

## INNOVATIVE TOOLS AND METHODS TO FOSTER SUSTAINABLE AND BIODIVERSE MAINTENANCE OF PUBLIC GREEN AREAS

Increasing the size and improving the quality of urban green spaces is an utmost priority of all European cities in the shadow of the ecological crisis. This is also required by the [EU Biodiversity Strategy for 2030](#) and the related [Nature Restoration Law](#).

Using innovative tools and methods within the maintenance of public green areas makes green infrastructure more biodiverse and resilient to climate change, but since urban parks are important windows to nature for many urban dwellers, these new methods also have great awareness-raising potential. In many public parks social, recreational and aesthetic functions have priorities, but even those frequented green areas - not to mention the lots of other, less used green areas - can be managed according to a differentiated and environmentally friendly approach so that they can be used simultaneously for social, recreational, educational, aesthetic and environmental purposes.

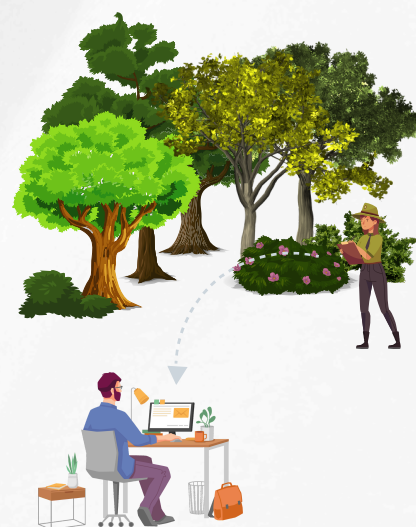
In this brief case study, we collected the most important trends and opportunities on how to foster sustainable and biodiverse maintenance of public green areas.

### Do you have a tree registry?



It is a huge work to create such a registry and it is not directly linked to biodiversity, but we must start the list with this tool, which is usually not only for the professional community. Cities often create a dedicated website or app not only to describe the species, genus and family of the given tree but to share myths, cultural and historical values as well as to highlight the benefits of trees (e.g. oxygen produces yearly, carbon dioxide reduced,

stormwater intercepted, energy conserved, air pollutants removed, total value of the tree). It often includes the cadastre of parks as well as protected areas and features like bird or bat nests. But it is equally important that such an app is a crucial engagement and communication tool: users for instance can report any issues directly to the maintenance team. The Urban Forest and Ecology Team of Melbourne for example created an [interactive map](#) that allows locals to find out about any tree in the council area and get to know the details. Besides providing information about genus and age, each tree has its own ID number and email address. The purpose of the email was for residents to inform the council of any trees that needed attention, however, since its launch in 2013, people have used the emails to send love letters and fan mail instead.



**Ferenc Albert Szigeti**  
*coordinator of the Hungarian  
Hub for Nature-based  
Solutions, lead expert of the  
BiodiverCity network*





© Canva

## Create a more diverse canopy cover!

Just like in the forest, diverse (age, species) urban forests are more resilient. Many cities follow the so-called 5-10-20 rule: no more than five per cent of one tree species, no more than ten per cent of one genus, and no more than 20 per cent of any one family can/should be found in the city or a given area.



## Let's get orchards back in city parks!



Having fruit trees on the streets is often a sensitive question: people tend to complain about falling fruits, the related smell and insects attracted by them (which did not disturb inhabitants too much some decades ago). Having them in public green spaces is another story since they can significantly increase the biodiversity of a given location and the fruits do not make “trouble”. For example, Budapest created its first experimental orchard in the award-winning Pünkösdfürdő Park, planting a total of 75 trees from 24 different species. An underground irrigation system from two sides nourishes the tree roots, supplemented by manual watering when necessary. Edible forests have a long literature, and community harvesting in a park is great fun!



