Dissertationes Forestales 390

Forest professionals' relationship with the forest and its role in changing and contested forest contexts

Tuulikki Halla

School of Forest Sciences
Faculty of Science, Forestry and Technology
University of Eastern Finland

Academic dissertation

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Author: Tuulikki Halla

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Thesis supervisors:
Head of School, Professor Jukka Tikkanen
School of Forest Sciences, University of Eastern Finland, Finland

Professor Taru Peltola
Department of Geographical and Historical Studies, University of Eastern Finland, Finland

Pre-examiners:
Research Director, Professor Eeva Primmer, D. Sc. (For.)
Finnish Environment Institute, SYKE, Helsinki, Finland

Head of Unit Stephanie Bethmann, PD Dr.
Societal Change Unit, Forest Research Institute Baden-Wuerttemberg, Freiburg, Germany

Opponent:
Shannon Hagerman, Dean and Vice-Provost (pro tem), Faculty of Graduate and Postdoctoral Studies, and Professor, Faculty of Forestry & Environmental Stewardship, Department of Forest Resources Management, University of British Columbia, Vancouver, Canada

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ABSTRACT

Forest professionals have traditionally played a central role in shaping how forests are understood and managed, occupying operational and managerial positions related to forest planning, timber harvesting, biodiversity conservation, and stakeholder engagement. In these roles, they increasingly navigate societal debates in which forest-related institutions and governance are challenged and tensions over forest values and objectives intensify.

The purpose of this research was to deepen conceptual and empirical understanding of forest professionals' lived relationships with forests, the interconnections between these relationships and professional culture, and how they can be interpreted as tensions and possibilities in sustainability-oriented change.

The research comprised three studies. Study I elaborated the concept of the human–forest relationship (HFR) for examining how people experience forests and ascribe meanings to them. Study II applied this framework to explore forest professionals' lived HFRs, focusing on how meanings are shaped within professional community culture. Study III examined emotions expressed by different actors participating in a forest-related digital discussion, interpreting emotional expressions as manifestations of HFRs and as factors shaping conflict dynamics.

Methodologically, the research combined conceptual analysis drawing on multidisciplinary literature with qualitative empirical inquiry. The empirical analysis was grounded primarily in interpretative phenomenological analysis (IPA), complemented by qualitative content analysis and narrative emotion analysis. The material comprised interviews with Finnish forest professionals and digital media discussions related to a forest conflict.

The findings indicate that forest professionals' HFRs are holistic and deeply interwoven with professional culture. Through professional socialisation, individuals become embedded in a cultural continuum that shapes values, perceptions, and existential orientations toward forests. Forests permeate both personal and professional lifeworlds, fostering strong attachments that support commitment but may also clash with alternative worldviews. Overall, the study reveals how professional identities and forest meanings are negotiated within historically embedded lifeworlds, opening understandings for sustainability-oriented shifts.

Keywords: conflict, emotion, experience, human–forest relationship, interpretative phenomenological analysis, sustainability

Halla T. (2026). Metsäammattilaisten metsäsuhde ja sen rooli muuttuvassa ja kiistanalaisessa metsäkontekstissa. Dissertationes Forestales 390. 72 s. https://doi.org/10.14214/df.390

TIIVISTELMÄ

Metsäalan ammattilaiset ovat perinteisesti olleet keskeisessä asemassa vaikuttamassa siihen, miten metsiä määritetään ja käytetään. He toimivat erilaisissa asiantuntija- ja muissa tehtävissä suunnitellen ja toteuttaen metsänhoitoa, puunkorjuuta, luonnon monimuotoisuuden suojelua sekä sidosryhmien osallistamista. Työssään metsäammattilaiset ovat osallisia ja osallistuvat yhteiskunnallisiin keskusteluihin metsien ja laajemmin luonnon tilasta ja kestävästä käytöstä. Näissä keskusteluissa metsiin liittyviä instituutioita ja hallintaa usein haastetaan ja jännitteet erilaisten arvojen ja tavoitteiden välillä kärjistyvät.

Väitöstutkimukseni tavoitteena oli syventää käsitteellistä ja empiiristä ymmärrystä metsäammattilaisten metsäsuhteista, näiden suhteiden ja metsäammattikulttuurin välisestä vuorovaikutuksesta sekä siitä, millaisia jännitteitä tai mahdollisuuksia näissä metsäsuhteissa ilmenee kestävyyssiirtymän näkulmasta.

Väitöskirja koostuu kolmesta osatutkimuksesta. Ensimmäisessä osatutkimuksessa kehitin metsäsuhde-termin määrittelyä saadakseni käsitteellisen työkalun ihmisten metsäkokemusten ja -merkitysten tutkimiseen. Toisessa osatutkimuksessa sovelsin tätä käsitettä tutkiakseni metsäammattilaisten metsään liittämiä merkityksiä ja erityisesti sitä, miten merkitykset muovautuvat osana ammattiyhteisöä ja -kulttuuria. Kolmannessa osatutkimuksessa tutkin metsien käyttöön liittyvää verkkokeskustelua ja osapuolten siellä ilmaisemia tunteita metsäsuhteiden ilmentyminä sekä konfliktien dynamiikkaa muokkaavina tekijöinä.

Menetelmällisesti tutkimus yhdisti monitieteiseen kirjallisuuteen pohjautuvan käsitteellisen analyysin laadulliseen empiiriseen tutkimukseen. Empiirinen analyysi koostui tulkitsevasta fenomenologisesta analyysista (IPA), laadullisesta sisällönanalyysista sekä narratiivisesta tunneanalyysista. Empiirinen aineisto koostui suomalaisten metsäammattilaisten haastatteluista sekä metsäkiistaan liittyvistä keskusteluista digitaalisessa mediassa.

Tulokset osoittavat, että metsäammattilaisten metsäsuhteet ovat kokonaisvaltaisia, moniulotteisia ja myös syvästi kietoutuneita ammattikulttuuriin. Alalle kouluttautuessaan ja ammatissa toimiessaan yksilöt kiinnittyvät ammattikulttuuriseen jatkumoon, joka muovaa yksilöiden metsiin liittyviä arvoja, käsityksiä ja tuntemuksia. Metsien merkityksellisyys on sekä henkilökohtaista että ammatillista ja kietoutuu monin tavoin niin yksilön elämänhistoriaan kuin yhteisöjen kulttuurisiin normeihin. Metsän merkityksellisyys omassa elämässä voidaan kokea myös ristiriitaiseksi suhteessa yhteiskunnassa vallitseviin arvoihin ja niiden ilmauksiin. Kokonaisuudessaan tutkimukseni tuo esiin, miten ammatilliset identiteetit ja metsiin liittyvät merkitykset neuvotellaan historiallisesti rakentuneissa elämismaailmoissa, ja avaa siten uusia näkökulmia metsäammattilaisten roolista kestävyyssiirtymässä.

Avainsanat: kestävyys, kokemus, konflikti, metsäsuhde, IPA-analyysi, tunne

KIITOKSET – ACKNOWLEDGEMENTS – REMERCIEMENTS

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Armonkalliolla ja Koivistonkylässä 24. huhtikuuta 2026

Tuulikki Halla

LIST OF ORIGINAL ARTICLES

This doctoral dissertation consists of three studies, each of which has been published as a scientific article. They are referred to in the text by Roman numerals.

I Halla T, Holz J, Karhunkorva R, Laine J (2023) The concept of the human-forest relationship (HFR) – Definition and potentials for forest policy research. Forest Policy and Economics 153: 102995. https://doi.org/10.1016/j.forpol.2023.102995

II Halla T (2026) Experiencing forests as professionals: meanings and tensions in sustainability transitions. Forest Policy and Economics 185: 103731. https://doi.org/10.1016/j.forpol.2026.103731

III Halla T, Laine J (2022) To cut or not to cut – emotions and forest conflict in digital media. Journal of Rural Studies 94: 439–453. https://doi.org/10.1016/j.rurstud.2022.07.019

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Tuulikki Halla is fully responsible for the summary of this doctoral dissertation and had overall responsibility for articles in studies I, II, and III. She was the corresponding author of all three articles. A more detailed description of her contribution is provided below.

I Tuulikki Halla was responsible for visualising the original draft and for reviewing and editing the published work. She was responsible for writing with contributions from the following co-authors: texts on (environmental) sociology and societal dimension (Jana Holz), anthropology and the cultural dimension (Reetta Karhunkorva), and institutions, time, and the societal dimension (Jaana Laine). She shared responsibility for conceptualisation, methodology and investigation with the co-authors.

II Tuulikki Halla was the sole author of the article.

III Tuulikki Halla was responsible for the conceptualisation and methodology of the research work and research questions. Data curation, analysis, and interpretation, as well as writing the original draft and reviewing and editing the published work, were shared with co-author Jaana Laine, who was also responsible for visualisation.

TABLE OF CONTENTS

1 INTRODUCTION

1.1 Changing meanings of forests: sustainability shifts, conflicts, and professional roles

Global environmental crises, including biodiversity loss and climate change, have rendered forest-related debates increasingly complex and transnational. Forests are entangled with issues such as sustainability transitions, bioeconomy, Indigenous rights, and even species equality (e.g., Jokinen 2014, 2019; Näyhä 2019; Ehrnström-Fuentes and Jääskeläinen 2022; Pecurul-Botines et al. 2025). These interconnected and often contradictory concerns challenge established approaches to forest governance, management, and use. Recent research anticipates paradigm shifts in forestry, introducing ideas such as relational forestry (Himes and Dues 2024), social forestry (Kornhauser and Hajjar 2024), and regenerative economy (Dahm 2022; Hellström 2023; Hohti et al. n.d.). Calls for reforming forest governance to better represent societal diversity are globally recognised (Arts et al. 2024).

Forest professionals occupy a pivotal position within these shifts and controversies. Traditionally, they have played a dominant role in defining forests and determining their use. With educational backgrounds in forestry and related disciplines, they hold operational and managerial positions with responsibilities such as developing and implementing forest management plans, timber harvesting, biodiversity conservation, and stakeholder engagement (Kilpeläinen and Lautanen 2020, 2022, 2025; Rekola and Sharik 2022). In performing these tasks, professionals are involved not only in critical debates over forest use but also in conflict resolution, as people's expectations regarding forests increasingly challenge forest-related institutions, governance, and individual professionals (Fernández-Manjarrés et al. 2021). Forest-related conflicts show no signs of diminishing; rather, factors such as urbanisation, intensified resource extraction, and stakeholder exclusion from planning processes appear to exacerbate tensions (Nousiainen and Mola-Yudego 2022).

Conflicts over forests can be understood as expressions of dissatisfaction with prevailing practices and as signs of shifting attitudes and values toward forests (e.g., Beddoe et al. 2009; Raymond et al. 2014). To grasp the roots of these tensions, it is essential to consider not only structural drivers of conflict— such as ownership, access, decision-making, and benefit-sharing (Sultana 2015; UNEP 2015, 11; Hansen et al. 2016; Olsson and Gooch 2019, 1–7) — but also the lived, individual-level relationships people experience with forests. The concept of the human–forest relationship (HFR) offers a lens for exploring how diverse meanings emerge and become embedded in these relationships — meanings that shape expectations and contribute to shifts and tensions in forests and their use. These relationships take shape through emotions, knowledge, practices, values, and other associations that become deeply embedded, often remaining taken for granted and 'invisible' (Brown and Perkins 1992; Manzo 1994, 2003).

Profound disagreements among stakeholders over core values, identities, and understandings of possible solutions are difficult to resolve (Putnam and Wondolleck 2003; Gritten et al. 2009; Balint et al. 2011). These disagreements are rooted not only in contrasting ontologies but also in differing epistemologies—that is, in the ways knowledge about forests is produced, validated, and prioritised. Forest professionals' reliance on tradition, experiential knowledge, and timber-oriented perspectives illustrates how professional culture shapes decision-making (Curtis et al. 2023; Deegen 2024; Huisman and Husu 2024). Sustainability transitions in forestry generate complex emotional dynamics among forest

machine entrepreneurs (Huisman and Husu 2026): emotions such as pride, trust, and belonging coexist with fear, disappointment, and distrust across local, institutional, and knowledge-production levels, reflecting tensions tied to identity, justice, and livelihoods (Ibid.). Even forestry students are strongly socialised into these traditions, often framing societal challenges as communication problems (Cichecki et al. 2025). When these underlying ontologies and epistemologies remain unaddressed, critical debate persists (Balint et al. 2011) and, at worst, a triggering event can escalate latent tensions into more severe conflict (Buijs and Lawrence 2013).

In forestry, repeated attempts have been made to understand and mitigate the confrontations using both theoretical (e.g., Raitio 2013; Sandström et al. 2013; Sarkki and Heikkinen 2015; Ott 2025) and practical (e.g., Wallenius 2001) approaches. Collaborative approaches — such as stakeholder participation, dialogue, and joint on-site meetings — are widely regarded as essential for successful and constructive natural-resource governance (Daniels and Walker 2001; Bethmann et al. 2018; John et al. 2024; Brietzke et al. 2025). Still, despite these constructive co-management strategies, confrontations seem to be intensifying, and people appear to lack trust in either forest professionals or forest policy and governance (Brietzke et al. 2025).

One possible reason for this could be that forest professionals themselves are not neutral mediators; they, too, subscribe to cultural norms and hold worldviews that may conflict with those of other actors (see e.g., Bruckmeier 2019). This dual role — as both conflict facilitators/managers and actors/stakeholders — may pose challenges to reconciling multiple forest-related expectations and, more broadly, to implementing sustainability shifts in the forest sector.

In this research, the term *sustainability shift* serves as an umbrella concept encompassing different scales of change toward more sustainable forest-related practices and governance. These changes include both *sustainability transition* and *sustainability transformation*: the former refers to incremental shifts in practices and institutional arrangements, while the latter denotes deeper paradigm changes in values, relationships, and cultural meanings (Linnér and Wibeck 2019; Dietz 2023). These perspectives are complementary for understanding and guiding sustainability-oriented change (Hölscher et al. 2018).

1.2 Purpose of the research

The purpose of this research is to deepen, both conceptually and empirically, the understanding of forest professionals' relationships with forests, the interconnections between these relationships and professional culture, and how these interconnections are experienced as tensions and possibilities in relation to sustainability shifts in the forest sector. Conceptually, the research introduces and further elaborates the concept of the human-forest relationship (HFR) as an intrepretative lens for exploring how people experience forests and ascribe meanings to them. The HFR concept foregrounds the experiential, cultural, and institutional dimensions through which forests become meaningful in people's lived worlds.

