Integrating nature tech: A guide for businesses



Nature 4Climate

Nature Tech Collective

KPMG

Climate Collective

serena

Nature4Climate (N4C) is a coalition of organizations across the environmental sector, all dedicated to helping raise the profile of nature as a solution for a more sustainable, equitable and nature-positive future. Our goal is to accelerate the implementation of nature-based solutions (NbS) on a global scale, using communications, advocacy and movement building to catalyse government action and private sector investment into the protection, restoration and sustainable management of ecosystems. The ultimate objective is to unlock nature's full climate potential to mitigate 10 million tonnes of carbon dioxide emissions annually by 2030.

The Nature Tech Collective (NTC) is a global community of nature tech stakeholders, united by a shared mission to accelerate the transition towards a nature positive economy. By crowd-sourcing research & intelligence from a leading network of scientific, solutions & industry experts, the Nature Tech Collective functions as an essential capacity builder for the nature positive transition.

KPMG is a Global organization of independent firms providing Audit, Tax, and Advisory services. Operating in 143 countries with 273,000+ employees, each KPMG firm is legally distinct and responsible for its own obligations. KPMG International Limited, a private English company, does not provide services to clients. For more details, visit kpmg.com/governance.

Climate Collective is a leading community of entrepreneurs, investors, nonprofits and scientists leveraging digital technology for climate and nature action at scale. Climate Collective is dedicated to accelerating the pace of tech and data innovations - and making sure founders are representative and solve meaningful climate and nature problems. Over the last 3 years, Climate Collective has bridged knowledge and networks between tech and climate. We have facilitated deeper climate understanding, identified technology relevant opportunities and forged unconventional partnerships. We have a proven program for accelerating entrepreneurs, nonprofits and catalytic ideas. We have served 50 organizations from 30+ countries and have helped raise 43x in follow-on funding from our $4M grant program.

Serena is one of Europe's leading venture capital funds, with $750m under management. Founded in 2008, Serena finances and supports innovative startups from pre-seed to Series B, with initial checks ranging from $500k to $15m. Born of the profound conviction that a venture capital fund should be at the service of its portfolio companies, Serena has set up the largest operational support team in Europe. Serena has a strong focus on AI, SaaS, Climate Tech and Impact, with several successful portfolio companies such as Dataiku, Electra, Descartes Underwriting, Accenta and Lifen. Protecting biodiversity, combating climate change and promoting sustainable investments are part of the fund's DNA.

Foreword

CBD COP16 is upon us. 12,000 people are descending on the tropical city of Cali in Colombia to make progress on global, national and private sector targets to halt and reverse nature loss. Every creature and organism on Earth has a stake in the outcome.

As with climate-related risk before it, awareness of nature-related risk for the private sector is on the rise. Regulatory changes, shifting market dynamics and liability risks have led to a surge in companies exploring nature impacts, dependencies, risks and opportunities.

The interconnected climate and nature crises pose daunting, if not existential, risks to most companies and few understand the magnitude of these threats. Leading companies are taking action to set nature-focused goals and strategies, alongside their climate plans. A broad range of support and guidance has been developed since the adoption of the Global Biodiversity Framework at the end of 2022 to help companies engage with the accountability system that has rapidly been put in place by organisations such as TNFD and SBTN. This engagement needs to accelerate, and rapidly turn its focus to the actions that are needed to halt and reverse nature loss.

In parallel, we are seeing supporting industries bursting into existence. Nature tech is a sector where the explosion of science and new technologies are combining to build solutions that can be used to tackle a range of sustainability challenges faced by the private sector. It is growing rapidly and attracting continued interest from venture capital. Nature tech startups are projected to attract up to $2 billion in investments by the end of 2024, twice as much as six years ago, across nearly 200 deals.

Even for companies that have been dealing with environmental issues such as climate change, pollution, water use, biodiversity and resource use for decades, managing these in a cost-effective way can be challenging, particularly when it comes to the data and metrics required to understand and address impacts. In the last few years, a range of digital tools and platforms such as sensors, satellites, artificial intelligence, machine learning, Internet of Things, blockchain, drones, bioacoustics, have emerged to help to close the nature-data gap that many corporations face.

This report provides an overview of where and how nature tech is providing solutions for business, and how it is contributing to more transparency around nature impacts and the actions taken to address them. Humans are often in awe of the power of technology, but there was a time when we were rightly in awe of the wonder and limitless riches of the natural world. Today, technology can reignite that wonder, enabling a deeper understanding of our threat to the natural world, as well as the full range of services provided by nature that our societies and economies are completely dependent on.

In his 2024 book, *Wise Animals*, Tom Chatfield uses the definition of technology that is as broad as possible - ‘the entirety of human artefacts that extend our grasp of the world’. He describes humans and our technologies as a continually unfolding dance, co-evolving with each new generation of technology - from fire and the wheel, to writing and the development of the computer and now AI.

The hope for nature tech is not only that it can ‘extend our grasp’ of the natural world, but that, in so doing, it will help us rebalance our existential relationship with all ecosystems and species on Earth.

Dominic Waughray
Executive Vice President, World Business Council for Sustainable Development

Table of contents

02 **Report partners**
03 **Foreword**
05 **Acknowledgements**
06 **Executive summary**

07 **Introduction**
The vital role of nature tech in corporate nature journeys
Nature tech for ACT-D
From MRV to dMRV
Nature regulations

10 **Chapter 1: Nature assessment**
Assessing nature interface and nature-related dependencies
Retail nature assessment
Ecosystem intelligence and eDNA
RWE's biodiversity strategy
TNFD LEAP assessment
From greenhushing to tech-enabled greenspeaking
Satellite and blockchain technology for supply chain traceability

24 **Chapter 2: Creating a nature strategy and target setting**
Developing a nature strategy
The nature positive strategy of Salesforce
Volvo Cars and the living and nonliving world
Drone-based reforestation: Morfo and the city of Rio de Janeiro
Nature tech for new business models
Machine learning and scalability
SBTN: Adopting nature-based metrics
The Biodiversity Intactness Index (BII)
Geospatial tech for natural capital

36 **Chapter 3: Nature finance and investing**
Investment in nature-based solutions
Nature-based solutions and place-based conservation
SEED-ing Nuveen Natural Capital
Nature tech for biodiversity credits
Catalysing the potential of nature tech
Buzzing bees in full BloomX

51 **Chapter 4: Nature monitoring, reporting, verification and assurance**
How nature tech promotes the data ethics prerequisite
Addressing nature data gaps
Bank of America on nature data
Conclusion

64 **Annex**
Nature tech taxonomy framework
Nature tech macro trends
Nature tech investment numbers
Regulations and framework

Acknowledgements

Authors:
Lucy Almond – Nature4Climate
Jen Stebbing – Nature4Climate
Gilad Goren – Nature Tech Collective
Paula Palermo – Nature Tech Collective
Sarah Nelson – KMPG
Carlijn van Dam – KPMG
Anna Lerner – Climate Collective
Paul Moriou – Serena

Written by Melissa Jun Rowley

Design:
Alexandre Drobac

Reviewers and contributors:
Thanks to all the industry experts, professionals and market leaders who were interviewed for, provided contributions to, or reviewed this report:

Abyd Karmali – Bank of America
Evan Paul and Julie Moorad – Salesforce
Hirokazu Masuoka - The Norinchukin Bank
Elaine van Ommen Kloeke – Naturalis
Gareth Thomas – Natural History Museum
Ingrid Kukuljan- Federated Hermes
James d'Ath – TNFD
Josine oude Lohuis and Andrew McCue – Metabollic
Judson Berkley – UBS
Katrina Hayter – HSBC
Kevin Webb - Superorganism
Mahima Sukhdev and Thomas Moran – GIST Impact
Mark Gough – Capitals Coalition
Matt Haddon – ERM
Natalie Rothausen – RWE
Ollie Potter – Nature Tech Memos
Owain Griffiths – Volvo Cars
Peter Elwin – Planet Tracker
Sophie Nitoslawski – Telus
Simas Gradeckas – Bloom Labs
Wes Geisenberger – HBAR Foundation

The content of the report, including any errors and omissions, remains the responsibility of the authors.

Published October 2024

Disclaimer:
Nothing contained in this report constitutes a solicitation, recommendation, endorsement, or offer by the authors, contributors or any third-party service provider to buy or sell any securities or other financial instruments in this or in any other jurisdiction in which such solicitation or offer would be unlawful under the securities laws of such jurisdiction.

Case studies provided in this report were submitted by the companies themselves and examples and quotes are taken from interviews conducted with experts, corporate leaders and organisations. Some examples are based on publicly available information. Some of the information may vary.

Executive summary

The health of the Earth's natural ecosystems is fundamental to providing a balanced climate and underpinning much of the world's economic value, as well as providing homes and livelihoods to billions of people. These ecosystems also provide vital resources for businesses including clean water, land, and raw materials. Biodiversity and nature losses pose significant problems for corporations and society at large.

Corporations have an unprecedented opportunity to become leaders in nature and biodiversity conservation and restoration through identifying their nature dependencies, impacts, and opportunities. Nature tech — any technology that enables, accelerates and scales the nature-positive transition — plays a vital role in this process. Strategically deploying nature tech creates new pathways for organisations to cut costs, reduce environmental, physical, and transitional threats, build new business models, and deepen their relationships with their natural ecosystems.

In this report, we present a methodical approach for companies to implement nature tech as a means of

Nature tech taxonomy



Source: https://www.naturetechcollective.org/stories/nature-tech-taxonomy-framework

developing their corporate nature journeys, and providing examples of real-world applications of nature tech through case studies, such as AXA LA's reforestation efforts in Borneo with the Borneo Nature Foundation and Land Life, Epoch Blue's carbon monitoring with Lujeri Estates, and Nala Earth's measurement of key environmental variables for Volkswagen.

To gather diverse perspectives on the current nature tech landscape and its future, we interviewed sustainability experts and nature tech innovators working across fashion, software, agriculture, infrastructure, banking and finance, telecommunications, aviation, renewable energy, automobile manufacturing, hospitality, and insurance. Through our conversations with corporations and financial institutions such as Salesforce, RWE, Telus, Bank of America, Volvo, HSBC and UBS, we gathered practical insights on how companies can integrate a range of nature tech solutions across their value chains. Whether by regulatory compliance or voluntary disclosure frameworks, in strategically adopting nature tech, corporations can contribute to a future where business and biodiversity can thrive—together.

Definition of nature tech

- Throughout our work in category building for nature tech, through the events and reports we have been involved in, our definition of nature tech has also been evolving.
- Nature tech in its broadest possible sense could be defined simply as technology that is 'good for nature'. This could include renewable energy generation, which has significant benefits for nature, as well as new generations of capex-intensive food system production, such as protein enzyme and closed-system farming.
- Nature tech can also refer to technology that addresses an increasing range of environmental challenges including habitat destruction, deforestation, soil degradation, water pollution and species loss. Some of these solutions are referenced in this report.
- We also occasionally use a narrower definition of nature tech as a broad set of technologies that can accelerate and scale the implementation of high-quality nature-based solutions (NbS).
- Our definitive definition, bearing in mind the evolution of the sector, and our work done in compiling this report is now: **Nature tech refers to any technology that enables, accelerates and scales the nature-positive transition**.



Introduction

The vital role of nature tech in corporate nature journeys

In 2022, the 15th United Nations Biodiversity Conference of the Parties (COP15) saw nature-focused involvement from businesses soar. This milestone heightened awareness across sectors about the responsibility of corporations to restore nature while shaping global biodiversity targets, including the 30x30 initiative, which aims to protect 30% of the world's terrestrial lands, inland waters, and coastal and marine areas by 2030.

The 30x30 initiative is part of the Kunming–Montreal Global Biodiversity Framework (GBF), which 196 nations have signed. Underscoring the loss of nature and biodiversity as a global risk to humanity, the GBF includes four long-term goals for 2050 that were established to ensure that the shared vision of living in harmony with nature comes to fruition.

Target 15 of GBF calls for businesses to progressively reduce negative impacts on biodiversity. This target and new mandatory regulations, such as the EU's Corporate Sustainability Reporting Directive (CSRD), as well as voluntary initiatives, such as the Taskforce for Nature-related Financial Disclosures (TNFD), have led to a surge in companies exploring their nature impacts, dependencies, risks and opportunities, such as regulatory changes, shifting market dynamics, or liability risks. These factors may present shorter-term financial threats (deemed material today) and longer-term risks presented by a company's dependencies and impacts on nature.

Whether harnessed to automate processes, collect and verify data, prepare for environmental reporting requirements, monitor the health of natural habits, or mimic nature itself, a number of nature tech tools enable companies to protect and restore nature and cultivate long-term operational resilience. Nature tech encompasses a range of digital tools and platforms such as sensors, satellites, AI, machine learning (ML), IoT, blockchain, drones, bioacoustics, and more to help close the nature data gap many corporations face.

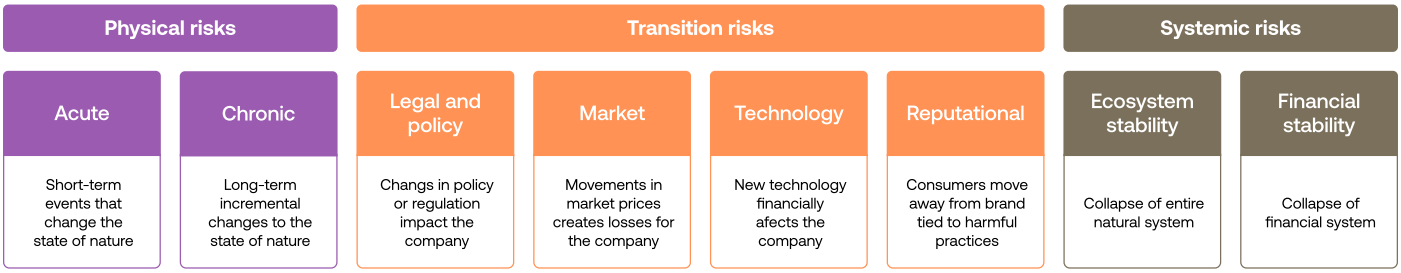
Nature tech for ACT-D

For companies embarking on a corporate nature journey, the ACT-D high-level business actions on nature build on existing frameworks and guidance providing a comprehensive model to follow. Standing for Access, Commit, Transform, and Disclose (ACT-D), these actions are organised into four primary disciplines, which take companies through the tools and initiatives available to assess their relationships with nature, commit to action and target setting, transform their practices, and disclose nature-related information. Nature tech can be implemented in every stage of ACT-D.

From MRV to dMRV

To ensure data accuracy and completeness, corporations can implement robust data systems for collecting, managing, and analysing data related to environmental impacts. For this reason, MRV (measurement, reporting and verification) and D-MRV (digital MRV) tools are at the centre of the ACT-D approach, as they help companies streamline carbon project monitoring, meet compliance requirements, and scale nature-based solutions more effectively.

Figure 1: from Bloomberg Paper - When the Bee Stings



Source: https://assets.bbhub.io/professional/sites/24/BNEF_Nature-Risk.pdf

MRV systems increasingly use AI, machine learning, and cloud platforms to improve precision and scalability, making these tools essential in corporate sustainability strategies and the emerging biodiversity credit market.

Grouped into four categories, D-MRV encompasses a range of technologies, including the following:

- **Data aggregators** that analyse data and the patterns in data. These technologies often include remote sensors, on-site sensors, AI, and ML (machine learning). Biometrio uses remote sensing methods to process radar and optical data from aircraft or satellite terrestrial observation missions, while Wildmon uses AI-powered tools to integrate eDNA (environmental DNA), camera trapping, and ecoacoustics that can record an ecosystem's soundscape. Mozaic Earth enables local communities to monitor the health of natural ecosystems through AI and smartphones.
- **Satellite data** that's collected through remote-sensing technology, including camera and hyper-spectral imaging. 3Bee uses a combination of satellite data and in-field sensors to collect comprehensive environmental data for monitoring biodiversity. Ramboll uses satellite technology and AI to analyse high-resolution data for applications like natural resource management, biodiversity monitoring, and urban planning.
- **Internet of Things (IoT) data** that involves sensors and devices to collect data on weather and biodiversity. Hive-Tech, an IoT system by 3Bee, gathers biometric information on beehive colonies and analyses the quality of the environment. Yard Stick uses sensor-based probes that can be deployed in the field to gather data on soil carbon and other key soil health metrics.
- **'Boots on the ground'** technologies such as bioacoustics that gather raw data at the ground level. Okala uses a combination of wildlife cameras, bioacoustics eDNA, and remote sensing to capture different aspects of biodiversity. Rainforest Connection uses ecoacoustics and AI to detect threats such as illegal logging, Hyphen Global AG uses its atmospheric digital MRV (aMRV) solution to quantify GHG flux data from Eddy Covariance Towers, integrating advanced emissions measurements directly with carbon markets.

Nature regulations

Needing to comply with regulations and frameworks is a driving force behind a number of corporate nature journeys. Some of these requirements offer nature tech solutions to help companies follow their



Image credit: Roshni Lodhia for Carbon Tanzania

their guidelines. For example, the Global Reporting Initiative (GRI) provides standards, tools, and training for organisations to report on their environmental performance. It also offers guidance on new standards by ISSB and the European Sustainability Reporting Standards (ESRS) established by the CSRD.

To date, CSRD will impact 50,000 companies with operations in the EU. This regulation requires corporations to assess whether or not nature and biodiversity are material to their business and then provide a full materiality assessment. For this reason, integrating components such as Double Materiality Assessment (DMA) are becoming more common among corporations. Looking at double materiality means that in addition to a company examining how sustainability issues and the environment can affect the company financially in the short-, medium-, and long-term, it must also consider how its activities impact people and the environment across the entire value chain.

1 Nature assessment



Image credit: Hula.Earth

Nature assessment

For a corporation to establish a baseline for nature-related goals, it must first assess its nature impacts. This step allows organisations to map their direct operations and broader value chain exposure to nature and biodiversity, while ensuring they focus on the most material issues. A company's C-suite team may want to undertake a nature assessment process for varying purposes, such as meeting regulation requirements and future-proofing their businesses.

- **Biodiversity and habitat mapping:** Tools such as IBAT (Integrated Biodiversity Assessment Tool) and MSCI's Nature and Biodiversity Metrics provide initial insights into a company's interface with biodiversity sensitive areas. Platforms such as NatureMetrics use environmental DNA (eDNA) analysis to map biodiversity hotspots and assess the presence of various species in an area, providing a clear picture of biodiversity levels.
- **Leveraging databases to screen impacts and dependencies:** Industry-based insights on potential impacts and dependencies can be gathered via platforms such as the ENCORE tool, which provides a qualitative rating for each impact and dependency for screening purposes. Available databases for biodiversity footprinting are based on similar input-output models (such as Exiobase, Globio, and GIST Impact's databases). They show potential biodiversity impacts and dependencies resulting from economic activities. Other databases include the Natural History Museum's Biodiversity Intactness Index (BII) and S&P Nature Risk Tool's Ecosystem Integrity Index.
- **Data collection:** Companies can assess the impacts and dependencies of their activities on biodiversity and ecosystems on site through remote sensing, satellite imagery, drones, and AI-based data models. Nature tech solutions help analyse how business operations impact and rely on ecosystem services, such as fresh water, soil health and productivity, and pollination, helping to identify risks and prioritise the most material areas for action.

Elaine van Ommen Kloeke from the Naturalis Biodiversity Centre emphasises the complexity of measuring biodiversity, noting the vast number of species and the critical ecosystem services they provide such as pollination and decomposition. She says the challenge lies in measuring species, interpreting the data, and understanding the broader ecological impact of human actions. When we interviewed her, she highlighted the importance of collaboration between knowledge institutions and companies to address biodiversity, pointing out that while companies are beginning to realise their impact on biodiversity, they need actionable steps to improve it.

Assessing nature interface and nature-related dependencies

Using nature tech to assess dependencies can inform corporations on how they can enhance ecosystem function. For example, Vibrant Planet conducts nature dependency assessments using a combination of detailed 3D vegetation data, machine learning models, and integration of diverse environmental datasets. The platform allows companies to analyse hazard and risk to structures, recreation areas, vulnerable water supplies, habitat species, and carbon sinks.

Helping companies take action despite ecological uncertainties, Earthshot Labs conducts nature dependency assessments by combining a range of advanced methodologies including AI, machine learning, and ecosystem physics modelling. Their platform, LandOS, integrates ground and remote sensing observations with historical data and global models to project outcomes for reforestation, conservation, and other nature-based projects. This system quantifies key environmental risks—such as fire, drought, and disease—and calculates carbon storage potential, biomass growth, and other ecological parameters at high spatial resolution.

The nature tech company Metabolic provides risk and dependencies assessment through a software solution called Link, which supports preparation for TNFD (Taskforce on Nature-related Financial Disclosures) and CSRD (Corporate Sustainability Reporting Directive). Covering the SBTN (Science-based Targets Network) baseline assessment and prioritisation approach, Link automates the calculation of environmental impacts and analyses supply chains using geospatial data and impact assessment methods. This functionality allows companies to identify their ecological footprint—whether related to biodiversity loss, deforestation, or

water use—and prioritise areas for action. It also allows corporations to save time and meet reporting requirements, while providing deeper insights into where they can improve.

Retail nature assessment

The Dutch retail chain HEMA used Link to conduct its first nature baseline assessment of the most impactful part of its business—purchasing commodities in the fashion category. Considering the fashion industry is the second-biggest consumer of water and is responsible for 2-8 % of global carbon emissions, its nature impacts and dependencies trend high. Link provided HEMA with a quantitative look at the interface between the retailer and the natural world in which it operates.

HEMA used the Link platform across its supplier engagement, product design, procurement, and central sustainability team. Through undergoing Link's process, HEMA now has a solid foundation for mitigating natural risks and impacts associated with the retailer's operations and value chain. Ultimately, the HEMA team learned that nature assessment is an iterative process and that using estimates and models is a solid starting point that needs to be refined as actions are taken in parallel.

Ecosystem intelligence and eDNA

Other notable companies that help corporations carry out their environmental impact assessments include Ecometrix and Stratifyx. Ecometrix, which has collaborated with Dow Chemical Company and The Nature Conservancy, offers an Ecosystem Intelligence platform that helps organisations measure, analyse, and integrate ecosystem services into their decision-making processes. Stratifyx leverages geospatial data and ecological expertise to help organisations make informed decisions about land use for both ecological and economic benefits. They provide tools for land asset managers, project developers, and investors to survey landscapes, identify high-value areas for ecosystem services, and support sustainable land management.

Meanwhile, NatureMetrics, WildTechDNA and SimplexDNA specialise in environmental DNA (eDNA) technology to measure and monitor biodiversity and conduct habitat mapping. SimplexDNA's water-based eDNA service FishMonitor provides fresh water habitat monitoring, while its QuaggaMonitor service offers DNA-based detection of the invasive Quagga mussel species.

Image credit: The Nature Conservancy (TNC)





Image credit: Dreamstime

RWE's biodiversity strategy

Some companies may assess nature-related risks and opportunities in conjunction with their climate strategies, as they are symbiotic. The energy company RWE exemplifies this in its growth strategy. After conducting a double materiality assessment in 2021, the RWE team decided to "make as little impact on wildlife and ecosystems as possible and explore opportunities for biodiversity enhancement" and emphasise the importance of biodiversity in its long-term trajectory.

While the assessment initially didn't rank biodiversity as one of the top areas to focus on, RWE prioritised it in its sustainability strategy because of the significant role land use plays in how the company impacts nature through its renewables growth targets and remaining mining operations. To better understand how the business affects natural ecosystems, RWE deploys monitoring technology, including bird detection devices that track how birds fly through the company's windmills. As part of their research and development, the energy giant uses artificial structures with camera traps, drones, sensors, and AI to analyse data. For measuring and reporting, RWE uses the nature intelligence providers, such as NatureMetrics, and eDNA, or environmental data that enables businesses to manage their impacts and dependencies on biodiversity at scale.

