

URBAN BIODIVERSITY: THE FORGOTTEN INDICATOR OF OUR CITIES' QUALITY

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For decades we have measured the success of cities through economic, demographic or mobility indicators. More recently, we have incorporated variables related to climate, energy or air quality. However, there is a fundamental aspect of urban resilience and liveability that still occupies a secondary place in many municipal strategies: **biodiversity**.

Urban biodiversity is often associated with images of parks, birds or green spaces, but its scope is much broader. It speaks to a city's capacity to sustain life, maintain functional ecosystems and preserve balanced relationships between people and nature. A biodiverse city is not simply a greener city; it is a healthier, more resilient city, better equipped to face climate challenges.

Why does biodiversity matter in cities?

Cities are home to a growing share of the population, but also to a growing share of environmental impacts. Urban expansion, soil sealing and habitat fragmentation have significantly reduced the presence of species and ecosystems in many urban environments.

Nevertheless, nature continues to perform essential functions within the city. Pollinators support the functioning of parks and urban gardens. Birds help with the biological control of pests. Trees and shrubs provide shelter for numerous species while improving air quality, [reducing the urban heat island effect](#) and helping [manage rainwater](#).

Furthermore, various studies have shown that proximity to natural spaces improves physical and mental health, reduces stress and fosters social cohesion. Biodiversity is not a landscaping luxury; it is infrastructure that generates wellbeing.

Against this backdrop, more and more cities are beginning to ask a question that until recently barely featured on urban agendas: how do we know whether a city is genuinely biodiverse?

From counting trees to measuring ecosystems

One of the great challenges of urban biodiversity is that it is far more complex to measure than other aspects of sustainability. For years we have grown accustomed to counting square metres of parks or the number of trees planted, but these indicators only tell part of the story.

Two green spaces of the same size can have radically different ecological value. A park dominated by ornamental lawn and exotic species may support very little life, while a smaller one featuring native vegetation, wildflower meadows, shrub layers, wildlife shelters, habitat diversity and connections to other natural spaces can become a genuine biodiversity hub.

As a result, international bodies and pioneering cities have developed new ways of assessing the ecological quality of urban environments. One of the best known is the 10-20-30 rule, proposed by researcher Frank Santamour. Under this recommendation, no single species should account for more than 10% of a city's tree stock, no genus more than 20%, and no family more than 30%. The aim is to prevent a pest, disease or climate event from massively affecting a city that is overly dependent on a handful of species.

From there, more and more cities are incorporating metrics related to species richness, ecological connectivity, pollinator presence, tree cover or habitat diversity. The question is no longer simply how many trees a city has, but whether those trees form part of an ecosystem capable of sustaining life.

This has given rise to a number of international standards and indicators.

One of the best known is the **Singapore Index on Cities' Biodiversity (CBI)**, developed under the Convention on Biological Diversity. This index assesses aspects such as:

- Native species diversity.
- Ecological connectivity.
- Quality of urban ecosystems.
- Biodiversity governance and management.
- Citizen participation.

Another reference framework is the one used by the European Union's **Nature in Cities** initiative, which promotes indicators related to vegetation cover, ecological connectivity, species presence and accessibility to natural spaces.

More recently, monitoring systems supported by remote sensing, environmental sensors and citizen science are enabling increasingly precise information to be generated on urban biodiversity.

Cities are starting to compare themselves on biodiversity

More and more municipalities are incorporating this type of metric into their urban strategies. Some cities have been moving in this direction for years.

Singapore has become a global benchmark with its City in Nature strategy, integrating ecological corridors, green cover and wildlife habitats into one of the densest cities on the planet.

Paris is driving forward programmes of mass revegetation and the removal of impermeable surfaces, while London monitors the evolution of species and urban ecosystems as part of its environmental planning.

Closer to home, initiatives such as Vitoria-Gasteiz's Green Belt, Barcelona's Barcelona Natura 2030 strategy and green infrastructure projects under way in cities such as Valencia, Zaragoza and Bilbao also stand out.

The question guiding many of these initiatives is no longer how many parks a city has, but how much biodiversity those spaces are able to sustain.

The importance of microhabitats

Experience shows that urban biodiversity often depends on seemingly small elements.

A pond can become a refuge for amphibians. A living hedge can support bird nesting and the movement of small mammals. A dead log can host dozens of insect and fungus species. A dry-stone wall can serve as shelter for reptiles, mosses and rock-dwelling plants.

These are modest pieces of infrastructure, but extremely valuable from an ecological standpoint.

This is why many current renaturalisation projects aim to increase the complexity of green spaces by incorporating different habitats and creating opportunities for new species to establish themselves.

From concept to practice: the Ortuella Biodiversity Park

Urban biodiversity is not an issue reserved for major capitals. It can also be built in smaller municipalities through concrete ecological restoration projects.

One example is the **Barracón Biodiversity Park**, in Ortuella, driven by the Asociación Plural Anitzak in collaboration with the local council. The project proposes creating a renaturalised peri-urban park that combines leisure and environmental education spaces with the active recovery of natural habitats.

What makes the project interesting is that it brings together, in a single space, many of the elements now considered essential for fostering urban biodiversity: native woodland, Miyawaki mini-forests, wildflower meadows, living hedges, amphibian ponds, reptile shelters, pollinator areas and ecological corridors.

In effect, the park functions as a small laboratory in which to observe how creating different habitats encourages the emergence of new species and improves the ecological quality of the surroundings. A practical demonstration that biodiversity does not depend solely on having more green spaces, but on designing them with the life they can sustain in mind.

Biodiversity as an indicator of ecological transition

As cities advance their climate strategies, biodiversity is ceasing to be a complementary aspect and becoming an indicator of urban transformation.

Perhaps for decades we measured our cities' progress by the amount of infrastructure we were able to build. Yet the environmental challenges of the 21st century compel us to ask a new question: how much life are we able to bring back?

Because when pollinators increase, certain birds return, amphibians appear in an urban pond, or native plant species recover, we are not talking only about nature. We are talking about cities that are healthier, more resilient and better prepared to live with the challenges of the future — in short,

we are talking about more liveable cities.



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