BIODIVERSITY CREDIT ALLIANCE

Understanding Biodiversity Credit Metrics: A Business Imperative

Discussion Paper

FEBRUARY 2026

A new market in nature credits needs the best possible start

The Biodiversity Credit Alliance (BCA) exists to guide the development of a credible and scalable biodiversity credit market capable of earning the trust and confidence of a broad spectrum of market participants. Key among them are Indigenous Peoples and local communities who live at the frontline of the nature crisis and are represented by International Environmental Guardianship (IEG), an independent member-based organization of Indigenous Peoples, Local Communities and Afro-Descendants. Together we are working to ensure strong foundations and principles exist and can be applied by all entrants to the market.

Our Mission

BCA is a voluntary international alliance that brings together diverse stakeholders to support the realization of the Kunming–Montreal Global Biodiversity Framework, in particular Targets 19(c) and (d), which "encourage the private sector to invest in biodiversity" utilizing, amongst others "biodiversity credits ... with social safeguards."

Our mission is twofold:

Help steer the development of a biodiversity credit market by building a framework of high-level, science-based principles.

Provide guidance and encourage best practice for market participants on the application of these principles, empowering them to achieve and maintain equitable, high-quality transactions that meet strict integrity criteria.

BCA was launched during the Fifteenth meeting of the Conference of the Parties to the Convention on Biological Diversity as an informal group of field-based conservation practitioners, researchers and standard setters. It has grown to include representatives of Indigenous Peoples, Local Communities and Afro-Descendant Peoples in the form of International Environmental Guardianship, as well as private sector representatives, including the World Business Council for Sustainable Development.

The BCA Secretariat is powered by United Nations Development Programme (UNDP) and supported by United Nations Environment Programme Finance Initiative (UNEP FI), Swedish International Development Cooperation Agency (SIDA), German Federal Ministry for Economic Cooperation and Development (BMZ), implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, European Commission (EC), Development Bank of Latin America and the Caribbean (CAF), and UNDP BIOFIN.

How this BCA Discussion Paper was Produced

BCA Issue and Discussion Papers are developed to provide background, analysis and research on key topics relevant to the formulation of a market in biodiversity credits. BCA Issue and Discussion Papers are led by a member of the BCA Taskforce and co-created by a dedicated working group. The working group members are comprised predominantly of the BCA Taskforce, International Environmental Guardianship (IEG) and BCA Forum.

The BCA Metrics and Measurement Working Group was co-led by the University of Nottingham (BCA Taskforce member organization), represented by Franziska Schrodt (acknowledging funding from the Natural Environmental Research Council and Innovative UK), International Institute for Management Development represented by Adrian Dellecker (with funding from E4S—Enterprise for Society), the University of Lausanne represented by PJ Stephenson (also with funding from E4S and also affiliated with the IUCN SSC Species Monitoring Specialist Group), and Toha Network (IEG member organization) represented by Nathalie Whitaker. The Working Group was coordinated by the Biodiversity Credit Alliance represented by Josh Brann and Belicia Teo. Additional Working Group members included Richard Field and Eun Kim of the University of Nottingham. Coordination and editorial support was rendered by the BCA Secretariat (Manesh Lacoul, Maria Alicia Eguiguren, Belicia Teo, Jacques Massardo and Saengkeo Touttavong).

This discussion paper was reviewed by and benefited from numerous contributions from the BCA Taskforce, International Environmental Guardianship and BCA Forum.

Suggested citation: Biodiversity Credit Alliance (2026). Understanding Biodiversity Credit Metrics: A Business Imperative. Discussion Paper.

Table of contents

Disclaimer and feedback

BCA recognizes that credible and transparent biodiversity credit metrics are fundamental to building trust, scaling markets, and enabling meaningful nature-positive outcomes. Businesses, investors, and policymakers require a clear understanding of how metrics are designed, applied, and interpreted. Strengthening alignment around biodiversity credit metrics will be essential to ensuring environmental integrity, comparability, and market confidence.

This discussion paper represents an initial effort to explore emerging approaches to biodiversity credit metrics, key methodological considerations, and practical implications for businesses. It aims to support informed decision-making and contribute to ongoing dialogue among market participants.

Any feedback should be shared with Josh Brann and Manesh Lacoul as representatives of the BCA Secretariat (secretariat@biodiversitycreditalliance.org)

Introduction

Private sector actors must be able to **make informed decisions** in order to participate in the growing market for biodiversity credits. As the number of biodiversity credit suppliers grows,[1] so does the methodological innovation and ecosystem-specific adaptation and use of metrics. In addition, the full universe of biodiversity metrics and indicators in use is even more extensive.[2] This reflects the inherent complexity of biodiversity.

Biodiversity credits can meet different business needs; for example, companies may prefer to focus on credits that contribute materially to regulatory requirements such as the EU's Corporate Sustainability Reporting Directive (CSRD), including its European Sustainability Reporting Standards (ESRS), or the Taskforce on Nature-related Financial Disclosures (TNFD) framework. Some may favor reputational benefits or employee satisfaction strategies. Others may choose to shift traditional corporate social responsibility budget allocations to outcome-based payments. **The market for credits may be as diverse as there are use cases, but in all cases metrics will matter.**

The biodiversity credit market and individual biodiversity credits are subject to key principles such as quality (whether credits contribute to additional, durable positive biodiversity outcomes), integrity (purchasers' representation of claims associated with those outcomes), and equity and benefits for people. **These factors are all directly influenced by the ways biodiversity is measured, and the metrics used in methodologies to generate and transact credits.** Businesses must therefore develop a clear understanding of biodiversity credit metrics and measurements to ensure credibility, transparency, and value in this emerging market.

A biodiversity credit is *"a certificate that represents a measured and evidence-based unit of positive biodiversity outcome that is durable and additional to what would have otherwise occurred".*[3] This definition encompasses a variety of potential approaches to deliver a quantifiable change in biodiversity. For example, a positive biodiversity outcome can be measured over 20 years in one hectare of restored habitat, or over six months in a square meter of a protected area, or anything in between.

Essential to the success of biodiversity credits are the metrics used to track changes in the state of biodiversity. Biodiversity metrics have long been an essential component of conservation efforts, and thousands of different metrics exist. This number is likely to increase with the use of new technologies such as remote sensing, acoustic monitoring, and Environmental DNA (eDNA).

[1] BloomLabs tracks 50+ biodiversity credit methodologies (as of 2025), up from ~30 in early 2024.
[2] In their initial 2022 survey, TNFD identified more than 3,000 unique biodiversity metrics and indicators used in corporate reporting.
[3] Biodiversity Credit Alliance (2024). Definition of a Biodiversity Credit. Issue paper.

While much discussion has centered on the potential for a single universal metric for the biodiversity credit market, this may neither be necessary nor even desirable. Currently **a multi-metric approach is emerging, requiring clear definitions and widespread understanding among market participants.** The complexity of monitoring and verifying impact using multiple metrics underscores the need for standardized frameworks, transparency, common understanding, and alignment across market participants.