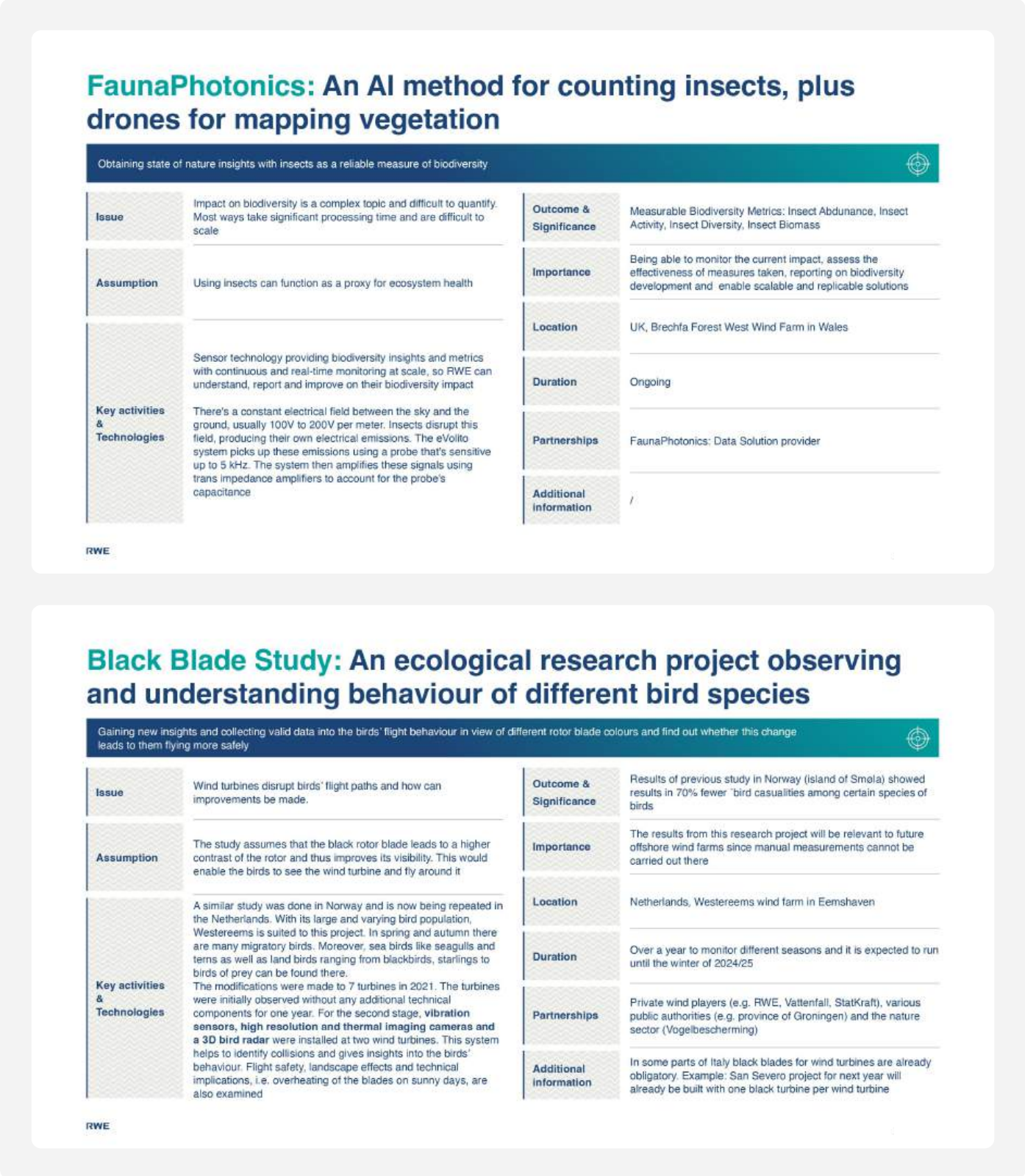
Natalie Rothausen, RWE's Group Biodiversity Lead, shared that as the RWE sustainability team looked into licences to operate, regulations, and its renewable build-out, they saw biodiversity not only as a resilience factor but also a chance to increase acceptance for renewable projects. "Climate change and biodiversity loss are deeply interlinked, with both crises exacerbating one another. Realising this, we believe that we can help governments as a strong partner, by supporting not only their renewable energy targets, but also their national biodiversity action plans. That seems like a win-win-win situation," said Rothausen.

TNFD LEAP assessment

Like RWE, Salesforce has been moving through its corporate journey for four to five years. Last year, the software company undertook its first TNFD-aligned LEAP assessment, which guides organisations through a structured process to identify and manage nature-related dependencies, impacts, and risks. LEAP stands for Locate, Evaluate, Assess, and Prepare.

Julie Moorad, senior manager of global climate action at Salesforce, said that thanks to conducting the TNFD LEAP assessment, the company now has nature information across all of its direct operations, supply chain categories, and downstream sectors. The climate action team can use that data to inform decisions and target settings.

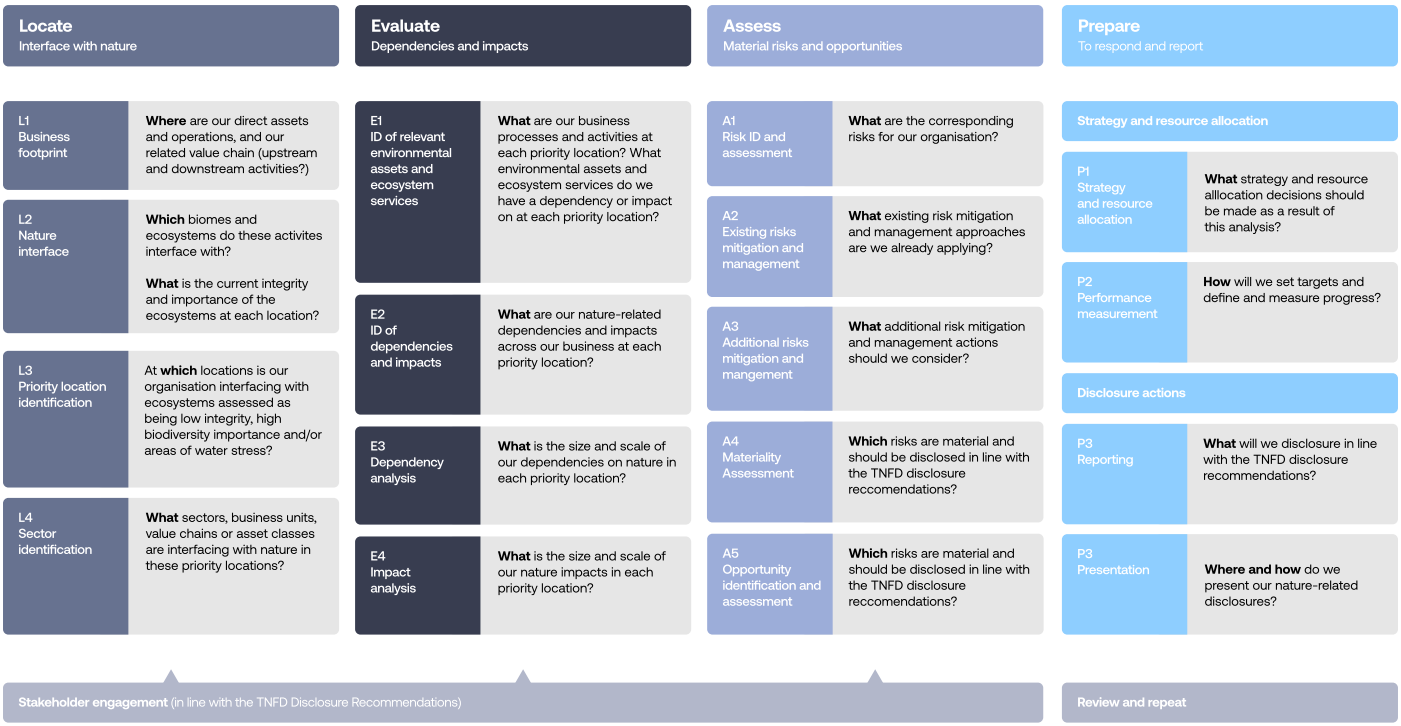
Figure 2: RWE's use of nature tech



Source: Overview of NatureTech Initiatives @RWE

A few nature data and analytics providers that guide companies through TNFD's LEAP assessment include NatCap, Earthblox, Gist Impact, and Nala Earth. Thomas Moran, VP and Head of Biodiversity Products at the nature data and analytics provider GIST Impact, sees TNFD disclosures gaining more traction across sectors. "Not everyone is going foot-first with TNFD, but in many cases, they are using TNFD or the LEAP process as a guiding light for nature relationships," he shared. "We see the industry catching up with where the company has been for a long time."

Figure 3: Graphic to illustrate and highlight TNFD LEAP Assessment



Source: https://tnfd.global/wp-content/uploads/2022/03/tnfd-the-leap-approach.pdf

From greenhushing to tech-enabled greenspeaking

As some companies navigate the complexities of their corporate nature (and climate) journeys or are new to developing and executing net-zero and nature-positive strategies, they may be cautious about communicating their nature-related efforts to avoid scrutiny or criticism. This approach is sometimes referred to as greenhushing. The caveat with this practice is that it hinders stakeholder engagement and prevents the possibility of setting an industry standard.

In the event that a corporation is greenhushing over concerns that claims cannot be sufficiently supported with clear evidence, nature tech can provide a solution. For example, technologies such as blockchain and satellite tools can enhance supply chain transparency by tracing raw materials from their source to the end product, ensuring that materials are ethically and sustainably sourced. The nature tech company Chloris Geospatial provides direct estimates of above-ground biomass (AGB) stock and change at operational scale resolution, anywhere on the planet.

By monitoring ecological factors, such as water quality, deforestation, or air pollution in real-time, companies can detect potential environmental risks in their supply chain and take proactive measures.

Satellite and blockchain technology for supply chain traceability

Supply chain traceability is essential in a corporate nature journey because for many businesses the key impacts on biodiversity are highly concentrated in the beginning of the upstream value chain. Enhancing transparency can help corporations comply with regulations and frameworks, including CSRD, and EUDR (EU's Deforestation Regulation).

EUDR focuses on preventing deforestation and forest degradation for certain products sold in the EU market. This regulation requires companies to ensure that the goods they import or sell do not directly contribute to illegal deforestation through their supply chains. Two nature tech companies providing supply chain traceability and thereby helping corporations be compliant with EUDR include Planet Labs, which operates a fleet of satellites that provide high-resolution imagery for monitoring forests and land use changes, and TraceX, which provides blockchain-based traceability by creating immutable records of product origin.

Hirokazu Masuoka, Senior Manager of Sustainability and Global Regulatory Affairs at Norinchukin Bank, says partnerships with tech companies, such as aiESG, which analyses supply chains and assesse environmental impact and dependencies, enable the

bank to engage with corporates more effectively. Other partnerships include technology solutions to develop nature-based carbon credits, like biochar, and to leverage MRV (measurement, reporting, and verification) tools from satellite data to improve TNFD.

Overall, complying with nature regulations requires a keen understanding of frameworks through assessing current practices and gaps, stringent data collection and management, and providing accurate analyses. A default and benefit of regulatory preparedness is maturation. Mature organisations are better positioned to evolve into sustainable corporate citizens and improve operational efficiency, innovation, and competitiveness.

Case Study: Frontierra and Foresight Group

Frontierra and Foresight Group

Overview
Foresight Group, a UK-based infrastructure and private equity firm, focuses on sustainable and impact-driven investments. With £11.9 billion in assets under management, Foresight is committed to integrating the principles of the Task Force on Climate-Related Financial Disclosures (TCFD) into its investment strategies and is an Early Adopter of the Taskforce on Nature-Related Financial Disclosures (TNFD). The company's approach emphasises sustainability in infrastructure and real assets, aiming to enhance environmental and social value while minimising risks.

To strengthen their biodiversity strategy and to align with the TNFD recommendations, Foresight partnered with Frontiera, a nature tech company offering geospatial services for rapid biodiversity and nature-related impact and dependency assessments. The collaboration aimed to improve Foresight's decision-making processes by providing actionable data on nature-related risks and opportunities across its diverse portfolio.

Nature tech solution
Frontierra's cloud-based geospatial service combines high-resolution satellite imagery, machine learning models, and on-the-ground data to generate detailed assessments of biodiversity and ecosystem health. Their platform enabled Foresight to map habitat quality, species richness, and ecosystem services across multiple investment sites. Using geospatial analysis, the solution provided a clear understanding of biodiversity-related risks and opportunities, allowing Foresight to factor these considerations into investment decisions.

The data-driven approach also supported Foresight's compliance with TCFD, adoption of TNFD and other emerging environmental regulations, ensuring that their investments align with global standards for sustainable finance.

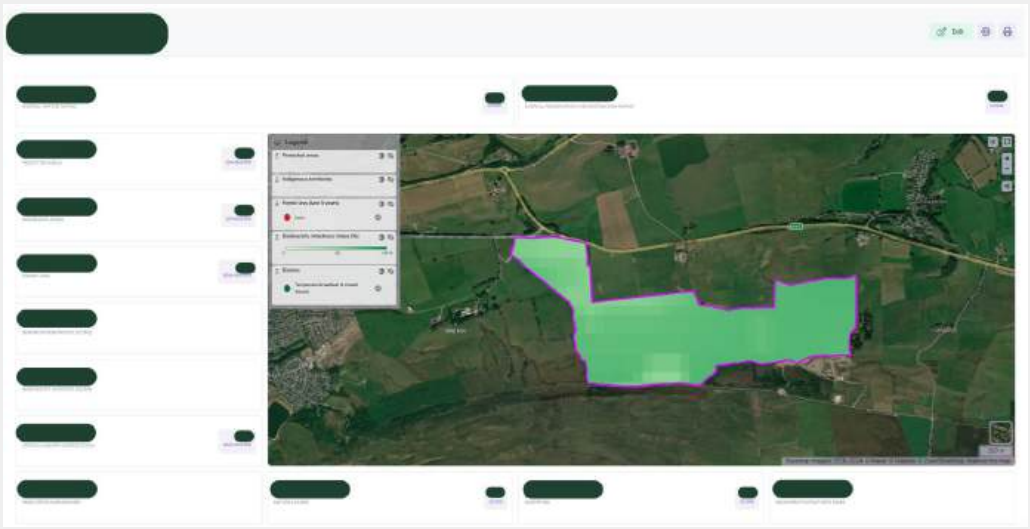


Image credit: Frontierra

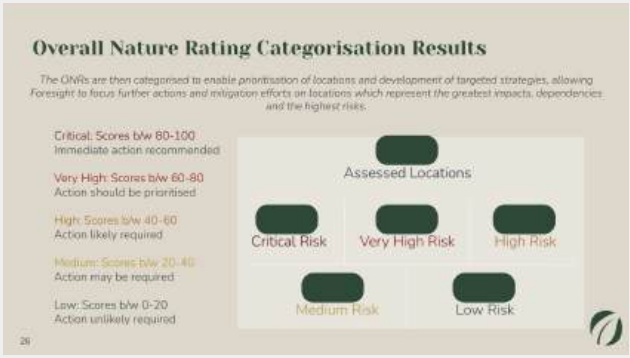
Case Study: Frontierra and Foresight Group

Main findings

Frontierra's assessments revealed several sites where biodiversity risks were higher than initially anticipated, particularly in areas with significant habitat fragmentation. This insight led Foresight to re-evaluate some investment strategies and consider nature-positive interventions, such as habitat restoration and improved land management practices.

The key takeaway is the importance of integrating nature considerations into investment decision-making. By leveraging Frontierra's geospatial tools, Foresight was able to identify high-risk areas early, reducing potential environmental impacts and enhancing the sustainability of their investment portfolio. This case study demonstrates how nature tech can provide critical insights for the financial sector, supporting more sustainable and resilient investment strategies.

Image credit: Frontierra





Case Study: BeeOdiversity and Luxembourg Airport

BeeOdiversity and Luxembourg Airport

Overview

As part of its broad environmental strategy and in the context of continuous improvement, Luxembourg Airport (lux-Airport) wanted to gather additional ground-truth data on a regular basis to measure and analyse the impact of their activities. They partnered with BeeOdiversity to implement the nature tech company's award-winning nature-based solution BeeOmonitoring© in order to monitor and enhance biodiversity on the airport premises, leveraging beehives present on site. The partners of this initiative aimed to go beyond simple compliance, setting an example of how infrastructure projects can enhance rather than disrupt local biodiversity.

Nature tech solution

Bees act like natural drones, collecting a wealth of information from the pollen grains they gather every day. Using a scientifically validated and non-intrusive methodology, and in partnership with local beekeepers, BeeOdiversity analyses and interprets the data into actionable metrics and insights for lux-Airport. Regular in-situ measurements include industrial pollutants, pesticides, heavy metals, PAHs, PFASs and a comprehensive biodiversity assessment, identifying plant species, richness, relative abundance and quality for the ecosystem over an area of 700 hectares from eight billion samples of pollen.

BeeOdiversity leveraged the beehives at lux-Airport and deployed their BeeOmonitoring© solution to continuously monitor and improve the environment. Analysis is performed four times per year to identify risks and opportunities. BeeOdiversity provides lux-Airport with specific recommendations to help them improve their practices (planting strategy, for example) and monitors the outcomes of those actions.

Case Study: BeeOdiversity and Luxembourg Airport

Main findings

Based on the results of BeeOmonitoring©, lux-Airport is able to obtain an overview of ecosystem health on their site, take data-driven decisions, monitor the impact of their improvement actions and comply with its reporting obligations. This has enabled lux-Airport to measure the real impact of its biodiversity projects, more specifically the assessment of seeding success, and to better manage its green spaces by identifying the right actions to implement. This process is a pillar of biodiversity and air quality monitoring and a tool to extend comparison analyses outside the airport boundaries. Biomonitoring information also helps lux-Airport communicate and maintain good relations with its various stakeholders, from regulatory and territorial authorities to citizens.

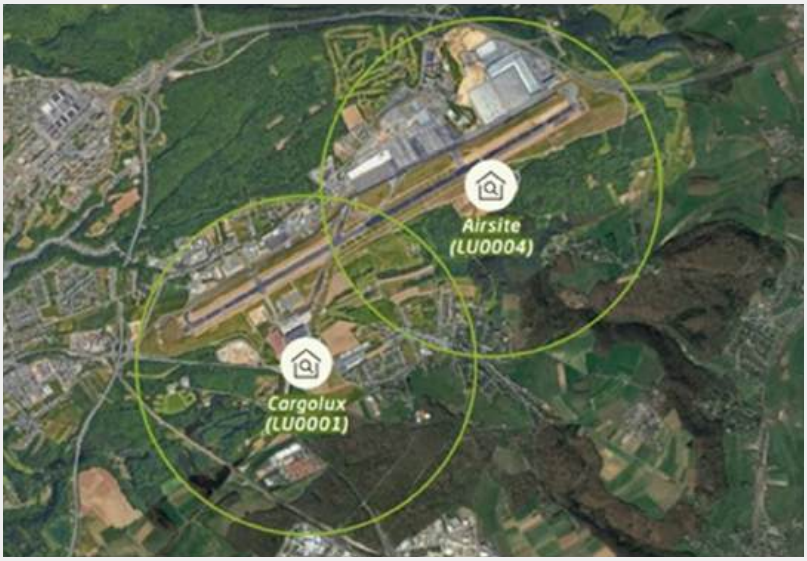








Image credit: BeeOdiversity

Case Study: NatureMetrics, Natural Power, and EDF Renewables

NatureMetrics, Natural Power, and EDF Renewables

Overview
As the UK targets 50 GW of offshore wind capacity by 2030, there's an urgent need for more efficient, scalable, and comprehensive survey methods to enhance environmental assessments and monitor impacts throughout project lifecycles. Natural Power, NatureMetrics, and EDF Renewables collaborated on a pioneering project to demonstrate the applications and benefits of using environmental DNA (eDNA) for biodiversity surveys at offshore wind farms. Conducted over 18 months at EDF's Blyth Offshore Demonstrator wind farm, the study compared eDNA sampling with conventional trawling methods over four seasonal surveys.

Nature tech solution
NatureMetrics deployed its eDNA sampling and analysis technology, to detect species presence using simple water filter samples. This non-invasive sampling method allows for comprehensive biodiversity assessment without traditional environmentally disruptive trawling techniques. The technology enables sampling within turbine arrays, previously inaccessible to trawling, and detects multiple taxa from a single sample.

The eDNA approach significantly enhances crew safety compared to the complexities of traditional trawling operations. Smaller boats can easily manoeuvre between turbines to collect samples, and the process requires minimal ecological expertise, making it accessible for anyone to conduct. These factors contribute to faster, more efficient, and less invasive surveys, providing a more comprehensive picture of marine biodiversity. Crucially, NatureMetrics' technology converts complex biodiversity datasets into simple, actionable metrics, enabling informed decision-making for large infrastructure projects.

Image credit: NatureMetrics



Case Study: NatureMetrics, Natural Power, and EDF Renewables

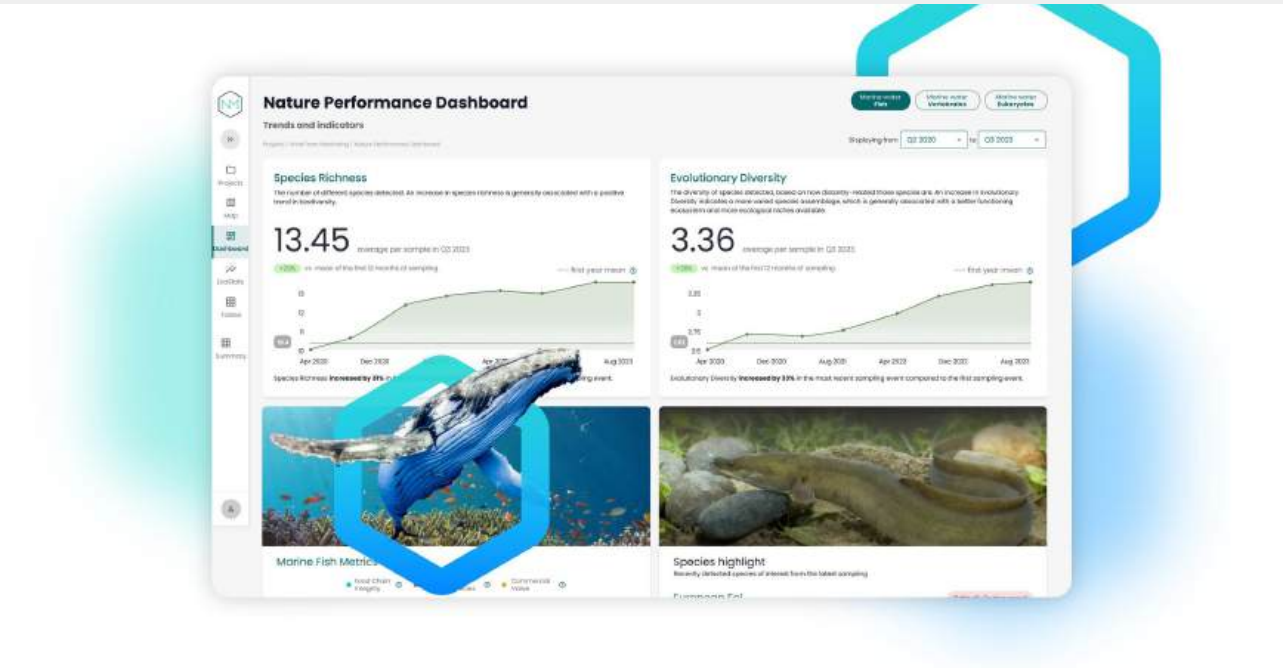
Main findings

The project highlighted the substantial benefits of eDNA technology over traditional trawling methods. eDNA identified 54 fish species compared to 26 species detected by trawling, including important species like European eel, Atlantic salmon, and sea trout. The technology also detected four large marine mammal species, seabird species, and over 60 invertebrate species, providing multi-taxa insights from a single sampling method.

The study achieved a ~40% reduction in vessel time and required only one third of conventional personnel resources compared to traditional methods. Perhaps most significantly, eDNA sampling allowed for the first-ever detailed species composition data from within the turbine array, with the data supporting the hypothesis that the turbines act as artificial reefs supporting higher relative abundances of rocky habitat species.

This case study highlights how nature tech can revolutionise biodiversity assessment in offshore environments, providing more comprehensive data while reducing costs and environmental impacts. The success of this project paves the way for wider adoption of eDNA in offshore wind development, offering a scalable solution for surveying deeper, more remote sites earmarked for offshore renewable energy projects.

Image credit: NatureMetrics



Case Study: 3Bee and Mundys

3Bee and Mundys

Overview

Mundys, an industrial contractor with a focus on sustainable infrastructure development, has committed to reducing its environmental impact, promoting biodiversity, and ensuring that its projects contribute positively to local ecosystems. Their projects span a variety of landscapes, including airports and extensive highway networks across South America, Central America, and Europe. To better understand and mitigate its ecological footprint, Mundys partnered with 3Bee, a nature tech company specialising in biodiversity monitoring and environmental impact assessment.

Case Study: 3Bee and Mundys

The primary goal of this partnership was to evaluate Mundys' impact on local biodiversity at its managed sites, which include five airports and a 4,000 km highway network. 3Bee's assessment focused on several environmental indices, including Mean Species Abundance (MSA), nectar potential, floral availability, pollinator abundance, local warming, nesting suitability, and hydrogeological risk. By applying these metrics, 3Bee aimed to create a prioritisation matrix to identify which locations posed the highest risk to biodiversity and required the most urgent intervention.

Nature tech solution

3Bee employed its proprietary Element-e methodology, designed to assess and monitor biodiversity and environmental impact across large areas. This solution integrates multiple data sources, including satellite imagery from Sentinel I and II, to generate synthetic indicators reflecting the state of biodiversity and the area's capacity to support pollinators. The use of geospatial data and satellite imagery enabled the team to map and monitor a variety of environmental conditions in real-time.

This technology, combined with a detailed scoring system, helped Mundys determine which sites were at the highest risk of environmental degradation. The results were communicated through an intuitive platform that allowed Mundys to track environmental changes and prioritise restoration and conservation actions.

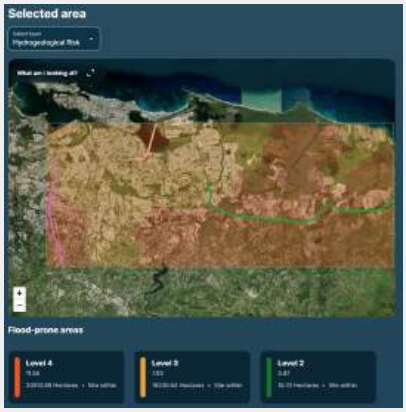
Main findings

3Bee's analysis revealed that certain sites, especially those located near protected areas, had a high risk of impacting local biodiversity. Key findings included a decrease in pollinator abundance near busy highway segments and reduced floral availability in areas adjacent to major airports. Using these insights, Mundys was able to implement targeted interventions, such as creating pollinator-friendly corridors and reducing pesticide use in critical areas.

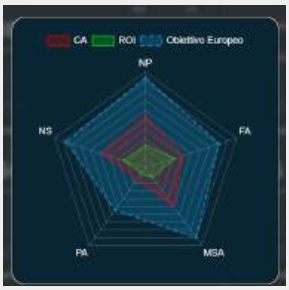
The project underscored the importance of using a data-driven approach to assess environmental impacts and prioritise biodiversity interventions. 3Bee's methodology enabled Mundys to make informed decisions, enhancing their ability to mitigate ecological risks while maintaining operational efficiency. This case study demonstrates how nature tech can empower industrial contractors to integrate biodiversity considerations into large-scale infrastructure management.

Image credit: 3Bee















Case Study: Natcap and MS&AD Insurance Group

Natcap and MS&AD Insurance Group

Overview

MS&AD Insurance Group, one of Japan's leading insurance firms, is a global pioneer in nature and biodiversity reporting, having been one of the first companies in Asia to publish a report aligned with the Taskforce on Nature-related Financial Disclosures (TNFD). With nature-related risk emerging as a significant concern for businesses globally, MS&AD's early adoption set a precedent, making it a role model for other organisations. MS&AD have set an internal goal of enabling all their customers to measure, act, and report on nature risk.

