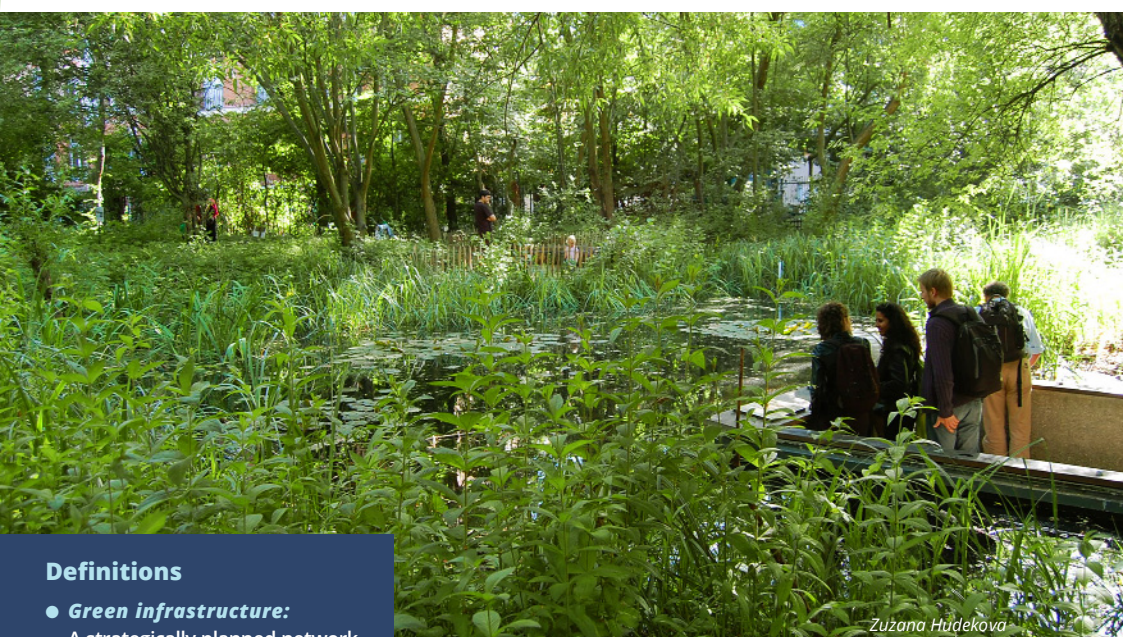


PERFECT factsheet 2



green infrastructure and biodiversity



Definitions

● **Green infrastructure:**

A strategically planned network of high-quality natural and semi-natural areas with other environmental features, which is designed and managed to deliver a wide range of ecosystem services and protect biodiversity in both rural and urban settings.

● **Biodiversity:**

The number, variety and variability of living organisms, including human beings, within a given area.

Zuzana Hudekova

Why is green infrastructure important for biodiversity?

We usually think about conserving nature or safeguarding or increasing essential ecosystem services in terms of protected areas that conserve valuable ecosystems such as forests and wetlands, or in terms of maintaining rural landscapes. But biodiversity in urban areas is vitally important, and its value is often underestimated.



‘Provision for nature in our towns and cities is not just a matter of providing cultivated and managed habitats such as urban parks, gardens and lawns’

Provision for nature in our towns and cities is not just a matter of providing cultivated and managed habitats such as urban parks, gardens and lawns. Derelict land, abandoned industrial sites and other vacant lots, ruins, roadside verges, allotment gardens, cemeteries and areas of urban wetland are increasingly being recognised as potential reservoirs of biodiversity – in addition to features more obviously related to provision for flora and fauna such as residential gardens and balconies, green roofs, green walls, and parks and botanical gardens.



Zuzana Hudekova

Why is biodiversity important for people?

The loss of biodiversity is a matter of the highest concern. Since we are totally dependent on the natural richness of our planet for our food, energy, raw materials, clean air and clean water, it is generally recognised that halting the loss of biodiversity is of great importance. Any further losses may undermine not only the natural environment, but also our economic and social goals.

Demonstrating the value of biodiversity provided by green infrastructure in urban areas can help decision-makers to maximise the efficient use of natural capital.