A key difference between credits and traditional funding for biodiversity conservation is that credits correspond to **independently verified outcomes or actions**. The inherent value of a credit depends on the demonstrated outcome. For this to be the case, **credit metrics must support principles of integrity, quality and equity**,[4] including verifiable and durable outcomes, clearly defined baselines, and tracking of potential leakage. It is also imperative that credits measure not only uplift in biodiversity but also account for and transparently demonstrate benefits that Indigenous Peoples, Local Communities, and Afro-Descendant Peoples receive from credits.

This can be a complicated landscape to navigate, especially for non-experts. Getting biodiversity credit metrics right is critical to ensure that biodiversity credits deliver positive outcomes for biodiversity and people. **The private sector has a unique opportunity to drive innovation and credibility in biodiversity markets by supporting scientifically sound, transparent, and high-quality, high-integrity measurement approaches.**

Companies can actively validate, benchmark, and cross-reference their credit purchases against methodologies, and disclose their due diligence processes used in credit selection. Ultimately, the goal of the new market for biodiversity credits is to drive new and additional investment in biodiversity to both reverse its loss and support its restoration. By building on decades of biodiversity conservation science, experience gained in measuring uplift, and a growing sector of new nature monitoring technologies, **the market for biodiversity credits represents an unprecedented opportunity for the private sector to become a key actor in the quest for a nature positive future. This will require the making of informed and well-considered decisions.**

This guide focuses on **ten key questions** to help businesses better understand biodiversity credit metrics and become informed decision-makers in this new market.

[4] BCA, IAPB, WEF (2025). High-level Principles to Guide the Biodiversity Credit Market. White paper, May 2025.

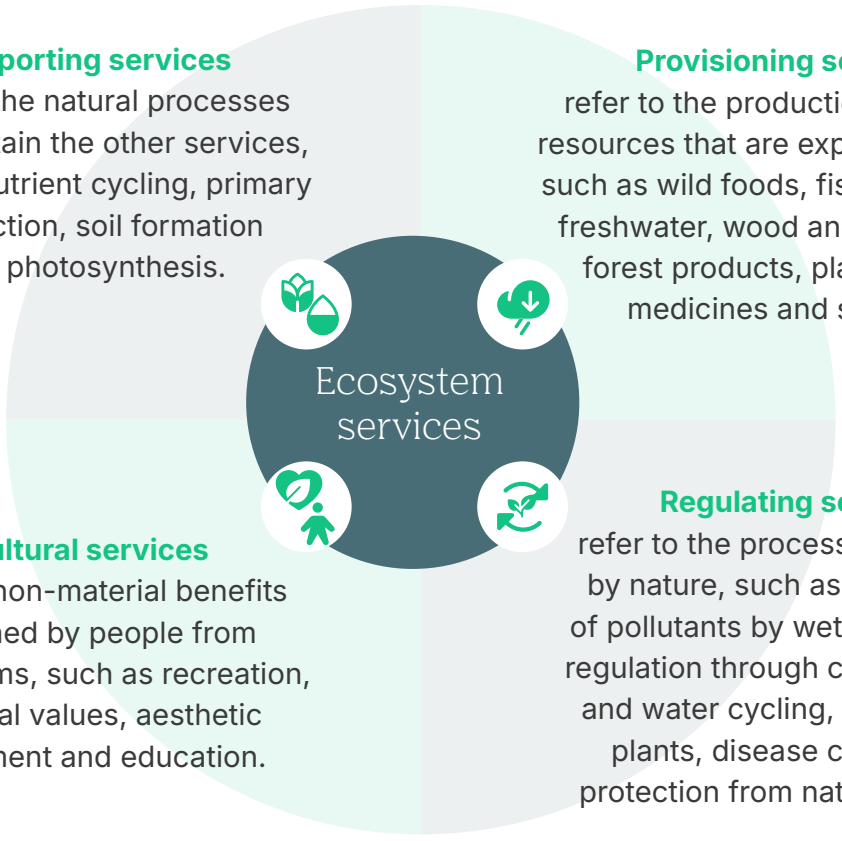
10 Questions to Navigate Biodiversity Credit Metrics

1. Why is it important to invest in biodiversity?
2. How are biodiversity credits different from carbon credits?
3. Does it matter that there isn't a single fungible unit?
4. Do biodiversity credits fit into my corporate disclosure sustainability reporting?
5. How do I know our company won't be accused of greenwashing?
6. How do I choose a credit that represents measurable and verified positive biodiversity outcomes?
7. What role does technology play in monitoring and measuring biodiversity outcomes?
8. Will AI resolve uncertainty around measuring biodiversity?
9. What does this all add up to?
10. Where can I find more information?

1 Why is it important to invest in biodiversity?

Investing in biodiversity is critical for the sustainability of business and finance. Biodiversity is estimated to contribute between US$ 100-300 trillion,[5] depending on the valuation methodology and is deeply linked to business operations and supply chains. For example, insect pollination is essential for 75% of agricultural crops worth US$ 2.4 trillion annually, so the current decline in insect populations threatens agribusiness and global food security, but this is just one example of many. If businesses fail to address biodiversity, they expose themselves to substantial operational, legal, financial, and reputational risks.

Biodiversity (the diversity of genes, species and ecosystems) has several inherent values to nature and people. It ensures continued and balanced ecological processes on which all life depends. These values are often referred to as ecosystem services, or nature's contributions to people, of which there are four recognized types.