MS&AD observed that the current tools and technologies to measure nature risk were inadequate for business decision making. These tools did not adapt insights based on the location of company operations and supply chains nor the practices used to manage those sites. The risks that were identified were too high level and crucially, not quantified financially. Risks were also not integrated into existing enterprise risk management systems nor were mitigation practices identified.

Nature tech solution

MS&AD solved this problem by partnering with Natcap, a nature intelligence firm originally spawned out of Oxford University. Natcap has developed technology that aggregates nature related data, including the IBAT data sets, and translates them into the insight business need to measure, report, and act on nature risk. The capabilities align closely with the TNFD LEAP framework, though can be used for a range of reporting and strategic use cases.

Main findings

In collaboration with Natcap, MS&AD is now able to provide its clients with access to the next generation of nature risk assessment technology. By harnessing the Natcap platform and expert support, MS&AD can address many of the shortcomings of existing solutions. This includes providing sufficiently granular risk taxonomy to drive decision making, integrating with existing enterprise risk management approaches, providing data that is sensitive to the specific location and management practices of a company's operations, and quantifying a company's nature risk financially.

MS&AD's proactive approach has made it a leader in TNFD adoption, with 25% of early TNFD adopters in Asia following their lead. The partnership with Natcap has not only strengthened MS&AD's position in the market but also contributed to advancing the practice of nature risk management and reporting in the global insurance industry.

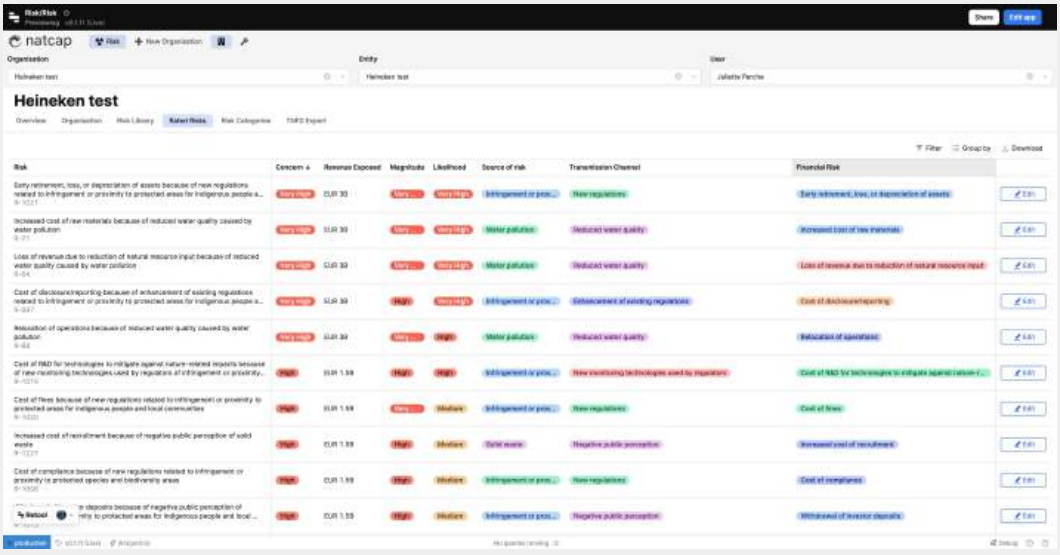


Image credit: NatCap

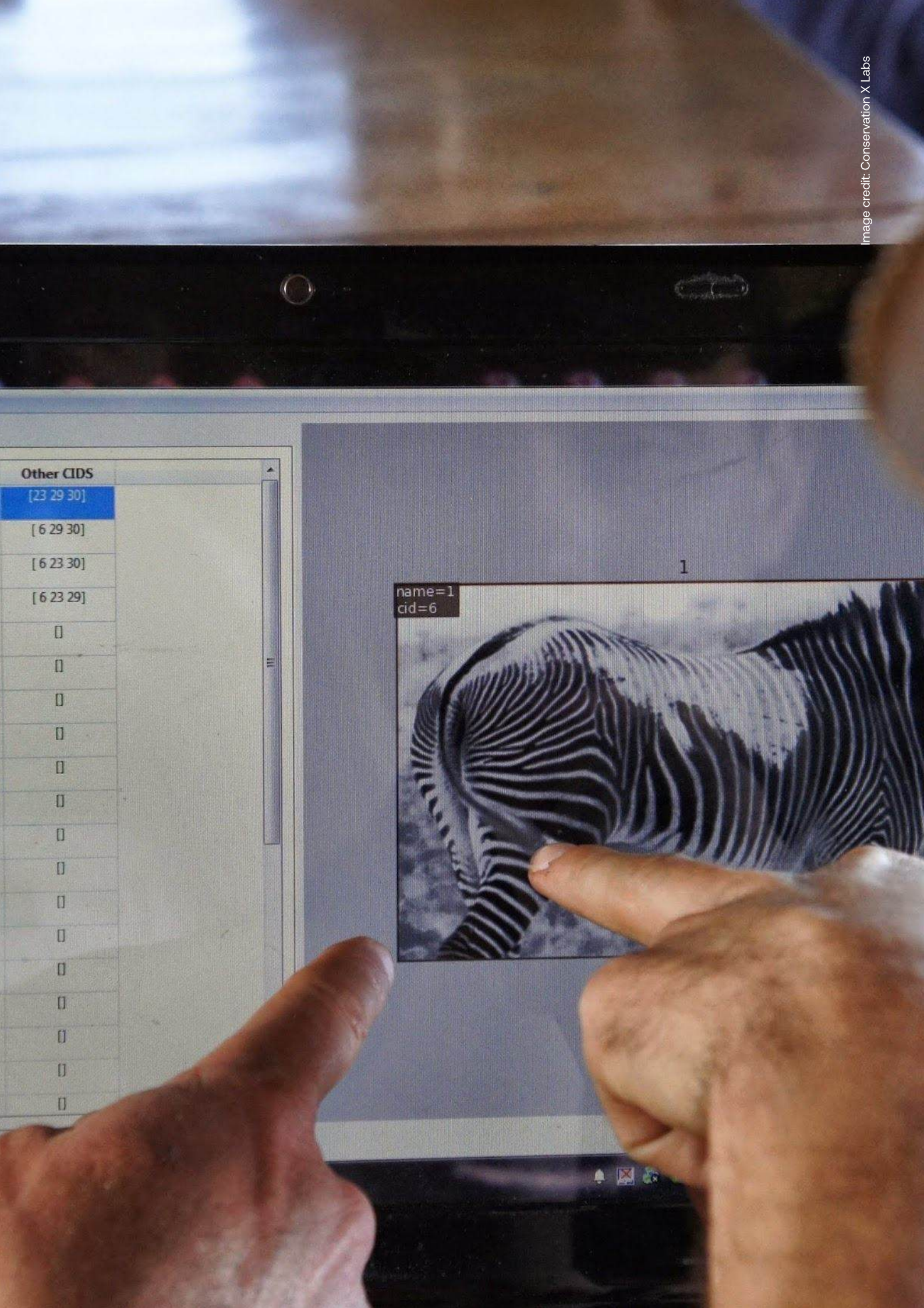


Image credit: Conservation X Labs

2

Creating a nature strategy and target setting

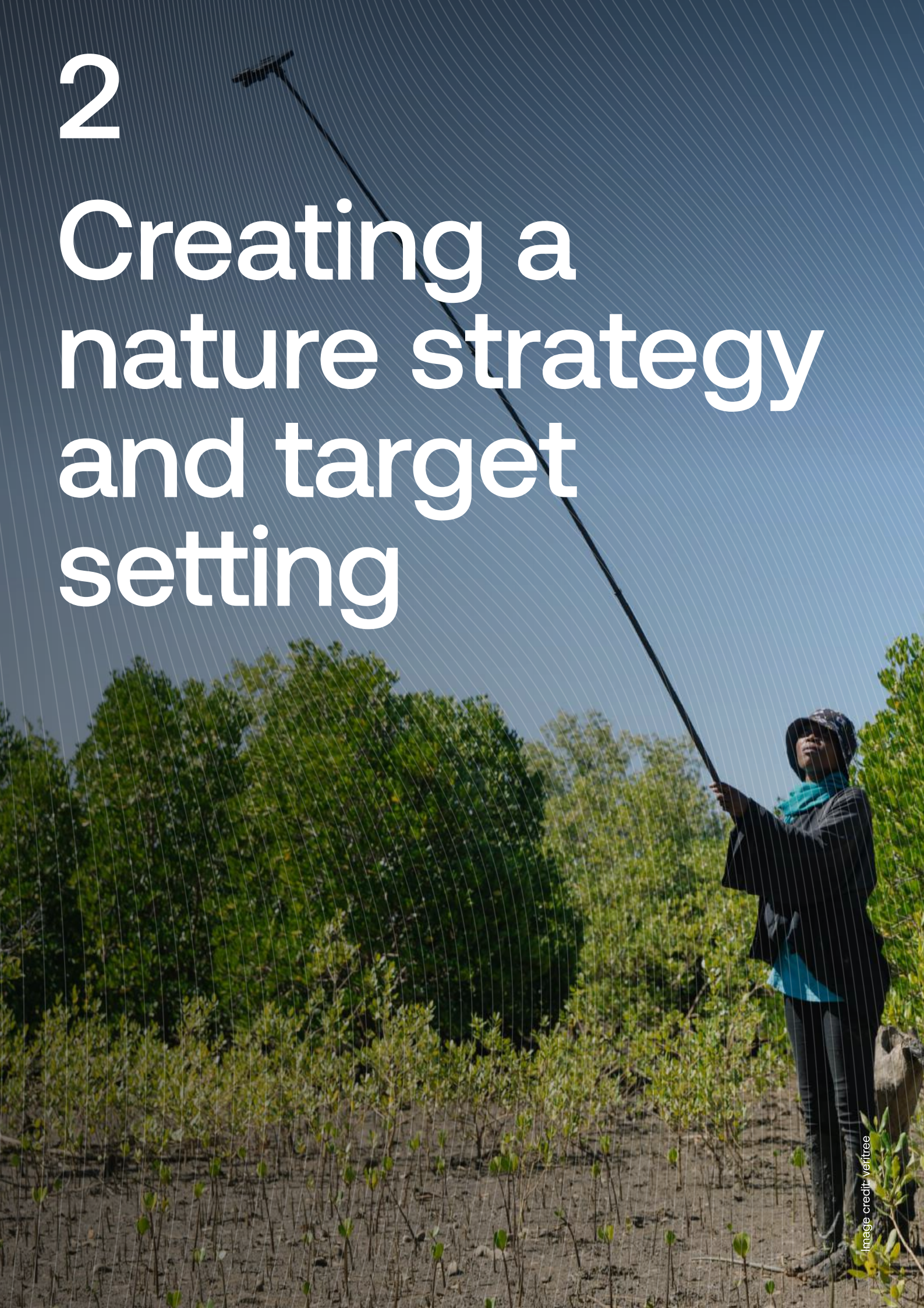


Image credit: veritree

Creating a nature strategy and target setting

Creating any kind of corporate strategy requires setting an ambition and clear targets. The same bodes true for nature planning. Hirokazu Masuoka cites the need for standard metrics for nature-related disclosures as a significant problem for the Norinchukin Bank's corporate clients. This issue presents itself across sectors. That's why committing to a value chain-wide nature strategy and setting targets is crucial for corporations after assessing and understanding their most material impacts, dependencies, risks, and opportunities.

Here are some aspects of the Commit phase of the corporate nature journey where technology is useful.

- **Data-driven target setting**: SBTN (Science-Based Targets Network) provides tools and guidance that enable companies to set specific, measurable targets for freshwater and land use.
- **Scenario modelling**: AI and machine learning models can project future ecological scenarios based on different business decisions, allowing companies to foresee the potential impacts of various strategies.
- **Strategic planning tools**: Software platforms like LandScope and NatureMap help companies plan conservation actions and align their targets with international biodiversity goals.
- **Benchmarking**: Nature tech platforms provide benchmarking data, allowing companies to compare their performance against industry peers and best-in-class sustainability leaders.

Developing a nature strategy

Developing a nature strategy entails prioritising areas where action can be the most effective, while establishing accountability, policies, and metrics across those key locations. Implementing technology is essential for this stage of the corporate nature journey, as companies need to determine whether or not they can meet their ambitions within a certain landscape or across their value chain.

Nature targets may include impact reduction goals, such as reducing habitat destruction, achieving biodiversity net gain, improving water quality, or reducing marine pollution. Other goals may revolve around restoration, regeneration, or reforestation. Based on ACT-D guidance from the Capitals Coalition, corporations should establish science-based targets, while being as ambitious as possible and striving to achieve nature positivity.

Salesforce's nature-positive strategy

Recognising a need for a holistic approach to nature, in 2023, Salesforce developed its nature positive strategy, which consists of three pillars, including:

1. **Reducing nature impacts**
2. **Leading on restoration at scale**
3. **Accelerating their customers and broader nature-positive movement**

Salesforce sees potential in using Tableau to visualise and distil massive amounts of nature data in a digestible way for senior stakeholders. Keeping transparency and accountability at the forefront, the software giant currently uses the nature restoration community platform Restor to track and measure its commitment to 100 million tree cover.

Volvo Cars and the living and non-living world

When approaching their nature strategy, the Swedish multinational automobile manufacturer Volvo Cars considers nature as both the living and the non-living world. Two years ago, the corporation began assessing its nature impact to understand its footprint on biodiversity and identify its nature hot spots. Owain Griffiths, Volvo Cars' head of circular economy and biodiversity, says Volvo Cars is the one of the first companies outside the agritech farming arena to use a science-based Life Cycle Assessment (LCA) methodology to quantify the biodiversity impact of its business and products.

“We [Volvo Cars] are one of the first companies to set a corporate ambition for a nature-positive future across our value chain, which means that we need to avoid and reduce our negative impact on nature and biodiversity, and then any remaining impact that we have as an organisation needs to be counteracted by positive nature activities like restoration and conservation at our sites and in our value chain.”

Owain Griffiths, Volvo Cars’ head of circular economy and biodiversity

As for nature tech, Volvo has used the Integrated Biodiversity Assessment Tool (IBAT)’s biodiversity map to see which facilities within Volvo Cars’ own operations are in areas of biodiversity importance, such as Key Biodiversity Areas (KBAs). They also work with databases such as the World Resources Institute Aqueduct 4.0 Water Risk Atlas, Worldwide Fund (WWF) Water Risk Filter, and systems like the LCA database.

"What I have recognised about developing a roadmap of activities to reduce our nature impact is that there are nature-based materials that we need to be very careful of, but we also have the potential to provide really good solutions," shared Griffiths. "If we are putting a natural fibre from a regenerative location into our products, it can be net-positive to the environment where it was grown, but we need to deploy technology to provide transparency and show that we're sourcing from the right locations and that the location is actively measuring the net benefit of the agriculture that's being done there."

Drone-based reforestation: Morfo and the city of Rio de Janeiro

A unique partnership between the nature tech company Morfo and the city of Rio de Janeiro illustrates how technology can achieve and surpass ambitious reforestation targets. Tasked with restoring 60 hectares of degraded land in Sierra de Inhoaíba, Morfo used drones to disperse encapsulated seeds across the land, accelerating the reforestation process by 100x. This force multiplier was possible because each drone could disperse 180 seed capsules per minute. Morfo's Assisted Natural Regeneration (ANR) approach and technology integrated seamlessly with Rio's existing reforesting initiatives, enhancing efficiency, reducing costs, and enabling planting in previously inaccessible areas.

Because of this nature tech implementation, Rio has become a pioneer in large-scale reforestation. Since 2021, the city's ReflorestaRio program has planted over 368,000 seedlings of native Atlantic Forest species. The current project in Serra de Inhoaíba represents a significant advancement, as the drone technology planted up to 150 different native species, vastly improving the biodiversity compared to traditional methods.

Nature tech for new business models

For companies with climate and social goals embedded in their DNA, nature tech can support their evolution. For example, a corporation may invest in biodiversity projects that enable that entity to create businesses revolving around carbon capture, ecotourism, or sustainable forestry, while tapping into new markets for green investment. By considering nature-related risks and opportunities, companies can design services that minimise environmental impact, opening up new sustainable product lines.

The Canadian telecommunications company TELUS frequently looks for ways to integrate nature into its business activities. In addition to having a charitable fund, the company owns its own reforestation company and explores opportunities for MRV technology to monitor transparency and impact. Sophie Nitoslawski, Strategic Programs Director at TELUS, says nature tech can help support the company's sustainability efforts.

"We do a lot of work in reclamation in the context of tree-planting, but we also do tree-planting for ESG and CSR purposes," says Nitoslawski. "And given that we're a data and technology company, there are many interesting ways our core technology capabilities could help enhance our environmental and sustainability work."

To support its environmental initiatives, TELUS has invested in Flash Forest. This aerial reforestation company leverages drones, AI, GIS, and plant science technology to build resilient forests at scale. TELUS has also invested in Dryad, which makes early wildfire detection possible through its large-scale IoT network of sensors.

Machine learning and scalability

Because scalability is a top priority in large reforestation projects and biodiversity monitoring across wetlands and oceans, satellite data is frequently combined with machine learning (ML). Together, the two can monitor vast and diverse ecosystems, identifying patterns that may not be visible to the human eye. These algorithms can detect changes in land cover, classify ecosystems, track species migration, and recognise specific plant or animal species.

The nature tech company, Pachama, uses machine learning models integrated with satellite data, 3D airborne lidar, and field plots to monitor and verify forest carbon levels, allowing enterprises to keep their nature targets on track. Pachama's technology maps and tracks forest changes over regions, enabling better carbon credit issuance and forest health management. The nature tech startup works with Microsoft, Boston Consulting Group, and Shopify to support high-quality reforestation projects and carbon credit validation.

Terraformation employs machine learning and remote sensing to support reforestation teams through its "Seed to Carbon Forest Accelerator." Their approach helps early-stage reforestation projects by providing funding, technical expertise, and tools for biodiversity-focused restoration and carbon credit generation.

Like Morfo, the Australian startup Lord of the Trees automates reforestation using drones and AI to plant up to 100,000 trees daily. The company's machine learning algorithms help identify optimal planting areas, ensuring that the native species are matched to the best environments. One of their notable partnerships is with the Australian telecommunications company Telstra, which is developing a project to plant and manage the reforestation of 240 hectares of land in northern New South Wales. This initiative involves planting 158,000 native trees and shrubs to store approximately 160,000 tonnes of carbon dioxide over the next 25 years.

In addition to enhancing reforestation efforts, ML, AI, drones, sensors, and interactive maps can track resource usage (like energy, water, or land) in real-time, allowing companies to optimise operations, reduce waste, and cut costs while meeting environmental goals. For industries heavily reliant on natural resources, such as agriculture, nature tech can act as an early warning system, detecting changes in weather patterns, soil quality, or ecosystems, helping to avert crises and manage resources better.

SBTN: Adopting nature-based metrics

Adopting science-based nature targets is crucial for companies for several reasons. In addition to the SBTN target setting framework supporting corporations with setting transparent, time-bound goals that operate within the Earth's natural cycles, it informs corporate action plans across four areas, including the prioritisation of actions, interaction with stakeholders, tracking and reporting KPIs, and resourcing for the whole implementation. During the commitment and target setting phase, corporations need to determine which science-based targets to set, which locations and economic activities to include, and where to take action first.

Companies can take direction from SBTN's initial and interim guidance while preparing to set targets in accordance with the recommendations released in

Image credit: Getty Images



2023. Tools like the SBTN Materiality Screening Tool and the High Impact Commodity List allow companies to quickly identify priority inputs and activities with high environmental impacts. This enables companies to focus their nature-based target-setting efforts where they can make the most significant positive change.

Quantifying the value of nature (and the costs of the impacts on nature) can help steer business decision making towards becoming nature positive. Nature tech can help in advancing the field of quantifying nature's value. A critical step in developing a nature strategy and setting nature targets is adopting nature-based metrics in decision making—or putting nature in the balance sheet. Wes Geisenberger, VP of sustainability and ESG at HBAR Foundation sees a great need for natural capital accounting. "We don't see nature tech in a vacuum," he said. "We see a balance sheet of the planet, and this means we need accounting that allows us to better value nature and our positive and negative interactions as both humanity and as the organisations we touch as individuals," he shared.

The Biodiversity Intactness Index (BII)

The Biodiversity Intactness Index (BII) from the Natural History Museum is a robust, science-based metric that quantifies how much biodiversity remains in a given terrestrial area relative to pre-industrial levels.

Underpinned by the PREDICTS database, which compiles global data on biodiversity responses to human pressures, it has the most taxonomic and geographically representative database of its kind, with over six million peer review species observations, across 50,000 sites in 100 countries covering 60,000 unique species.

BII plays a pivotal role in policy, serving as a Component Indicator for the Global Biodiversity Framework (GBF) and informing key reports, such as the IPBES Global Assessment. Additionally, its business impact is highlighted by a licensing agreement with Bloomberg, enabling the integration of biodiversity metrics into financial decision-making.

Bloomberg is working with BII data licensed from NHM to enhance its nature and biodiversity analytics offerings. By integrating the BII into its financial and risk assessment tools, Bloomberg enables investors and corporates to assess their exposure to biodiversity-related risks more effectively. The BII data provides a scientific foundation for evaluating company impacts on nature. This data supports Bloomberg's broader sustainability-focused products by allowing users to incorporate biodiversity considerations into nature-aware investment decisions and align with global regulatory frameworks. This integration exemplifies how financial institutions can use robust biodiversity metrics to drive better-informed, responsible investment strategies.

The global investment management firm Federated Hermes firm applied BII to its own proprietary database that collected information on food waste and land conversion. Through the BII factors, the firm assessed whether land was based in biodiversity-rich areas or poor areas. Known for its focus on sustainability, responsible investing, and stewardship, Federated Hermes also used BII to locate and quantify an estimated number of protected species.

Federated Hermes launched one of the first biodiversity-focused public equity funds, the Biodiversity Equity Fund, which was designed to address the global biodiversity crisis by investing in companies that contribute to the protection and restoration of biodiversity while seeking financial returns.

Ingrid Kukuljan, head of impact investing, international lead portfolio manager, says the misconception that there's a lack of data is what's keeping more people from investing in biodiversity. "There's actually a lot of data, and if you want to take a pragmatic view, which regulators should be taking and if every company in the world was made to report on water and emissions and had to put proper targets in place, we would be in be in a good place to reduce stresses on biodiversity," she shared.

Geospatial tech for natural capital

We talked with numerous companies and banks using the free online ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) tool, to assist them in screening their potential dependencies and impacts on nature. By incorporating geospatial data and GIS technology, ENCORE maps ecosystem service provisions and natural capital assets in different regions.

To use the tool, users input specific sectors or activities. Next, a map is generated to locate where nature capital dependencies are. The platform then identifies the potential risks associated with natural capital loss and suggests mitigation measures or opportunities for sustainable development. For example, a company in the agriculture sector can use ENCORE to assess its relationship with ecosystem services like pollination, water provision, or soil quality. The tool can help that business evaluate how environmental degradation could impact its operations and determine what actions it can take to mitigate these risks.

Case Study: Nala Earth and Volkswagen

Nala Earth and Volkswagen

Overview

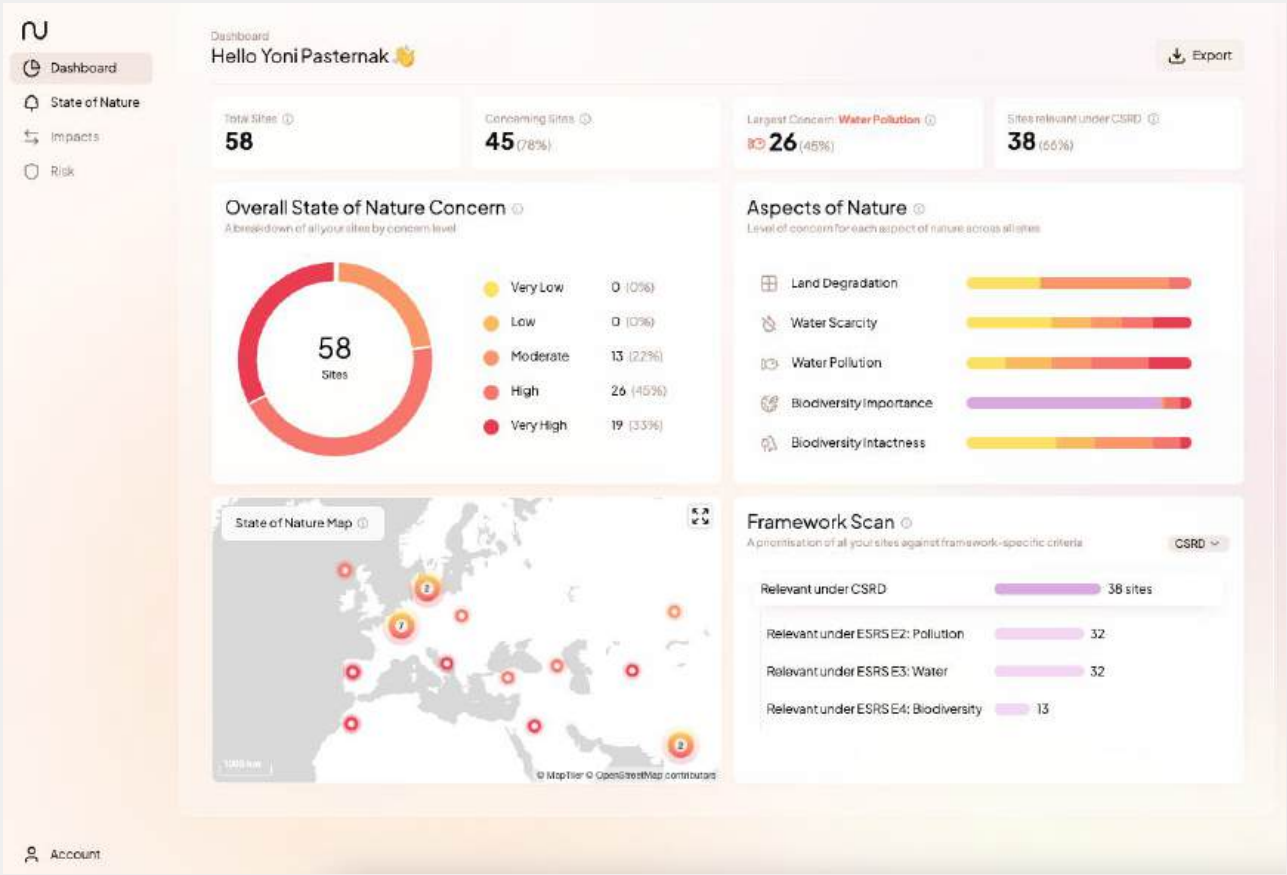
Volkswagen, aiming for net carbon neutrality by 2050, is integrating biodiversity considerations into its sustainability strategy. The company's vision of a "zero impact factory" involves minimising its ecological footprint across its manufacturing sites and within its value chain. Volkswagen partnered with Nala Earth, a nature tech firm offering a holistic platform for corporate nature management. Together, they sought to evaluate the state of nature across all of Volkswagen's production sites and test a methodology to identify nature hotspots. Nature Hotspots are production sites where impact mitigation and nature restoration efforts are most urgently needed based on the combination of the local condition of nature and Volkswagen's environmental pressures.

