

Promoting health through interaction with nature in urban areas

Contact with nature improves our health and well-being. Purposeful planning can make it easier to achieve the benefits we can gain from natural areas in our towns and cities.

Natural areas should remain accessible close to homes even in increasingly densely populated cities. Forests, parks and other natural environments should also be used by kindergartens and schools more frequently than today.

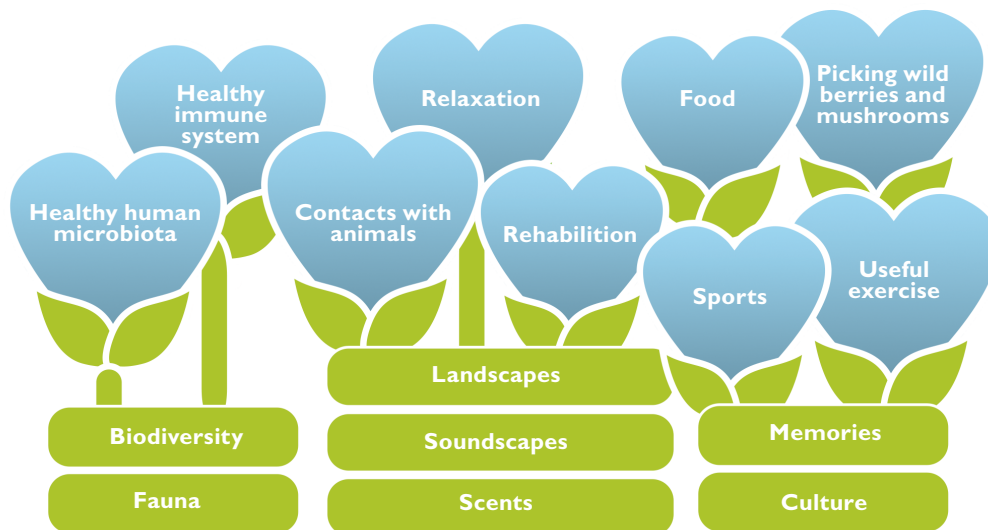


Recommendations for urban planners

- Encourage constructive dialogues between planners working with land use, transport and services. Stakeholders who organise recreational activities locally, including teachers and active local residents should also be involved.
- Actively inform stakeholders about the significant health benefits of nature in urban areas, since this concept is quite new.
- Ensure that local residents, including children who may not be able to walk long distances, have access to urban nature within easy reach.
- Recognise the varying characteristics of different urban districts, and take them into account in planning. Different solutions are needed for central districts and for suburban areas. Initiate local and regional trials to find new solutions.

It is important to realise the health benefits of urban nature at all levels from regional to local.





Health benefits from nature

The health and well-being impacts of contacts with nature are increasingly being discussed in relation to environmental policies in Finland and more widely in Europe. Natural areas offer experiences and health benefits that are particularly important to children. They also encourage children to play actively and learn about their surroundings.

While playing in natural environments, children are exposed to microbes. This strengthens their immune system. Limited exposure to natural microbes in childhood impedes the development of microbiota in our bodies, hindering the functioning of our immune systems. The consequent reduced resistance may lead to conditions such as atopic sensitisation, allergies and asthma. Research findings have supported this so called biodiversity hypotheses by showing, for example, that the distances between the homes of small children and the nearest forest or field are reflected in levels of atopic sensitization, for instance.

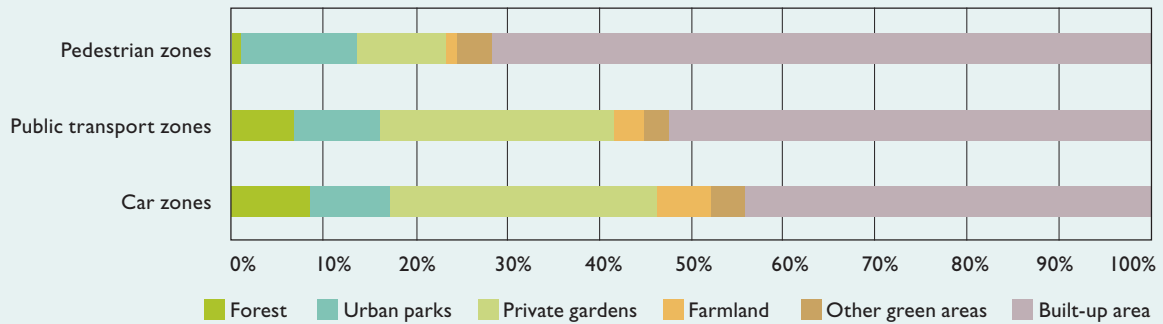
Children are more likely to be exposed to a healthy range of plants, animals and microbes when natural areas are easily accessible near their homes. Environmental psychologists refer to this phenomenon as affordance. Urban planners can facilitate affordance by finding ways to encourage people to get out into local natural areas. Such work involves maintaining and suitably managing green areas located in urban districts.