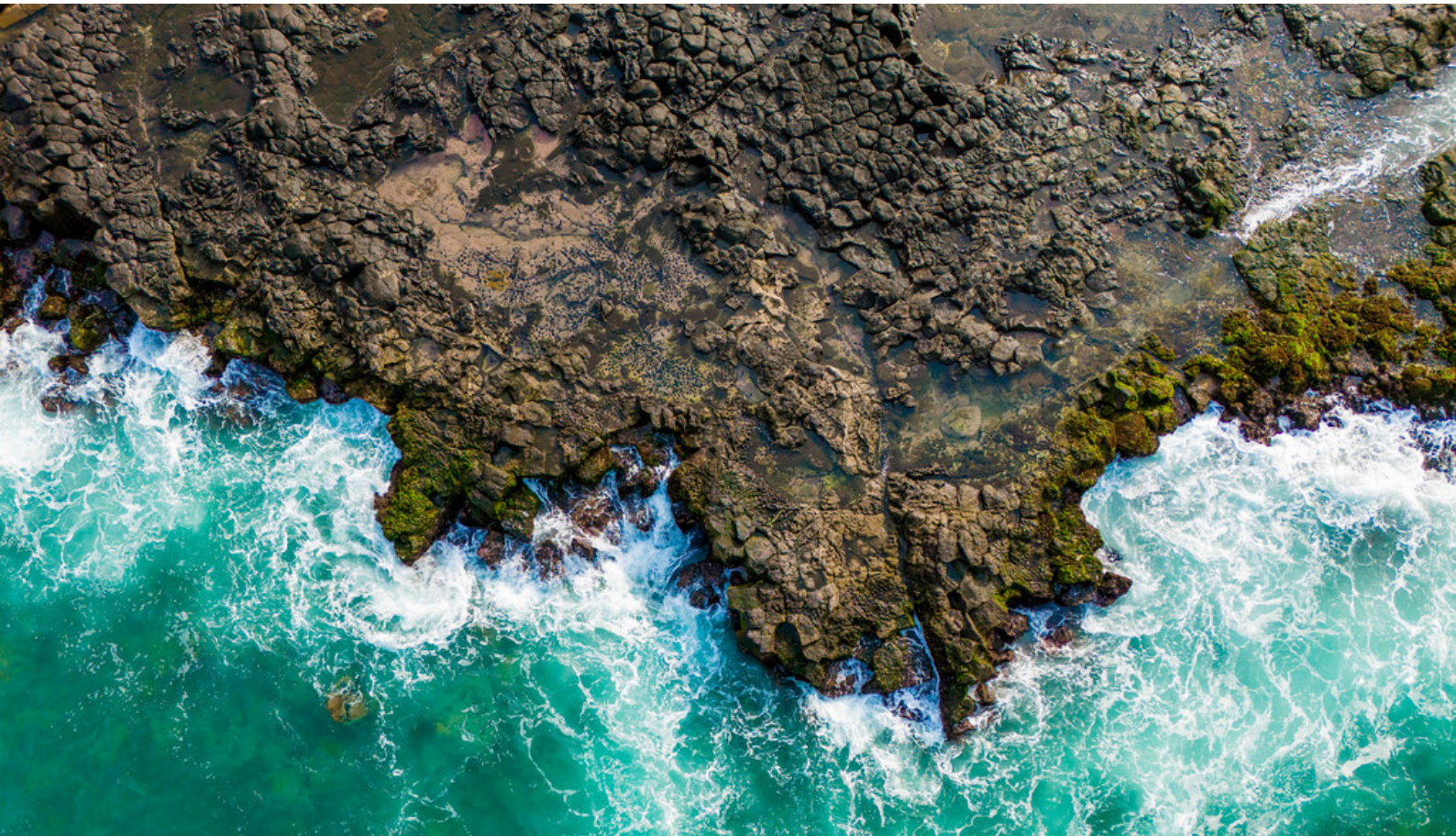


[5] IPBES (2019). Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Díaz, S., Settele, J., Brondízio, E.S., Ngo, H.T., Guèze, M., Agard, J., Arneth, A., Balvanera, P., Brauman, K.A., Butchart, S.H.M., Chan, K.M. A., Garibaldi, L.A., Ichii, K., Liu, J., Subramanian, S.M., Midgley, G.F., Miloslavich, P., Molnár, Z., Obura, D., Pfaff, A., Polasky, S., Purvis, A., Razzaque, J., Reyers, B., Roy Chowdhury, R., Shin, Y.J., Visseren-Hamakers, I.J., Willis, K.J., & Zayas, C.N. (eds.). IPBES Secretariat, Bonn, Germany. 56 pp.

Biodiversity loss and climate change are closely linked, and interdependent. Corporate sustainability strategies must therefore go beyond climate change and carbon, to include impacts and dependencies on biodiversity. Biodiversity credits are a good mechanism for companies to concretely respond to biodiversity-related risks and opportunities. Biodiversity credits are explicitly mentioned in the United Nations Global Biodiversity Framework (under Target 19d) as a mechanism to stimulate investment in biodiversity, and they align with Target 15's expectations for corporate disclosure relating to nature. Various legislative and policy frameworks and initiatives, from the EU's Corporate Sustainability Reporting Directive to the Taskforce on Nature-related Financial Disclosures and the Science-based Targets Network, are adding to the incentives for businesses to invest in nature.

High-integrity, nature-positive biodiversity credits offer several potential benefits for investors. Companies can invest in credits that support positive biodiversity outcomes close to their assets and linked directly to their supply chains, providing opportunities to "think global and act local." In the relevant circumstances, credits can also generate benefits for, and validate the roles of, Indigenous Peoples, Local Communities and Afro-Descendant Peoples in nature conservation and stewardship.

Businesses therefore have many strong reasons to focus on and invest in biodiversity, and biodiversity credits are a growing opportunity to do this.



2 How are biodiversity credits different from carbon credits

Although there are similarities between biodiversity credits and carbon credits, they have fundamental differences and serve distinct purposes. Both can play critical roles in corporate sustainability strategies.

Carbon credits have been designed to mitigate climate change by reducing or removing carbon dioxide (CO_2) from the atmosphere. Reductions and removals are often achieved through quantifiable carbon sequestration or emission reduction activities, such as afforestation or renewable energy projects. While these initiatives can contribute to emissions reductions and removals, they might do little to address broader ecological health, diversity, or resilience and many carbon offset projects have been criticized for prioritizing short-term carbon gains at the expense of local biodiversity, such as monoculture tree plantations that degrade natural ecosystems. In contrast, biodiversity credits focus on the conservation (avoided loss), restoration (uplift), and/or maintenance of ecosystems and species diversity, recognizing that carbon storage is one of many functions of a healthy environment. By incentivizing conservation actions that protect entire ecosystems rather than just carbon stocks, biodiversity credits have the potential to drive meaningful environmental change and meet corporate sustainability targets. For companies, this distinction has practical implications: biodiversity credits reward ecosystem resilience and multi-functional health. This aligns with regulatory expectations (CSRD, TNFD) that require assessment of multiple ecosystem services, not carbon alone.

While carbon credits are well-established with demand driven by corporate net-zero commitments (as of 2024 nearly 60% of the 2000 largest publicly traded companies have such targets)[6], the biodiversity credit market is in an earlier phase of development. Demand is emerging from evolving voluntary (e.g., TNFD)[7] and regulatory frameworks (e.g., CSRD, BNG), mounting reputational pressures, and growing recognition of nature-related material risks, including business dependencies on healthy ecosystems. As such, engagement with the carbon market vs. the biodiversity credit market is driven by a range of demand factors, including regulatory compliance, nature risk mitigation, or ecosystem restoration, and is often linked to their use in corporate climate or nature strategies.

The methodologies for measuring carbon credits are by now well-established, standardized, and based on CO_2-equivalent reductions. Frameworks such as the Verified Carbon Standard (VCS) and Gold Standard provide guidelines for assessing carbon storage and emissions reductions, making these credits straightforward to verify and trade (though also not without challenges).

[6] https://zerotracker.net

[7] TNFD (2025). Guidance on nature in transition plans, version 1.0. November 2025.

Biodiversity credits require a more nuanced and multidimensional approach, and biodiversity credit standards continue to be developed. Biodiversity is not a fungible commodity[8] and there is no widely accepted single way to measure it; instead, it encompasses various ecological attributes that are assessed using many possible indicators. Metrics may include habitat restoration success, species population trends, and ecosystem connectivity, among others. This complexity makes biodiversity credits more challenging to standardize and commoditize compared to carbon credits; biodiversity credits provide an opportunity for market participants to illustrate a story about life in a specific part of the world.

