

Biodiversity and real estate: Risk, resilience, and opportunity

Why biodiversity matters

Biodiversity is the variety of living species on Earth, including plants, animals, bacteria, and fungi. Nature encompasses all living and non-living components, natural processes, and ecosystem services. The rate of species loss is greater now than at any time in human history, with extinction occurring at rates hundreds of times higher than historical extinction rates, and these trends are expected to accelerate in the coming years. In addition, global wildlife populations have declined by an average of 69% since 1970, based on the WWF Living Planet Index. As species decline or disappear, ecosystems become less stable and less productive, reducing their ability to provide essential services such as clean air, fresh water, soil fertility, and climate regulation.

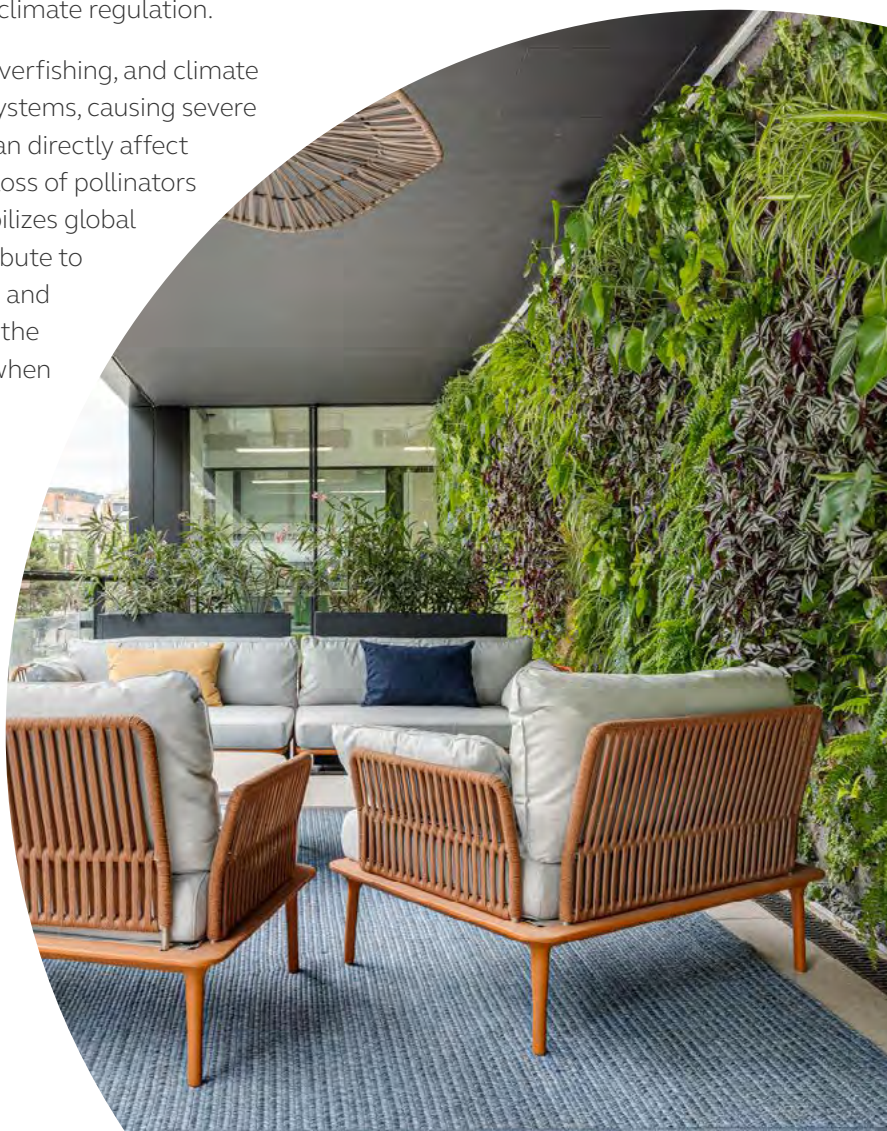
Human-driven activities like deforestation, pollution, overfishing, and climate change are destroying habitats and disrupting these systems, causing severe ecological and economic impacts. These disruptions can directly affect economic activity and food security. For example, the loss of pollinators threatens crop production, increases costs, and destabilizes global supply chains, while ecosystem degradation can contribute to broader economic impacts, including pressure on GDP and increased financial risk. Overall, biodiversity underpins the systems that support life and economic stability, and when those are stressed, it can create cascading risks across environmental, social, and financial systems.