Empirically, the purpose of the research is twofold. First, it seeks to explore and interpret forest professionals' lived relationships with forests, paying particular attention to the meanings embedded in these relationships and to how such meanings are shaped within professional community culture. Second, it aims to explore the emotions expressed by actors in forest-related conflicts and the themes associated with these emotions. Emotional

expressions are understood to characterise actors' relationships with forests and, as such, to contribute to a deeper understanding of the dynamics and escalation of forest conflicts.

This research proceeds from the understanding that recognising and interpreting how forest professionals' relationships with forests emerge and continue to evolve within their lived worlds can contribute to understanding conflict transformation in times of socio-environmental change. These lived worlds are situated within broader cultural and societal contexts in which forests are encountered through multiple, and partly diverging, values and meanings. In such contexts, forests take shape through ongoing social processes in which their definitions and meanings are not fixed but continually evolving and, at times, contested. This perspective sheds light on how forest conflicts arise, unfold, and escalate, and on how evolving relationships with forests shape professionals' roles, positions, and actions within these processes.

These research objectives were addressed through three interrelated studies:

I. The first study reviewed and refined the HFR concept, framing it as encompassing personal, cultural, and institutional dimensions. This study established the conceptual foundation for the empirical analyses that follow. (Article I)

II. The second study explored forest professionals' lived relationships with forests focusing on how forest professionals, as individuals, experience forests and how meanings are shaped within professional community culture. This study adopted a phenomenological perspective, seeking to illuminate the embodied, taken-for-granted meanings that underlie professional practices and identity through the analysis of interviews with Finnish forest professionals. (Article II)

III. The third study examined forest conflicts and their escalation, focusing on emotions as integral to forest-related meanings. By analysing digital media expressions around a forest conflict in Finland, this study asked: What emotions do actors express in forest conflicts, and to what issues are these emotions connected? Emotions, deeply intertwined with values and identities, were considered to play a key role in shaping conflict dynamics. (Article III)

Based on the findings of these three studies, this summary section examines how forest professionals' relationships with forests — shaped and permeated by professional culture — affect and manifest in forest-related conflicts. By making these often implicit meanings visible, the research contributes to understanding how sustainability shifts in forestry are negotiated — not only through policy processes and science but also through the lived worlds of those who work in and with forests.

1.3 Empirical focus on Finland

Empirically, this research focuses on Finnish forest professionals and the forest-related conflicts they encounter. Shaped by a historically embedded professional culture and long-standing peer norms (Primmer and Karppinen 2010; Peltola and Tuomisaari 2016), their lived experiences provide fertile ground for examining how HFRs and professional identities are constructed, sustained, and challenged within an internationally connected forestry tradition and diverging sustainability and forest policy priorities in the EU (Kotilainen and Rytteri 2011; Pecurul-Botines et al. 2025). In Finland, the cultural narrative portraying professionals

as guardians of the forest has underpinned both the existential grounding and cohesion of the professional community (Paaskoski 2008), while forests themselves have historically been framed as a cornerstone of national economic and social well-being (Laakkonen et al. 2022). Despite growing environmental demands, extractivist forestry practices continue to be widely experienced as normalised and self-evident within local forest lifeworlds, where the forest industry is deeply embedded in community histories and identities, nature is commonly perceived as resilient, and intensive forest use is rarely questioned (Holz 2023). Industrial forestry — and forest professionals as part of it — shape how people perceive, value, and interact with nature (Holz 2023; see also Holz and Saave 2025).

Finnish forest professionals working in expert and managerial roles typically hold either a bachelor-level degree in forest management (forest engineer) or a master's degree in forest sciences (forester; Kilpeläinen and Lautanen 2024, 2025). Bachelor-level programs are offered by six universities of applied sciences. Between 2011 and 2022, these institutions graduated 2,093 students — an annual average of 174 (Kilpeläinen and Lautanen 2024). Most graduates are employed in the forest industry, forest-management associations, or public agencies, where their tasks commonly include advising forest owners, timber procurement, and forest management (Ibid.). Master's degrees in forest sciences are offered at two universities. Between 2011 and 2023, a total of 1,258 students — 945 Finnish and 313 international — completed their degrees, an annual average of 97 graduates (Kilpeläinen and Lautanen 2025). Master's graduates are employed by a wide range of organisations, most frequently the forest industry, universities, and government agencies. Their typical work tasks include timber procurement, research and development, forest management, teaching, advisory services, and environmental protection (Ibid.).

Forests cover 86% of Finland's land area (Luke Statistics), making them a dominant feature of the landscape and deeply intertwined with Finnish culture, identity, and economy (e.g., Björkman 2021; Seppä 2021; Laakkonen et al. 2022; Lummaa et al. 2023; Mäkelä et al. 2023; Vainio et al. 2024). These interlinkages have contributed to persistent disputes over forest use for centuries. Earlier conflicts were rooted in land-use rights and rural livelihoods in the natural economy (e.g., Ruuttula-Vasari 2004; Roiko-Jokela 2012; Starlander 2020), later evolving into multifaceted issues, such as nature conservation, bioeconomy, biodiversity loss, and climate change mitigation (e.g., Roiko-Jokela 1997; Kröger and Raitio 2017; Houtbeckers 2023).

A significant turning point occurred in the 1860s with the establishment of the Finnish state forest administration and the launch of formal forest education, positioning forest professionals as key actors in these conflicts — initially in opposition to rural populations, later to private forest owners, and eventually to civil society at large (Siiskonen 2007; Parpola and Åberg 2009; Kotilainen and Rytteri 2011). Public criticism of intensive forest management intensified in the 1980s. Dramatic changes in forest landscapes — such as clear-cutting and wetland drainage — combined with the endangerment of forest ecosystems, the loss of old-growth forests, growing environmental awareness, and increasingly urban lifestyles with more nature-related leisure and recreational activities, led to confrontations. These developments intensified conflicts between the forest sector and civil society, mobilising environmental activists, non-governmental organisations, and the general public (Enbuske and Ruuskanen 2021, 192–194). Although the dominance of timber-production-centred thinking began to wane, and the prevailing economic-scientific paradigm — which emphasised rational, productive, and science-based forest management — was gradually replaced by a multi-objective forestry paradigm (Parpola and Åberg 2009; Kotilainen and Rytteri 2011), Finnish forest policy and practice have continued to prioritise the economic

use of wood resources (Takala et al. 2019; Takala et al. 2023; Harrinkari 2024). Rather than society at large becoming accustomed to the dramatic changes in forest landscapes caused by clear-cutting (see Reunala 1991, 221), conflicts over forest use and management methods have persisted (e.g., Raitio 2008, 2013; Sarkki and Heikkinen 2015; Ott 2025).

2 THEORETICAL UNDERPINNINGS OF THE HUMAN–FOREST RELATIONSHIP

2.1 Conceptual and epistemological orientations

This research addresses three forest-related human phenomena: the human–forest relationship (HFR; Study I), being a forest professional (Study II), and forest conflict (Study III). For their exploration, it draws on three complementary approaches — conceptual, phenomenological, and social constructionist — which are applied in different ways across these three studies: the conceptual approach is used to develop the concept of the human–forest relationship (Study I), while phenomenological and constructionist approaches guide the empirical examination of forest professionals and forest conflicts (Studies II and III). As a result, the research aims to produce descriptive and interpretative accounts of the studied phenomena (van Manen 1994, 4–8, 24–27; Tökkäri 2018, 64–84).

The theoretical foundation of the research thus comprises two complementary layers. The first, presented in Study I, is a conceptual framework that defines the research subject through the lens of the HFR. The second layer, applied in Studies II and III, comprises the epistemological and interpretative methodological underpinnings of social constructionism, phenomenology, and hermeneutics, which guide both the research design and the interpretation of the findings. Social constructionism views people as active subjects who construct reality by assigning meaning to the world and its phenomena (Patterson 2008). In phenomenology, meaning-making occurs within one's lifeworld — that is, in specific times and places — through embodied interaction with people, things, and cultural practices (Merleau-Ponty 1998; Heidegger 2000; Larkin et al. 2019). As a method for examining these lived experiences, hermeneutic phenomenology enables inquiry into how forest professionals perceive, interpret, and attach meaning to the forest within their lifeworlds (Smith et al. 2022).

The phenomenological concept of lifeworld is closely related to the notion of social reality in social constructionism, although each approach emphasises different dimensions of meaning-making. Phenomenology operates within (inter)subjective first-person experience, focusing on how individuals live through phenomena and associate meanings with these experiences (Moran and Cohen 2012, 189–193, 195–196). By contrast, social constructionism highlights the role of social interaction in the collective construction and sharing of meanings (Turner 2006). In this research, I apply both approaches to explore how forest professionals perceive the world — particularly the forest and their professional roles — and how, as members of the forest professional community, they construct their reality and interpret their experiences as culturally and socially significant. The focus lies on forest professionals as unique individuals who give meaning to their lifeworlds and who create, maintain, and transmit these meanings through their embodied and expressive existence as part of various interhuman and interspecies networks and on how these meanings are negotiated and contested.

2.2 Dimensions of human relations and relationships with nature

Several concepts describe human connections to their surroundings, such as the human–environment relationship (HER), human–nature relationship (HNR), nature connectedness

(NC), and nature relatedness (NR). Concepts like society–nature relations (SNR) (Görg 1999; Becker and Jahn 2006) and social relations with nature (Eversberg et al. 2022) emphasise the institutional and structural dimensions of human–nature interactions, including power dynamics and their influence on social groups and individual lifestyles. The development of the HFR concept benefits from these related concepts and their contributions (Figure 1).

The concept of HER refers to the multifaceted network of material, social, cultural, and symbolic meanings that the environment holds for human communities. By contrast, HNR focuses on human–nature interaction, emphasising that relationships are formed within specific natural contexts (Willamo 2004a, 32–35; Willamo 2004b, 36–44; Willamo 2005, 169–173; Flint et al. 2013; Häyrinen and Pynnönen 2020). According to HER and HNR, humans — as both cultural and environmental beings — possess socially shared meanings as well as direct perceptions of their environment (Ingold 2000). Related concepts, such as nature connectedness (Mayer and Frantz 2004) and nature relatedness (Nisbet et al. 2009), highlight the emotional dimensions of these relationships. These concepts overlap in that they — implicitly or explicitly — encompass both natural and human-made surroundings, including spaces for individual and collective activities and cultural practices (Bourdeau 2004; Flint et al. 2013): nature has been shaped by human activity over time resulting in its transformation into anthropogenic biomes, or 'anthromeres' (Ellis and Ramankutty 2008).

From a sociological perspective, societal relations, institutions, power, and dominance shape and modify nature. HNRs are socially mediated (Eversberg et al. 2022): influenced by individuals' social backgrounds, life histories, and political views. While SNRs examine macro-level structures — such as how society organises its material and symbolic metabolism with nature — social relations with nature focus on the mental and practical ways individuals and groups relate to, reproduce, or challenge these structures (Eversberg et al. 2022). According to this perspective, people may relate to nature as capital, partner, heritage, or environment, and their position within society shapes whether this relationship is characterised by control or dependency, hierarchy or reciprocity. These relations are, then, not merely individual preferences but are shaped and sustained by broader institutional, economic, and cultural structures (Ibid.). For example, within the natural resource sector, SNRs and social relations with nature intersect with economic and cultural practices, and nature is shaped and perceived — i.e., lived — through the social and economic processes prevailing in society (Holz 2023; Holz and Saave 2025).

Societal institutions and cultural practices are characterised by stability, which often underpins their persistence over time. This permanence is reinforced by the power and authority of actors who benefit most from existing arrangements (Sene-Harper et al. 2022). Societal and environmental changes, however — such as climate impacts, economic shifts, and evolving norms — can generate pressures that challenge institutional resilience (Burch 2010; Raymond et al. 2014; Feola 2017). Under such conditions, opportunities for shifts within governance and institutional regimes emerge, enabling reconfigurations of practices and policies (Beddoe et al. 2009; O'Brien and Sygna 2013).

Building on this conceptual landscape, Study I developed the definition of the HFR, which was then applied in Studies II and III to explore forest professionals' and other actors' forest-specific meanings, and their role in shaping forest use and conflict dynamics.

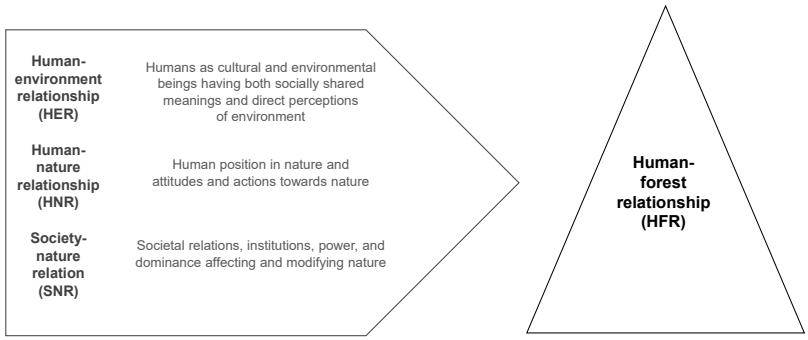

Figure 1. Contributions of the HER, HNR and SNR concepts to the development of the HFR concept.

2.3 Socially constructed realities in forest contexts

Within their HFRs, individuals both experience and perceive forests in their lifeworlds, while simultaneously constructing social realities by assigning meaning to forest-related phenomena through social interaction. These perceptions and meanings emerge not only through engagement with other people but also through direct interaction with the forest itself. People belong to various communities and interpret the world through socially shared worldviews, norms, and cultures (Berger and Luckmann 1966; Turner 2006). At the same time, as unique individuals, they experience the world through their personal characteristics, social identities, and life histories, which shape how they interpret and relate to forest environments (Hogg and Reid 2006; Kreiner et al. 2006).

From a social constructionist perspective, various forest-related actors, such as forest professionals, can be understood as a distinct social group — a forest professional community — that constructs shared meanings and ideas about the forest based on its community culture and history. In Finland, the particular truths, values, and realities of this community have evolved since the establishment of forest education in the mid-19th century. Although forestry has undergone various periods of societal change, and both the profession and forests have been associated with shifting aspirations and goals, the core assumptions of the professional community have been sustained, reproduced and transmitted across generations: as individuals enter the profession, they are socialised into this continuum of shared truths, values, and realities (Paaskoski 2008). Since the social reality created by the forest professional community is only one among many in society, antagonistic relationships and conflicts may arise between communities with differing realities (Hogg and Tindale 2005; Hogg and Reid 2006; Muhar and Böck 2018). In addition to inter-group tensions, intra-group diversity also exists. Forest professionals are also members of other communities — such as family, leisure, and virtual networks — through which they navigate and reconcile multiple professional and personal social realities in their lifeworlds (Hogg and Reid 2006; Fraser and Turcan 2025).