> Biodiversity credits' complexity, often seen as a drawback, can actually be a strength, ensuring they remain focused on real conservation outcomes.

Carbon credits' fungibility allows for global trading, portfolio diversification, and liquidity, underpinned by standardized methodologies and global frameworks such as the EU Emissions Trading System (ETS) and the Clean Development Mechanism (CDM). However, this same standardization has also enabled potential issues like double counting, over-crediting, and speculative trading, which have, at times, undermined the environmental integrity of the system. While offsets remain a core part of net-zero strategies, emerging guidance encourages insetting—reducing emissions within corporate value chains. In contrast, biodiversity is not fungible: credits are tied to specific ecosystems, outcomes, and contexts. This makes credit tradability subject to certain conditions (e.g., under different types of use cases) but also acts as a safeguard, grounding credit value in real-world verifiable biodiversity outcomes linked to a specific place and time.

While considered within some credit schemes, the use of biodiversity credits for offsetting has been explicitly discouraged by leading institutions, including TNFD, SBTN, and the IAPB. Use case distinction is critical: Biodiversity credits serve two primary purposes: (i) Compensation use cases, where companies address residual negative impacts after applying the mitigation hierarchy—here, biodiversity credits function as conservation investments verified against ecological baselines; and (ii) Contribution use cases, where companies invest in conservation without offsetting claims. In compensation scenarios, additionality and causality verification become essential to distinguish genuine conservation from business-as-usual activities.

[8] Note that it is representative units of in-situ biodiversity (or change in biodiversity) being traded, without physical movement of biodiversity across geographies (in case of Intellectual Property considerations).

Without a single global metric or centralized market infrastructure, biodiversity credits are project-based and can be highly bespoke. While this fragmentation currently limits scalability, it also avoids many of the market manipulations seen in carbon trading. Biodiversity credits' complexity, often seen as a drawback, can actually be a strength, ensuring they remain focused on real conservation outcomes.

One of the key distinctions between carbon and biodiversity credits lies in how they address the longevity of outcomes—permanence for carbon and durability for biodiversity. In carbon markets, permanence refers to the risk that sequestered carbon might later be released back into the atmosphere; for instance, for nature-based solutions related to forest-based interventions, this could be through deforestation, wildfire, or land-use change. Biodiversity outcomes are typically more dynamic and context dependent. Gains in species abundance or ecosystem function can vary over time in response to fluctuating threats such as climate change, habitat fragmentation, or invasive species. As a result, ensuring the durability of biodiversity outcomes depends on continuous monitoring, adaptive management, and sustained engagement with the landscape and local stewards.

For corporate buyers, this means that while mechanisms ensuring longevity can differ, both carbon and biodiversity credits require credible long-term stewardship to maintain their integrity. Companies already investing in high-quality, nature-based carbon credits will find that the key elements of monitoring, risk mitigation, and adaptive management are similarly essential—and equally achievable—in high-integrity biodiversity credit projects. Buyers should ensure contracts specify: (i) minimum monitoring intervals (typically annual or biennial); (ii) adaptive management triggers (e.g., population threshold declines); (iii) exit/renewal provisions if outcomes fall below baselines; and (iv) commitments extending 20+ years to ensure durability.

3 Does it matter that there isn't a single fungible unit?

The comparison to the carbon credit market often raises the issue of defining a single, fungible unit for biodiversity. Yet it may be impossible, and even undesirable, to have such a single unit. At least, it is not necessary in order to have a thriving market for biodiversity credits.

While biodiversity credit schemes need to place a monetary value on a unit of biodiversity and measure the change in that biodiversity over time, this requires a comprehensive, multi-faceted, and nuanced approach due to the complexity and diversity of nature. Biodiversity represents all living things, including species from bacteria to whales, from fungi to trees. Ecosystem structure and function is as diverse as the species within them, ranging from wetlands to tropical rain forests, from coral reefs to alpine meadows.

Quantifying a meaningful single, global and fungible unit of biodiversity therefore presents a range of issues. One "unit" of biodiversity may be completely different from another, and the components of biodiversity they represent, like apples and oranges. How does a community of endangered mammals in a tropical rainforest in Madagascar compare to a community of flowering plants in a grassland in the United Kingdom? How these are valued pose certain challenges. For example:

Species and habitats are not valued the same way. Many schemes weight biodiversity based on its importance for conservation to determine "quality" and value, but the degree to which habitats and species are threatened and the extinction risk they face is also variable. Similarly, the contribution of any given species to ecosystem services will vary.

Species and habitats are not measured the same way with the same methods or indicators. Some animals can be counted individually for an accurate measure of abundance; others can only be determined as present or absent. Some plants can be counted individually; others can only be measured as vegetation cover.

Changes in species and habitats happen at different scales and are not directly comparable. If a gorilla population increases from 6 to 10 it would be a significant improvement in the state of biodiversity, yet four more flowers in a meadow does not represent a major uplift.

Therefore, whereas carbon markets trade in units of carbon (e.g., tons of CO_2 or equivalent), no single metric for biodiversity is feasible. This largely explains why current biodiversity credit markets are based on positive biodiversity outcomes occurring in a different given area over a different given time period and measured in a specific way. For instance (taking some illustrative examples): Terrasos's VBC is based on measures of biodiversity change in $10m^2$ for 20 years; CreditNature's "Nature Credit" considers biodiversity in relation to a 0.1 increase in Ecosystem Condition Index in 1 hectare for 10 years. Savimbo's credit is based on the presence of key taxa and encourages the use of cameras and camera traps, whereas the Wallacea Trust methodology is based on a basket of metrics measured, wherever practicable, using verifiable survey techniques such as camera traps, sound recordings, 3D mapping of reef structures, drone, or satellite imagery.

The absence of a single fungible unit of biodiversity may shape the structure and scaling dynamics of the market, including the extent of secondary trading, but it does not undermine the ability to define, measure, or transact valid biodiversity credits. This is because:

- **Many markets function effectively without relying on a single fungible unit of comparison.** Equity markets, for example, trade a wide range of heterogeneous financial assets whose values reflect diverse and non-standardized characteristics. Likewise, many consumer and asset markets price goods based on multiple attributes rather than a uniform metric. Cars are valued and marketed according to a combination of performance, efficiency, features, and design, while real estate prices reflect factors such as location, size, age, land area, and amenities. In these markets, price formation emerges from the aggregation of multiple value dimensions rather than strict comparability across identical units. These examples illustrate how markets routinely accommodate diverse, non-fungible assets with differentiated value propositions, risk profiles, and performance characteristics.

- **Differences in pricing of biodiversity credits correspond to variations in the scale and scope of crediting schemes, and the biodiversity outcomes targeted.** There is not a single biodiversity credit price, and prices vary widely between different types of biodiversity credits. This diversity is a familiar feature for investors and provides a useful lens for understanding how biodiversity credits may similarly reflect variation across ecological outcomes, project types, and temporal horizons. This allows buyers to right-size their investment based on their needs and use case. As the market matures, prices will increasingly reflect how individual credits are valued by the market, shaped by demand, supply, and perceived performance.

