

# Environmental Finance



# Biodiversity Insight 2024

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# Making the case for investment allocations to natural capital

Institutional investors are under-exposed to the natural capital asset class, which offers diversification benefits, ESG upside and potential for outperformance, says Climate Asset Management's Ben O'Donnell

**Environmental Finance:** Climate Asset Management is helping to lead the development of natural capital investing. How do you define the natural capital asset class?

**Ben O'Donnell:** Natural capital is all the planetary infrastructure that's essential for life – the assets around the planet that contribute positively to a healthy world. As a broad statement, natural capital is the world's stock of natural resources, which includes geology, soils, air, water and all living organisms. On the land, that's roughly a third forestry, a third agricultural land and a third other habitats. Over the last 100 years in particular, people have increasingly managed land from the angle of economic exploitation and overlooked the role it plays providing essential ecosystem services, such as climate regulation via carbon sequestration, crop productivity via soil biodiversity benefits or the supply of clean water via soil filtration.

Investing in the natural capital space is about how we can optimise working land to improve environmental outcomes and contribute to better planetary health, while continuing to generate attractive risk-adjusted financial returns. That might be through a change of management strategy, and/or a change of use, coupled with participation in markets allowing the monetisation of positive environmental outcomes.

**EF:** Do you think natural capital, as an asset class, has been overlooked by mainstream investors? If so, why is that?

**B O'D:** Agriculture, forestry and fisheries contribute between 4 and 5% to global GDP. Institutional investment portfolios have on average around 0.1% of their assets invested in natural capital. If investors want to match an investment portfolio to the underlying dynamics of the global economy, a significantly increased proportion of capital should go into natural capital. It's a sector which is fundamental for prosperous economies and long-term planetary health.

As for why the asset class has been overlooked, one reason could be the lack of large-scale investment opportunities due to asset and industry fragmentation. This is likely exacerbated by the lack of sufficient sector knowledge and experience within



Ben O'Donnell

mainstream investors' portfolio teams to screen, select and assess natural capital investment strategies and about how they're likely to benefit a typical institutional investment portfolio.

It's complicated to select from different strategies across geographies and commodities, and investors generally are not being presented with diversified portfolio opportunities. Finally, the uncertainties caused by climate change are making potential investors apprehensive when, in fact, the risks around climate change can be managed and can provide investment opportunities.

**EF:** What's the case for including natural capital in a diversified investment portfolio?

**B O'D:** Natural capital is an excellent portfolio diversifier in that

it has low correlation with the broader economic cycle, although returns are correlated with inflation over the long term. People need to eat, so there's inelasticity of demand across the sector through the economic cycle, and particularly as it pertains to asset values, because of the scarcity of high-quality land that can be used for the production of food and fibre.

There's a strong ESG upside to natural capital in that it can deliver better environmental outcomes and offers some correlation with any increase in carbon prices. This can not only help make portfolios more resilient to increasing exposure to tightening climate change policies but can also capture additional financial returns by monetising positive environmental impacts on related environmental markets.

“Nature, like climate, is now firmly on the agenda for many investors”

**EF: There is a perception in the market that natural capital assets are subject to high volatility. Is that true? Are there ways to mitigate that volatility?**

**B O'D:** There is a certain element of volatility across food and timber production cycles, and the weather is something we can't control. However, the selection of assets' location, crop selection and the adaptation of land use management is the first layer of resilience building against environmental risks to mitigate volatility.

The remaining volatility risks which cannot be offset by active management can be mitigated through diversification of the underlying asset portfolio. We are investing across geographies, climatic regions and sub-sectors. That builds in diversification to the portfolio and helps mitigate particular microeconomic risks that pertain to geographies, currency, climate or supply chains in a single investment, sector or region. In this way, natural capital can act as a true diversifier within a broader investment portfolio, which we think is fundamental to getting more capital to positively participate in the sector and start to invest in a way that benefits both planetary outcomes and wealth creation.

**EF: What other risks do investors in natural capital assets need to understand and get comfortable with?**

**B O'D:** Climate volatility and risk can be both a pro or a con, depending on where the asset is located and how much work has been done in terms of water security, the resilience of the landscape and its participation within global supply chains. A shortage of a commodity in one region can lead to increased prices for producers in other parts of the world; that risk can be evaluated through appropriate due diligence.

The asset class can also be exposed to political and social risk. By investing across developed markets, we reduce the potential for significant geopolitical risk. In addition, we avoid the challenge of social displacement that you can find in emerging markets that typically have a much higher proportion of rural and regional jobs.

**EF: What ancillary biodiversity and climate benefits can natural capital investments deliver to investors?**

**B O'D:** This asset class offers true impact and ESG upside, with clear improvements possible in biodiversity and carbon sequestration outcomes and better water management, for

example. Natural capital investing positions the asset in markets that are facing growing regulation intended to encourage landowners to improve environmental outcomes.

For example, by investing in increased buffer zones and set-aside areas, we can support biodiversity improvements. Upgrading irrigation systems can help reduce water consumption and allow more water to be returned to the environment. Cover-cropping strategies can both help micro habitats for insects and small reptiles at the bottom of the food chain while also promoting carbon sequestration and nutrient fixing into soils. This helps improve soil quality, water-use efficiency and the underlying diversity of the plant species within a working landscape. All this increases the land's resilience through the climatic cycle, which ultimately will improve its performance through the commodity supply and demand cycle.

These activities also provide future income generation opportunities from nascent markets in biodiversity, water quality and carbon, which represents upside to the base case investment thesis.

**EF: What incentives are there for early movers in natural capital investment?**

**B O'D:** The supply and demand dynamics for early movers in natural capital investing are very strong. On the supply side, land is a finite asset and its supply is being further constrained by ongoing urban development or degradation due to a combination of outdated management practices or climate impacts. We have an opportunity to create value through building smaller aggregations into larger, more efficient institutional-grade portfolios that optimise impact and returns.

On the demand side, we are seeing a growing body of regulation that is pushing more capital into ESG-oriented strategies. This is being done in a very soft way, largely through disclosure and reporting. But, as more and more capital comes to the sector, portfolios that have established a track record of delivering both impact and returns are going to be very well positioned to generate upside. That additional capital will be chasing a limited set of institutional scale and institutional-grade assets that we anticipate will drive significant additional value for early movers.

**EF: How do you expect the market to develop over the coming year?**

**B O'D:** While we don't expect to see the market move materially through 2024, the global challenges that we've experienced over the past 12 months pertaining to conflict and the economic cycle have definitely been acting as a brake on progress in terms of market developments and regulation.

That said, nature, like climate, is now firmly on the agenda for many investors. As economies pick up and people become once again more focused on the negative impacts that climate and biodiversity loss are having on the economy at large, increasing regulation will encourage capital to take action to improve the contribution natural capital investing can deliver to support climate and nature. If you look at where we need to be, in terms of carbon sequestration and improved biodiversity outcomes, the natural capital sector has a significant role to play in ensuring we continue to prosper on a healthy planet. ■

Ben O'Donnell is the London-based chief investment officer, natural capital strategy, at Climate Asset Management, a joint venture of HSBC Asset Management and Pollination.

For more information, see: <https://climateassetmanagement.com>



# Outlook for natural capital in 2024: Reporting, restoration and implementation

Interest in the theme will continue to grow but talk needs to be converted to action, writes **Genevieve Redgrave**

**A** growing recognition that climate and biodiversity crises are interdependent has helped nature to become embedded as a core tenet of sustainable finance.

Focus on natural capital will continue to grow in 2024 – with policymakers, companies and investors raising their game ahead of COP16 in Colombia.

## 1 Nature reporting to be encouraged/mandated

The Taskforce on Nature-related Financial Disclosures (TNFD) released its much-anticipated framework last year.

While this has initially been introduced on a voluntary basis, throughout 2024 the market will face increasing pressure to align with its standards, or a similar form of nature-related reporting.

For example, [France's pioneering Article 29](#) requires financial institutions to disclose their biodiversity-related risks and strategies, or a plan to do so.

While it has not yet been replicated elsewhere, many jurisdictions are now making moves to introduce some form of nature-related reporting. The EU, for example, has aligned much of its European Sustainability Reporting Standards with the TNFD's 'concepts'

and has [outlined plans](#) to enhance the 'interoperability' between the two frameworks throughout 2024.