Biodiversity loss introduces a range of interconnected risks for real estate investors, including heightened physical exposure to climate hazards and evolving regulatory requirements resulting in increased pressure on asset valuations and operating costs. As flood protection, temperature regulation, and water supply degrade, asset resilience and performance may decline. Shifting investor expectations and emerging disclosure frameworks are elevating biodiversity as a core component of risk management. Integrating nature-related considerations into investment management processes becomes more critical in order to help protect asset value, maintain market competitiveness, and position portfolios for long-term resilience.

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Materiality of biodiversity

Biodiversity is emerging as a significant business consideration worldwide and is increasingly relevant to commercial real estate, driven by investor expectations, evolving regulatory requirements, and its growing role in risk management and helping to protect asset value. This shift is especially important for real estate because the sector directly affects land, ecosystems, and the built environment.

Global standards and frameworks increasingly reflect the need to address nature-related risks, with new guidance, disclosures, and country-level regulations reinforcing this shift. For example, in the UK, BS8683 establishes formal approaches to measuring biodiversity baselines and net gains at development sites. Collectively, these developments signal a broader transition in which biodiversity is no longer viewed solely as an environmental consideration, but as a critical factor in assessing asset resilience, operational performance, and long-term portfolio competitiveness.

The rapid evolution of global frameworks and tools further reflects this growing focus. [The Taskforce on Nature-related Financial Disclosures \(TNFD\)](#) provides a foundational structure for identifying, assessing, and reporting nature-related dependencies, impacts, risks, and opportunities. The [International Sustainability Standards Board \(ISSB\)](#) is expected to incorporate biodiversity and nature-related considerations over time, drawing on TNFD guidance. Complementary frameworks—including [GRI's](#) updated Biodiversity Standard, [Principles for Responsible Investment \(PRI\)](#)'s integration of biodiversity into responsible investment practices, and [GRESB's](#) introduction of biodiversity into its real estate assessment—are further embedding biodiversity into mainstream investment analysis and reporting. Together, these developments, alongside market innovations such as investor tools and analytics that provide comprehensive biodiversity risk assessment and mitigation, are accelerating the integration of biodiversity into financial decision-making and reinforcing its importance as a core dimension of risk, resilience, and value in real estate portfolios.

Measuring biodiversity

Measuring nature-related risks presents a distinct challenge for investors due to the complexity, variability, and location-specific nature of ecosystems. Unlike greenhouse gas emissions, which have more established methodologies and standardized metrics, biodiversity measurement is still nascent, with universally accepted frameworks and consistent data sources still developing. This makes it difficult to generate comparable, auditable information across assets, portfolios, and geographies—an important requirement for investors seeking to integrate biodiversity into strategic decision-making. In addition, translating biodiversity impacts into financial terms remains complex, as there are not yet widely adopted approaches to quantify or price ecosystem degradation and its implications for asset performance.

Another challenge is that integrating biodiversity considerations into investment-related decision-making is still in the early stage of market adoption. While disclosure frameworks including TNFD, [European Sustainability Reporting Standards \(ESRS\) E4](#), the [Kunming-Montreal Global Biodiversity Framework \(GBF\)](#), and GRI 304 Biodiversity are beginning to provide structure and guidance, biodiversity-related reporting and risk assessment practices are still evolving and gaining traction. As with the development of climate-related risk frameworks, progress is expected through continued refinement of metrics, increased data availability, and stronger alignment across standards.

As this space progresses, the concept of “Nature Positive” is becoming more prominent. The term reflects a growing focus on not only mitigating negative impacts on ecosystems, but also actively restoring and enhancing natural systems. While definitions and measurement approaches are still developing (for example, the [Nature Positive Initiative](#)), nature-positive strategies are expected to play an increasingly important role in shaping investment decisions, asset design, and long-term portfolio resilience. Standardization of a nature-positive approach is expected to evolve rapidly in the coming years.