- **There are many similarities between schemes that can be built on.** The metrics measured and data needed by existing schemes generally relate to the extent and quality of habitats and the presence or abundance of species, as well as the relative importance of these habitats and species (e.g. rarity, extinction risk).

Well-established methods are available to measure these metrics for different species and habitats. Many schemes use satellite-based remote sensing, especially if the credits are stapled to or stacked with carbon credits, and several draw on the use of camera traps or cameras on drones. Numerous scientifically validated and standardized biodiversity survey techniques are available and widely used for species such as birds, butterflies and plants.

- **Many crediting methodologies quantify biodiversity in valid ways.** While there is a diversity in approaches, in most cases they are adapted to the local environment, habitats and species. Methodologies are also subject to scientific scrutiny and standard setters provide certification of methodologies.

- **Using more than one metric is fine, and potentially necessary.** Some schemes use an aggregation (or basket) of metrics to assess biodiversity which can be a valid, workable approach to cover multiple species and habitats; in other schemes, a single metric (such as the presence of a key species) can be used to good effect.

- **Credit schemes may be applied to changes in actual biodiversity, or to changes in conditions that are known to improve the status of biodiversity.** Crediting methodologies can be based on changes in biodiversity, or to the management actions known to improve the status of biodiversity. For example, under the EKOS SD Standard and BioCredita program, both a "Verified Effect Approach" (based on a change in biodiversity) and "Verified Cause Approach" (based on actions that lead to that change) are recognized.

- **Flexibility allows values of biodiversity to be measured in appropriate, locally relevant ways.** For example, crediting methodologies can integrate socio-cultural values of biodiversity so that credits generated also reflect the cultural significance of biodiversity. In addition, the local nature of biodiversity corresponds to locally linked nature-related risks, so for potential buyers, fungibility may not be a key consideration.

- **We can learn from the nature conservation community.** Governments, international organizations, scientists, NGOs and other civil society actors have been quantifying and monitoring biodiversity for decades at multiple scales. Think of the Global Biodiversity Outlook by the CBD Secretariat, the Global Environment Outlook by UNEP and the Living Planet Report by WWF. Lessons and data can be drawn on to continue to refine and improve the measurement of biodiversity for biodiversity credit schemes.

Therefore, the complexity of biodiversity and the lack of a single fungible unit should not block or hinder the development of measurable, high-integrity, nature-positive biodiversity credits. Companies can standardize credit selection by examining a defined set of attributes for different credit types that have been transparently disclosed, while also ensuring that core principles of integrity, quality, and equity are respected.

4 Do biodiversity credits fit into my corporate disclosure sustainability reporting?

Biodiversity credits can fit into corporate sustainability reporting as tangible evidence of positive biodiversity outcomes that companies finance or achieve. When used responsibly, biodiversity credits complement direct conservation efforts. High-integrity, high-quality biodiversity credits can be a useful tool to address biodiversity impacts and redirect incentives away from nature loss.

Corporate sustainability officers can integrate biodiversity credits into disclosures by reporting on the quantity or cost of credits purchased (since price varies across credit types) or generated and the outcomes achieved, such as hectares of wetland restored or number of trees planted. It is important to communicate how these credits fit into an overall biodiversity strategy, rather than treating them as a standalone effort. For instance, an organization would first disclose its (estimated) impact on nature, highlight how it is applying the mitigation hierarchy for reducing its ecological footprint, then explain how it uses biodiversity credits to achieve targets related to reducing its nature risks, compensating for remaining impacts, or supporting a nature positive approach.[9] Reporting should specify whether credits address Scope 1 (direct operations), Scope 2 (indirect operations / supply chain tier 1), or Scope 3 (value chain) impacts. This distinction ensures alignment with emerging International Sustainability Standards Board (ISSB) biodiversity disclosure standards (expected 2026) and facilitates comparison across corporate reports.

Such transparency ensures that biodiversity credits are seen as a credible part of a nature strategy or sustainability plan, not merely a “greenwashing” tool, and demonstrates accountability. By disclosing the use of biodiversity credits in sustainability reports or ESG disclosures, organizations can show stakeholders and investors their commitment to addressing nature, and track progress in quantitative terms (e.g., footprint reduction, ecosystem services secured, acres of habitat conserved, species reintroduced), much as they do with carbon credits for climate goals.

Metrics in biodiversity credit methodologies can be used to align with leading sustainability frameworks. In many cases, the metrics used in biodiversity credit projects (such as restored area, habitat quality, or species counts) mirror the metrics these frameworks expect organizations to report. A summary of how biodiversity credits intersect with major frameworks and goals is shown in Box 1. TNFD has published information on the interoperability between reporting frameworks and standards (e.g., TNFD, GRI, etc.).

[9] Note: There are a wide range of potential biodiversity credit use cases. This example references a “compensation” use case, which necessitates the full application of the mitigation hierarchy. A “contribution” use case may not relate to the application of the mitigation hierarchy.

Box 1. Biodiversity credits in relation to some existing biodiversity frameworks for business.

TNFD (Taskforce on Nature-related Financial Disclosures) provides a framework for companies to identify and disclose nature-related risks, impacts, and opportunities, analogous to climate disclosures. Biodiversity credits can be reported under TNFD's recommended disclosures on metrics and targets—for example, a company might disclose the area of habitat restored via credits as a metric of its nature-positive actions. ISSB has signaled it will draw on TNFD's nature-risk disclosures in future standards.

SBTN (Science-based Targets Network) helps companies set science-based targets for nature (covering biodiversity, land, water, etc.), with the overarching goal of halting and reversing nature loss by 2030. The measured outcomes of biodiversity credits align with SBTN's focus on measurable, science-based indicators, ensuring an organization's actions are grounded in scientific credibility.

The **CSRD** and European Sustainability Reporting Standards (specifically ESRS E4 on biodiversity and ecosystems) mandates thousands of companies in Europe to report on their biodiversity impacts, dependencies, and how they're managing them. This regulatory framework means biodiversity is now a formal part of corporate reporting. Under CSRD, a company must disclose not only its risks and impacts on ecosystems but also the actions and investments to mitigate those impacts and achieve biodiversity goals. Biodiversity credits can be one such action: companies can report any credits they purchase or generate as part of their strategy to compensate for damage or contribute to positive biodiversity outcomes.

GRI has introduced an updated Biodiversity Standard (GRI 304/GRI 101: Biodiversity 2024) to guide organizations in reporting biodiversity-related information. This standard requires detailed, location-specific disclosure of a company's significant impacts on biodiversity and how they are addressed. Under the GRI standard, if a company uses biodiversity credits to address its impacts on nature, it will report the details under the relevant disclosures (for example, describing the habitats restored or conserved, and how this helps mitigate the company's biodiversity impact). By following GRI's guidance, companies can ensure their biodiversity credit use is reported in a credible and standardized way, showing stakeholders that they are actively managing and addressing their biodiversity footprint.