Social realities are constructed, shared, and communicated through language. Language shapes how individuals understand the world and constrains what can be expressed, perceived, and known (Guba and Lincoln 1994; Peck and Mummery 2018; Tökkäri 2018).

Within the forest professional community, a technical vocabulary and communicative style have evolved that foreground certain aspects — such as facts and rationality — while marginalising others: for example, more emotional expressions (Predmore et al. 2011; Bethmann et al. 2018). Moreover, as embodied and environmental beings (Ingold 2000, 2), humans also experience their surroundings through sensory perception, which may not always be verbalised. These experiences can include embodied feelings that are difficult to articulate (Smith 2013; Pernau and Rajamani 2016).

To access these diverse social realities, this research focused on different forest actors (Study III), with particular attention paid to one specific group — forest professionals — and the ways in which they experience forests and construct forest-related meanings in their lifeworlds (Study II). The latter inquiry was approached through phenomenological and hermeneutic methodologies, combined with research that conceptualises individual forest professionals as members of social groups (e.g., Hogg and Reid 2006), to explore how socialisation into collectively shared professional meanings may shape their experiences.

2.4 Phenomenology and hermeneutics as epistemological approaches to explore human–forest relationships

As philosophical traditions, phenomenology and hermeneutics focus on how knowledge is constituted through experience and interpretation. They align with the postmodern epistemologies that view knowledge as socially constructed, thereby departing from the modernist view that true knowledge mirrors an objective reality (Kvale 1995). A key premise is the role of subjectivity in the pursuit of knowledge: objectivity itself is understood as ‘an achievement of subjectivity’ (Moran 2005, 50).

Phenomenology emphasises individual experience, where knowledge of the world is conveyed through sensation and lived experience. Hermeneutics, in turn, views knowledge as the meanings and interpretations of phenomena within one’s lifeworld. Knowledge emerges through perceiving these connections and the meanings they entail (Mantzavinos 2018; Smith et al. 2022). In both traditions, knowing is always a knowing of *something*: it arises when a person directs attention to ‘this something’ and associates meaning with it. These meanings are intersubjective — they are culturally and socially formed and shared in relation to others.

Both phenomenology and hermeneutics operate with the key concepts of lifeworld, experience, meaning, and the horizon of understanding. The lifeworld refers to the world in which individuals exist as embodied beings — the world as it unfolds and manifests in experience (van Manen 1994; Merleau-Ponty 1998; Heidegger 2000). Each person inhabits a unique lifeworld: the world as given in experience, a dynamic horizon in which nothing appears except as lived. Experiencing is an immediate cognitive and sensory activity — the act of consciously living through something by perceiving, sensing, moving, doing, or remembering (Merleau-Ponty 1998; Smith 2013).

In the act of experiencing, individuals attach meanings to the phenomena they perceive in their lifeworld. These meanings structure and define experience as always being of something (Heidegger 2000, see also Merleau-Ponty 1998). Lifeworlds are permeated by fundamental existential dimensions — spatiality, temporality, corporeality, and relationality — which form the existential ground for all human experience (van Manen 1994, 101, 172–173). In forest contexts, these dimensions manifest as space for being, acting, and moving; inter- and intra-generational time of humans and nature’s temporalities; corporeal presence

and embodied sensuality; and interpersonal and interspecies relationships (Figure 2). The subjective ways in which individuals embody their experiences (lived body) — such as the forest (lived space), human and tree generations (lived time), and continuous interaction with environments, events, and others (lived other) — form the frames or horizons of understanding for one's ontological interpretations of being human and being-in-the-world, as well as epistemological understandings of what the world is and means.

Beyond these existential dimensions, cultural, historical, and social contexts further situate individual lifeworlds (van Manen 1994, 101). Experiencing and meaning-making occur through the lenses of socially constructed structures. Meanings — such as beliefs, emotions, knowledge, and values — intertwine with cultural traditions and worldviews, socialising individuals to experience themselves and their environments in particular ways (Ingold 2000, 5, 9–10; Longhurst et al. 2017, 5). Socialisation is shaped by community attitudes toward nature and its use, as well as by intra- and inter-group dynamics that influence how nature is perceived and valued (Kivimäki 2019, 9). These social structures often become so ingrained that they appear natural, although they are socially produced through community ideologies, paradigms, and values (Hogg and Tindale 2005; Hogg and Reid 2006). As a result, every individual possesses a unique horizon of understanding — a perspective from which they interpret the world (Heidegger 2000). This horizon evolves through collectively shared and constructed realities. For example, in the forest professional community, a particular set of forest-related principles, beliefs, values, and norms (i.e., paradigm(s)) is created and shared through social practices. These define and give meaning to the forest as both a physical and social phenomenon and guide decisions and actions regarding its use (Cubbage et al. 1993; Arts et al. 2010).

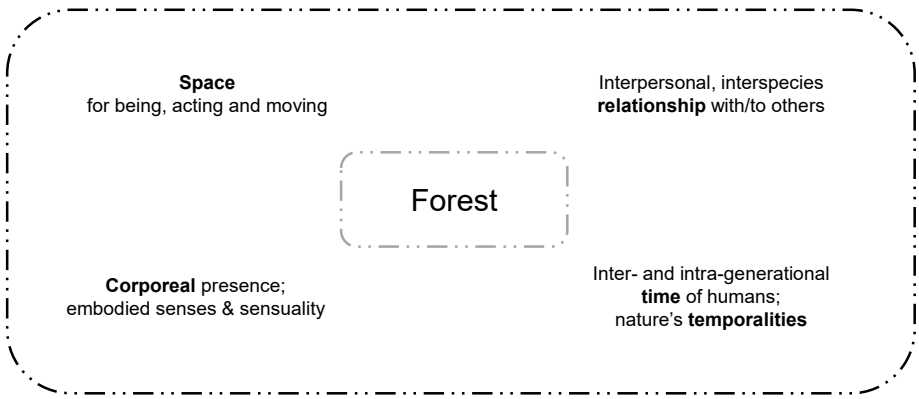

Figure 2. Ways to experience the forest through the existential elements of the lifeworld: space, time, corporeality and relationship (according to van Manen 1994, 172–173).

2.5 Emotions as meanings in human–forest relationships and conflicts

HFRs shape how forest conflicts emerge and escalate: they include diverse meanings that individuals and communities associate with forests, thus underlying expectations to forests and their use as well as contributing to shifts in forest-related values and tensions. While forest conflicts have been widely studied, the concept of HFR offers a more holistic perspective, encompassing diverse associations and extending the focus beyond commonly examined values to include emotions. Emotions are central to these relationships: they shape affective bonds with forests and influence the emergence, persistence, and resolution of conflicts within broader societal dynamics (Bar-Tal et al. 2007; Jasper 2011, 2014). According to Buijs and Lawrence (2013), emotions are linked to forest attachments, emotional arousal in response to perceived threats, and processes of information processing and conflict escalation (Figure 3).

Individuals and communities form emotional attachments to their environments and to specific places within them (Buijs and Lawrence 2013). Forests may constitute a meaningful part of people's everyday lives, representing places of identity and belonging (Perkins and Thorns 2012; Singh 2013; Huisman and Husu 2024, 2026). They may be valued as familiar landscapes near home (Hansen-Møller and Oustrup 2004; Skår 2010) or as spaces for work and recreation (Häggström 2019a, 2019b; O'Flynn et al. 2021). Feelings of psychological ownership (Matilainen et al. 2017; Wagner 2025) or senses of ontological security (Banham 2020; Ott 2025) may be associated with forests. Psychological ownership refers to an individual's personal sense of belonging to a forest, even without legal ownership (Pierce et al. 2003; Matilainen et al. 2017). Cultural aspects and social institutions — such as anthropocentric religious traditions (e.g., Glacken 1967; Passmore 1980) and the Nordic tradition of 'everyone's right' (e.g., Letto-Vanamo et al. 2019) — can reinforce experiences of this ownership when, for example, entitling people to access and use nature, as well as providing feelings of ontological security; personal experiences of trust, continuity, and order may be linked to forests and their long temporal existence (Giddens 1991; Buijs and Lawrence 2013; Banham 2020).

Emotions motivate action (Buijs and Lawrence 2013). Both grievance and hope can contribute to the emergence of social movements (Devlin 2019–2020). Perceived injustices, deprivation (Van Zomeren et al. 2008), threats to significant personal or communal values (Vining and Tyler 1999), or hope for a better future (Ojala 2017) may empower individuals and groups to organise and engage in action — either opposing unwanted change or advocating for desired environmental transformation (Jasper 2011, 2014).

Emotions and their intensity influence both thinking and information processing (Buijs and Lawrence 2013; Cohen-Chen et al. 2014). In addition to cognitive aspects, emotions are relevant in both fast thinking — when individuals seek quick answers to complex questions — and slow thinking, which involves moral and value-based reflection (Kahneman 2011; Veselý 2021). Debates on conflicting issues often occur in public forums where people process and share information differently. As Buijs and Lawrence (2013) demonstrate, emotions influence the way people process new information and knowledge. For instance, anger increases reliance on stereotypes and prompts selective information-seeking that reinforces existing beliefs (Lerner and Tiedens 2006). In such emotionally heightened situations, people tend to think quickly and make impulsive decisions, making it difficult to influence them with dispassionate, reasoned arguments (Kunda 1990; Sirin et al. 2011). This leads to communication among conflict stakeholders that is saturated with simplified claims, stereotypes, and emotional reactions.

Spoken and written language, as well as stakeholders' histories, can accelerate emotions. This may consequently lead to escalations of forest conflicts (Buijs and Lawrence 2013). Certain concepts or phenomena — such as clear-cutting or continuous cover forestry in the Finnish forest debate — become 'saturated with affects', and this emotional stickiness gives them performative power, making their use more emotionally charged than others (Ahmed 2014). Previous relationships between stakeholders (Sarkki and Heikkinen 2015) and a lack of trust (Juerges et al. 2018) may affect the success or failure of conflict management, as earlier experiences can escalate tensions. Stakeholders associated with such 'sticky signs' may reflect these emotional histories in discussions (Ahmed 2014, 89–92). Recognising emotions can, therefore, support more constructive dialogue between stakeholders (Predmore et al. 2011; Bethmann et al. 2018).

Building on this theoretical foundation, Study III applied Buijs and Lawrence's (2013) framework of the four emotional aspects of forest conflicts: place attachment, motivation for social movements, information processing, and conflict escalation (Figure 3). This framework helps illustrate the role of emotions in both HFRs and in the transformation and escalation of forest conflicts.

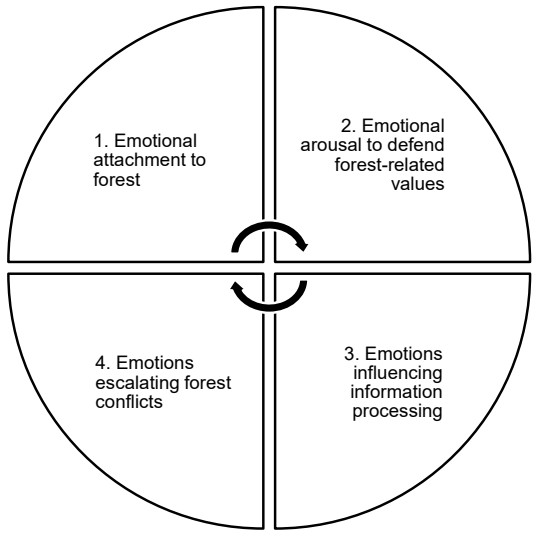

Figure 3. Emotions in forest conflict according to Buijs and Lawrence (2013).

3 RESEARCH DESIGN

3.1 Qualitative research on forest professionals' relationships with forests

Among various qualitative, human science-oriented methodologies, I applied interpretative phenomenological analysis (IPA; Smith et al. 2022) when exploring experiences and forest-related meanings in Study II. To examine emotions as a distinct and significant form of meaning in Study III, I employed narrative emotion analysis (Kleres 2010) together with conventional content analysis (Hsieh and Shannon 2005; Schreier 2014) to describe to which forest-related activities, ideas, practices or suggestions expressed emotions were connected to. (Table 1). The main advantage of these data-driven approaches was to gain direct information from participants/informants regarding what they found meaningful in relation to forests rather than relying on predefined categories (Hsieh and Shannon 2005; Schreier 2014). The oral and written accounts co-produced in the interviews and gathered from digital sources were treated as expressions of the phenomena under study: the human–forest relationship, being a forest professional, and forest conflict.

Further refinement of the HFR concept emerged as relevant during the research process (Table 1). Although the concept has appeared in academic literature and in Finnish cultural and forestry contexts (e.g., Ritter and Dauksta 2013; Matila et al. 2018; Häggström 2019a, 2019b; Halla et al. 2020; Häyrinen and Pynnönen 2020; Hujala et al. 2021; Karhunkorva et al. 2021; Apajalahti et al. 2022), its application has remained relatively limited. Forest-related meanings have often been explored without explicitly using the HFR concept, leaving its analytical potential underdeveloped. In Study I, I engaged in conceptual elaboration by examining the diversity of forest-related meanings and their cultural and societal dimensions. This work was informed by the perspective of conceptual history, which considers how concepts both reflect and shape cultural, political, and social change through their use in specific historical contexts (see e.g., Ifversen 2011; Koselleck and Richter 2011). Rather than applying a full conceptual history methodology, my analysis drew on its interpretative orientation, particularly in exploring how forest-related meanings evolve within societal discourse and resonate with broader shifts in human–nature relations.

3.2 Methods of data collection and analysis

3.2.1 Study I: The concept of the human-forest relationship (HFR) – Definition and potentials for forest policy research

The purpose of Study I was to introduce and further elaborate the concept of the HFR as a lens through which to explore how people experience and ascribe meanings to forests, and to consider its potential applications in forest policy and research. Because HFR draws on multiple disciplines — including anthropology, geography, history, and sociology — the study employed a conceptual analysis of the existing scholarly literature from these fields. The material consisted of articles that either explicitly used HFR or addressed related notions like the human–environment relationship (HER), human–nature relationship (HNR), or society–nature relation (SNR; Table 2). These articles were retrieved through university-affiliated search services and databases including EBSCOhost Academic Search Premier, Google Scholar, Scopus, and Web of Science. In addition, literature engaging with themes

resonant to the HFR perspective — such as culture, institutions, place, and values — was examined (Table 2).

