

# Forest facts

## Factors shaping the interaction of people with urban greenspace in Sweden

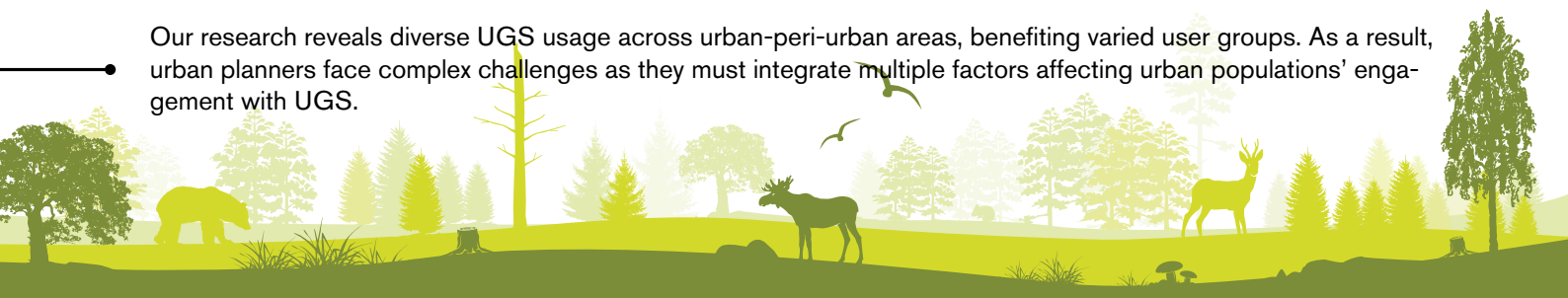
**Marine Elbakidze, Lucas Dawson, Per Milberg, Grzegorz Mikusiński, Marcus Hedblom, Ivan Kruhlov, Taras Yamelynets, Christina Schaffer, Karl-Eric Johansson**

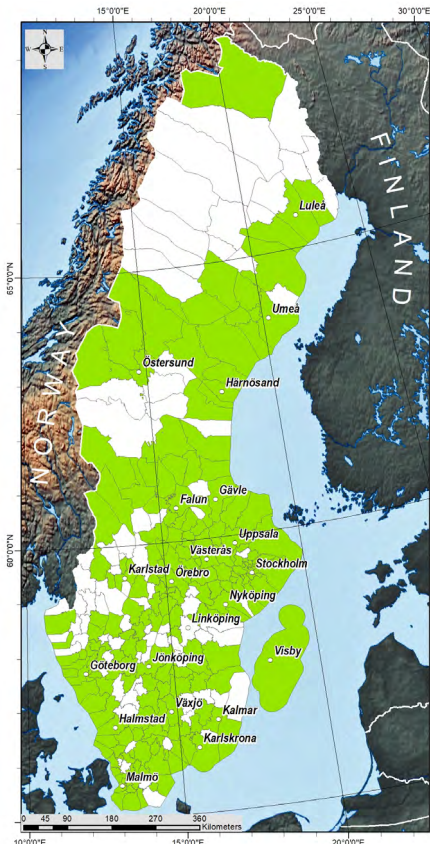
Urban greenspace (UGS) provides vital ecological and social benefits for human well-being, yet research often narrows its scope. This fact sheet addresses the need for more diverse, comprehensive UGS studies.

We aimed to analyse multiple factors affecting people's interactions with UGS across diverse Swedish settlement types. In 2021, an online survey gathered data from 2806 respondents in 208 (of 290) municipalities, aiming to represent a wide range of people.

We identified 61 explanatory variables that affect the frequency of interactions with UGS. Nature connectedness, perceived functions and perceived accessibility of UGS shape critical differences between frequent and infrequent users of UGS in Sweden.

Our research reveals diverse UGS usage across urban-peri-urban areas, benefiting varied user groups. As a result, urban planners face complex challenges as they must integrate multiple factors affecting urban populations' engagement with UGS.