ISSB is establishing a global baseline for sustainability reporting (under the IFRS umbrella), and while its first standards focused on climate, it has indicated that biodiversity and ecosystem disclosures are expected in 2026. This means that in the near future, companies worldwide may be required (or expected) to report on biodiversity in a manner consistent with financial reporting principles. Biodiversity credits can play a role here by providing quantitative, verifiable data on nature outcomes that companies can include in these disclosures. Ensuring that biodiversity credit purchases are consistent with ISSB's materiality and transparency requirements will be important—companies should articulate how these credits contribute to managing nature-related risks or opportunities. As ISSB standards evolve, using biodiversity credits with clear metrics could position a company to meet future global reporting expectations, effectively connecting voluntary nature conservation efforts with formal reporting requirements.

ISO (International Organization for Standardization) has published its first global biodiversity standard in October 2025, **ISO 17298: Biodiversity in Strategy and Operations**. This standard helps companies embed biodiversity considerations into core governance, strategy, risk management, and operational processes, enabling a structured approach to setting measurable objectives and monitoring progress in line with global expectations. ISO 17298 is designed to be compatible with complementary frameworks (such as ISO 14001 environmental management, TNFD's LEAP approach, and the Kunming-Montreal Global Biodiversity Framework), supporting rigor, comparability and credibility in how nature-related actions are integrated and reported. By aligning corporate biodiversity action with a widely recognized international benchmark, companies can enhance transparency for stakeholders and investors and better demonstrate how biodiversity credits and other nature-positive efforts contribute to their broader biodiversity management and reporting commitments.

5 How do I know our company won't be accused of greenwashing?

For companies seeking to engage in biodiversity credit markets, concerns about reputation risk are valid; a 2025 analysis of corporate biodiversity claims found that companies linked to biodiversity risk are increasingly flagged for greenwashing risk (6% in 2025, up from 3% in 2021).[10] However, these concerns are addressable in the context of biodiversity credits. Greenwashing could arise in two ways: (1) by purchasing or making claims about credits without integrity (i.e., intentionally for greenwashing purposes) or adequate due diligence, and (2) purchasing poor-quality credits that fail to deliver meaningful outcomes for biodiversity and people.

Avoiding these risks starts with embedding biodiversity action within a clear corporate nature strategy, grounded in globally recognized good practices. In line with the High-Level Principles to Guide the Biodiversity Credit Market,[11] if credits are purchased as a compensation for negative impacts elsewhere, companies should apply the mitigation hierarchy—prioritizing avoiding and reducing negative impacts on nature within their operations and supply chains—before using biodiversity credits to compensate for residual impacts.

When purchasing biodiversity credits, companies should prioritize credits that meet high standards of quality and integrity. This means sourcing credits from projects that are independently verified, transparently monitored, and that deliver measurable and durable outcomes for biodiversity and people. The biodiversity credit market has quality control and quality assurance drivers on both the supply side and the demand side. High-quality credits are underpinned by credible methodologies that have independent scientific validation, and take into account ecological baselines, robust monitoring, and adaptive management approaches. In the context of metrics, when selecting biodiversity credits to purchase, it is essential for companies to conduct due diligence on the crediting methodologies being used—understanding not only how biodiversity outcomes are measured, but also whether those metrics are aligned with the company's nature strategy and disclosure needs. Different methodologies may use different metrics depending on the ecosystem, species, or conservation intervention involved—so businesses should prioritize purchasing credits that use transparent, science-based approaches to measure outcomes that are relevant and material to their biodiversity commitments and stakeholder expectations.

[10] RepRisk, 2025. Fourth Annual Greenwashing Report.

[11] BCA, IAPB, WEF (2025). High-level Principles to Guide the Biodiversity Credit Market. White paper, May 2025.

In addition, engagement with Indigenous Peoples, Local Communities and Afro-Descendant Peoples is critical, and must be integrated into project design, governance, and benefit-sharing arrangements—not only as a matter of principle and rights, but as a key determinant of project success and legitimacy. This includes recognition of rights, and key principles such as ensuring Free, Prior, Informed Consent and data sovereignty.

Equally important is how claims are communicated. Companies should ensure their public-facing claims about biodiversity credits are transparent, specific, and proportionate to the outcomes being delivered. Claims should clearly distinguish between actions taken within the company's own value chain versus other contributions made through biodiversity credits. Transparency about the type of credit purchased, the issuing project or standard, and the derived biodiversity and community benefits are essential to maintaining trust and credibility. Development of detailed guidance on claims is ongoing in the Biodiversity Credit Alliance's Demand Integrity Working Group.

Avoiding greenwashing in biodiversity credit purchases depends heavily on the intended uses of the credit and the proportionate claims made. Nevertheless, any biodiversity credit purchase must be aligned to a comprehensive internal nature strategy, must source high-integrity credits, ensure respect and engagement with Indigenous Peoples, Local Communities and Afro-Desendant Peoples, and make transparent, accurate claims. If credits are purchased to compensate for negative impacts elsewhere, adherence to the mitigation hierarchy is also critical. By doing so, companies can avoid reputational risks while also helping build a credible biodiversity credit market that delivers real value for biodiversity and people.

6 How do I choose a credit that represents measurable and verified positive biodiversity outcomes?

For companies engaging with biodiversity credit markets, choosing a measurable and verifiable credit is critical to ensuring that investments meet use-case requirements, deliver positive outcomes for biodiversity and people, and that any associated claims are credible. The first step is to ensure clarity around the organization's intended use case for biodiversity credits as part of a broader nature strategy, such as to demonstrate a contribution to biodiversity-positive outcomes, compensation for impacts, or as a mechanism to support specific stakeholder priorities. The use case may relate to specific corporate nature targets with corresponding metrics, or more general strategic corporate objectives. This clarity should inform the selection of credits based on a range of credit attributes, and define expected biodiversity outcomes based on transparent, science-based metrics and indicators.

> For a biodiversity credit to be trusted and effective, it must reliably show how the investment leads to positive results for biodiversity.

Corporate buyers should ensure that credits are issued by suppliers who adhere to internationally recognized principles for high-integrity markets. In particular, companies should seek credits aligned with the *High-Level Principles to Guide the Biodiversity Credit Market*, developed by the Biodiversity Credit Alliance in partnership with several organizations, including the International Advisory Panel on Biodiversity Credits, and the World Economic Forum. These principles provide the foundation for defining verified positive outcomes for nature (e.g., clear biodiversity objectives, scientifically credible baselines, robust monitoring and third-party audits), equity and fairness for people (e.g., respect for Indigenous rights and equitable benefit-sharing), and good governance (e.g., transparent data, traceable issuance and retirement). BCA provides an assessment framework to support adherence to these principles, and buyers can access this assessment tool to assess prospective credits against the principles, or draw on 3rd party assessments.

Equally important is methodological transparency. Credible credit suppliers should disclose in full the methodologies used to measure and generate credits, including the metrics applied, the approach to establishing baselines and additionality, and how uncertainty is handled. Understanding the metrics used and how they relate to both biodiversity and the company's use case is essential. Projects based on ecosystem services relevant to the company's value chain or operating footprint may offer more strategic alignment than generic or unrelated conservation actions; for example, food and beverage companies could prioritize credits relating to pollinator abundance, soil health, or water availability; financial institutions could leverage credits in regions exposed to climate or flood risk where intact ecosystems reduce systemic risk.

