

Introduction to Biodiversity Considerations

Biodiversity: The Basics

Biodiversity, shorthand for biological diversity, refers to the natural variety of organisms that comprise ecosystems and corresponding ecosystem functions that support life on Earth. The variation and abundance of genes and species in an ecosystem are key for its stability under external pressures, with biodiversity health dictating the resiliency and functionality of natural ecosystems. Biodiversity essentially captures the “value chain” of renewable and nonrenewable natural resources in ecosystems across water, soils, air, and living species. Biodiversity is measured by the density and variability in species and genes, with the level of biodiversity in a region or geography ranging widely between arid or heavily human-impacted landscapes with low levels of biodiversity and “biodiversity hotspots” like rainforests or wetlands that provide key ecosystem services and resources. Biodiversity ecosystem services include global food and water source security, natural resource regeneration, and climate change mitigation through carbon sequestration and resiliency to extreme weather events (EWEs).

Biodiversity loss is a systemic risk to the global economy. Natural assets and ecosystem services are known as Natural Capital and directly contribute towards traditional measures of economic activity like GDP. Global efforts to measure the economic value



IN COLLABORATION WITH:



KEY TAKEAWAYS

- Institutional investors have begun to focus on having a better understanding of dependencies on and impacts to biodiversity in capital allocation strategies.
- A growing number of asset managers across classes are looking beyond climate change when considering systemic environmental risks, focusing on the economic value of natural ecosystem services, and conversely, the business risks posed by biodiversity loss.
- Asset owners who are early movers in mitigating the risk exposure of assets to headwinds from loss of natural capital will be better positioned to protect value and expand the positive impact of their portfolios.

of ecosystem services from the World Economic Forum have found that ~\$44T of annual economic value generation, over half of the world's total GDP, is moderately or highly dependent on ecosystem services and exposed to risks from biodiversity loss.¹ Biodiversity loss and corresponding decreases in natural capital under a 'business-as-usual' scenario could significantly hurt global economies in the near future; studies project a reduced supply of ecosystem services (e.g., reduced soil fertility and freshwater filtration, loss of marine fisheries) would result in a ~\$10T loss in global GDP by 2050, equivalent to an annual loss of \$479B.²

Global biodiversity is currently being destroyed at an unprecedented rate, as average population sizes of global fauna have decreased by an average of 69% since 1970, and ~20% of the world's countries are currently at risk of ecosystem collapse in what is commonly referred to as Earth's sixth mass extinction.³ As threats have mounted, biodiversity loss has gained recognition as a leading global issue, and the 2022 UN Biodiversity Conference of the Parties (COP 15) saw the adoption of a landmark set of international goals for biodiversity by 188 nations known as the Kunming-Montreal Global Biodiversity Framework (GBF), which committed to protect 30% of global land, coastal areas, and inland waters by 2030, and aligned biodiversity priorities with the UN SDGs.⁴ An additional Accelerator Partnership was also joined by 23 countries to facilitate rapid access to financial and technical support to support parties in fast-tracking implementation of National Biodiversity Strategies and Action Plans (NBSAPs).⁵

The Growing Importance of Biodiversity for Investors

Climate priorities have dominated environmental priorities for investors in recent years, as asset owners and asset managers position themselves for the transition to a low-carbon economy. While still an emerging

ESG consideration compared to more developed climate priorities (e.g., Net Zero Asset Owner Alliance, Climate Action 100+), asset owners are increasingly weighing biodiversity considerations in ESG assessments when allocating capital to fund managers. Notably, the GBF calls for a central role for institutional stakeholders in reaching the stated goal of mobilizing over \$200B each year to protect biodiversity, spurring many asset owners to push fund managers to begin evaluating biodiversity exposure and impacts.⁶

Thus far, 153 financial institutions representing over \$22T have signed the Finance for Biodiversity Pledge, committing to protect and restore biodiversity through their finance activities and investments.⁷ While still a nascent issue for most investors, biodiversity risks to natural capital have begun to grow in prominence as another important environmental business consideration that should be managed in portfolios and targeted in funds.