Orchard next to the recreational area in the award-winner Pünkösdfürdő Park, Budapest  
© Ferenc Albert Szigeti

## Let's get shrubs back in city parks!

The same applies to shrubs. We removed them from parks some decades ago in many parts of Europe due to various reasons (safety, maintenance). Nowadays they are appearing again in less frequented parts of public parks since their existence is essential for biodiversity (providing food and hiding places for insects and birds).



Pünkösdfürdő Park, Budapest  
© Ferenc Albert Szigeti





## Support pollinators!

Urban areas sadly have become key in halting the decrease in the number of pollinators caused mainly by intensive agriculture. Believe it or not, the honey produced in urban areas often has very high quality! In urban green areas, we can support pollinators in many ways.

We can install insect hotels which is also a great educational activity. The easiest and cheapest tool is the new approach to green space management: decreasing mowing frequency, especially in less-used green spaces, not only provides havens for pollinators (and thus increases biodiversity) but contributes to cooler surface temperatures compared to regularly trimmed lawns, better water retention, more beautiful streetscape, even positively impacting the local groundwater balance. We can support this process by using seeds of native species to enrich urban wildflower meadows. We can also create bee pastures: (artificially) flowered areas by using a special seed mix, resulting in areas flowering during the summer where there is less food for pollinators. And even we can experiment with installing bee hives in public areas. It might sound dangerous to many city leaders, but our cities are often full of green corners nobody uses. Urban beekeeping has the power to enhance pollination for city gardens and parks, leading to increased plant growth and biodiversity. This practice offers valuable educational opportunities for residents to learn about the essential role of pollinators in ecosystems. Specially designed bee hives are perfectly suited for urban settings, promoting community engagement and yielding delicious local honey.



© FÖKERT Nonprofit Zrt.



## Let trees grow faster!

As more and more cities experiment with the Miyawaki Method (named after Akira Miyawaki, a Japanese botanist), more and more facts prove its success: it helps trees grow faster and increase biodiversity. The method takes its inspiration directly from processes and diversity in nature: different species of trees and shrubs are planted close to each other and this plant community works very well together, they strongly compete for the sunlight, and perfectly adapt to local weather conditions. Vegetation becomes much denser than conventional plantations, and it has the structure of a mature natural forest.

