

RESEARCH ARTICLE

Nature facilitates eudaimonic well-being through promoting connection with self and others

Joha Järekarid | Nora Fagerholmid | Salla Eilolaid | Vesa Arkiid

Department of Geography and Geology,
University of Turku, Turku, Finland

Correspondence

Joha Järekar
Email: joha.jarekari@utu.fi

Funding information

Turun kaupunginhallituksen myöntämä erityisavustus; TOP-Säätiö, Grant/Award Number: 20200687; Research Council of Finland, Grant/Award Number: 321555 and 358368; Maj ja Tor Nesslingin Säätiö, Grant/Award Number: 202100174; Jenny ja Antti Wihurin Rahasto, Grant/Award Number: 00200127

Handling Editor: Rachele Gould

Abstract

1. Urban nature is an important source of cultural ecosystem services (CES), providing well-being benefits. Currently, well-being is often conceptualized too narrowly to capture the more intangible benefits of urban nature. The concept of eudaimonic well-being takes a long-term, value-based approach to the well-being effects of the human–nature connection. There is a recognized need to study the deep, qualitative benefits of CES, as well as to understand the role of nature in people's eudaimonic well-being.
2. We used a qualitatively dominated mixed-method design to study the eudaimonic well-being benefits of nature and their links to the CES expressed by youth (ages 15–24) and elderly (age 60+) citizens in a mid-sized Nordic city. To gain understanding of engagement with outdoor environments, geospatial data were collected via a map-based survey. After this, in-depth qualitative data were collected via creative writing. We reflect on the understanding these two data sets provide on the role of nature in both age groups' eudaimonic well-being and how this could be better recognized in urban planning.
3. We discovered that both age groups gain notable eudaimonic well-being benefits from urban nature, linked to multiple deep-level CES. While the groups showed differences in where and how they spend time in urban nature and what benefits they gain, they also shared many perspectives. For both groups, nature supports eudaimonic well-being by allowing people to connect with deeper values and their most authentic selves. Nature also promotes connection with other people, as well as with other species.
4. The results show two cross-cutting aspects of eudaimonic well-being: change and temporality. Both age groups find a feeling of permanence and continuity in nature, contributing to their eudaimonic well-being. However, eco-crisis—especially human-induced change in nature—and the negative emotions related to these changes can hinder these well-being benefits.
5. This study highlights how urban nature contributes to eudaimonic well-being, suggesting that planning approaches, which more systematically incorporate these benefits are likely to better support long-term good life in urban environments.

This is an open access article under the terms of the [Creative Commons Attribution](https://creativecommons.org/licenses/by/4.0/) License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2025 The Author(s). *People and Nature* published by John Wiley & Sons Ltd on behalf of British Ecological Society.

KEYWORDS

creative methods, cultural ecosystem services, embedded mixed-methods, eudaimonic wellbeing, nature's wellbeing benefits, PPGIS, urban nature

1 | INTRODUCTION

The benefits of nature for human well-being and the framework of ecosystem services (ES) were highlighted by the Millennium Ecosystem Assessment (MEA, 2005). The ES framework was designed to create a strong scientific foundation for assessing the impacts of ecosystems and their changes on human well-being and to enhance sustainable management of ecosystems (Chan et al., 2012; MEA, 2005). Since then, ES has been a great interest in academia and has been applied to the policy and decision-making processes of societies and organizations aspiring to become sustainable. Especially in an urban context, the role of nature to support human well-being has attracted attention as the population in urban areas continues to grow, and subsequently, the pressure to densify cities increases (ESPON, 2020; Kabisch et al., 2015).

Evidence shows that ES support mental and physical well-being in multiple ways in urban contexts. For instance, reviews (Hartig et al., 2014; Kosanic & Petzold, 2020; Mensah et al., 2016) on nature and human well-being have highlighted a positive association between urban nature and improved mood, recovery from attention fatigue (Health Council of the Netherlands & Dutch Advisory Council for Research on Spatial Planning, Nature and the Environment, 2004) and physical activity (James et al., 2015). Furthermore, a negative association has been observed between urban nature and violence rates (Kondo et al., 2018), mortality and high levels of cortisol (Kabisch et al., 2015) and blood pressure (Twohig-Bennett & Jones, 2018). Furthermore, research on nature's well-being benefits in urban contexts has ranged from the regulating ES, such as regulation of temperatures (Heidt & Neef, 2007) to cultural ecosystem services (CES), such as opportunities for recreation (Niemelä et al., 2010), aesthetic experiences or inspiration (Gould & Lincoln, 2017) provided by urban nature.

However, CES have been the least researched ES (Milcu et al., 2013), and it is important to gain more understanding of their contribution to human well-being and to strengthen their role in urban planning in order to promote sustainability transformations that societies strive for (Lehtinen, 2017; Independent Group of Scientists appointed by the Secretary-General, 2019; Kabisch et al., 2015). In recent years, CES have been gaining more and more attention (Kosanic & Petzold, 2020) as the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has disclosed the concept of *nature's contribution to people* to highlight the plurality of values associated with nature (IPBES, 2022).

An emerging research interest in studies addressing the well-being benefits of nature has focused around the concept of eudaimonic well-being (White et al., 2017, p. 78). Compared to a more

prominent hedonic view that focuses on immediate benefits, such as elevated mood, lowered stress levels or increases in positive affect, the eudaimonic view takes a more long-term approach accentuating meaningful living (Deci & Ryan, 2008; Huta, 2020; Ryff, 1989a; Sonnentag, 2015). Thus, the eudaimonic perspective centralizes feelings of competence, meaning and fulfilled aspirations that have often been overlooked by studies focusing on CES and urban nature. In addition, eudaimonia is intrinsically tied to how individuals adapt to challenges (Ryff, 2014, p. 2, 4). It provides a framework to understand how external resources such as nature support resilience and adaptability under changing conditions or crises, such as COVID-19 (see Fagerholm et al., 2022).

To our knowledge, the research on what eudaimonic well-being means for urban dwellers in relation to their nature connection and specifically how the eudaimonic perspective can reinforce the CES framework still lacks empirical exploration. Well-being in the context of CES has been the focus of numerous studies (e.g. Bryce et al., 2016; Gladkikh et al., 2019; Huynh et al., 2022); however, these studies often define well-being in only generic terms (Fish, 2011; Kosanic & Petzold, 2020; Rendón et al., 2019, p. 486). Kosanic and Petzold (2020, p. 8) note the need for more in-depth analyses of the qualitative benefits of specific CES for individuals and social groups, while Lima and Mariano (2022, p. 10) state that human-nature relationships support eudaimonic well-being and future research should empirically test this idea.

Additionally, there is a recognized need for research on group differences in response to nature, as stated, for example, by McMahan (2018) in a comprehensive review of nature's effect on subjective well-being. One aspect is the generational change in the nature connection. In particular, the alienation of the younger generation from nature has been widely debated during the past decade in the context of Western countries (Hughes et al., 2018; Louv, 2005; Soga & Gaston, 2016). In contrast, the elderly population, for example, in the Nordic countries, largely has strong roots in the countryside. Urbanization only started in the Nordic countries after the Second World War and peaked in the 1960s and 1970s (Borges et al., 2017, p. 53). Tapping into these potential generational differences helps us to better understand the changing human-nature relationships and the best ways to support them in the urban context where there is currently an urgent need for sustainability transformations. Studying human-nature connections and well-being in the more recently urbanized Nordic context is valuable for understanding urbanization's impact and for finding future sustainable pathways. The importance is also highlighted by long-term studies in the Nordic countries that show a decline in urban greenery (ESPON, 2020).

In this study, we apply the ES framework and the acknowledged psychological concept of eudaimonic well-being within an empirical mixed-methods approach that includes a place-based quantitative and in-depth qualitative methodology to provide a more comprehensive understanding of well-being and related CES in the context of everyday urban nature. Our overall objective is to determine what role nature plays in the eudaimonic well-being of inhabitants in the city of Turku, a middle-sized city in Finland. We study this aspect from an intergenerational perspective, using a comparison of two age groups, young (ages 15–24) and elderly (age 60+). More specifically, our research objectives are as follows.

1. Characterize the engagement with outdoor environments of youth and the elderly, related CES and eudaimonic well-being benefits based on map-based survey data.
2. To examine in-depth the eudaimonic well-being benefits of nature as expressed by youth and the elderly, and their links to CES, based on creative writing data.

Hence, our research design addresses people's previous nature experiences (Hammit et al., 2004). In the discussion, we reflect on the understanding that these two data sets provide about the role of nature in the eudaimonic well-being of both age groups, and how this could be better recognized in urban planning. We also reflect on how the increased understanding of the topic contributes to the theoretical advancement of both the eudaimonic well-being and the CES field.

2 | CULTURAL ECOSYSTEM SERVICES

Cultural ecosystem services (CES) has been used to conceptualize the intangible benefits that humans derive from ecosystems. Unlike provisioning or regulating services, CES focus on the non-material contributions of nature to human well-being, offering insights into how nature shapes cultural identity, inspiration and quality of life (Chan et al., 2012; MEA, 2005). CES are expressed on various levels, from sensory experiences such as aesthetic and recreational experiences to more tacit themes such as perspective and life teachings (Gould & Lincoln, 2017).

Recent research highlights the multidimensionality of CES, encompassing psychological, social and relational aspects. Key theoretical advancements have shifted the perspective from a static list of benefits to a more dynamic understanding of human–nature relationships, emphasizing co-production processes where cultural values, practices and ecosystems interact (Fish et al., 2016). For example, Fagerholm et al. (2019) summarize that, especially in the context of engaging with outdoor environments, both activities and values are relevant, as activities serve as accessible expressions of underlying values and related CES (also Brown & Fagerholm, 2015). These developments underscore the need for interdisciplinary frameworks to capture the complex and context-dependent nature of CES, particularly as global environmental changes continue to alter human interactions with

ecosystems. One methodological approach that has addressed these needs is the Public Participation Geographic Information Systems (PPGIS) approach, also part of our methodology, which emphasizes the context-specificity and place-based character of CES (see, for example, Rall et al., 2017). The PPGIS approach often applies map-based surveys to capture place-based perceptions of respondents, contextualized using spatial analysis tools (Brown & Kyttä, 2014; Dunn, 2007). PPGIS has been widely used to map ES from socio-cultural perspectives (see review by Brown & Fagerholm, 2015).

Alongside the empirical assessment of ES, the framework has also raised criticism of exposing a utilitarian view of nature. The sheer concept of ES indicates that nature exists to benefit the people (Ellis et al., 2019; Jax et al., 2018). The concept of nature's contribution to people (NCP) was therefore developed to recognize the plurality of nature-related values by embracing concepts associated with other worldviews and knowledge systems (e.g. 'nature's gifts' in many Indigenous cultures) rather than only the utilitarian Western view (Pascual et al., 2017). For further coherence and continuing popularity of the ES concept in the academic literature (Huynh et al., 2022, p. 1), in spite of its shortcomings, the ES concept is used in this article. This also lets us reflect further on how the eudaimonic perspective can strengthen the understanding of the nonmaterial benefits of nature in the CES framework.

