



Licentiate Thesis in Sustainability Studies

# From access to relationship

How formal green space planning and civic outdoor organisations shape children's connection with nature in urbanising landscapes

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KTH ROYAL INSTITUTE OF TECHNOLOGY



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**KRISTIN MALMCRONA FRIBERG**

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*Jag vill tacka naturen som skänker tanken klarhet*

*Naturen som låter mig vara ifred med mina tankar*

*Här får tankeprocesser mogna i sin egen takt*

*Naturen som låter mig tänka långsamma tankar till punkt.*

## Foreword

When we spend time in nature, pondering and self-criticism ease. Happy children are motivated children - just like adults - and a motivated mind can look to the future with confidence. However, realising that many children carry a dark view of the future is painful. As a matter of course, children should be able to trust in a bright, playful tomorrow. That knowledge prompts uneasy questions: what world are we passing on, and can we be proud of it? When you sit with the evidence, read the research studies closely, take in what they actually say - and take them seriously - you see a simple truth: we cannot go on like this. Nature needs room to recover, and delay only makes the task harder. Yet stopping is not enough. We need a clear direction, rooted in care and shared responsibility, to guide us toward a better future for ourselves and the generations to come.

My direction has been shaped by a combination of experiences and key readings that helped me shift my gaze. Time in Bolivia, learning about *el buen vivir* and *Pachamama*, opened ways of living where wealth is measured in relations and balance. Tim Jackson's *Prosperity without Growth* clarified that economic well-being need not depend on ever-rising resource use. Robin Wall Kimmerer's *Braiding Sweetgrass* gave me language for gratitude, reciprocity, and duty, where nature is not an object but kin. Richard Louv's *Last Child in the Woods* showed how childhood shrinks when nature leaves daily life, and how contact with nature underpins health, play, and curiosity. The book *Reconnection* by Miles Richardson ties practice and philosophy together and shows how schools, civic life, and planning can weave reconnection into everyday routines. These ideas informed my earlier work and studies, continued to shape my thinking over time, and now guide my research towards human-nature connection, children's experiences of nature, and the civic groups that help to care for it. A more recent book that influenced my thinking is Suzanne Simard's *Finding the Mother Tree*. Her work shows that forests are not collections of separate individuals but living networks built on reciprocity, communication, and shared care. Reading her work helped me understand that relationships are the foundation of thriving ecosystems. Taken together, they pulled away my old footing: from an anthropocentric view, where nature mainly serves human goals, I am moving - slowly but steadily - towards an ecocentric view, where humans are part of a larger living whole. In that shift, the idea of a "good life" changes: less about owning, more about relationships; less about consumption, more about care. A good life for people and planet can go together when well-being, fairness, and ecological limits are held as one.

In my research, concepts such as care, stewardship, and relational thinking have been a compass. This thesis is therefore about relationships - how our ties to nature are formed, harmed, cared for, and renewed. Furthermore, the thesis is the result of a knowledge intense and deeply rewarding journey of learning, exploration, and companionship with nature. I was sitting on a hidden bench in Slottskogen, beside a waterfall, preparing for the job interview and trying to formulate to myself why I would be a good fit for the doctoral candidate role. Not long after, after a morning

run in Änggården (my sanctuary forest) I received the offer to begin my doctoral journey. A coincidence? Possibly rather a reminder that research about our relationship with nature cannot be detached from the very landscapes that sustain us. The timing, however, was a bit unusual. I began my research journey at the end of the COVID-19 pandemic, with my entire family falling ill during my very first weeks as a PhD. That period highlighted, in a very personal way, the increased importance of accessible urban green and blue spaces in times of crisis. Just as research on outdoor recreation during the pandemic has shown, nature became not only a place of refuge, but also a vital part for health, resilience, and community. For me, these insights were not only theoretical, but lived.

Throughout this knowledge process, nature has been my constant companion. I have spent countless hours running and walking the paths of the Änggården nature reserve and the Botanical Garden, as well as exploring hidden gems in the big city park of Slottskogen, all situated in Gothenburg. These places have offered me clarity, silence, and the rhythm needed to think slow thoughts - an invaluable part of conducting and engaging in research. Daily encounters in the forest with local stewards also taught me that the concept of care is not abstract but practiced in small, patient, and compassionate acts. It has also meant continuously grounding my research in practice through, for instance, my civic leader engagement, together with my mother, with children in and around the forests of Gothenburg. And, living in Gothenburg while working in Stockholm has meant commuting across landscapes and carrying ideas between cities, forests, and coastlines.

I always make time to step outside, to walk, to breathe. Doing so is a luxury, a necessity, a privilege, a source of resilience and inspiration, and of course - pure happiness. I am grateful to the trees and streams for bearing my out-loud thinking and talking to myself on long walks - I guess at times the best audience I could wish for. Not once did a pine object.

My wish is that this thesis contributes to building a firmer evidence base for research on sustainable outdoor recreation and urban planning practices, and children-nature connectedness. I also wish to offer words, tools, and examples that make it easier to choose care over resignation, and stewardship over depletion.

*Gothenburg, 13<sup>th</sup> of March, 2026 – after my usual morning run in Änggårdsbergen*





## **Abstract**

Urbanising landscapes are undergoing rapid transformation as densification, sprawl, land-use competition, and climate change reshape urban green and blue spaces. These dynamics influence not only ecological functions, but also everyday opportunities for people to encounter nature. In particular, children's access to nearby nature is increasingly recognised as important for wellbeing, environmental awareness, and the development of nature stewardship. However, the conditions that enable children's meaningful and lasting connections with nature remain unevenly studied. This licentiate thesis examines how formal land use planning and management of urban green-blue infrastructure, and practices of civic organisations, shape children's opportunities to meaningfully connect with nature in urbanising landscapes. The research is situated within sustainability science and social-ecological systems research and adopts *stewardship* as an analytical lens for examining how responsibility for human-nature relations is distributed across society. The thesis consists of two qualitative case studies conducted in the Stockholm region. Paper 1 analyses formal land use planning and management processes shaping multifunctional urban green-blue infrastructure, based primarily on semi-structured interviews with municipal and regional officials. Paper 2 investigates how Swedish civic outdoor organisations foster children's nature connection through pedagogical practices, recurring outdoor activities, and intergenerational learning. The findings show that formal land use planning and management processes play a decisive role in shaping structural conditions for nature access, yet outdoor recreation and children's everyday contact with nature are often weakly prioritised in the formal governance of land use characterised by sectoral fragmentation and competing land-use interests. At the same time, civic outdoor organisations provide important relational infrastructures that enable children's repeated, playful, and meaningful engagement with nature. Taken together, the studies demonstrate that children's opportunities to develop lasting relationships with nature depend on the interaction between structural and relational conditions. Urban land use planning and management determines whether nature is physically available and accessible in a broad sense, while practices of civic organisations contribute to the experiences, knowledge, and meanings through which children learn to relate to landscapes. By linking formal land use planning and management with lived practices of nature engagement, the thesis contributes to sustainability science by highlighting how stewardship emerges across public and civic sectors and by bringing children's experiences more explicitly into discussions of sustainable urban development.