Nature tech solution

Nala Earth's platform provided Volkswagen with a Software-as-a-Service (SaaS) tool for strategic nature decision-making. Using 12+ science-based indicators, the tool measured key environmental variables, including land quality, water availability, water quality, biodiversity intactness, and biodiversity importance. These indicators were contextualised to Volkswagen's business needs, offering insights aligned with regulatory frameworks such as the EU's Corporate Sustainability Reporting Directive (CSRD) and the Taskforce on Nature-related Financial Disclosures (TNFD).

Nala supported Volkswagen in improving the analysis of the local condition of nature around 114 industrial sites. Furthermore, a methodology aligned with prioritisation guidance by the Science based Targets Network (SBTN) was applied to a subset of production sites to identify nature hotspots. By integrating geospatial nature and biodiversity data with site-specific pressure indices, Nala Earth's approach highlighted sites where biodiversity was most at risk.

Image credit: Nala Earth



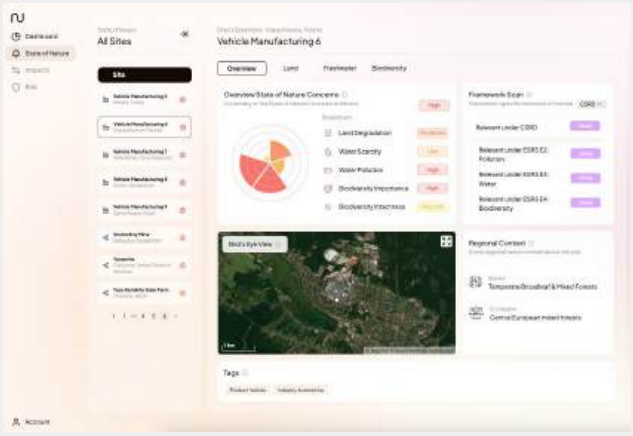
Case Study: Nala Earth and Volkswagen

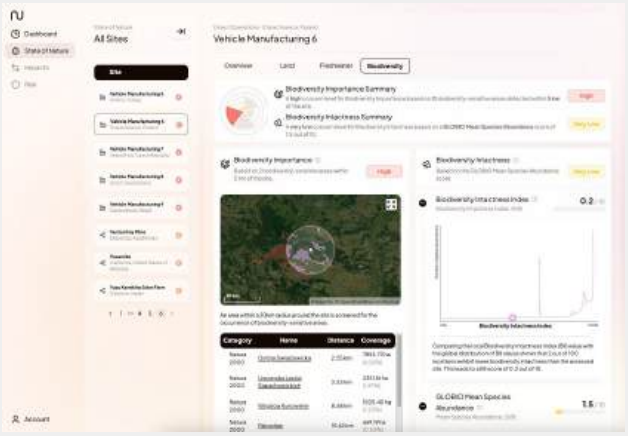
Main findings

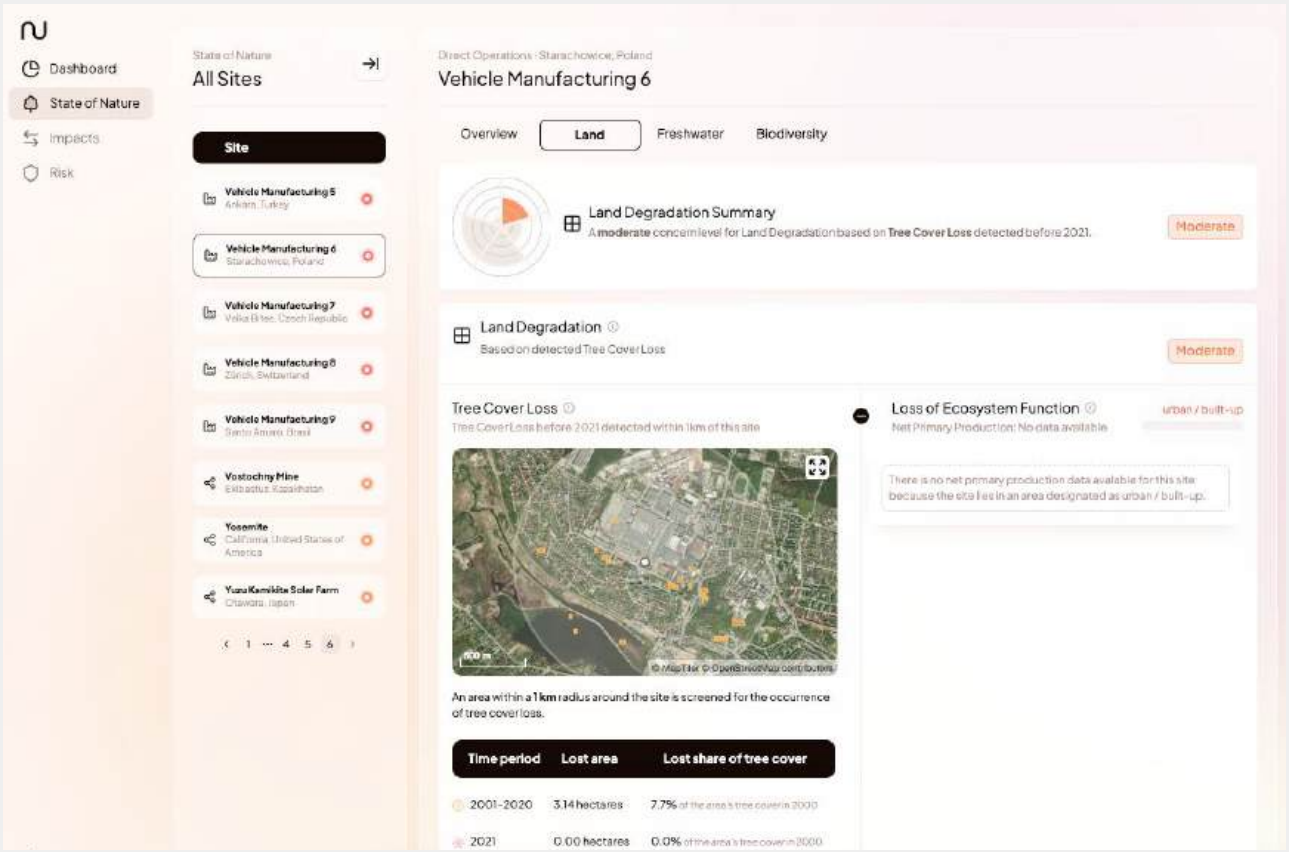
The platform identified production sites with a concerning state of nature and the prioritisation methodology successfully identified nature hotspots within Volkswagen's operations. This clarity helped Volkswagen with their nature-related reporting and supported prioritising future mitigation and restoration efforts, optimising the allocation of resources to areas with the greatest potential for impact.

A significant challenge during this process was navigating the evolving landscape of nature-related guidance and regulation and identifying how Volkswagen's existing sustainability efforts are best complemented with a nature and biodiversity focused analysis. Nala Earth's ability to adapt to regulatory guidance and maintain data accuracy ensured that Volkswagen's reporting aligns with the latest regulations. This case study illustrates how targeted nature tech solutions can support complex corporate sustainability goals by providing actionable insights and facilitating transparent nature-related reporting.

Image credit: Nala Earth







Case Study: SEKEM and The Landbanking Group

SEKEM and The Landbanking Group

Overview

SEKEM, an Egyptian pioneer in biodynamic agriculture, operates with a holistic approach to environmental stewardship. This includes renewable energy use, water conservation, and carbon emission reductions. However, SEKEM faced challenges in tracking and monetizing its land's biophysical improvements, such as soil health and water holding capacity. To address these needs and support its goal of expanding sustainable agriculture across 250,000 farmers by 2028, SEKEM partnered with The Landbanking Group. The collaboration used the Landler platform, an operating system that offers near real-time data on carbon, soil, biodiversity, and water, allowing SEKEM to monitor, report, and monetize ecosystem improvements across its farmland.

Nature tech solution

The Landler platform provided SEKEM with an accessible digital interface to monitor the environmental health of its lands. Users could log into their accounts, define specific plots using polygon drawing tools or upload shape files, and trigger measurements for various environmental attributes at the project and plot levels. This included assessments of soil organic carbon, water-holding capacity, and biodiversity metrics.

Through Landler's integration of remote sensing data, ground-truth surveys, and proprietary algorithms, SEKEM could measure changes in soil carbon levels, water availability, and plant diversity over time. These metrics were then translated into quantifiable units that could be used for nature-based asset generation and reporting, meeting both investor demands and certification requirements.

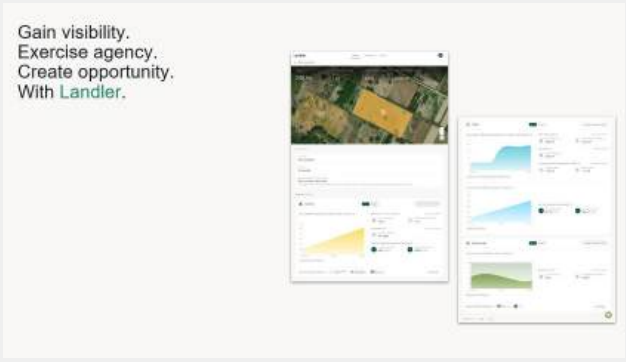
Main findings

The initial project scope covered 17 hectares of SEKEM's farmland. Results showed a soil organic carbon content of 14 tonnes per hectare and a water-holding capacity of 831 m^3 per hectare. This detailed environmental assessment enabled SEKEM to successfully generate natural capital units that were sold to a beauty company investor. With these results, SEKEM demonstrated tangible environmental benefits, which were subsequently used to attract further investment and support their goal of expanding sustainable practices to a larger area.

The project's success has motivated SEKEM to scale up the use of the Landler platform across its entire network, which is expected to reach 1.2 million hectares by 2028. This partnership illustrates how nature tech can facilitate sustainable agriculture by providing a data-driven foundation for measuring, verifying, and monetizing positive environmental impacts. The collaboration sets a precedent for other agricultural organisations seeking to integrate digital solutions to scale their sustainability initiatives.

Image credit: The Landbanking Group





Case Study: Ramboll and National Highways

Ramboll and National Highways

Overview

National Highways, responsible for managing England's Strategic Road Network, is committed to achieving biodiversity net gain across its 30,000 hectares by 2040 and meeting the UK's 10% biodiversity net gain requirement for infrastructure projects. To transform England's 7,000 km of roads into assets that enhance the natural environment, National Highways partnered with Ramboll. Together, they developed an innovative approach to integrate biodiversity considerations into infrastructure management, setting a new benchmark for environmental stewardship in large-scale public infrastructure.

Nature tech solution

Ramboll's approach centred on the development of the Intelligent Environmental Estate (IEE) project, a cloud-based data processing and modelling pipeline that uses satellite imagery and machine learning to produce digital maps of land cover and habitat types. These maps enable National Highways to track biodiversity changes across expansive areas, ensuring data consistency and comparability over time. The IEE project provided digital mapping of 14 key land cover types, establishing a baseline to monitor changes and quantify biodiversity impacts across the network.

This solution integrates with National Highways' existing operational data, offering actionable insights to support resource allocation and decision-making. It also facilitates biodiversity reporting in compliance with regulatory frameworks, such as the UK's biodiversity net gain mandate, and helps align project planning with environmental objectives.

Main findings

The IEE project has already made a significant impact by providing National Highways with the data needed to establish a robust baseline for biodiversity monitoring. The ability to map and categorise various land cover types enables a more comprehensive view of habitat quality, connectivity, and potential areas for restoration. This baseline data supports long-term biodiversity tracking and informs future infrastructure development plans to minimise environmental impacts.

One of the key challenges Ramboll encountered was the integration of diverse data types and the complexity of monitoring biodiversity at a large scale. Adjustments to machine learning models and data processing methods were necessary to achieve the desired level of accuracy. The project's success highlights the importance of flexibility and continuous improvement in complex projects. For similar initiatives, maintaining clear communication and aligning stakeholder expectations are critical to overcoming technical and logistical hurdles.

This case study illustrates the value of combining remote sensing and AI with collaborative project management to set new standards in nature-positive infrastructure development.

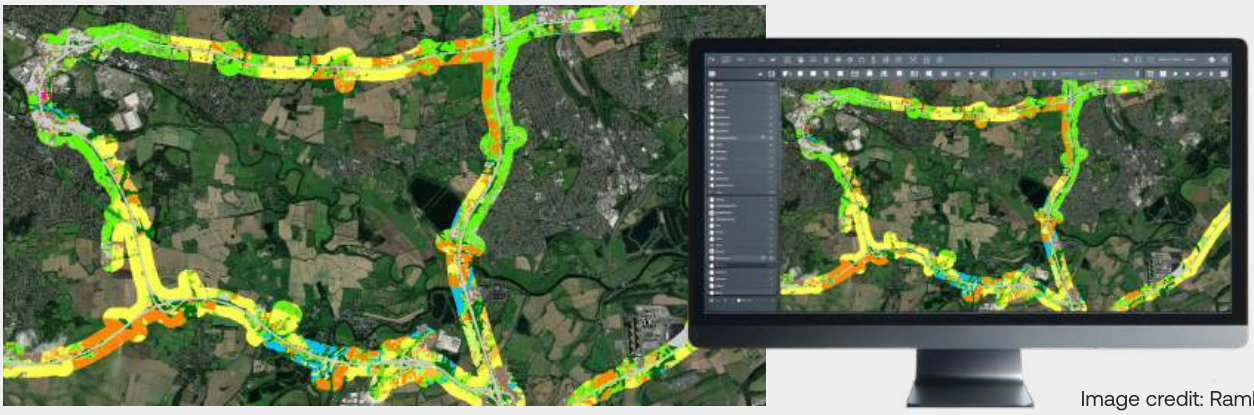


Image credit: Ramboll

Case Study: GIST Impact and Wipro

GIST Impact and Wipro

Overview

Wipro, a global technology services firm, has been partnered with GIST Impact, a leading impact data and analytics provider, for over eight years to measure and manage its natural capital impacts across its sites, operations and value chain, spanning more than 20 countries. Wipro's collaboration with GIST Impact has been instrumental in driving context-specific insights on natural capital across Wipro's sustainability strategy and operational decision-making.

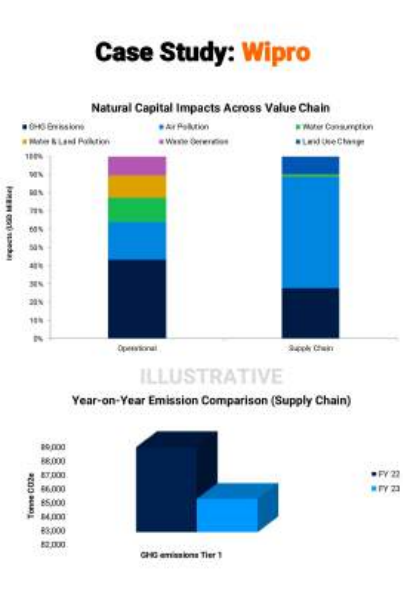
Nature tech solution

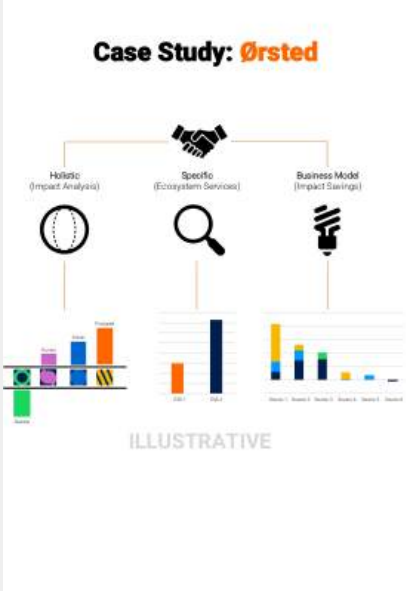
GIST Impact implemented a science-based, data-driven solution to perform natural capital impact analysis for Wipro's sites, operations and value chain. Leveraging codified algorithms made available via their platform and API, GIST Impact calculates impact on Natural Capital across six key drivers: GHG emissions, water consumption, waste generation, air pollution, water and land pollution, and land use change. All impacts are quantified in monetary terms (e.g. human health costs of air pollution) and based on location-specific factors (e.g. water scarcity, population density). The quantification into monetary values enables a standardised and contextualised comparison of environmental performance worldwide - for example, a gallon of water withdrawn in a water-scarce area has a much higher impact than a gallon of water withdrawn in a water-abundant area.

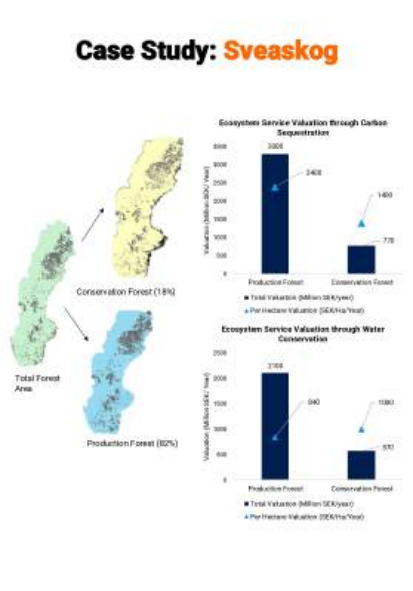
GIST Impact also provided solutions to measure and monitor natural capital impacts across multiple supply chain tiers, showcasing how they apply deep, science-backed research capabilities in scalable solutions.

Together, GIST Impact and Wipro are looking for further opportunities to deploy impact intelligence at scale by collaborating on the evolving environmental and social challenges facing the technology value chain worldwide.

Image credit: GIST Impact







Main findings

GIST Impact's data helped Wipro prioritise key operational sites where interventions were required. Following a baselining exercise, GIST Impact identified year-on-year reduction in impact intensity at these sites, validating the efficacy of Wipro's sustainability investments. The partnership also led to improved engagement efforts between the company and its suppliers, with Wipro now enhancing its supply chain sustainability by working directly with the top 50 impact-producing suppliers.

Case Study: GIST Impact and Wipro

At the same time, GIST Impact calculated an overall -$270m natural capital impact across direct operations and the supply chain, driven in large part by air pollution. While this may be surprising for a technology and consulting business, GIST Impact's location-specific analysis into the supply chain demonstrated a high dependence on coal-powered energy, and operations close to major population centres.

The key takeaway from this collaboration is the possibility of enhancing sustainability strategies with precise, data-driven insights. GIST Impact's ability to manage and analyse complex datasets enabled Wipro to develop clear investment strategies and engagement policies, and track performance year-on-year. The partnership showcases how technology and analytics can be harnessed to create a clear roadmap for corporate sustainability, helping companies like Wipro to achieve their sustainability goals.

Image credit: Michael Olsen





Image credit: veritree



3 Nature finance and investing

Nature finance and investing

Abyd Karmali, managing director, environmental business advisory, at Bank of America, shared with us that while most Fortune 500 companies have sustainability departments, some are not yet fully aware of the array of new sources of nature data and tools that are now available. As companies explore how they can contribute to systems transformation through nature finance and new investment models, nature tech can play a pivotal role in disrupting the status quo and optimising opportunities. Nature tech enables companies to alter their operations and supply chains, and make transformational changes that include acting on their negative impacts on nature, investing in nature restoration, and shifting business models.

Nature tech enables companies to alter their operations and supply chains, and make transformational changes that include acting on their negative impacts on nature, investing in nature restoration, and shifting business models.

- **Nature-based solutions (NbS)**: Companies can leverage tools to invest in and implement NbS, such as reforestation, wetland restoration, and regenerative agriculture. Naturebase can assess opportunity for carbon capture and other ecosystem benefits relevant to all 20+ natural climate solutions pathways everywhere around the globe. Using satellite technology and proprietary algorithms, Cultivo scales nature-based solutions by connecting high-quality natural capital projects with investors. Land Life uses a combination of advanced technologies like drones for aerial analysis, AI-based tools for assessing land suitability, and monitoring systems to optimise the efficiency and impact of reforestation and land restoration projects.

- **Biodiversity-friendly land management**: Digital platforms offer real-time tracking of land use, enabling practices that support biodiversity (e.g., agroforestry habitat corridors). Kanop uses AI models, satellite-based remote sensing, and space-borne LiDAR technology to monitor forests, measure biomass, and track changes in ecosystem health.

- **Circular economy technologies**: Nature tech integrates circular economy principles by allowing the recovery and reuse of natural resources (e.g., water treatment technologies and precision agriculture to minimise inputs and maximise yield).

- **Smart Supply Chains**: Technologies like blockchain and digital traceability platforms help track and manage sustainability practices throughout the supply chain, transforming operations to ensure compliance with environmental standards. Meridia provides field data verification and compliance solutions through its flagship product, Meridia Verify®. This SaaS platform enables real-time verification of field and physical flow data, validating compliance with regulations such as the EU Deforestation Regulation (EUDR). Epoch Blue uses multi-modal environmental data to monitor and report on sustainability metrics across thousands of properties worldwide. This nature tech company's technology supports detailed traceability by tracking environmental outcomes at the "first mile" of supply chains, such as carbon footprints and deforestation risks.

Investment in nature-based solutions

Gathering data on the effectiveness of NbS interventions is imperative for transformation. Leveraging on the ground data, satellite imagery, and AI, the nature tech company Loamin measures nature-based projects across the globe through soil sampling and the continuous monitoring of key indicators at high spatial and temporal resolution. Similarly, Genvision offers tools for requesting, gathering, and analysing data on nature-based investment opportunities. The company does this by harnessing AI and satellite-powered insights to interact with project data, forecast yields and prices, and provide a centralised space for document management. Users can compare multiple projects to identify top-performing biodiversity and carbon credit opportunities. Chloris is another startup incorporating satellite reporting. The company quantifies carbon emissions and removals
from space.

Nature-based solutions and place-based conservation

Place-based conservation is an area of NbS investment that positively impacts nature and biodiversity, companies, and local communities, as it involves methods that pertain to a specific place or region. Benefits include disaster risk reduction, water provision, food security, and support for ecotourism, but they also range wider into support for gender equality and peacebuilding. Nature tech innovations that support place-based conservation include solutions that enhance ecological restoration, management, and monitoring. These methods and tools include eDNA, biosensors, remote sensing drones, and geographic information systems (GIS).

SEED-ing Nuveen Natural Capital

Nuveen Natural Capital (NNC) is the land-focused investment manager for Nuveen, a global asset manager. To bolster responsible stewardship of its natural assets, including native vegetation, food, watercourses, timber and fibre, and better understand the biodiversity of its asset sites, NNC is collaborating with ETH Zurich's Crowther Lab. This partnership involves testing and applying the beta version of Crowther Lab's SEED Biocomplexity Index. This globally standardised geospatial index reflects the intactness of natural systems relative to their natural state.

NNC is looking to test SEED's effectiveness in individual timberland and farmland asset sites across its global portfolio. The site-specific measures will consider the unique characteristics of the natural capital assets present, and will ultimately aim to account for changes over time in nature's complexity at the species and ecosystem levels. In the spirit of collaboration, NNC is sharing ground-sourced data where available. NNC's objective is to enrich biodiversity further and protect, maintain, and enhance biodiversity at their asset sites.

Nature tech for biodiversity credits

If a company wants to invest in biodiversity credits—environmental credits that quantify and monetise actions taken to preserve, restore, or enhance biodiversity—as a means of meeting its biodiversity net gain requirement, nature tech can inform that business on where and how to make this happen. These credits call for physical technologies like remote sensing, satellite imagery, and D-MRV (Digital Monitoring, Reporting, and Verification), which automates and enhances the traditionzal MRV process. These tools offer real-time monitoring and data analytics to track project performance against critical biodiversity and sustainability indicators.

The US-based startup Savimbo and the Colombian nature tech company Terrasos are part of a specialised cohort for biodiversity credit developers launched by the Climate Collective network. Bridging the gap between nature tech and carbon markets, they're focused on creating platforms and tools to facilitate biodiversity credit markets and nature conservation projects.

Catalysing the potential of nature tech

From the field to finance to local community and customer engagement, nature tech can underpin a critical through-line weaving together the essential aspects of a corporation's sustainability efforts, cost-effectiveness, and long-term vision. Creating networks and supporting local communities and landowners is vital to many corporate nature strategies, particularly in agriculture.

“The agrifood industry needs production systems to be as efficient, productive, and regenerative as possible. To deliver this there’s a pretty tech-knowledge-rich switch in farming practices coming and I see a huge investment opportunity around that switch.”