3 | THE EUDAIMONIC WELL-BEING BENEFITS OF NATURE

According to World Health Organization (WHO, 2021b, p. 10), well-being is a positive state experienced by individuals and societies that reflects both quality of life and the ability to contribute to society with a sense of meaning and purpose. Human well-being has been studied from multiple perspectives, from objective measurements such as high cortisol levels (Kabisch et al., 2015) and blood pressure (Twhig-Bennett & Jones, 2018) to subjective well-being where the person's own experience is centred (White et al., 2017). The former link to hedonic well-being, while the latter, eudaimonic well-being, belongs to the subjective well-being research field, going deeper into the person's experiences. In essence, the hedonic and eudaimonic views are two different views of what a 'good life' means, and thus form a different basis for research on well-being (Ryan & Deci, 2001; Ryff, 2014).

Eudaimonia is a philosophical concept that has been increasingly applied in the field of psychology (Braaten et al., 2019; McMahan & Estes, 2011; Ryff, 1989a). Then again, eudaimonic well-being is a psychological concept. One of the most widely acknowledged conceptualizations of eudaimonic well-being is the multidimensional Psychological Well-being Scales offered by Ryff (1989a, 1989b), which consists of six dimensions:

1. *Self-acceptance*, meaning having a positive attitude towards oneself, as well as one's past and the knowledge and acceptance people have of themselves, including awareness of personal limitations;

2. *Positive relationships*, that is, having satisfying, quality relationships and concentrating on the depth of the connections with significant others;
3. *Autonomy*, meaning independence and self-determination. Assessing oneself using one's own personal standards;
4. *Environmental mastery*, meaning the ability to manage one's life and create a life and environment suitable for one's needs. Handling changing life situations;
5. *Purpose in life*, having an outlook or beliefs that give meaning to life. Having goals and a sense of directedness. Feeling that there is meaning in both present and past lives;
6. *Personal growth*, meaning being open to new experiences and changing attitudes. Making use of personal talents and one's full potential.

Eudaimonic well-being has been gaining ground in the context of nature, especially during the last decade (Knippenberg et al., 2018; Lima & Mariano, 2022). Knippenberg et al. (2018) introduced the idea of nature-inclusive eudaimonia—an attitude towards life that encourages eudaimonic action in people rather than simply the pursuit of hedonic happiness, as that particular action can play a central role in inspiring conservation activity. Furthermore, the science-policy interface has also identified the concept, for instance, in the *IPBES Global Report* (IPBES, 2019, p. 813) where eudaimonia is mentioned in the discussion of the terminologies used to address well-being, happiness and the good life.

Specific aspects of eudaimonic well-being have been studied to some extent in relation to nature in different contexts. Eudaimonic perspectives on subjective well-being have been measured, for example, in the context of neighbourhood flourishing as part of a research programme that assessed the impacts of urban green infrastructure (Andersson et al., 2021). The concept of autonomy, central in the eudaimonic framework, has been frequently discussed in the context of Indigenous self-determination where the rights to land are indeed central (Russell et al., 2013, p. 489). Qualitative research in health geography has provided some clues that link nature exposure and

eudaimonic well-being as drawn from the narratives elicited during in-depth interviews (e.g. Bell et al., 2015; Völker & Kistemann, 2013) that emphasize thought processes that go beyond experiential emotional states, indeed a central feature in eudaimonic well-being (White et al., 2017). White et al. (2017) also noted that people who visited natural environments daily were almost twice as likely to report high levels of eudaimonic well-being as those who had never visited those habitats. To summarize, in recent years, eudaimonic well-being has become a prominent research topic in a nature context. However, gaining a holistic understanding of eudaimonic well-being and nature calls for a more comprehensive engagement with the full theoretical framework of eudaimonic well-being (see, for example, Knippenberg et al., 2018; Lima & Mariano, 2022), rather than focusing solely on specific aspects such as autonomy.

4 | STUDY AREA

Turku, Finland's sixth largest city (pop. 201,863 in 2023) (Statistics Finland, 2024), lies by the Baltic Sea in southwest Finland. The Aura River runs through the city, providing key recreational areas such as the National Urban Park (Turun kaupunki, n.d.). The residential areas further away from the centre feature urban forests and green spaces. The city has 18 conservation areas and 13.9 km² (5.7%) designated as Natura sites. Turku's archipelago, accessible by public transport, adds to its natural attractions. With the population projected to grow by 10% in 20 years (MDI, 2019), preserving urban nature is under increasing pressure.

5 | METHODOLOGY

5.1 | Mixed-methods design

To understand the engagement with outdoor environments and the relevance of eudaimonia for nature connection among youth

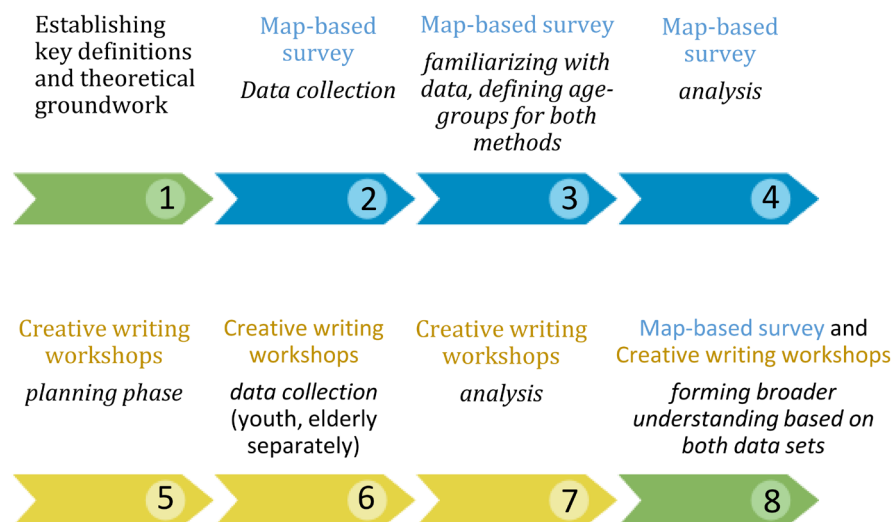


FIGURE 1 The phases of the embedded mixed-methods study. Phases in blue indicate the quantitative working phases and phases in yellow indicate the qualitative working phases. The green phases apply to both methods.

(15–24) and elderly (60+), we first applied the PPGIS approach and collected data through a map-based survey (see Figure 1). The well-being statements in the survey provide insights into the relevance of eudaimonic well-being in connection with nature in Turku. However, the map-based survey is limited in the depth of capturing nature experiences and was therefore followed by qualitative data collection to deepen understanding. In the second phase of our study, eudaimonic well-being benefits were examined using Ryff's (1989a) six eudaimonic dimensions in creative writing workshops with youth (15–24) and elderly (60+).

Our embedded mixed-methods design prioritizes qualitative creative writing data, with survey data playing a supportive role (Creswell & Plano Clark, 2011; see Eide et al., 2018, for a similar design in health geography). The mixed-methods approach prevents drawing ill-judged conclusions from small qualitative samples. As human geographers, we find the survey data valuable for understanding the spatial context: What type of culture to engage with outdoor environments underpins the eudaimonic well-being benefits, informing what kind of urban contexts these results may apply. Age groups were defined based on the survey to allow statistical comparisons in the survey data, and qualitative data were collected from the corresponding groups for integrated analysis. However, the response groups are likely different in the two data sets.

In the study, we recognize nature as a socially constructed concept open to debate (Castree, 2014; Chan et al., 2016). Here, 'nature' spans from pristine wilderness to designed urban spaces and even indoor elements such as plants or natural materials (Hartig et al., 2014).

5.2 | A map-based survey on engagement with outdoor environments

We collected data on Turku citizen engagement with outdoor environments, the personal importance of nature and its role in well-being through a map-based survey using the Maptionnaire online platform (Fagerholm et al., 2021). Our survey targeted Turku residents aged 15 and older, and participants were reached through press releases and local social and printed media. Data were collected in May to June 2020, early in the COVID-19 pandemic, an event that will be reflected in the results, although its impacts are not the focus of our study. In the survey, participants marked recreation sites on a map and indicated whether the COVID-19 pandemic had affected their use of these areas or if they continued to visit them regularly. They also identified which CES were important at each site, selecting from a typology based on prior PPGIS studies (Fagerholm et al., 2021). CES were asked in the form of concrete, everyday activities (e.g. walking a pet) and values (e.g. biodiversity). This practical framework eliminated the need for explanatory definitions or indicator questions often used in other studies (as, e.g. in Duşcu & Rîşnoveanu, 2025; Fagerholm et al., 2019; Plieninger et al., 2013). Nineteen CES options were provided (Table 1), along with an open category 'Other'.

TABLE 1 The CES the participants had the possibility of identifying in relation to each mapped recreation site in the survey.

CES options in the survey	
Activities (A)	Values (V)
Being outside	Beautiful place or scenery
Walking	Closeness to nature or in nature itself
Sports/exercising	Possibility to relax or freshen up
Observing nature (e.g. observation of plants or birdwatching)	Closeness to water
Time with family/others in nature	Enjoyable sounds or silence
Walking a pet	Biodiversity
Hiking	Pleasant smells
Playing with kids	Cultural or historical significance
Everyday connection (e.g. a way to work or for shopping)	Emotions, ideas and experiences triggered by the place (e.g. inspiration, suspense)

Note: Religious or spiritual CES were excluded from the analysis due to insufficient responses for reliable statistical testing.

Abbreviation: CES, cultural ecosystem services.

In addition, the survey included well-being statements rated from Strongly agree to Strongly disagree (5-point Likert scale), assessing nature's role in eudaimonic well-being. Respondents also answered: 'Have you noticed change in your own or other people's use of the natural environment during COVID-19? What kinds of change?' and 'Do you feel like you have spent more time outdoors this spring than usually during spring? Why?' The study included responses related to eudaimonic well-being.

This research focuses on data from 58 young and 100 elderly respondents (see Fagerholm et al., 2021 for research on all age groups). The majority of the respondents were female (75.9% of youth, 72.0% of the elderly). The highly educated participants comprised 39.7% of the youth and 40.0% of the elderly. Thus, the sample includes a disproportionate number of women and highly educated individuals. Students comprised 67.2% of the youth, while 69.0% of the elderly were retired (see Appendix S1 for demographics).

5.3 | Creative writing workshops

The idea of creative writing, specifically free writing, is to write without constraints, focusing on verbalizing thoughts on paper (see Appendix S2). While often associated with fictional narratives (Nettle, 2009), it can also include nonfiction (Root et al., 2011). Wenz and McWhirter (1990) suggested that writing allows discussing experiences indirectly, making it easier to address unspoken topics.

They also observed that this indirect approach often leads to more direct expressions.

The creative writing workshops were planned and facilitated by the main author of this article and two community artists. One is a creative writing teacher and the other is a visual artist and researcher. The workshop contents and their structure were tested with six people, after which small adjustments were made. The creative writing process consisted of 3 days of activities. Due to COVID-19 restrictions, the process was conducted remotely with small groups to ensure effective communication and genuine experience sharing. On the first day, community artists guided participants through real-time assignments in Microsoft Teams, where they created hand-drawn pictures and writings. On the second day, participants wrote texts completed as independent assignments using written and video instructions on the Webropol platform, an online survey tool accessed via a link. The third day, themed *Into Nature*, combined outdoor photography with creative writing, with participants following remote instructions on Webropol to take photos and write texts (See [Appendix S2](#) for assignment details).