The Emergence of Biodiversity Disclosures

The European regulatory landscape is leading the push for corporate biodiversity disclosures. The EU Corporate Sustainability Reporting Directive (CSRD) mandates that qualifying companies issue environmental disclosures based on the European Sustainability Reporting Standards (ESRS).⁸ The European Sustainability Reporting Standards covers six disclosure areas, including one standard (ESRS E4) that directly requires biodiversity and ecosystem disclosures from companies, as outlined below. It is estimated that the CSRD will eventually apply to 50,000 companies, including 10,000 non-EU assets with European operations, with the first reporting year for large European companies (i.e., 500 employees, EUR 40m turnover and/or EUR 20m balance sheet value) required in 2025 for FY2024 information.

ESRS E4 Biodiversity and Ecosystem Disclosures

| SEGMENT | DISCLOSURE | DISCLOSURE REQUIREMENT |
|---|------------|--|
| GENERAL DISCLOSURE | ESRS E4-1 | Transition plan on biodiversity and ecosystems |
| IMPACT, RISK, AND OPPORTUNITY MANAGEMENT | ESRS E4-2 | Policies related to biodiversity and ecosystems |
| | ESRS E4-3 | Actions and resources related to biodiversity and ecosystems |
| METRICS AND TARGETS | ESRS E4-4 | Targets related to biodiversity and ecosystems |
| | ESRS E4-5 | Impact metrics related to biodiversity and ecosystems change |
| | ESRS E4-6 | Potential financial effects from biodiversity and ecosystem-related impacts, risks and opportunities |

**ESRS E2 Pollution, ESRS E3 Water and Marine Resources, and ESRS E5 Resource Use and Circular Economy require additional biodiversity-related disclosures.*

The EU taxonomy for sustainable activities (EU Taxonomy), the European Commission’s sustainable finance classification system, includes the protection and restoration of biodiversity and ecosystems as a guiding objective. In April 2023, the European Commission published a draft Delegated Act that defines the technical screening criteria for evaluating biodiversity and ecosystem impacts, including common definitions and language to guide how asset owners and managers should prepare asset-level biodiversity disclosures.⁹

Notably, France already mandates nature-related disclosure requirements. In 2021, France introduced a new decree under Article 20 of the French law on Energy and Climate which included requirements for financial institutions to disclose information on their

assets’ dependency and impact on biodiversity. Other global environmental leaders have also taken action to push for corporate biodiversity disclosures, including Australia, France, Germany, the Netherlands, Norway, Switzerland, and the United Kingdom, who have financed the Task Force on Nature-Related Financial Disclosures’ development.

The Task Force on Nature-Related Financial Disclosures (TNFD) from the Financial Stability Board (FSB) has emerged as the primary global standard for biodiversity reporting. The final TNFD framework was recently released in September 2023 at UN Climate Week in New York.¹⁰ Over 4,000 signatories, including the taskforce of ESG and Sustainability leads from key financial institutions and investors with over \$20T in assets, have aligned with the TNFD to date.¹¹

Asset owners looking to protect value in assets exposed to nature-related risks and aggregate biodiversity portfolio data can begin to request or encourage fund managers in their portfolio to align with the TNFD framework as the current industry standard for incorporating biodiversity considerations. See below for the TNFD's 14 recommended disclosures across four pillars: biodiversity governance, strategy, risk and impact management, and metrics and targets.