Rather than conducting a systematic literature review (e.g., Himes et al. 2024), the focus was on exploring and synthesising key meanings and perspectives concerning HFR and its relation to HER, HNR, and SNR (e.g., Becker and Jahn 2006; Flint et al. 2013). Based on this analysis, the conceptual elaboration of HFR was structured around three dimensions: personal experiences and meanings (e.g., Milton 1996; Ingold 2000), socially shared cultures (e.g., Hannerz 1992; Hall 1997), and societal institutions and ideologies (e.g., Hodgson 2006) (Figure 4). Finally, the article reflected on the possibilities and limitations of the HFR concept, emphasising how its multidisciplinary nature opens interpretative pathways for understanding forest-related attitudes, practices, and their connections to future expectations.

	I	II	III
Study	The concept of the human-forest relationship (HFR) – Definition and potentials for forest policy research	Experiencing forests as professionals: meanings and tensions in sustainability transitions	To cut or not to cut – emotions and forest conflict in digital media
Main focus	Definition and development of the human-forest relationship (HFR) concept	The experiences and meanings of forests among Finnish forest professionals	Stakeholders' emotional expressions associated with the forest in the forest conflict
Material	Research literature in cultural studies, geography, history and sociology	Interviews of 37 Finnish forest professionals in 2020	61 reader comments (Helsingin Sanomat) and 71 tweets, published in 2018 after the launch of the Stop Clearcuttings citizens' initiative
Method	Conceptual analysis based on selected multidisciplinary literature	Interpretative phenomenological analysis (IPA) (Smith, Flowers, Larkin 2022)	Narrative emotion analysis (Kleres, 2010) and Qualitative content analysis (Hsieh and Shannon 2005; Schreier 2014)

Table 1. Summary of the data and methods used in the studies.

Concept / Theme	Articles used, N	Articles
Human-forest relationship (HFR)	12	Apajalahti et al. 2022, Ciancio 2015, Hiltunen et al. 2020, Häggström 2019ab, Häyrinen & Pynnönen 2020, Hujala et al. 2021, Johann et al. (Eds.) 2021, Karhunkorva et al. 2017, Paaskoski & Roiko-Jokela (Eds.) 2020, Ritter & Dauksta 2013, Skår 2010
Human-nature relationship (HNR)	14	Beery et al. 2023, Bourdeau 2004, Flint et al. 2013, Guo et al. 2023, Ives et al. 2017, Ives et al. 2018, Juel 2002, Laurén 2006, Lummaa 2016, Mayer & Frantz 2004, Nisbet et al. 2009, Richardson et al. 2020, Valkonen 2013, Willamo 2004
Human-environment relationship (HER)	4	Coeckelbergh 2017, Ingold 2000, Milton 1996, 2002
Society-nature relation, Social relations with nature (SNR)	3	Eversberg et al. 2022, Becker & Jahn 2006, Görg 1999
Culture/-s	19	Ehn & Löfgren 2004, Fornäs 2017, Glacken 1967, Greif 1994, Hall 1997, Hankonen 2021, Hannerz 1992, 1999, Jokinen 2019, Kallinen et al. 2012, Karhunkorva et al. 2016, Kirner 2016, Licht 2007, Longhurst et al. 2017, Matila et al. 2018, Pilgrim & Pretty (Eds.) 2010, Siivonen 2018, 2022, Stephenson 2008
Institution/-s	10	Acemoglu & Robinson 2021, Andriani & Bruno 2022, Beddoe et al. 2009, Burch 2010, Feola 2017, Hecht 2014, Hodgson 2006, Letki 2006, Ostrom 2005, Raymond et al. 2014,
Place (attachment, identity)	20	Blake 2002, Brown & Perkins 1992, Brown et al. 2002, Buttimer 1976, Buttimer & Seamon 1980, Clark & Stein 2003, Farnum et al. 2005, Jager 1985, Lewicka 2011, Manzo 1994, 2003, 2014, McAndrew 1998, Schroeder 2004, Seamon 1984, 2021, Stedman 2002, Stedman 2003, Tuan 1977, 1991
Value/-s	6	Attfield 1983, Hargrove 1989, Passmore 1980, Rawluk et al. 2019, Rekola et al. 2010, Van Riper et al. 2019
Total, N	*88*	

Table 2. Articles used for the conceptual analysis in Study I.

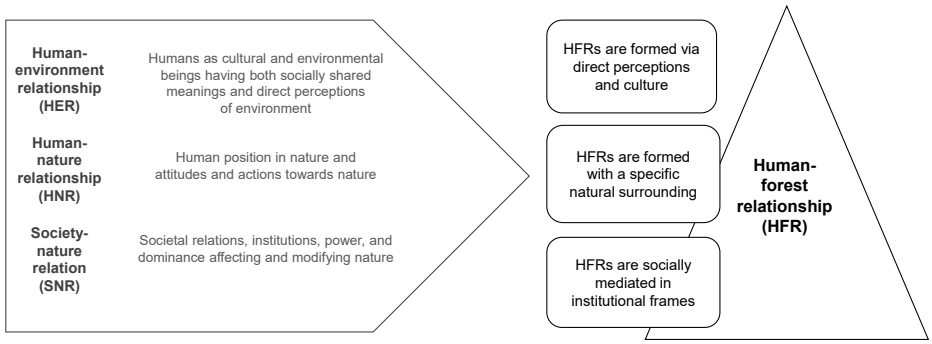

Figure 4. Conceptual development of the HFR informed by analyses of the HER, HNR, and SNR, published in the journal of Forest Policy and Economics (Halla et al. 2023).

3.2.2 Study II: Experiencing forests as professionals: meanings and tensions in sustainability transitions

The purpose of Study II was to explore and interpret forest professionals' lived relationship with the forest, paying attention to the meanings embedded in this relationship and the ways these meanings are shaped within professional community culture. The study sought to understand how these experiences are constituted and perceived within the lifeworld of professionals engaged in sustainability transitions.

The research material consisted of in-depth interviews with 37 Finnish forest professionals occupying diverse roles in forest governance, management, recreation, and

conservation — within both the forest industry and state or regional forest organisations and administration (Table 3). Recruitment began with an open invitation circulated through key forest sector organisations. To ensure analytical breadth among participants, the diversity of interviewee backgrounds was considered against Harrinkari et al.'s (2016) analysis of forest policy coalitions (forestry, administrative, and environmental), without treating these coalitions as fixed recruitment categories. In addition to this conceptual framing, attention was paid to variation in family and geographical backgrounds, organisational positions, and professional tasks. Purposive sampling (Etikan et al. 2016) was further employed by directly contacting nine additional professionals to broaden this variation. The sample excluded field-level forest(ry) workers and focused on professionals with academic or applied university degrees in strategic positions capable of influencing forest-related decisions and policies.

The interviews were conducted in 2020. Twenty-four interviews took place in participant-selected environments, allowing conversations to unfold within their natural, cultural, and social contexts; thirteen were conducted remotely due to COVID-19 restrictions or scheduling needs. The interviews were conversational, guided by prompts that invited participants to reflect on personally significant forest-related meanings and professional experiences. Openings were flexible and often emerged from introductory conversation, with alternative starting points prepared around work, professional community, leisure, or childhood. In participant-selected locations, discussions frequently began with reflections on the place in question and its personal significance. All interviews were audio-recorded and transcribed verbatim, resulting in approximately 56 hours of material.

The analysis followed IPA (Smith et al. 2022), which foregrounds the interpretation of participants' lived experiences within their lifeworlds. The process was iterative and reflexive: it began with immersion in the data through repeatedly reading and listening to the interviews while making exploratory notes on anything resonating as meaningful. From this immersion, statements conveying the experiential significance of participants' forest-related meanings were articulated. Each Personal Experiential Theme (PET) was considered in its own context before exploring potential connections across cases. Through ongoing reflection, these PETs were gathered and allowed to form emerging patterns. In keeping with IPA's participant-driven nature, PETs were not predetermined but rather emerged through dialogue between the material and my interpretative engagement. Subsequently, similar PETs were brought into relation across interviews, giving rise to Group Experiential Themes (GETs) — shared structures that reflected common experiential patterns within the material. Each GET synthesised related expressions and was described in detail. This process was not linear but involved continuous movement back and forth among transcripts, statements, and themes, maintaining a reflexive stance and ensuring that all PETs and GETs remained traceable to participants' original words (Smith et al. 2022).

		Female(s), n	Male(s), n	*Total n (%)*
Organization	**Forestry coalition:**			
	Central Union of Agricultural Producers and Forest Owners (MTK) / Forestry Association	1	1	*2 (5%)*
	SMEs (wood supply)	1	1	*2 (5%)*
	Stora Enso	1	3	*4 (11%)*
	UPM	3	1	*4 (11%)*
	Administrative coalition:			
	Forest Centre	2	2	*4 (11%)*
	Metsähallitus*(state enterprise)	1		*1 (3%)*
	Metsähallitus Forestry Ltd*	3	2	*5 (14%)*
	Ministry of Agriculture and Forestry of Finland		1	*1 (3%)*
	Regional Council*	2		*2 (5%)*
	University of Applied Sciences*		1	*1 (3%)*
	Environmental coalition:			
	Centre for Economic Development, Transport and the Environment (ELY)*	1	1	*2 (5%)*
	Metsähallitus Parks & Wildlife Finland*	7	2	*9 (24%)*
	Total n (%)	*22 (59%)*	*15 (41%)*	*37 (100%)*
Born between (age when interviewed)	1955 - 1959 (61-65 years)	1	3	*4 (11%)*
	1960 - 1969 (51-60 years)	5	6	*11 (30%)*
	1970 - 1979 (41-50 years)	8	2	*10 (27%)*
	1980 - 1989 (31-40 years)	6	3	*9 (24%)*
	1990 - 1995 (25-30 years)	2	1	*3 (8%)*
	Total n (%)	*22 (59%)*	*15 (41%)*	*37 (100%)*
Education	Doctor of Forest Sciences	1	1	*2 (5,4%)*
	Master of Forest Sciences	11	9	*20 (54,1%)*
	Forest Engineer	9	3	*12 (32,4%)*
	Other education in forestry		1	*1 (2,7%)*
	Other education	1	1	*2 (5,4%)*
	Total n (%)	*22 (59%)*	*15 (41%)*	*37 (100%)*
Work tasks	Forestry and forest management			*13 (35%)*
	Timber supply (incl. purchase and logistics)			*8 (22%)*
	Nature tourism and recreation			*5 (13%)*
	Nature conservation and management			*7 (19%)*
	Customer/stakeholder relations			*4 (11%)*
	Total n (%)			*37 (100%)*
Location (regions)	Southern Finland			*9 (24%)*
	Eastern Finland			*10 (27%)*
	Western Finland			*8 (22%)*
	Northern Finland			*10 (27%)*
	Total n (%)			*37 (100%)*

Table 3. Background information on the forest professionals interviewed in Study II. The diversity of interviewee backgrounds was considered against Harrinkari et al.'s (2016) analysis of forest policy coalitions. As the organisations marked with (*) were not included in their study, their positioning follows the main lines of their original categorisation.

3.2.3 Study III: To cut or not to cut – emotions and forest conflict in digital media

The purpose of Study III was to explore the emotions expressed by actors in the forest conflict and the themes associated with these emotions. Emotional expressions were considered to characterise the actors' relationship with the forests and thus contribute to an understanding of the conflict.

The research material consisted of emotional expressions — 61 reader comments and 71 opening tweets — published in digital media following the release of the Stop Clear Cuttings citizens' initiative in May 2018 in Finland. Reader comments were collected from two digital newspaper articles published in *Helsingin Sanomat*, the largest subscription newspaper in Finland. The first article (published 17 May 2018) explained the main points of the citizens' initiative, while the second article (published 26 May 2018) discussed forest researchers' partly conflicting views on the advantages and drawbacks of period cover forestry (PCF) and continuous cover forestry (CCF).

On Twitter, 71 opening tweets using the Finnish hashtag #avohakkuuthistoriaan (#stopclear-cuttings) were published between 17 May and 17 June 2018. Only opening tweets were included in the research data, as the focus was on instant emotional reactions (see Henrich and Holmes 2013). Both reader comments and tweets were classified into three actor groups — supporters, opponents, and neutrals — based on their expressed attitudes toward the citizens' initiative. Unlike reader comments, tweets included profile data about the authors, allowing for the identification of different informants. This identification was performed to demonstrate the societal positions of informants in the Twitter data. For the analysis, profile data were pseudonymised to ensure impartiality.

Two qualitative research approaches were utilised in the analysis. First, narrative emotion analysis (Kleres 2010) was conducted to identify the emotions. Second, qualitative content analysis (Hsieh and Shannon 2005; Schreier 2014) was used to identify themes within these emotional expressions. The emotions expressed in reader comments and tweets revealed how the narrated situation was experienced by the emoting subject. Narrative components — such as expressions like 'cry for help' or 'we feel it is important' — provided insight into emotional impressions of the semantic content (Kleres 2010).

During the analysis, individual emotions (e.g., love, happiness) were grouped into four broader emotional categories that more reliably represented emotional expressions than did single emotions alone. These emotional groups encompassed wider emotional fields and enabled exploration of the role of emotions in forest conflicts and their thematic connections. Since one reader comment or tweet could express multiple emotions, the total number of emotional expressions (281) exceeded the number of comments and tweets (132): 61 reader comments yielded 127 emotional expressions, and 71 tweets yielded 154 emotional expressions.

In the qualitative content analysis, texts were examined in detail by focusing on specific words or sentences that captured key themes — such as activities, ideas, practices, or suggestions — that triggered the emotional expressions in question.

3.3 Ethical considerations

The ethical dimensions of this research encompass both the collection, management, and use of data, as well as the interpersonal dynamics of engaging with participants (interviewees) in Study II and informants (digital media authors) in Study III. These considerations were

integral throughout the research process, from recruitment to interpretation and dissemination.

In Study II, sampling strategies were designed to invite a breadth of perspectives while minimising bias. Recruitment combined open invitations through key forest sector organisations with purposive sampling (Etikan et al., 2016) to ensure variation in professional roles, organisational positions, and socio-cultural backgrounds. While women were slightly overrepresented in one organisation, this reflects voluntary participation patterns rather than researcher selection. Gender distribution also mirrors historical and contemporary trends in forestry education (Paaskoski 2008; Kilpeläinen and Lautanen 2020, 2022, 2025). In Study III, initial focus on opening tweets introduced bias, as informants supporting the citizens' initiative actively used hashtags, while opponents were more reluctant to do so or indeed to tweet about the initiative at all. This bias was partially mitigated by reader comments, which included balanced expressions of both support and opposition.