Katrina Hayter, Global Head of Sustainable Land Use and Supply Chain at HSBC

Last year HSBC shared plans to make available $1 billion of financing to early-stage climate tech companies around the world, including technologies focused on sustainable food and agriculture.

Buzzing bees in full BloomX

A collaboration between Eyal, which is part of the Granot Organization, the largest regional agricultural cooperative in Israel, and BloomX elegantly exemplifies this. Eyal began using BloomX's innovative pollination technologies to support local farmers and communities by enhancing crop yields. BloomX's "Robee" and "Crossbee" biomimetic tools mechanically pollinate crops, such as blueberries and avocados by replicating the buzzing of bees or the electrostatic forces they create to move pollen between flowers.

By working closely with local farmers, the two companies improved yields by up to 30%, even in areas with low bee populations. BloomX also worked with agricultural communities across South Africa, Israel, the U.S., and Latin America, integrating their technology into existing farming practices. This approach benefited farmers by increasing fruit production and reducing their dependence on honeybees and the need to transport them over long distances, thus minimising environmental impact.

Case Study: Cultivo and Octopus Energy Generation

Cultivo and Octopus Energy Generation

Overview

Octopus Energy Generation's fund management team is one of Europe's largest specialist investors in renewables and energy transition technologies. Octopus Energy Generation invests throughout the life cycle of green energy projects, including in developers creating new green projects, to construction and operational ones too. As part of this work, Octopus Energy Generation invests in businesses that are creating green infrastructure investment opportunities and then finance those infrastructure projects too, and in a sense, natural capital projects with certain features can be considered 'infrastructure investment.

Octopus Energy Generation partnered with Cultivo to develop a pipeline of high-quality natural capital projects, using cutting-edge technology to ensure these will help the natural environment flourish and provide meaningful benefits to local communities that host them.

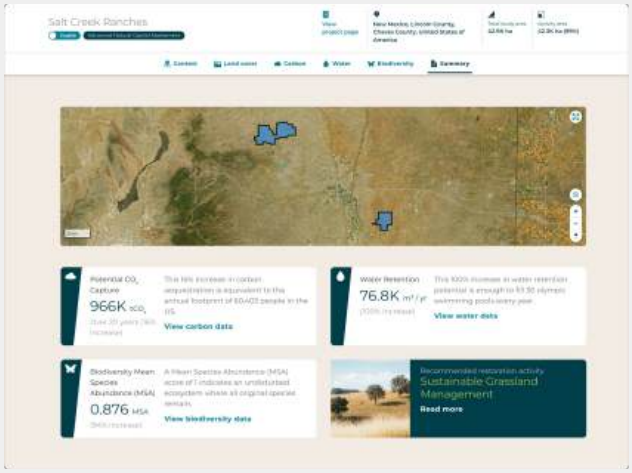
Nature tech solution

Cultivo uses their nature tech platform to first identify suitable sites by analyzing and forecasting the natural capital potential for those sites if they were to be regenerated. For example, the increases in carbon capture, biodiversity, and water storage.

Cultivo's platform then streamlines deeper site surveys, including integrating data from on the ground studies, as well as streamlining the processes for getting projects reviewed and verified, and the reporting on performance and carbon sequestered.

Image credit: Cultivo and Octopus Energy Generation



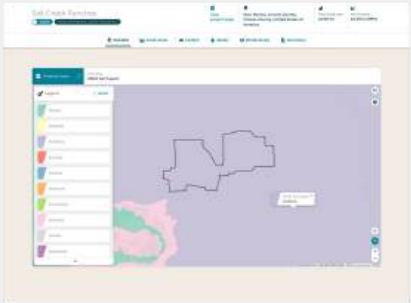


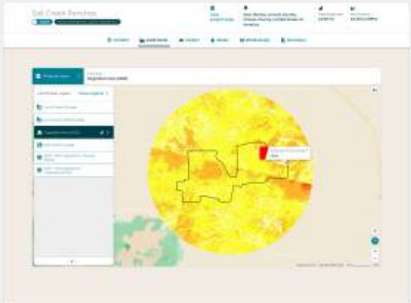
Case Study: Cultivo and Octopus Energy Generation

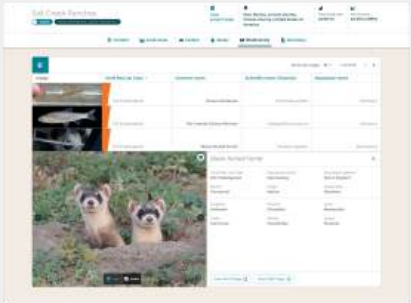
Main findings

Reaching net zero will require a whole range of developments and technologies, and restoring nature through regenerating degraded land and reforestation activities will be integral to this. Cultivo's platform can rapidly assess degraded land and forecast the carbon sequestration potential, as well as other natural capital benefits such as water retention and biodiversity. Having strong nature tech to streamline and accelerate the project origination and development process is really important.

Image credit: Cultivo and Octopus Energy Generation







Case Study: veritree and Sutton Place Hotels

veritree and Sutton Place Hotels

Overview

Sutton Place Hotels, a Canadian luxury hotel chain, has made sustainability a core part of its strategy, focusing on six key areas, including energy efficiency, water conservation, waste management, and carbon footprint reduction. To support its environmental goals, Sutton Place Hotels partnered with veritree, a nature tech company that provides technology-driven solutions for tracking, verifying, and managing restorative action projects. The goal was to engage guests in the sustainability journey and promote reforestation by offering a unique program: for every guest who opted out of daily housekeeping services, the hotel would plant 10 trees on their behalf.

Nature tech solution

veritree's platform integrates blockchain technology and on-the-ground reporting to provide transparency and accountability for reforestation projects. The technology suite includes ground sensors, dendrometers, soil sensors, bioacoustic monitors, and trail cameras, which all feed into a unified system to monitor restored ecosystems comprehensively. By combining ground-based data with satellite imagery, veritree can model impacts such as carbon sequestration and biodiversity enhancements, allowing Sutton Place to track reforestation progress and engage guests through real-time data.

Image credit: veritree









Case Study: veritree and Sutton Place Hotels

Initially, the program was launched as a pilot at Sutton Place's Halifax location, where guests were given the option to opt out of housekeeping services in exchange for planting trees. The results from the pilot were so promising that the program was expanded to three other locations, allowing Sutton Place to achieve operational savings while enhancing their sustainability credentials.

Main findings
Over a six-month pilot period, the housekeeping opt-out rates increased by over 125%, leading to an estimated annual savings of $36,000 in reduced operational costs. From an environmental perspective, the project resulted in the planting of tens of thousands of trees in Canada and Kenya, contributing to improved biodiversity and ecosystem health in these regions.

The program has since become a year-round initiative, with Sutton Place expanding it to additional locations. To date, the initiative has contributed to the planting of over 500,000 trees. The collaboration with veritree provided a clear model for how the hospitality sector can engage guests in nature-positive actions, demonstrating that sustainability can drive both environmental and financial benefits.

This case study highlights the value of combining digital transparency with guest engagement to achieve impactful sustainability outcomes. By making reforestation part of the guest experience, Sutton Place Hotels has set a new standard for sustainability in the hospitality industry.

Case Study: Yard Stick PBC and Indigo Ag

Yard Stick PBC and Indigo Ag

Overview
Indigo Ag, a global leader in regenerative agriculture, focuses on promoting sustainable practices that sequester carbon, enhance soil health, and improve farmer profitability and resiliency. Indigo's suite of sustainability solutions - including the Carbon by Indigo program - measures and monetizes greenhouse emissions abated and sequestered in soils as a result of practices like cover cropping, reduced tillage, and crop diversification. However, accurately measuring soil carbon levels across vast agricultural landscapes remains a significant cost. To solve this, Indigo partnered with Yard Stick PBC, a nature tech firm specialising in low-cost, scalable soil carbon measurement technologies.

Yard Stick exists to provide MRV technology that improves the accuracy of soil carbon measurements while reducing costs and making it easier to monitor carbon stocks across project scales of millions of acres. These improvements would improve the scalability and rigor of soil carbon projects.

Image credit: Yard Stick





Case Study: Yard Stick PBC and Indigo Ag

Nature tech solution
Yard Stick's primary innovation is a novel soil carbon sampling device that allows for rapid, high-precision measurements of soil carbon content. The device uses a combination of infrared spectroscopy and advanced machine learning models to analyse soil samples on-site, providing real-time data on soil carbon stocks. This eliminates the need for complex, costly laboratory analysis and enables more frequent sampling. It also enables instant measurements at multiple depths, opening up new modalities of stock change quantification such as equivalent soil mass at a fraction of the cost and operational complexity of traditional methods.

The technology can integrate seamlessly with Indigo's existing systems, allowing for monitoring of soil carbon stock changes over time. Additionally, Yard Stick provides a digital platform that aggregates and visualises the collected data, making it easy for Indigo to perform quality control and ensure high quality data inputs into its robust quantification engine that tracks the impacts of practice changes.

Main findings
In this pilot across multiple fields in Kansas, Yard Stick's solution demonstrated strong performance measuring field-level soil carbon stocks as compared to conventional stock quantification via dry combustion. Across multiple fields in the pilot project, Yard Stick's spectral probe was able to accurately measure project stock and variance. This performance shows that Yard Stick's spectroscopy-based probe is a promising technology to augment or replace traditional soil sampling and analysis. Coupled with potential cost savings, operational efficiency, and depth-resolved analysis, in-field spectral soil carbon measurement provided by Yard Stick's technology can significantly upend traditional soil analysis.

Image credit: Yard Stick





Case Study: Everimpact and Hitachi Systems

Everimpact and Hitachi Systems

Overview
Hitachi Systems, a subsidiary of the multinational conglomerate Hitachi, works with local governments across Japan to design digital solutions that support sustainable development. To address the challenge of monitoring and optimising forest health and carbon sequestration across diverse landscapes, Hitachi partnered with Everimpact, a climate and nature tech company specialising in real-time carbon monitoring and climate impact assessment. The collaboration aimed to create a scalable approach for forest management and carbon credit generation in Japanese forests, providing valuable data for green finance initiatives.

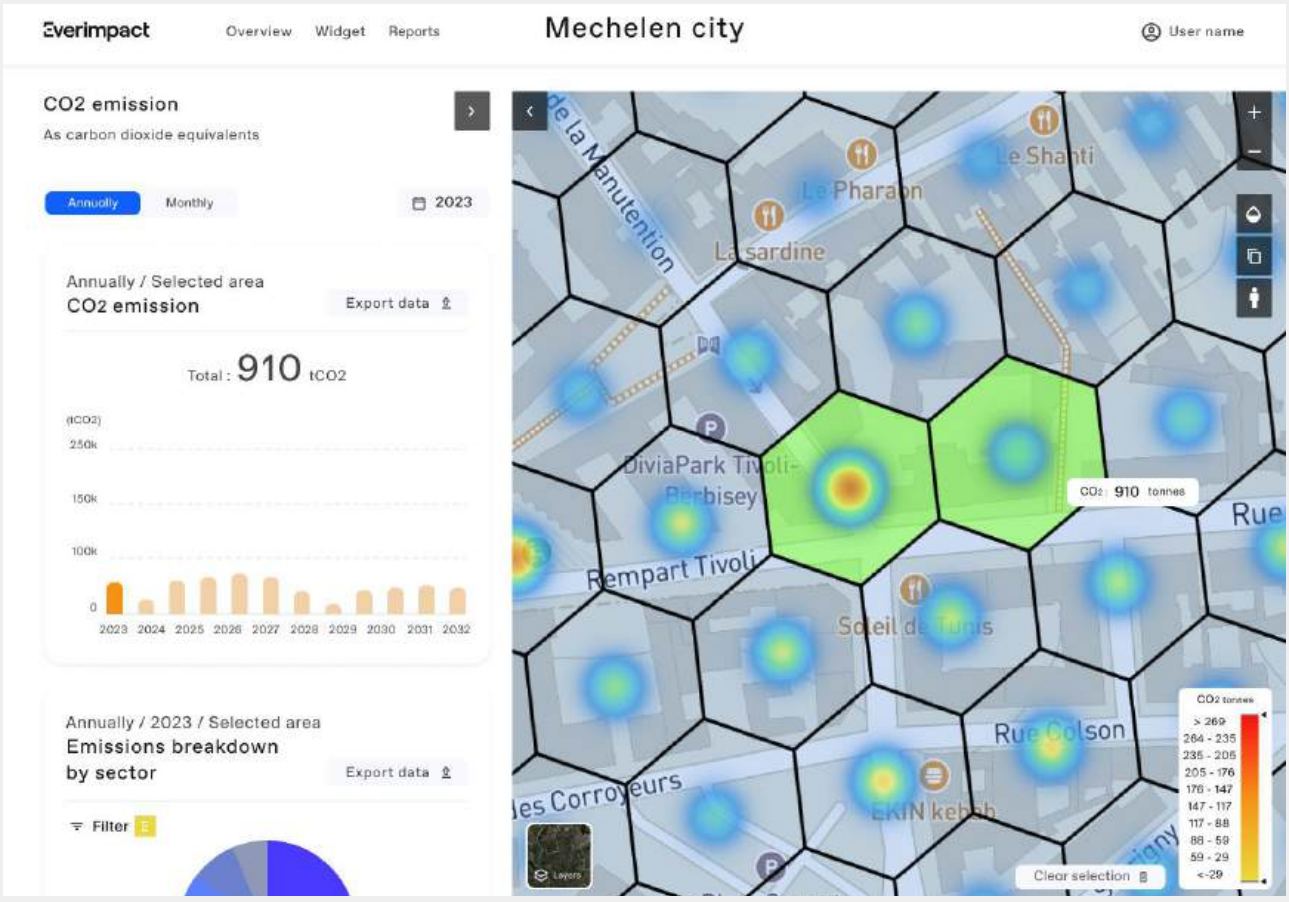
Case Study: Everimpact and Hitachi Systems

Nature tech solution

Everimpact's Sustainable Nature Management Platform combines satellite data, machine learning, and in-situ measurements to provide real-time insights into forest health and carbon sequestration capacity. The platform's AI models analyse large volumes of data to estimate biomass, carbon stock, and changes in forest cover, offering a clear view of how management practices impact carbon dynamics over time.

The data is made available through an API, enabling Hitachi to integrate it into custom dashboards for land and forestry managers. These insights support decision-making around forest management, helping local authorities identify areas for intervention and optimise forest health. Additionally, Everimpact guided Hitachi on the best methodologies for generating carbon credits, ensuring that the data met the stringent requirements from Verra for verification and trading.

Image credit: Everimpact



Main findings

The project effectively quantified carbon stock and sequestration potential across multiple forest sites, providing a solid foundation for informed decision-making. The solution also enabled Hitachi and its clients to identify and plan substantial mitigation actions related to climate change adaptation and biodiversity management. One of the key outcomes was the identification of opportunities for carbon credit generation, which could create new revenue streams for local governments and landowners.

This case study highlights how technology can support sustainable land management by providing accurate, real-time data on forest health and carbon dynamics. The collaboration between Hitachi and Everimpact demonstrates the potential for nature tech to unlock green finance opportunities, driving positive environmental outcomes while supporting local economies.

Case Study: Land Life and AXA XL

Land Life and AXA XL

Overview

AXA XL, a global provider of insurance and reinsurance, has made nature and biodiversity a key pillar in their sustainability strategy and aims to raise awareness of nature risks and the importance of nature protection and restoration. To support their goals, AXA XL identified Land Life, a nature restoration company leveraging technology and science to restore degraded land, as a tree planting partner. Together with local implementation partner Borneo Nature Foundation, they aimed to restore forests on the Indonesian island of Borneo to rehabilitate critical habitats for orangutans in areas severely damaged by over-logging and wildfires.

Nature tech solution

Land Life uses advanced bioacoustics technology and satellite imagery to monitor and track biodiversity and habitat recovery. Bioacoustics involves the use of sound recorders to capture and analyse the local soundscape. A machine learning algorithm is then employed to cluster similar sounds, distinguishing between human-made and natural noises. This analysis is supported by Okala, a nature measurement provider, and allows for the faster identification of various bird species, serving as a proxy for overall biodiversity health in the region. Additionally, Land Life uses satellite and drone imagery alongside ground surveys to monitor vegetation recovery. Remote sensing indicators like the Normalised Difference Vegetation Index (NDVI) and the Normalised Difference Moisture Index (NDMI) are employed to understand the area's recovery and water holding capacity. Additionally, forest connectivity is tracked via satellite imagery.

Planting native tree species nursed and managed in partnership with local communities, as coordinated by Land Life's partner the Borneo Nature Foundation, was another crucial element of this project. This approach not only supports reforestation goals but also empowers local stakeholders, creating a sense of ownership and long-term stewardship.

Image credit: Land Life



Case Study: Land Life and AXA XL

Main findings
Though the project is still underway, initial results have already led to a re-evaluation of the original objectives. Initially, the goal was to reforest 160 hectares in the Rungan area of Borneo. However, the success of the preliminary efforts has motivated the partners to look into expanding the project tenfold, scaling up restoration efforts to 1,600 hectares.

An important takeaway is the need for flexibility and project-specific approaches in biodiversity monitoring. For example, the team initially planned to use soil eDNA for part of the biodiversity assessment, but a lack of locally relevant literature posed significant barriers. In addition, considerable logistical challenges, such as cooling samples in remote tropical areas, made it impractical. They pivoted to bioacoustics, which proved more suitable for this context. This experience underlines the importance of adapting methods to specific environments and project needs to ensure effective and efficient conservation outcomes.

Image credit: Land Life





Case Study: Pivotal and Oji Group

Pivotal and Oji Group

Overview
The Oji Group, one of Japan's largest pulp, paper and packaging companies, is prioritising biodiversity conservation and environmental sustainability, as outlined in its "Environmental Vision 2050" and "Environmental Action Programme 2030." The company's initiatives include natural forest restoration, endangered species protection, and afforestation projects.

In September 2024, Oji announced its commitment towards nature positive, a strategy that involves integrating natural capital accounting into its future operations. As a first step, Oji sought to evaluate the current state of nature in its forests, starting with the Sarufutsu site in Hokkaido, Japan. To achieve this, Oji partnered with Pivotal, a nature tech company that specialises in using AI, digital sensors, and remote sensing to assess the state of nature.

Nature tech solution
Pivotal's solution integrates data from various on-the-ground and remote sources to create robust, verified datasets for calculating a suite of state-of-nature metrics and tracking how these change over time. The company combines proprietary machine learning with a global network of remote ecosystem experts to annotate and validate biodiversity data. At the Sarufutsu site, which features a diverse mix of marshland, peat bogs, woodlands, and streams, Pivotal deployed a combination of object detection, clustering, and localised models for image and acoustic data analysis.

Analysing a rich, combined set of primary data sources, Pivotal mapped habitat types and structures, and calculated a range of biodiversity metrics, including species richness, species diversity, habitat

Case Study: Pivotal and Oji Group

health, habitat connectivity, and additional indicators such as species and habitat threat statuses, invasive species, and water stress. The results provided Oji with a comprehensive picture of the site's ecological status and potential risks. Primary data can be correlated with ground operations, supply chain data, and other environmental data. The datasets enable Oji to make decisions on the allocation of capital to support future stewardship and monitoring, and establish a baseline from which Oji can track future changes to the state of nature.

Main findings

The initial project at the Sarufutsu site demonstrated the scalability and accuracy of Pivotal's approach, covering multiple taxonomic groups efficiently and providing insights across several biodiversity metrics. Key findings revealed significant areas of ecological importance, particularly for the preservation of rare species like the Ito fish and Red-crowned Crane. The data also highlighted critical habitat connectivity corridors that are essential for maintaining biodiversity resilience in the region.

Pivotal's solution proved highly effective and scalable, and the project identified opportunities for further innovation, such as increased automation to increase scalability. The success of this pilot has set the stage for expanding the partnership across Oji's broader land holdings, enabling the company to systematically assess its natural capital and incorporate these insights into long-term conservation planning.

This case study highlights the potential for large corporations to leverage advanced nature tech solutions to support their sustainability commitments. Pivotal's technology enabled Oji to gain unprecedented visibility into its biodiversity impacts, paving the way for more informed decision-making and nature-positive management strategies.

Case Study: Mycocycle, Tarkett and Gensler

Mycocycle, Tarkett and Gensler

Overview

The French multinational corporation Tarkett, which specialises in the production of floor and wall coverings has set two ambitious 2023 climate goals. One is to reduce its Scope 1, 2, and 3 carbon emissions, and the other is to increase the recycled content of its products by 30%. Today, 18% of its raw materials are sourced from recycled content. Ultimately, Tarkett wants to achieve a zero-waste value chain.

Image credit: Mycocycle, Tarkett and Gensler





Case Study: Mycocycle, Tarkett and Gensler

Tarkett is working to decompose and recycle its construction waste through a partnership with the nature tech company Mycocycle. Bioinspired by fungi, Mycocycle transforms construction waste into low-carbon, biobased building materials. This is done by using fungal root structures (mycelium) to consume and eliminate toxins. Tarkett united Mycocyle with the global design firm Gensler, which was focused on the reduction of embodied carbon and in the process of renovating an office. Through this partnership, Tarkett first explored the impact of mycelium on carpet.

In line with Gensler worldwide standards, the renovation's climate goals notably focus on reducing embodied carbon. With waste sitting in the centre of achieving this goal, the firm's greatest challenge and most impressive feat was discovering a way to recycle the broadloom carpet that they had installed. The historically unrecyclable material accounted for a significant amount of their waste and a roadblock in meeting their diversion targets.

Nature tech solution

Gensler partnered with Mycocyle to harness the power of mushroom root systems to consume and eliminate toxins from the carpet and avoid the landfill. The mushrooms produce a natural byproduct that has all the qualities of an ideal raw material for the built environment and reduces the industry's reliance on virgin raw materials.

The Mycocycle scientists cultivate and test fungi, looking for species with enzymes that can optimally break down and detoxify construction debris, asphalt, and other forms of waste, and rapidly convert them into harmless materials they weave into their own growing rootlike structures. The resulting mass that the fungi produce is fire and water-resistant, exceptionally light and tough, and can be used in the production of flooring, concrete, insulation products, and more, replacing petrochemical polymers currently in use.

Main findings

Mycocycle was able to quickly innovate solutions for Gensler at Scale. Researchers developed the optimal nature-based solution via fungal mycelium, tracking progress and rate of degradation, and moved to a garage scale pilot to validate proof of concept. A continuing effort between Tarkett R&D teams and Mycocycle researchers has led to the ongoing partnership—well after the Gensler office remodel. As a next step, Mycocycle deployed their solution with Tarkett at a manufacturing facility.

Next, Mycocycle deployed their solution with Tarkett at a manufacturing facility aiming to treat waste directly on-site to create larger open and closed loop supply chain opportunities.

Image credit: Mycocycle, Tarkett and Gensler







Case Study: Basecamp Research and Protein Evolution, Inc. (PEI)

Basecamp Research and Protein Evolution, Inc. (PEI)

Overview

Protein Evolution, Inc. (PEI) is a leading biological recycling company leveraging biology to transform polyester waste into reusable materials, addressing the significant environmental impacts of plastic waste. Their proprietary Biopure™ technology uses AI-designed enzymes to break down polyester waste into its chemical building blocks, creating a circular economy for polyester products. To achieve this, PEI requires access to a large and diverse genetic dataset to design and optimise high-performing enzymes. To accelerate its development, PEI partnered with Basecamp Research, a nature-tech company pioneering foundational AI models built on top of the world's largest, ethically sourced database of biological information.

Nature tech solution

Basecamp Research's core asset is its proprietary global biodiversity database, BaseGraph™, which provides a comprehensive map of genetic biodiversity collected through access and benefit-sharing partnerships worldwide. BaseGraph™ powers a suite of AI tools that enable protein function prediction, structure modelling, and conditional protein design. By leveraging this dataset, Basecamp was able to design novel enzymes optimised for breaking down complex polyester waste.

Basecamp's commitment to regulatory compliance and fair benefit-sharing beyond global regulations ensure that local biodiversity stakeholders are fairly compensated. This approach not only supports sustainable and ethical research but also strengthens the robustness of the genetic data used in their models.

Image credit: Basecamp Research and Protein Evolution, Inc. (PEI)





Main findings

The collaboration enabled PEI to accelerate the development of its Biopure™ technology, by accessing novel plastic-degrading enzymes that have never been reported previously. Through an expanded partnership, Basecamp Research will leverage its database and AI tools to identify enzymes capable of breaking down a wider variety of materials, paving the way for new applications in recycling complex plastic mixtures.

A key outcome of this partnership is the creation of a closed-loop system for polyester products, significantly reducing environmental impact and providing a scalable solution for plastic waste management. Basecamp's foundational data built in adherence to global regulations on biodiversity sets a new standard for ethical protein design, ensuring that the benefits of this technology are shared equitably across the biodiversity value chain.

Case Study: Basecamp Research and Protein Evolution, Inc. (PEI)






Image credit: Basecamp Research and Protein Evolution, Inc. (PEI)



Image credit: Getty Images

4 Nature monitoring, reporting, verification and assurance



Image credit: veritree

Nature monitoring, reporting, verification and assurance

Throughout each of the ACT-D high-level business actions, companies should track their performance and prepare to report nature-related information publicly as much as possible as long as they're aligned with existing standards. This process calls for consistently measuring and monitoring nature assessments and using verification strategies for reporting.

Nature tech supports transparency, accountability, and the entire disclosure process by making it easier for companies to monitor, report, and validate their progress.