There have also been suggestions that the UK will [introduce mandatory nature-related reporting](#) and [Australia has indicated plans to include nature in its reporting standards](#).

The International Sustainability Standards Board said nature reporting could be the next area of focus of its recently launched sustainability standards. Given that these have been endorsed or adopted by many countries, this would be a major development and an indication that nature-reporting is going mainstream on the international stage. There is already some aspects of nature in its existing sustainability standards.

There is concern, however, that nature reporting is a fiendishly complex task, given its localism and the lack of a singular metric. [Environmental Finance was recently told](#) that most investors simply 'lack maturity' on nature at this stage.

However, there is a growing recognition that time is running out to address the nature crisis. A UK treasury minister [recently told an event that it is crucial](#) that the TNFD is adopted faster than its climate counterpart.

The ECB, which has been at the forefront of central bank work on climate, recently signalled its intent to broaden its focus to include nature-related risks and, while it did not suggest these would be included in future expectations, a member of its executive board did say it should consider nature in its lending and bond purchases.

It is one of several central banks to have studied the exposure of economies to nature-related risks and if the trend for central bank action on climate is replicated for nature, it would be logical to assume subsequent studies to focus on micro prudential risks for individual banks will follow.

2024 will see rapid progress on nature reporting from all actors in the financial sector.

### 2 Data to open up?

A lack of useable or comparable data relating to natural capital is commonly cited as a key barrier to progress. [Data providers, however, often claim ample data already exists](#), but the market does not know how to access or use it.

There is a growing suite of technologies available to investors, including satellite imagery that can be used to track the impact of a portfolio's assets on nature, as well as DNA sequencing to give a detailed picture of change over time.

The TNFD announced it is working on an open data platform which was tipped as a counterpart to the Net Zero Data Public Utility, an open-source climate data platform currently under development.

However, it was [recently suggested](#) that this might not be a similar platform and could “just be a data standard that could be developed quickly”.

Data provision and its openness will be a key topic this year, as well as a continued growth of emerging nature data platforms and technologies for investors.

### 3 Implementation of the Global Biodiversity Framework

Signed at COP15 in Montreal at the end of 2022, the Global Biodiversity Framework was seen as a ‘landmark’ agreement to halt and reverse biodiversity loss on a global scale by 2030.

However, just over a year on, there is widespread recognition that not enough is being done to implement the goals of the agreement, including restoring 30% of degraded ecosystems and conserving 30% of land, water and seas.

It was widely discussed on ‘nature day’ at COP28 in Dubai in December that, if these targets are to be met, 2024 needs to focus on implementation.

Clear policy and investment strategies need to be put in place at a national level, in order to develop international strategies at COP16 in Colombia in October.

### 4 Investor action to forge ahead

This will require action from the private sector, which needs to move to its next phase: away from purely setting targets or assessing risk and move into action.

This will likely include increased scrutiny of portfolio companies and more engagement – particularly with the launch of nature-related investor coalitions. This includes [Nature Action 100, which will target 100 companies](#) deemed to have a high impact on nature across ‘key sectors’, as well as a Principles for Responsible Investment-led initiative on corporate lobbying activities relating to nature.

Some investors, such as [Fidelity International](#), have announced plans to step-up proxy activities and begin voting against

companies if they do not meet its minimum standards of deforestation-related practices and disclosures.

With increasing pressure to be first-movers and a growing reputational risk of being associated with practices such as deforestation, it is likely nature engagement and action will be a key theme throughout 2024 and its proxy season.

Increased action is also required in investment decision-making, particularly in areas which have previously lacked private capital, and solely been within the remit of multilateral development banks or philanthropies.

This is especially true of land restoration, which has been overshadowed by nature protection investment. This is often attributed to a lack of restoration opportunities, or protection being seen as an easier entry point into nature investment.

Yet, to meet global and regional restoration goals including the EU's recent forest restoration legislation, 2024 is likely to see a major push to channel private capital into these underfunded areas.

### 5 Innovative mechanisms for developing economies

Nature protection and restoration will be critical for many emerging economies that [rely on nature](#), but are often facing major nature degradation and are at the forefront of physical climate risks, such as floods or rising sea levels.

Emerging economies will increasingly look to new financing mechanisms to help attract private capital into nature restoration or protection projects. These might include debt-for-nature swaps, which have grown in interest over 2023 and were endorsed at COP28, especially as they can help lower sovereign debt – which is a growing problem for many emerging economies.

While there are challenges to scaling up these mechanisms, ongoing work by the likes of the [Colombian, French and Kenyan taskforce](#) or multilateral development bank reforms to speed up capital flows, will likely help these instruments grow.

### 6 Biodiversity credits – a potentially massive market

Nature credits are emerging as a way to help funnel capital to local communities and finance restoration projects, although it is unlikely the credits will be allowed to be used as ‘offsets’.

Operationalisation of a fully-fledged biodiversity credit market is unlikely in 2024. However, a market for credits is being built in numerous countries including [Australia, which recently passed legislation](#) to develop a ‘first-of-its kind’ credit market for the protection and restoration of nature and biodiversity.

The [UK has also recently introduced legislation](#), which means that building developments will be required to achieve a 10% biodiversity net gain – which will then be turned into a tradeable ‘BNG’ unit.

A number of discussions are taking place in countries from France to Colombia on how a biodiversity credit market might work in their jurisdiction, as well as biodiversity credit methodologies being developed by carbon credit certifiers.

Demand for these credits is growing. McKinsey predicts the market for them could reach \$2 billion by 2030 and upwards of \$69 billion in 2050. However, a significant amount of market building is needed until demand of that size could be facilitated.

In the meantime, carbon credits that provide biodiversity ‘co-benefits’ are seeing increased demand, and selling for a higher premium than many other types of carbon credit. However, doubts remain about the assumptions that underlie nature-based solutions and their permanence. ■

# A growing focus on biodiversity risk

As nature loss rises up the agenda, investors are adopting increasingly sophisticated approaches to the issue. **Reza Marvasti** and **Brian Colantropo** from ISS ESG survey an evolving landscape

**Environmental Finance:** How has investors' thinking about biodiversity risk and opportunity evolved over the last year or so?

**Reza Marvasti:** Essentially, what we have seen is that investors' interest in biodiversity and nature has shifted from just focusing on deforestation to also considering the impacts of issuers on biodiversity more broadly, as well as their dependencies on ecosystem services and the potential negative impact that the disappearance of those services could have on the bottom line.

**Brian Colantropo:** I would add that, over the last year or so, not only has the thinking around biodiversity evolved quite a bit, but there's also been a tremendous amount of upskilling in the market in terms of understanding the issue: what is meant by biodiversity, how do we measure it, what is material, how do we want to incorporate it into the investment process? There's just been a tremendous focus from an investor standpoint over the last 12 months.

**EF:** What has driven that growing interest in the issue?

**RM:** This is linked to a number of changes in the regulatory environment, as well as the recent release of biodiversity- and nature-related standards, disclosures and targets – most notably from the Taskforce on Nature-related Disclosures (TNFD) and the Science Based Targets Network (SBTN).

COP15, which took place in December 2022, saw the adoption of the Kunming-Montreal Global Biodiversity Framework, which included globally agreed nature-related targets and goals. There have also been a number of national-level regulatory developments, such as Article 29 of France's Energy Transition Law, which requires financial institutions to begin reporting on their biodiversity impacts.

In addition, we have also seen new investor-led initiatives, such as Nature Action 100, a global investor engagement initiative designed to encourage greater corporate ambition to halt and reverse nature loss.

All of these things have contributed to what we are seeing at the moment, namely ever-growing interest in biodiversity risk and impact assessment.

**EF:** How have you responded at ISS ESG?

**RM:** We launched our Biodiversity Impact Assessment Tool (BIAT) in 2022. The tool is based on a life-cycle impact assessment (LCIA) methodology, which allows for the quantification of



Reza Marvasti

drivers of biodiversity loss at a regional scale. The results are presented in a form of two of the most commonly used biodiversity footprinting metrics: potentially disappeared fraction of species (PDF) and mean species abundance (MSA).

