

BIODIVERSITY: A FUNDAMENTAL PART OF OUR NATURAL CAPITAL

RESEARCH BRIEFING NOTE
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Key Takeaways

- **Declining biodiversity** - two-thirds of global wildlife has been lost since 1970 due to biodiversity degradation
- **Real estate benefits** - biodiversity delivers on all aspects of ESG and offers financial performance benefits to investors
- **Increased regulation** - legislative change will both incentivise and force biodiversity restoration and adaption costs will be lower for investors who act sooner

Consideration of the environmental impact of real estate is usually focussed on greenhouse gas emissions during construction and operations. However, another critical aspect is the impact of the built environment on biodiversity.

Biodiversity is declining at an unprecedented rate and real estate is responsible for 30% of this loss.¹ At the United Nation's Conference of Parties 15 (COP15) held in Montreal in 2022, an ambitious plan was agreed to slow biodiversity loss by 2030.

Buildings play a critical role in shaping sustainable communities and lifestyles. As well as performance benefits,

1. GRESB, 2021
2. World Economic Forum, 2020

promoting biodiversity in real estate limits biodiversity loss and promotes the wellbeing of the occupiers and users of the building and the community within which it is located.

In this briefing note we explore the connection between biodiversity and real estate. We explain why investors that align their strategies to accommodate new regulations will also enhance their asset financially, socially, and environmentally.

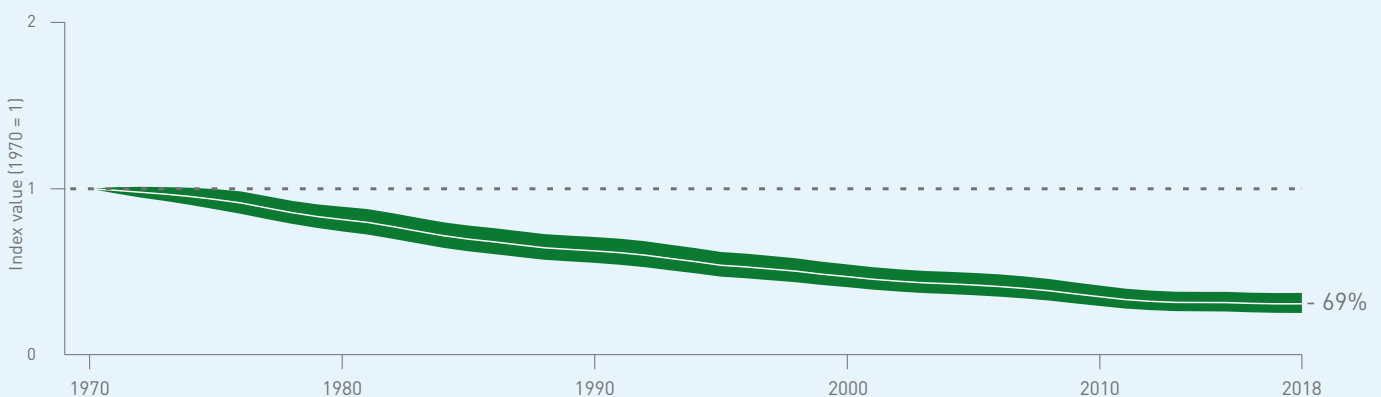
Biodiversity: crucial but declining

Biodiversity refers to all life found in a given physical area, which works together in ecosystems to maintain balance and support life. Ecosystems are crucial as half of global GDP, or \$44 trillion of economic value, is dependent on the services they provide.² This is known as natural capital.

Despite its clear importance, biodiversity is in decline, measured by a 69% reduction in wildlife populations since 1970 (figure 1). This is potentially catastrophic for humanity and our economic system because ecosystems provide fundamental services which businesses depend on such as air filtration, pollination, flood protection, and carbon sequestration.