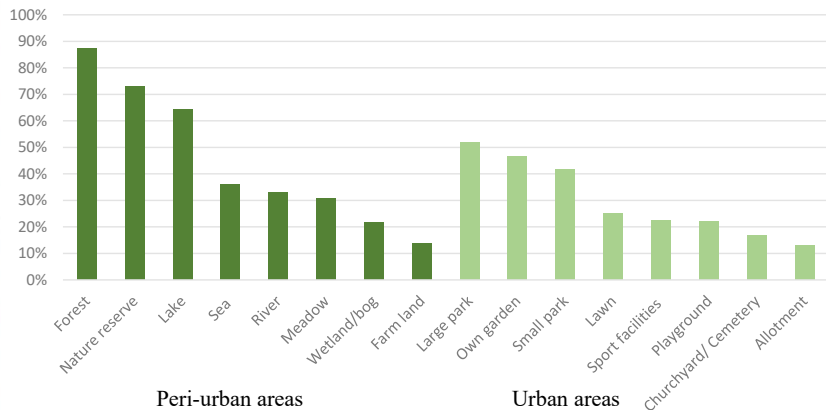


**Figure 1.** Municipalities in which respondents participated in the survey.

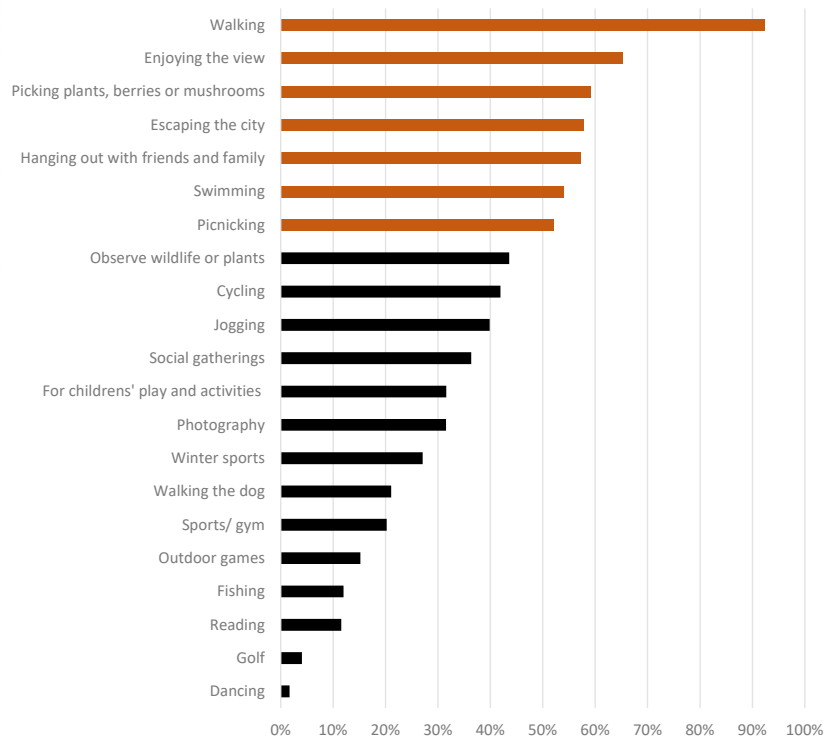
**New challenges for urban green space**

Many countries in Europe are undergoing rapid demographic and cultural changes. This raises new challenges for urban greenspace (UGS) planning to support sustainable living environments that meet the requirements of all inhabitants in increasingly multicultural urban and peri-urban areas. Alongside improved approaches to planning and management of UGS, a better understanding of the factors that affect people’s willingness to visit and interact with UGS is crucial.

Most previous studies on UGS users have focused on relatively few factors (i.e. age, education, cultural background), on specific types of UGS (e.g., parks, urban forests), or on patterns of UGS use at the local- or city-scale. However, such studies may be too narrow in scope to understand the complexity of factors that shape interactions of people with UGS, and risks excluding the preferences of some groups. Extensive case studies with a wide range of spatial and demographic variables to represent the breadth of human interactions with UGS are missing.



**Figure 2.** Respondents selected 16 types of UGS along a peri-urban – urban gradient as places they liked to visit. Most respondents preferred to use forest, nature reserves, large parks, and lakes to perform their activities. The other UGS were selected by less than 50% of respondents.



**Figure 3.** The most selected activity was walking (selected by 92% of respondents). More than 50% of respondents acknowledged six more activities: ‘enjoying the view’, ‘picking plants, berries and mushrooms’, ‘escaping the city’, ‘hanging with friends and family’, ‘swimming’, and ‘picnicking’ (red bars). The other 15 types of activities were selected by less than 50% of respondents (black bars).

We therefore aimed to identify and analyse multiple factors that influence people’s interactions with UGS across a wide range of settlement types in Sweden. An unrestricted, self-selected online survey was used to collect data across Sweden. The survey questionnaire was organised in four domains: (1) individual characteristics of respondents, including socio-demographic charac-

teristics, self-reported nature connectedness, and self-reported preventions of UGS usage, (2) perceived characteristics of UGS, including perceived availability, quality, and accessibility in UGS in and around where respondents lived, as well as perceived problems and benefits; (3) preferences of respondents concerning desired state and types of UGS, and preferred activities; and (4) external factors

concerning biophysical characteristics and socio-economic attributes of municipalities. A total of 2806 respondents from 208 (out of 290) municipalities completed the survey in 2021.

