Biodiversity

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Innovate UK

Housekeeping

Welcome to the second webinar in this series about Climate Change Adaptation

- This webinar is being recorded and will be circulated with slides after the event
- Chat box – please use this to introduce yourselves or for any technical issues
- Q&A function – please use this for any questions you have for our speakers rather than the chat box, there will be a short Q&A at the end

UKRI Innovate UK

BIODIVERSITY

Dr Amanda Flint
Nature-Based Solutions Manager

MIDDLEMARCH

Warwickshire Wildlife Trust

Wildlife Trust Consultancies

- **A profit-for-purpose led business wholly owned by Warwickshire Wildlife Trust.**
- **With a legacy of over 30 years, we are the UK's largest Wildlife Trust Consultancy and the only one to have UK-wide coverage.**
- **We’re dedicated to helping businesses protect the natural environment and reverse the UK’s decline in biodiversity.**
- Every year, we invest our profits into Warwickshire Wildlife Trust, and our investment supports the valuable work they undertake, to bring wildlife back, and to help people act for nature.
- With our innovative and bespoke solutions, we empower our clients to meet their environmental obligations, achieve positive and sustainable project outcomes, and embrace opportunities to connect with the natural world.
- We’re passionate about nature and pragmatic about the fact that change happens.

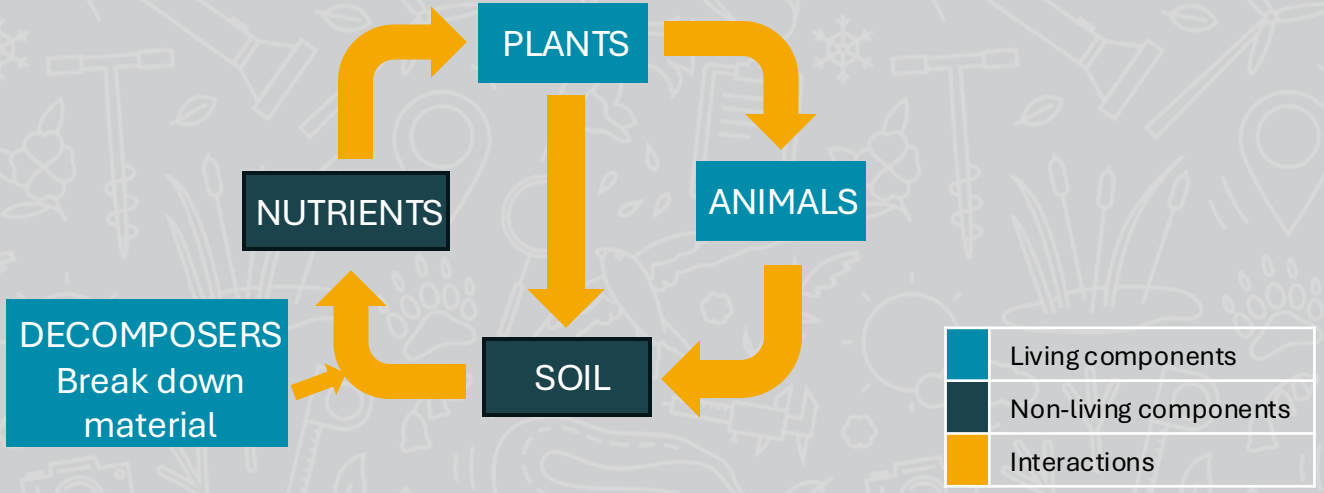
WHAT IS BIODIVERSITY?

Biodiversity is the sum total of all biotic variation from the level of genes to ecosystems.

Genes – biological variation within species.

Species - a group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding.

Ecosystem - a functional, dynamic community of all living organisms interacting with the non-living components of the physical environment.



WHY BIODIVERSITY IS IMPORTANT.

The **Convention on Biological Diversity** is a multilateral treaty that was created after the first **Earth Summit in Rio** (1992).

It was declared that human activities were dismantling biodiversity at an alarming rate.

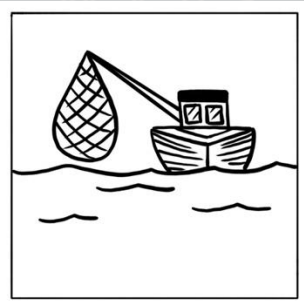
It was established that biodiversity is essential for:

- Human health & well-being
- Economic prosperity
- Food safety & security
- Climate regulation
- And other critical areas necessary for humans to thrive and for socioeconomic prosperity.

DRIVERS OF BIODIVERSITY LOSS.

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) identified 5 main drivers that account for the loss of over 90% of biodiversity compared to pre-industrial levels.

Land and Sea use change 30 %



Exploitation of Natural Resources 23%

Climate Change 14%

Pollution 14%

Invasive Species 11%

The UK's State of Nature Report (2023) states:

'***The UK is now one of the most nature-depleted countries on Earth***'

'***Halting and reversing biodiversity loss is vital***. *But it is only the first steps towards a healthy environment with resilient species, thriving habitats and functioning ecosystems.*'

GLOBAL BIODIVERISTY TARGETS.