Urban zones – an important consideration in planning

The numbers and characteristics of green areas vary in different parts of any city. The built environment can be divided into pedestrian, public transport and car zones. These zones are defined with regard to distance from the city centre and related opportunities for mobility. Green areas can be found in all of these zones, though opportunities to promote health through contacts with nature may differ considerably.



Natural environments near kindergartens in different urban zones



SYKE | Urban zones: SYKE/YKR | Kindergartens: cities of Helsinki, Vantaa, Espoo and Kauniainen | Land cover: Urban Atlas 2012 / EEA

Land cover within 300 metres of kindergartens in different urban zones within the Helsinki Metropolitan Area. In pedestrian zones, located around central districts, 70 percent of the land area is built-up, and parks are the most common form of urban green space. In public transport zones further from the city centre roughly half of the land is built-up, and a quarter consists of private gardens. Forests are also more common than in central pedestrian zones. The shares of private gardens, forest and farmland are highest in car zones.

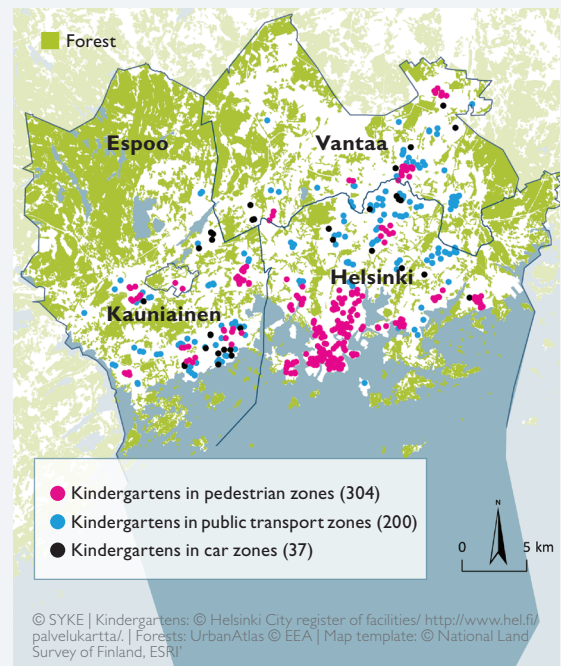
Proximity essential for recreational areas

It is important that natural areas suitable for recreational activities should exist close to all residential areas – and preferably within a distance of 300 metres, as stated in planning guidelines issued by Finland’s Ministry of the Environment. Forests and parks are the most common recreational areas in the Helsinki Metropolitan Area. The proximity of such areas to more than 1,000 kindergartens in the Helsinki Metropolitan Area has been analysed at the Finnish Environment Institute (SYKE).

Forests are the richest urban habitats in terms of biodiversity, but their accessibility varies considerably across the city. More than half (541) of the studied kindergartens were located more than 300 metres from the nearest forest. Of these kindergartens, 56 percent were located in pedestrian zones, 37 percent in public transport zones, and 7 percent in the car zone.

More formal parks complement the network of more natural recreational areas around Helsinki, especially in more densely developed central districts. Parks can still offer good opportunities for daily exposure to nature for pre-school children. Only 21 of the kindergartens were located more than 300 metres from either a forest or a park. These kindergartens are mainly in pedestrian zones.