In addition to regionalised modelled data, the assessment also takes into account company-specific sets of information, including ISS ESG's proprietary Corporate Rating and SDG assessment related to nature and biodiversity indicators.

So, overall, this provides a good holistic assessment of a company's impact as it relates to biodiversity. The dataset includes a total of around 700 different factors, looking at the impact per activity, region, biodiversity driver and ecosystem service.



Brian Colantropo

Together, the biodiversity impact assessment and the ecosystem services dependency assessment address the topic of double materiality, allowing users to assess both the impact and risk exposure of companies.

The tool provides intuitive rankings, which allow for easy comparison of company biodiversity impact, both within its sectors and in relation to a wider universe of assessed companies.

To further support investors in measuring the impact of their investment portfolios on biodiversity, we have recently launched a portfolio report functionality. The report allows for comparison of a portfolio's biodiversity risk and impact against a benchmark, as well as providing a set of additional TNFD-related disclosures.

**EF: Biodiversity impact can be highly habitat and species specific. Are there any universal metrics or indicators investors can focus on?**

**RM:** It is important to acknowledge that, given the complex structure of our natural ecosystems, assessment of biodiversity loss requires consideration of multifaceted issues across species and ecosystems. Both PDF and MSA metrics can provide investors with valuable information regarding a company's impact on species richness (through the PDF metric) as well as changes in species abundance (by measuring MSA).

As we know, biodiversity is inherently local. In the coming years, with the implementation of the TNFD framework and other guidelines, such as those from the SBTN, we can expect a better alignment in terms of the standards and more complete site-specific reporting.

**EF: How are you navigating gaps in data? To what extent will the TNFD address this issue?**

**RM:** Lack of standardisation is one of the biggest challenges we face when it comes to nature and biodiversity data. There are many reasons for this lack of uniformity, including inadequate

reporting and monitoring frameworks.

By providing a set of core global metrics as related to nature risk, opportunities and dependencies, the TNFD framework can provide all relevant market participants with a common language for biodiversity and nature-related risk assessment.

The question remains, of course, around the degree to which companies will use this guidance and, crucially, whether they have the necessary data to disclose against it and whether that data is of sufficiently high quality. Some of the TNFD's requirements are quite complex, so it may take a couple of years for companies to be able to meet them.

**EF: What about sector impact? What is your research telling you about concentrations of risk?**

**RM:** Recent scientific studies have shown land-use change has been the dominant driver of biodiversity loss across the globe. Based on our assessment of over 16,000 issuers, companies involved in land-based industries account for the largest impact on biodiversity. This includes industries such as food and beverages, energy and materials.

This underlines that biodiversity impact is highly concentrated. Our research found that, in a universe of around 3,000 constituents of the STOXX World AC index, the 100 companies with the largest biodiversity footprint accounted for 60% of total PDF, and the top 20% of companies by footprint accounted for 83% of the total. In terms of dependencies, surface and ground water accounted for the largest percentage of ecosystem services dependencies. The implications for investors are that, by investing in indexes that tilt away from the companies with the greatest footprint, they can dramatically reduce the biodiversity impact in their portfolios.

**EF: How do you anticipate investors' approach to biodiversity risk and opportunity evolving in the year ahead?**

**RM:** The ongoing development of target setting and scenario analysis will be a big part of investors' evolving approach to biodiversity risk. To a large extent, this is linked to the implementation of the Kunming-Montreal Global Biodiversity Framework, as well as the roll-out of sector-specific nature targets.

We're beginning to see some work being done on this, for example from the Finance for Biodiversity Foundation and the SBTN. I expect that a lot will happen in that space in the coming year.

I'm also expecting to see greater focus on nature restoration and 'nature positive' solutions such as regenerative agriculture. This is something that has been talked about quite a lot in the past couple of years.

**BC:** One thing I'd add is that we are seeing an increase in engagement and some interest in biodiversity from a voting standpoint as well. As investors get up to speed and as data quality improves, we see engagement as a tool that investors are deploying – particularly to encourage policies on biodiversity and disclosure, given the tailwinds from the TNFD. ■

Reza Marvasti is senior product manager at ISS ESG in Paris and Brian Colantropo is head of research solutions product at ISS ESG in Boston.

For more information, see: [www.issgovernance.com/esg/biodiversity-impact-assessment-tool](http://www.issgovernance.com/esg/biodiversity-impact-assessment-tool)



# Bonds with terrestrial and aquatic biodiversity conservation use of proceeds

According to *EF Data (Environmental Finance Data)*, 2023 was a stellar year for sustainable bonds issued with terrestrial and aquatic biodiversity conservation use of proceeds, with 255 bonds worth \$150 billion issued in 2023 for an all-time total of 699 bonds worth \$452 billion.\*

404 of 699 were labelled green (58%) down from 72% in 2022, with the remaining portion labelled sustainability bonds. This mirrors the wider sustainable bond market trend of an increase in sustainability bonds with a mix of social and green use of proceeds.

There was a marked increase in the proportion of green and sustainability bonds with terrestrial and aquatic biodiversity conservation use of proceeds, rising from 9% in 2022 to 37% in 2023.

## Issuer type

Supranationals continue to dominate the issuance of bonds with terrestrial and aquatic biodiversity conservation use of proceeds increasing their share of the market from 31% in 2022 to 39% in 2023. There has been a slight year-on-year decline in the proportion issued by municipal and agency issuer types, but financial institutions, corporates and sovereign issuers all maintained their market share.

## Regional issuance

The regional breakdown of issuers of bonds with terrestrial and aquatic biodiversity conservation use of proceeds shows an increase in market share for Asia, from 21% in 2022 to 26% in 2023, and for Latin America from 7% in 2022 to 10% in 2023. There have been slight proportional decreases for Europe, 52% in 2022 to 44% in 2023, and North America at 17% in 2022 and 14% in 2023.

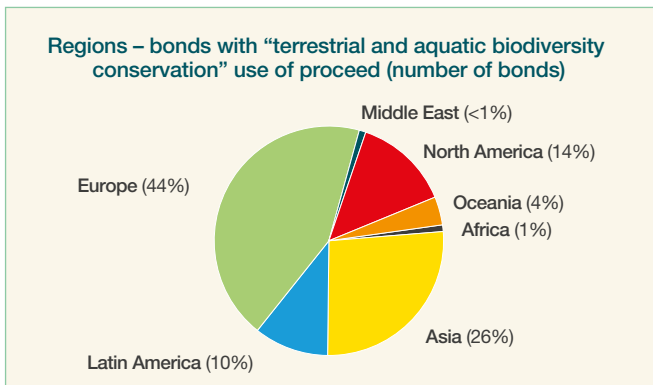
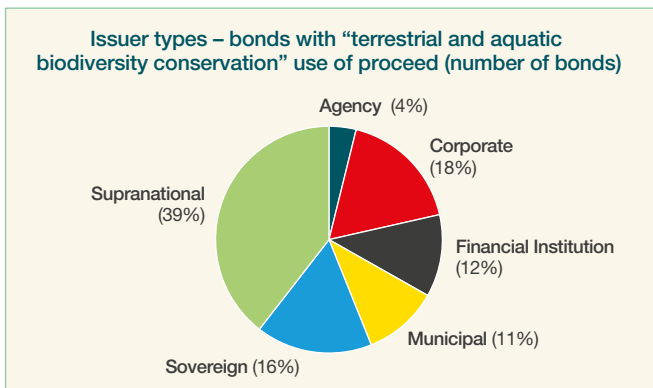
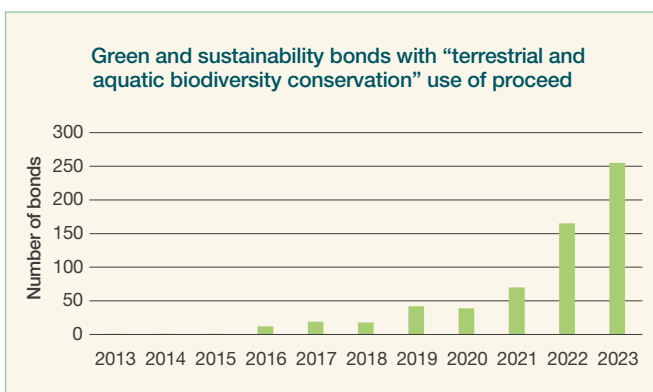
## Sustainability-linked bonds (SLBs) with biodiversity KPIs

Biodiversity KPIs remain rare in the SLB market with only five bonds issued (two in 2021, two in 2022, and one in 2023). The most notable remains the sovereign SLBs from Uruguay in 2022 and 2023, worth a combined \$2.2 billion, which include biodiversity goals surrounding the maintenance of native forest and have step-ups and step-downs in the coupon rate related to specific biodiversity indicators.