## **Keywords**

*Children's nature connectedness; Green-blue infrastructure; Stewardship; Outdoor recreation; Civic outdoor organisations; Social-ecological systems; Sustainable urban development; Sweden*

## Sammanfattning

Urbaniserade landskap genomgår snabba förändringar i takt med förtätning, konkurrens om marken och klimatförändring. Dessa förändringar påverkar inte bara ekologiska funktioner utan också människors möjligheter att möta natur i vardagen. Särskilt barns tillgång till närliggande natur lyfts i forskningen fram som betydelsefull för fysiskt och mentalt välbefinnand, miljömedvetenhet och på sikt även ansvarstagande för miljö och biologisk mångfald. Samtidigt är kunskapen fortfarande begränsad om vilka samhällsliga förutsättningar som möjliggör barns meningsfulla och långsiktiga relationer till natur i urbaniserade miljöer. Denna licentiatavhandling undersöker hur planering och förvaltning av grönområden och civilsamhällets engagemang och aktiviteter tillsammans formar barns möjligheter att möta och relatera till sin stadsnära natur. Studien är förankrad i hållbarhetsvetenskap och forskning inom social-ekologiska system, där begreppet *stewardship* används som analytisk perspektiv för att förstå hur ansvar för relationen människa-natur tar sig i uttryck inom olika delar av samhället. Avhandlingen består av två kvalitativa fallstudier i Stockholmsområdet. Den första studien analyserar planering och förvaltning av mångfunktionell grön-blå infrastruktur genom intervjuer med kommunala och regionala tjänstepersoner. Den andra studien undersöker hur svenska idrotts- och friluftorganisationer bidrar till barns naturkontakt genom pedagogiskt engagemang, återkommande aktiviteter ute i naturen, och lärande över generationer. Resultaten visar att planering och förvaltning av grön- och blåområden har stor betydelse för de strukturella förutsättningarna för barns naturkontakt. Samtidigt framkommer att friluftsliv och barns vardagliga naturkontakt ofta har en svag ställning i de formella planeringsprocesserna som präglas av sektorsuppdelning och konkurrerande markanvändningsintressen. Parallellt fungerar civilsamhällets friluftorganisationer som viktiga sociala och pedagogiska aktörer där barn erbjuds återkommande aktiviteter och erfarenheter i naturen. Sammantaget visar studierna att barns möjligheter att utveckla långsiktiga relationer till naturen formas i samspelet mellan strukturella och relationella förutsättningar. Den fysiska planeringen och förvaltningen av stadslandskapet avgör i vilken utsträckning natur finns tillgänglig i vardagen, medan civilsamhällets praktiker bidrar till de erfarenheter, kunskaper och betydelser genom vilka barn lär sig att relatera till landskapet och dess 'när-natur'. Genom att koppla samman formella planeringsprocesser med vardagliga naturpraktiker bidrar avhandlingen till hållbarhetsvetenskap genom att belysa hur *stewardship* formas i mötet mellan institutionella strukturer och civilsamhällets engagemang, men också genom att tydligare inkludera barns röster och erfarenheter i samtalet kring urbana landskap och en hållbar utveckling.

## Nyckelord

*Barns naturkontakt; Grön-blå infrastruktur; Stewardship; Hållbart friluftsliv; Civilsamhället; Social-ekologiska system; Hållbar stadsplanering; Sverige*



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I would like to express my appreciation to the Mistra Sports and Outdoor (MSO) research program, which served as a stepping stone and point of departure for this work. It provided the foundation that allowed me to further explore what I find both meaningful and relevant for the future of my research. Through MSO, I have had the opportunity to collaborate with a wide range of actors whose knowledge and experience have greatly enriched this journey.

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To my two brothers and their families – here’s to many more fun adventures together ahead. Best brothers I could ask for.

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Finally, the idea of knowledge is inseparable from the question of for whom it exists, and in this work it is ultimately dedicated to you – children, present and future. My hope is that you will be able to experience the richness and importance of a close relationship with nature, to feel a true friendship with the natural world, and to tend it dearly.

And to Sam and Mia, for spending countless hours outdoors together exploring and playing, and just truly enjoying being outside. Sometimes it is as simple as that.



## List of Publications

### Paper 1:

Titel: *Sustainable outdoor recreation in rapidly urbanising landscapes. Practitioners' perspectives in Stockholm, Sweden.* (Submitted to the Journal of Outdoor Recreation and Tourism, under 2<sup>nd</sup> round of review)

Authors: Malmerona Friberg, K., Borgström, S., Andersson, E., Milestad, R.

#### AUTHORS CONTRIBUTIONS

KMF, EA and RM conceived the ideas and designed methodology; KMF collected the data; KMF, SB, RM and EA analysed the data; KMF and SB led the writing of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

### Paper 2:

Titel: *Where will future stewards of nature come from? Children, nature, and the role of Swedish civic outdoor recreation organisations.* (Complete manuscript. To be submitted to the journal Urban Forestry and Urban Greening)

Authors: Malmerona Friberg, K., Borgström, S., Jansson, M.

#### AUTHORS CONTRIBUTIONS

KMF and SB conceived the ideas and designed methodology; KMF collected the data; KMF, SB and MJ analysed the data; KMF led the writing of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

## Scientific papers not included in the thesis

Wassénius, E., Bunge, A. C., Scheuermann, M. K., Resare Sahlin, K., Pranindita, A., Ohlsson, M., Blandon, A., Singh, C., **Malmcrona Friberg, K.**, & Villarrubia-Gómez, P. (2023). Creative destruction in academia: A time to reimagine practices in alignment with sustainability values. *Sustainability Science*, 18, 2769–2775. <https://doi.org/10.1007/s11625-023-01357-6>

Rastandeh, A., Borgström, S., Andersson, E., **Malmcrona Friberg, K.**, & Moum Rieser, A. (2025). Understanding the recreation-conservation nexus in peri-urban landscapes: Challenges, opportunities, and knowledge gaps. *Nature-Based Solutions*, 7, Article 100232. <https://doi.org/10.1016/j.nbsj.2025.100232>





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# 1. Introduction

Urbanising landscapes are undergoing rapid transformation. Densification, sprawl, competing land-use demands, and climate adaptation place intensifying pressure on green and blue spaces, reshaping how urban nature is planned, managed, accessed, used and in the end valued (Hansen et al., 2022; Hansen & Pauleit, 2014; Pauleit et al., 2019). These pressures are particularly urgent in urban settings, where ‘everyday nature’ risk being over used, reduced or fragmented (Haaland & Konijnendijk van den Bosch, 2015). A central challenge addressed by this thesis is therefore not only to safeguard urban ecological functionality, but at the same time to protect the nearby, accessible green and blue spaces that enable daily contact with nature, especially for children (Jansson & Schneider, 2026).

Within sustainability science, these challenges have often been approached through institutional reforms, development of policies and implementation tools, and technical solutions (Elmqvist et al., 2019; Elmqvist et al., 2021; Frantzeskaki & Kabisch, 2016). Yet transitions toward sustainability also depend on relationships: how people form emotional bonds, develop care, and take responsibility for the landscapes they inhabit and use (Chawla & Gould, 2020; Ingold, 2011, 2024; Ives et al., 2017; Masterson et al., 2017; Peçanha Enqvist et al., 2018; West et al., 2018). Research on children’s nature connectedness (CNC) also shows that early and repeated encounters with nearby nature shape long-term ecological values, wellbeing, and pro-environmental behaviour (Chawla, 2015; Chawla & Gould, 2020; Giusti et al., 2018). This raises a critical question: how do formal planning processes and land use management, and everyday relational practices interact in shaping children’s opportunities to meaningfully connect with nature?

Stewardship, a central analytical lens in this thesis (Andersson et al., 2014; Andersson et al., 2017; Bennett et al., 2018; Mathevet et al., 2018), is used here as a way of examining how responsibility for maintaining and nurturing human-nature relations is enacted across different actors and governance levels. Rather than treating stewardship as a predefined ideal or goal, the thesis explores how it is expressed through governance processes, organisational practices, and everyday interactions (Andersson et al., 2014; Andersson et al., 2017).