### Multiple factors shape people's interaction with UGS

We used statistical methods to identify 61 variables that explained how often people in Sweden use UGS (Table 1). We found that more frequent users (who use UGS every day or several days per week) tend to be older, in good health, with higher formal education, and are more likely to be female and born in Sweden. In contrast, infrequent users (who use UGS once a month or almost never) are more likely to be males of younger age and with lower levels of formal education.

We also identified several factors that shape critical differences between frequent and infrequent users. *First*, respondents with a stronger self-reported connection to nature were likely to use UGS more often than others. *Second*, frequent users associated UGS with more benefits than infrequent users. Such benefits included: physical and mental health, especially during the COVID-19 pandemic; gathering wild berries, mushrooms and other non-wood forest products; and the use of UGS for social interactions. Infrequent users mainly associated UGS with benefits relating to social activities. *Third*, more frequent visitation was more likely if the distance to UGS was shorter and people could walk to places they like to visit.

### Diversity of UGS along an urban-peri-urban gradient

We found that a broad range of UGS are important for urban residents, from parks of different sizes, lawns, playgrounds to forest, nature reserves, wetlands, lakes and other UGS for diverse activities (Figures 2 and 3). More than 70% of respondents acknowledged using forests and nature reserves for multiple recreational benefits, highlighting these as core UGS types. These UGS are often located in peri-urban areas and are characterised by both high natural and social values. As such, they provide significant assets for urban sustainability. Our results also indicate that small UGS (e.g., pocket parks, allotments, playgrounds etc.) in cities are especially important for less frequent users. Further, we found that water objects,

**Table 1.** Explanatory variables of frequency of UGS usage: variables in bold are more likely to increase UGS usage; the rest of the variables are more likely to have an opposite effect on the frequency of UGS usage.

Group of explanatory variables	Factors	
External factors	<b>Mean temperature</b>	
	Proportion of built-up area in municipality	
Socio-demographics	<b>Population density in municipality</b>	
	Age	
	Health	
	Education	
	Origin	
	Gender	
Connectedness to nature	<b>Work linked to nature</b>	
	<b>'My relationship to nature is an important part of who I am'</b>	
	<b>'It is important to be aware of environmental issues'</b>	
	'Land should be used more for housing instead of nature and green areas'	
Preventions of UGS usage	'Nature will recover from any human impact'	
	'do not want to'	
	<b>'nothing stops me'</b>	
	'lack of time'	
	'lack of knowledge where to go, what to see and what to do',	
	'lack of someone to go together with'	
	'lack of places to visit'	
'health issues'		
Perceived benefits	<b>'important for my health'</b>	
	<b>'have been important for my physical and mental health during the Corona-virus pandemic',</b>	
	<b>'provide a source of wild foods'</b>	
	'provide a place for social interaction'	
Accessibility	Perceived accessibility	
	Distance from home	
	<b>By foot</b>	
Perceived problems	By public transport	
	<b>Do not see any problems</b>	
	<b>Litter</b>	
	<b>Graffiti</b>	
	Feel unsafe	
	Danger of injury	
Desired state of UGS	Criminal activity	
	<b>'as natural as possible'</b>	
	<b>'sport facilities and outdoor gyms'</b>	
	'have restaurants, café'	
	'have tables and benches'	
	'have fountains/statues'	
	'have street light'	
'have playgrounds for kids'		
Used UGS	<b>Forest</b>	
	<b>Meadow</b>	
	<b>Allotment</b>	
	<b>Own garden</b>	
	<b>Nature reserve</b>	
	<b>Wetland/bog</b>	
	Sport facilities	
	Lawn	
	Playground	
	Sea	
	Activities in UGS	<b>Jogging</b>
		<b>Cycling</b>
<b>Picking wild foods</b>		
<b>Observing wildlife or plants</b>		
<b>Walking the dog</b>		
<b>Walking</b>		
<b>Photography</b>		
<b>Sport and games</b>		
Fishing		

so-called “blue-spaces”, are essential for a diverse range of recreational activities in Sweden. However, both small UGS and water objects are often overlooked or not included in UGS classifications and databases. There is therefore a need to compile a more comprehensive database of different types of UGS along urban-rural gradients for all urban areas in Sweden.