There are many reasons for biodiversity loss such as invasive species, pollution, and climate change. However real estate

Figure 1: The global living planet index, declining wildlife populations since 1970



Source: WWF, Living Planet Report, 2022

is a major cause, particularly through land use changes, land artificialisation, unsustainable building materials sourcing, and construction-related climate change impacts.³ Raw building materials such as concrete and steel require extracting, manufacturing, and transporting. Each step of this process affects biodiversity through habitat destruction, pollution, and release of greenhouse gas emissions.

Regulation: rapidly changing legislation

To tackle biodiversity loss, governments and regulatory bodies are enacting stricter regulations and legal requirements for real estate. For example:

- The EU aims to achieve “no net land take” by 2050, with a deadline of 2030 for green urban spaces.⁴ Any undeveloped land converted for development, such as agricultural, forest, semi-natural, or natural land, must be compensated by returning an equivalent area of green space.
- New regulation implemented in England and Wales in 2021 makes it mandatory for all developments to replace any biodiversity lost and add 10% to provide a net gain. Provision for biodiversity gain will be a condition of planning permission. Where possible developers must provide the increase in biodiversity on the site itself. However, where this is not possible, developers must provide the enhancements off-site or purchase biodiversity credits.
- Since 2021, French law requires all financial institutions to disclose biodiversity and climate-related risk and provide strategy with specific biodiversity impact reduction targets.

Incorporating biodiversity considerations into investment decisions protects against reputational and financial risk by preventing costly legal battles for investors. If done correctly, it also positions them as responsible environmental stewards which aligns to societal ESG attitudes.

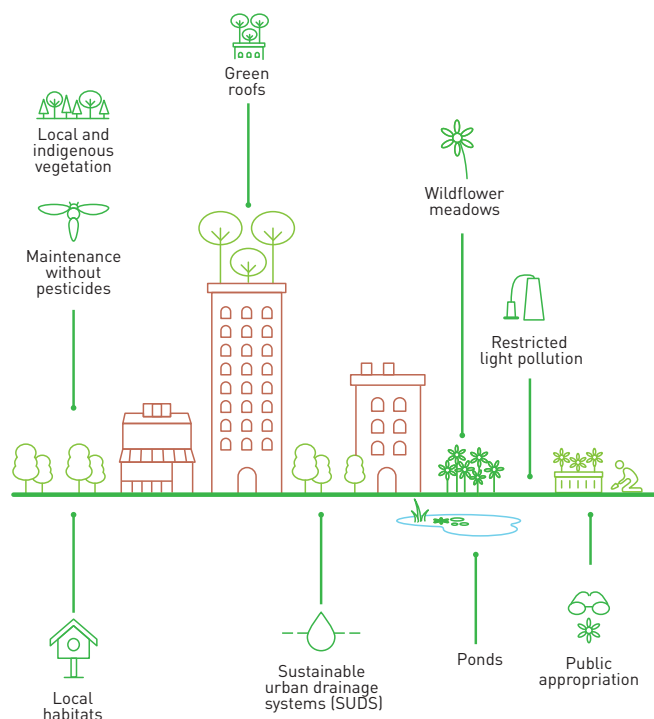
Development, maintenance, and benefits: the cost of biodiversity

For every new development, there are three options to increase biodiversity: on site; off site; and by purchasing biodiversity credits.

Typically, most biodiversity creation or enhancement can be both on site by incorporating elements such as wildflower meadows, ponds, vegetated gardens, and green roofs (figure 2). Further biodiversity creation can be added off site by the developer creating and managing habitats on additional land, such as turning arable land, which is any land capable of being ploughed and used to grow crops, into wildflower meadows.