Locations of kindergartens more than 300 metres from the nearest forest

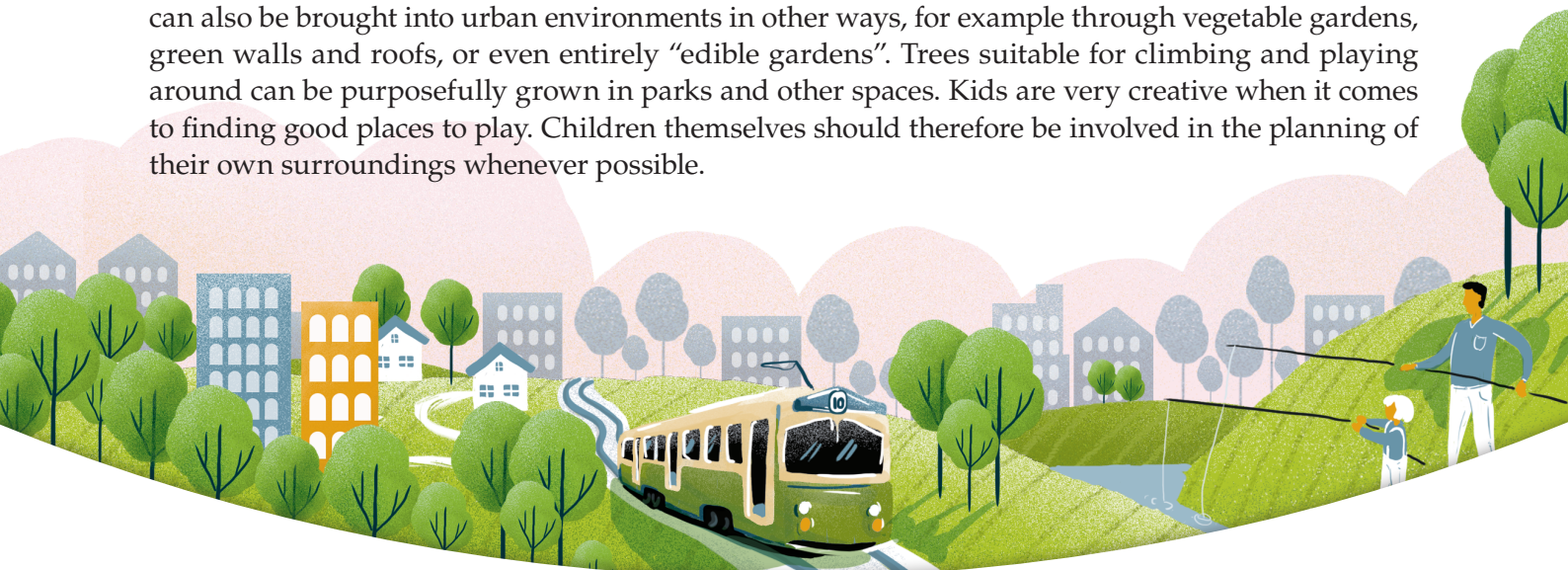


Kindergartens located more than 300 metres from the nearest forest, in different urban zones in the Helsinki Metropolitan Area. These 541 kindergartens are mainly located in pedestrian zones.

Dialogue essential in planning urban green areas

To meet residents' varying needs as widely as possible, planners must encourage goal-oriented dialogues in relation to urban nature, to get a wide range of local actors involved in planning processes. It is particularly important to get people who use urban green areas to participate alongside planners working with building developments, transport and public services. It is important that the health benefits of urban green spaces should be more widely recognised. Responsibilities for planning and managing such areas should also be allocated more clearly. In sub-urban districts beneficial contacts with nature are most often provided by nearby forests; whereas in central districts parks more often fulfil these functions.

Good planning can make it easier for interactions with urban nature to be integrated into the everyday routines of kindergartens and schools. In addition to considering the location and quality of natural areas, it is important to find ways to utilise them in daily routines and curricula. For kindergartens, natural areas must be located very nearby, and be easily accessible. The presence of a wide or busy road between a kindergarten and a green area can easily form a barrier to access. Natural elements can also be brought into urban environments in other ways, for example through vegetable gardens, green walls and roofs, or even entirely "edible gardens". Trees suitable for climbing and playing around can be purposefully grown in parks and other spaces. Kids are very creative when it comes to finding good places to play. Children themselves should therefore be involved in the planning of their own surroundings whenever possible.



For more information:

- Operationalisation of natural capital and ecosystem services project: www.OpenNESS-project.eu ja www.oppla.eu
- The biodiversity hypothesis and urban planning project (in Finnish): www.syke.fi/hankkeet/dive
- Beyond MALPE-coordination: Integrative Envisioning project: <http://bemine.fi/in-english/>
- Travel-related Urban Zones as a Planning Tool. Finnish Environment Institute SYKE: www.syke.fi/projects/urbanzone2

References:

- Hölttä J. & Paloniemi R. (2016). Schools near forests – health-promoting playgrounds or places for adults to control and fear? (In Finnish, Abstract in English) *Yhdyskuntasuunnittelu* 54(3): 26–43.
- 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*, DOI: 10.1007/s13280-017-0920-z.
- Newman P., Kosonen, L. & Kenworthy, J. (2016). Theory of urban fabrics; planning the walking, transit/public transport and automobile/motor car cities for reduced car dependency. *Town Planning Review* 87 (4), 429–458.
- OpenNESS (2015). Integrating nature-based solutions in urban planning. OpenNESS brief no. 3, November 2015. www.OpenNESS-project.eu/sites/default/files/OpenNESS_brief_03.pdf
- Ruokolainen, L., von Hertzen, L., Fyhrquist, N., Laatikainen, T., Lehtomäki, J., Auvinen, P., Karvonen, A. M., Hyvärinen, A., Tillmann, V., Niemela, O., Knip, M., Haahtela, T., Pekkanen, J. & Hanski, I. (2015). Green areas around homes reduce atopic sensitization in children. *Allergy: European journal of allergy and clinical immunology*. 70(2): 195–202.
- Tiitu M. (2014). Expansion of built-up areas in Finnish urban regions – changes in 2000-2012 (In Finnish). Reports of the Finnish Environment Institute 30/2014. Finnish Environment institute, Helsinki.

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