

Urban Nature in Dresden

Services and Values of Urban Ecosystems

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Background

Urbanization is increasing worldwide. Natural land resources are more and more used for built-up areas. However, **urban nature** with its positive effects on the inhabitants is of great importance. In addition to the remnants of semi-natural habitats, other elements of the so-called **green infrastructure** have an important role for the quality of urban life, such as

- parks,
- urban forests,
- facade greenings or
- water bodies.

These elements provide numerous **ecosystem services (ES)** to humans, such as

- binding of greenhouse gases,
- reducing heat stress or
- the self-purification of water, and at the same time
- providing habitats for plants and animals.
- In addition, they beautify the cityscape and
- allow nature experiences and
- recreational activities in the urban area.



Project

The **German-Czech Research "BIDELIN"** addresses the value of ecosystem services and biodiversity in urban areas, exemplified by the cities of Dresden (DE), Liberec and Děčín (CZ).



One of the elementary aims of the project is to apply a uniform approach to detecting, quantifying and evaluating ecosystem services in the project cities. The results and values emphasize the importance of urban nature to citizens and urban planners and serve as additional arguments for nature conservation in cities.

Dresden is one of the project cities:

- located on the river Elbe,
- capital of the Free State of Saxony,
- approximately 32,800 ha urban area,
- about 557,100 inhabitants in 2017, approx. 580,000 predicted for 2025,
- Dresden is a **growing city**.

Dresden is considered a **green city**, as it has large green and open spaces and lots of small habitats as well as many nature conservation areas. This variety of urban ecosystems provide a wide range of services to dwellers and play an important role in the quality of life in Dresden. But in light of the ongoing urbanization many open spaces are overbuilt. The demonstration of the values of urban nature can provide additional arguments for the preservation and protection of green spaces in the Dresden.

City Forest

A total of **7,600 ha** of Dresden's city area are covered by forest, of which about **690 ha** are corporate forest and are thus the responsibility of the city.

The area of the corporate forest in Dresden contributes to the **avoidance of CO₂** in the value of about **€ 32,300** per year.

Allotment Gardens



In the allotment gardens in Dresden (total: approximately **1,174 ha**) there is a potential annual yield of about **110 truck-loads** of vegetables and about **80 truck-loads** of fruits.

Water Bodies

30.5 km of the Elbe and further **520** running waters flow through Dresden. Water bodies play an important role for the climatic regulation and provide many habitats for animals and plants. A survey shows that flowing waters contribute to the **well-being** of Dresden's inhabitants and represent a characteristic element of the nature in the city.

Street Trees

According to estimates, about **4.7 million trees** grow in the urban area of Dresden. Of these, approximately **53,500** are listed in the municipal tree register. On the basis of these data it could be determined that the trees store a total of **662 kg carbon**.

	Total (kg)
C-Storage	12.463
CO ₂ -Reduction	45.697
O ₂ -Production	33.234
Annual C-Sequestration	662
Annual CO ₂ -Reduction	2.429
Annual O ₂ -Production	1.767

Parks

Dresden has a park area, which in total is about the size of **1,600 football fields**. A survey in some of Dresden's parks shows that many people feel relaxed and positive after their stay in city parks. The "Großer Garten" (**147 ha**) in the city's center is particularly important and worth preserving for many people in Dresden.

Orchard Meadows



On a total area of about **284 ha**, 667 orchard meadows are distributed in the urban area of Dresden. These areas are important habitats for animals and plants in cities and also offer valuable recreational opportunities for people.

Arable Land

Dresden has a total arable land of about **5,513 ha**.

The exclusive cultivation of cereals on this area would have the potential to cover about **70%** of Dresden's grain consumption and thus reduce the import of food into the city.



Provision of additional arguments for the preservation and protection of urban nature by demonstrating values and ecosystem services of urban nature.