We held two workshops: one with youth (April 2021) and another with the elderly (September 2021). High school creative writing students were contacted through their teacher, who arranged the schedule and informed students and parents via email. They were chosen due to their pre-existing writing group, which helped minimize self-selection bias, namely participants taking part in the workshop because they are particularly interested in the topic. The elderly were invited by reaching out to adult education groups, associations, university colleagues, email lists and word of mouth, increasing the likelihood of self-selection.

Between 9 and 13 youth and 2 and 6 elderly participated in each creative writing day (see [Table 2](#)). Most of the participants were female: in the youth group, 10 women, 2 men and 1 non-binary; in the older group, 6 women and 1 man. All youth were high school students, while among the elderly, five were retired, one employed and one unemployed (see [Appendix S1](#) for details). Although participants were recruited through various methods aiming for socio-economic and demographic diversity, the sample is skewed towards women and highly educated individuals.

Participants in both the creative writing process and the map-based survey received a privacy notice stating that data would be anonymized, not shared with third parties and stored in compliance with the EU General Data Protection Regulation and the University of Turku's policies. Participation was voluntary. Creative writing participants were additionally informed via plain-language email and face-to-face that their responses would remain anonymous and confidential. The Ethics Committee for Human Sciences at the

University of Turku did not require a full ethics application, as the study was considered low risk; all participants were at least 15 years old and gave prior informed consent.

5.4 | Data analysis

Quantitative and geospatial analyses examined statistical differences between youth and elderly in PPGIS data. Euclidean distances from each mapped recreation site to the respondent's home, the nearest Natura area, city recreational areas and the National Urban Park were calculated in ArcGIS Pro. Group differences were tested using two-tailed independent samples *t*-tests in SPSS. The associated CES data were analysed with cross-tabulation and chi-square tests. The well-being statements were analysed with cross-tabulation and the Mann–Whitney *U*-test in SPSS. Unequal group sizes can reduce the power of non-parametric tests; however, this does not compromise the validity of the results (Bürkner et al., 2017). The open-ended survey responses were analysed by deductive content analysis in MS Excel to identify the dimensions of eudaimonic well-being.

Creative writing assignments and transcribed workshop discussions were analysed using a deductive content analysis method in NVivo qualitative analysis software (Castleberry & Nolen, 2018; Nowell et al., 2017). The writings were anonymized and read for an overview. The youth and elderly data were then coded in separate groups using Ryff's (1989a) eudaimonic well-being dimensions as the main codes (*self-acceptance, positive relationships, autonomy, environmental mastery, purpose in life and personal growth*). During this process, while remaining open to identifying themes inductively to understand Ryff's categorization in the nature context, two cross-cutting categories (*eco crisis/change and temporality*) emerged from the data. When reporting results (Section 6.2), we use bolded text to mark the eudaimonic dimensions of well-being. The links to the eudaimonic dimensions were divided into positive (benefits well-being) and negative (hinders well-being). Only the negative associations are specifically noted in the results section, as they were considerably fewer and are marked with '(hindering)'. The quotes in the Section 6 were translated from Finnish into English by the main author.

Lastly, by reviewing the content of each CES and identifying the corresponding themes within the qualitative data, the eudaimonic dimensions of well-being were combined with the CES framework. As a CES classification, we used reviews by Gladkikh et al. (2019) and Gould & Lincoln (2017, p. 118); as their typologies captured diverse and tacit CES benefits.

Participant groups	Day 1: Online workshop (n)	Day 2: Independent assignments (n)	Day 3: Into nature (n)
Youth (15–24 years old)	13	11	9
Elderly (60+ years old)	4	6	2

TABLE 2 The number of youth and elderly participants in the creative writing process.

6 | RESULTS

6.1 | The context of outdoor recreation, CES and the role of nature in eudaimonic well-being

In the map-based survey, the youth (15–24 years old, $n=58$) and the elderly (60+ years old, $n=100$) mapped a similar number of outdoor recreation sites (mean 2.6 youth vs. 2.7 elderly). Youth outdoor spaces concentrated more in the city centre area and were closer to the respondent's home compared to the elderly whose sites were more scattered throughout Turku (see [Figure 2](#)). Distance analysis revealed that the outdoor recreation sites of the elderly were statistically significantly closer to Natura conservation areas compared to the young [mean distance for the elderly, 2355.7 m; for the young, 2773.4 m, $t(413.7) = -2.456$, $p = 0.014^*$] (see [Figure 2](#); [Appendix S3](#)). Then again, the youth found their outdoor recreation places statistically significantly closer to the recreational areas of the city [the mean distance for the young was 259.6 m; for the elderly, 554.5 m; $t(413.7) = -2.414$, $p = 0.016^*$] and to the National Urban Park [mean distance for the young 955.2 m; for the elderly 1850.8 m; $t(413.8) = -3.984$, $p = 0.000^{***}$] compared to the elderly.

The CES most frequently identified for the mapped outdoor recreation sites for both age groups were: *Walking, Being Outside and a Beautiful Place or Scenery* (all identified in 31.5%–59.3%, [Figure 3](#)). More often than the elderly, the youth connected their outdoor recreation with sports/*Exercising* [43.3% vs. 15.8%, $\chi^2(1) = 83.737$,

$p = 0.000$], *Everyday connection* [12.0% vs. 2.6%, $\chi^2(1) = 15.500$, $p = 0.000$] and *Time with family/others in nature* [20.7% vs. 10.3%, $\chi^2(1) = 8.741$, $p = 0.003$]. On the contrary, the elderly identified more of the following CES: *Observing nature* [30.4% vs. 19.3%, $\chi^2(1) = 6.094$, $p = 0.014$], *Cultural or historical significance* [21.6% vs. 8.7%, $\chi^2(1) = 11.486$, $p = 0.001$], *Biodiversity* [20.5% vs. 12.0%, $\chi^2(1) = 4.861$, $p = 0.027$] compared to youth. For more details on the identified CES data, see [Appendix S4](#).

Both age groups strongly recognized the eudaimonic well-being benefits of nature, and there were no statistically significant differences between the groups ([Figure 4](#)). In fact, between 58.7% and 31.0% of the youth and 60.0% and 31.0% of the elderly strongly agreed with each statement. The most strongly agreed statement by both groups was 'Nature increases meaning in my life' (purpose in life). (For detailed percentages of each statement, see [Appendix S5](#)).

The open survey questions highlighted three of the dimensions of eudaimonic well-being. The elderly participants described nature as contributing to their **purpose in life**, especially during the COVID-19 pandemic, by giving meaning and strength to endure the difficult situation. Furthermore, the role of nature supporting **environmental mastery** during the pandemic was evident, as nature remained 'open' while many other venues were restricted by the COVID-19 regulations. The youth especially reported that the less structured school or workday allowed more time outdoors. Trips to nature during the workday eased the structuring of the day and (emotionally) helped manage the new situation. The urban nature allowed people to choose safe and relaxing environments, with

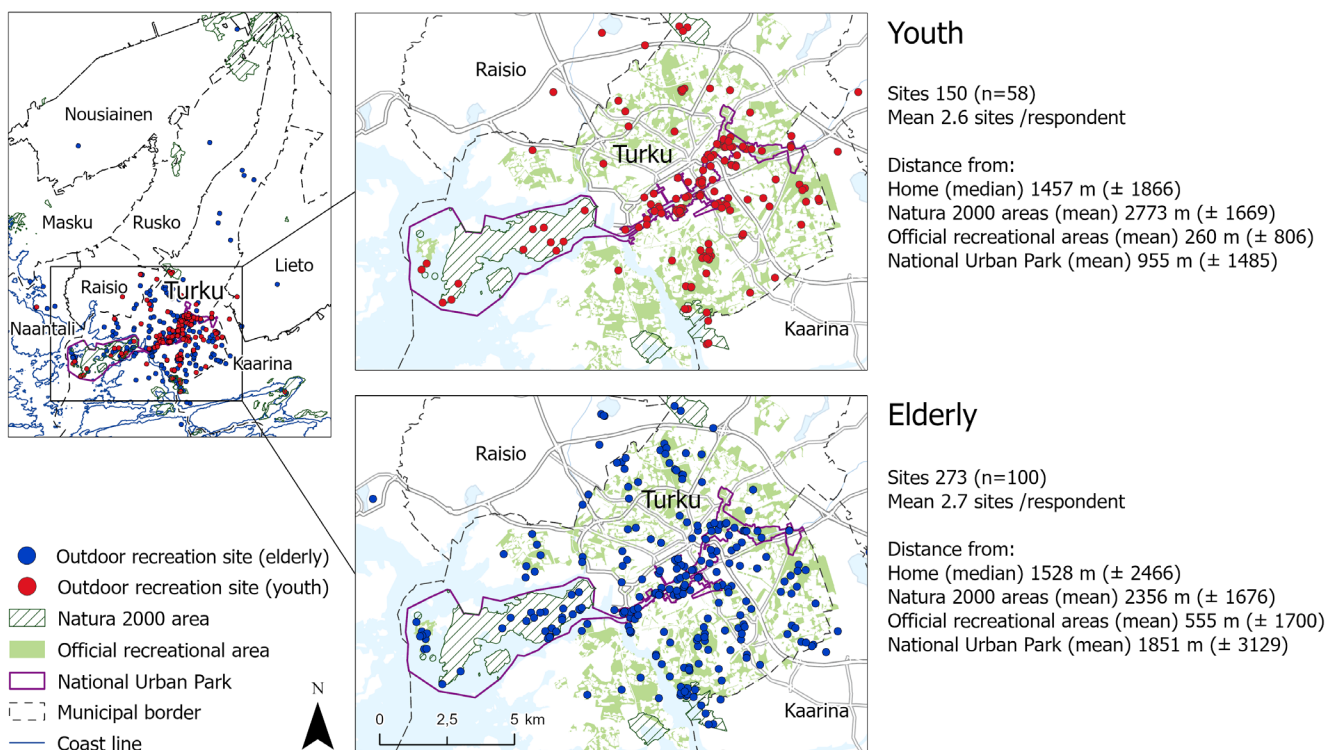


FIGURE 2 Mapped outdoor recreation sites for the youth and elderly respondents in Turku. Background map © National Land Survey, city of Turku and OpenStreetMap.