TNFD Recommended Disclosures

| PILLAR | OUTCOME | RECOMMENDED DISCLOSURES |
|-------------------|--|---|
| Governance | Disclose the organisation's governance of nature-related dependencies, impacts, risks, and opportunities. | <p>Describe the board's oversight of nature-related dependencies, impacts, risks, and opportunities.</p> <p>Describe management's role in assessing and managing nature-related dependencies, impacts, risks, and opportunities.</p> <p>Describe the organisation's human rights policies and engagement activities, and oversight by the board and management, with respect to Indigenous Peoples, Local Communities, affected and other stakeholders, in the organisation's assessment of, and response to, nature-related dependencies, impacts, risks and opportunities.</p> |
| Strategy | Disclose the effects of nature-related dependencies, impacts, risks and opportunities on the organisation's business model, strategy, and financial planning where such information is material. | <p>Describe the nature-related dependencies, impacts, risks, and opportunities the organisation has identified over the short, medium, and long term.</p> <p>Describe the effect nature-related dependencies, impacts, risks, and opportunities have had on the organisation's business model, value chain, strategy, and financial planning, as well as any transition plans or analysis in place.</p> <p>Describe the resilience of the organisation's strategy to nature-related risks and opportunities, taking into consideration different scenarios.</p> <p>Disclose the locations of assets and/or activities in the organisation's direct operations and, where possible, upstream, and downstream value chain(s) that meet the criteria for priority locations.</p> |

| PILLAR | OUTCOME | RECOMMENDED DISCLOSURES |
|--|--|---|
| <p>Risk and Impact Management</p> | <p>Describe the process used by the organisation to identify, assess, prioritise, and monitor nature-related dependencies, impacts, risk, and opportunities.</p> | <p>Describe the organisation’s processes for identifying, assessing, and prioritising nature-related dependencies, impacts, risks, and opportunities in its direct operations.</p> <p>Describe the organisation’s processes for identifying, assessing, and prioritising nature-related dependencies, impacts, risks, and opportunities in its upstream and downstream value chain(s).</p> <p>Describe the organisation’s processes for monitoring nature-related dependencies, impacts, risks, and opportunities.</p> <p>Describe how processes for identifying, assessing, prioritising, and monitoring nature-related risks are integrated into and inform the organisation’s overall risk management processes.</p> |
| <p>Metrics & Targets</p> | <p>Disclose the metrics and targets used to assess and manage material nature-related dependencies, impacts, risks, and opportunities.</p> | <p>Disclose the metrics used by the organisation to assess and manage material nature-related risks and opportunities in line with its strategy and risk management process.</p> <p>Disclose the metrics used by the organisation to assess and manage dependencies and impacts on nature.</p> <p>Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.</p> |

Understanding Nature-Related Risks to Assets

Nature and climate-related risks can be understood and addressed in tandem, as biodiversity loss and climate change reinforce each other through a positive feedback loop; a self-reinforcing cycle of ecosystem destruction and global warming where biodiversity loss drives greater carbon emissions, which, in turn, drives further biodiversity loss. Like climate change, biodiversity risks can be broken down between physical and transition-related risks to businesses.

Physical Risks – Direct physical risks stem from a company's dependency on natural assets for its economic activity and include the financial and operational impacts caused by a loss of biodiversity and key ecosystem services. Physical risks to assets vary widely by sector and geography and include resource loss, supply chain constraints, and market disruptions. Assets highly dependent on ecosystem services that are exposed to physical risks include companies sourcing agricultural products and natural resources.

Transition Risks – Indirect transition risks to companies are driven largely by public scrutiny and government regulation and can include loss of customers, reputational damages, and regulatory penalties and fines for operations that contribute to biodiversity loss and ecosystem destruction. Assets in sectors that heavily contribute to biodiversity loss are more exposed to transition risks, including the four major value chains that account for 90% of the pressure on biodiversity: food and beverages, infrastructure and mobility, energy, and fashion.¹² Potential commercial impacts of identified sustainability risks.

While nature-related risks can be categorized similarly to climate-related risks, biodiversity and climate change have key differences in their causation, measurability, and scope. This is primarily because ecosystem degradation and biodiversity

loss have a much more complex dynamic between cause and effect than GHG emissions and climate change.

While emissions across the globe produce a relatively consistent impact on climate change, biodiversity loss requires a much more locally differentiated approach, and loss of natural capital can be accelerated or mitigated based on the resiliency and exposure of a given ecosystem.