The thesis is situated within sustainability science (Fang et al., 2018; Haider et al., 2018), particularly at the intersections of the scientific fields urban green-blue infrastructure (uGBI) governance, social-ecological system (SES) research (Berkes et al., 2002; Folke et al., 2005; Haaland & Konijnendijk van den Bosch, 2015), and CNC (Chawla, 2015; Chawla & Gould, 2020). By bringing together these scientific fields, the thesis adopts a relational perspective on stewardship (Peçanha Enqvist et al., 2018; West et al., 2018; West et al., 2020) across levels and actors of society, where ‘organisational’ stewards who protect green and blue spaces through formal land use planning and management approaches and tools, and ‘civic/pedagogical’ stewards who strive to keep human-nature relations alive through practice, are both needed. Municipalities and civic outdoor organisations therefore emerge as different but potentially complementary stewards of urban nature (Borgström, 2019).

## 1.1 Aim and Research questions

The overall aim of this licentiate thesis is to explore how different actors within the governance system, both within formal land use planning and management, and within civic outdoor organisations' practices, shape conditions for children's meaningful and lasting connections with nature in urbanising landscapes. The thesis addresses three research questions:

RQ1: How do formal land use planning and management shape the use of uGBI in urbanising landscapes, and what challenges are encountered?

RQ2: How do civic outdoor organisations foster CNC, care, and stewardship, and what challenges do they face?

RQ3: What enables or constrains meaningful and lasting nature connectedness among children in urbanising landscapes, and how might formal land use planning and management and civic practices better align to its support?

The research is conducted in a Swedish context, where rapid urbanisation intersects with long and strong tradition of nature conservation, strong civic outdoor traditions, and the Right of Public Access (Allemansrätten), which grants everyone the right to access and spend time in nature while emphasising shared responsibility and care in its use (Naturvårdsverket, 2024; Sandell & Svenning, 2011). This combination provides an analytically rich setting for examining how structural and relational dimensions of nature stewardship interact in practice.

## 1.2 Overview of included papers

Paper 1 analyses the formal land use planning and management of uGBI in the Stockholm region. It positions uGBI as foundation for children's opportunities to access and encounter nature. Formal land use planning and management decisions, to a large extent, determine availability, proximity, accessibility, and multifunctionality. In this sense, Paper 1 examines the structural conditions that either enable or constrain everyday nature contact and access.

Paper 2 addresses a different but complementary dimension: how civic outdoor organisations nurture CNC within the structural conditions made available. Here the focus shifts to the "how" - how repeated encounters, pedagogical practices, narratives, and motivations foster meaningful engagement and connection with nature.

### 1.3 Structure of thesis

While the Introduction outlined the aim and research questions, the Background chapter develops the theoretical framing of the thesis, situating it within sustainability science and SES research, and elaborating the concept of stewardship. It also situates the study within the governance context of Swedish land use planning and management. The Methods chapter outlines the qualitative, multi-method research design and methodological considerations. The Results chapter presents findings from both empirical papers, followed by a joint synthesis. The Discussion chapter interprets the findings in relation to stewardship, governance fragmentation, and relational thinking within sustainable urban development as part of sustainability science. The thesis closes with sections on: Conclusions, Policy implications, and Pathways for future research.

# 2 Background

## 2.1 The overarching scientific context and framing of the thesis

By linking and clarifying how structural conditions (formal land use planning and management of uGBI), and lived practices interact, the thesis contributes to sustainability science mainly in three ways: First, it empirically connects formal land use planning and management of uGBI with relational processes of human-nature connection, fields that are often studied separately (Lin & Andersson, 2023; West et al., 2020). Second, it conceptualises stewardship as distributed across public sectors and practices of civic outdoor organisations, highlighting how responsibility for nature is enacted differently across actors and levels of society. Third, it brings children as actors explicitly into sustainability science discussions on governance and stewardship, not only as future beneficiaries but as present actors whose opportunities for meaningful engagement are shaped by formal planning and management of uGBI. In doing so, the thesis addresses how sustainability transitions depend not only on land use policies, but also on the relational conditions through which care and responsibility are cultivated.

## 2.2 Sustainability science and a ‘relational turn’

Sustainability science emerged as an interdisciplinary field concerned with understanding and supporting transformations toward long-term ecological integrity and human well-being (Elmqvist et al., 2019; Fang et al., 2018; Kates, 2001; Lang et al., 2012). The field has aimed to bridge ecological and social processes, emphasising complexity, cross-scale interactions and multi-level governance (Berkes et al., 2002; Folke et al., 2005). Early sustainability research often focused on reforming formal institutions, processes and tools (Abson et al., 2017; Kates, 2001). Over time, however, researchers within the field increasingly recognised that sustainability challenges cannot be addressed through technical or institutional solutions alone. Transitions also depend on values, cultural practices, emotions, and everyday interactions (Ives et al., 2018; Ives et al., 2017; Masterson et al., 2017; West et al., 2018). Within this development, SES research has played a central role. SES research conceptualises humans and ecosystems as intertwined systems characterised by co-production, feedbacks, and thresholds (Berkes et al., 2002; Folke et al., 2005; Ostrom, 2009). Rather than separating ecology, governance and social life into distinct domains, SES research analyses how they interact (Berkes et al., 2002). This shift has opened space for more relational approaches to sustainability, where care, responsibility, and interdependence are seen as central dimensions (Peçanha Enqvist et al., 2018; West et al., 2018; West et al., 2020).

## 2.3 Stewardship as distributed responsibility

The emergence of stewardship as a core concept is closely tied to the development of SES research (Barthel et al., 2005; Berkes et al., 2002; Folke et al., 2005; Ostrom, 2009).

Foundational contributions such as Berkes et al. (2002), Folke et al. (2005), and Ostrom (2009) framed human actors not merely as “users” of ecosystems but as co-producers of its social and ecological outcomes, affected by, and responsible for, system dynamics. Urban environments were increasingly understood as social-ecological systems, where stewardship can manifest through formal planning and management, institutional mandates, everyday practices, or civic actions (Andersson et al., 2014; Barthel et al., 2005; Bennett et al., 2018; Berkes et al., 2002; Colding et al., 2006; Elmqvist et al., 2021). More recent studies emphasise that stewardship is not only about managing resources, but about nurturing relations - emotional, ethical and intergenerational (Bennett et al., 2018; Bramston et al., 2011; Chapin et al., 2009; de la Bellacasa, 2017; Masterson et al., 2017; Peçanha Enqvist et al., 2018; Welchman, 2012; West et al., 2018). This ‘relational turn’ argues that sustainability requires attentiveness, reciprocity and responsibility toward more-than-human beings. Children become particularly relevant in this shift: they represent both present actors and future stewards, and their early experiences of nature influence attitudes to and appreciation of nature and the environment over time (Chawla, 2015; Chawla & Gould, 2020; Giusti et al., 2014; Giusti et al., 2018; Louv, 2010; Richardson, 2023). Importantly, in this thesis stewardship is not treated as a normative goal or moral ideal. Rather, it functions as an analytical lens to examine how responsibility is distributed and enacted across different levels of society.

**Table 1.** Overview of stewardship expressions across levels of society. The table illustrates how stewardship is distributed across structural, social, and experiential dimensions, enacted by different actors, and examined through the two included papers.