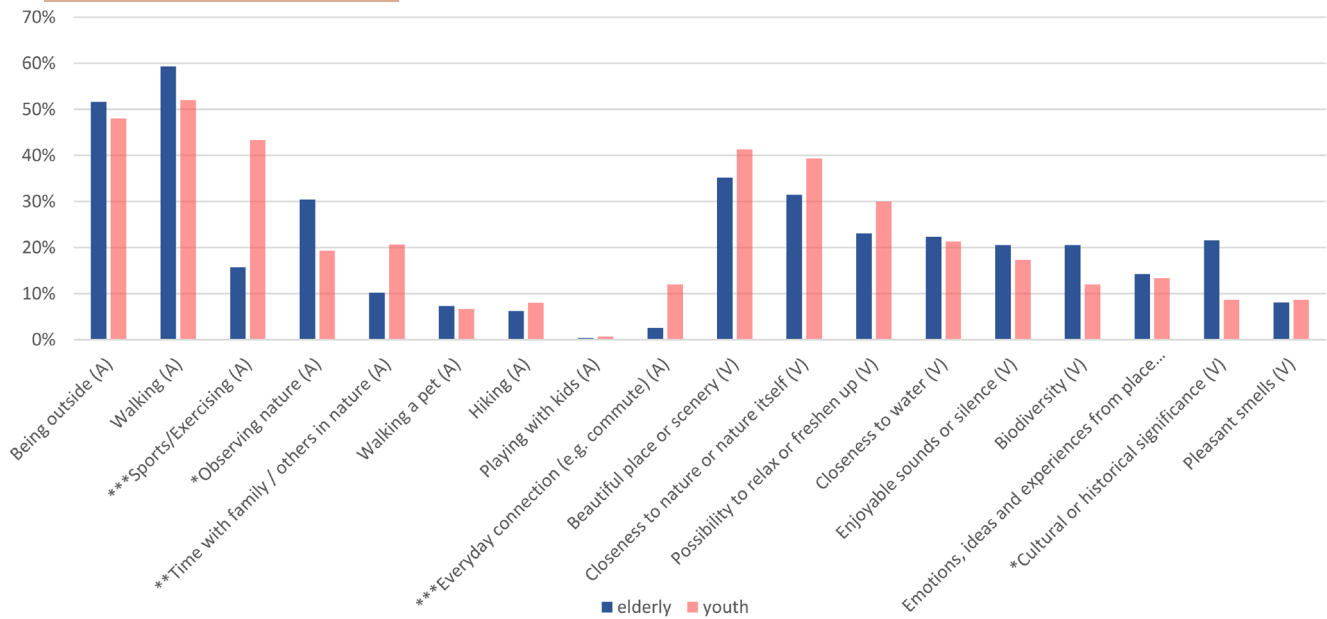


FIGURE 3 CES identified by the elderly (blue) and youth (red) at the mapped outdoor recreation sites. The items on the left are activities (A); the items on the right are values (V). The asterisks denote statistically significant differences in the chi-square test (*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$). (The religious or spiritual experience of CES was left out, as too few answers were received for rigorous statistical tests.) CES, cultural ecosystem services.

The wellbeing statements, both repondent groups

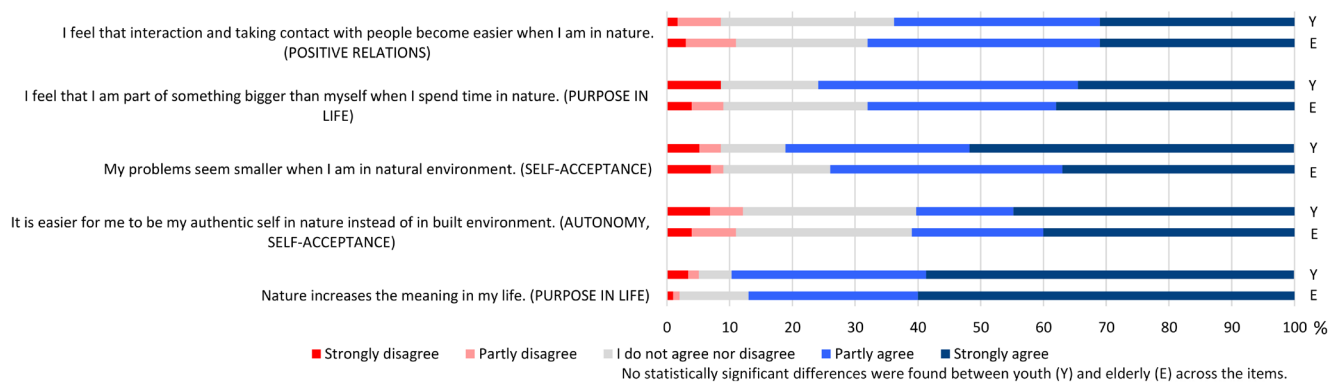


FIGURE 4 Responses in percentages (%) to survey statements that addressed the eudaimonic well-being benefits of nature. E, elderly; Y, youth. No statistically significant differences were observed between the age groups.

some discovering ‘new’ recreational places during the pandemic. For many, nature allowed social gatherings despite COVID-19 restrictions (**positive relationships**). The elderly noted that people greeted and smiled at each other more in nature, especially early in the pandemic, although some also reported avoiding others (**positive relationships/hindering**).

6.2 | Nature supports eudaimonic well-being by enabling authentic connection to self and others

Two central arguments were drawn from the qualitative data according to which the results are structured. Firstly, the informants

describe how nature supports eudaimonic well-being by enabling a more authentic connection to self and others, discussed in the following. Secondly, the themes of temporality and change in nature emerged as they interact with and reinforce the eudaimonic aspects in nature (Section 6.3). The results are summarized in Table 3.

For both age groups, it is easier to get in touch with the authentic self in a non-judging nature environment, without social pressure; thereby clarifying personal opinions and values to better understand priorities. This experience provides space for **autonomy** and **personal growth** and connects with **environmental mastery**. Through deep contemplation, individuals can better shape a life aligned with their needs.

TABLE 3 Well-being related themes in the nature context identified in the respondents' writings and classified into Ryff's (1989a) eudaimonic well-being dimensions, and with identified links to CES.

Ryff's eudaimonic well-being dimension						
	Self-acceptance	Positive relationships	Autonomy	Environmental mastery	Purpose in life	Personal growth
Both age-groups	Nature does not judge (+)	Connecting with plants and animals (+)	Easier to get in touch with the authentic self, clarifying one's own opinions/values (+)	Relaxing in nature makes easier to cope with demands of everyday life (+) Easier to get in touch with the authentic self, clarifying own opinions/values (+) Changing habits towards more ecological (+)	Everything is <i>right</i> in nature (+) Space for more meaningful thoughts and values (+) Temporal perspective/continuity (+) Worry about the future (-)	Consciousness of eco crisis—requires changing habits to the more ecological (+) Easier to get in touch with the authentic self in a non-judging environment, clarifying own opinions/values (+)
Youth	Safe place to feel freely (+) People as ignorant and harmful to nature, evoking shame (-)	Easy to spend time with friends, easy to just be (quiet) when in company (+) In nature loneliness does not feel bad (+) Desire to be alone (-) (+)	Own space, mentally and physically (+) Place to assess one's life direction (+)	'I cannot make a difference for the benefit of nature. My voice does not matter' (-)	Nature as a buffer against the fast-paced world (+) What is important? (+) Possibility of losing important places (-)	Nature offers a place to 'play one more time'—escape from adulthood, memories of childhood (+)
Elderly	Variety in nature as soothing (+) Affirmative feeling of being part of a bigger whole (+) I am enough/important, self-esteem (+)	Being present with each other without distraction (+) Nature brings generations together (+)	Place to perceive what is one's own opinion on things (+)	Feeling important in nature (+) Nature as a place of agency/seasonal activities (+) Nothing can be done anymore (-)	Spirituality in nature (+)	Possible to spend more time in nature—deepening connection with nature (+) Childhood as a stepping stone to deep nature connection (+)
Linked CES	Perspective in life, identity, life teachings, sense of place, knowledge systems	Social relations, cultural heritage, knowledge systems, relaxation, identity	Identity, perspective on life, life's teachings	Relaxation, knowledge systems, identity, bequest	Perspective in life, identity, spirituality, life teachings	Education, identity, knowledge systems

Note: Aspects that contribute positively to well-being are indicated with a (+) symbol and hindering aspects with a (-) symbol. Abbreviation: CES, cultural ecosystem services.

A [natural] place often prompts me to reflect on whether I truly want to continue in the same direction with my decisions or take a different path.

young, woman

The quote further exemplifies that **autonomy** is connected to the CES identity, perspective in life and life's teachings. **Environmental mastery** links to identity by identifying what truly matters and enabling life changes based on these insights. The most common way nature contributes to **environmental mastery** is how relaxation after daily demands restores energy to manage school, work or other activities.

The feeling that everything is right in nature arose strongly from the data. This contributed to the perception of **purpose in life of both age groups**, as in nature they felt whole without having to do anything (**self-acceptance**):

In nature, everything is fine. Everything is the way it is supposed to be. That includes me.

young, woman

An elderly woman wrote that in a time of crisis, that is, work-related fatigue, she found help by sitting on an ancient rock and looking at the trees. This made her feel that *she* was important, linking to the CES identity and perspective in life. Nature can also be a place for self-reflection by offering something one can identify with. One young person identified with a glacial erratic, she also felt that she is in the wrong place, as the rock seems to be. Two elderly participants described the variety in nature as soothing (**self-acceptance**):

Each tree and plant are different--but they grow on the same ground. I guess that is how it is also in the human world.

elderly, woman

The CES inspiration was closely linked with novel thoughts and ideas, such as described above. The two previous quotes clearly show the relationship between **self-acceptance** and the CES perspective in life and identity. Drawing life lessons from nature can be used to make sense of the human world, which is also linked to the CES life teaching.

The youth generally stated being happiest alone in nature, and often other people were deemed a nuisance (**positive relationships/hindering**). The freedom to connect with oneself and feel and express all feelings, as well as the ease of accepting oneself in nature, was prominent in the youth writings (**autonomy, self-acceptance**). This links to the CES identity.

In nature, one can unload emotions as they want. The trees will not complain about your tone of voice, the noise you make, or your attitude.

young, woman

Spirituality, also a well-established CES, was highlighted more in the elderly's than in the youths' writings (**purpose in life**). Some elderly participants wrote about their deepening nature connection, as they now had more time to be involved in nature (**personal growth**).

In addition to a more authentic connection to oneself, connecting with others became easier. Some youth wrote that they liked to go to nature with a friend, sharing feelings, as it is especially easy to spend time with them there, even when just being quiet. For the elderly, nature is a place that fosters equality, as a sauna, as an elderly woman noted, facilitating social interaction. Two elderly participants also observed that people are eager to help each other in nature.

Positive relationships, often reflected in the elderly's writings and workshop discussions, emphasized interconnection and community, particularly intergenerational connections. The elderly wrote about the lessons they had been taught by their parents about nature and that now they enjoy spending meaningful time in nature with their grandchildren, undisturbed by electric devices.

There are no disturbing elements in the forest like Netflix, PlayStation, skate or scooter boards. There we hear and listen to each other.

elderly, woman

In the context of nature, the eudaimonic concept of **positive relationships** expands to more-than-human nature like old trees, big rocks and animals mentioned in both age groups writings. The above examples of **positive relationships** in nature link to CES social relations, cultural heritage, knowledge systems and relaxation.

6.3 | Time and change in nature interact with and reinforce the eudaimonic aspects

For both age groups, temporal themes in nature were present with links to all eudaimonic dimensions. The youth described that nature served as a stable anchor amidst a changing self and world, providing a sense of continuity and permanence (**self-acceptance, purpose in life**). Nature acted as a place for 'me time', also potentially bringing about a longer time perspective on life decisions; mentioned earlier in relation to **autonomy**.

For youth, nature seems to offer an escape from spatial and temporal constraints to some extent (**purpose in life**). They stated that natural elements, such as the sea, have seen other worlds, bringing a sense of continuity. The elderly also reported feelings of continuity. In both age groups, the sense of continuity was inspired by connections to previous generations (**positive relationships, purpose in life**).

The bedrock and the forest surrounding it are a stable landmark, although the environment is changing due to construction. The rock feels safe.

—elderly, woman

In our cottage, I feel the presence of my late grandfather. It used to be his cottage. Now it is our turn to take care of it.

young, man

Again, this confirmed that **self-acceptance** links to the CES perspective in life and identity.