- **Automated environmental reporting**: Platforms like SustainCERT and BlueLayer automate the collection, analysis, and reporting of environmental data, reducing the complexity of sustainability reporting. Microsoft and SAP are supporting businesses to streamline the additional data points within their current data lakes and reporting systems.
- **Compliance with global frameworks**: A number of nature tech tools align corporate disclosures with global frameworks, such as the Taskforce on Nature-related Financial Disclosures (TNFD), Carbon Disclosure Project (CDP), the Global Reporting Initiative (GRI), and the Science-Based Targets for Nature (SBTN). The nature tech company Nala Earth uses a location-based approach to map out business operations and supply chains, identifying biodiversity hotspots and nature-related dependencies and risks. It also provides scenario analysis tools and helps set nature-positive targets. Dunya Analytics helps companies comply with regulations through its SaaS platform that measures science-based risk analytics for biodiversity and nature.
- **Stakeholder engagement and communication**: Digital platforms can facilitate better communication with stakeholders, investors, and the public by visualising data in an accessible format (e.g., dashboards, interactive maps). Terraware, for example, is a forest management platform that facilitates stakeholder engagement and communication through real-time tracking and reporting features. The tech solutions of Agerpoint create a "digital twin" of the natural world, which allows for precise monitoring and measurement of plant health, biomass, biodiversity, and carbon sequestration.
- **Third-party verification**: Groups such as SustainCERT and the Forest Stewardship Council (FSC) use third-party verification to ensure the integrity and transparency of their certification processes for sustainable forest management.

In nature tech, there's often a direct correlation between disclosure and decentralisation to increase data transparency and enhance connectivity. For example, dClimate is a chain-agnostic, decentralised climate and land data explorer and marketplace, featuring datasets as APIs that integrate into smart contracts enabling machine readable agreements. SimplexDNA is an environmental-DNA-based biodiversity monitoring system that uses blockchain to connect local communities, large corporations, and governments to generate a biodiversity baseline layer. Open Forest Protocol leverages blockchain technology to bring trust to forestation and reforestation projects for the creation of high-quality and high-integrity carbon credits, at scale.

How nature tech promotes the data ethics prerequisite

MRV goes hand in hand with data ethics—the responsible collection, use, sharing, and management of data. Some organisations see nature data as more valuable than the technology used to gather it, as data enriched with local community involvement and situational insights are essential for informed decision-making.

Data ethics questions for corporations to consider during their corporate nature journey include:

- **How do companies and their consultants access nature data for commercial use?**
- **How do we address the challenges around improving data availability?**
- **How do we secure holistic, ethical, reliable data from experts in the field?**

- **How do we ensure the rights of Indigenous peoples (IPs) and local communities (LCs) who are occupants of these lands?**
- **How do we overcome potential privacy issues?**
- **How do we address the scientific community's concern that data availability also brings dangers (e.g., the risk of poachers)?**

We discussed data ethics with Evan Paul, Senior Director of Innovation for Nature at Salesforce. He highlighted the importance of balancing the pursuit of high-resolution nature data with ethical governance, particularly as AI and Agents enhance data collection and scalability.

"Companies that succeed long-term will prioritise both ethical data collection and the ethical use of AI and Agents," he explained. "For startups, AI offers the chance to scale quickly, but with it comes the responsibility to set new standards for responsible innovation. For corporate sustainability leaders, improved data standards and technologies will drive better measurement and disclosure, but ethical practices—protecting privacy, community rights, and stewardship—are key to achieving ESG goals and building stakeholder trust."

Judson Berkey, managing director in the chief sustainability office at UBS, sees working toward verified nature data as a necessity for UBS's clients. "We want to see what data is available," he shared. "That gives us useful views on the companies we're investing in and the companies we may be lending to, as well as anything they're doing that may be supportive of the broader goal of halting and reversing nature loss."

Addressing nature data gaps

Whilst lack of data may be an issue in some instances, according to TNFD, data gaps are not the biggest problem; the business intelligence around direct operations and value chains poses the most significant challenges. TNFD's Data Facility aims to overcome the current and anticipated market failures in the nature data landscape, especially around data fragmentation.

Jame d'Ath, data and technical analytics lead at TNFD, says sectors and nature tech providers must be more nuanced when discussing data. "There will be large primary data providers (i.e. NASA, Planet, Maxa and the like)," shared d'Ath. "That data needs to be cleaned, processed, and formatted, and then you'll need to validate that with some in-situ data, which again needs to be cleaned, processed, and formatted. The data facility catalogue provided by TNFD offers guidelines and principles to unlock pipes to good data. The facility will sit not in front of the tech developers but behind them, providing the key principles required to identify high-quality data."

Bank of America on nature data

Bank of America (BofA) has seen a significant uptick in the need for location-specific granular data. As a user of nature tech and an advocate for their clients to apply technology through their corporate nature journeys, BofA recommends that companies explore TNFD's Data Catalyst Initiative, which promotes the use of data to drive innovation and improve decision-making in various sectors. At the beginning of their corporate nature journey, most companies need to familiarise themselves with nature data sources, so the initiative offers a strong starting point.

From starting to finishing the ACT-D process, companies must implement Measurement, Reporting, and Verification (MRV) strategies to manage nature data efficiently, effectively, and ethically. As corporations navigate complex regulatory frameworks and align diverse stakeholders, investing in these tools can unlock new business models and opportunities for advancing nature-positive practices.

“As the state of the art of the technology and data get better over time, we'll see a higher standard for restoration, which could be great.”

Evan Paul, Senior Director of Innovation for Nature at Salesforce

Case Study: Cecil Earth and Foresight Group - Foresight Natural Capital (FNC)

Cecil Earth and Foresight Group - Foresight Natural Capital (FNC)

Overview

In 2019, Foresight Group developed a natural capital investment strategy with a core focus on forestry and afforestation (new woodland creation). FNC's goal is to sequester at least two million tonnes of additional carbon with the new trees it is planting and using validation and verification standards such as the UK Woodland Carbon Code. To make this happen, Foresight is committed to consulting with and working with local communities, delivering diverse planting schemes, protecting and enhancing biodiversity across its portfolio, increasing the supply of sustainable UK timber, and meeting industry sustainability standards.

To manage its nature data and extract key insights about its business operations, Foresight Group partnered with the software platform Cecil Earth, which collaborates with a network of industry experts to consolidate dataset protocols and methods. Prior to partnering with Cecil, Foresight found it overwhelming to manage its thousands of files and millions of rows of relevant data on timber, carbon projects, and biodiversity metrics.

Image credit: Cecil Earth





Nature tech solution

Cecil learned that while its data management system provided value for FNC, the company also needed to close its data gaps between periodic surveys. So the Cecil platform collected data from ecologists, forest managers, and ad-hoc service providers across FNC's c.80 forests and c.17,000 hectares. FNC's data was organised by Cecil using structured models, which are frequently checked for formatting errors. This process provides a high-integrity data foundation to support internal and external analysis.

Cecil ingested data on Foresight Group's natural assets through file uploads and integrations with third-party tools and datasets, which have helped FNC understand its natural risks and maximise the value of its portfolios of natural capital assets.

Main findings

For the first time, FNC is able to view and monitor its portfolio in one place. This nature tech evolution allows team members to reduce time on reporting and operations, and gives stakeholders access to data on the impact of the fund and its performance.

Cecil is expanding the data use cases, which may include baselining for biodiversity net gain on UK assets. Additionally, Foresight is using Cecil's platform to support investment decisions, portfolio growth, and data acquisition.

Case Study: NatureHelm & Wildlife Friendly Enterprise Network (WFEN)

NatureHelm & Wildlife Friendly Enterprise Network (WFEN)

Overview
Wildlife Friendly Enterprise Network (WFEN) certifies products and businesses that contribute to wildlife conservation and community well-being, while NatureHelm is one of the world's most advanced business and biodiversity data insights platforms. The two organisations joined forces to scale both their operations globally. With the goal of accelerating the implementation of nature-based solutions and driving regional innovation, they worked together to combine WFEN's on-the-ground NbS work with NatureHelm's biodiversity insights technology.

Nature tech solution
NatureHelm leverages the power of billions of existing species data points, deep biodiversity and business sustainability expertise, and AI-powered analytics to provide rapid, benchmarked State of Biodiversity risk screening at specific sites globally. Uniquely, NatureHelm also links species known to occur at sites to the most material business risks, dependencies and opportunities to facilitate decision making, enable action to be taken on the ground in an efficient and effective way, and provide transparent reporting. By capturing baseline data and then analysing and visualising it over time, NatureHelm provides an end to end tool for understanding, monitoring and managing biodiversity in relation to business activities at scale.

WFEN implemented NatureHelm's advanced monitoring, reporting and verification technology to support critical Regenerative + Wildlife Friendly production practices on the ground within cotton production communities in central India. This has enabled WFEN to demonstrate how businesses can transparently address both biodiversity and climate challenges by maintaining habitats for keystone species and contributing to carbon sequestration through sustainable land management practices.

Main findings
Through this partnership, WFEN has made significant progress in implementing their nature-based solutions strategy and Certified Wildlife Friendly® program, which protects threatened and endangered species, conserves over 12 million hectares (29 million acres) of diverse wetland, forest and grasslands, and benefits over 200,000 people who coexist with wildlife.

With both organisations leveraging insights from each other, they're able to advance and scale up their operations in a cost-effective and efficient way and rapidly iterate to adapt to new contexts and opportunities. This partnership will further advance sector specific insights for the regenerative agriculture industry and increase the transparency and ease of data collation to help scale up biodiversity conservation within regenerative agriculture systems.

Case Study: Chloris Geospatial and Catona Climate

Chloris Geospatial and Catona Climate

Overview
Catona Climate, a climate finance company focused on enhancing transparency and integrity in the carbon market, sought a reliable solution for monitoring changes in above-ground biomass across its global carbon projects. Accurately measuring carbon removals and emissions is crucial for ensuring the credibility of nature-based carbon credits. To achieve this, Catona partnered with Chloris Geospatial, a leading provider of biomass and carbon data, as scalable and cost-effective forest carbon insights. Together, they use high-quality carbon data to support Catona's thorough project due diligence and monitoring procedures.

Case Study: Chloris Geospatial and Catona Climate

Nature tech solution

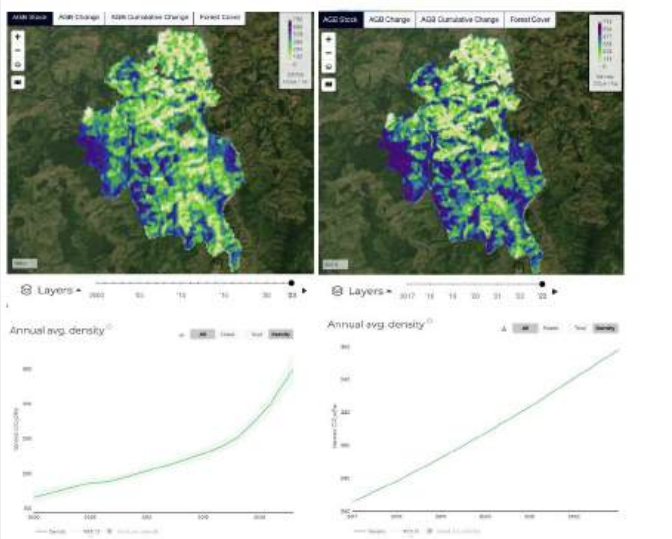
Chloris Geospatial leverages AI to analyse large volumes of satellite and sensor data, providing accurate estimates of biomass carbon stock and changes over time since 2000 and for any area in the world. The system is trained and validated using LiDAR (Light Detection and Ranging) data, a remote sensing method that uses laser pulses to create high-resolution 3D maps of vegetation structure. Chloris's models generate precise measurements of above-ground biomass and carbon stock that are essential for evaluating carbon sequestration outcomes.

Catona Climate integrated this data into its project management workflows, using it to monitor biomass changes across the lifecycle of its carbon projects. Chloris's data allows Catona to better understand the drivers of changes in carbon stock and identify potential risks, such as deforestation or degradation.



Chloris 2023 biomass stock map at a 10m resolution for a cooperative agroforestry project in Kenya, Africa.

Image credit: Chloris Geospatial



On the top, Chloris 2023 biomass stock maps, 30m resolution (left) and 10m resolution (right). On the bottom, biomass growth evolution, 2000-2023 at 30m resolution (left) and 2017-2023 at 10m resolution (right).

Main findings

The partnership complemented Catona Climate's rigorous monitoring system, enabling Catona to keep track of carbon impact, better understand what's driving changes to carbon stock, and assess urgent and ongoing threats to natural ecosystems. Looking at historical geospatial analysis also helps Catona to assess compliance with VCM methodologies and evaluate whether projects are meeting registry requirements and credit issuance schedules, which ultimately helps reduce risk.

Understanding biomass trends also allows Catona to work with project developers and community members to track environmental change, mitigate risk, and enable communities to have the agency to make sustainable decisions within a project region. This case study illustrates how AI and remote sensing can be leveraged to support high-integrity carbon markets, making it easier for climate finance companies to monitor and de-risk nature-based solutions at scale.

Case Study: Foresight Group, Mozaic Earth & rePLANET

Foresight Group, Mozaic Earth & rePLANET

Overview

Foresight Group, a leader in natural capital management, partnered with Mozaic Earth and rePLANET to deploy an efficient and scalable biodiversity monitoring system for their afforestation sites in Scotland. This collaboration aimed to support Foresight's commitment to nature recovery by creating a biodiversity baseline that could be used for carbon and biodiversity credit markets, increasing land value and enhancing nature-related reporting.

Nature tech solution

Mozaic Earth's technology integrates smartphone-based monitoring with artificial intelligence (AI) and remote ecologists to drastically reduce the cost and complexity of ground-level habitat and vegetation monitoring. Field employees, with no prior ecology training, used a gamified mobile application to capture geolocated images of the sites, which were analysed remotely by expert ecologists. This method decentralises data collection and allows for far more efficient surveys (ecologists can now review sites in a fraction of the time) and training of AI models.

The solution also integrates additional data, all collected either automatically or by people already onsite, to provide a robust audit-grade biodiversity baseline that includes habitat assessments, plant diversity surveys, bioacoustic monitoring, and invertebrate surveys. This comprehensive approach supports Foresight's goals of monetizing land through nature credit markets while maintaining end-to-end transparency in the data in a cost-effective way.

Image credit: Mozaic Earth



Main findings

The project's technology-driven approach is enabling Foresight to:

- Reduce the cost needed for biodiversity monitoring by ~50% compared to traditional methods.
- Collect accurate and auditable ground-level habitat and biodiversity data, enhancing the value of their land assets.
- Improve the quality of nature-related reporting, aligning with Foresight's broader environmental goals.
- Create opportunities for further community engagement and future projects, as initial feedback from both field staff and ecologists has been overwhelmingly positive.

Case Study: Foresight Group, Mozaic Earth & rePLANET

Some of the key lessons learnt include striving for “good” over “perfect”. In the natural capital market, balancing scientific rigour with scalability is essential for directing more funding into nature recovery. In addition, the cross-disciplinary partnerships between Foresight, Mozaic, rePLANET, and other biodiversity experts have been essential to deliver the project effectively. Finally, the decentralisation and democratisation of data collection and the remote analysis by ecologists were game-changers, allowing for quicker, more scalable biodiversity surveys.

The success of the initial set of projects in 2024 is expected to lead to expansion across additional sites, reinforcing Foresight’s leadership in sustainable land management and biodiversity enhancement.

Case Study: Epoch Blue (Epoch) and Lujeri Tea Estates

Epoch Blue (Epoch) and Lujeri Tea Estates

Overview
Lujeri Tea Estates (Lujeri), a major tea grower and supplier, needed an advanced system to quantify carbon removals and negotiate premiums with their downstream supply chain partners. As a supplier of agricultural commodities, Lujeri faced increasing pressure to provide transparent data on emissions, especially related to Scope 3 emissions, which encompass all indirect emissions in an organisation’s value chain. To address these challenges, Lujeri partnered with Epoch, a nature tech firm that provides environmental monitoring and a system of record for sustainability metrics for agriculture and forestry-linked supply chains. The partnership aimed to provide cost-effective monitoring and a single source of truth for environmental metrics across Lujeri’s 5,000 hectares of plantations to power premium payments.

Nature tech solution
Epoch’s solution combined local and remote data sources to deliver a holistic view of Lujeri’s environmental impact. A key component of the solution was the integration of multiple MRV capabilities for seamless reporting across measures of greenhouse gas emissions, biodiversity, and water impacts. Epoch’s platform is built for producers of agricultural and forestry commodities like coffee, tea, cocoa, palm oil, rubber, timber and soy to also provide data for regulatory requirements like EUDR, CSRD, and CSDD to their buyers, allowing companies across the supply chain to collaborate on nature-positive interventions at the supply base.

To produce the data in a cost effective and timely manner, Epoch used geospatial datasets to automatically detect environmental factors like soil characteristics, land-use history, climate conditions to model biomass stock changes and calculate non-biomass emissions using industry-recognized carbon calculators like Cool Farm Tool (CFT). This capability significantly reduced the data burden on Lujeri, given the extensive supply base of smallholder farmers and the associated data-collection challenges. The technology also tracked Scope 1 (direct), Scope 2 (energy-related), and Scope 3 (supply chain) emissions, generating a comprehensive environmental assessment that was easily shareable with stakeholders.

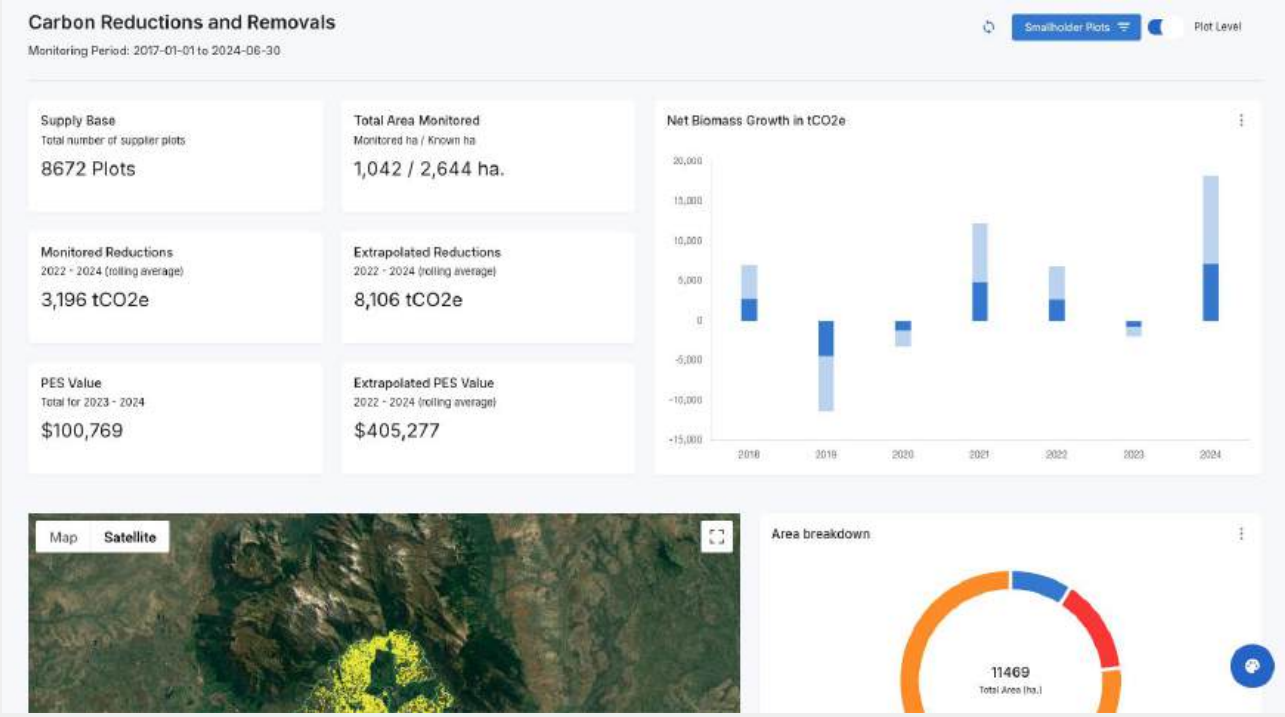
Main findings
The collaboration resulted in substantial benefits for Lujeri. Epoch’s platform enabled Lujeri to sell verified carbon removals to multiple buyers, significantly increasing income for smallholder farmers. The interventions are projected to sequester approximately 500,000 tCO_2 over the life of the planned activities. Furthermore, the project’s scalability was a key outcome, making it easier for other agricultural enterprises to adopt similar systems.

An essential takeaway from this partnership is the importance of a flexible, integrated approach to data management in complex agricultural supply chains. By leveraging multiple data sources, MRV systems

Case Study: Epoch Blue (Epoch) and Lujeri Tea Estates

and integrating with widely accepted tools CFT, Epoch Blue reduced the complexity of monitoring and reporting on sustainability metrics in a cost-effective way, which is a critical need for producers in the global south. This case study highlights how sophisticated nature tech can bridge data gaps and drive meaningful environmental and financial outcomes in agriculture.

Image credit: Epoch Blue



Case Study: General Mills and Regrow Ag

General Mills and Regrow Ag

Overview

General Mills, a global leader in the consumer packaged goods (CPG) industry, has set ambitious sustainability goals, including advancing regenerative agriculture on one million acres of farmland by 2030 and reducing greenhouse gas emissions by 30% across its value chain. Since agriculture contributes to over half of these emissions, General Mills must have a reliable system to track and verify supply chain progress.

To meet these goals, General Mills partnered with Regrow Ag, a nature tech company specialising in agricultural sustainability. Together, they implemented Regrow's Sustainability Insights platform to monitor regenerative agriculture practices and track the environmental outcomes across their supply chain, focusing on key crops such as wheat, oats, and dairy.

Nature tech solution

Regrow's solution is built on two core technologies: the Operational Tillage Information System (OpTIS) and the DeNitrification-DeComposition (DNDC) model. OpTIS uses satellite imagery to monitor and verify regenerative agriculture practices such as reduced tillage and cover crop adoption. The remote sensing data collected by OpTIS provides a high-resolution view of how practices change over time, feeding directly into the DNDC model.

The DNDC model then estimates nutrient cycling and soil carbon dynamics, allowing General Mills to

Case Study: General Mills and Regrow Ag

quantify the impacts of regenerative practices on greenhouse gas emissions. By integrating these technologies, Regrow was able to provide General Mills with dynamic and location-specific emission factors, making it easier to measure progress against their sustainability targets.

Main findings
The collaboration enabled General Mills to create a standardised methodology for tracking emissions reductions and soil health improvements across their supply chain. This approach not only provided transparency for internal reporting but also set a new industry standard for monitoring regenerative agriculture practices.

Key findings from the project included measurable reductions in greenhouse gas emissions and improvements in soil organic matter, particularly in areas where reduced tillage and cover cropping were implemented. The ability to link these improvements directly to specific farming practices helped General Mills refine its sustainability strategy and communicate the benefits of regenerative agriculture more effectively to stakeholders.

This case study highlights the importance of integrating technology and science to support ambitious corporate sustainability goals. Regrow's platform provided the rigorous data needed to drive meaningful environmental change, positioning General Mills as a leader in regenerative agriculture and sustainable food production.

Image credit: Regrow Ag.



Case Study: LandPrint and Cargill

LandPrint and Cargill

Overview
Cargill, one of the world's largest agricultural companies, has launched several initiatives to promote sustainable supply chains and reduce deforestation in critical biomes like the Amazon, Cerrado, and Gran Chaco. One of its flagship programs is the Land Innovation Fund (LIF), a $30 million initiative

Case Study: LandPrint and Cargill

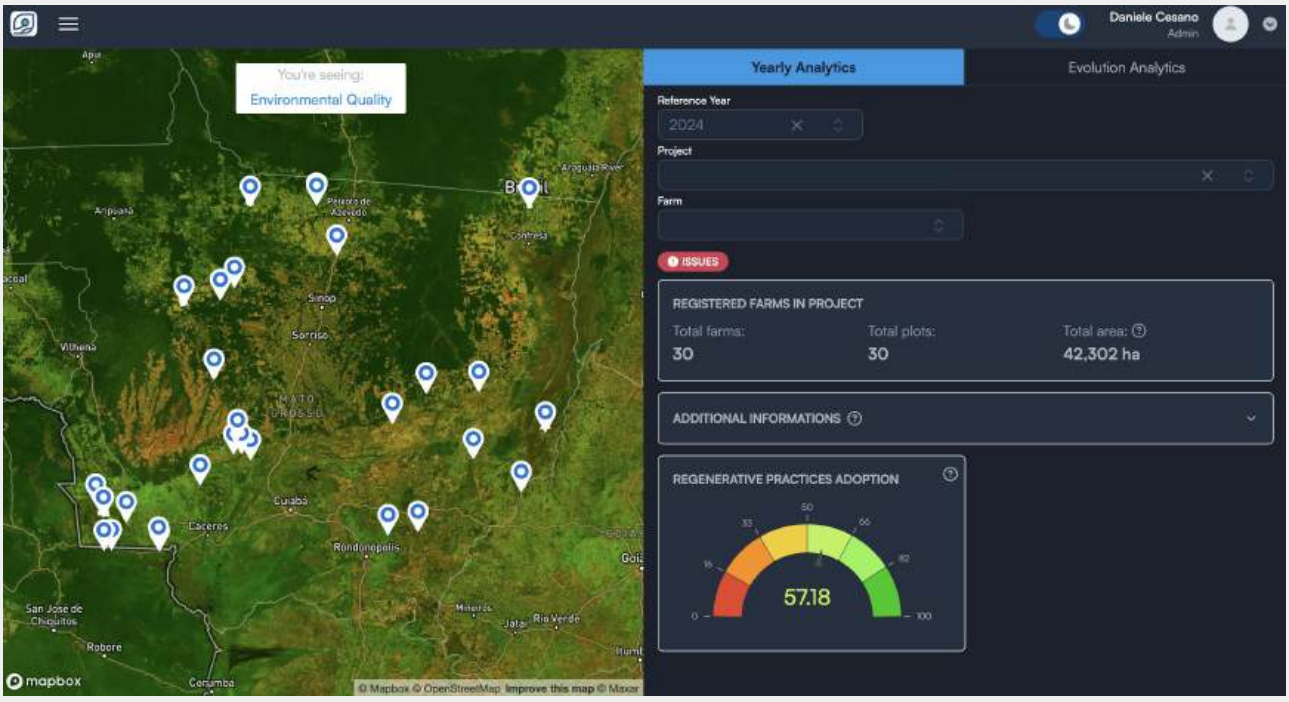
designed to promote deforestation-free soy supply chains in South America. Managed by Chemonics International, the fund supports projects that offer viable alternatives to deforestation, promote native vegetation, and create economic incentives for sustainable land use. To strengthen its nature-positive efforts, Cargill collaborated with Handprint, a nature tech company specialising in scalable, data-driven sustainability solutions and environmental ratings.