Level	Stewardship Expression	Actors	Paper
<b>Structural/institutional</b>	Formal governance tools, mandates, planning priorities	Municipalities, County Administrative Board, Civil Servants	Paper 1
<b>Social/pedagogical</b>	Learning environments, intergenerational practices	Civic outdoor organisations	Paper 2
<b>Experiential/personal</b>	Emotions, belonging, care	Children with adult leaders	Across thesis

## 2.4 Care, knowledge, and relational thinking

Researchers within sustainability science increasingly emphasise care as both an ethical orientation and a practical mode of engagement with the world (de la Bellacasa, 2017). This perspective highlights interdependence, situated knowledge, and the recognition that humans are embedded within ecological processes rather than positioned outside them (de la Bellacasa, 2017; Ingold, 2011). Care in this sense is not an end state but an ongoing practice shaped through attentiveness, reciprocity, and responsibility toward human and more-than-human beings (de la Bellacasa, 2017). Studies suggest that stewardship extends beyond formal decision-making to include practices of learning, care, and intergenerational knowledge transfers that support social-ecological relations over time (Masterson et al., 2017;

Peçanha Enqvist et al., 2018; West et al., 2018). Knowledge and care may therefore be mutually reinforcing: care can motivate learning and engagement, while knowledge deepens the capacity to relate responsibly. Without knowledge, there is a risk that care remains sentimental; without care, knowledge may risk remaining detached.

In the context of children's meaningful engagement with nature, this interplay becomes particularly visible. Research shows that repeated exposure to nearby nature fosters ecological understanding and positive emotional attachment (Chawla, 2015; Giusti et al., 2014; Giusti et al., 2018). Yet experiences of nature are not universally positive (Soga et al., 2020; Soga et al., 2023). For some individuals, nature may evoke fear, discomfort, or exclusion (Jensen et al., 2025; Soga & Evans, 2024). This thesis therefore seeks to avoid portraying nature as inherently benevolent. Nature is neither morally good nor bad; it is dynamic, sometimes harsh, and socially interpreted in different ways.

## 2.5 The Swedish governance context: between planning and practice

Sweden has more than a century of tradition in nature conservation and outdoor recreation, rooted in the Right of Public Access (*Allemansrätten*) (Fredman et al., 2013; Naturvårdsverket, 2024; Sandell & Svenning, 2011). At the same time, Sweden is highly urbanised (88% of the population lives in urban areas; (SCB, 2022), and rapid densification and sprawl places growing pressure on uGBI, where housing development, biodiversity conservation, climate adaptation, and outdoor recreation increasingly compete for the same spaces (Erlwein et al., 2023; Haaland & Konijnendijk van den Bosch, 2015; O'Farrell & Anderson, 2010). These spatial dynamics are shaped by formal planning and management priorities. Studies further indicate that children's declining everyday access to nature in urbanising areas is not only socially or culturally produced, but also spatially shaped through formal planning and management (Beery, Djerf, et al., 2023; Beery, Stahl Olafsson, et al., 2023; Soga & Gaston, 2016; Soga et al., 2018). Densification, land-use competition, and infrastructure development may gradually reduce informal play areas, fragment accessible forests, or create physical barriers between residential areas and nearby nature (Jansson & Schneider, 2026; Jansson et al., 2020). Research on nature connectedness suggests that proximity and frequency of contact are particularly important for fostering emotional attachment and ecological understanding (Chawla & Gould, 2020; Giusti et al., 2018; Richardson, 2023).

Formally, Swedish municipalities hold primary responsibility for land use planning and often also management, including provision of uGBI (Bjärstig et al., 2017; Jacobsson, 2025). Yet responsibility for outdoor recreation is often fragmented across departments, weakly resourced, and rarely operationalised through dedicated policies or tools (Ankre et al., 2023; Stenseke & Hansen, 2014). Despite national goals established in 2012 (SEPA, n.d.) to facilitate people's access to nature, recent evaluations indicate these remain far from being achieved (SEPA, 2019, 2023b). As politically steered organisations, and to a large extent funded by tax payers, municipalities are also vulnerable to shifting priorities across electoral

cycles, making long-term commitment to outdoor recreation and uGBI difficult to sustain (Jacobsson, 2025; Kristianssen & Granberg, 2021).

Alongside formal planning, Sweden has a strong tradition of civic outdoor organisations that provide recurring nature-based activities, facilitate intergenerational knowledge transfer, and connect children and communities to local landscapes (Fredman et al., 2018; Naturvårdsverket, 2024; SAOO, 2022). These civic outdoor organisations are, however, largely non-governmental, member driven and volunteer-based, relying on unstable funding and oftentimes lacking formal recognition for societal contributions (Borgström, 2019; Lundström & Wijkström, 1997; Wijkström, 2004). Together, these two spheres, formal land use planning and management of uGBI, and practices of civic outdoor organisations, constitute the governance context within which this thesis is situated, and makes Sweden a relevant case for examining how structural and relational dimensions of stewardship interact in practice.

## 3 Materials and Methods

### 3.1 Methodological approach

This Licentiate thesis explores how conditions for children's connection with nature are shaped by both formal land use planning and management processes and everyday practices of civic outdoor organisations in urbanising landscapes. The research therefore examines dynamics that unfold across different institutional and organisational contexts rather than analysing a single static phenomenon. The research design was developed to address the thesis' research questions by examining both formal land use planning and management processes shaping uGBI, and the civic relational practices through which children encounter and learn to care for nature.

In the initial and exploratory phase of the research, three workshops organised by the Stockholm County Administrative Board in November-December 2021 informed the framing of the first study (for details, see Paper 1). The insights from these discussions also contributed to the development of the interview guide for Paper 1. The workshops brought together regional authorities, municipal officials, civil society organisations, and academic actors to discuss priorities for a forthcoming regional action plan for outdoor recreation in the Stockholm region (SCAB, 2021, 2023).

The study uses a process-oriented, qualitative multi-method approach. Sustainability challenges, such as uGBI planning and management, and CNC, involve complex interactions between institutions, actors and values, as well as the constituents of the uGBI. These interactions evolve over time and cannot be fully understood through detached observation or statistical data alone (Creswell, 2014; Reinette et al., 2021). Instead, they require engagement with the actors who interpret policies, implement decisions, and cultivate practices within specific contexts. As Flyvbjerg (2001) argues, methodological choices should follow the nature of the research problem (Flyvbjerg, 2001). In this thesis, CNC is not primarily located in documents or datasets, but emerge through dialogue, practice and everyday decision-making at multiple levels.

### 3.2 Studying unfolding processes through interviews

Both the empirical studies examine situations that are still unfolding. In Paper 1, the formal land use planning and management processes in regard to sustainable outdoor recreation and uGBI in the Stockholm region take shape within an evolving governance system including the County Administrative Board, the Stockholm region, the municipalities, and civic outdoor organisations. These processes are rarely fully documented but are negotiated through administrative judgement, professional interpretation, and coordination across sectors and levels. Semi-structured interviews therefore provide access to contextualised knowledge and reasoning that is often absent in formal documents (Kvale & Brinkmann, 2015).

Paper 2 investigates a complementary setting: Swedish civic outdoor organisations that foster CNC, care, and stewardship. In this context, the processes of interest for this study occur largely outside formal land use planning and management, and is instead decided by the organisations's members. Semi-structured interviews were therefore selected as the primary method of data collection, as they enable participants to reflect on motivations, experiences, and practices while allowing the researcher to ask follow-up questions and explore emerging themes (Kvale & Brinkmann, 2015; Mason, 2002).