## Sustainable loans

Sustainable loans are still not commonly used to fund biodiversity projects with only around 1.5% of loans with use of proceeds or KPIs linked to biodiversity. *EF Data* has identified 12 green loans worth \$5.1 billion with terrestrial and aquatic biodiversity conservation as a use of proceeds, with only one issued in 2023 (a \$500 million loan for the Arab Republic of Egypt).

There has been some increase in the number of sustainability-



linked loans using biodiversity and conservation KPIs, increasing from 27 worth \$15.5 billion by the end of 2022 to 42 worth \$20 billion by the end of 2023. ■

\* The dollar values for the bonds include the full amount of bonds and loans with multiple use of proceeds so the full amount will not necessarily be allocated to the biodiversity use of proceeds.

# Biodiversity Equity – investing for life and the planet

*Environmental Finance* speaks with Federated Hermes' Ingrid Kukuljan on the importance of investing in the companies that help mitigate biodiversity degradation at this crucial point in time

**Environmental Finance:** What is a 'biodiversity champion', and how strict is Federated Hermes' criteria for inclusion in its investment strategy?

**Ingrid Kukuljan:** When we look at the impact of biodiversity loss it's clear we've reached a tipping point. Human activity has severely altered 75% of the planet's land surface and 66% of the marine environment. Average species population sizes fell by 68% between 1970 and 2016.

As responsible investors, we believe the best way to address this challenge is to identify biodiversity champions, that is, companies around the world that are best placed to mitigate biodiversity decline.

To be included as a biodiversity champion in our strategy, we look for two key performance indicators.

Firstly, the company needs to map to at least one of the UN Sustainable Development Goals (SDGs). The reason for this is that 80% of UN SDGs depend on biodiversity and if we don't address the issue of biodiversity loss we are unlikely to reach 2030 targets. Secondly, and crucially, the company must help restore, reverse loss of, or preserve biodiversity.

**EF:** Which topics within biodiversity do you prioritise, and why?

**IK:** There are five main drivers of regional and global biodiversity loss: change in land and sea use, direct exploitation of organisms, invasive alien species, climate change and pollution.

We've extensively researched each of these drivers and have defined six investable themes for the strategy that address all of them. These themes are land pollution, marine pollution and exploitation, unsustainable living, climate change, unsustainable farming, and deforestation. Each of these themes has multiple sub-verticals that are aligned to specific SDGs.

Idea generation within the portfolio is driven by this thematic framework and our analysis of all industry sub-verticals. Within those, we seek companies that provide products and services which have the highest positive impact on preventing loss of or restoring biodiversity.

Sources:

1 IPBES Report (2019), EOS, Our Commitment to Nature (2021), WWF and ZSL, Living Planet Report (2020), Seven ESG Trends to Watch in 2021, S&P Global (spglobal.com).

2 Global Canopy, The Little Book of Investing in Nature (2021).



Ingrid Kukuljan

## The climate-nature nexus

Protecting and restoring our ecosystems is considered to be the second most effective solution to climate change after switching from fossil fuels. Research further suggests over 50% of global GDP is highly or moderately dependent on nature<sup>1</sup>, and a failure to reverse biodiversity decline could result in collapsing food systems, loss of livelihoods and pose a systemic risk to the global economy.

While companies and investors have largely ignored this problem thus far, the financial industry can play a key role through capital allocation and stewardship as we face a global biodiversity funding gap of more than \$800 million dollars<sup>2</sup> per annum.

**EF: How do you find a balance between investing in companies that benefit biodiversity across different habitats?**

**IK:** The issue with drivers of biodiversity loss is that it very rarely occurs just as a single, self-contained instance. Often it takes place across multiple habitats, ecologies and locations simultaneously. That's why focusing on a single habitat in isolation – say, biodiversity on land, for example, or exclusively at sea – will not solve the issue.

The flipside's also true about our biodiversity champions and, in many cases, we find that there are companies that have the potential or ability to prevent biodiversity loss across multiple habitats – whether on land or on water – in multiple geographies. One of our holding companies, for instance, is a manufacturer of home decking which is made out of 95% recycled and reclaimed polyethylene, displacing the use of timber and plastic and preventing land and ocean pollution as well as deforestation.

“The issue with drivers of biodiversity loss is that it very rarely occurs just as a single, self-contained instance. Often it takes place across multiple habitats, ecologies and locations simultaneously”

**EF: How do you assess fair value as a biodiversity investor?**

**IK:** We assess the value of biodiversity credentials in two ways. The first is by using our Qualitative Biodiversity Assessment, which maps one or more of the six biodiversity themes and provides a credible biodiversity thesis around which the portfolio is managed.

The second medium is our Quantitative Biodiversity Assessment: our Biodiversity Impact Database. This database calculates the biodiversity impact of each name within the strategy across key performance indicators for examining biodiversity impact (such as species loss avoided), as well as the broader sustainability impacts.

**EF: How large is the investable universe for biodiversity?**

**IK:** If you want to invest in transition, the investable universe for biodiversity encompasses literally every company in the global index as they all need to transition to a biodiversity-positive business model or at least to reduce negative impacts. In terms of what we define as biodiversity champions, our watchlist is just under 200 companies.

We invest in companies capable of generating alpha via outsized secular growth opportunities versus the market, through the solutions they provide. These companies benefit from anticipated

regulatory change through regulated competitive advantage or early adoption relative to peers.

The stocks within the strategy's portfolio are selected for the long term, with a holding period that is intended to be over five years and we use discounted cash flow and multiple analysis. For each stock we run a DCF (Discounted Cash Flow) analysis assessing base (most likely), best and worst case scenarios.

**EF: What are the portfolio's risk and financial parameters?**

**IK:** There are three key parameters we use. The first is liquidity – the daily liquidity of a stock needs to be equivalent to 1% of the strategy's net asset value. The second is stock correlation. Finally, we only target single thematic exposure to a maximum of 25%.

We are 'growth at a reasonable price' investors, so we look to identify companies that offer growth at reasonable valuation. We look for companies with attractive returns versus cost, cash flow yield, a track record of organic growth and sustainable or improving profitability.

The strategy targets a concentrated portfolio of around 30-50 stocks held with high conviction and built-in absolute terms, without reference to an index. We adjust weighting depending on risk, with smaller companies held at smaller weights (1-1.5%). For high conviction holdings the weighting is between two to 4% and the typical maximum position size will be 5% of the portfolio.

**EF: How do you maintain the 'purity' of biodiversity investment in listed companies?**

**IK:** There are many instances where biodiversity is only a part of a more complex narrative and that's why it's key to have full traceability and accountability on the activities of all our portfolio companies. Our Biodiversity Impacts database is an important tool here. It provides a look through into areas such as carbon emissions, waste generated, and water usage – both for individual holdings and across the portfolio as a whole versus our benchmark. It's also where we get look-through into things like clean energy usage, recycling levels, and how much land has been protected from change of use or encroachment of human activity. It's a really granular tool and is a differentiator when we look to understand how our portfolio companies are performing from a biodiversity point of view. It means we only invest in stocks where we can demonstrate that a company helps to restore, reverse loss of or preserve biodiversity.

Federated Hermes is a pioneer in the field of biodiversity with a strong track record in advocacy and stewardship. The company is a member of industry organisations including the Finance for Biodiversity Pledge, the PRI Sustainable Commodities Practitioners' Group, the SPOTT Supporter Network, the Partnership for Biodiversity Accounting Financials, and the PRI plastics working group. ■

Ingrid Kukuljan is head of impact & sustainable investing and portfolio manager for Federated Hermes' Biodiversity Equity Strategy.