As a last resort, developers can also purchase biodiversity credits. Similar to carbon offset credits, their aim is to create measurable increases in plants and animals outside the asset to compensate for the negative impacts of the project itself.⁵

Figure 2: On site biodiversity solutions



Sources: Altarea, Cromwell Property Group, 2023

The cost of incorporating biodiversity into a development can vary drastically, and is dependent on how many biodiversity units, which refer to the output of the biodiversity, are required. Savills calculates that in the UK, a typical off-site habitat creation would cost around £11,000, or €12,600 per biodiversity unit. These would be in addition to any on site habitat enhancements and management costs, which Savills estimate would be £20,000, or €23,000 per hectare to create and maintain enhanced habitats for 30 years. To put this into context, Savills calculates that incorporating biodiversity into the development of a 10-acre residential site, with a land value of £10 million, or €11.5 million, with the purchase of five off site biodiversity units, would cost between 0.8% and 2.2% of the land value.⁶ From our own experience, the process of enhancing biodiversity through planting trees, bushes and adding insect habitats and bird houses to our logistics asset in Nove Mesto, Slovakia, cost 5.4% of the total capital expenditure spent as part of wider BREEAM improvement works. In another example, the investment in planting a flower meadow at our light industrial asset in Straubing, Germany, represented 18.75% of the total capital expenditure.

Despite the initial cost, incorporating biodiversity can increase investment performance as well as mitigating downside risk. Biodiversity is highly visible and can improve the lettable of an asset. Whilst it can be difficult to demonstrate energy efficiency measures, occupiers can clearly see green roofs, native landscaping, and other biophilic features. These initial investments can pay off in the short term by increasing the marketing value.

3. World Economic Forum, 2021
 4. Global Real Estate Engagement Network, 2023
 5. ULI, Nature positive and net zero: the ecology of real estate, 2022
 6. Savills, What does biodiversity net gain mean for residential development, 2021

Developments which create a net biodiversity gain may benefit from a quicker permitting and approvals process too, which reduces development costs and time.

The upfront capital costs of providing more biodiversity can pay off in the long term by increasing efficiency and reducing operating costs, such as by reducing heating and ventilation requirements through a green roof or treating rainwater on site.⁷ Cheaper funding may also be available as banks are increasingly offering sustainability-linked finance and setting biodiversity targets, particularly in locations with new biodiversity-related regulations.

Placemaking: delivering meaningful social impact

As enhancing biodiversity often requires partnerships, or collaboration with other stakeholders like local communities, occupiers or other nearby landowners, it connects real estate to the broader community. This delivers on both the social and governance of ESG.

Whilst enhancing biodiversity is important for all real estate investors, those in urban locations in particular can make meaningful contributions to society. Urban areas are often

dismissed as places bereft of nature. However, cities are inseparable from the ecosystems and land they are built on and support a variety of plant and animal life. Because they have a lower existing nature they may also see a greater benefit from new provision as the impact of low to medium biodiversity will be higher than improving biodiversity in an already biodiverse location.

Biodiversity is often factored into building certifications such as WELL and BREEAM, because of its role in supporting health and wellbeing.⁸ A growing body of research indicates that nature is key to people's mental and physical health. Visible access to nature is correlated with reduced stress, a 13% increase in health and wellbeing, and an 8% increase in productivity.⁹ Urban greenery such as living walls and green roofs creates social value.

With two-thirds of the world projected to live in cities by 2050, placemaking initiatives that prioritise biodiversity are only going to become more vital to building and maintaining healthy and resilient communities. This is particularly important for deprived communities which often have less access to green space.