Our approach to biodiversity

At Principal Real Estate, we recognize that biodiversity loss can impact asset performance, resilience, and occupant well-being. It can also disrupt critical ecosystem services such as water management, air quality, and natural systems that help mitigate flooding, erosion, and extreme weather impacts. Our approach focuses on identifying, managing, and reducing these risks across our portfolio. Biodiversity is embedded within our broader Pillars of Responsible Property Investing (PRPI) platform, which guides how we integrate sustainability into investment management practices.

We align our approach with TNFD to help us properly identify, assess, and disclose nature-related dependencies, impacts, and risks. In support of this, our [Sustainability Guidelines for Biodiversity](#) (published in 2025) provides practical direction for stakeholders, including how to assess risks, apply tools, and implement nature-positive strategies at the asset and portfolio levels. At the asset level, we assess biodiversity impacts such as habitat loss, water stress and soil degradation as applicable as part of our acquisition due diligence process. At the portfolio level, we recommend assessing overall exposure to nature-related risks and opportunities. Biodiversity risks are considered throughout the investment lifecycle, including due diligence, development, and ongoing operations. Cross-functional teams, including acquisitions, asset management, sustainability, and property management, work together to assess risks and implement action plans. Together, this approach helps integrate biodiversity into decision-making, aligned with global frameworks, and supported by clear accountability across the organization.



Turning strategy into action

We translate our strategy to manage biodiversity risks and opportunities into action through four core pillars: operations, development, climate resilience, and engagement. We recommend portfolios and assets work to adopt the following best-practice approaches if not doing so already:

1. Operations

- Implement low-impact site maintenance to reduce chemical use
- Use native and drought-tolerant landscaping to support biodiversity
- Apply integrated pest management to limit environmental impact
- Reduce water use through efficient irrigation and alternative water sources

2. Development

- Prioritize site selection in already developed areas
- Restore brownfield sites where feasible
- Avoid environmentally sensitive areas such as wetlands and protected habitats
- Incorporate conservation, land-use planning, and habitat protection into project design