The data revealed a connection to childhood in both age groups, with childhood viewed as a life phase in which many meaningful nature memories were formed. For the youth, nature sometimes served as a place where they could be children once more:

This place [*field with forest beside*] raises childhood memories and calls me to play one more time. The edge of the forest acts as a protective barrier against everything else. When I step into the forest, the everyday worries are left on the field.

young, man

Here, **self-acceptance** connects with the CES identity and sense of place.

The reassuring feeling of continuity and the environmental changes contrasted each other. An elderly participant described this bidirectionality:

Nature experience supports me, but also makes me very sad. I have read a lot, so I know how poorly our planet is doing. Even thinking about it makes me tearful [stops because emotion is too much].

elderly, woman

Beyond an intellectual, knowledge-based perspective on a changing world, the elderly also possess sensed knowledge of how nature has changed during their lifetimes, pointing to CES knowledge systems. The youth wrote about the ever-present sad possibility of losing important nature places (**purpose in life/hindering**). Worry about the future and viewing people as a threat to nature were strongly reflected in the writings of both age groups. However, the tone of these quotes differed. The elderly seemed to have some mental distancing between those who destroy the environment, and themselves (**self-acceptance**):

I cannot understand ignorant people who destroy the beautiful environment. Again, there would be a need for voluntary trash picking. Those litterers surely will not participate. In the future families and seniors will not want to use that beach.

elderly, man

However, youth did not seem to make this mental separation. This view can be seen in the way they spoke about 'us' when describing an eco-crisis, for example:

It doesn't matter, we say and turn our backs, not until our empty plastic bottles end up on our plates.

young, other

The lack of mental distancing may be one reason, the youth reported feelings of shame when nature is threatened, affecting negatively to **self-acceptance** (/hindering). Youths' writings showed that **self-acceptance** connects to the CES identity and perspective in life.

Changing societal views of nature requires changing one's attitudes and ways (**personal growth**). An elderly person wrote that 'nature is like a big learning book' and that through a Scouts' hobby, he has learned to appreciate nature and act to benefit it. Both age groups wrote that a deep connection to nature is largely due to their childhood experiences (**personal growth**) and reported having adjusted their daily habits towards the more ecological (**environmental mastery**). This action is connected to the CES of formal and informal education provided by nature. Both age groups expressed concerns about not doing enough for the environment and not being able to do enough, and many youths felt that their voices did not matter (**environmental mastery/hindering**). The eco-crisis thus negatively affects the CES bequest.

In addition to nature changing and people having to change because of it, people also actively make changes connected with nature. Nature is a place for action, especially as expressed by the elderly. This contributes to their feeling of **environmental mastery**. By repairing the Scout house or building the house as natural as possible, they act in connection with nature. A youth respondent connected with the feelings of agency by being part of a student group that takes care of the greenhouse and aquarium at their high school. An elderly woman said in the workshop discussion that spring brings with it 'demands' to start doing things in the garden. Also, one quote indicated that nature 'expects' action from people:

Maybe the wagtail wishes the human would remember to clean the birdhouse before the start of a new summer.

elderly, man

Through acting in collaboration with nature, **environmental mastery** is linked to the CES knowledge systems. For links between eudaimonic dimensions and CES, see [Table 3](#).

7 | DISCUSSION

7.1 | Bringing Ryff's eudaimonic well-being dimensions into the context of nature and contributing to the CES framework

In this research, we brought Ryff's (1989a) categorization of eudaimonic well-being into the context of urban nature. Our exploration of inhabitants of a different age in the city of Turku in Finland broadened the understanding of the deeper eudaimonic well-being

benefits of nature. This study also broadens the understanding of the intimately personal, but at the same time, culturally and socially shared aspects of CES. In general, the six eudaimonic dimensions were prominently identifiable in the descriptions of the participants of their nature connection. Self-acceptance and positive relations were the most frequently identified eudaimonic dimensions, also showing the most frequent links to various CES. The embedded mixed-methods design (Creswell & Plano Clark, 2011) with PPGIS data providing spatial context highlights that the CES mentioned by the survey participants show a varied use and what people value in the outdoor areas, from nature observation to social activities and relaxing in nature, painting a picture of the multifaceted role of nature and outdoor areas in the daily life of the Turku inhabitant.

This paper brings a new understanding of how deeply embedded, and thus transformative, CES are linked to human well-being. Eudaimonia is especially linked to CES *identity, knowledge systems, life teachings and perspective in life* (Figure 5). Kosanic and Petzold (2020) call for a ‘better understanding of how certain types of CES affect specific perceptions of physical and mental health, going beyond generic and aggregated approaches to human well-being’. This cross-disciplinary integration of using the framework of eudaimonic

well-being helps to gain a multifaceted view of CES and deepen the perception of pathways between these non-material benefits of nature and human well-being, advancing the theoretical and methodological framework of the CES. Our rich qualitative data offer insight into people's experiences, grounding the theorization in outdoor recreation and nature connection.

All eudaimonic dimensions are linked with the CES identity, which highlights that eudaimonia is in fact in contact with the innermost processes and values of a person. Vice versa, the CES identity supports well-being through multiple meaningful pathways (see Figure 5 for visualization of the eudaimonic dimensions by Ryff, 1989a connected to specific CES). These results and the links between the eudaimonic dimensions and CES are discussed in more detail in Section 7.2.

7.2 | Eudaimonia brings about a life guided by personal values that could be supported in urban planning

Our study highlights that nature has the potential to support eudaimonic well-being by allowing people to connect with deeper

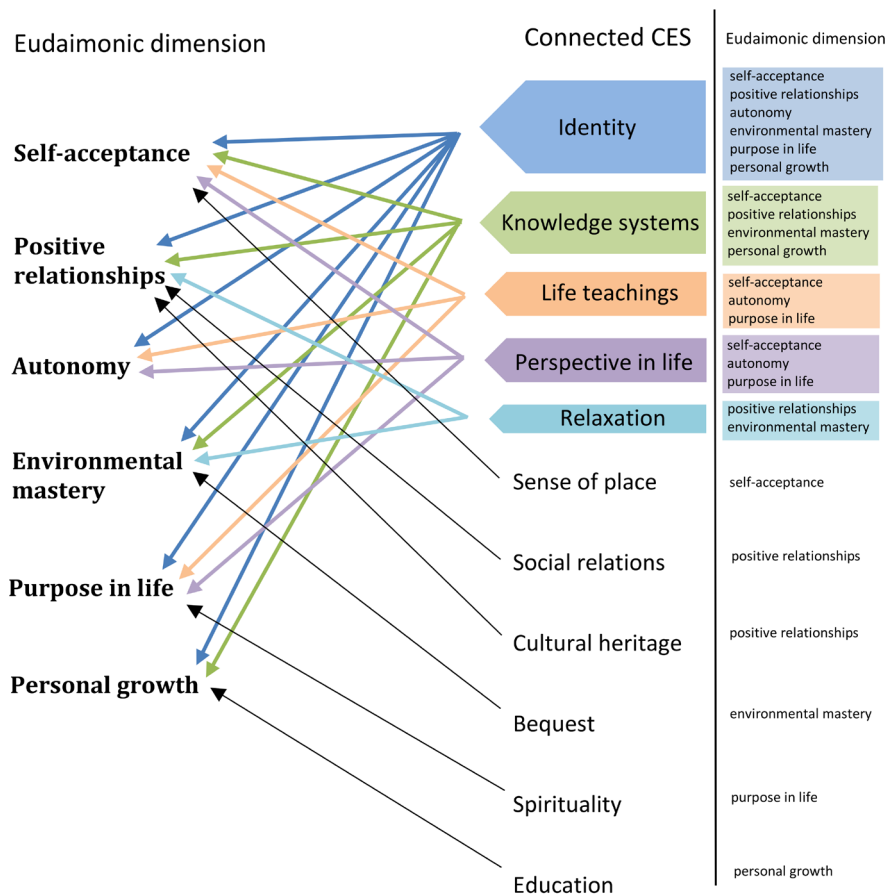


FIGURE 5 Connections between Ryff's (1989a) six eudaimonic well-being dimensions and CES. The connections shown reflect only those grounded in our data; other plausible links may exist. For clarity and accessibility, the connections can be viewed in two formats: Via arrows connecting on the left side, or in a list form on the right. CES linked to multiple eudaimonic dimensions are colour-coded to enhance readability and facilitate the visualization of connections. CES, cultural ecosystem services.

values and the most authentic selves (also noted by Yang et al., 2023). Authenticity is widely recognized as a central component of eudaimonic well-being (see for example Huta & Waterman, 2014). Interestingly, although the framework of eudaimonic well-being used in this study (Ryff, 1989a) did not explicitly include authenticity as a distinct construct, it emerged strongly in the findings. This suggests that authenticity may arise indirectly through related aspects such as autonomy, which was emphasized in the results. This connection underscores the interrelatedness of components within eudaimonic well-being.

In addition, our data provide an understanding of the pathways through which the authentic connection to self and others is gained. One of the most influential pathways through which nature supports this link is through the support of autonomy. Nature acts as a place to tune into one's own opinions and values—important things in life come into the foreground, also adding the feeling of purpose in life. For youth, the own space is also found physically in nature. The elderly reflect more on the mental space and highlight the spiritual experiences in nature.

Furthermore, self-acceptance gained in nature by feeling that nature does not judge aids authenticity. For youth especially, nature is a place to feel freely and express those feelings which are essential, as the teenage years are often a time of emotional turbulence (WHO, 2021a) and teenagers are particularly sensitive to social evaluation (Somerville, 2013). Our data support these notions and that nature can be a great support in regulating the emotions of young people (also Birch et al., 2020; Korpela et al., 2001, 2002; Puhakka & Hakoköngäs, 2023). The elderly reflect more on the notion that nature is the place they feel they are enough and important, which can be related to decreased formal engagements in life, like employment. The role of nature walks, gardening and other routines built around nature have been shown to help retirees avoid feelings of drifting or dullness, fostering well-being (Finlay et al., 2015). Our study suggests that increased self-acceptance is one pathway through which this well-being boost occurs.

Interestingly, the authenticity gained in nature contributes to the feeling of environmental mastery and personal growth in both age groups, providing good ground to steer one's life in a direction that aligns with their deeper values. Our findings align with previous research by Mathers and Brymer (2022), who studied how people in the United States (aged 30–68) were able to make life changes encouraged by nature experiences, also expanding these results to youth and to the Nordic context.

The authentic connection with other people in nature was apparent in the writings of the two age groups, which is not surprising, since nature's role in social relationships has been part of the CES discussion since MEA (2005). Our data move beyond anthropocentric views, expanding Ryff's (1989a) positive relationships dimension to include non-human nature. Through such communion, people experience an important feeling of connectedness to nature (also Birch et al., 2020 in the urban UK context). Moving towards kinship with all that exists (IPBES, 2022, p. 8) and a shift to more-than-human spatial planning policies and practices to ensure sustainable urban

development (Fieuw et al., 2022) also advances eudaimonic well-being. This could be done, for example, by shifting urban narratives towards more-than-human well-being, which people also seem to be concerned about according to our data, and designing green corridors that support biodiversity and species movement. Including more-than-human aspects in urban planning comes down to the question: Who belongs in the city?

When we compared the CES identified by the age groups in the PPGIS survey, there were significant differences: youth had more activity-oriented CES attached to their outdoor recreation places. On the contrary, the elderly had identified more CES related to the environment and its qualities. In the context of eudaimonia in nature, the way of outdoor recreation of the elderly could be seen as purposeful seeking of nature and places due to their CES, and the youth acquire nature experiences and the associated CES incidentally as a 'by-product' of other activities (Beery et al., 2017 about incidental nature experience). Furthermore, for the youth, both recreation places near the city centre as well as places of solitude in nature are meaningful, based on the combined understanding of both data sets.