7. ULI, Nature positive and net zero: the ecology of real estate, 2022
8, 9. Global Real Estate Engagement Network, 2023



's-Hertogenbosch, Willemsplein 2-10, Bastion, The Netherlands



Net zero and climate impacts: nature is key

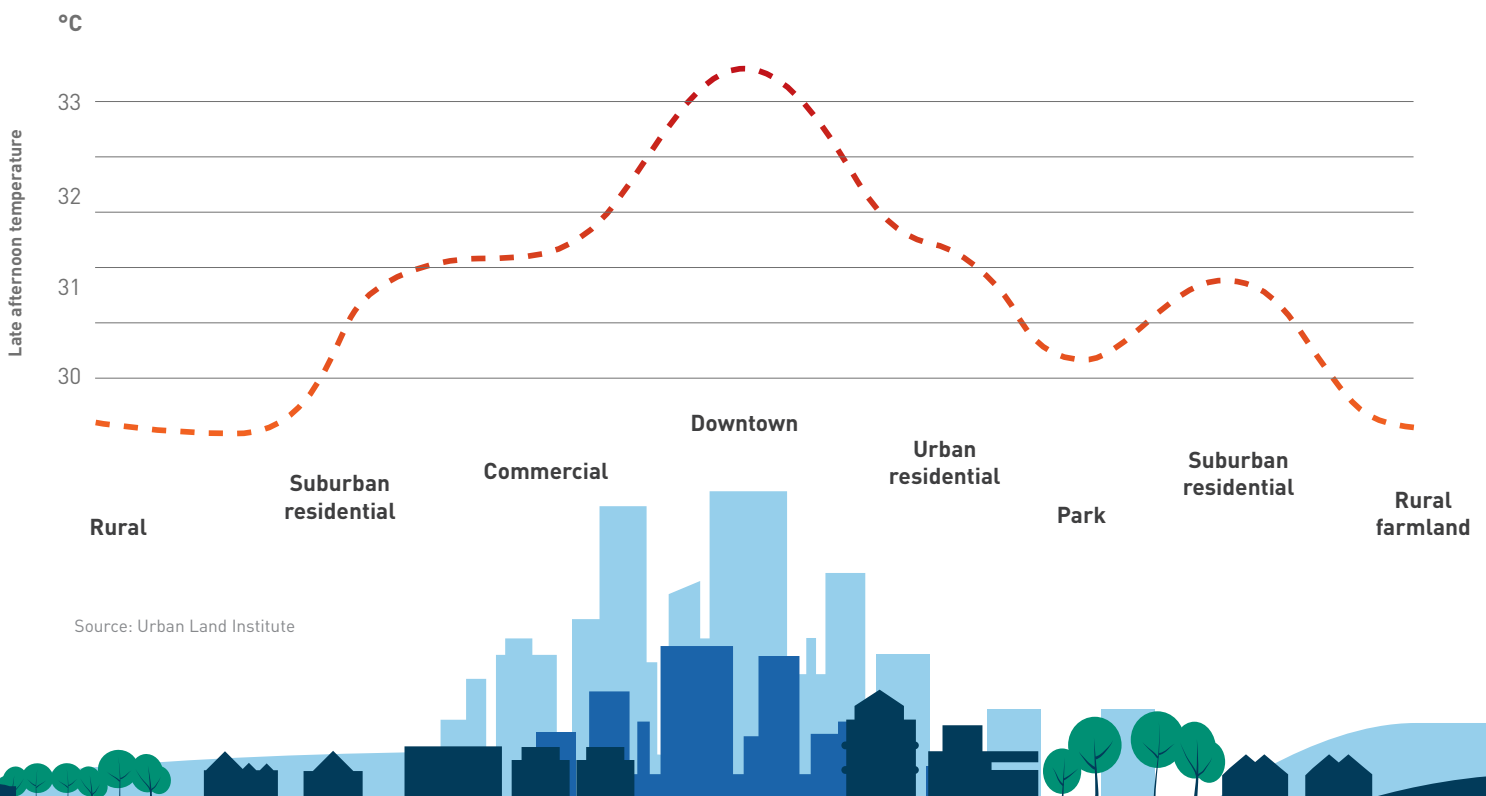
Including biodiversity in real estate can significantly contribute to reaching net zero emission goals. It is estimated that 30% of all emission reductions needed to reach the net zero goals can be achieved through biodiversity.¹⁰ Investors will also want to incorporate greater biodiversity to combat the physical risks of climate change such as the rise in extreme heat. The areas within cities that become significantly hotter than their rural surroundings are called urban heat islands (UHIs). This is due to the abundance of heat-absorbing surfaces like asphalt and concrete, reduced greenery, and concentrated human activity. UHIs can lead to higher temperatures, increased energy use

and health concerns. One way to combat this is by increasing green space as seen in figure 3. Parks, trees and plants do not absorb as much heat, and send water back via perspiration into the atmosphere which cools its surroundings.