A data management plan was developed to ensure the ethical handling of research materials. Participants (interviewees) provided written consent after receiving clear information about the study's purpose, their right to withdraw, and the intended use and storage of data. All research material was carefully pseudonymised to ensure that neither individual participants/informants nor their close relatives could be identified. Given the close-knit nature of the Finnish forest professional community, indirect identifiers, such as gender, age, geographic location, or even manner of speaking, could potentially reveal identities (Laoire 2007). Additionally, some participants/informants hold prominent positions within the sector or broader society, while others may live in small communities where they are the sole representatives of their profession. The interview material were archived at the Finnish Forest Museum Lusto, the national museum responsible for forest culture, which ensures compliance with the ethical principles of the Finnish National Board on Research Integrity (TENK, https://tenk.fi/en).

Phenomenological inquiry involves entering participants' experiential horizons. In Study II, interviews invited reflection on personally significant forest-related meanings, which could evoke sensitive memories. Building mutual trust was essential — from initial contact to the interpretative phase. The dialogical nature of interviews required attentiveness to the participants' pace and openness, ensuring that meaning-making remained participant-led and situated within each participant's lifeworld.

As a researcher with a forest professional background, I occupy an insider position within the community under study. This entails several ethical considerations. Familiarity with some participants — either by name or through prior professional contact — was unavoidable. This prior experience, however, provided insight into the sector's social realities and enabled recognition of nuanced meanings in participants' accounts. Simultaneously, my current outsider status as a social scientist fostered critical distance, supporting reflexivity and helping to avoid assumptions based on shared knowledge (Johnson and Rowlands 2012). Positioning myself within participants' experiential horizons required openness and reflexivity, allowing meanings to emerge beyond my own pre-understandings. This interpretative process was guided by the hermeneutical circle, as discussed in subsection 3.4.

Finally, the forest profession and the Finnish forest sector carry a strong identity and historical continuity. While the findings may contribute to a deeper understanding within the sector, they may also challenge established norms, potentially provoking discomfort or resistance. In extreme cases, the researcher may be perceived as transgressing community norms (Juvonen 2017). Furthermore, the research was partially funded by a foundation whose mission is to support the development of the forestry sector. In some contexts, this may be

perceived as a source of bias, positioning the researcher as an advocate of a particular perspective. For these reasons, openness and transparency guided the research process, informing methodological choices, interpretative work, and communication.

3.4 Validity and postmodern understanding of knowledge as socially constructed

In phenomenological — and more broadly qualitative — research, validity rests on openness, reflexivity, and transparency rather than on claims of objectivity or universal truth. Experiences become accessible for inquiry through their expression and sharing — both embodied and linguistic. They may be conveyed through gestures, tone, and shared presence (Smith 2013; Pernau and Rajamani 2016), as well as through language (Gadamer 2000; Smith 2013). These expressions often take narrative form, whether in interviews (Study II) or written texts (Study III) — stories about personal or social experiences that articulate something that has happened to a person or group (Kleres 2010).

In Study II, interviews were understood as reciprocal, meaning-making encounters rather than neutral data-gathering events (Mishler 1986; Holstein and Gubrium 1995). Both researcher and participant brought their own lifeworlds, histories, and relationships with forests into the conversation. While the researcher's horizon of understanding inevitably shapes their interpretation, the primary orientation is toward entering the participant's experiential horizon and attending to the ways they express perceptions and articulate their lifeworld. In Study III, digital-media posts — often only a few words or sentences — were treated as narrative expressions. Despite their brevity, these texts carry narrative-like meanings and offer insights into the authors' experiences and worldviews (Elliot 2005; Livholts and Tamboukou 2015).

In both studies, a dialogical attitude was essential for understanding. For me, both the interview and a digital-media text represented a dialogical relationship grounded in the aspiration to listen to and understand the Other: the participant or informant (Moran 2000; Friedman 2002; Habermas 2015). The Other is conceived as a unique person with an individual experiential history and a horizon of understanding through which meanings are made in one's lifeworld. This dialogical attitude contrasts with a monological stance, where the Other is treated as an object and subjected to attempts to influence their being and thinking. Such influence may involve exercising power to promote one's own goals rather than seeking to understand the Other, especially when their ideas differ from one's own. The aim of a dialogical attitude is not to alter the Other's values or ideas but to understand them and their formation (Bilu 2015; Habermas 2015). Whereas dialogical engagement in Study II was partly grounded in reciprocal interaction between researcher and participant, in Study III dialogicality was primarily realised at the level of interpretation, guiding the researcher's commitment to understanding the Other behind the text and the meanings expressed in opening tweets.

Within the analysis, the researcher's interpretation is a crucial element. Participants' and informants' expressions originate in their experiential worlds, yet they may not fully disclose all dimensions of their experience. Cultural norms and professional identities can shape what is said or written and how (Hogg and Reid 2006; Yow 2015, 22). Similarly, the researcher's pre-understandings may unconsciously guide interpretation. Phenomenological analysis acknowledges this by engaging the hermeneutic circle — a dynamic interplay between the researcher's preconceptions and the expressions of participants and informants (Gadamer 2000; Smith et al. 2022). This process requires an openness to meanings not yet anticipated

and a critical reflection on one's own assumptions. Understanding thus evolves through iterative movement between parts and the whole, text and context, and the Other and self. Studying the Other is simultaneously studying oneself (Gadamer 2000, 362–379; Räihä 2010, 23).

Importantly, the researcher's interpretation is always only one among many possible interpretations. The complexity of social reality can never be fully captured, and no single interpretation can claim exclusivity. Another researcher might obtain different material or approach even the same material differently, producing alternative insights (Giorgi 1975, 2006; Kvale 1995). This multiplicity reflects the ambiguities of human lifeworlds, to which each study opens its own unique perspective. Rather than reducing reliability, interpretativeness is a defining feature of human science methods. Reliability rests on systematicity, openness, and transparency rather than replicability (van Manen 1994; Smith et al. 2022). In IPA, validity is not assessed through generalisability but rather through depth, contextuality, and coherence. IPA's idiographic orientation prioritises detailed engagement with individual cases before moving to patterns across participants (Smith et al. 2022). This commitment ensures that interpretations remain grounded in the particularity of lived experience rather than abstracted into universal claims. Validity thus emerges from the richness of description, the transparency of analytic steps, and the reflexive acknowledgment of the researcher's interpretative role. By maintaining this idiographic focus, the research honors the complexity of participants' and informants' lifeworlds and resists reductive tendencies, offering insights that are situated, nuanced, and meaningful within their specific contexts.

4 RESEARCH FINDINGS

This section summarises the findings of the individual studies (Table 4). More detailed results are presented in the respective published articles.

4.1 Definition of the human–forest relationship (HFR) concept (Study I)

As forests differ from other natural environments ecologically, culturally, politically, and socially, the evolving concept of the HFR seeks to capture the relationship between a specific natural environment — the forest — and human beings. The concept of the HFR refers to a reciprocal and evolving connection through which humans experience and relate to forests. This relationship is shaped by personal experiences, life histories, cultural and societal contexts, and environmental settings (Figure 5). Individual HFRs comprise emotions, knowledge, values, and other meanings that people attribute to forests. It also includes a future-oriented dimension, as forest-related meanings influence the expectations individuals associate with the future state of forests.

These relationships emerge through both direct and indirect experiences. Direct experiences involve physical presence and sensory engagement in forest environments — being and moving in the forest. Indirect experiences arise from representations in art, religion, science, folklore, and media. Both types of experience are culturally and socially mediated: individuals learn to perceive forests through prevailing cultural knowledge and institutional structures, which shape not only practices but also emotional and ethical orientations.

Culture is manifested in intangible meanings and in tangible forms and embodied practices, such as forest-related traditions, artefacts, and actions. Certain cultural meanings become institutionalised, transmitting dominant values, norms, and practices. Institutions — such as forestry education systems, state forest administration, certification schemes, and management regimes — reinforce particular cultural ways of knowing, managing, and valuing forests. Cultures and institutions also contribute to the formation of professional identity by legitimising certain forms of expertise and emotional expression while marginalising alternative ways of knowing and feeling. Through cultural and institutionalised routines and expectations, forest professionals learn to align their actions and emotions with prevailing rationalities, including productivity, efficiency, and economic growth. Moreover, affective and emotional elements — ranging from attachment and embodied feelings to culturally shaped emotions — play a central role in forest contexts, influencing how individuals associate values and other meanings with forests.

Cultures and institutions are historically rooted: each historical period is marked by characteristic ideologies that shape human attitudes and practices toward forests, influencing understandings, actions, and policies. Societies and communities construct distinct ideologies and ontologies that inform human perceptions of forests and justify related behaviours, as well as definitions and categorisations of what a forest is. These socially mediated ideologies — together with their embedded ontologies, institutions, and paradigms — provide the framework through which individuals build their relationships with forests. Consequently, one's culturally and socially mediated HFR shapes how forests are perceived and why certain forest-related activities or institutions are supported or opposed.

Institutions tend to exhibit stability, as cultural and political resistance often limits change. Their durability is maintained through power and authority, particularly by those

who benefit from existing structures. Transformations may occur, however — either gradually or abruptly — when environmental, economic, or political shifts alter people's emotions, values, and other meanings in relation to the forest. These renewed attitudes may conflict with outdated institutions, enabling shifts in political and practical regimes.

The pressure to redesign forest institutions often manifests in forest conflicts. Diverse HFRs influence the emergence and escalation of these disputes. The meanings people attach to forests are frequently so deeply embedded that they remain implicit and taken for granted. When forests undergo changes that disrupt everyday routines, these latent meanings may surface. Perceived threats to forests and forest-related meanings can also provoke confrontation. In addition to past and present experiences, such confrontations may be shaped by expectations regarding the future state of forests and their possibilities. These expectations are influenced by the meanings embedded in people's HFRs, making certain future scenarios appear more preferable or more plausible or preposterous than others. HFRs thus anticipate possible futures by reflecting forest-related trends and megatrends in societies and communities.

At the same time, HFRs may include mechanisms that resist or impede change, or reflect resilience to it. Attitudes and practices embedded in past HFRs may become institutionalised, forming cultural traditions that challenge the full realisation of contemporary HFRs. These prevailing traditions and values may resist and regulate shifts in paradigms and values connected to forests. Such institutional cultures, cemented by past HFRs, may constrain individuals' capacity to embrace emerging meanings and values.

Cultural norms, policies, or institutional practices may also be destructive — either through formal regulation or informal acceptance. Within prevailing cultures and institutions individuals may associate emotions like indifference, fear, or disgust with forests, or act in ways that degrade or deplete forest ecosystems. In deeply forest-based cultures, certain emotional responses, such as fear or disgust, may not be socially acceptable to express or memorise, as implicit norms favour the expression of appreciative or affirming attachments to forests while discouraging the articulation of emotions that challenge culturally accepted views.

	I	II	III
Study	The concept of the human-forest relationship (HFR) – Definition and potentials for forest policy research	Experiencing forests as professionals: meanings and tensions in sustainability transitions	To cut or not to cut – emotions and forest conflict in digital media
Key focus	Definition and development of the human-forest relationship (HFR) concept	The experiences and meanings of the forest among Finnish forest professionals	Stakeholders' emotional expressions associated with the forest in the forest conflict
Key findings	• HFRs are formed via direct perceptions and culture • HFRs are socially mediated and contested in institutional frames • HFRs may anticipate people's expectations and interpersonal tensions about the future state of forests	• Professional expertise and lived knowledge foster a felt sense of ownership • Forests are lived as embodied, intergenerational spaces of constancy • Professional culture shapes norms, belonging, and identities • Economic meanings anchor community, though not always shared	• Forest conflicts are saturated with emotions and historical contradictions • Emotions clarify stakeholders' motives and values in forest conflict • Emotions empower conflict stakeholders to defend their own values and challenge others

Table 4. Summary of the key findings.

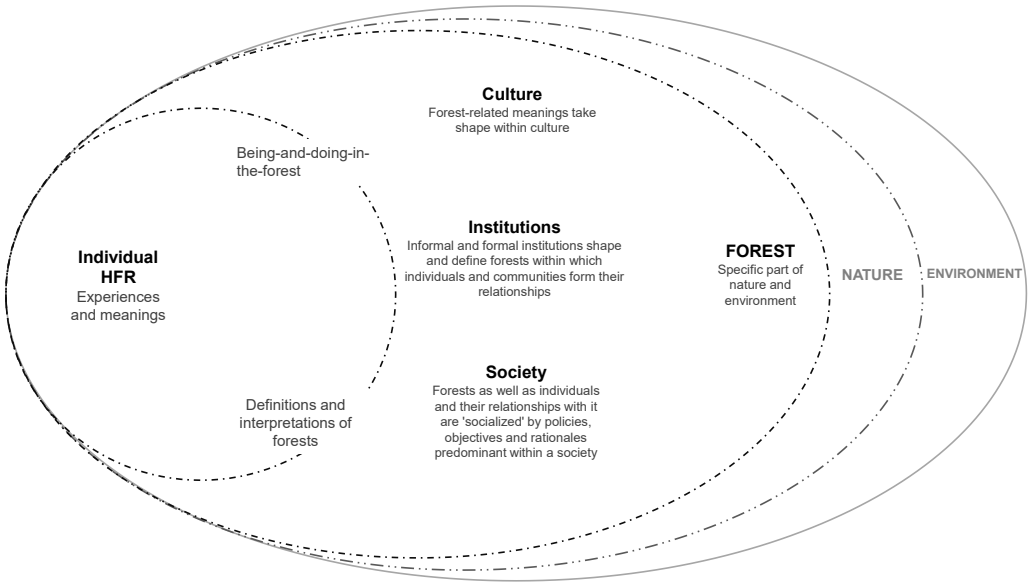

Figure 5. The HFR concept and its cultural, institutional, and societal dimensions, published in the journal of Forest Policy and Economics (Halla et al. 2023).

4.2 Lived experiences and meanings of forests among Finnish forest professionals (Study II)

Nine overarching Group Experiential Themes (GETs), comprising 83 sub-themes, emerged from the interviews, offering insight into how forest professionals live and make sense of forests and their profession (Table 5).

Participants described forests as present in multiple ways throughout their lives. Forests were lived bodily through movement and action, evoking sensory and emotional engagement. Forests were experienced both as natural dwelling spaces and as professionally cared-for landscapes associated with human well-being and care for more-than-humans — especially trees and game. Forests carried layered temporal and social meanings, connecting personal histories, family traditions, and professional identities.