### 3.3 Strategic sampling and moving across societal levels

Participants were selected through strategic sampling (Kvale & Brinkmann, 2015) with the goal to identify key respondents who occupy positions that shape either the formal land use planning and management processes of uGBI, or the relational practices through which children encounter nature. This approach allowed the research to capture perspectives across multiple societal levels of planning, management and practice. In Paper 1, respondents included actors involved in the land use planning and management processes related to uGBI, such as municipal officials (e.g. planners, ecologists, strategists), and representatives of the regional authorities. These actors operate within public institutional structures that influence how outdoor recreation, biodiversity, climate adaptation and land-use priorities are balanced in urbanising landscapes. In Paper 2, respondents included representatives and leaders within Swedish civic outdoor organisations who work directly with children in outdoor activities. These actors provide insight into how pedagogical practices, organisational motivations and intergenerational learning processes contribute to children's meaningful engagement and connection with nature.

The sampling strategy enabled movement across levels of society, and from strategies to practices. Importantly, the different levels should not be understood as a hierarchy of actors or practices. Each level contributes in different ways to shaping the conditions for CNC, care and stewardship. The framework therefore illustrates how responsibility, interpretation and influence might move across societal levels and everyday practices, rather than following a strictly top-down or bottom-up logic (see Table 2 below). This approach aligns with relational perspectives within sustainability science, which emphasise that agency and responsibility are distributed across multiple actors, sectors, levels and institutional contexts (Borgström, 2019; Borgström et al., 2006).

**Table 2.** Overview of the sampling strategy across levels of society in the two included papers. The table presents the respondents and actors included at each level, and the analytical aim each level serves in relation to the overall research design.

Level	Paper 1 uGBI planning	Paper 2 Civic outdoor organisations	Aim
<b>Structural/institutional</b>	County Administrative Board; Regional and Municipal strategists/officials	National leaders; pedagogical coordinators	Understand institutional intentions, mandates and responsibilities
<b>Operational/civil servants</b>	Project leaders; landscape architects; ecologists; nature conservation; outdoor recreation	Organisers; program developers	Study translation and interpretation of goals into concrete action
<b>Practice/everyday/tactical</b>	Less central in Paper 1	Local leaders; volunteers interacting with children	Explore where values and pedagogies are enacted in practice
<b>Cross-level dynamics</b>	Regional governance meetings; inter-municipal collaboration	Intergenerational pedagogies; learning environments	Show how responsibility, influence and learning move across levels

### 3.4 Methodological and ethical considerations

The strategic sampling means that findings are not statistically generalisable (Creswell, 2014; Kvale & Brinkmann, 2015). However, following Flyvbjerg (2006), the aim of such case-based research is analytical rather than statistical generalisation. The aim is therefore to generate contextually grounded insights that may contribute to broader theoretical understanding rather than to represent a wider population.

Researcher positionality (Reinette et al., 2021) requires continuous reflection throughout the research process. As England (1994) notes, proximity between researcher and respondents can influence both responses and interpretation (England, 1994). To address this, careful notes were taken during data collection, and afterwards reflexive analysis was conducted in order to track assumptions and potential interpretive biases.

Additionally, semi-structured interviews carry the risk of bias through framing, interpretation or leading questions (Kvale & Brinkmann, 2015). To mitigate this, interview guides were developed based on the research questions, and themes were compared across interviews in order to identify patterns as well as inconsistencies (Kvale & Brinkmann, 2015). Interview material was also interpreted in relation to organisational characteristics and policy documents in order to situate responses within the broader governance context of the research.

Finally, the relational nature of the research meant that access depended on trust and dialogue with actors involved. Protecting respondents identities therefore remained a central ethical consideration. At the same time, completely anonymising respondents would have removed the organisational contexts that shape decision-making and practice. The research therefore

balanced confidentiality with contextual clarity by protecting individual identities while retaining relevant organisational information necessary for interpreting the processes under study. This research design enabled the thesis to explore how land use planning and management processes, civic outdoor organisational practices and relational learning dynamics interact in shaping children's opportunities to access and meaningfully engage with nature in urbanising landscapes.

For full methodological details and research design, see respective paper (Paper 1; Paper 2).

# 4 Results

## 4.1 Results Paper 1: Sustainable outdoor recreation in multifunctional uGBI

The first study (Paper 1) investigates how sustainable outdoor recreation is operationalised within the formal land use planning and management of uGBI in the Stockholm region. The findings reveal an implementation deficit: despite pronounced national and regional ambitions, outdoor recreation remains undervalued and weakly integrated in policy and planning processes.

Three central themes emerged. First, practitioners highlighted a *decreasing room for action* as densification and competing land uses reduce available and accessible green and blue spaces. Second, there are *insufficient preconditions* for operationalising sustainable outdoor recreation, including inadequate funding, unclear mandates, and limited strategic capacity within municipalities. Third, *seeds of change: promising pathways for more proactive governance* in the form of emerging practices, such as the proposal for outdoor recreation strategists, cross-sectoral councils, or innovative planning tools like a Recreation Factor or a Recreation Guarantee for children and youth.

Overall, the study demonstrates that while uGBI is acknowledged as vital infrastructure for biodiversity, public health, and social cohesion, its role as an arena for sustainable outdoor recreation is structurally undervalued. Regional and municipal officials call for more strategic integration, institutional clarity, and supportive governance models that elevate outdoor recreation from a peripheral to a central planning priority.

## 4.2 Results Paper 2: Civic outdoor organisations and CNC

The second study (Paper 2) investigates the role of Swedish civic outdoor organisations in fostering CNC, care, and stewardship. Across six Swedish civic organisations, the results show that these groups serve as crucial actors that enable and nurture children's repeated, playful, and meaningful engagement with nature.

Three central themes emerged. First, the organisations provide *recurring, direct encounters with nature* through play, exploration, species identification, and practices of care. These encounters are often framed relationally, e.g. naming species as “friends,” or linking recreation to ecological care. Second, the organisations facilitate *intergenerational transfer of ecological knowledge*, where children bring new insights back to their families, and former participants often return as adult leaders. Third, the civic outdoor organisations face *structural challenges*, including reliance on volunteers, resource limitations, and barriers created by densification, digitalisation, and shifting societal norms that shrink children's outdoor time. Despite these identified challenges, the studied civic outdoor organisations act as multipliers of ecological knowledge and care, grounding stewardship practices in everyday activities and embedding them within Swedish traditions of civic participation and the Right of public access (Allemansrätten).

**Table 3.** Overview of the two included papers and their combined contribution. The table summarises the empirical focus, research questions, key findings, conceptual lenses, and contributions to sustainability science of each paper, and how they together advance a relational understanding of stewardship and CNC.