‘Like climate change, nature recovery is a long-term and complex issue.’

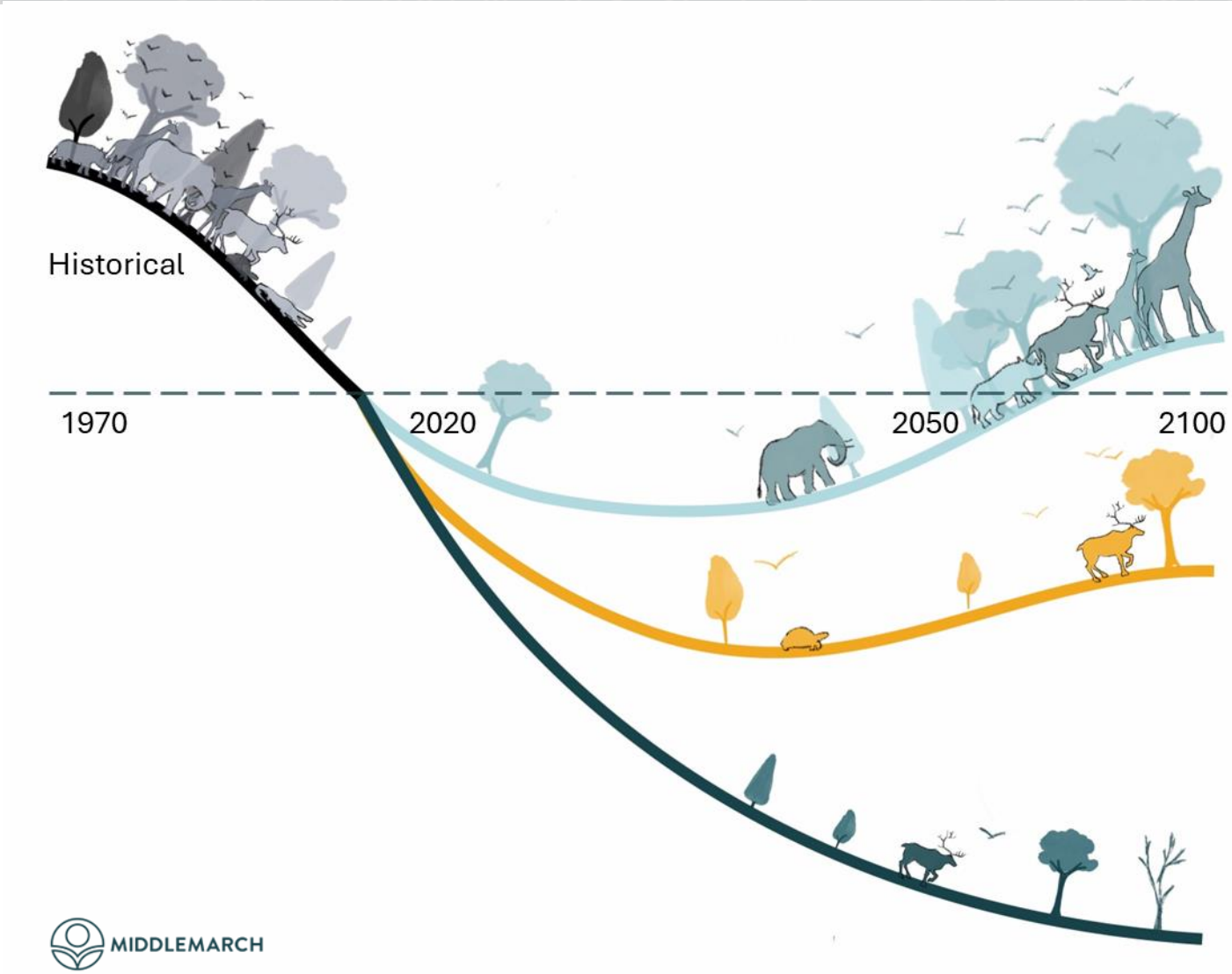
The Office for Environmental Protection (2025)

The Global Biodiversity Framework (2022) **established a global mission to halt and reverse the loss of nature by 2030 and achieve recovery by 2050**, so that nature and biodiversity thrives, and people and the planet benefit.

There are 4 outcome-orientated goals to achieve by 2050 and these are underpinned by 23 action targets, that fall under three headings:

- Reducing threats to biodiversity
- Meeting people’s needs through sustainable use and benefit sharing
- Tools and solutions for implementation and mainstreaming

BENDING THE BIODIVERSITY CURVE.



+ Conservation
+ Sustainable production and consumption

+ Conservation
+ Nature-based solutions

Business as usual

This image is adapted from Global Biodiversity Outlook 5 (2020) and illustrates the main findings

GLOBAL RISKS RANKED BY SEVERITY OVER THE SHORT AND LONG TERM.