When speaking from their personal life histories, participants often described forests as deeply rooted in family traditions and childhood memories — spaces for play, work, and intergenerational continuity. Emotional and sensory engagement was commonly expressed, ranging from feelings of safety and belonging to bodily awareness of ecological interconnectedness. Professional forestry was frequently described as continuing this transgenerational link, where older generations share expertise and practices and are commemorated in the landscapes they managed. For many, managing family-owned forests and engaging in recreational activities reinforced a sense of responsibility and attachment. These experiences were described as shaping personal well-being as well as career choices: attachment to the forest, familiarity with forest environments and related practices and, in some accounts, a desire to advance ecologically sustainable forestry were key motivations for entering the field.

Perceptions of forests were also shaped by professional culture. During their studies, participants described becoming socialised into a shared professional culture, gradually adopting its values, practices, and language. This culture was perceived as fostering a sense of belonging through field courses, peer networks, and traditions often described as ‘forester spirit’, characterised by solidarity and informal collegiality. Not all participants, however, identified with these traditional notions. Some female professionals reported navigating masculine-coded behaviours and appearance norms, sometimes facing exclusion or harassment. Roles outside traditional forestry — such as recreation or conservation — were perceived as less legitimate, revealing hierarchical structures within the sector.

Forests were frequently viewed as socially shared and professionally governed spaces, where expertise and institutional norms shape attitudes and practices. Professional views on forest management emphasised active intervention as essential for maintaining forest vitality, economic value, and aesthetic quality. Management was described as a creative and responsible practice, with clear-cutting understood as part of a long-term renewal cycle rather than destruction. Finnish forestry was widely seen as ecologically sound, supported by trust in professional expertise and adaptive practices to mitigate biodiversity loss and climate effects. Some participants working in non-traditional roles voiced concerns about the prevailing practices, yet open disagreement among colleagues was often avoided. At the personal level, participants described long-term, caring relationships with the forests they have managed, shaped by emotional attachment and accumulated experience. Expertise was not experienced as purely theoretical. Rather, it was embodied: sensory and bodily engagement formed a core part of skills and informed decisions.

Professional roles — especially those working in traditional forestry roles — strongly influenced how participants perceived forests, even during leisure time. Many described their

‘professional eye’ extending beyond work hours, shaping their observations and interpretations of forests. While some consciously attempted to separate their professional and personal perspectives, they still often described forests as managed and categorised spaces. Definitions of what is a forest were described as multidimensional — both managed and unmanaged, familiar yet complex — reflecting the interplay between forestry knowledge and personal experience although many leaned on professional definitions in their reflections. Participants working outside traditional forestry roles tended to associate naturalness with less-managed forests, while clear-cut areas were seen as temporarily losing their forest-like character, or ‘forestness’.

Forestry work was widely described as a source of pride and moral value, linked to national well-being and long-term stewardship. Many expressed a sense of ownership over the forests under their management, rooted in their professional expertise and responsibility. The temporal scale of forest management — spanning generations — was emphasised as reinforcing continuity and responsibility, while participants also articulated uncertainties inherent in their decisions due to nature’s rhythms and temporal dynamics. Professional expertise was seen as essential for guiding forest owners, although this sometimes led to tensions when forest owners’ preferences conflicted with silvicultural recommendations.

Conflicts were described as arising from multiple, interwoven sources. These included divergent perceptions of ownership and time, ecological and aesthetic objections to forestry practices, and incompatible livelihoods, as well as poor communication and misunderstandings. Conflicts were often linked to what participants perceived as non-professionals’ lack of accurate forestry knowledge. While considered normal part of the work, conflicts were described as emotionally demanding for some participants. Despite these challenges, some stressed the importance of balancing economic value with ecological and social ones, viewing forests as spaces where timber production, biodiversity, and landscape values can coexist.

Main themes (GET)	Subthemes/ GET, N	GET subthemes (Interviews (PETs) expressing the theme, %, when N37=100%)
1 The forest as an embodied and aesthetic experience	8	1.1. Sensuality (17%), 1.2. Corporeality (67%), 1.3. Feet (8%), 1.4. Head (33%), 1.5. Chest, lungs (17%), 1.6. Affectivity of seasons (17%), 1.7. More-than-humans (42%), 1.8. Processing the observation(s) (33%)
2 The forest as an intergenerational experience	5	2.1. Childhood env. (92%), 2.2. Intergenerational learning (83%), 2.3. Community and community spirit (58%), 2.4. Life cycle (50%), 2.5. Professional intergenerationality (25%)
3 The forest in forest professional culture	11	3.1. Personal history (67%), 3.2. Career choice (67%), 3.3. Socialisation (33%), 3.4. Professional culture (92%), 3.5. Forest professional (75%), 3.6. Intergenerationality (50%), 3.7. Professional community (67%), 3.8. Work tasks (58%), 3.9. Practicality of the work (75%), 3.10. Work skills, expertise (75%), 3.11. Ecological values, pluralism (67%)
4 The forest as an object of the management	12	4.1. Importance of forest management (75%), 4.2. Unmanaged forest (33%), 4.3. Priority of economic benefits (67%), 4.4. Pluralism (67%), 4.5. Aesthetics of forest mgnt (33%), 4.6. Prof. attitudes (83%), 4.7. Prof. expertise (33%), 4.8. Impact of work role (50%), 4.9. Experiential knowledge of forest mgnt (33%), 4.10. Emotions in forest mgnt (17%), 4.11. Criticism towards forest mgnt (42%), 4.12. Time, future (33%)
5 The forest as a gendered experience	4	5.1. Masculinity (58%), 5.2. Femininity (33%), 5.3. Socialisation (58%), 5.4. Working atmosphere (17%)
6 The forest as a work place	9	6.1. Childhood (25%), 6.2. Place for work (75%), 6.3. Practical work (50%), 6.4. Meaning of the work (92%), 6.5. Community spirit (83%), 6.6. (Professional) identity (50%), 6.7. Challenges in work (67%), 6.8. Status, power (33%), 6.9. Commitment to work (33%)
7 The forest and ownership	5	7.1. Forest as human possession (42%), 7.2. Own forest (33%), 7.3. Property rights (33%), 7.4. Psychological ownership in general (17%), 7.5. Psychological ownership, forest professionals (100%)
8 The forest as a site of conflict	8	8.1. Confl. issues (92%), 8.2. Clear cutting (50%), 8.3. Conflict stakeholders (75%), 8.4. Emotions (83%), 8.5. Work well-being (75%), 8.6. Interaction, communication (75%), 8.7. Knowledge (67%), 8.8. Vocabulary (42%)
9 The position(s) of the human and the forest	21	9.1. Forest needs to be managed (50%), 9.2. Separate from humans (50%), 9.3. Forest's 'forestness' (67%), 9.4. Uniqueness of the forest (17%), 9.5. Experiential forest definition (25%), 9.6. Cultural impacts on defining forest (25%), 9.7. Forest as location for action (100%), 9.8. The importance of forest (100%), 9.9. Forest's values and their change (42%), 9.10. Securing human survival (58%), 9.11. Dualistic forest conceptions (25%), 9.12. Natural products as forest's harvest (25%), 9.13. Non-economic values (50%), 9.14. Inequality of species and of life (58%), 9.15. Forest belong to humans (67%), 9.16. (Finnish) forest belong to the Finns (42%), 9.17. Forest belongs to more-than-humans (42%), 9.18. Forest conservation (50%), 9.19. Nature's power (50%), 9.20. Forest as freedom (25%), 9.21. Role-dependent perceptions (25%)
Total, N	*83*	

Table 5. The number of themes and subthemes emerged from the interviews, illustrating participants' perceptions of forests and their profession.

4.3 Emotions as information about actors' HFRs in forest conflict (Study III)

The analysis of conflicted digital-media discussions surrounding the citizens' initiative to stop clear-cutting in Finnish state forests revealed how emotions shaped actor positions and arguments. Emotional expressions were first identified and grouped into four categories: affirming emotions (e.g., hope, pride), emotions of anger and fear, care-related emotions, and miscellaneous feelings such as nostalgia and well-being. These emotions were then linked to eight thematic areas that emerged in the analysis, including forest management, biodiversity, economic aims, climate change, and forest ownership — and finally classified according to three actor groups: supporters, opponents, and neutrals (Figure 6).

Supporters included those who supported the citizens' initiative prohibiting clear-cutting and promoting the use of continuous cover forestry (CCF). They were mainly representatives of (environmental) non-governmental organisations and green or left-wing politicians. *Opponents* included those who opposed the initiative and supported maintaining current forest-management practices, including clear-cutting and period cover forestry (PCF). They were primarily representatives of the forest(ry) sector and related organisations. *Neutrals* did not clearly express their stance or they favoured both PCF and CCF.

Supporters most often expressed affirming emotions such as hope and pride, reflecting trust in transitioning from PCF to CCF. Both supporters and opponents frequently voiced anger, which was directed at each other's attitudes and actions. Opponents also expressed care, emphasising confidence in current forestry practices and the goal of maintaining healthy, productive forests.

Supporters linked affirming emotions to activism and forest protection, celebrating the citizens' initiative and its growing support. Their anger focused on forest management and

biodiversity loss, criticising economic priorities and questioning private ownership. Opponents stressed forest management and economic aims, defending PCF as ecologically sound and vital for both national and private economies. They viewed CCF as harmful and resisted expanding conservation areas, framing ownership rights as central. Care-related expressions appeared in both groups: supporters saw CCF as safeguarding biodiversity, while opponents considered PCF best for forests and society.

Miscellaneous emotions highlighted well-being and nostalgia, valuing forests beyond mere economic goals and recalling decades of successful PCF management. Expressions in this category from both supporters and neutrals focused on forest management and emphasised the well-being of both forests and people as equally important. Supporters suggested that non-economic aims should be recognised and that Finland could benefit from forest-related knowledge in the future development of the bioeconomy. Opponents' nostalgic expressions within the forest management theme highlighted how well forests had been managed for decades under PCF.

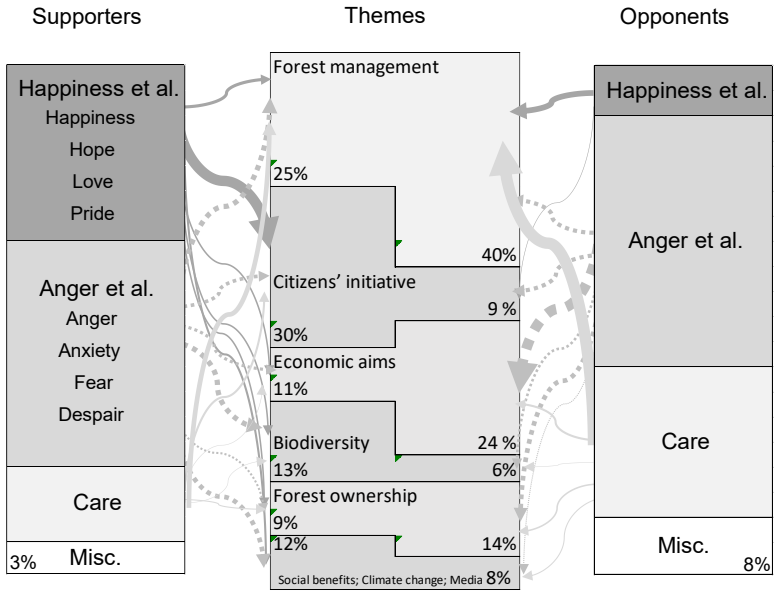

Figure 6. Actors' emotional expressions and their connection to forest conflict themes. Original graphic by Jaana Laine, co-author of Article III, published in the Journal of Rural Studies (Halla and Laine 2022).

5 DISCUSSION

In this section, I discuss the main findings of my three studies and their theoretical contributions to understanding how forest professionals relate to forests amid sustainability shifts, contested meanings, and forest-related conflicts. To illuminate these findings, I draw on the four emotional aspects of forest conflict — place attachment, motivation to act, ability and willingness to adopt information, and conflict escalation — proposed by Buijs and Lawrence (2013) and used in Study III. I extend this perspective with insights from Study II, highlighting how forest professionals' lived relationship with forests shapes the dynamics of forest conflict (Figure 7): (1) how their attachment to forests is experienced through personal, communal, and professional meanings; (2) how perceived threats to these meanings and to professional cohesion motivate resistance; (3) how professional expertise informs the ways in which information is taken up; and (4) how professional cultures, histories, and ontologies become intertwined with processes of conflict escalation. In this section, the term 'participant' is used broadly to refer to both interview participants in Study II and informants in Study III.

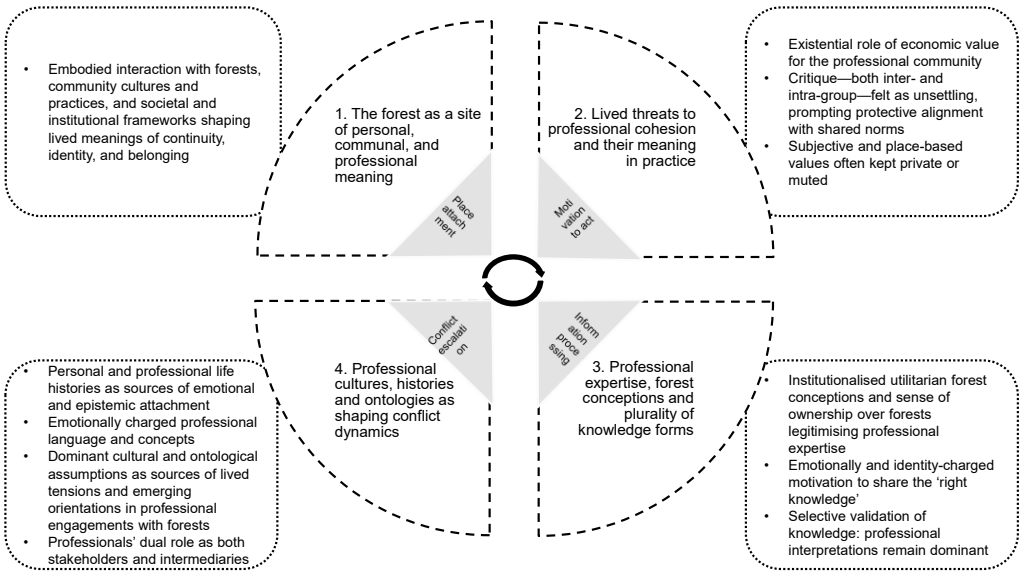

Figure 7. Forest professionals' role in forest conflicts. The four-staged framework (grey triangles) is adapted from Buijs and Lawrence (2013); see also Figure 3.