In both data sets, we noticed that the eudaimonic well-being benefits of nature stem both from tangible sensory experiences and from thought processes that go beyond immediate emotional reactions (as noted also by White et al., 2017; cf. Fish et al., 2016, p.213). Examples of cognitive and reflective processes leading to well-being in our data include both age groups identifying with elements in nature as well as finding permanence and continuity despite the eco-crisis, linking to self-acceptance and purpose in life. As Fagerholm et al. (2022) mentioned, the role of nature is emphasized during crises such as the COVID-19 pandemic. Our open questions from the PPGIS survey bring a eudaimonic perspective on this, adding that in the context of the COVID-19 pandemic, nature provided meaningfulness in suddenly changed lives. The survey also emphasizes the connection between nature and purpose in life, through it being the most commonly and strongly agreed upon statement. These findings are important in bringing the eudaimonic well-being framework into the context of nature as meaningful life and temporality in the form of long-term well-being are central in eudaimonic well-being (Huta & Waterman, 2014; Ryan & Deci, 2001). The participants also write about forests without people offering permanence when oneself and the world are changing. These experiences support self-acceptance by fostering a perception of the self as part of a larger whole and as inherently good. These notions are supported by the survey: the two statements regarding self-acceptance were either partially or strongly agreed with by 60%–80% of both age groups. However, this may be negatively affected by prevalent feelings of unpredictable future and environmental 'doom' (Pihkala, 2020). The more tangible sensory effect can be seen in the way that CES relaxation links long-term eudaimonic well-being to the more immediate hedonic well-being: we argue that relaxing and being present in the moment as well as tuning into one's own feelings and the surrounding nature often precede the eudaimonic well-being benefits of nature. As many of the studies on hedonic well-being on nature show, being

in nature also inherently supports this relaxed state (e.g. in Kabisch et al., 2015; Twhig-Bennett & Jones, 2018).

Both age groups reported having changed their daily habits towards more ecological practices. However, they also wrote about uncertainty about the future, anxiety and feelings of not doing enough to benefit nature. This connects to the eudaimonic dimension of environmental mastery, where ecological adjustments help manage life changes but also highlight individual limits in addressing the eco-crisis. For the youth, perceiving people as a threat to nature is negatively connected to self-acceptance and linked to feelings of shame. The elderly do not seem to connect the eco-crisis so directly to their own actions. The youth have lived solely in an era where the various threats that people pose to nature are prevalent topics in the media. They have also received formal education that emphasizes and supports environmental awareness and its connection to nature (Beery & Lekies, 2021). Handling eco-anxiety is one key factor in a more sustainable future (see also Cunsolo et al., 2020; Pihkala, 2020). It has the potential to turn into pro-environmental action, but only if it is not on a paralysing level. Pihkala (2018, p. 546) pointed out that eco-anxiety can result from seeing concrete changes in the environment, but also indirectly from having a hopeless outlook about the future because of climate change. In our qualitative data, the participants wrote of both ways of experiencing eco-anxiety. From an urban planning point of view, this also means being conscious of what the environment signals to the inhabitants. In the planned environment, people see society's values reflected (Mathotaarachchi & Thilakarathna, 2021). This can create hope for the future or trigger despair. Developments in urban nature can influence people's eudaimonic well-being, and this connection deserves attention in decision-making processes.

In our qualitative data, old trees are seen as symbols of temporal continuity. In green area management, the question might be how to choose between perceived safety due to hollow trunks and the social, cultural and ecological significance of the tree (Maurer et al., 2021; Suchocka et al., 2022). Collaborating with local residents to identify culturally and eudaimonically significant natural elements could be a key to considering their deep CES. We argue that making beneficial decisions for nature are also good for long-term human well-being, as eudaimonia has a gaze that is inherently focused on the future. Reflecting CES to the eudaimonic framework gives a more long-term view of what CES can mean. Although this is a very anthropocentric view, we see that the eco-crisis has the potential to act as a catalyst for personal growth in humans. To achieve the kind of systemic change called for by many international organizations (IPBES, 2019, 2022), people need to re-evaluate what is needed to live a good life.

7.3 | Methodological reflections and suggestions for future research

Creative methods are beneficial as a means of recognizing previously unvoiced, sensitive or private topics (Tumanyan & Huuki, 2020). We achieved this by using a creative method and broadening the time

span of data collection. We consider the workshop format consisting of three separate days to be a successful way to guide the participants into a mood where they felt freer and would go beyond the customary discourses on nature compared to the traditional social science methods like interviews. Our impression based on this research is that studies on the eudaimonic benefits of nature can benefit from paying attention to the tacit nature of such experiences.

We recognize that the theme of our study may have attracted more pro-environmentally inclined participants in both methods. In the workshops, for example, both respondent groups said they had adjusted their daily habits to be ecological. To understand the eudaimonic benefits of nature among the population, a study that includes various attitudes towards nature would be beneficial. Additionally, more research is needed on how eudaimonia is experienced in the context of nature between different social groups—especially marginalized groups—and targeting larger qualitative data samples to better understand these benefits. We also did not explicitly ask participants to specify the type of nature in their texts. In some cases, this emerged indirectly rather than systematically. This limits our research and highlights a key area for future studies, particularly in advancing urban planning. An interesting avenue for future research is also the role of non-human aspects in eudaimonic well-being.

7.4 | Conclusions

This study aimed to explore the role of nature in the eudaimonic well-being of Turku residents and the related CES. The mixed-method data provided an understanding that nature has a central role in eudaimonic well-being and that these benefits link to various deeply embedded and thus transformative CES. These benefits are linked to the multifaceted use and valuation of nature, from urban areas to more remote conservation areas.

The analysis of how specific CES are linked to eudaimonic dimensions provides nuanced insights into the mechanisms between CES and human well-being, advancing our understanding beyond generalized approaches. Our research suggests that centralizing the deeply embedded CES, like identity and knowledge systems, in research instead of leaving them last on the list (like stated also by Fish et al., 2016, p. 215) or, in some CES typologies, failing to even include them in the list (Gould & Lincoln, 2017, p. 118), can have a big impact on how planning and policy ultimately regard eudaimonic well-being or not.

Our findings suggest that urban nature supports eudaimonic well-being in ways that are not yet systematically addressed in planning processes. Integrating these benefits more explicitly into urban planning can help align development with broader human well-being goals. Furthermore, our data highlight the importance of relationships also with non-human nature. This leads us to argue that learning more about the eudaimonic well-being benefits of nature also has the potential to advance multi-species sustainability transformations in our societies. Further recognition of nature's role in eudaimonic well-being can help support this deeper well-being, sustaining a good life in the long term.

AUTHOR CONTRIBUTIONS

Joha Järekarri and Nora Fagerholm conceived the ideas and designed the methodology; Joha Järekarri analysed the qualitative data; Nora Fagerholm, Salla Eilola and Joha Järekarri collected the quantitative data; all authors analysed the quantitative data; Joha Järekarri led the writing of the manuscript. All authors contributed critically to the drafts and gave final approval for publication.

ACKNOWLEDGEMENTS

We thank the community artists, Niina Aho (BCA) and Satu Suvanto (MSocSci), for their invaluable work on the creative writing process. We also wish to thank all the participants in the creative writing process/workshops and all survey respondents. The contribution of J. Järekarri was funded through the Maj and Tor Nessling Foundation (Grant 202100174) and the Jenny and Antti Wihuri Foundation (Grant 00200127). The Research Council of Finland funded the contribution of N. Fagerholm (grants 321555 and 358368) and S. Eilola (grant 321555). N. Aho and S. Suvanto received financial support from the City of Turku and the TOP Foundation (TOP-Säätiö). Open access publishing facilitated by Turun yliopisto, as part of the Wiley - FinELib agreement.

CONFLICT OF INTEREST STATEMENT

The authors declare that there were no conflicts of interest in this study.

DATA AVAILABILITY STATEMENT

The survey data are available at the University of Turku Geospatial Data Service at <https://geonode.utu.fi/layers/geonode:Places>. Due to the sensitive nature of gathering and reviewing creative writing data, this particular set of data remains with the first author and is stored according to the GDPR statement.