### Bringing people to nature?

Our findings indicate that urban inhabitants are very heterogeneous in their perceptions, preferences for and usage of UGS. Urban spatial planners are therefore challenged to secure a multitude of diverse types of UGS in a time of increasing competition from other types of land use. Many efforts have been made to bring ‘nature to people’ by improving the accessibility and availability of UGS in cities. We argue that developing a more inclusive approach to UGS planning and management is equally important to ensure an attractive and inclusive mix of living environments in urban settings. There is a need for a broader view concerning the quality, availability, and accessibility of UGS from the perspectives

of different user groups, including those from different cultural backgrounds.

We highlight three prerequisites for inclusive UGS development: (1) involving diverse actors with different, even conflicting, demands and needs in the design, planning and implementation of greening strategies; (2) planning and managing UGS as places for the interaction among different groups of people; and (3) steering UGS development using a multi-actor governance structure that includes stakeholders from public, private and civic sectors to ensure an inclusive representation of all residents.

There are several barriers to a more inclusive UGS development in Sweden: (i) UGS management is highly fragmented; (ii) UGS managers are mainly involved in maintenance activities rather than long-term planning or collaborative activities; and (iii) municipalities have a so-called “planning monopoly” for urban areas, and studies have shown that efforts to integrate broader sets of stakeholder preferences in comprehensive municipal planning have not succeeded.

### Conclusion

This study reveals that the frequency of people’s interactions with UGS is influenced by an extensive and highly diverse set of factors relating to socio-demographic characteristics, personal perceptions and preferences concerning UGS, and biophysical characteristics of urban landscapes themselves. Our results suggest the need for the integration of improved tools for dealing with complexity into urban planning regimes, as well as indicating a need to redefine the availability, accessibility and quality of UGS in a more inclusive way, which considers differences in preferences for and perceptions of UGS among user groups. Additionally, our study shows the importance of peri-urban greenspace for urban residents in Sweden. It suggests a need for urban planners to go beyond urban administrative boundaries and consider peri-urban nature more explicitly in UGS planning.

**Key words:** preferences for urban greenspace; perceptions of urban greenspace; frequent users; urban green planning.

### >> Read more

**Elbakidze, M., Dawson, L., Milberg, P., Mikusiński, G., Hedblom, M., Kruhlov, I., Yamelynets, T., Schaffer, C., Karl-Eric Johansson, KJ., Grodzynski, M. 2022.** Multiple factors shape the interaction of people with urban greenspace: Sweden as a case study. *Urban Forestry & Urban Greening*, 74. DOI: 10.2139/ssrn.4032626

**Film:** <https://www.youtube.com/channel/UCOiiGQZ3lg9XTi6IAI4bE0g>

### Authors

**Marine Elbakidze**, Associate Professor, Faculty of Forest Sciences, SLU, Sweden.

email: [marine.elbakidze@slu.se](mailto:marine.elbakidze@slu.se)

**Lucas Dawson**, PhD, Researcher, Faculty of Forest Sciences, SLU, Sweden. email: [lucas.dawson@slu.se](mailto:lucas.dawson@slu.se)

**Per Milberg**, Professor, Department of Physics, Chemistry and Biology, Linköping University, Sweden. [per.milberg@liu.se](mailto:per.milberg@liu.se)

**Grzegorz Mikusiński**, Associate Professor, Faculty of Forest Sciences, SLU, Sweden. [grzegorz.mikusinski@slu.se](mailto:grzegorz.mikusinski@slu.se)

**Marcus Hedblom**, Professor, Faculty of Landscape Architecture, Horticulture

and Crop Production Science, SLU, Sweden. [marcus.hedblom@slu.se](mailto:marcus.hedblom@slu.se)

**Ivan Kruhlov**, Professor, Faculty of Geography, National University of Lviv, Ukraine.

[ivan.kruhlov@lnu.edu.ua](mailto:ivan.kruhlov@lnu.edu.ua)

**Taras Yamelynets**, Professor, Faculty of Geography, National University of Lviv, Ukraine.

[taras.yamelynets@lnu.edu.ua](mailto:taras.yamelynets@lnu.edu.ua)

**Christina Schaffer**, Post-graduate student, Faculty of Forest Sciences, SLU, Sweden. [christina.schaffer@slu.se](mailto:christina.schaffer@slu.se)

**Karl-Eric Johansson**, PhD, Faculty of Forest Sciences, SLU, Sweden.

[kalle.johansson@slu.se](mailto:kalle.johansson@slu.se)

### Forest facts

ISSN: 1400-7789. Production: SLU, Faculty of Forest Sciences 2023.

Publisher: [goran.ericsson@slu.se](mailto:goran.ericsson@slu.se).

Editor: [yva.melin@slu.se](mailto:yva.melin@slu.se).

Layout: [grafiskservice@slu.se](mailto:grafiskservice@slu.se).

Illustrator: Fredrik Saarkoppel, Kobolt Media AB.