5.1 The forest as a site of personal, communal, and professional meaning

In my research, the HFRs of the studied forest professionals emerge at the intersection of embodied experience and sociocultural horizons, unfolding through everyday practices and shared narratives. Participants described attachments to forests that take shape both through embodied interaction and through community cultures and institutional practices. Forests were encountered corporeally — in movement, sensory engagement, and routine work — as well as through the attitudes, conceptions, and worldviews into which participants were socialised within their professional and local communities. Within this experiential nexus, the forest becomes a site where personal, collective, intergenerational, and institutional meanings intertwine. These meanings are closely interwoven with professional and broader identities: forests are lived as spaces of professional and personal continuity and safety, supporting familiar ways of being, working, and belonging. Consequently, sustainability-related requirements and reforms may be experienced as unsettling, and at times resisted, particularly when they are perceived to contradict or threaten these deeply held meanings.

My findings highlight that, for both the forest professional community and individual professionals, forests are lived as sources of material, temporal, and social continuity. Participants experienced security in and through forests: forests as tangible livelihoods and as intangible heritage sustain the existence of individual professionals as well as their families and professional and other communities. The daily and seasonal routines of work and leisure anchor experience and reinforce a sense of stability across time. Being a forest professional — and often also a forest owner and someone engaged in forest-related hobbies — constitutes a significant part of participants' self-understanding. Forests connect past, present, and future not only as a career but as meaningful work for the well-being of forests and communities. This experience of stability and continuity resonates with Giddens' (1991) concept of ontological security. It symbolises material and social constancy and provides a space in which individuals can construct and express their identities, as Banham (2020) has shown in her case study of individuals' relationships with forests in Tasmania, Australia.

While experienced individually, these meanings are simultaneously forged and sustained within shared social spaces. In addition to this experience of forests as source of security and continuity, participants portray forests as socially shared spaces in which professional and other forest-related communities act and through which social bonds are strengthened across life courses. This interpretation draws from Baklien et al.'s (2016) observations on family outdoor experiences, in which forests provide a space for a family community to act, and where such shared activity strengthens relationships among family members. As experienced and articulated by participants, forests similarly operate as communal arenas for forest professionals, fostering continuity and belonging within professional and other forest-related communities over time.

Although professional culture with intergenerational depth is experienced as a background horizon that orients how participants relate to forests, the findings — particularly from Study II — indicate that participants' concerns extended beyond an economically oriented professional domain, even when explicitly economic language was used. Implicitly, forests as places and spaces carry meanings fundamental to participants' identities — whether as professionals, rural or urban dwellers, environmental enthusiasts, or forest owners. Many participants articulated a plurality of forest-related values and described forest management as a form of care — for forests, communities, and shared well-being.

These layered meanings and attachments suggest that the personal and embodied experiences of forest professionals resonate with those documented among non-professionals, such as experiences of identity and belonging (see e.g., Perkins and Thorns 2012; Singh 2013; Zahn et al. 2018), family and home (e.g., Hansen-Møller and Oustrup 2004; Gruver et al. 2017), and recreation and well-being (e.g., Skår 2010; Häggström 2019a, 2019b). In my research, however, such meanings tend to surface more readily within private sphere than in overtly professional discourse. This pattern aligns with earlier research: Satterfield (2004) notes how emotional expression is shaped by structural positions, with loggers containing expressions of rage in response to public images of irrationality. Similarly, Xu and Bengston (1997) suggest that caring relationships with forests among professionals may be muted or reframed by the rationality and economic values hegemonic within professional community.

My findings further indicate that traditional forestry roles were experienced as reinforcing this implicit orientation, whereas participants engaged in non-forestry tasks described more flexible norms and explicit interpretations of forests as nature. These differences resonate with earlier studies demonstrating variations in professional attitudes toward economic and environmental issues (e.g., Wagner et al. 1998; Pregernig 2001; Egan 2013). Norms and peer traditions shape how professionals perform their work and expertise (Primmer and Karppinen 2010; Peltola and Tuomisaari 2016; John et al. 2024; Loch et al. 2025).

Against this background, sustainability-related requirements and shifts — such as discourses on climate, biodiversity, inclusivity and the regenerative economy that exert pressure on institutional forestry to reform (see Arts et al. 2024; Himes and Dues 2024; Kornhauser and Hajjar 2024) — are often lived by the studied forest professionals as tensions within their lifeworlds. As professionals, participants are bound to a culture in which economic orientation has historically been foundational, and in which forests have been controlled, defined, and managed primarily for human well-being (see e.g., Glück 1987; Kotilainen and Rytteri 2011; Himes and Dues 2024). Forestry has also traditionally been a masculine field (e.g., Suopajärvi 2009; Boakye-Danquah et al. 2025). Earlier professional generations have transformed forest environments within these frameworks — and the institutions embedded in them — into the places that the studied professionals inhabit today. Through community culture, participants experience themselves as connected to these long-standing institutions and practices, including those that may have receded: the forests they encounter — and the HFRs they form — have already been shaped by previous generations and their HFRs (see Paaskoski 2014, 22; Karhunkorva et al. 2016).

As Studies II and III suggest, socialisation into professional culture, its institutions, and core meanings — such as economic-oriented knowledge and masculine heritage — can come into conflict with the demands embedded in contemporary sustainability shifts, thereby opening spaces of uncertainty and negotiation. Within the professional community, such pressures are often lived as threats to familiar ways of being and working. Deep commitment to established practices functions as a source of stability and may evoke resistance especially when change is perceived as disruptive. At the same time, many participants articulated broader understandings aligned with socio-ecological values. I interpret these articulations as lived openings toward change, emerging within — and not outside of — the forest professionals' existing lifeworlds.

5.2 Lived threats to professional cohesion and their meaning in practice

Within the lifeworlds of the studied forest professionals, a shared understanding of the forest's economic value functions as an existential cornerstone — an essential background meaning that sustains professional community cohesion. In participants' accounts, other actors' reactions to forest management were often experienced as emotionally charged. These accounts suggest that forest professionals can be understood as an emotional community, held together by shared commitments and a felt need to protect who they are, both collectively and individually.

A neutral stance — often described by participants as 'sticking to facts' — emerges as a culturally learned way of coping, rooted in the rational tradition of forest science. Yet, beneath this performed neutrality, participants voiced emotions such as concern, fear, and insecurity. Demands arising from civil society and other (non-professional) actors were lived as disruptions to ontological security, professional legitimacy, expertise, and identity. Strong emotional responses were evoked particularly when traditional forestry knowledge and practices were publicly questioned. While existing literature often frames emotional arousal in conflict as a reactive response to perceived threats and as a mechanism motivating the defence of values and identities (see e.g., Woods et al. 2012; Buijs and Lawrence 2013), my analyses understand emotions not merely as reactions but as constitutive of how forest professionals make sense of themselves and of the forests as part of their lifeworlds, amid contested change. What is expressed, and what remains unspoken, is evaluated through professional norms. As a consequence, certain forest-related meanings and emotions — especially those perceived as personal and not fully aligned with explicit professional norms — are often kept private or muted.

Participants situate their experiences within a historical horizon shaped by national objectives of safeguarding sustained yield and promoting economic independence (see Kotilainen and Rytteri 2011). These objectives were felt to be deeply embedded in the cultural foundations of the Finnish forest-professional community (see Paaskoski 2008). Within this horizon of meaning, a shared understanding of the forest's economic value emerges as a core background assumption that sustains cohesion. In such a context, both inter-group and intra-group critiques of forestry practices are experienced as unsettling — as threats to what is held to be essential. Participants recount responding in inter-group confrontations by holding on to the community and its core values; whereas in intra-group situations they describe a felt norm of keeping differing views private or silent.

In inter-group tensions, participants in both Studies II and III described being challenged by other (non-professional) actors and by civil society at large. In their accounts, proposed changes in forest use were experienced as carrying major consequences for the forest sector, with far-reaching implications for employment, rural livelihoods, and national economic stability. These meanings are lived as existential for the professional community and, consequently, as central to their professional identity. When faced with such challenges, participants often described defending their practices and ways of relating to forests by drawing on professional agency and expertise. Analytically, these accounts suggest that such positioning tends to align with dominant political-economic frameworks underpinning forestry governance and institutions, whereas other groups — such as civil society actors and non-professionals — are commonly portrayed as seeking to transform these frameworks.

My interpretation draws on Singh's (2013) analysis of community forests, which illustrates how state and capitalist projects to discipline and commodify forests operate through existing rationalities, and how these are contested through affective labor of local

dwellers. However, in my research — particularly in Study II — forest professionals, while explicitly positioning themselves to maintain and protect established management rationalities, also expressed emotional and embodied orientations toward forests that carried features of care and affective engagement similar to those described among local dwellers in Singh's (2013) study. Some participants described managing their own forests more gently than those under professional responsibility, as they were not bound as strictly by organisational demands and profit-making imperatives. These accounts point to a more intimate and less instrumental mode of relating to forests. In public debates, the studied forest professionals tend to present professional cohesion aligned with traditional economic key values, while their everyday management practices are also permeated by more diverse, care-oriented and affective attitudes that remain largely implicit.

Accordingly, although the professional community publicly promotes largely instrumental values — such as economic ones — accounts in Study II indicate that participants also hold relational values and other meanings rooted in personal and communal experiences with specific forests. When these meanings diverge from perceived community norms, participants frequently described keeping them unspoken or private. As members of a professional community, they often emphasise qualities felt to be essential for belonging, constructing or aligning with an idealised image of the forest professional (see Hogg and Tindale 2005; Hogg and Reid 2006). Participants' accounts suggest that what becomes shared is shaped by what feels acceptable within the community. Paaskoski (2008) has described this shared framework — collective narrative — as a metanarrative of forestry that persists across generations and is reproduced through shared memory and experience, thereby becoming part of professional identity formation. In this sense, some accounts in my research may reflect a community-shaped interpretation rather than an individual one, even without conscious intent. My findings suggest that intra-group differences in HFRs can be overlooked or silenced. As a result, subjective and place-based values and meanings may remain marginal within dominant professional discourses that prioritise instrumental and rational framings of the forest. These silences reflect the lived tensions between individuality and belonging within the professional lifeworld.

I understand this intra-group unity to be both protective and limiting. Caring relationships with forests are often masked by rationality, while care itself is frequently articulated through active forest management, including routine operations that secure annual growth and economic profit. In this sense, forest professionals engage in emotion work (see Hochschild 2012): they align publicly with rationality while simultaneously experiencing a wide range of emotions. These emotions are shaped and regulated by professional community norms, influencing how they are perceived, articulated, and shared. I interpret these emotions and meanings as lived in process — emerging through embodied, situated relations to forests and to the professional community — rather than as fixed properties or solely as outcomes of external conflict.

Taken together, my findings suggest that economic value operates as an existential anchor for the professional community, while both inter- and intra-group critique are lived as unsettling and managed through protective alignment with shared norms — often at the cost of silencing subjective and place-based meanings (Figure 7).

5.3 Professional expertise, forest conceptions and plurality of knowledge forms

In my research, the professional relationship with the forest shapes how the studied forest professionals define and conceptualise what the forest is and how they position and legitimise their own forest-related knowledge in relation to that of other actors. The findings suggest that professional identity, embedded in institutionalised practices, norms, and shared emotional orientations, plays a key role in shaping how forests are understood and how competing forest conceptions are evaluated. Within this professional lifeworld, forests are predominantly framed through their economic importance, and professional expertise — grounded in education, work experience, and forest science — is experienced as the most legitimate and trustworthy basis for forest-related decision-making.

In forest-related debates, participants described a strong reliance on professional knowledge and rational argumentation. Critique originating outside the professional community was frequently experienced not merely as disagreement but as emotionally charged, uninformed, and potentially threatening to professional legitimacy. Participants often felt that non-professionals lack an adequate understanding of forestry, which motivates them to share what they perceived as the 'right knowledge' in order to correct misunderstandings and resolve conflict. As these debates unfold, professionals tend to gravitate towards forms of knowledge that resonate with their shared values and group identity, while opposing views are often experienced and interpreted as biased, emotional, or irrational.

As professionals positioned as society's forest experts, participants articulated a strong sense of responsibility for managing and using forests efficiently and appropriately for desired societal outcomes. Earlier studies have applied the concept of psychological ownership when exploring forest actors, such as forest landowners, highlighting motivations related to self-identity, attachment, and the need for a place of one's own (Matilainen et al. 2017; Matilainen 2019; Wagner 2025). My findings extend this concept to forest professionals, who describe a felt sense of control and responsibility over forests more broadly. This felt experience of efficacy and effectance reflects a fundamental human need to act upon and shape one's environment (White 1959; Matilainen 2019) and — according to my findings — is closely intertwined with professional identity.

Drawing on Hillenbrand and Money's (2015) conceptualisation of identity as comprising the "learned self" (norms and values acquired through socialisation), the "lived self" (cognitions and emotions formed in everyday practice), and "perceived self-identity" (how one is recognised by others), my findings illustrate how professional ownership over forests is constituted at multiple experiential levels: norms and values learned within the professional community, embodied experiences of daily work, and perceptions of recognition by colleagues, forest owners, and other forest-related actors all shape how ownership, responsibility, and legitimacy are expressed. Exercising professional expertise to achieve desired forest outcomes enhances feelings of security and competence, reinforcing a sense of responsibility to forests owned by others. It also reinforces professionals' understanding of themselves as stewards of both national and private forests as resources for social and economic welfare. Expertise and knowledge over forests thus become central to professional identity and its expression, with rationality, scientific facts, and technical competence emphasised in interactions with colleagues and other forest-related actors.

In Study II, participants expressed this orientation as a felt responsibility for the health, productivity, and long-term well-being of forests, as well as for determining what is considered best for them. The professional notion of what is forest and what is 'best' for it is

deeply embedded in a Euro-Modern ontological framework that understands forests primarily as natural resources providing timber and ecosystem services for human use (see Ott 2025; Säynäjäkangas 2025). Participants' accounts thus largely align with a utilitarian and human-centred conception of forests, experienced as the most legitimate and socially sanctioned viewpoint within their professional community. Such conceptions have been widely documented in earlier research on forest professionals (Glück 1987; Saarimaa 1998; Vaara 2013; Blicharska and Van Herzele 2015; Himes and Dues 2024).

At the same time, beneath these dominant and explicit cultural framings, the interviewed forest professionals also expressed a multiplicity of more personal, situational, and sometimes contradictory ideas about what the forest is. Because forests occupy a central place in their lifeworlds, they are experienced not solely as economic resources but also as embodied, sensory, and relational spaces — places where human and tree generations intersect and where interpersonal and interspecies relationships unfold. However, despite this lived plurality, especially in conflicting situations, dominant professional interpretations tend to prevail as the most explicitly articulated, functioning to hold the professional community together and to provide shared orientation. Alternative forest conceptions — whether ecological, emotional, or culturally grounded — tend to remain marginal, implicit, or private within these professional contexts. These dynamics also reflect intra-group and interspecies hierarchies, in which certain forms of knowledge and certain forms of life — such as scientific expertise or economically or personally valuable species — are prioritised over others.