Nature tech solution

LandPrint's platform enables companies to quantify, track, verify, and communicate the impact of nature-positive interventions using real-time data and environmental ratings. For Cargill's Land Innovation Fund, LandPrint developed a monitoring system that uses a combination of satellite imagery, remote sensing data, and ground-truth surveys to assess land use changes, farming practices, and biodiversity impacts. This solution provided a comprehensive view of the environmental outcomes in Cargill's soy supply chain in Maranhao state, Brazil, allowing Cargill to quantify the benefits of sustainable land management practices and identify areas for improvement.

Additionally, LandPrint's platform integrates financial data to model the economic benefits of different farming interventions, helping Cargill make informed decisions about how to optimise resources effectively in transitioning its supply chains towards sustainable farming practices. This transparency is crucial for engaging stakeholders and ensuring that the fund's investments align with its deforestation-free goals.

Image credit: Landprint



Main findings

LandPrint's system enabled Cargill to measure the impact of its supply chain in Maranhao state more accurately and efficiently, providing critical insights into the effectiveness of its sustainability strategies. Key findings showed that projects supported by the Land Innovation Fund led to developing nature tech solutions to measure improvements in soil health, carbon, water retention, and biodiversity restoration. The ability to track these changes in real-time helps Cargill identify best practices and scale successful interventions across regions.

The collaboration also highlighted the importance of combining environmental and economic data to drive sustainability. LandPrint's financial modelling capabilities linked to natural capital measurements

Case Study: LandPrint and Cargill

and farming practices allowed Cargill to assess the return on investment for various nature-positive interventions. This case study demonstrates how advanced nature tech can support the sustainable transformation of agricultural supply chains, creating value for both the environment and local communities.

Image credit: Landprint





Conclusion

While the transformative role of nature tech in driving corporate sustainability is still in its infancy, practical tools and platforms that can drive nature-positive strategies abound. By integrating the aforementioned technologies in this report throughout the ACT-D high-level business actions, a company can intimately understand its nature impacts and opportunities and take action more transparently and effectively.

Ultimately, nature tech bridges the gap between business operations and environmental stewardship, enabling organisations to contribute meaningfully to global biodiversity and sustainability goals. By leveraging technologies such as AI, IoT, and digital MRV systems, businesses can not only reduce environmental risks but also unlock new opportunities for growth and resilience.

To learn how to begin and follow through on your business's corporate nature journey, visit capitalscoalition.org for guidance on the ACT-D framework. To explore more about the nature tech sector, go to nature4climate.org/nature-tech and naturetechcollective.org.

Image credit: Sylvera



Annex

Nature tech taxonomy framework
Nature tech macro trends
Nature tech investment numbers
Regulations and frameworks

Nature tech taxonomy framework

Published by Nature Tech Collective and Impact Labs | Copyright © 2024-2025 Nature X Foundation, Inc.

Nature tech taxonomy framework

Alpha Version - Revision 0.6
October 2024

Transition lens

This taxonomy builds upon the foundational work established by One Earth.

Scaling conservation and restoration

Land conservation	Protected areas Rarity sites Land habitats Mammal assemblages Intact wilderness Climate refugia Indigenous tenure Urban biodiversity
Ocean conservation	Protect seas Marine habitats Sustainable fisheries Marine carbon sinks
Ecosystem restoration	Reforestation Forest recovery Sustainable forestry Grassland restoration Mangrove restoration Coral restoration Species rewilding
Wildlife connectivity	Land corridors Buffers and greenways Rivers and streams Marine corridors

Regenerative agriculture transition

Regenerative croplands	Farm afforestation Cropland restoration Soil management Sustainable biochar Sustainable fertilizer Cover crops Sustainable rice farming Agritecture Crop optimization Dryland irrigation Agroforestry PolyculturePerennial / Superfoods Seed diversity Smallholder farming Bioengineered microorganisms for soil health restoration Hedgerows management
Sustainable rangelands	Silvopasture Pastoralism Grazing optimization Healthy feed Meat-free proteins Planetarian diet
Food Waste reduction	On-farm storage Bioregional sourcing Food upcycling Urban gardening Composting Sustainable meal planning Redistribution systems

Nature positive economy

Supply chain (scope 3)	Supply chain transparency Waterloop systems Zero waste Waste to energy Sustainable raw material sourcing Insetting projects Optimized transportation and local sourcing
Processes and production (scope 1 & 2)	Resource efficency Depollution Green energy Energy efficiency Green chemistry Water management Eco design and eco conception
Behavorial change	Consumer education Redistribution systems and incentives

Nature positive finance

Financial instruments	Bonds and debt instruments Securities and structured products Nature credits Insurance and reinsurance Equities Development finance Payment for ecosystem services Environmental subsidies Development rights and leases Grants and philanthropy Derivatives Referential instruments
Investment vehicles	Marketplaces Philanthropy and grant-giving organizations Development banks and multilateral institutions Asset managers and institutional investors Microfinance institutions Real estate investment trusts Crowdfunding and syndication Hedge funds Pension funds Exchange traded funds Funds of funds Private equity and venture capital funds Special purpose vehicle
Catalysts	Ratings institutions Disclosure framework providers Think tanks and technical assistance Standard setting organizations Financial media Regulatory bodies Validated and verifying bodies Central banks

Technology lens

The 5Ms framework was developed by the Nature Tech Collective Community and Sector Intelligence team.

Market pressures

Policy mechanisms
Research bodies
Training and education
Regulation tech
Reporting tools
Impact assessment tools
Certification and verification platforms
Standards
Community engagement platforms
Free, prior and informed consent

Measurement and monitoring

Internet of things
Remote sensing and earth observation
Traditional ecological knowledge
Robotics and UAVs
eDNA
Radar
Drones
Bioacoustics
Camera Traps
Hyperspectral imaging
Wearables
LiDAR
Soil measurements
Pressure modeling
Multispectral imaging
Water quality and monitoring
Wireless sensor networks
Thermal infrared cameras
Lightning detection systems
Firewatch towers with optical cameras
Weather stations
Monitoring buoys

Modeling

Artificial Intelligence and machine learning
Digital twins
Data integration and analytics
Cloud computing
Target setting processes
Camera vision
Earth observation analytics
LCA, LCI, LCIA
Sensor fusion techniques
Risk assessment and modeling
GIS

Material change

Biotechnology
Nanotechnology
Chemical treatments
Additive manufacturing and robotics
Nature-based solutions
Nature-based carbon sequestration
Bio-based and biodegradable materials
Low-carbon cement, concrete, and additives
Coatings and surface treatments
Advanced recycling technologies
Sustainable textile production
Precision agriculture
Bioenergy and biofuels
Water recycling and reuse
Water desalination
Water, sanitation, and hygiene (WASH)
Wastewater treatment
Bioretention and biofiltration
Flood management
Livestock emissions management
Nature-based infrastructure
Infiltration and treatment-based landscape solutions

Monetisation

Distributed ledger technology
Fintech
Natural capital accounting
Credits and offset instruments
Insurtech
Investments and trading platforms
Payments
Ecosystem services valuation tools
Marketplace infrastructure

Nature lens

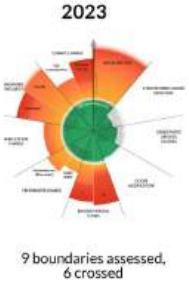
The Nature Lens is still in development. We plan to integrate several complementary frameworks, including those shown here.

LEARN MORE

Taskforce on Nature-related Financial Disclosures



Planetary Boundaries



One Earth Bioregional Framework



Published by Nature Tech Collective
Copyright © 2024-2025 Nature X Foundation, Inc.

DOWNLOAD THE WHITEPAPER

Nature tech macro trends

Nature tech macro trends

Our report, The State of Nature Tech, identified five macro trends in nature tech that continue gaining traction as corporate engagement around nature impact increases. Each of the following trends has emerged as pivotal practices executed at different points of corporate nature journeys.

NbS origination

These include tech solutions that support the origination of NbS projects that can regenerate nature at speed and scale. Technologies in this category include sensing and satellite imagery that can monitor ecosystems and track land use and biodiversity changes. The Landbanking Group has a natural capital management platform called Landler that offers AI-powered measurement, reporting, and verification (MRV) tools to track various environmental parameters like carbon, water, biodiversity, and soil health. This data is used to generate natural capital accounts, which are tools to continuously monitor the ecological health of any piece of land on the planet. Whenever an improvement is recorded on a natural capital account, for example a one tonne increase in soil carbon storage or a one litre increase in soil water holding capacity, Landler generates a “natural capital unit”. Businesses can purchase natural capital units directly from land stewards. In other words, they can invest in measured, holistic nature impact. Natural capital units can be booked as green assets on balance sheets and used as building blocks to create outcome-based financing instruments.

Advances in monitoring, reporting and verification

The monitoring, reporting, and verification (MRV) of nature-based solutions is essential for measuring the impacts of interventions on nature. In addition to providing transparency and accountability, MRV solutions support data-driven decision-making, which can help mitigate risk, highlight nature-positive business opportunities, and build trust in the voluntary carbon market and biodiversity markets. Biometrio, Okala, Wildmon, and Pivotal leverage multi-modal data aggregation and advanced analytics for biodiversity monitoring and nature impact assessment. They integrate various data collection methods, such as environmental DNA (eDNA), bioacoustics, camera traps, and satellite imagery, to provide a comprehensive view of ecosystems and their health.

Ensuring the production of high-integrity biodiversity and carbon credits

Digital tools have modernised environmental markets. Digital and cost-efficient approaches to credting, calculating, and auditing are the practices of today. By leveraging MRV, creating and managing biodiversity credits and nature-based carbon credits becomes more transparent and credible. While this often leads to greater confidence among investors and stakeholders, it also drives more robust performance in biodiversity markets and the voluntary carbon market.

ERS (Environmental Resources Management), the Biodiversity Future Initiative, and InvestConservation ensure high-integrity biodiversity and carbon markets through a combination of rigorous project design, transparent monitoring, and robust reporting mechanisms. ERS provides guidance for corporate investors and financial institutions on investing in high-integrity natural climate solutions (NCS) projects for the voluntary carbon market. Focused on projects that respect Indigenous rights, ERS emphasises the importance of comprehensive due diligence and using MRV systems that adhere to stringent environmental and social criteria.

The Biodiversity Futures Initiative works on creating standards and methodologies to quantify biodiversity impacts and ensure that nature credits represent real, measurable benefits.

InvestConservation focuses on making biodiversity conservation financially viable by connecting investors with high-quality conservation projects. While investing in conservation areas that protect at-risk tropical forests, they employ a rigorous selection and verification process for projects to ensure that investments contribute to genuine biodiversity and ecosystem health improvements.

Connecting local communities to the NbS market

Human-centred nature tech is necessary for unlocking local capacity, as it increases the likelihood that local communities can access and manage nature-based solutions. These technologies support local communities in deploying NbS, tracking and reporting on progress and impact, and heightening transparency.

Similarly, land stewards use Web3 platforms to monitor ecological assets and shift data ownership to local communities. Groups also use blockchain technology to deploy payments for ecosystem services and de-risk investments into nature-based climate solutions.

Regen Network uses Web3 technologies to connect local communities with global regenerative finance solutions. Their approach revolves around creating digital ecological assets, known as eco-credits, which are verified and traded on the Regen Registry.

Mozaic Earth leverages a decentralised model to collect ecological data using widely available smartphones. This allows community members to ground-truth nature data at a fraction of the cost of traditional ecological surveys, making biodiversity monitoring scalable and more accessible to a global network of local guardians. By integrating Web3 technologies, the company is able to provide transparent, immutable records of data collected, which can be used to issue eco-credits or similar tokens that reflect the verified conservation efforts of these communities.

Terrascope enables local stakeholders—including communities and supply chain partners—to contribute environmental data, which is then integrated into a centralised platform. The platform incorporates decentralised data management practices, allowing for transparent and traceable climate data.

Terraspect integrates local knowledge into its environmental data collection processes by involving community members in monitoring biodiversity, land use, and other key environmental factors. Projects that aim to enhance carbon sequestration or reduce emissions are often linked to sustainable land

management practices. Terraspect works with frontline communities to implement these practices, which can provide economic benefits and help improve local livelihoods, while also contributing to carbon reduction goals.

Enhancing data transparency and unlocking the value of environmental assets

From tracing supply chains to developing and sharing data, the overarching trend of transparency underpins all of nature tech. This trend has culminated due to an increased reliance on data aggregating systems, satellite reporting, remote sensing technology, MRV, and Web3. Transparency can significantly enhance the value of environmental assets by improving investor confidence and consumer trust, opening up and improving market access, driving accurate valuations, assessing and mitigating nature-related risks, and helping companies adhere to regulatory compliance.

Cecil aggregates nature datasets, standardises units, and ensures spatial and temporal compatibility. It integrates data into a single database for large-scale analysis, making it accessible for users via SQL and enabling efficient, transparent insights. This approach helps streamline environmental data reporting and unlocks new asset value by making complex datasets usable for environmental finance.

Cherty uses blockchain-inspired techniques and open-source principles to enhance data reproducibility and verifiability. This is needed for ensuring high standards in environmental data handling and reporting. By using these methods, Devonian supports both scientific and financial stakeholders in creating more reliable and accessible environmental asset data.

Nature tech investment numbers

VC funding trends in nature tech H1 2024 update

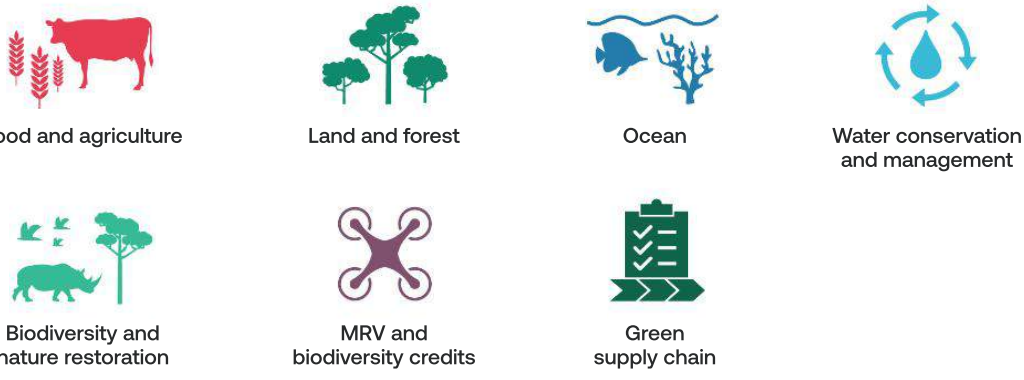
The nature tech market maintained strong momentum in H1 2024, outpacing H2 2023. With sustained growth, the market is on track to nearly double compared with its 2018 level, reaching $2 billion by year-end.

Xavier Lorphelin, founder and managing partner of Serena, partnered with Nature4Climate on its 2023 nature tech report on The State of Nature Tech. Published in October 2023, the report offered a comprehensive outlook on the nature tech market and venture capital investments from 2018 to 2022.

In March and now with this new report in October 2024, Serena has provided updated analyses of venture capital funding and trends in nature tech for 2023 and the first half of 2024.

Nature tech startups can be classified into seven verticals:

- **Food and agriculture**: regenerative agriculture, precision farming, nutrient management and biofertilizers, soil health monitoring, integrated pest management, sustainable livestock management, plant biotechnology.
- **Land and forest**: agroforestry, sustainable forest management, precision forestry, bio-geoengineering.
- **Ocean**: sustainable blue economy (fisheries, aquaculture...), algae production.
- **Water conservation and management**: smart irrigation systems, wastewater treatment, and water purification technologies.
- **Biodiversity and nature restoration**: protection and restoration of wildlife, forests, grasslands, peatlands, oceans, coastal zones - mangroves, wetlands, seagrasses, coral reefs.
- **MRV and biodiversity credits**: biodiversity data collection and monitoring, digital MRV for carbon and biodiversity, biodiversity credit exchange; carbon credit exchange.
- **Green supply chain**: supply chain traceability, land titling management.



Nature tech verticals (source: "The state of nature tech" report from Nature4Climate)

VC investments in nature tech

1 Key figures

Overview: VC funding in nature tech startups increased by 51%, from $581m in H2 2023 to $878m in H1 2024.

Number of deals: The number of nature tech deals increased by 37%, from 71 in H2 2023 to 96 in H1 2024.

Early-stage: Early-stage VC investments (from Pre-Seed to Series A) increased by 69%, from $245m in H2 2023 to $415m in H1 2024.

Late-stage: Late-stage VC investments grew by 38%, from $335m in H2 2023 to $463m in H1 2024.

Verticals: “Food and Agriculture” remained the largest category with ~40% of total investments in H1 2024. The “MRV and biodiversity” category saw a sharp increase in funding with H1 2024 investments almost reaching the total for 2023 - respectively $224m and $248m.

Geography: The geographical distribution of VC investments remains consistent with our 2023 observations - the U.S. maintains a leadership position, but Europe continues to close the gap. However, Asia experienced a slow start in H1 2024 and is falling behind.

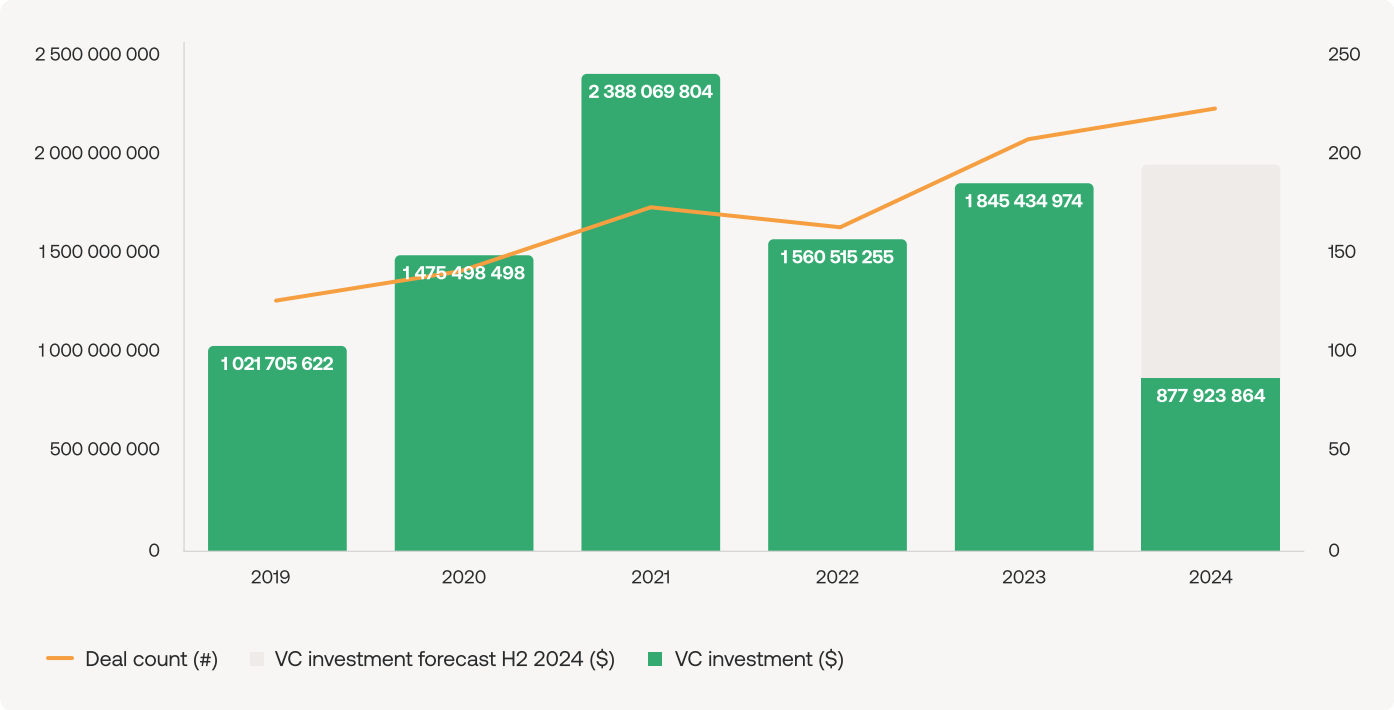
Cumulative nature tech funding: Since 2018, nature tech companies have raised $10.2bn of venture capital funding across 1,106 deals.

2 Analysis

Funding overview:

VC funding in nature tech startups is set to increase by 7.7%, from $1.85bn in 2023 to $1.99bn in 2024.

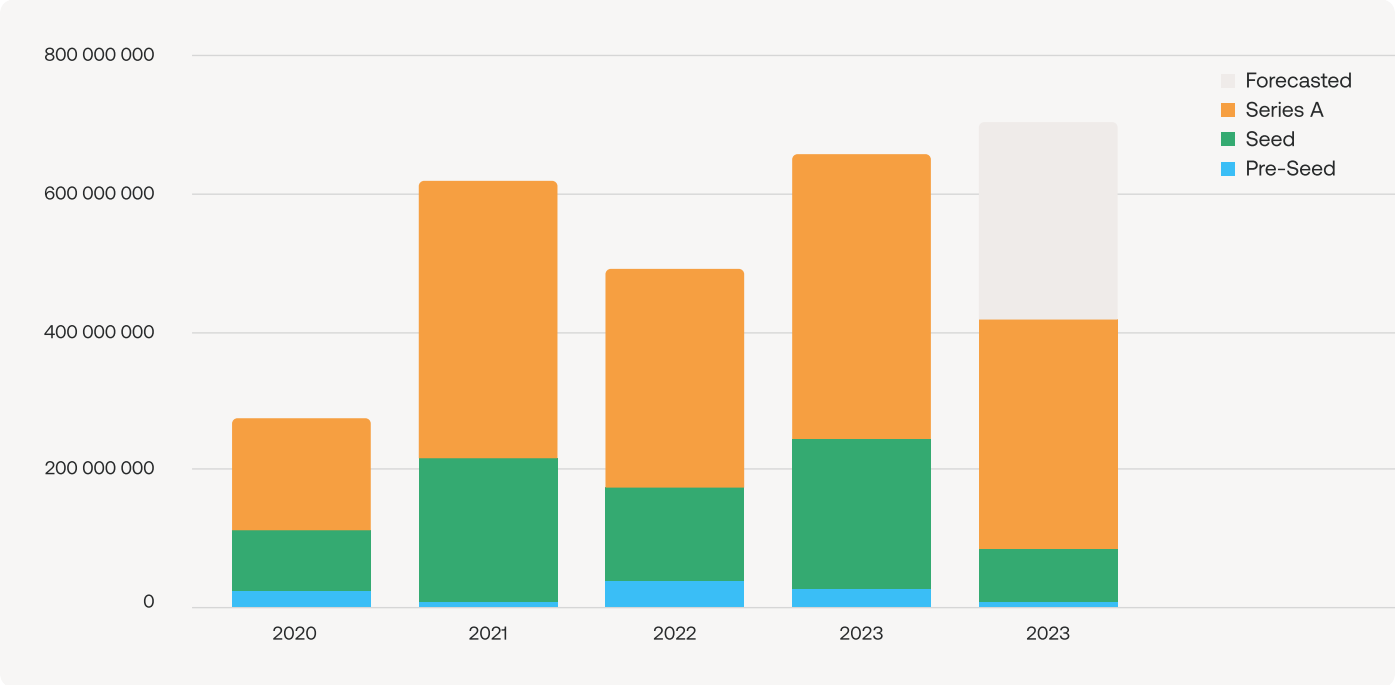
Funding in nature tech startups increased by 51%, from $581m in H2 2023 to $878m in H1 2024. Nature tech deals increased by 35%, from 71 in H2 2023 to 96 in H1 2024. The first semester of 2024 is experiencing a funding momentum that should accelerate during the second part of the year.



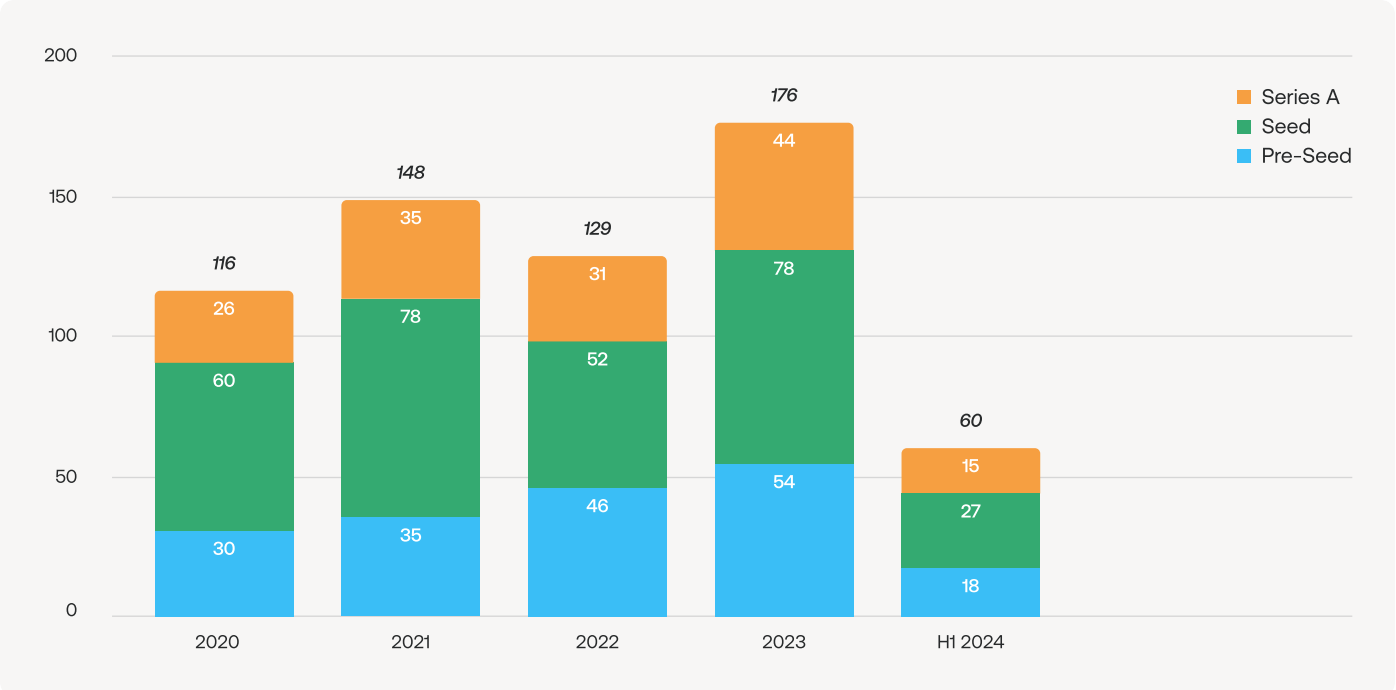
Graph 1 - VC funding ($) and deal count (#) in nature tech - 2020 to H1 2024 (forecast for H2 2024) (sources: Crunchbase and Serena)

Early stage:

Early-stage VC investments (from Pre-Seed to Series A) grew by 69%, rising from $245m in H2 2023 to $415m in H1 2024 (*Graph 2*), driving much of the overall growth. This increase was primarily fueled by a rise in the number of deals, with 76 early-stage deals in H1 2024 compared to 60 in H2 2023 (*Graph 3*).