The more complex relationship between ecosystem degradation and biodiversity loss presents greater challenges for measuring the multitude of biodiversity impacts that may be caused by a company's operations. While key climate metrics (e.g., MtCO₂) are relatively straightforward, tracking a business's biodiversity footprint based on will require a wider set of more complex metrics (e.g., spatial footprint impacted, volume of wastewater, tons of high-risk commodities sourced) than those needed to track its carbon footprint, making reliable biodiversity data a key area for further development. While the TNFD has standardized disclosure metrics, collecting data and reporting on biodiversity metrics remains a pain point in adoption for asset managers, and may require complex tools that overlay ESG data onto geospatial data to isolate risks and identify declines in ecosystems due to asset activity.¹³

Managing Portfolio-Level Biodiversity Risks

Asset owners targeting biodiversity goals in their investment portfolio construction in response to growing public and regulatory pressure can begin to request flow-down biodiversity diligence and disclosures from asset managers. Asset owners screening managers for investment can evaluate the biodiversity risk management maturity of asset managers, such as whether biodiversity considerations are integrated in ESG due diligence and if managers have ongoing monitoring of portfolio ESG risks including company exposure to nature-related headwinds. In doing so, asset owners can reference investment best practices, including assessment not only of exposure to the major drivers of biodiversity loss, but also of i) the degree of dependence to ecosystem services and ii) potential impacts and mitigants.

Asset owners can also evaluate how asset managers analyze biodiversity dependency and exposure hotspots in current portfolio assets and manage assets where biodiversity exposure may be impacting financial outcomes. If risk management practices are deemed insufficient, one tool asset owners can begin to encourage biodiversity management best practices for fund managers in their portfolios is through side letters. In preparing for disclosures, asset owners can also encourage asset managers to adopt the TNFD's LEAP approach (Locate, Evaluate, Assess and Prepare) for assessing their dependency on and exposure to nature-related issues and identifying material disclosure metrics.¹⁴ The LEAP approach aims to help asset managers conduct the due diligence necessary to inform disclosure requests aligned with the TNFD recommendations. Asset portfolio asset managers begin to conduct biodiversity risk assessments and preparing for disclosures, asset owners can direct managers to consult the TNFD Tools Catalogue and Knowledge Hub for extensive resources to support asset-level biodiversity risk assessments.¹⁵

Next Steps for Asset Owners

There are several actionable steps that asset owners can take to advance the management of biodiversity risks to their portfolio assets:

- Review the GBF and TNFD biodiversity frameworks and resources.
- Review portfolio assets for CSRD disclosure requirements; prepare for CSRD reporting cycles by reviewing ESRS disclosures and EU Taxonomy technical screening criteria.
- Evaluate the biodiversity integration and current biodiversity due diligence capacity of existing portfolio asset managers, share TNFD diligence framework and resources for reference toward best practices.
- Introduce go-forward biodiversity due diligence expectations for asset managers to screen new portfolio assets based on TNFD LEAP best practices.
- Issue requests for standardized biodiversity disclosures from fund managers (see above for the TNFD's standardized reporting framework).
- Analyze asset-level biodiversity disclosures to identify assets with greatest risk exposure, potential financial portfolio-level financial impacts from high-risk assets.
- Consider conducting scenario or sensitivity analyses to integrate biodiversity exposure in financial modeling, where feasible.