Dimension	Paper 1	Paper 2	Combined contribution
<b>Empirical focus</b>	Formal land use planning of uGBI in the Stockholm region, sustainable outdoor recreation	Practices of Swedish civic outdoor organisations fostering children’s nature connectedness	Connects institutional/governance structures with everyday practices
<b>Main RQ</b>	How do formal land use planning and management shape the use of urban green blue infrastructure in urbanising landscapes, and what challenges are encountered?	How do civic outdoor organisations foster CNC, care, and stewardship, and what challenges do they face?	What enables or constrains meaningful and lasting nature connectedness among children in urbanising landscapes, and how might formal land use planning and management, and civic practices better align to its support?
<b>Key findings</b>	uGBI planning is fragmented across sectors; competing goals create trade-offs; children’s perspectives are often marginalised in practice	Organisations provide recurring, playful, intergenerational encounters with nature but face challenges such as urbanisation, lack of resources, digitalisation	Demonstrates both structural governance challenges and civic opportunities in supporting CNC and sustainable urban development
<b>Conceptual lens</b>	uGBI, MLG, multifunctionality, sustainable outdoor recreation	Stewardship, care, CNC, children’s agency	A relational perspective linking governance frameworks and lived experiences of nature
<b>Contribution to Sustainability science</b>	Reveals how fragmented governance structures and competing land-use priorities constrain children’s access to urban nature, advancing sustainability science by empirically connecting formal planning and management with relational processes of HNC/CNC	Highlights civil society’s role in fostering children’s nature stewardship, care and CNC through repeated, everyday civic outdoor practices	Advances sustainability science by bridging structural and relational dimensions of sustainability, and by integrating children’s perspectives

### 4.3 Synthesis of Paper 1 and Paper 2

Taken together, Paper 1 and Paper 2 highlight two interconnected yet differently structured systems that shape children's opportunities for meaningful and lasting connections with nature in urbanising landscapes. The findings present a clear picture of both opportunities and constraints, and together they address RQ3: What enables or constrains meaningful and lasting nature connectedness among children in urbanising landscapes, and how might formal land use planning and management of uGBI, and practices of civic outdoor organisations, better align to its support?

On the one hand, Paper 1 shows that the formal land use planning and management system is characterised by decreased room for action, fragmented mandates, competing objectives, and a lack of long-term coordination. As cities densify, uGBI become increasingly contested, leaving limited space for everyday nature experiences close to where people live and work. This means that even if municipalities express ambitions to safeguard children's access to nature, these ambitions often lose out to stronger political and economic drivers, such as housing development or cost-saving measures. Outdoor recreation, which is essential for human well-being, and a precondition for nature connectedness, is often treated as something that will occur "naturally," without requiring targeted resources and explicit prioritisation. On the other hand, Paper 2 shows that civic outdoor organisations to some degree compensate for formal implementation deficit by providing the lived settings where children encounter nature in recurring, playful, and relational ways. These civic outdoor organisations offer more than activities; they foster situated learning, intergenerational knowledge transfer, and emotional meaning through play, storytelling, sensory exploration, and hands-on care for nature. Children learn to recognise species, develop empathy toward living beings, and practise acts of stewardship. For many children, these civic outdoor organisations represent a reliable pathway to nature contact at a time when everyday access to nearby nature is decreasing (Jansson & Schneider, 2026; Soga & Gaston, 2016; Soga et al., 2018).

When the results of the two studies are brought together, a structural mismatch becomes evident. The potential for meaningful nature contact certainly exists, both in the form of uGBI and in the presence of strong civic engagement. Yet the governance system does not fully capture or sustain this potential. Fragmentation across societal levels, lack of incentives for coordination, and the short-term nature of many municipal and regional projects create an environment where efforts remain isolated. Municipalities are politically steered organisations whose priorities may shift with electoral cycles (Bjärstig et al., 2017; Jacobsson, 2025), while civic outdoor organisations are non-governmental and often volunteer-based, relying on unstable funding (Emmelin et al., 2010; Sandell & Svenning, 2011) and lacking formal recognition for the pedagogical and stewardship work they perform (Skriver Hansen et al., 2022). This asymmetry makes it difficult to build durable structures that support children's long-term engagement with nature.

Both studies reveal that the conditions enabling nature connectedness differ significantly between formal land use planning and management processes, and civic outdoor practices.

The formal processes tends to decompose 'nature' into functional categories such as outdoor recreation, biodiversity, climate adaptation, or stormwater management. Children, by contrast, experience nature as an indivisible whole, where play, sensory engagement, social interactions, and ecological learning occur simultaneously (Bento & Dias, 2017; Jansson et al., 2022; Prins et al., 2022). The results of the studies indicate that civic outdoor organisations are more aligned with this integrated, relational experience, while planning and management tools often struggle to account for such complexity. This mismatch raises important questions about how actors within formal land-use planning and management of uGBI could learn from the relational and holistic perspectives embodied in civic outdoor organisation pedagogies, and children's own experiences.

Urbanisation further intensifies these challenges. As nearby nature decreases, the everyday arenas that support spontaneous and repeated nature contact become scarcer (Erlwein et al., 2023; Haaland & Konijnendijk van den Bosch, 2015). When urbanisation reduces the availability of such places, they inadvertently limit the developmental conditions under which stewardship can take root. Expecting future generations to care for nature becomes difficult if the opportunities to build such care are systematically constrained. Furthermore, Paper 2 emphasises that children are not merely future stewards - they already often act as knowledgeable and engaged caretakers. They share ecological insights with family members and participate in conservation activities. Yet their present agency remains largely invisible in planning processes, where children are still oftentimes framed as passive users/recipients (Ataol et al., 2019; Rodela & Norss, 2022; Vidal & Castro Seixas, 2022). Recognising children as active participants would likely reshape how their needs and perspectives are integrated into planning decisions.

Finally, the synthesis of Paper 1 and 2 results shows that meaningful and lasting nature connectedness among children depends on the interplay between formal protection of availability and access (as seen in formal planning and management of uGBI), and the relational, experiential practices (as seen in civic outdoor organisations). Neither system is sufficient on its own. For alignment to improve, planning processes would need to more explicitly acknowledge the relational dimensions of nature contact, and civic outdoor organisations would need more reliable support and recognition as important contributors of CNC. This includes longer-term partnerships, integrated policies that reflect children's rights, including their right to be heard in matters that affect them (as enshrined in the UN Convention on the Rights of the Child (UNCRC, 1989)).

# 5 Discussion

This chapter discusses the findings from both papers in relation to the overarching aim of the thesis: to explore how different actors within the governance system shape conditions for children's meaningful and lasting connections with nature in urbanising landscapes. Returning to the three research questions, the findings collectively suggest that nature stewardship, as it operates across formal planning, civic outdoor organisations, and children's everyday practices, is distributed across levels of society but unevenly supported by existing governance arrangements. Throughout, the argument returns to the central framing of the thesis: that transitions toward sustainability depend not only on institutional reforms, but on the relational practices through which people - and especially children - develop care and stewardship for the landscapes they inhabit.

## 5.1 Sectoral logic, relational loss

The findings suggest that stewardship in urbanising landscapes is not located within a single organisation but emerges through interactions between multiple actors operating at different societal levels. Regional and municipal officials act as organisational stewards when navigating planning mandates, negotiating trade-offs between land uses, and attempting to safeguard uGBI (Paper 1). Civic outdoor organisations function as civic/pedagogical stewards, fostering children's recurring and embodied relationships with nature through outdoor learning and practice. Children themselves also demonstrate forms of stewardship through curiosity, species recognition, and everyday acts of care (Paper 2).

However, the studies show that these different forms of stewardship are not equally supported. The results point to that actors responsible for relational and pedagogical work often operate with the least formal support. Civic outdoor leaders, volunteers, and educators introduce children to landscapes through recurring practices such as excursions, exploration, and stewardship activities, yet these efforts frequently depend on voluntary engagement and unstable resources. Social-ecological systems (SES) researchers emphasise that resilient systems rely not only on formal institutions but also on informal networks, local practices, and cultural norms (Barthel et al., 2005; Berkes et al., 2002; Colding et al., 2006). Outdoor recreation may be recognised as a national interest (SEPA, n.d.), yet regional and municipal officials report lacking clear mandates or tools to prioritise it in rapidly densifying urban contexts. One interpretation is that urban planning privilege technical and structural 'solutions' over relational ones, despite extensive SES research demonstrating that both dimensions are necessary for sustaining human-nature relationships (Andersson et al., 2014; Berkes et al., 2002).