An example of this is in New York, where the largest green roof in the city sits on top of the Javits Convention Centre. Since its creation in 2014, as well as attracting a variety of birds and insects back to the area, the green roof was found to be 16 degrees celsius cooler than a nearby non-green roof and 5-10 degrees celsius cooler than an adjacent street surface during the summer months.¹¹

10. Green, Sustainable Real Estate through Biodiversity, 2023
 11. Science Direct Assets, The Seasonal Microclimate Trends of a Large Scale Extensive Green Roof, 2021

Figure 3: Biodiversity to fight urban heat island effect





Practical solutions: what can investors do?



Impact assessment

Investors should undertake biodiversity impact assessments as part of their due diligence of any investment. This should provide an understanding of the existing and potential future provision on their assets.



Biophilic design and nature based solutions

Incorporate biodiversity in asset planning, design, retrofitting and management to provide spaces which benefit people but are also habitats for vulnerable animal species.



Clean utility alternatives

Sanitation, waste disposal and clean energy are essential services that need to be scaled up to meet growing demands of expanding urban areas. Over 80% of global wastewater is discharged into biodiversity-rich freshwater and coastal ecosystems without proper treatment. Real estate can help to prevent these by setting up effective management systems for solid waste and wastewater.



Harness natural ecosystems

Incorporate naturally functioning ecosystems into the planning and design of the built environment. This is increasingly important for climate change and disaster adaptation and mitigation. There is growing consensus that incorporating natural ecosystems can be cost-effective in the long run, especially when combined with human-engineered solutions. Furthermore, the natural ecosystem's ability to regenerate means lower maintenance costs compared to man-made structures.



Collaboration

Community/occupiers need to be involved to get their long-term assistance in managing biodiversity. Investors need to collaborate with other investors and local stakeholders because an ecosystem will encompass many assets.

Sources: GRESB, 2021, Cromwell Property Group, 2023

Glossary

Biodiversity	Nature and the variety of all of the different kinds of organisms - the plants, animals, insects and microorganisms that live on the planet.
Biodiversity credits	Measurable units of biodiversity that can be bought by companies.
Biophilic design	An approach to architecture that seeks to connect building occupants more closely to nature.
Carbon sequestration	A natural or artificial process by which carbon dioxide is removed from the atmosphere and held in solid or liquid form.
Ecosystem	An ecosystem consists of all the organisms and the physical environment with which they interact.
Land artificialisation	Transformation of a soil of agricultural, natural or forestry character by management actions, which may result in its total or partial waterproofing.
Natural Capital	The stock of renewable and non-renewable natural resources (e.g., plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.

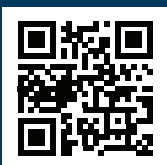
Conclusion: clear investment benefits by incorporating biodiversity

Nature must be recognised as an intrinsic part of the building life cycle, from the creation and circular management of materials for construction, to creating a long-term sense of place for occupiers and the community.

Investors should include biodiversity considerations in all acquisition, management, and disposal decisions. It has low implementation costs but can improve asset performance through stronger occupier demand, higher rents and shorter voids. It also delivers on all aspects of ESG due to strong environmental benefits, increased social value and governance through collaboration and local community partnerships.

Regulations are emerging to prevent further biodiversity loss. Aligning real estate strategies and decisions with these frameworks as they develop will build resilience and protect asset value. It will also attract investor capital which is increasingly concerned with ESG credentials.

In an era where environmental consciousness is shaping consumer preferences, regulatory frameworks, and investment trends, real estate investors have much to gain by prioritising biodiversity. Investors can secure long-term value, contribute to environmental conservation, and position themselves as leaders in delivering meaningful ESG impacts.



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