Third-party certification under a recognized standard, or independent, expert verification aligned with best practice, is another key signal of quality. Where third-party standards are not yet formalized for a given ecosystem or context, buyers should assess whether suppliers have implemented appropriate governance mechanisms, verification processes, and Indigenous and local community engagement protocols as defined in the High-Level Principles. Technology-related MRV processes should ensure all relevant digital standards and data access and transparency requirements are met.

For a biodiversity credit to be trusted and effective, it must reliably show how the investment leads to positive results for biodiversity. This means transparent, measurable and auditable links of the investments to the biodiversity outcomes. By applying this lens to credit selection, companies can contribute to a high-integrity market that helps address the biodiversity finance gap, while advancing their own biodiversity-related objectives.

7 What role does technology play in monitoring and measuring biodiversity outcomes?

Traditional statistically robust observer-based surveys such as bird counts or plant quadrants remain essential for measuring biodiversity, and are currently predominant, but are often time-consuming, limited in scale, and reliant on specialized expertise. Emerging technologies increasingly complement these methods by enabling data collection and analysis at larger spatial and temporal scales, often with greater precision and verifiability (e.g., photographic evidence versus human sightings). These tools are typically more costly and require specialized expertise, but they can strengthen the evidence base for biodiversity credits, enhance transparency, and are more scalable—and therefore are likely to be increasingly used. The "nature tech" landscape is evolving rapidly, and there are many benefits to the deployment of these technologies, while cost and deployment limitations are likely to remain for years to come.[12]

Key technologies include remote sensing (satellite or UAV-based optical, radar, and LiDAR sensors), camera traps, acoustic recorders, and environmental DNA (eDNA). Many methods now integrate artificial intelligence (AI) to automate and scale big-data analysis.

> Beyond data collection, digital platforms and analytics tools now play a central role in translating raw biodiversity data into clear, decision-relevant information.

Earth observation (EO) technologies are rapidly expanding their capabilities, with upcoming satellite missions specifically designed to monitor various aspects of biodiversity. Satellite remote sensing has become a cornerstone of large-scale biodiversity monitoring. Modern satellites can achieve sub-meter resolution and revisit sites daily, providing continuous, non-intrusive coverage. However, optical sensors are constrained by cloud cover and tree canopies, and remain limited in detecting species-level information.

Unoccupied Aerial Vehicles (UAVs) overcome some satellite limitations, collecting highly granular data below cloud level. UAV-mounted spectrometers can estimate ecosystem health or chlorophyll content, while LiDAR produces three-dimensional topographic maps relevant to habitat structure and biodiversity indicators. UAVs require trained operators, and advanced sensors such as LiDAR remain expensive. Photogrammetry, or the process of reconstructing a 3D scene or environment from overlapping 2D images, is increasingly used to monitor ecosystems and document change over time. It is used in both terrestrial and marine environments and is typically applied to monitor finer-scale processes than satellite-based remote sensing.

[12] For in-depth information on emerging nature tech approaches, see the Nature Tech Collective's directory of nature tech solutions: https://naturetechdirectory.com/.

Camera traps are among the most cost-effective and non-intrusive tools for wildlife monitoring. They detect rare, nocturnal, or elusive species and help estimate relative abundance. As AI improves image classification and even individual recognition, camera traps can provide robust data for biodiversity credit monitoring. However, their coverage is limited and placement requires expertise. There are also some concerns that the presence of camera traps in nature infringes the privacy of people and creates more no-go zones for local communities, especially women.

Passive acoustic monitoring (PAM) uses recording devices to detect vocal species and broader "soundscapes" that can indicate ecosystem health or detect threats such as vehicles or chainsaws. Machine learning applications in bioacoustics can now detect and classify species based on soundscapes, improving monitoring in previously inaccessible ecosystems. PAM is inexpensive and scalable, but it captures only vocal species. While AI-based sound analysis is advancing rapidly, expert input is still needed to ensure accuracy.

The decreasing cost of airborne EO, combined with advances in semi-automated sensors with inbuilt AI capabilities, for example camera traps identifying moth species, offers promising new ways to track habitat changes, vegetation health, and some aspects of species distributions. They also enable autonomous, non-intrusive monitoring, with minimized human intervention, protecting sensitive areas from disturbance and enabling near real-time assessments. Automated data analysis is also rapidly progressing. AI-based gap filling methods and predictive models can improve estimates of biodiversity indicators in data-poor regions based on correlated environmental features (e.g., predicting biodiversity from vegetation indices), aiding decision-making and risk assessment.

eDNA analysis identifies species from genetic material found in water, soil, or air samples. It enables the detection of species that may be difficult to observe directly and can engage local communities in data collection. It can also detect early signals of ecosystem restoration, with increased detection of low visibility species. However, results depend heavily on consistent sampling protocols and environmental conditions; poor conditions may yield false positives or negatives. eDNA applications also raise privacy concerns when human genetic material is inadvertently captured.

Beyond data collection, digital platforms and analytics tools now play a central role in translating raw biodiversity data into clear, decision-relevant information. Platforms such as CreditNature, LIFE Institute, Ecogain, and Regen Network integrate multiple data sources and support the design, validation, and verification of biodiversity credits.

The large-scale use of technology can introduce new governance and ethical challenges. Data sovereignty is a key concern, particularly where remote sensing or centralized data systems bypass the participation and consent of Indigenous Peoples, Local Communities and Afro-Descendant Peoples. Overreliance on technology can also risk marginalizing highly valuable traditional ecological knowledge. Ideally, technology should complement—not replace—local engagement, helping reduce barriers to participation by simplifying data collection and improving accessibility.

In practice, biodiversity credit methodologies will increasingly depend on combinations of these tools to generate credible, verifiable data. No single technology captures all taxa or ecological functions, and most provide limited information on abundance or interactions. Over time, technological advances will refine accuracy and coverage, and the most effective systems will blend modern technology with traditional survey methods and local knowledge to ensure both scientific rigor and social legitimacy. Credit issuance and verification will continue to rely on human intervention on-site and traditional methods of surveying biodiversity, at least in the foreseeable future. In the procurement of biodiversity credits, buyers should prioritize credits generated through the combination of multiple monitoring technologies, as this reduces methodological bias and strengthens verification credibility.

8 Will AI resolve uncertainty around measuring biodiversity?

AI is rapidly enhancing biodiversity monitoring and measurement, but it will not give a perfect picture of biodiversity in the near future. Measuring biodiversity has been an evolving process for decades, and while technological advancements continue to refine our understanding, there is as yet no imminent breakthrough moment on the horizon that will suddenly resolve all complexities. Biodiversity is inherently dynamic, context-dependent, and multidimensional, and applying new technologies to the measurement of biodiversity will be an ongoing process for many years. Traditional biodiversity monitoring methods, developed and refined over hundreds of years, have, and will continue, to provide valid and valuable insights about the status of biodiversity.