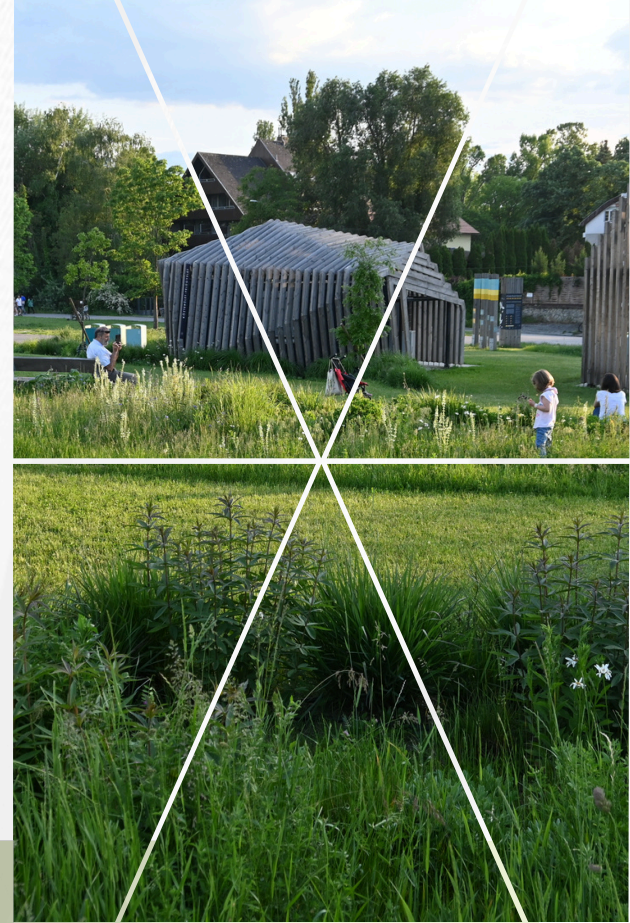






## Use landscape mosaic in public green areas!

Recreation often has priority in most parts of a public park, but not everywhere. Why not make the park landscape closer to the rural landscape, which is – originally – had a mosaic structure? Make your public park more attractive and biodiverse by featuring a diverse array of habitats, including open grassy areas dedicated to recreation, wilder wooded sections with native trees and shrubs, flower beds, raingardens and ponds, wildflower meadows, etc. This variety supports a rich biodiversity of plant and animal species, providing recreational spaces for visitors while enhancing the ecological health of the urban environment.



*Pünkösdfürdő Park, Budapest  
© Ferenc Albert Szigeti*

## Plan the length and variety of the margins properly!

Margins are also important in preserving biodiversity. It is very important to plan border strips between different habitat patches of different character (e.g. patches of shrubs between a wooded park area and the open meadow, or a strip reminiscent of a swamp between the meadow and a pond). These edges have a special role in biodiversity, they are important hiding and feeding places.



## Planting perennials instead of annual flower plants!

Perennial beds embody resilience and cost-effectiveness, requiring only a one-time planting. Their remarkable ability to absorb and retain rainwater, releasing it during dry periods, significantly benefits urban climates.

## Help young trees!

For example, by using watering bags placed around the base of trees, providing constant watering, while minimising evaporation. This is highly beneficial for young trees recovering from transplant shock. A 75-litre bags need refilling every 5-7 days and collapses when empty, making it easy even for residents to refill.







## Managing organic waste locally!

There is no bigger waste in a green area than collecting fallen leaves (by using manpower or gasoline) into plastic bags and transporting the organic material needed for plants to another place. Of course, recreational areas have other priorities, but a public park has lots of parts where leaf litter can work as a natural mulch, preserving soil moisture and maintaining soil temperature to support plant growth. It also offers a hotel for hedgehogs, providing a safe environment for hibernation and raising their young while attracting insects and other small creatures.

## Place community composting at the edge of public parks!

In line with the previous paragraph, public parks can – again - raise awareness efficiently. This time for composting, in the form of community compost boxes, run by residents. Local composting for personal use is often permit-free.



## Create a hedge made of fallen branches!

You can build a hedge with cut-off or fallen branches piled together in a line or structure, providing a cosy home for wildlife. These hedges besides providing habitat for wildlife might help with soil erosion control in gardens and natural areas. They are an eco-friendly way to recycle garden waste and promote biodiversity.

## Support birds and bats!

Birds are especially important, not only for the ecosystem but for humans enjoying the green area too. We can help them (as well as bats and often small mammals) with nesting boxes specialised for different species. We can help nesting birds if there is no reconstruction during the nesting period. In Budapest for example, Budapest's Green Space Maintenance Company works together with Birdlife Hungary to enhance tree health assessments with ecological surveys and to schedule non-urgent tree maintenance outside the nesting season. Exceptions are made for hazardous trees requiring immediate attention, and in those cases, the company relocates bird nests and ensures the safety of nesting birds.



## Become pesticide-free!

In 2009 the European Union Member States approved Directive 2009/128/EC of the 21 October 2009 on Sustainable Use of Pesticides (SUDP), and the movement of towns going pesticides-free is growing. However, many towns, regions and countries had already decided a long time ago to become pesticide-free. Learn from the pioneer [Pesticide Free Towns!](#)

## Sheep grazing in urban areas?

It is a more advanced practice. Using sheep for mowing can help reduce pollution, maintenance costs, herbicide use, and fuel consumption. They contribute to holistic land management by controlling brush, weeds and invasive plants while restoring native grasslands. In addition, it has a huge awareness-raising potential. However, providing appropriate accommodation and veterinary need costs and expertise, finding a shepherd can be challenging, you might meet several regulations and a good communication campaign is also needed.

