



The Other Side of Environmental Risk: Biodiversity and Natural Capital

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Key Takeaways

- International stakeholders across the private and public sectors 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.
- Institutional investors have increasingly dedicated resources towards mitigating their impacts on and exposure to biodiversity loss in capital allocation.
- Private market investors who begin to evaluate and mitigate the risk exposure of assets to headwinds from loss of natural capital will be better positioned to protect value and raise capital from biodiversity-sensitive limited partners.

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. To put it into financial terms, 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 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. 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](#).

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. 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. 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).

The Growing Importance of Biodiversity for Investors

Climate priorities have dominated environmental considerations for investors, as shareholders, asset owners, and management teams position themselves for the transition to a low-carbon economy. 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. 2022 saw a [150% surge](#) in the number of funds offering investment strategies that target biodiversity according to Bloomberg, as a growing number of GPs, particularly in Europe where [key regulations](#) mandating biodiversity-related disclosures are emerging, begin to evaluate nature-related business risks to assets. Notably, the GBF calls for a central role for financial stakeholders, including banks and asset managers, in reaching the stated goal of mobilizing over [\\$200B each year](#) to protect biodiversity, creating significant opportunity for investors who proactively adopt biodiversity strategies. Following COP 15 in Q4 2022, fund managers offering strategies that target biodiversity expanded their total asset base by [15% in Q1 2023](#) alone. While still an emerging ESG consideration compared to more developed climate priorities (e.g., Net Zero Asset Owner Alliance, Climate Action 100+), institutional investors are increasingly weighing biodiversity considerations in ESG assessments when allocating capital to fund managers.

As investors look to increasingly raise capital for funds targeting nature-based opportunities and analyze how portfolio companies are exposed to biodiversity, they have looked for a standard methodology for assessing and reporting on biodiversity. The Task Force on Nature-Related Financial Disclosures (TNFD) from the Financial Stability Board (FSB), launched parallel to the FSB's more prominent Task Force on Climate-Related Financial Disclosures (TCFD), has emerged as the primary body standardizing biodiversity reporting. While there is not a regulatory body currently mandating TNFD alignment, it has become the standardized framework for investors to evaluate and disclose nature-related risks and opportunities for assets. Over the past two years, the TNFD has developed and iterated upon four drafts of a multi-level biodiversity disclosure framework, with hundreds of organizations across sectors pilot-testing the TNFD's 14 recommended disclosures. The [final TNFD framework](#) was recently released on September 18 at UN Climate Week in New York. Over 4,000 signatories, including ESG and Sustainability leads from key financial institutions and investors (e.g., BlackRock, Macquarie Group, Bank of America) with over [\\$20T in assets](#), have aligned with the TNFD to date. Fund managers looking to raise capital from biodiversity-sensitive institutional investors and protect value in assets exposed to nature-related risks can look to the TNFD framework as the current industry standard for incorporating biodiversity considerations. Notably, alignment to biodiversity frameworks has begun to be mandated in some cases by European regulatory bodies and is expected to become an increasingly standard practice among financial stakeholders.

Understanding Nature-Related Business Risks

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-risks to businesses. 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 agriculture and natural resources. 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. Companies 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.

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. First, biodiversity loss and ecosystem degradation 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. Second, this more complex relationship between cause and effect 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 [14 core disclosure metrics](#), collecting data and reporting on biodiversity metrics remains a pain point in adoption, and may require complex tools that overlay ESG data onto geospatial data to isolate risks and identify risks from the decline of living species due to asset activity.

Managing Biodiversity Business Risks and Value Creation

As institutional investors increasingly align with the TNFD and target biodiversity goals for their portfolios in response to growing public pressure, forward-looking investors and asset owners can differentiate themselves towards biodiversity-sensitive LPs and capitalize on the momentum of nature-related considerations. Investors must consider how the destruction of biodiversity could impact their AUM, how portfolio company operations may contribute to biodiversity loss, and how nature-based economic opportunities can create value for portfolio assets. Companies that adopt leading biodiversity practices can also directly benefit from new business opportunities and improved standing with customers and investors.

Fund Managers who choose to pursue strategies targeting nature-based opportunities and integrate biodiversity considerations in asset management can pursue a variety of emerging best practices. The GBF outlines the considerations that asset managers should begin to evaluate in [GBF Target 15](#), which calls for governments to mandate that large companies and financial institutions "regularly monitor, assess, and transparently disclose their risks, dependencies, and impacts on biodiversity... including along their

operations, supply and value chains and portfolios.” In evaluating target investments, investors can screen for biodiversity risks and opportunities by evaluating exposure to drivers of biodiversity loss along targets’ operations, supply chains, and value chains in ESG due diligence. Investors can also analyze biodiversity dependency and exposure hotspots in current portfolio assets and evaluate how an asset’s biodiversity exposure may be impacting financial outcomes. To report on biodiversity risks, investors can align with the [TNFD reporting framework](#) in translating nature-related risks into financial projections and disclosing the financial impacts of projected biodiversity loss in reporting along the TNFD’s [14 core disclosure metrics](#).

Integration of biodiversity and natural capital considerations into the investment lifecycle is rapidly progressing, and both investors and corporates alike should begin to prepare themselves to measure nature-related risks and disclose their impacts on biodiversity. Malk is well positioned to serve as a partner in supporting teams looking to better understand and align with biodiversity frameworks, assess biodiversity risks in diligence, monitor asset exposure and opportunities, and report on biodiversity impacts.

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