This unevenness is reinforced by how formal planning and management of uGBI is organised. A recurring theme in Paper 1 is that these systems tend to fragment nature into separate administrative categories, such as for instance biodiversity conservation, outdoor recreation, climate adaptation, and stormwater management. While these categories serve

important planning purposes, they may unintentionally obscure how nature is experienced in practice. Research on CNC shows that children rarely perceive nature in compartmentalised ways (Chawla, 2015; Chawla & Gould, 2020; Giusti et al., 2018; Vidal & Castro Seixas, 2022). Instead, they experience nature as an integrated landscape where play, exploration, social interaction, and ecological learning occur simultaneously (Prins et al., 2022; Vidal & Castro Seixas, 2022). A forest patch, perhaps not even acknowledged as a ‘green space’ in formal planning and management, may be at once a place for imaginative play, species discovery, social bonding, and sensory exploration, and a critical arena for early stewardship practices with peers. The findings reinforce an important implication: if everyday opportunities for such interactions continue to diminish, expectations that future generations will develop strong stewardship values may become increasingly unrealistic. Strengthening children’s access to nearby nature should therefore be understood not only as a recreational or public health concern, but as a long-term sustainability issue.

The findings suggest that this discrepancy between sectoral fragmentation and lived experiences may weaken certain relational conditions necessary for developing nature connectedness. For example, forests protected primarily for biodiversity may become less accessible for children’s play, while recreational areas designed mainly for adults may lack biological richness or opportunities for nature explorations. In such cases, formal land use planning and management risk separating ecological and social values that in practice are closely intertwined. SES research has long emphasised that governance arrangements which divide ecological and social dimensions may overlook cross-scale interactions and feedbacks that sustain social-ecological systems (Andersson et al., 2014; Borgström et al., 2006; Folke et al., 2005). The findings here point to a similar dynamic. Children’s holistic experiences challenge the sectoral logic of formal systems and suggest a need for governance approaches that better reflect relational and experiential engagements with everyday nature.

## 5.2 Civic outdoor organisations: bridging access and stewardship

The sectoral conditions of formal planning and management systems of uGBI shape, but do not fully determine, what and how children experience their nearby nature. The Swedish Right of Public Access (*Allemansrätten*) (Naturvårdsverket, 2024) is more than a constitutionally protected right; it appears to operate as a socially maintained commons that depends on continuous learning and practice (Naturvårdsverket, 2024). Civic outdoor organisations play an important role in transmitting both the knowledge, values, and norms associated with responsible access (Fredman et al., 2013; Sandell & Svenning, 2011; SEPA, 2023a, n.d.). Children learn not only that they are allowed to move freely in nature, but also how to do so responsibly, for example by leaving places as they were found (or in an even better shape), respecting species and habitats, and caring for shared environments (Naturvårdsverket, 2024). This interpretation aligns with SES research emphasising that commons are sustained through collective norms, social learning, and cultural practices rather than through formal institutions alone (Berkes et al., 2002; Ostrom, 2009). In rapidly urbanising contexts, where families may lack time, knowledge, or nearby access to nature (Jensen et al., 2024; Soga & Gaston, 2016; Soga et al., 2018; Wu et al., 2023), civic outdoor

organisations therefore appear to function as important carriers of this pedagogical commons (Chawla, 2007; D'Amore & Chawla, 2020; Jensen et al., 2024). Recognising this interdependence raises important questions: the constitutionally protected right to access nature may remain formally intact, but without relational practices that sustain them, the cultural and ecological foundations of such rights risk weakening over time. Furthermore, the results from Paper 2 underline the importance of repeated and familiar encounters with nature in developing children's sense of belonging, confidence, and care. Previous research shows that repeated exposure to nearby nature strengthens emotional attachment and environmental awareness (Chawla, 2015; Giusti et al., 2014; Giusti et al., 2018). Interestingly, civic outdoor organisations often generate these forms of repetition intentionally. Weekly gatherings, seasonal traditions, and intergenerational participation allow children to build lasting relationships with places over time (Chawla, 2007, 2015; D'Amore & Chawla, 2020). What also becomes evident from the findings in Paper 2 is that former participants frequently return as adult leaders, or participants together with their child, reinforcing continuity between generations.

Furthermore, formal land use planning and management of uGBI tends to focus primarily on spatial provision (Park et al., 2026; Sunding et al., 2025), with less attention paid to how continuous interactions with these spaces are maintained (Jansson et al., 2020; Qviström et al., 2025). Schools may represent an important bridge in this regard. Because schools reach nearly all children regardless of socio-economic background, they hold significant potential for supporting repeated contact with nearby nature through outdoor education, schoolyard design, and collaboration with local organisations (Chawla, 2015; Mårtensson et al., 2014; van Velzen & Helbich, 2023; Waite & Aronsson, 2022). Partnerships between municipalities, schools, and civic outdoor organisations could therefore create more reliable pathways for children's everyday contact and meaningful engagement with nearby landscapes (Jansson & Mårtensson, 2012; Mann et al., 2022).

Building on this, civic outdoor organisations may be understood not only as recreational providers but also as actors within multi-level governance systems (MLG) supporting and nurturing nature stewardship. SES researchers increasingly emphasise the importance of diverse actors in MLG arrangements (Andersson et al., 2014; Andersson et al., 2017; Borgström, 2019; Buijs et al., 2019). In this perspective, civic outdoor organisations can complement formal planning and management processes by providing relational and pedagogical capacities that formal institutions often lack. At the same time, recognising civic outdoor organisations as contributing partners raises important questions about autonomy (Salamon & Toepler, 2026). Over-formalisation could risk undermining the flexibility, creativity, and local diversity that make many civic initiatives effective (Mustchin et al., 2023). Rather than integrating such organisations directly into formal governance structures, more flexible arrangements may benefit from enabling conditions that support civic initiatives while preserving their grassroots character (Borgström et al., 2006; Buijs et al., 2019).

### 5.3 Children as nature stewards in the present - and the future

The governance implications extend further when we consider the agency of children themselves. The findings also challenge the common narrative that children are primarily ‘future stewards’ of nature. Results from Paper 2 indicate that children already enact forms of stewardship in the present through everyday acts of curiosity, care, and engagement with uGBI. This perspective resonates with research arguing that children are not only future citizens but active participants in (re)shaping human-nature relations today (Chawla & Gould, 2020; Rana et al., 2020). Recognising children as present actors has implications for governance. Formal land use planning and management processes tend to frame children as passive users or beneficiaries of uGBI rather than as participants with knowledge and relevant perspectives (Ataol et al., 2019; Rodela & Norss, 2022; Vidal & Castro Seixas, 2022). Sweden’s commitments under the UNCRC, which became Swedish law in 2020, emphasise children’s right to be heard in matters affecting them (UNCRC, 1989). Applying this principle to formal land use planning and management of uGBI could involve methods such as child-led mapping of valued places, participatory planning exercises, or collaboration with organisations and schools that regularly engage in children’s interactions with local landscapes. Such approaches would need to go beyond project-based initiatives and align planning and management processes with children’s rights, while also providing valuable insights into how children actually experience and use their nearby nature. In this regard, a point raised in Paper 1 is telling: some respondents expressed a need for an outdoor recreation “guarantee” for children. Rather than a widely supported proposal, this is perhaps best understood as a signal that awareness is growing among practitioners that children’s everyday access to nature cannot be left to chance and may require more explicit institutional safeguards.