Graph 2 - Early-stage VC funding ($) - Pre-Seed to Series A - 2020 to 2024 (sources: Crunchbase and Serena)



Graph 3 - Early-stage deal count (#) - Pre-Seed to Series A - 2020 to H1 2024 (sources: Crunchbase and Serena)

Late stage:

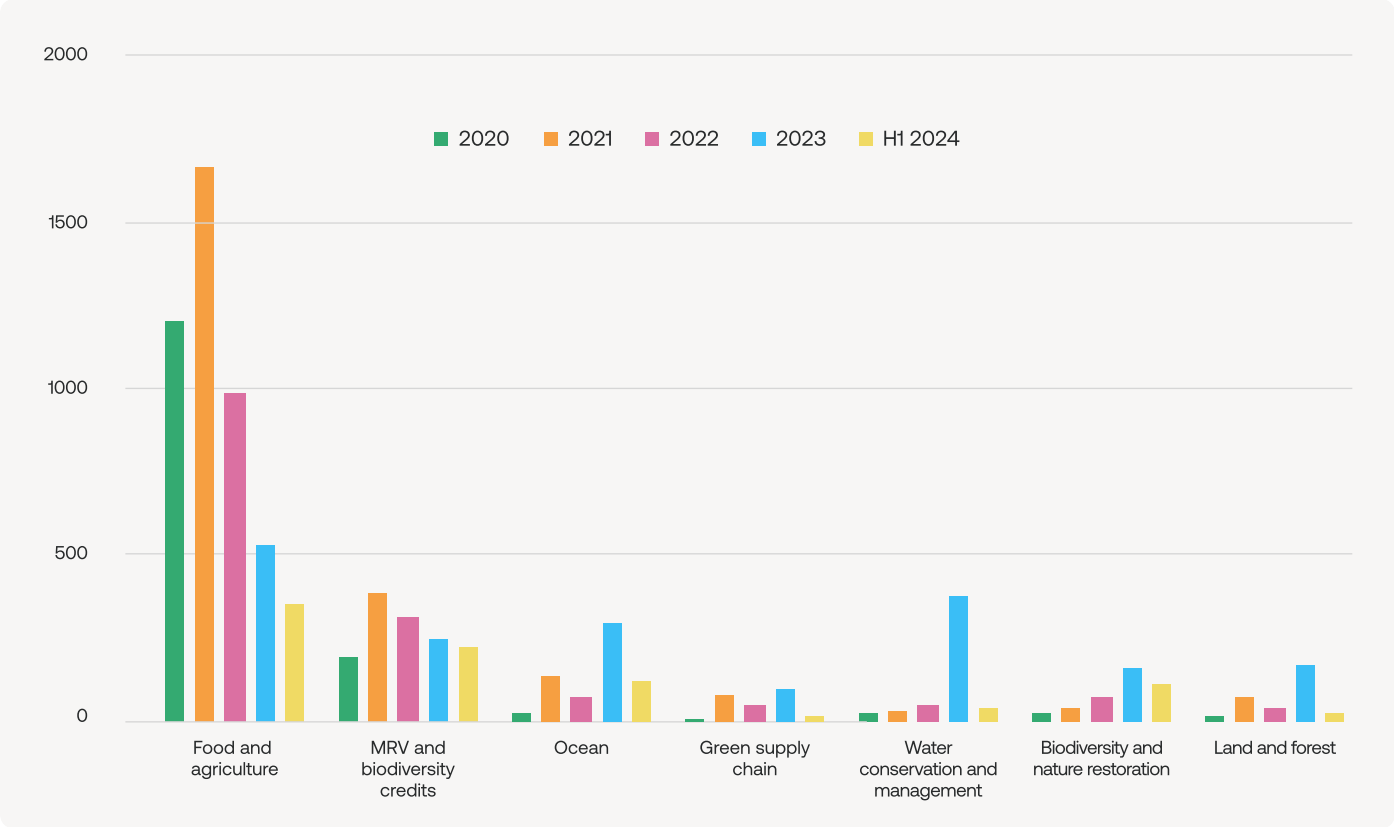
Late-stage VC investments increased by 38% semester-over-semester, rising from $335m in H2 2023 to $463m in H1 2024, driven by multiple Series C rounds in H1 2024.

Category breakdown:

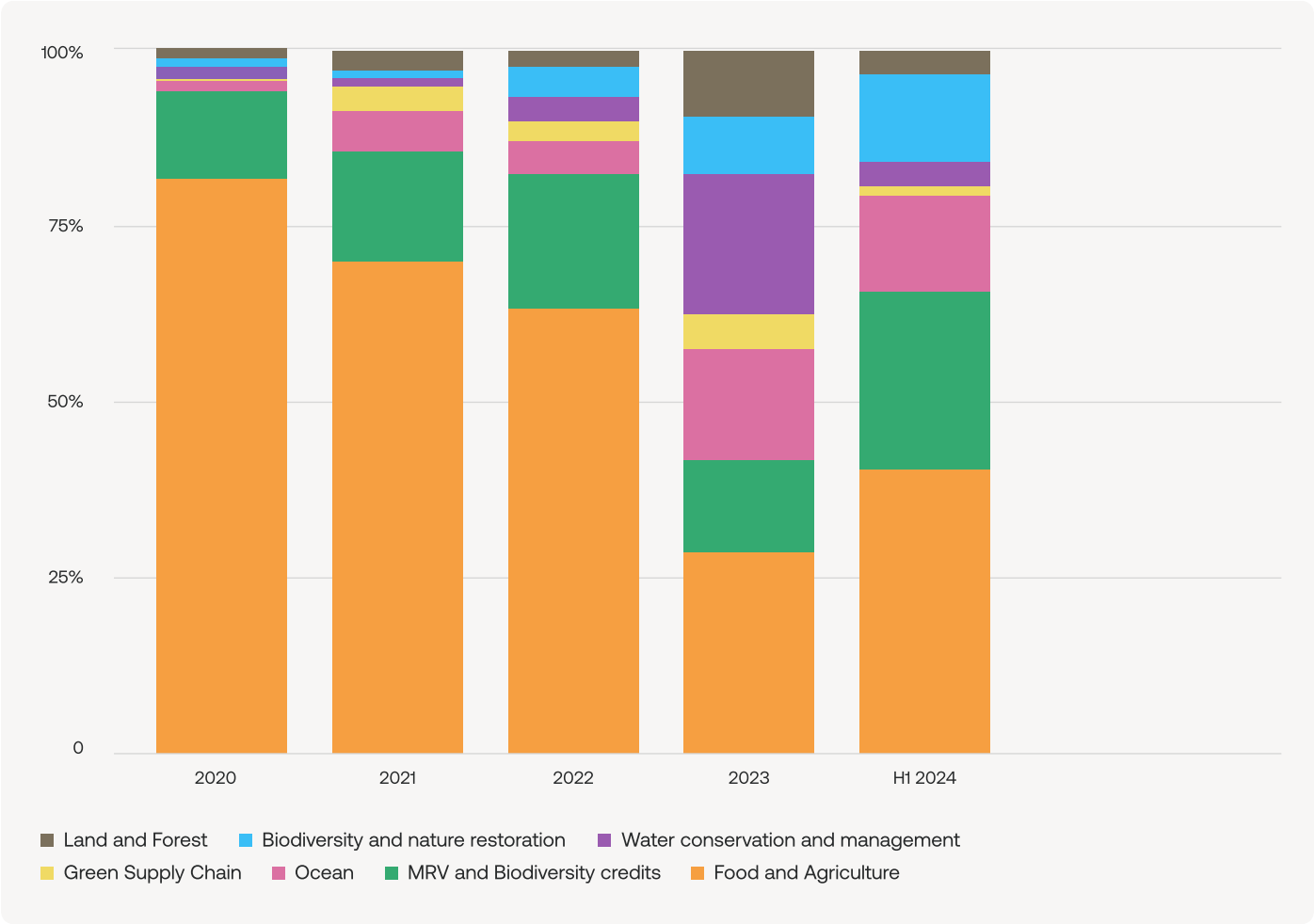
Following recent trends, "Food and Agriculture" remained the largest category, accounting for 40% of total investments in H1 2024 (*Graph 5*). The "MRV and biodiversity" category experienced a significant surge in funding, with H1 2024 investments nearly matching the total for 2023, at $224m and $248m, respectively (*Graph 4*).

In H1 2024, the “Food and Agriculture” category remained the largest in terms of funding, totaling $353m. While its share of funding had sharply decreased in 2023 (-35 pts) compared to 2022, it regained prominence in 2024 (*Graph 5*). However, this shift still reflects an ongoing trend: a rebalancing of categories that were once heavily dominated by “Food and Agriculture.”

As mentioned, the “MRV and biodiversity credits” category has made significant progress in both funding amounts and deal counts. This category is expected to maintain its strong growth, driven by regulatory frameworks, sustainability commitments, and technological innovation.

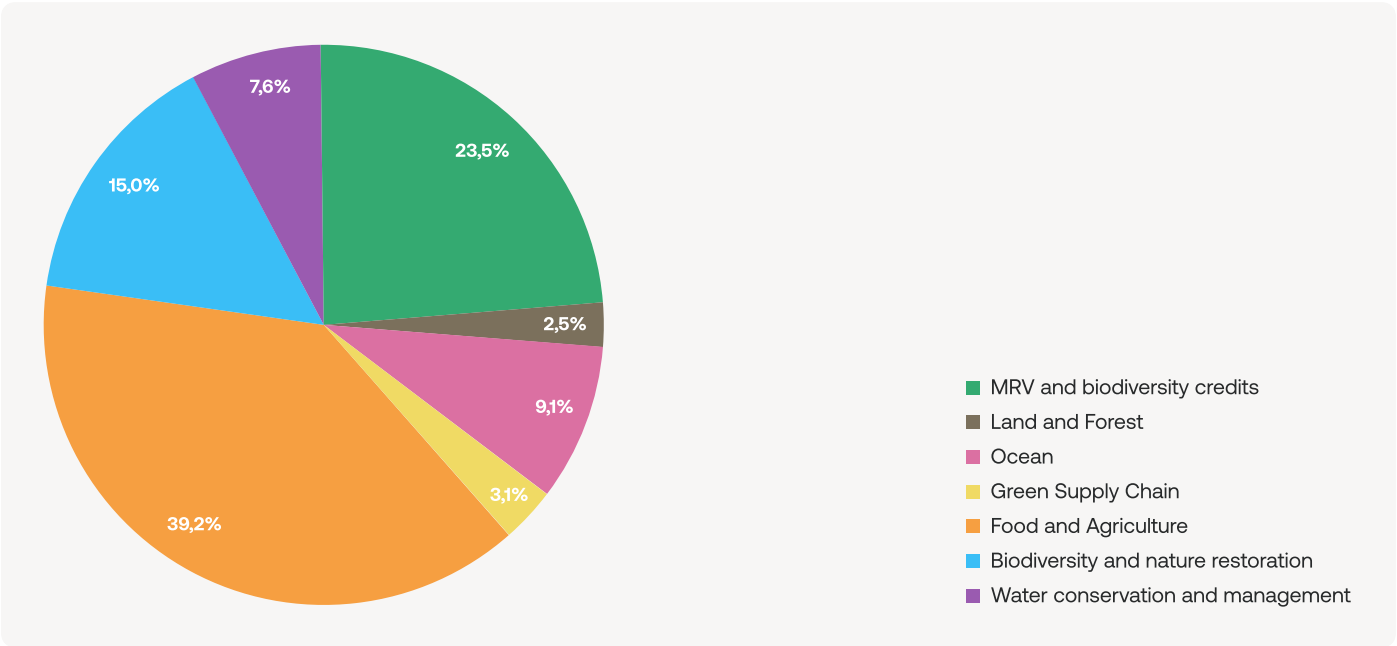


Graph 4 - Graph 4 - Yearly VC funding ($) by category - 2020 to H1 2024 (sources: Crunchbase and Serena)



Graph 5 - VC funding split per category (%) - 2020 to H1 2024 (sources: Crunchbase and Serena)

In early-stage investments (Pre-Seed to Series A), while the "Food and Agriculture" category regained its leading position in H1 2024 compared to 2023, the "MRV and biodiversity credits" category continued to attract a substantial share of funding, totaling $98m in H1 2024 (*Graph 6*).



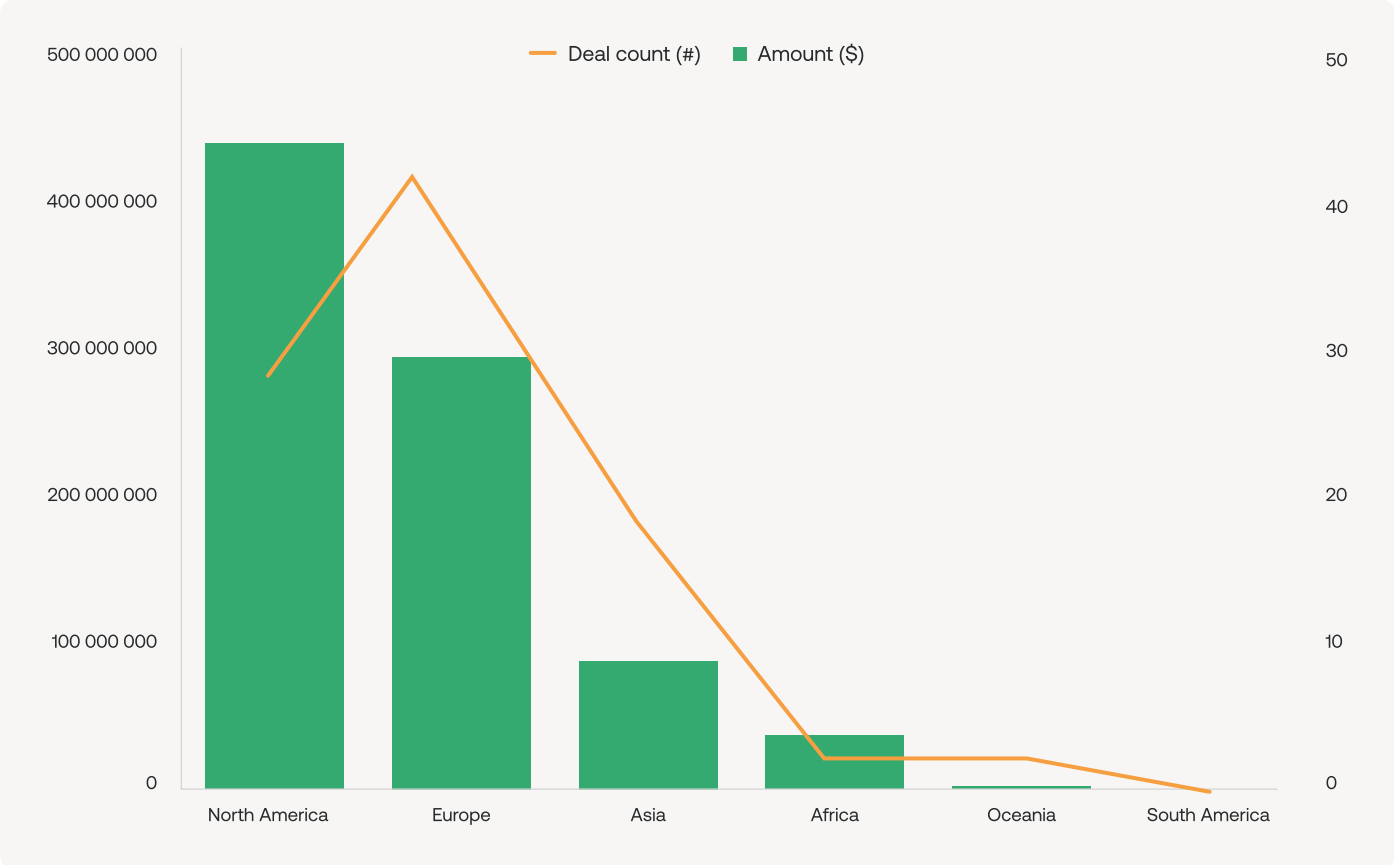
Graph 6 - 2024 H1 early-stage VC funding by category - Pre-Seed to Series A (sources: Crunchbase and Serena)

Regional breakdown:

Europe continues to close the gap with the U.S. (accounting for nearly 95% of funding in North America) in terms of funding, while Asia experienced a slow H1 2024 and is falling behind.

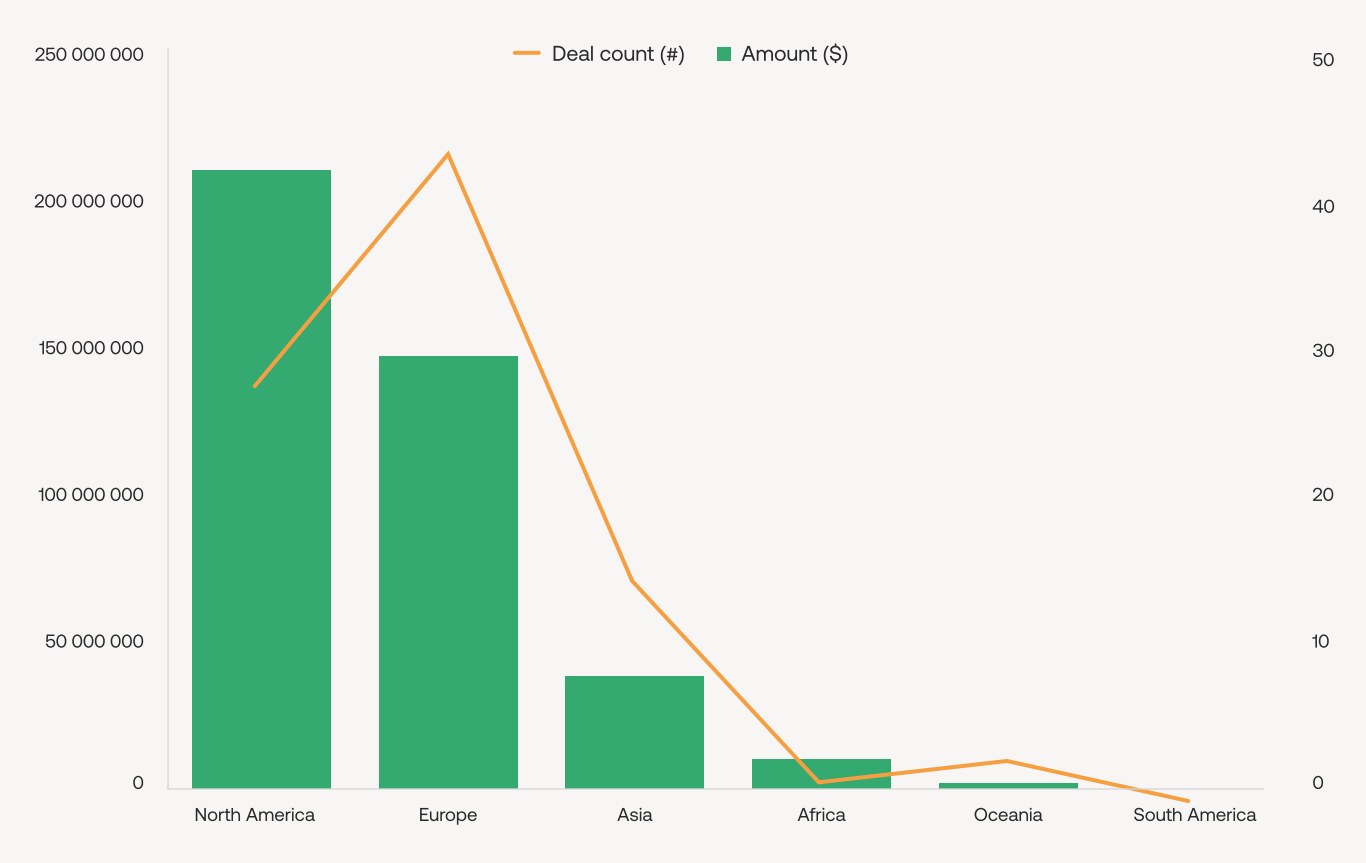
As for 2023, the U.S. remains the leading geography for VC funding in H1 2024, with $417m invested (*Graph 7*). This represents 48% of total funding, comparable to the 43% share in 2023 but significantly lower than the 78% average seen from 2018 to 2022.

For the second time, Europe has surpassed the U.S. in terms of the number of deals, with 42 deals recorded in H1 2024 compared to 26 in the U.S. (*Graph 7*). This difference underscores the variation in funding amounts per deal between the two regions, with the U.S. seeing more later-stage VC deals.



Graph 7 - 2024 H1 VC funding ($) and deal count (#) by geography (sources: Crunchbase and Serena)

The same trend is observed in early-stage investments, with Europe attracting one-third more deals than the U.S., but raising less capital in total value. Europe sees more Pre-Seed deals and fewer Series A rounds compared to the U.S. (*Graph 8*).



Graph 8 - 2024 H1 VC early-stage funding ($) and deal count (#) by geography Pre-Seed to Series A (sources: Crunchbase and Serena)

3 Methodology

The objective of this report is to quantify and analyse venture capital (VC) funding in nature tech startups since 2018. A database of 1,006 venture capital transactions in nature tech startups (excluding grant and debt financing) was extracted from Crunchbase using keywords specific to the seven nature tech categories. Deals with undisclosed amounts are not accounted for in this report. These deals represent a total funding amount of $10.2bn for the 6.5 years 2018-2024 (H1). Each transaction includes the following information:

- Name, location, and description of the company
- Transaction date and amount
- Stage of investment (Pre-Seed, Seed, Series A, Series B, Series C...)
- Nature tech category

It should be noted that the current database does not take into account impact-related criteria related to biodiversity, climate change or societal, because these criteria still need to be explicitly measured, assessed, and reported by nature tech startups or investors.

Regulations and frameworks

Regulations and frameworks

The **Corporate Sustainability Reporting Directive (CSRD)** requires companies to reveal metrics and targets on their biodiversity and nature impacts, dependencies, risks, and opportunities. Along with the CSRD, initiatives provide guidelines for companies to follow when measuring and reporting nature-related dangers and effects. These include the **Taskforce on Nature-Related Financial Disclosures (TNFD)** and the **Science Based Targets Network's (SBTN's) Targets for Nature**, which guide companies and cities in taking measurable and science-based actions to halt and reverse nature loss. All of the above require credible data.

The **Carbon Disclosure Project (CDP)** has created other relevant guidelines. It supports thousands of companies, cities, states, and regions in measuring and managing their risks and opportunities related to climate change, water security, and deforestation. Additionally, the **International Sustainability Standards Board (ISSB)** creates standards for sustainability disclosures focused on the needs of investors and financial markets.

CDP has launched a platform to enhance the efficiency of reporting on climate and nature. This move is poised to usher in a new era of streamlined disclosure and prompt action, as financial institutions with a record $142 trillion in assets demand robust climate and nature data. The new platform is accessible to 75,000 requested companies, cities, states, and regions. It aims to ease the reporting burden and facilitate agile disclosures. The rising global mandatory climate disclosure legislation has prompted **CDP** to align its new questionnaire with **IFRS S2**, the **International Sustainability Standards Board (ISSB)** climate standard. This alignment serves as the foundational baseline for CDP's climate disclosure.

While the **GRI** and **ISSB** focus on sustainability reporting, they serve different purposes and frameworks. The **GRI** standards are designed to communicate their impacts on sustainability to various stakeholders, including governments, NGOs, and the general public. **ISSB**, established by the **International Financial Reporting Standards (IFRS)** Foundation, develops standards for sustainability disclosures focused on the needs of investors and financial markets.

International work on nature-related financial risks has been progressing. The **Network for Greening the Financial System (NGFS)** has developed a conceptual framework on nature-related risks for central banks and supervisors. The **Organisation for Economic Cooperation and Development (OECD)**, in cooperation with the European Commission, issued policy considerations on nature-related risks and opportunities, and the World Bank has started to integrate nature-related risk analysis in their technical assistance.

nature4climate.org
naturetechcollective.org
kpmg.com
climatecollective.org
serena.vc

The KPMG name and logo are trademarks used under license by the independent member firms of the KPMG global organization.

KPMG refers to the global organization or to one or more of the member firms of KPMG International Limited ("KPMG International"), each of which is a separate legal entity. KPMG International Limited is a private English company limited by guarantee and does not provide services to clients. For more detail about our structure please visit kpmg.com/governance.

Nature 4Climate

Nature Tech Collective

KPMG

Climate Collective

serena