‘Demonstrating the value of biodiversity provided by green infrastructure in urban areas can help decision-makers to maximise the efficient use of natural capital’



'Reports show that biodiversity has declined by more than a quarter in the last 35 years'

'Scientists in western Germany found that between 1989 and 2013 the total mass of insects fell by nearly 80%'

What is the scale of biodiversity loss?

Reports show that biodiversity has declined by more than a quarter in the last 35 years.¹

Numerous studies show the extent of the threat to biodiversity across Europe. Butterflies, bees and birds are in general decline. The population of grassland butterflies halved between 1990 and 2011 across Europe.² Many bumblebees are endangered, with the numbers of 46% of European species decreasing and 24% of species threatened by extinction.³ The economic impact of such a decline is highly significant as bumblebees play a crucial role in food production through pollination. Bird numbers across Europe have decreased by over 420 million in the past 30 years. The decline has affected some of our most well-known species, with the numbers of house sparrows and starlings falling by 62% and 53%, respectively.⁴

The UK's *State of Nature* report for 2016 found that more than 1 in 10 of the UK's wildlife species are threatened with extinction.⁵ And scientists in western Germany found that between 1989 and 2013 the total mass of insects fell by nearly 80%.⁶ The decline in pollinator insects could seriously affect agricultural production, given that 84% of Europe's crops have at least some dependence on insect pollination. Between 2000 and 2010, dwindling numbers resulted a reduction of around 5% in the capacity of insects to pollinate crops.⁷

Towns and cities as homes for biodiversity

Our towns and cities have an important role to play in hosting rare and endangered species and habitat types of European-wide interest.

Some species whose natural 'homes' have mostly disappeared from the natural world, such as the common swift, have even found new ones in urban environments. Cities play host to about 20% of the world's avian biodiversity.⁸

Filling built-up spaces such as courtyards, roofs and walls with greenery not only provides shelter and food for different species, but also helps to absorb dust and pollutants from the air, reduce noise, balance the water cycle, and alleviate summer heat.

Reconnecting plant and animal populations through green infrastructure

According to the United Nations' Millennium Ecosystem Assessment, Europe's territory is more fragmented than that of any other continent.⁹ This is largely due to the fact that vast areas have been transformed into urban zones or cut up by transport infrastructure.

Green infrastructure – whether designed or naturally occurring – can help to reconnect disparate animal and plant populations and habitats, thereby helping to protect ecosystem functions. Green corridors – strips of land covered in vegetation in otherwise urban areas – can serve to connect green areas and enhance biodiversity within towns and cities, and can also link urban areas with the surrounding natural environment.

Urban biodiversity largely depends on the amount and quality of urban green infrastructure that is in place – and on how that green infrastructure is managed. Green infrastructure plays a vital role in supporting the ecological connectivity between individual green spaces in inner city areas, enhancing connectivity between urban and rural areas, and helping species to move from one area to another.





'It is important to maintain and enhance urban green infrastructure in a way that preserves ecosystem services'

Selecting the right approach to green infrastructure for biodiversity

It is important to maintain and enhance urban green infrastructure in a way that preserves ecosystem services. For example, native trees are more likely to be beneficial to biodiversity than non-natives – for instance, in the USA native oaks have been found to accommodate 537 species whereas the non-native ginkgo, a common street tree in many cities, hosts just three.¹⁰

Below the tree level, an increase of the volume of urban vegetation can increase occupancy levels for bats, native birds, beetles and bugs by 30-120%.¹¹ Raising public awareness has a key part to play here – through educational and dissemination activities designed to inform local residents about the importance of existing local fauna and flora, and about opportunities to protect them and boost their numbers.



Zuzana Hudekova

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Pointers to further information

The PERFECT project (Planning for Environment and Resource eEfficiency in European Cities and Towns). <https://www.interregeurope.eu/perfect/>

The GREEN SURGE project. <http://greensurge.eu/>

The ENABLE project. <http://projectenable.eu/about/>

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About PERFECT

PERFECT (Planning for Environment and Resource eEfficiency in European Cities and Towns) is a five-year project, running from January 2017 to December 2021, funded by Interreg Europe. It aims to demonstrate how the multiple uses of green infrastructure can provide social, economic and environmental benefits. It will raise awareness of this potential, influence the policy-making process, and encourage greater investment in green infrastructure.

To find out more about PERFECT, visit <http://www.interregeurope.eu/perfect/>

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