Asset owners evaluating asset managers' capacity to identify and manage biodiversity risks can leverage the following sample questions, based on the TNFD's LEAP framework:

LEAP-Aligned Assessment Questions

| STEP | QUESTION |
|---|---|
| <p>Locate The Interface with Nature</p> | <p>How are sector-wide, and value chain, and operational dependencies and impacts on nature identified during due diligence?</p> <p>What sectors, value chains, and assets have been identified to have potentially moderate and high dependencies and impacts on nature, if any?</p> <p>How would the firm be made aware of assets with activities and value chains in ecologically sensitive locations?</p> |
| <p>Evaluate Dependencies and Impacts</p> | <p>What environmental assets, ecosystem services, and impact drivers are associated with the fund's target sectors and geographies?</p> <p>How is the dependency and impacts of assets on nature evaluated during due diligence and portfolio monitoring?</p> <p>Have material nature-related dependencies or impacts been identified for any portfolio assets?</p> |
| <p>Assess Risks and Opportunities</p> | <p>Have nature-related dependencies or impacts created any material risks for assets?</p> <p>Once identified, how might potentially material biodiversity-related risks and opportunities impact investment decisions and be escalated to asset owners?</p> <p>What risk mitigation and risk and opportunity management processes (e.g. risk taxonomy, risk inventory, risk tolerance criteria) is the firm currently applying?</p> |
| <p>Prepare To Respond and Report</p> | <p>Has the firm set targets and measure progress related to nature-related risks and opportunities?</p> <p>Are any portfolio assets required to prepare nature related disclosures?</p> <p>What nature-related disclosures does the firm currently produce? Aligned to TNFD Recommended disclosures?</p> |

As biodiversity integration advances, asset owners are able to consider how the destruction of biodiversity could negatively impact their AUM, how portfolio assets may contribute to biodiversity loss, and in turn, how nature-based economic opportunities can create value for portfolio assets. Requesting that portfolio asset managers begin to assess biodiversity risks at the asset-level and collecting nature-related disclosures at the portfolio-level can help asset owners manage the biodiversity risk exposure of their portfolios. Integration of biodiversity and natural capital considerations into the investment lifecycle is rapidly progressing, and both asset owners and managers alike can begin to prepare themselves to measure nature-related risks and disclose their impacts on biodiversity.

Footnotes

1. Public resource: <https://www.weforum.org/press/2020/01/half-of-world-s-gdp-moderately-or-highly-dependent-on-nature-says-new-report/>
2. Public resource: https://files.worldwildlife.org/wfcmprod/files/Publication/file/75p5cvk0ul_Summary_Report.pdf?_ga=2.214196369.786910857.1680101773-444825462.1679491753
3. Public resources: <https://livingplanet.panda.org/en-US/>; <https://www.bcg.com/publications/2021/biodiversity-loss-business-implications-responses>
4. Public resource: <https://www.unep.org/resources/kunming-montreal-global-biodiversity-framework>
5. Public resource: <https://www.unep.org/news-and-stories/press-release/new-partnership-aims-accelerate-global-biodiversity-framework>
6. Public resource: <https://www.cbd.int/article/cop15-cbd-press-release-final-19dec2022>
7. Public resource: <https://www.financeforbiodiversity.org/>
8. Public resource: https://www.ey.com/en_us/climate-change-sustainability-services/the-nature-related-disclosure-landscape#:~:text=Subject%20to%20materiality%2C%20the%20standard,dependencies%20across%20the%20value%20chain.
9. Public resource: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/13237-Sustainable-investment-EU-environmental-taxonomy_en
10. Public resource: https://tnfd.global/wp-content/uploads/2023/08/Recommendations_of_the_Taskforce_on_Nature-related_Financial_Disclosures_September_2023.pdf
11. Public resource: <https://tnfd.global/about/the-taskforce/>
12. Public resource: <https://web-assets.bcg.com/fb/5e/74af5531468e9c1d4dd5c9fc0bd7/bcg-the-biodiversity-crisis-is-a-business-crisis-mar-2021-rr.pdf>
13. Public resource: https://tnfd.global/wp-content/uploads/2023/08/Recommendations_of_the_Taskforce_on_Nature-related_Financial_Disclosures_September_2023.pdf?v=1695118661
14. Public resource: <https://tnfd.global/publication/additional-guidance-on-assessment-of-nature-related-issues-the-leap-approach/>
15. Public resources: <https://tnfd.global/learning-tools/knowledge-hub/>; <https://tnfd.global/learning-tools/tools-catalogue/>