ORCID

Joha Järekarri  <https://orcid.org/0000-0001-9262-0239>

Nora Fagerholm  <https://orcid.org/0000-0001-5020-0746>

Salla Eilola  <https://orcid.org/0000-0002-6169-7310>

Vesa Arki  <https://orcid.org/0000-0002-9822-4568>

REFERENCES

- Andersson, J., Benton, J. S., Macintyre, V. G., Rothwell, J., & French, D. P. (2021). Neighbourhood flourishing (NOURISH): A new short and inclusive interpersonal measure of subjective well-being. *Well-Being, Space and Society*, 2, 100030. <https://doi.org/10.1016/j.wss.2021.100030>
- Beery, T. H., & Lekies, K. S. (2021). Nature's services and contributions: The relational value of childhood nature experience and the importance of reciprocity. *Frontiers in Ecology and Evolution*, 9, 944. <https://doi.org/10.3389/fevo.2021.636944>
- Beery, T. H., Raymond, C. M., Kyttä, M., Olafsson, A. S., Plieninger, T., Sandberg, M., Stenseke, M., Tengö, M., & Jönsson, K. I. (2017). Fostering incidental experiences of nature through green infrastructure planning. *Ambio*, 46(7), 717-730. <https://doi.org/10.1007/s13280-017-0920-z>
- Bell, S. L., Phoenix, C., Lovell, R., & Wheeler, B. W. (2015). Seeking everyday well-being: The coast as a therapeutic landscape. *Social Science and Medicine*, 142, 56-67. <https://doi.org/10.1016/j.socscimed.2015.08.011>
- Birch, J., Rishbeth, C., & Payne, S. R. (2020). Nature doesn't judge you – How urban nature supports young people's mental health and well-being in a diverse UK city. *Health and Place*, 62, 102296. <https://doi.org/10.1016/j.healthplace.2020.102296>
- Borges, L. A., Nilsson, K., Tunström, M., Dis, A. T., Perjo, L., Berlina, A., Costa, S. O., Fredricsson, C., Grunfelder, J., Johnsen, I., Kristensen, I., Randall, L., Smas, L., & Weber, R. (2017). *White paper on Nordic sustainable cities*. Nordregio. <https://nordregio.org/publications/white-paper-on-nordic-sustainable-cities/>
- Braaten, A., Huta, V., Tyrany, L., & Thompson, A. (2019). Hedonic and eudaimonic motives toward university studies: How they relate to each other and to well-being derived from school. *Journal of Positive Psychology and Wellbeing*, 3(2), 179-196.
- Brown, G., & Fagerholm, N. (2015). Empirical PPGIS/PGIS mapping of ecosystem services: A review and evaluation. *Ecosystem Services*, 13, 119-133. <https://doi.org/10.1016/j.ecoser.2014.10.007>
- Brown, G., & Kyttä, M. (2014). Key issues and research priorities for public participation GIS (PPGIS): A synthesis based on empirical research. *Applied Geography*, 46, 122-136. <https://doi.org/10.1016/j.apgeog.2013.11.004>
- Bryce, R., Irvine, K. N., Church, A., Fish, R., Ranger, S., & Kenter, J. O. (2016). Subjective well-being indicators for large-scale assessment of cultural ecosystem services. *Ecosystem Services*, 21, 258-269. <https://doi.org/10.1016/j.ecoser.2016.07.015>
- Bürkner, P. C., Doebler, P., & Holling, H. (2017). Optimal design of the Wilcoxon-Mann-Whitney-test. *Biometrical Journal*, 59(1), 25-40. <https://doi.org/10.1002/bimj.201600022>
- Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds? *Currents in Pharmacy Teaching & Learning*, 10(6), 807-815. <https://doi.org/10.1016/j.cptl.2018.03.019>
- Castree, N. (2014). *Making sense of nature – Representation, politics and democracy*. Routledge.
- Chan, K. M. A., Balvanera, P., Benessaiah, K., Chapman, M., Díaz, S., Gómez-Baggethun, E., Gould, R., Hannahs, N., Jax, K., Klain, S., Luck, G. W., Martín-López, B., Muraca, B., Norton, B., Ott, K., Pascual, U., Satterfield, T., Tadaki, M., Taggart, J., & Turner, N. (2016). Why protect nature? Rethinking values and the environment. *Proceedings of the National Academy of Sciences of the United States of America*, 113(6), 1462-1465. <https://doi.org/10.1073/pnas.1525002113>
- Chan, K. M. A., Guerry, A. D., Balvanera, P., Klain, S., Satterfield, T., Basurto, X., Bostrom, A., Chuenpagdee, R., Gould, R., Halpern, B. S., Hannahs, N., Levine, J., Norton, B., Ruckelshaus, M., Russell, R., Tam, J., & Woodside, U. (2012). Where are cultural and social in ecosystem services? A framework for constructive engagement. *BioScience*, 62(8), 744-756. <https://doi.org/10.1525/bio.2012.62.8.7>
- Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research*. Sage.
- Cunsolo, A., Harper, S. L., Minor, K., Hayes, K., Williams, K. G., & Howard, C. (2020). Ecological grief and anxiety: The start of a healthy response to climate change? *The Lancet Planetary Health*, 4(7), e261-e263. [https://doi.org/10.1016/S2542-5196\(20\)30144-3](https://doi.org/10.1016/S2542-5196(20)30144-3)
- Deci, E. L., & Ryan, R. M. (2008). Hedonia, eudaimonia, and well-being: An introduction. *Journal of Happiness Studies*, 9(1), 1-11. <https://doi.org/10.1007/s10902-006-9018-1>
- Dunn, C. E. (2007). Progress in human geography participatory GIS – A people's GIS? *Progress in Human Geography*, 31(5), 1493. <https://doi.org/10.1177/0309132507081493>
- Duşcu, D.-M., & Rîşnoveanu, G. (2025). Understanding visitor preferences: Perceived importance of anthropogenic and natural forest features in supplying cultural ecosystem services. *Forest Ecosystems*, 13, 100306. <https://doi.org/10.1016/j.fecs.2025.100306>
- Eide, A. H., Dyrstad, K., Munthali, A., van Rooy, G., Braathen, S. H., Halvorsen, T., Persendt, F., Mvula, P., & Rød, J. K. (2018). Combining

- survey data, GIS and qualitative interviews in the analysis of health service access for persons with disabilities. *BMC International Health and Human Rights*, 18(1), 26. <https://doi.org/10.1186/s12914-018-0166-2>
- Ellis, E. C., Pascual, U., & Mertz, O. (2019). Ecosystem services and nature's contribution to people: Negotiating diverse values and trade-offs in land systems. *Current Opinion in Environmental Sustainability*, 38, 86–94. <https://doi.org/10.1016/j.cosust.2019.05.001>
- ESPN. (2020). Policy brief: Green infrastructure in urban areas. <https://archive.espon.eu/sites/default/files/attachments/Policy%20Brief%20Green%20Infrastructure%20in%20Urban%20Areas.pdf>
- Fagerholm, N., Eilola, S., & Arki, V. (2021). Outdoor recreation and nature's contribution to well-being in a pandemic situation – Case Turku, Finland. *Urban Forestry & Urban Greening*, 64, 127257. <https://doi.org/10.1016/j.ufug.2021.127257>
- Fagerholm, N., Samuelsson, K., Eilola, S., Giusti, M., Hasanzadeh, K., Kajosaari, A., Koch, D., Korpilo, S., Kyttä, M., Legeby, A., Liu, Y., Præstholm, S., Raymond, C., Rinne, T., Stahl Olafsson, A., & Barthel, S. (2022). Analysis of pandemic outdoor recreation and green infrastructure in Nordic cities to enhance urban resilience. *npj Urban Sustainability*, 2(1), 25. <https://doi.org/10.1038/s42949-022-00068-8>
- Fagerholm, N., Torralba, M., Moreno, G., Girardello, M., Herzog, F., Aviron, S., Burgess, P., Crous-Duran, J., Ferreiro-Domínguez, N., Graves, A., Hartel, T., Măcicăsan, V., Kay, S., Pantera, A., Varga, A., & Plieninger, T. (2019). Cross-site analysis of perceived ecosystem service benefits in multifunctional landscapes. *Global Environmental Change*, 56, 134–147. <https://doi.org/10.1016/j.gloenvcha.2019.04.002>
- Fieuw, W., Foth, M., & Caldwell, G. A. (2022). Towards a more-than-human approach to smart and sustainable urban development: Designing for multispecies justice. *Sustainability*, 14(2), 948. <https://doi.org/10.3390/su14020948>
- Finlay, J., Franke, T., McKay, H., & Sims-Gould, J. (2015). Therapeutic landscapes and wellbeing in later life: Impacts of blue and green spaces for elderly. *Health and Place*, 34, 97–106. <https://doi.org/10.1016/j.healthplace.2015.05.001>
- Fish, R., Church, A., & Winter, M. (2016). Conceptualising cultural ecosystem services: A novel framework for research and critical engagement. *Ecosystem Services*, 21, 208–217. <https://doi.org/10.1016/j.ecoser.2016.09.002>
- Fish, R. D. (2011). Environmental decision-making and an ecosystems approach: Some challenges from the perspective of social science. *Progress in Physical Geography*, 35(5), 671–680. <https://doi.org/10.1177/0309133311420941>
- Gladkikh, T. M., Gould, R. K., & Coleman, K. J. (2019). Cultural ecosystem services and the well-being of refugee communities. *Ecosystem Services*, 40, 101036. <https://doi.org/10.1016/j.ecoser.2019.101036>
- Gould, R. K., & Lincoln, N. K. (2017). Expanding the suite of cultural ecosystem services to include ingenuity, perspective, and life teaching. *Ecosystem Services*, 25, 117–127. <https://doi.org/10.1016/j.ecoser.2017.04.002>
- Hammit, W. E., Backlund, E. A., & Bixler, R. D. (2004). Experience use history, place bonding and resource substitution of trout anglers during recreation engagements. *Journal of Leisure Research*, 36(3), 356–378. <https://doi.org/10.1080/00222216.2004.11950028>
- Hartig, T., Mitchell, R., de Vries, S., & Frumkin, H. (2014). Nature and health. *Annual Review of Public Health*, 35, 207–228. <https://doi.org/10.1146/annurev-publhealth-032013-182443>
- Health Council of the Netherlands, & Dutch Advisory Council for Research on Spatial Planning, Nature and the Environment. (2004). *Nature and health. The influence of nature on social, psychological and physical well-being* (Publication No. 2004/09E; RMNO Publication nr A02ae). Health Council of the Netherlands and RMNO.
- Heidt, V., & Neef, M. (2007). Benefits of urban green space for improving urban climate. In M. M. Carreiro, Y.-C. Song, & J. Wu (Eds.), *Ecology, planning, and management of urban forests* (pp. 84–96). Springer. https://doi.org/10.1007/978-0-387-71425-7_6
- Hughes, J., Richardson, M., & Lumber, R. (2018). Evaluating connection to nature and the relationship with conservation behaviour in children. *Journal for Nature Conservation*, 45, 11–19. <https://doi.org/10.1016/j.jnc.2018.07.004>
- Huta, V. (2020). How distinct are eudaimonia and hedonia? It depends on how they are measured. *Journal of Well-Being Assessment*, 4(3), 511–537. <https://doi.org/10.1007/s41543-021-00046-4>
- Huta, V., & Waterman, A. S. (2014). Eudaimonia and its distinction from hedonia: Developing a classification and terminology for understanding conceptual and operational definitions. *Journal of Happiness Studies*, 15(6), 1425–1456. <https://doi.org/10.1007/s10902-013-9485-0>
- Huynh, L. T. M., Gasparatos, A., Su, J., Lam, R. D., Grant, E. I., & Fukushi, K. (2022). Linking the nonmaterial dimensions of human-nature relations and human well-being through cultural ecosystem services. *Science Advances*, 8(31), eabn8042. <https://doi.org/10.1126/sciadv.abn8042>
- Independent Group of Scientists appointed by the Secretary-General. (2019). *Global sustainable development report 2019: The future is now – Science for achieving sustainable development*. United Nations.
- IPBES. (2019). *Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services* (E. S. Brondizio, J. Settele, S. Díaz, & H. T. Ngo, Eds.). IPBES Secretariat. <https://doi.org/10.5281/zenodo.3831673>
- IPBES. (2022). Summary for policymakers of the methodological assessment of the diverse values and valuation of nature of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. In U. Pascual, P. Balvanera, M. Christie, B. Baptiste, D. González-Jiménez, C. B. Anderson, S. Athayde, D. N. Barton, R. Chaplin-Kramer, S. Jacobs, E. Kelemen, R. Kumar, E. Lazos, A. Martin, T. H. Mwampamba, B. Nakangu, P. O'Farrell, C. M. Raymond, S. M. Subramanian, ... A. Vatn (Eds.), (pp. 1–37). IPBES secretariat. <https://doi.org/10.5281/zenodo.6522392>
- James, P., Banay, R. F., Hart, J. E., & Laden, F. (2015). A review of the health benefits of greenness. *Current Epidemiology Reports*, 2(2), 131–142. <https://doi.org/10.1007/s40471-015-0043-7>
- Jax, K., Calestani, M., Chan, K. M., Eser, U., Keune, H., Muraca, B., O'Brien, L., Potthast, T., Voget-Kleschin, L., & Wittmer, H. (2018). Caring for nature matters: A relational approach for understanding nature's contributions to human well-being. *Current Opinion in Environmental Sustainability*, 35, 22–29. <https://doi.org/10.1016/j.cosust.2018.10.009>
- Kabisch, N., Qureshi, S., & Haase, D. (2015). Human-environment interactions in urban green spaces – A systematic review of contemporary issues and prospects for future research. *Environmental Impact Assessment Review*, 50, 25–34. <https://doi.org/10.1016/j.eiar.2014.08.007>
- Knippenberg, L., de Groot, W. T., van den Born, R. J., Knights, P., & Muraca, B. (2018). Relational value, partnership, eudaimonia: A review. *Current Opinion in Environmental Sustainability*, 35, 39–45. <https://doi.org/10.1016/j.cosust.2018.10.022>
- Kondo, M. C., Fluehr, J. M., McKeon, T., & Branas, C. C. (2018). Urban green space and its impact on human health. *International Journal of Environmental Research and Public Health*, 15(3), 445. <https://doi.org/10.3390/ijerph15030445>
- Korpela, K., Kyttä, M., & Hartig, T. (2002). Restorative experience, self-regulation, and children's place preferences. *Journal of Environmental Psychology*, 22(4), 387–398. <https://doi.org/10.1006/jevp.2002.0277>
- Korpela, K. M., Hartig, T., Kaiser, F. G., & Fuhrer, U. (2001). Restorative experience and self-regulation in favorite places. *Environment and Behavior*, 33(4), 572–589. <https://doi.org/10.1177/00139160121973133>