For more insights on the vital role investors play in limiting biodiversity loss, visit our biodiversity hub at <https://www.hermes-investment.com/se/en/professional/biodiversity-hub/>

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# What investors need to know about nature

MSCI has just published its *Investors' Guide to Nature and Biodiversity Risks and Impacts*. **Arne Philipp Klug** and **Sylvain Vanston** explain what investors need to understand about nature and biodiversity risks and impacts

**Environmental Finance:** What are the main questions that your clients are coming to you with when it comes to nature?

**Arne Philipp Klug:** They are similar to the questions investors ask about ESG and climate: “Which companies or assets in my portfolio contribute most to biodiversity loss? How do my investee companies manage biodiversity risks or impacts? What does the decline in the state of biodiversity mean for my portfolio? How can I align with voluntary or mandatory reporting frameworks?”

**EF:** How do the challenges in this space differ from those in climate transition investment approaches?

**AK:** There are a lot of overlaps with climate change, and the two issues are connected. Climate change is a key driver of biodiversity loss, while nature plays a vital role in meeting climate goals, as we need intact ecosystems to absorb carbon emissions. However, there are key differences. With climate risks, we have harmonisation when it comes to measuring climate impacts and a single metric in CO<sub>2</sub> equivalents. We don't have that in biodiversity.

Another important distinction is that we don't have a 'nature budget' defined in the way we have a budget for the volume of carbon emissions we can emit under certain scenarios.

**Sylvain Vanston:** This issue constraint often gets overlooked. Unless perhaps via the 'planetary boundaries' model, I don't think it will be possible to create quantified budgets for nature, which would allow investors to understand when companies are at risk of missing targets. This challenge requires alternative approaches to create solutions.

**EF:** How can investors translate biodiversity-related policy, such the COP15 outcomes, into meaningful signals for their investment strategies and frameworks?

**AK:** What we believe is needed is for countries to translate those goals into national laws and regulations. The EU has started to do that, with regulations on deforestation and reporting standards. That's less the case, for example, in the United States and other countries.

However, it's already clear that some of the COP15 outcomes, such as the pledge to protect 30% of land and oceans by the end of this decade, could have serious consequences for companies and investors. Although we are yet to see how that will be implemented, investors can already start to, for example, assess what impact their portfolios are having on biodiversity and begin to explore investments that deliver nature-positive outcomes.



Arne Philipp Klug

**EF:** You've just published an investor's guide to biodiversity – what do investors need to know?

**AK:** The report sets out how investors can look at nature and biodiversity, what questions they should ask themselves, and presents the tools they have at their disposal. It provides a systemic approach to tackling the topic, a practical checklist on how to integrate biodiversity into investment decisions, and our Nature and Biodiversity Metrics Framework to help investors start identifying which metrics to consider as they begin incorporating biodiversity into their investment processes.

**EF:** Can you outline your approach to biodiversity metrics?

**AK:** At MSCI, we have spent decades developing metrics and data for investors to measure risks and opportunities related to ESG and climate change issues. We have applied that experience to our nature and biodiversity metrics framework. The framework follows the logic of our climate change metrics framework: we look at the impact of investment decisions on nature and biodiversity, and the impact of biodiversity loss on portfolios. We have also considered the new Taskforce on Nature-related Financial Disclosures (TNFD) framework, because it provides great



Sylvain Vanston

guidance on how to categorise the types of risk and how to look at various impact drivers and so on.

**EF: How will new technologies and geospatial data help with some of the challenges faced?**

**AK:** We see a lot of great potential here. In contrast to climate change, biodiversity impacts are highly location specific. Investors may want to know if the physical assets of their investee companies – a factory, mine or plantation, for example – are located in or close to a biodiversity sensitive area, and so on. Leveraging our issuer-linked asset location dataset, MSCI GeoSpatial, we are able to carry out this location-specific analysis for relevant biodiversity indicators. This means that our issuer-level biodiversity screens take into account the individual asset locations the issuer has around the globe and how these may be in locations considered biodiversity-sensitive, such as deforestation fronts, etc.

In the future, these assessments could be further enhanced by using even more accurate satellite images and remote sensing. That type of technology can really help to generate more granular, consistent and up-to-date data when it comes to measuring biodiversity. Often the challenge remains to link this biodiversity data to corporate behaviour. At the same time, there is good progress being made to see, for example, the contribution of a specific company to forest loss.

**EF: Can you tell me about the work you are doing on biodiversity footprinting?**

**AK:** Biodiversity footprinting is a hot topic, and also a complex one, because there's no harmonised approach in the market or academic world of how to quantify a company's impact on nature and biodiversity. For example, should you include only direct impacts, or also those from a company's supply chain? What should be the time horizon of the footprint? What are the best metrics to use?

A biodiversity footprint metric is seen by many as a way to simplify the complexity of biodiversity into one communicable metric, akin to a carbon footprint for climate change. To cater to client needs, we plan to enhance our existing Nature and Biodiversity Metrics package in 2024 with the addition of a biodiversity footprinting tool. We are using an approach based

on academic models to assess a company's biodiversity impact at both global and local levels. We take species diversity as a proxy for the state of biodiversity.

The biodiversity footprinting would provide metrics on potentially disappeared fraction (PDF) of species, as well as means species abundance (MSA), because investors have different preferences on which methods to use. The biodiversity footprint – similar to its carbon footprint counterpart – will aim to help investors quantify impacts and enable them to compare their investments against a benchmark.

**EF: What are your thoughts on the progress of the work of the TNFD? What developments and potential outcomes will you be keeping an eye on?**

**SV:** The TNFD is obviously following in the footsteps of the Task Force on Climate-related Financial Disclosures (TCFD), which was launched in 2015. It has taken about four or five years for the TCFD to become a mainstream financial discussion. It is our hope that it doesn't take as long for the TNFD to become mainstream: we don't have that much time when it comes to biodiversity.

However, the market already recognises the value of the TNFD framework, which has been thoroughly tested through several rounds of consultation. In our opinion, the Taskforce has been prudent and inclusive, and has onboarded legitimate parties and experts, including companies in sensitive industries, investors, researchers and NGOs.

It is our hope that the state of disclosures will improve significantly with two or three rounds of TNFD reporting. As a data company, we know the state of data when it comes to biodiversity, and currently it's not as good as it needs to be. It's scarce, it's often hard to compare and it's sometimes inaccurate. Better disclosures are a key part of the sustainable finance's theory of change.

**EF: What are the next steps for the industry as it relates to nature-related impacts and dependencies?**

**AK:** I feel we've reached a minimum level of consensus about what needs to be done. It's now a question of increasing the level of sophistication, as we've seen with climate finance. While there are still data limitations, it shouldn't be used as an excuse. The data isn't perfect, but it's better than many people think.

**SV:** The data that is really missing is, for example, easy-to-access information about issuer-related asset locations and local activity type, land and water use, etc. It's not rocket science, but this data is scarce and rather difficult to collect, because until now companies hadn't been asked to report it. This is where data providers like MSCI can apply their experience in data collection and analysis, working with public and third-party data sources, and playing a role in facilitating greater transparency of data and information across issuers and investors.

Finally, investors are increasingly aware that you can't work on climate and nature in sequence: you have to work on them in parallel, as the crises are connected, as are some of the solutions. The urgency is there, the regulations are coming, and there's lots of new work to be done. Better start now. ■

Arne Philipp Klug is MSCI's biodiversity research director, based in Frankfurt, and Sylvain Vanston is the firm's head of climate and biodiversity investment research, based in Paris.

For more information, see: [www.msci.com/our-solutions/climate-investing/nature-and-biodiversity](https://www.msci.com/our-solutions/climate-investing/nature-and-biodiversity)

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# The birth of a biodiversity offset market

Dasos Habitat Foundation and Eurowind Energy have entered into a first-of-its-kind biodiversity offset transaction, to compensate for the residual impacts on nature that will be caused by a proposed Finnish wind farm. **Tapani Pahkasalo** explains the thinking behind the novel transaction

**Environmental Finance:** Dasos Habitat Foundation is pioneering a novel biodiversity impact offsetting market. What's the thinking behind the new market?