The coexistence of these multiple forest conceptions and knowledge forms is widely experienced as a source of tension among the studied forest professionals. In the Finnish forest debate, a recurring feature is that many people perceive forest management — especially clear-cutting — as environmentally harmful or even as an irreversible loss (e.g., Finnish Forest Foundation 2018; WWF Finland 2019; Suomen Kuvalehti 2021). By contrast, studied forest professionals often described forests as enduring at the macro level, even when individual stands were harvested. When civil society actors introduced alternative forms of expertise or challenged established practices, participants experienced this as a questioning of their authority and expertise.

Information and perspectives that contradict deeply held professional beliefs are not easily integrated within the professional community. Public critique is frequently experienced as confusing, emotionally charged, and personal — as an attack not only on expertise but on professional identity and a perceived national responsibility to care for Finnish forests and society. In response, participants often feel compelled to defend their position by emphasising professional knowledge and by disseminating what they perceive as correct and scientifically grounded information. As shown in Study III, such interactions appear to focus more on defending professional group identity than on fostering mutual understanding or negotiating shared values.

These observations echo with Buijs and Lawrence's (2013) findings that emotions reinforce existing views and stereotypes in forest conflicts, shaping selective information seeking and the rejection of contradictory evidence. The findings suggest that the studied forest professionals engage in emotionally charged reasoning, even as they emphasise rationality and scientific grounding, which in turn influences how forest conceptions and forms of knowledge are evaluated and validated. This interpretation also resonates with Kangaspunta's (2024) analysis of discursive strategies in Finnish forest debates, where professional actors authorise their positions by framing them as rational, scientifically

grounded, and oriented towards the societal good, particularly through appeals to economic benefits (see Kangaspunta 2024).

Taken together, these findings suggest how institutionalised, utilitarian forest conceptions and a sense of professional ownership legitimise expertise, while emotionally and identity-charged motivations guide the selective validation and defence of 'right' knowledge in forest debates (Figure 7).

5.4 Professional cultures, histories and ontologies as shaping conflict dynamics

The interviewed forest professionals described developing a forest-oriented sense of self — strengthened through professional socialisation, expertise, and shared practices. Safeguarding forest use was felt not only as protecting resources but as preserving personal and professional identities and the community to which they belong. Alongside shared professional values, participants also expressed forest-related meanings rooted in personal histories. These often felt intimate and were kept private, especially when perceived to diverge from dominant professional norms.

I suggest that these perceptions, which orient forest professionals' relationships with forests, may hinder the reconciliation and implementation of multiple sustainability shifts in the forest sector (Figure 8). Closely interwoven with hierarchical assumptions and prevailing knowledge practices, these perceptions shape identities and influence how tensions over forests are experienced and managed in everyday practice. At the same time, the interview accounts reveal signs of transformation: emerging practices and values that may foster new orientations within the profession (Figure 8). These 'seeds of change' suggest that, while obstacles persist, opportunities still exist for a gradual reconfiguration of professional identities and approaches.

Forest professionals' views and knowledge do not arise in isolation, but are embedded in broader cultural and historical horizons. The professional community is rooted in Western heritage and neoclassical economic thought and permeated by Euro-Modern ideologies that prioritise material wealth, economic growth, and the notion of a 'one nature' and its economic valuation (see e.g., Casi 2024; Ott 2025; Säynäjäkangas 2025). Within this horizon, dichotomies like human–nature, male–female, and reason–emotion become lived coordinates that guide participants' practice and discourse over forests and its use.

In my research, these dualisms appear in both intra- and inter-group relationships. In participants' expressions, gender diversity was largely framed in binary terms, with broader expressions (e.g., LGBTQ+) rarely acknowledged. Non-human species were commonly viewed through human-centred lenses; some were even interpreted as threats to forest — and thus human — well-being, legitimising human control. Professional expertise — especially economic and technical knowledge — remained the prevailing form of knowledge, thereby sustaining a sense of control and psychological ownership over forests, reinforcing professional identity and marking boundaries between experts and laypersons. These views and practices often overshadow alternative ways of knowing and relating to forests. Some of these tensions have already been described in recent research — such as silences and conflicting understandings of knowledge in forest policy (Ville 2025) and gendered patterns in forestry (e.g., Andersson and Johansson 2025; Chamlagain et al. 2025; Jost et al. 2025). Knowledge that diverges from dominant norms may remain overlooked or implicitly undervalued and, as Takala et al. (2023, 2024) and Dawson et al. (2025) show, this complicates efforts to incorporate strong sustainability into decision-making.

Despite the dominance of economically oriented meanings within professional culture, participants also expressed diverse and embodied perceptions of forests that may support sustainability shifts. In bodily encounters with forests, they described forests as meaningful environments that nurture belonging and enable both human and interspecies attachments — meanings that often resonate with those of non-professionals, thereby opening possibilities for mutual understanding and dialogue. Many participants recognised the plurality of forest-related values across communities, and forests were associated not only with instrumental, but also with intrinsic and relational values. Forests were also frequently associated with care — for the forest itself, for communities, and for shared well-being — even as explicit emotional expressions were constrained by professional norms. This holism creates both tensions and possibilities for interaction with stakeholders and other actors.

In settings marked by sustainability shifts and forest-related disputes, forest professionals are often positioned as intermediaries in conflict management. Reconciling diverse inter-group HFRs is challenging, however, as forest professionals themselves are also emotionally and ontologically connected to forests in ways similar to non-professionals, as Study II shows. Consequently, professionals' dual role as both stakeholders and potential facilitators complicates their position in conflict resolution and should be acknowledged as one factor among others in escalation.

Conflict escalation is also intensified by affective language and by historically embedded positionalities — dynamics that implicate professionals as well. As members of a professional community with over 160 years of history, participants embody identities with emotionally charged meanings that persist across generations. Given that this history is interwoven with repeated conflicts (e.g., Roiko-Jokela 1997, 2012; Ruuttula-Vasari 2004; Raitio 2008, 2013), the professional image has become stigmatised with mixed meanings and saturated with strong affective tensions. Even the term *forest professional*, together with certain management concepts (e.g., continuous cover forestry, clear-cutting), can become 'saturated with affects' (Ahmed 2014, 89–92), triggering immediate emotional responses and polarising actors and thereby limiting possibilities for resolution.

Taken together, these findings form the core of Figure 7, illustrating how personal and professional life histories, emotionally charged professional language, and dominant cultural-ontological assumptions collectively shape forest professionals' dual role as both stakeholders in, and intermediaries of, conflict. Professionals' involvement may thus even heighten the wickedness of conflict when their expertise and language — rooted in a forest-science-oriented professional culture — do not readily convey the emotional or ontological meanings that resonate with non-professional actors. These embodied relationships with forests are often difficult to articulate (Bethmann et al. 2018), and many forest-related meanings — those of professionals as well as other actors — remain unspoken because they are socially filtered, perceived as too mundane, or lack adequate conceptual frameworks (Manzo 2003; Pelli et al. 2024). When underlying ontological differences and uncertainties remain unaddressed, controversies become difficult to resolve, as doing so would also require compromising stakeholders' identities (Putnam and Wondolleck 2003; Gritten et al. 2009; Balint et al. 2011; Bruckmeier 2019). As my findings indicate, forest professionals, too, are concerned with such compromises, as their professional identity is at stake in conflicts and in their potential resolution.

Alongside the lived tensions these dynamics generate, emerging orientations can also be recognised. While not yet fully articulated in professional roles or tasks, these orientations suggest a gradual broadening of what forest work and professional responsibility may come to entail (Figure 8). Against this backdrop, the ability to identify and articulate these implicit

or silenced connections may foster shared understanding and create a foundation for collaboration within both professional and public spheres. The concept of the HFR can serve as a practical and conceptual tool for recognising and acknowledging these meanings and their cultural, historical, and institutional embeddedness. Such shifts may help align professional norms with evolving societal values and support professionals in navigating between traditional and emerging forest(ry) roles.

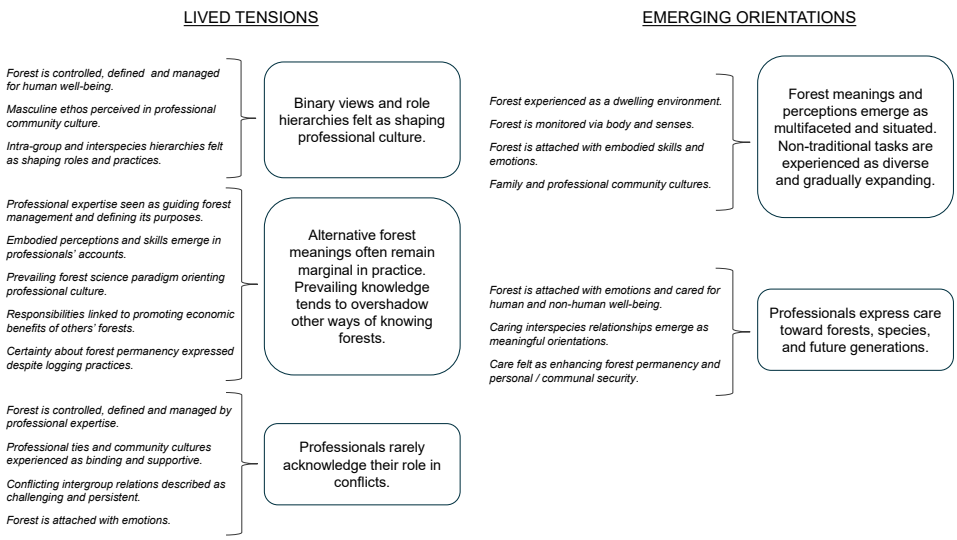

Figure 8. Lived tensions and emerging orientations toward sustainability in forestry and professional culture.

6 CONCLUSIONS

As embodied beings, we live and act within specific physical environments — whether human-made or (semi-)natural. Our experiences and interpretations of these environments are shaped by personal histories, community cultures, and institutional structures. Through these lenses, we attach meanings that become deeply interwoven with the fundamental structures of our lifeworlds. Such meanings often generate tensions around values, identities, and visions of possible futures.

Globally, forests sustain biodiversity, cultural heritage, livelihoods, and identities, differing culturally, ecologically, economically, politically, and socially from other natural environments. To account for these specificities, this research developed the concept of the human–forest relationship (HFR), reframing the forest from an abstract or resource-oriented space into a lived environment — one that people engage with physically and affectively, or indirectly through cultural representations and institutional structures.

Among all forest-related actors, forest professionals play a central role in shaping forest ecosystems and influencing the lives, cultures, and economies of surrounding communities, and thus the well-being, sustainability and future of both the forest and people. Educated in forestry and forest science, forest professionals hold operational and managerial roles, develop and implement forest management plans, conserve biodiversity, and interact with diverse societal and forest-related actors. Their work is guided by meanings attached to forests — meanings shaped by life histories and professional cultures, and embodied relationships that unfold across practice.

This research applied phenomenologically and hermeneutically oriented methodologies to interpret these meanings. Phenomenology, as an experience-oriented and inductive approach focusing on the immediacy of experience, offers a powerful means of uncovering social and personal phenomena. It does so by engaging directly with individuals' lived realities, rather than relying on predefined categories that may overlook their unique life histories. Phenomenological interpretation aims to describe what a phenomenon means and how it is experienced, contributing to interpretive insight — especially when it succeeds in articulating experiences that participants themselves may struggle to express. When phenomenological description can verbalise something felt yet previously unspoken, it expands how we understand both the phenomenon and the conditions under which it emerges.

Forest-professional identity is not monolithic but rather negotiated through institutional affiliations, community cultures, and evolving relationships with forests. The findings therefore invite the question of how individual professionals can be supported in their sustainability aspirations and empowered as agents of change within their communities. In my interpretation, attending to lived experience — embodied interaction with the material forest, cultural practices, and institutional interpretations within professional and other communities — offers a viable pathway for re-imagining professional cultures so that sustainability shifts can be negotiated within, rather than against, the lifeworlds of those who work with forests.

This research included a diverse group of forest professionals, each of whom brought unique motivations, perspectives and life histories. The richness of the data offers ample material for further analysis from multiple vantage points. Future research could benefit from mixed-method approaches to examine whether forest professionals more broadly identify with the interpretive findings presented here.

Beyond the empirical contributions, this research also speaks to broader conceptual debates. The HFR concept, along with related frameworks describing human–environment relationships, operates within anthropological and environmental-humanities paradigms. These fields, including strands of posthumanist thought (e.g., Haraway 1991, 2008; Lummaa 2016; Kopnina 2020), challenge the human–nature dichotomy and other binaries prevailing in current Euro-Modern ontologies and critique anthropocentrism as a root cause of ecological crises and consequently forest-related conflicts. Deconstructing this divide requires recognising reciprocal relationships between humans and non-human entities (Kopnina and Shoreman-Oumet 2016). Further development of the HFR concept can contribute to such recognition by identifying and describing networks and hierarchies of interaction between individuals and groups as well as between species, institutions, and cultural systems.

It is also important to acknowledge that research has often highlighted emotional connections and belonging in human–forest relationships, while aspects like fear, indifference, or institutional and historical alienation also shape attitudes and actions toward forests (e.g., Beery et al. 2023; Richardson 2025). These dimensions warrant further exploration.

Future development of the HFR concept should, therefore, focus more explicitly on the embodied, ontological, and epistemological dimensions of HFRs, and on how these dimensions interact with both formal and informal forest-related institutions. This includes, for example, examining how being in the forest and engaging bodily with its various elements — trees, understory, soil, soundscapes, and seasonal rhythms — shapes lived experience and meaning-making. It also involves understanding how forests are perceived through community worldviews and situated forms of knowledge and how such perceptions are, in turn, influenced, constrained, or legitimised by organisational cultures, legislation, forestry practices, and conservation institutions. Exploring these questions would deepen the theoretical and empirical grounding of the HFR concept and help to reveal how lived experience, knowledge, and institutional frameworks co-constitute each other in contemporary relationships with forests.

Additionally, analysing the various definitions of ‘forest’ — as a physical space, a cultural construct, and a symbolic entity — would enhance its conceptual clarity. Forests are interpreted differently across disciplines as well as in art, religion, folklore, philosophy, and media, all of which shape public and professional perceptions. This research has taken initial steps into this multidisciplinary terrain, acknowledging that the journey is only beginning.

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