- Kosanic, A., & Petzold, J. (2020). A systematic review of cultural ecosystem services and human well-being. *Ecosystem Services*, 45, 101168. <https://doi.org/10.1016/j.ecoser.2020.101168>
- Lehtinen, A. (2017). Kaupunkiluonto lääkkeenä ja luksuksena. [Urban nature as medicine and luxury]. In A. Lehtinen & I. Pyy (Eds.), *Mitä on laadullinen kaupunkisuunnittelu? [What is qualitative city planning?]* (Vol. 104, pp. 55–64). Otavan Kirjapaino Oy.
- Lima, P. A. B., & Mariano, E. B. (2022). Eudaimonia in the relationship between human and nature: A systematic literature review. *Cleaner Production Letters*, 2, 100007. <https://doi.org/10.1016/j.clpl.2022.100007>
- Louv, R. (2005). *Last child in the woods – Saving our children from nature deficit disorder*. Algonquin Books.
- Mathers, B., & Brymer, E. (2022). The power of a profound experience with nature: Living with meaning. *Frontiers in Psychology*, 13, 764224. <https://doi.org/10.3389/fpsyg.2022.764224>
- Mathotaarachchi, K. P., & Thilakarathna, K. A. A. N. (2021). The social structure of the city: A critical review of contributing sociologists. *Current Urban Studies*, 9(2), 181–195. <https://doi.org/10.4236/cus.2021.92011>
- Maurer, M., Zaval, L., Orlove, B., Moraga, V., & Culligan, P. (2021). More than nature: Linkages between well-being and greenspace influenced by a combination of elements of nature and non-nature in a New York City urban park. *Urban Forestry & Urban Greening*, 61, 127081. <https://doi.org/10.1016/j.ufug.2021.127081>
- McMahan, E. A. (2018). Happiness comes naturally: Engagement with nature as a route to positive subjective well-being. In E. Diener, S. Oishi, & L. Tay (Eds.), *Handbook of well-being*. DEF Publishers.
- McMahan, E. A., & Estes, D. (2011). Hedonic versus eudaimonic conceptions of well-being: Evidence of differential associations with self-reported well-being. *Social Indicators Research*, 103(1), 93–108. <https://doi.org/10.1007/s11205-010-9698-0>
- MDI. (2019). Kooste Kymmenen Kaupunkiseudun Väestönkehityksestä Vuoteen 2040 [Summary of the population estimates of the ten city regions by 2040].
- Mensah, C. A., Andres, L., Perera, U., & Roji, A. (2016). Enhancing quality of life through the lens of green spaces: A systematic review approach. *International Journal of Well-Being*, 6(1), 142–163. <https://doi.org/10.5502/ijw.v6i1.445>
- Milcu, A. I., Hanspach, J., Abson, D., & Fischer, J. (2013). Cultural ecosystem services: A literature review and prospects for future research. *Ecology and Society*, 18(3), art44. <https://doi.org/10.5751/ES-05790-180344>
- Millennium Ecosystem Assessment (MEA). (2005). *Ecosystems and human well-being: Synthesis*. Island Press.
- Nettle, D. (2009). The evolution of creative writing. In S. B. Kaufman & J. C. Kaufman (Eds.), *The psychology of creative writing* (pp. 101–116). Cambridge. <https://doi.org/10.1017/CBO9780511627101.008>
- Niemelä, J., Saarela, S. R., Söderman, T., Kopperoinen, L., Yli-Pelkonen, V., Väre, S., & Kotze, D. J. (2010). Using the ecosystem services approach for better planning and conservation of urban green spaces: A Finland case study. *Biodiversity and Conservation*, 19(11), 3225–3243. <https://doi.org/10.1007/s10531-010-9888-8>
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1), 1609406917733847. <https://doi.org/10.1177/1609406917733847>
- Pascual, U., Balvanera, P., Díaz, S., Pataki, G., Roth, E., Stenseke, M., Watson, R. T., Başak Dessane, E., Islar, M., Kelemen, E., Maris, V., Quaa, M., Subramanian, S. M., Wittmer, H., Adlan, A., Ahn, S. E., Al-Hafedh, Y. S., Amankwah, E., Asah, S. T., ... Yagi, N. (2017). Valuing nature's contributions to people: The IPBES approach. *Current Opinion in Environmental Sustainability*, 26–27, 7–16. <https://doi.org/10.1016/j.cosust.2016.12.006>
- Pihkala, P. (2018). Eco-anxiety, tragedy, and hope: Psychological and spiritual dimensions of climate change. *Zygon*, 53(2), 12407. <https://doi.org/10.1111/zygo.12407>
- Pihkala, P. (2020). Anxiety and the ecological crisis: An analysis of eco-anxiety and climate anxiety. *Sustainability*, 12(19), 7836. <https://doi.org/10.3390/SU12197836>
- Plieninger, T., Dijks, S., Oteros-Rozas, E., & Bieling, C. (2013). Assessing, mapping, and quantifying cultural ecosystem services at community level. *Land Use Policy*, 33, 118–129. <https://doi.org/10.1016/j.landusepol.2012.12.013>
- Puhakka, R., & Hakoköngäs, E. (2023). Adolescents' experiences in nature: Sources of everyday well-being. *Journal of Leisure Research*, 55, 250–269. <https://doi.org/10.1080/00222216.2023.2204346>
- Rall, E., Bieling, C., Zytynska, S., & Haase, D. (2017). Exploring city-wide patterns of cultural ecosystem service perceptions and use. *Ecological Indicators*, 77, 80–95. <https://doi.org/10.1016/j.ecolind.2017.02.001>
- Rendón, O. R., Garbutt, A., Skov, M., Möller, I., Alexander, M., Ballinger, R., Wyles, K., Smith, G., McKinley, E., Griffin, J., Thomas, M., Davidson, K., Pagès, J. F., Read, S., & Beaumont, N. (2019). A framework linking ecosystem services and human well-being: Saltmarsh as a case study. *People and Nature*, 1(4), 486–496. <https://doi.org/10.1002/pan3.10050>
- Root, R., Steinberg, M., & Huber, S. (2011). "Digital suspicions," "how do I write?" In S. Huber, R. Root, & M. Steinberg (Eds.), *The fourth genre: Contemporary writers of/on creative nonfiction* (6th ed.). Longman.
- Russell, R., Guerry, A. D., Balvanera, P., Gould, R. K., Basurto, X., Chan, K. M. A., Klain, S., Levine, J., & Tam, J. (2013). Humans and nature: How knowing and experiencing nature affect well-being. *Annual Review of Environment and Resources*, 38, 473–502. <https://doi.org/10.1146/annurev-environ-012312-110838>
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141–166. <https://doi.org/10.1146/annurev.psych.52.1.141>
- Ryff, C. D. (1989a). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, 57(6), 1069–1081. <https://doi.org/10.1037/0022-3514.57.6.1069>
- Ryff, C. D. (1989b). Beyond Ponce de Leon and Life satisfaction: New directions in quest of successful ageing. *International Journal of Behavioral Development*, 12(1), 35–55. <https://doi.org/10.1177/016502548901200102>
- Ryff, C. D. (2014). Psychological well-being revisited: Advances in the science and practice of eudaimonia. *Psychotherapy and Psychosomatics*, 83(1), 10–28. <https://doi.org/10.1159/000353263>
- Soga, M., & Gaston, K. J. (2016). Extinction of experience: The loss of human-nature interactions. *Frontiers in Ecology and the Environment*, 14(2), 94–101. <https://doi.org/10.1002/fee.1225>
- Somerville, L. H. (2013). Special issue on the teenage brain: Sensitivity to social evaluation. *Current Directions in Psychological Science*, 22, 121–127. <https://doi.org/10.1177/0963721413476512>
- Sonnetag, S. (2015). Dynamics of well-being. *Annual Review of Organizational Psychology and Organizational Behavior*, 2, 261–293. <https://doi.org/10.1146/annurev-orgpsych-032414-111347>
- Statistics Finland. (2024). *Population*. https://stat.fi/tup/suoluk/suoluk_vaesto.html#suurimpien-kuntien-vakiluku
- Suchocka, M., Wojnowska-Heciak, M., Błaszczczyk, M., Gawłowska, A., Ciemniowska, J., Jarska, A., Heciak, J., & Pachnowska, B. (2022). Old trees are perceived as a valuable element of the municipal forest landscape. *PeerJ*, 10, e12700.
- Tumanyan, M., & Huuki, T. (2020). Arts in working with youth on sensitive topics: A qualitative systematic review. *International Journal of Education through Art*, 16(3), 381–397. https://doi.org/10.1386/eta_00040_1

- Turun kaupunki. (n.d.). Turun kansallinen kaupunkipuisto [Turku National Urban Park]. Retrieved August 11, 2025. <https://www.turku.fi/ulkoilu-ja-retkeily/turun-kansallinen-kaupunkipuisto-0>
- Twohig-Bennett, C., & Jones, A. (2018). The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environmental Research*, 166, 628–637. <https://doi.org/10.1016/j.envres.2018.06.030>
- Völker, S., & Kistemann, T. (2013). "I'm always entirely happy when I'm here!" urban blue enhancing human health and well-being in Cologne and Düsseldorf, Germany. *Social Science and Medicine*, 78(1), 113–124. <https://doi.org/10.1016/j.socscimed.2012.09.047>
- Wenz, K., & McWhirter, J. J. (1990). Enhancing the group experience: Creative writing exercises. *Journal for Specialists in Group Work*, 15(1), 37–42. <https://doi.org/10.1080/01933929008411910>
- White, M. P., Pahl, S., Wheeler, B. W., Depledge, M. H., & Fleming, L. E. (2017). Natural environments and subjective well-being: Different types of exposure are associated with different aspects of well-being. *Health and Place*, 45, 77–84. <https://doi.org/10.1016/j.healthplace.2017.03.008>
- World Health Organization (WHO). (2021a). *Adolescent mental health*. <https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health>
- World Health Organization (WHO). (2021b). *Health promotion glossary of terms 2021*. World Health Organization.
- Yang, Y., Sedikides, C., Wang, Y., & Cai, H. (2023). Nature nurtures authenticity: Mechanisms and consequences. *Journal of Personality and Social Psychology*, 126(1), 432. <https://doi.org/10.1037/pspi0000432>

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

Appendix S1. The demographics of the two groups of respondents to gather qualitative and quantitative data.

Appendix S2. Detailed descriptions of the three creative writing workshop days.

Appendix S3. Distances between mapped outdoor recreation sites and other variables.

Appendix S4. The percentages of CES marked by age group.

Appendix S5. Participant responses to five eudaimonic well-being statements.

How to cite this article: Järekäri, J., Fagerholm, N., Eilola, S., & Arki, V. (2025). Nature facilitates eudaimonic well-being through promoting connection with self and others. *People and Nature*, 00, 1–18. <https://doi.org/10.1002/pan3.70104>