**Tapani Pahkasalo:** The basic point is that we see tremendous interest from consumers, investors and society at large in protecting nature. We see that demand in the media and public discussion all the time: biodiversity loss is a growing issue. Legislators across Europe have responded to this with new national regulations and also internationally with the Montreal-Kunming agreement, signed at the meeting of the Convention on Biological Diversity in 2022.

There is demand to protect biodiversity. Harming biodiversity remains largely an externality, it is not captured by market prices, and nature is not being priced correctly in investment decisions. The 'polluter pays' principle will reduce harm for nature and channel more funds to restoration and conservation. We wanted to come up with a market-based solution that allows those who are impacting biodiversity to contribute to restoring nature, and eventually produce more nature.

**EF:** You've just entered into your first transaction. Who and what did that involve?

**TP:** We have just closed our first Biodiversity Positive Renewable Energy transaction, with Eurowind Energy, a Danish renewable energy company that is developing the Tielampi wind farm, in Lapinlahti, Northern Savonia, in Finland. The company will offset the residual impacts on nature that the wind farm creates, from the construction of the wind turbines themselves, as well as from the transmission lines and from the road network, by restoring areas of the same habitat type, nearby.

The project will be nature positive, creating a net gain of biodiversity. At this point, because the wind farm has not yet been through the permitting process, we don't know exactly how large the farm and what the final impact will be, but we will restore an area many times greater than the land affected, with the aim of delivering overcompensation.

**EF:** It's enabled by Finland's new Nature Conservation Act. What does the act do?

**TP:** The Finnish parliament updated the Nature Conservation



Tapani Pahkasalo

“Nature is not being priced correctly in investment decisions”

Act in 2023 to, among other things, introduce provisions on voluntary ecological compensation. What it practically means for

biodiversity impact offsetting is that it provides an agreed format for measuring biodiversity, with defined units of measurement, creating consensus and transparency.

The act enables project participants to measure biodiversity loss and gain, with the same agreed methodology, and propose actions to improve the current state of nature. It sets out how to measure nature and biodiversity, how to measure loss and how to measure gains produced by means of nature restoration and conservation. It also creates potential to record projects in a public registry, enabling transparent evaluation of losses and gains.

The legislation uses a concept called ‘habitat hectare’, which is based on nature in an intact state for various types of habitats, whether old-growth forest, sand dune, peatland etc. You can then measure the current state of nature, expressed in habitat hectares that vary between that intact state and a completely degraded state. An equivalent or larger amount of the lost ‘nature units’ will need to be created to offset the impacts. Those additional and permanent nature units need to be created in the same type of habitat that is being impacted by the development.

“Producing biodiversity loss-free electricity is not very expensive when mitigation measures are correctly used and offset sites are well chosen”

**EF: To what extent is such a market replicable elsewhere? Is specific legislation required in different jurisdictions?**

**TP:** The market in Finland is completely voluntary and exists outside of compulsory legislation. Private markets can similarly be created elsewhere, without the need for specific legislation. However, what the legislation in Finland does do is create consistency and transparency on the unit of measurement. Clearly, biodiversity loss is a global problem, and there is a strong case for such consistency to be created as widely as possible, whether at the European level or globally.

Obviously, biodiversity impacts tend to be local. Similarly, solutions using offsets will have to be local. Offset markets have to be adapted to the types of habitats that are found in specific geographies. Trading units between different countries and types of nature is not meaningful. This means there is likely to be many local markets, but they are likely to operate under similar principles.

**EF: Can you talk to the costs of this service? How material is it to a wind or solar project developer?**

**TP:** The relative cost of biodiversity offsetting depends on how intensively a particular project uses land, and the value added per hectare that is developed. Our focus is on the land-use sector, and in projects that impact areas with forests, but it can be used in other habitats as well. Renewable energy projects, for example, should be able to pay for this. For other sectors, such as the construction sector, the costs are unlikely to be prohibitive by any means.

We believe that the costs are marginal compared with the

benefits they can produce. Producing biodiversity loss-free electricity is not very expensive when mitigation measures are correctly used and offset sites are well chosen. For example, by creating biodiversity-positive projects and products, companies could increase the prices they charge and eventually earn more. Similarly, they are likely to be able to access cheaper financing. For example, we are seeing that some funds that are seeking to register under Articles 8 or 9 of the Sustainable Finance Disclosure Regulation will, in future, require any investment they make to address its biodiversity impacts.

**EF: The opponents of offset markets often raise concerns around their environmental integrity. How does the scheme address those concerns?**

**TP:** Correctly placing a price on a unit of nature will encourage developers to reduce and mitigate their impacts. We follow the mitigation hierarchy: economic actors should first avoid impacts, then minimise those impacts, before seeking to compensate for unavoidable impacts using an offset mechanism.

Putting a price on nature creates incentives to protect it. If a project developer faces greater costs from damaging land that has greater biodiversity value, it will be encouraged to reduce how much it does so. We are already seeing biodiversity offsetting leading to behaviour change. There are cases where it might be optimal for a wind turbine to be placed on an area of wetland; but having to compensate for the greater impact might be sufficient to persuade the project developer to place the turbine in a less environmentally damaging spot.

**EF: How would you respond to critics who say that nature is priceless, and shouldn't be traded?**

**TP:** There are certainly cases where nature is indeed priceless and shouldn't be traded. For example, a habitat that includes species that are at risk of extinction should be protected. Existing conservation areas should not be taken into economic use, regardless of whether impacts are offset elsewhere, even if that impact is offset ten-fold.

We take the view that offsets in this scheme should ‘trade up’. So, if the developer is affecting a fairly common habitat, there's not a great deal of point creating more of it. Instead, they should be seeking to restore or create rarer habitats, with greater biodiversity value. Similarly, we seek to create larger scale, connected compensation areas. This is in line with the ecological metapopulation theory that finds that large areas have greater biodiversity value per hectare than smaller ones.

**EF: What would you say is the potential for biodiversity offset markets in future?**

**TP:** It is very clear that challenges around biodiversity loss are far from being solved. It is a critical topic in the markets that we operate in at Dasos Habitat Foundation, and we see strong demand from consumers and a willingness to pay for habitat protection. We think there is potential for most land-use sector projects to fully offset their impacts on nature and, as well as our first transaction in Finland, we are also seeing inspiring projects emerging elsewhere.

We are excited to be part of the first deal of this kind, creating new markets for biodiversity and creating new channels for nature financing. ■

Tapani Pahkasalo is a partner at Dasos Capital, based in Helsinki, Finland. For more information, see: [www.dasos.fi](http://www.dasos.fi)



# Taking a data-driven approach to nature risk and opportunity

Investors face a potential flood of nature-related data as efforts build to stem biodiversity loss. Bloomberg's Nadia Humphreys explains how they can begin to make sense of it

**Environmental Finance:** As investor interest builds in nature impacts and dependencies, what advice would you give to investors who are beginning to grapple with the issue?

**Nadia Humphreys:** The first thing is to realise that nature-related risks are financially material: 55% of global GDP is moderately or highly dependent on nature. That might express itself through direct impacts, such as poultry or cattle farming where highly transmissible diseases can have a serious impact on producers, or less obvious impacts, such as the issues Tesla had with groundwater depletion in Germany.

Then, as an investor, you need to start with the basics: what commodities are they sourcing? What governance do they have around nature? Where are they operating? Who are they doing business with? The next stage is to consider more technical elements: have they made any claims around sustainable sourcing of raw materials? Have they implemented any nature-related policies? Are they reporting basic nature-related metrics, and how are those metrics trending over time? Getting the answers to these types of questions will help you get the information needed to develop your biodiversity-based investment and engagement strategies.

**EF:** To what extent is this data available? And how difficult is it for investors to find clear signals within it?

**NH:** These datasets exist. To see what a company is doing, an investor could review how and where they make money or where they have capital expenditure. Bloomberg has revenue segmentation data on 50,000 companies which we map to over 2,000 classification categories, and we're now seeing segmented capital expenditure. Only about 4,000 of those companies have any sort of biodiversity policy. We have data on 1.1 million physical assets that shows where they are operating, based on facilities that are material to their enterprise value, like manufacturing and R&D. We also have a supply chain dataset, to show who they are doing business with.