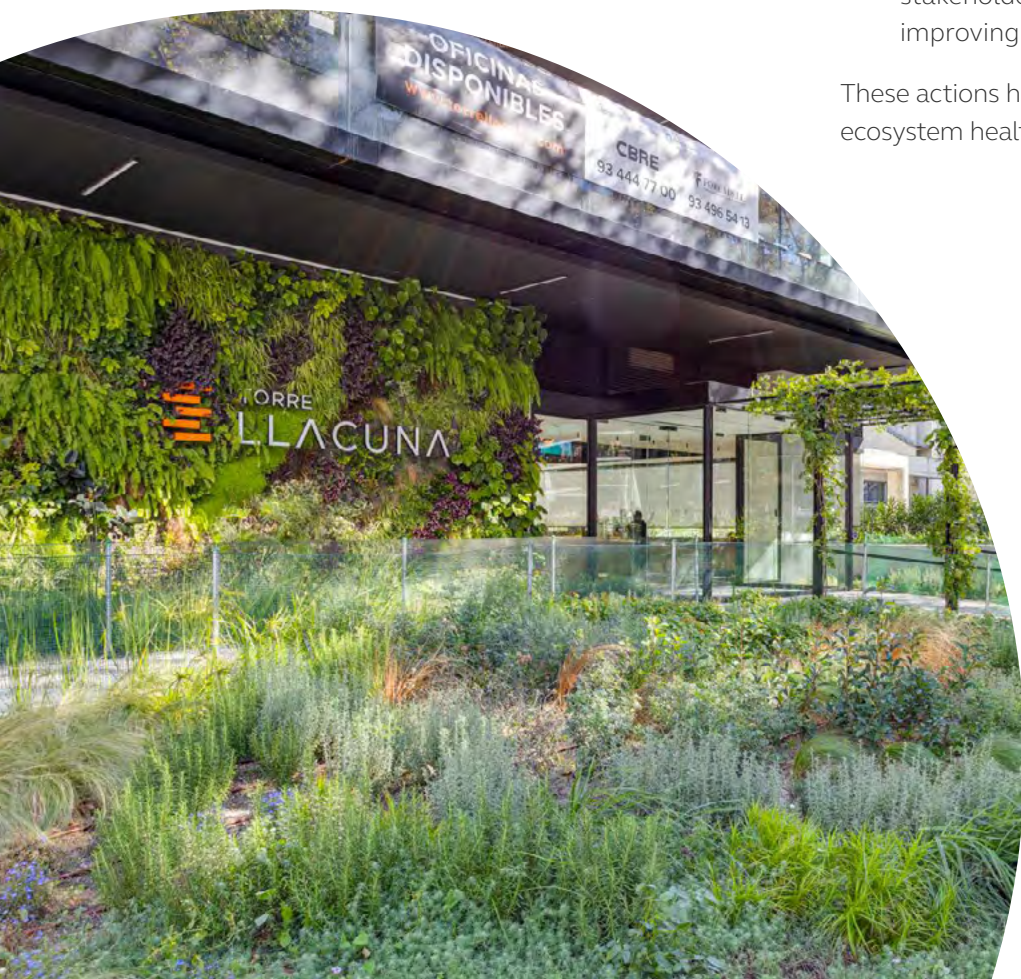
3. Climate resilience

- Use nature-based solutions such as stormwater management features, green infrastructure, and permeable surfaces
- Improve water retention and reduce flood risk
- Support cooling through tree planting, green roofs, and reduced heat island effects
- Assess exposure to climate risks such as water stress, flooding, and heat stress

4. Engagement

- Engage tenants and communities through sustainability and biodiversity initiatives
- Support activities such as tree planting and habitat restoration
- Promote education and participation in environmental programs
- Collaborate with local partners, municipalities, and stakeholders on activities aimed at maintaining and improving biodiversity

These actions help reduce environmental impact, support ecosystem health, and strengthen asset resilience.



Creating value through nature-positive action

Nature-positive action focuses on protecting, restoring, and enhancing ecosystems. For commercial real estate, these actions can help strengthen asset performance, reduce risk, and create long-term value for investors. Nature-positive initiatives can enhance asset quality, strengthen the attractiveness and competitiveness of properties, and improve tenant health, wellbeing, and overall experience. They can also support value creation by increasing resilience to physical climate and nature-related risks, and positioning properties to meet evolving tenant, investor, and regulatory expectations. As demand grows for more sustainable and resilient buildings, integrating nature into asset management and development strategies can help protect and enhance long-term asset value.

Nature-positive initiatives may also complement broader sustainability objectives, including reducing emissions, energy consumption, and water use, while supporting climate resilience and the transition to a net-zero economy. Principal Real Estate has established targets to reduce emissions, energy, and water use, and views nature-positive strategies as an area worthy of continued evaluation as part of our broader sustainability approach. Please see our **2025 Principal Real Estate Sustainability Report** for more information regarding our broader sustainability goals and performance.

Looking ahead

Nature-related risks, disclosure frameworks, investor expectations, and measurement methodologies continue to evolve rapidly. While regulatory approaches differ across jurisdictions, biodiversity is increasingly becoming a key consideration in risk management, investment analysis, and asset resilience. We expect continued advancement in frameworks, data availability, and analytical tools that help investors better assess, measure, and manage nature-related risks.

At Principal Real Estate, our approach to biodiversity will continue to evolve alongside these developments. We remain committed to monitoring emerging requirements, evaluating new tools and methodologies, and aligning with the most relevant and widely adopted frameworks to strengthen how we assess and manage biodiversity-related risks and opportunities across our portfolio.

By integrating biodiversity considerations into investment decision-making and asset management practices, we seek to support long-term asset resilience, protect value, and contribute to healthier ecosystems and communities. We believe that proactive biodiversity stewardship is both a sound risk management practice and an important component of sustainable value creation.



Risk Considerations

Past performance does not guarantee future results. Investing involves risk, including possible loss of principal. Potential investors should be aware of the risks inherent to owning and investing in real estate, including: value fluctuations, capital market pricing volatility, liquidity risks, leverage, credit risk, occupancy risk and legal risk. All these risks can lead to a decline in the value of the real estate, a decline in the income produced by the real estate and declines in the value or total loss in value of securities derived from investments in real estate.

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