## 6 Conclusion

This Licentiate thesis examines how formal land use planning and management of uGBI and civic outdoor organisations shape conditions for children's meaningful and lasting connections with nature in urbanising landscapes. Drawing on two qualitative studies in the Stockholm region, the findings highlight that children's opportunities to connect with nature emerge from the interaction between formal planning processes and relational practices in civil society. First, the research shows that formal land use planning and management of uGBI strongly influence whether nature is spatially available and broadly accessible in rapidly urbanising contexts. However, outdoor recreation and children's nature contact often remain weakly prioritised within these formal processes characterised by sectoral fragmentation, competing land uses, and limited resources and mandates. Second, the findings demonstrate that civic outdoor organisations play an important role in fostering CNC through recurring outdoor experiences, intergenerational learning, and pedagogical practices that cultivate environmental awareness and care. Third, the synthesis of the two studies suggests that meaningful nature connectedness among children depends on the alignment between these formal and relational conditions. Whilst formal planning processes shape spatial availability and access to some degree, civic outdoor organisations animate these spaces through meaning/sense-making, play, care, and repeated engagement. A sustainable pathway forward requires recognising the complementary roles of these actors and creating systems that allow their respective strengths to reinforce rather than compensate for one another. The thesis contributes to sustainability science by linking formal land use planning and management of uGBI with everyday practices for children's meaningful and lasting connections with nature in urbanising landscapes. In doing so, it highlights stewardship as distributed across institutional, civic, and experiential levels, and brings children's perspectives more explicitly into discussions of sustainable urban development.

## 7 Policy implications

The findings suggest several implications for sustainable urban planning. First, children's everyday access to nearby nature requires stronger recognition in formal land use planning and management of uGBI. Although uGBI is widely acknowledged as important for biodiversity, climate adaptation, and public health, children's nature access and contact is often weakly prioritised in practice. Formal land use planning and management processes could therefore introduce clearer safeguards for accessible everyday nature, such as proximity standards or child-sensitive criteria within uGBI strategies. Second, the results highlight the important role of civic outdoor organisations in fostering CNC through repeated, experiential, playful and meaningful engagement with landscapes. Despite this contribution, such civic outdoor organisations often operate with limited resources. Formal land use planning and management of uGBI could therefore benefit from stronger partnerships with civil society, including long-term collaboration, reliable funding mechanisms, and involvement in formal decision-making processes. Finally, formal approaches may need to better account for children's holistic experiences of nature. Supporting accessible, everyday encounters with nearby nature is likely to be critical for sustaining and nurturing future stewardship and care for urban nature.

## 8 Pathways for future research

A first priority concerns deepening the knowledge of children's own perspectives and experiences. Children's views on urban nature, biodiversity, and outdoor recreation need to be further explored across scales of land use planning - from strategic to operational level. Studies should move beyond adult representatives to examine how children themselves experience nature connectedness, stewardship, and care, and how these experiences change over time. Longitudinal research may reveal how early engagement in civic outdoor organisations shapes later environmental behaviour, civic engagement, and wellbeing. Alongside this, there is a growing need to develop and validate robust methods for measuring nature connectedness. Current approaches (e.g. self-report scales, observational methods, participatory tools) are rarely applied consistently across studies, which limits comparability. Methodological advances here would strengthen the evidence base and support more meaningful comparisons across programmes, settings, and governance arrangements. A related and pressing concern is the rise of biophobia and nature illiteracy in urbanising contexts. As everyday contact with nature diminishes, future generations may not only lack ecological knowledge but develop active aversion or indifference toward natural environments. Research is needed that identifies which types of nature, landscapes, and ecological elements are most effective in fostering the relational practices that lead to genuine connectedness, as not all nature encounters generate the same outcomes.

A second priority concerns governance and collaboration. Future work should explore collaborative models that better bridge the formal and civic spheres identified in this thesis: how municipalities, schools, and civic outdoor organisations can develop sustained partnerships that go beyond ad hoc projects and create reliable, long-term pathways for children's engagement with nearby nature. Citizen science offers one particularly promising avenue, as it can simultaneously generate ecological knowledge and build relational connections between formal governance and civil society. Governance research should also examine how children's voices are acknowledged within organisations and planning structures, and when children's initiatives lead to lasting change rather than symbolic participation.

A third area requiring attention is equity. Future work should examine who participates in civic outdoor life and activities, who remains excluded, and how participation intersects with socio-economic status, migration background, gender, and functional variation. The challenge of bridging cultural diversity is particularly significant: understandings of nature, 'appropriate' outdoor behaviour, and the meaning of stewardship vary across cultural contexts, and civic outdoor traditions may not be equally accessible or resonant for all children and families. Research needs to explore how diverse cultural understandings of nature can be engaged within planning and pedagogical practice, and how structural barriers, such as language, economic constraints, unfamiliarity with Swedish outdoor norms, can be addressed. An equity lens is essential for ensuring that stronger governance for CNC does not inadvertently reproduce existing patterns of exclusion.



And lastly, let us be reminded of Professor Karin O'Brien's hopeful words:

*Transformative change for a just and sustainable world is urgent, necessary, and challenging - but possible.*



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## Appendices

### Media Contributions

This section presents selected blog posts, interviews, and media reports that relate to my research on sustainable outdoor recreation and children's meaningful engagements in and with nature. Including these materials demonstrate how the insights from the Mistra Sports and Outdoors research program have been communicated beyond academia, engaging practitioners, civil society, and the public. This not only illustrates the societal relevance of the research but also reflects how the studied processes and policy discussions resonate in broader societal debates.

*Included materials:*

Blog posts published within the Mistra Sports and Outdoors research program:

- With sustainable strategist Karin Willis at Friluftsförbundet: *Ett hållbart friluftsliv för framtiden/A sustainable outdoor life for the future*.  
<https://mistrasportandoutdoors.wordpress.com/2025/03/28/ett-hallbart-friluftsliv-for-framtiden-samtal-med-karin-willis-friluftsfremjandets-nya-hallbarhetsstrateg/>
- *Friluftsliv och naturvistelse behöver ges tyngd och prioritet/Outdoor life and nature visits need prioritisation*  
<https://mistrasportandoutdoors.wordpress.com/2024/04/03/friluftsliv-och-naturvistelse-behoover-ges-tyngd-och-prioritet/>

Interviews:

- With Utemagasinet Utsidan.se, Sweden's largest online platform for outdoor life and adventure: *Skogsmulleledarens bästa tips – så gör du vandringen rolig för barnen/Tips from the Skogsmulle leader*.  
<https://www.utsidan.se/cldoc/skogsmulleledarens-basta-tips-sa-gor-du.htm>
- Interview in *Magasin Friluftsliv* (Friluftsförbundet) with editor-in-chief Jenny Grundemark. See edition 3/2025, pp.79.  
<https://www.e-magin.se/latestpaper/849f66m6/paper/1#/title/849f66m6>
- With Göteborgs-Posten (GP), one of Sweden's largest morning newspapers and the dominant daily in western Sweden. *Experten: Så klär du ditt barn rätt i kylan/How to dress your child properly in cold weather*.  
<https://www.gp.se/livsstil/experten-sa-klar-du-ditt-barn-ratt-i-kylan.473e07bc-c8e6-471c-a891-1b632a0d5cbd>

Reportage:

- Upcoming coverage in Swedish outdoor magazine *Magasin Friluftsliv* (Friluftsförbundet) about overnight hike with our Mulle-group. See forthcoming edition 3/2026.