The value we at Bloomberg want to give to investors is in helping them to start knitting individual data points together to provide a clearer narrative about their impacts and dependencies on nature. What investors need to be careful with are datasets that are heavily proxied or estimated and, as a result, are difficult to substantiate. Investors want to have confidence in the datasets



Nadia Humphreys

“Nature-related risks are financially material: 55% of global GDP is moderately or highly dependent on nature”

that are driving their investments or their engagement strategies so, if a dataset uses estimates, what's going into those numbers, and how transparent is that dataset?

**EF: To what extent does the Taskforce on Nature-related Financial Disclosures (TNFD) framework help investors to identify and collect the data from companies they need?**

**NH:** It is imperative that organisations understand and price their impacts and dependencies on nature; that allows them to better manage those impacts and dependencies. TNFD is still a reasonably new framework, but we can see that just over 750 companies have acknowledged in their corporate sustainability reporting that they plan to adopt it.

That is slightly lower than the nearly 1,500-strong TNFD community, but we see a bigger universe when we look at the framework's core components. For example, about 1,300 companies say they have board or executive management oversight of biodiversity-related issues. However, it takes time for some of these governance structures to affect how companies operate: currently, according to our data, only around 200 companies are disclosing discussions about biodiversity risk and opportunity in a meaningful way.

“It is imperative that organisations understand and price their impacts and dependencies on nature”

**EF: Forest-risk commodities are a particular focus for some companies and investors. What tools and techniques are available to help them identify and mitigate deforestation impacts in commodity supply chains?**

**NH:** Forest-risk commodities are under intense scrutiny, specifically because of recent legislation in the EU and the UK, but also because of the outcome reached in the final COP28 agreement. That agreement included a goal to halt forest loss by 2030, echoing the agreement reached in 2022 at the COP15 meeting of the Convention on Biological Diversity. That means that countries are now obliged to consider carbon stores such as forestland in the development of their next round of nationally determined contributions, due at COP30 in Brazil.

As an investor, you want to understand who is making money from high forest risk commodities. Where are they operating? Who is in their supply chain? Who are they supplying to? Where companies claim that their raw materials are sustainably sourced, investors will want to unpick or substantiate these claims. To do so, investors will need to see if the habitats around where the company is operating, or where its suppliers are operating, are in good health or whether they are degrading in terms of environmental integrity.

Until very recently, investors have had to rely on companies' claims and on the policies they have in place. Investors want to be able to interrogate whether the claims companies are making are in fact true, using a science-backed dataset that can inform discussions investors are having when they challenge

companies about the way they're performing. That's where our collaboration with the Natural History Museum comes in.

**EF: That collaboration involves Bloomberg licensing the museum's Biodiversity Intactness Index (BII). How will you be using it?**

**NH:** The BII looks at the response to human pressure on ecosystems and provides an estimate of the remaining percentage of the original number of species that are present in a location. It represents the biodiversity makeup of certain terrestrial areas in comparison with a pristine area with minimal human interference.

What we will be giving investors will be the value of the BII index relative to the operational profile of a company and relative to the operational profile of its suppliers. Investors can use the index to identify portfolio companies with operations in areas of high ecosystem integrity, or where ecosystem integrity is declining rapidly. These are both asks within the TNFD framework.

What will become really interesting to investors as the dataset evolves will be the ability to see year-on-year changes. If a company has made a commitment to reduce its impact, the index will track whether that improvement is in fact being delivered.

**EF: In terms of regulatory developments, what are you watching most closely?**

**NH:** We're seeing considerable momentum building up on reporting and disclosure. For example, under the EU's Sustainable Finance Disclosure Regulation, one indicator looks specifically at operations in or near areas of high environmental integrity. What investors really want to know is whether they are also having negative impacts on those areas.

Biodiversity is also starting to take shape within the Corporate Sustainability Reporting Directive. Companies are being asked for transition plans to 2030 and 2050 as they relate to nature. We are also seeing the EU's biodiversity objective being added to the EU Taxonomy: companies will have to begin eligibility reporting this year and alignment reporting from 2025. Initially, the activities in question are focused on conservation, restoration and ecotourism.

**EF: How much of a regulatory impact has the 2022 Global Biodiversity Framework had to date?**

**NH:** We're not aware of any policies yet to implement commitments under the Global Biodiversity Framework. That is unlikely before countries submit their action plans, which need to be delivered at COP16, scheduled for the end of this year.

But this action will need to pick up fast. According to UNEP's State of Finance for Nature, financial flows towards nature-based solutions, at \$154 billion/year, are dwarfed by \$500 billion to \$1 trillion of environmentally harmful subsidies.

But, on the other hand, there are enormous opportunities from a nature-positive economy: research from the World Economic Forum estimates that nature-positive solutions could create more than \$10 trillion in business opportunities and 395 million jobs by 2030. If we do this right, there is an economic multiplier from which we can all benefit. ■

Nadia Humphreys is head of sustainable finance data solutions at Bloomberg LP, based in London.

For more information, see: [www.bloomberg.com/professional/solution/sustainable-finance](https://www.bloomberg.com/professional/solution/sustainable-finance)

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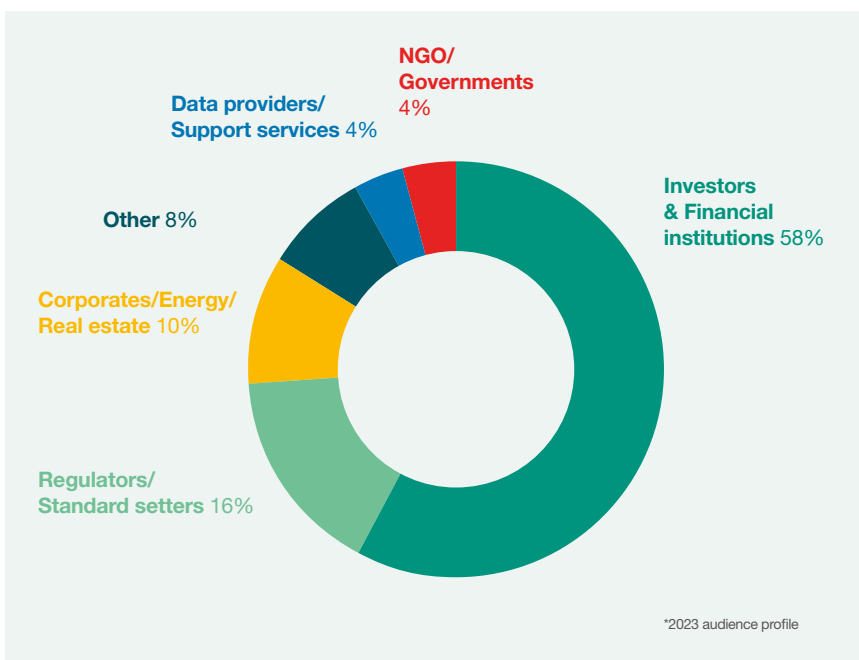
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# Measuring the biodiversity footprint of a company or portfolio

## Why biodiversity matters

Biodiversity is essential to sustaining humanity, society and people through the provision of ecosystem services and nature’s multiple contributions. In its latest Global Assessment Report on Biodiversity and Ecosystem Services, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) identifies five main drivers of direct pressures responsible for biodiversity decline:

- Changes in land and sea use
- Direct exploitation of organisms and resources
- Climate change
- Pollution
- Invasive species

Of the global boundaries set by the Stockholm Resilience Centre for the nine planetary processes essential to sustain human life on Earth, already six have been crossed such as land-system and freshwater changes.

## How to measure Corporate Biodiversity Footprint

Iceberg Data Lab (IDL) has developed a Corporate Biodiversity Footprint (CBF) measurement tool which assesses biodiversity footprinting using the metric of Mean Species Abundance (MSA). The MSA is a biodiversity metric expressing the average relative abundance of native species in an ecosystem compared to their abundance in an ecosystem undisturbed by human activities and pressures. This indicator is based on species abundance and measures the conservation status of an ecosystem compared to its original state. An area with an MSA of 0% will have completely lost its original biodiversity (or will be exclusively colonised by invasive species) whereas an MSA of 100% reflects a level of biodiversity, equal to an original, undisturbed ecosystem. The MSA metric is commonly used and scientifically recognised by international parties (IPCC, IPBES, etc.).