Currently, AI can help group, structure, and filter data to increase human efficiency in data processing and analysis (e.g., in bioacoustics). While technology can help enhance species observations and AI can help identify species in those observations, they may be less applicable for measuring abundance and ecological interactions. Some groups of species that are important indicators of ecosystem health and provide key ecosystem functions—like soil organisms, fungi and freshwater mussels—currently have low detection rates using AI and other technologies. Many regions and species remain underrepresented in digital datasets, potentially skewing AI outputs, and ecological processes being non-linear, dynamic, and context-specific limits the predictive accuracy of AI models.

One of the most critical concerns in deploying AI models is a lack of transparency. Many models function as black boxes, offering little to no insight into how decisions are made. When such opaque systems are used in decision-making processes, particularly in high-stakes contexts like biodiversity credits, the inability to interpret or justify AI-driven outcomes can undermine trust, accountability, and the legitimacy of the decisions themselves. These limitations highlight the need for continued investment in ecological research, improved field data integration, and careful interpretation of technological outputs. Such concerns around decision-opacity can also have implications for demand-side due diligence and decision-making. Attention should be paid to key aspects such as whether AI models have been peer-reviewed, whether results can be manually spot-checked, what data sets have been used in training that might result in bias, and documented error rates.

Ultimately, AI will dramatically enhance our understanding of biodiversity, but it should be seen as part of a broader toolkit rather than a definitive solution. Corporate biodiversity strategies should not be contingent on future AI breakthroughs. The future of biodiversity assessment will depend on the careful integration of technology with ecological expertise, robust field validation, integration of diverse knowledge systems—including Indigenous and local expertise—and governance frameworks that align conservation integrity with market value, reinforcing trust, credibility, and long-term investment.

9 What does this all add up to?

Biodiversity is in crisis. 1.2 million plant and animal species are under threat of extinction, leading some to describe this moment as the sixth mass extinction. Biodiversity underpins all facets of life on Earth—over 50% of global GDP is moderately or directly dependent on nature, including biodiversity, while 100% is indirectly reliant on the ecosystem services that biodiversity supports.

Biodiversity credits are not a silver bullet that will solve this crisis, but they are a promising new complementary tool for channeling investments towards biodiversity conservation and restoration while creating value for multiple stakeholders. There are many reasons for businesses to invest in biodiversity that are both practical and moral. Investing in high-quality biodiversity credits specifically, however, offers the security of verified biodiversity outcomes that ensure conservation or restoration of nature and benefits for Indigenous Peoples, Local Communities and Afro-Descendant Peoples

A single fungible unit for biodiversity is likely to be unattainable, but as this paper highlights, a single unit might not be preferable at all. Biodiversity is diverse, and the diversity of methodologies and metrics used in biodiversity crediting reflects this. This is good not only for biodiversity as a wide range of positive biodiversity outcomes can be targeted, it is also a strength for buyers of credits who will be able to tailor their purchases to their needs:

Organizations seeking to invest in nature within their area of operations or within a specific segment of their supply chain are likely to find a biodiversity credit with metrics tailored to that region or a specific aspect of biodiversity.

Where particular keystone species or critical ecosystems hold particular significance to a business, credits based on methodologies that track specific species or ecosystem indicators can prove useful.

For companies aligning with a specific corporate sustainability disclosure framework, choosing high-quality biodiversity credits with metrics aligned to that framework can help to track progress and demonstrate environmental performance.

Businesses have an unprecedented opportunity to take a leading role in conserving and restoring nature by understanding and disclosing their relationship to nature, setting science-based corporate nature targets, and potentially leveraging biodiversity credits to help achieve those targets. Key steps include:

1. Having a corporate nature strategy that fully applies the mitigation hierarchy

2. Being clear about which biodiversity outcomes to invest in and choosing biodiversity credit schemes with indicators that reflect those goals

3. Making transparent claims that are aligned with the biodiversity outcomes of the credit purchased

The variability and diversity of life on Earth is important for economic, environmental, social and cultural reasons, and the variety of biodiversity credit methodologies out there offer a multitude of ways that one can invest in nature. Biodiversity credits offer an opportunity to do just that.

10 Where can I find more information?

More information on current initiatives related to the responsible development of the biodiversity credit market, including the metrics and measurement of biodiversity credits, can be found on the websites of:

- Biodiversity Credit Alliance
- International Advisory Panel on Biodiversity Credits
- Taskforce on Nature-related Financial Disclosures (TNFD)
- Science-based Targets Network
- World Economic Forum (WEF)

The above sources of information are reputable, internationally supported organizations and initiatives aimed at increasing transparency and integrity in the market. BCA recommends using critical judgment and doing due diligence on any source of information about biodiversity credits. In general, those seeking information on markets are encouraged to apply a critical eye to ensure appropriate levels of rigor.

Market information about the biodiversity credit market can be found at the following resources:

- BloomLabs Market Intelligence Platform for Biodiversity Credits
- Dow Jones OPIS Biodiversity Market Report
- CarbonPulse Nature and Biodiversity Pulse

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Appendix

Acronyms

BCA	Biodiversity Credit Alliance
BNG	Biodiversity Net Gain
CBD	Convention on Biological Diversity
CDM	Clean Development Mechanism
CSRD	Corporate Sustainability Reporting Directive
eDNA	environmental DNA
EO	Earth Observation
ETS	Emissions Trading System
EU	European Union
ESG	Environmental and Social Governance
ESRS	European Sustainability Reporting Standards
GDP	Gross Domestic Product
GRI	Global Reporting Initiative
IAPB	International Advisory Panel on Biodiversity Credits
IFRS	International Financial Reporting Standards
ISO	International Organization for Standardization
ISSB	International Sustainability Standards Board
IEG	International Environmental Guardianship
IUCN SSC	International Union for Conservation of Nature Species Survival Commission
LiDAR	Light Detection and Ranging
MRV	Monitoring, Reporting and Verification
PAM	Passive Acoustic Monitoring
SBTN	Science-based Targets Network
TNFD	Taskforce on Nature-related Financial Disclosures
LEAP	Locate, Evaluate, Assess, and Repair (TNFD framework)
UAV	Unmanned Aeiral Vehicle
UNEP	United Nations Environmental Programme
VBC	Voluntary Biodiversity Credit
VCS	Verified Carbon Standard
WWF	World Wildlife Foundation

BIODIVERSITY CREDIT ALLIANCE

BCA Vision

BCA's vision is a transparent, trustworthy and efficient global market in biodiversity credits founded on just and equitable principles, and underpinned by innovation.

BCA works to facilitate the transition to a nature positive economy aided by an integrated, efficient and scaled biodiversity credit market. BCA considers biodiversity credits to be an effective complement to, but not a replacement of, the private sector's supply chain transformation efforts. BCA views biodiversity credits as an effective mechanism for advancing the private sector's participation in ecosystem restoration and transformative landscape approaches in line with science-based principles.

We invite you to join us in achieving these ambitions

biodiversitycreditalliance.org