The CBF assesses the most material pressures on terrestrial biodiversity shown in Figure 1.

We partially cover marine biodiversity through the pressure of plastic entanglement related to marine species only. This pressure is part of the main pressure “Water Pollution”.

The CBF models the impact of corporates on biodiversity through four main environmental pressures on species and habitats:

- Change of land use, with occupational, transformational, incremental, encroachment and fragmentation impacts;
- Climate change, due to greenhouse gases emissions (GHG emissions);
- Air pollution, leading to the ecosystems’ disturbance due to

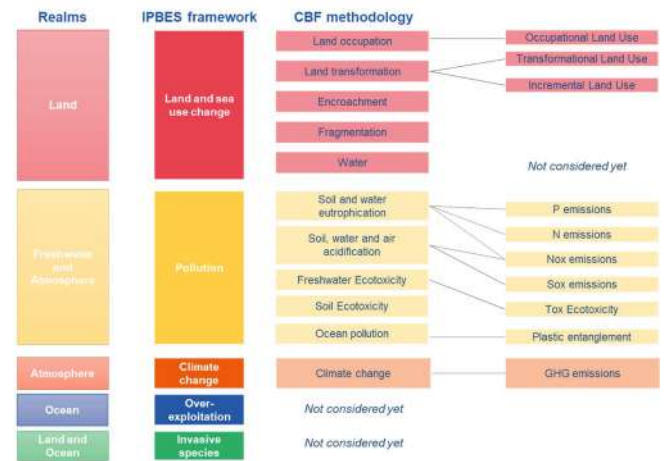


Figure 1: Pressures and sub-pressures on biodiversity considered in the CBF methodology and based on the five main drivers identified by IPBES

- terrestrial eutrophication and acidification (Nitrogen and Sulphur emissions respectively); and
- Water pollution, through freshwater ecotoxicity with the release of toxic compounds in the environment and plastic entanglement.

Two additional pressures, Invasive Species and Water stress, will be added in 2024 to extend our coverage of the biodiversity pressures.

These pressures are calculated along the whole value chain of the corporations, appraising their processes, products, and

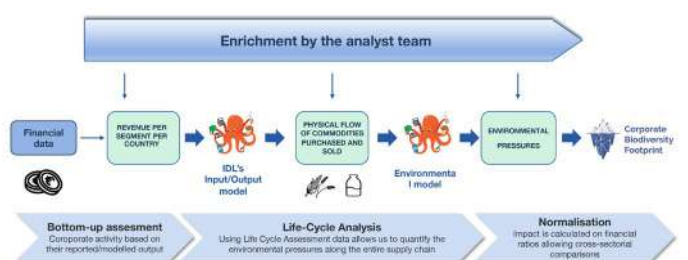


Figure 2: Illustration of the global approach and modelling process of IDL's biodiversity accounting methodology

supply chains. All pressures are aggregated into Scope 1, 2 and 3 (upstream and downstream) according to the definitions and boundaries outlined in the GHG Protocol.

Finally, the CBF provides a footprint expressed in the unit of  $\text{km}^2\text{MSA}$  (see Figure 2).

The CBF metric is carried out in a bottom-up manner. Absolute and relative impacts (computed with financial indicators) enable peer comparisons to be made. It covers the whole value chain (Scope 1, 2 & 3 upstream & downstream) and the four main environmental pressures (Land Use, Water Pollution, Climate Change and Air Pollution).

Using a comparative measurement approach allows users to implement “best-in-class” or “best-in-universe” approaches as well as positive or negative screenings. The CBF also allows financial institutions to integrate their impact on biodiversity in their strategies and decision-making processes with a science-based approach.

### How to create a Positive Contribution

Corporations’ positive contribution to biodiversity is assessed through three pillars:

- Reduction
- Avoidance
- Compensation

The “**Reduced Impact**” can be defined as the reduction of impact on biodiversity of a company or financial institution over time. The goal of the reduced impact is to track a corporation’s performance over time to compare its current impact to its predicted impact based on the environmental performance of its products and services from a base year.

The “**Avoided Impact**” is defined as the impact on biodiversity that a company or financial institution will have avoided compared to a baseline scenario established for each main sector. The goal of the avoided impact is to quantify how much the corporation’s products and services perform better than the market’s average.

The “**Compensated Impact**” or “**Positive Impact**” will be approached through positive land transformation (restoration, rehabilitation of lands, etc.).

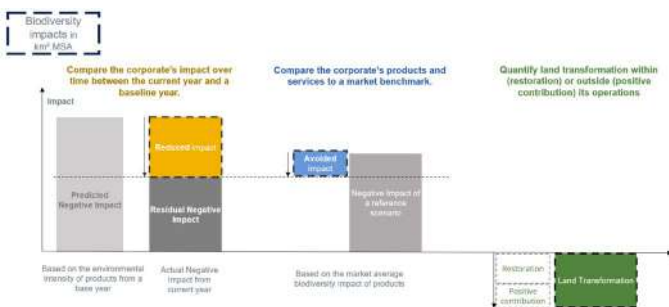


Figure 3: Illustration of the three pillars of the Biodiversity Positive Contribution

### How to assess the dependency

IDL developed the **Dependency Score** derived from the ENCORE tool. Based on 26 ecosystem services sectioned into three pillars: regulating, provisioning and cultural. IDL provides three sub-scores for each type of ecosystem service alongside an average score aggregated at the company level. This approach allows companies and financial institutions to evaluate, measure

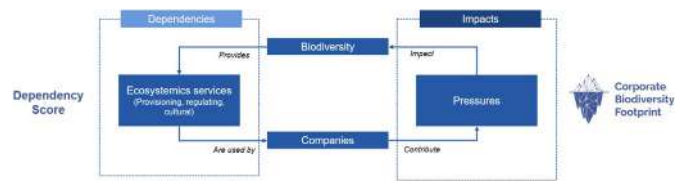


Figure 4: Double materiality principle linking impacts and dependencies

and calculate their dependencies to ecosystem services for each sector.

Looking at a company’s dependency on natural capital alongside its biodiversity impact has become an increasingly crucial topic for many stakeholders such as regulators and intergovernmental institutions. Double materiality means analysing a company’s biodiversity footprint, describing how it destroys and disturbs nature, while also looking at its dependency on nature and the impact of nature related risk on the company.

### How to align with the regulations

#### Conference of the Parties 15 (Convention on Biological Diversity, CBD)

The Global Biodiversity Framework (GBF) that was adopted in Montreal includes four goals and 23 targets. Target 15 requires companies and financial institutions to monitor, assess and disclose their risks, impacts (positive and negative) and dependencies on biodiversity all along their operations, supply chains and portfolios.

From a regulatory perspective, the CBF provides an analysis of the contribution to the reduction of the main pressures and impacts on biodiversity identified by the IPBES. IDL’s positive contribution can be used to measure positive impact, which is also one of the GBF’s objectives.

The CBF largely meets the objectives of the CBD (first adopted in 1992). Expressed in  $-\text{Km}^2\text{MSA}$ , it is a quantitative metric, comprehensible by non-experts which reflects the ecosystem condition and allows users to account for stocks and variations of stocks of biodiversity through the MSA.

#### Taskforce on Nature-related Financial Disclosures

IDL is a Forum Member of the Taskforce on Nature-related Financial Disclosures (TNFD). Following the working groups of the TNFD, IDL conducted one pilot test of the beta TNFD framework and the LEAP-FI and V-Process approach with the CBF and in partnership with some financial institutions and currently has two ongoing pilots to continue to test the framework. Our biodiversity measurement approach uses metrics and indicators as recommended in the TNFD guide.

The CBF can be used for impact metrics (in an absolute value) and measuring impact drivers such as change of land-use or pollution. The CBF can also give indicators in a relative value (per impact/€Million). This helps financial institutions and investors to evaluate companies’ impacts and dependencies on nature.

After two years of work and publishing four beta frameworks, the TNFD launched its final recommendations and guidelines in September of 2023. Following this, IDL has developed a packaged dataset aimed at answering the TNFD requirements and most of the core metrics presented by the taskforce. ■

For more information, see: [icebergdatalab.com](https://icebergdatalab.com), or [contact@icebergdatalab.com](mailto:contact@icebergdatalab.com)

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