The World Economic Forum Global Risks Perception Survey 2024-2025 identified:

	2 years		10 years
1	Misinformation & Disinformation	1	**Extreme Weather Events**
2	**Extreme Weather Events**	2	**Biodiversity Loss & Ecosystem Collapse**
3	State-Based Armed Conflict	3	**Critical Change to Earth Systems**
4	Societal Polarization	4	**Natural Resources Shortages**
5	Cyber Espionage and Warfare	5	Misinformation & Disinformation
6	**Pollution**	6	Adverse Outcomes of AI Technologies
7	Inequality	7	Inequality
8	Involuntary Migration & Displacement	8	Societal Polarization
9	Geoeconomic Confrontation	9	Cyber Espionage and Warfare
10	Erosion of Human Rights and or Civic Freedoms	10	**Pollution**

Risk Categories:

Economic | **Environmental** | **Geopolitical** | **Societal** | **Technological**

UK - SUMMARY OF ASSESSMENT OF PAST TRENDS, PROGRESS AND PROSPECTS OF MEETING TARGETS

The Office for Environmental Protection (OEP) last month, published its third assessment of the Government's progress on improving the natural environment. The report covers the period of April 2023 to March 2024 and **details that the Government remains largely off track to achieve its legal commitments**.

Environment Improvement Plan 2023 Areas	Environmental Improvement Plan 2023 Goals		Past Trends	Progress	Overall prospects of meeting targets and commitments
The Apex Goal	**Goal 1 – Thriving Plants and Wildlife**				
Improving Environmental Quality	Goal 2 – Clean Air				
	Goal 3 - Clean & Plentiful Water				
	Goal 4 – Managing exposure to chemicals and pesticides				
Improving Our Use of Resources	Goal 5 – Maximise Our Resources, Minimise our Waste				
	Goal 6 – Using Resources from Nature Sustainably				
Improving Our Mitigation of Climate Change	**Goal 7 – Mitigating and Adapting to Climate Change**	**Mitigation**			
		Adaptation			
	Goal 8 - Reduced Risk of Harm From Environmental Hazards				
Improving our Biosecurity	Goal 9 – Enhancing Biosecurity				
Improving the Beauty of Nature	Goal 10 – Enhancing Beauty, Heritage & Engagement with the Natural Environment				

THE OEP REPORT DETAILS.

GOAL 1 - THRIVING PLANTS & WILDLIFE:

- England's downward trajectory in species abundance is slowing, but this is no time for complacency
- Wider biodiversity trends continue to show decline
- A decline in the condition of protected sites prevents the creation of a coherent and resilient ecological network
- Time is running out to implement measures that will effect change in species abundance by 2030

GOAL 7 – MITIGATING & ADAPTING TO CLIMATE CHANGE:

- The 3rd National Adaptation Programme (NAP3) provides limited evidence of adaptation at the scale needed to prepare for climate risks across most sectors
- Key climate risks to the natural environment appear largely unaddressed
- Inadequate integration of long-term climate risk policy development, including statutory targets
- Transitioning the economy to achieve Net Zero is challenging, since 2024 the Climate Change Committee's (CCC) confidence in meeting Carbon Budgets 5 & 6 has decreased

'this is the time to co-ordinate the development and delivery of multiple strategies so that plans for climate mitigation, adaptation and nature recovery are fully integrated'

'Like climate change, nature recovery is a long-term and complex issue. Taking actions that maximise synergies in mitigating and adapting to climate change, alongside restoring nature should be seen as investing in a more prosperous, sustainable future.'

OUR VISION. A THRIVING NATURAL WORLD WHERE NATURE PLAYS A VALUED ROLE IN ADDRESSING CLIMATE, ECOLOGICAL, AND HUMAN HEALTH EMERGENCIES.

OUR MISSION. TO DELIVER VALUE IN NATURE.

MIDDLEMARCH

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What's nature got to do with technology?

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cambridgeconsultants
Part of Capgemini Invent

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Isobel Ashbey

- MPhys (Physics) from Durham University
- 9 years working in technology & product development
- Studied PgCert in Biodiversity, Wildlife and Ecosystem Health at University of Edinburgh
- Head of Biodiversity and Nature Tech at Cambridge Consultants

At Cambridge Consultants we do new-to-the-world deep tech innovation
We're ready to work with you to create technologies, services and products that have never been seen before, or help you understand the intersection between innovation, sustainability and your business.

We're in a biodiversity crisis

The crisis is driven by business activities across a wide range of sectors

What's that got to do with technology?

Carrying on as we are isn't an option:
We need to innovate our way out of this crisis

There are 5 main drivers of biodiversity loss

Climate Change

Land Use Change

Pollution

Exploitation of natural resources

Invasive Species

https://www.unep.org/news-and-stories/story/five-drivers-nature-crisis

A wide range of sectors contributes to these drivers of biodiversity loss

Change will be needed across these sectors to halt and reverse their impacts on biodiversity

Many of the solutions that will enable companies to reverse these impacts while remaining commercially viable do not exist yet

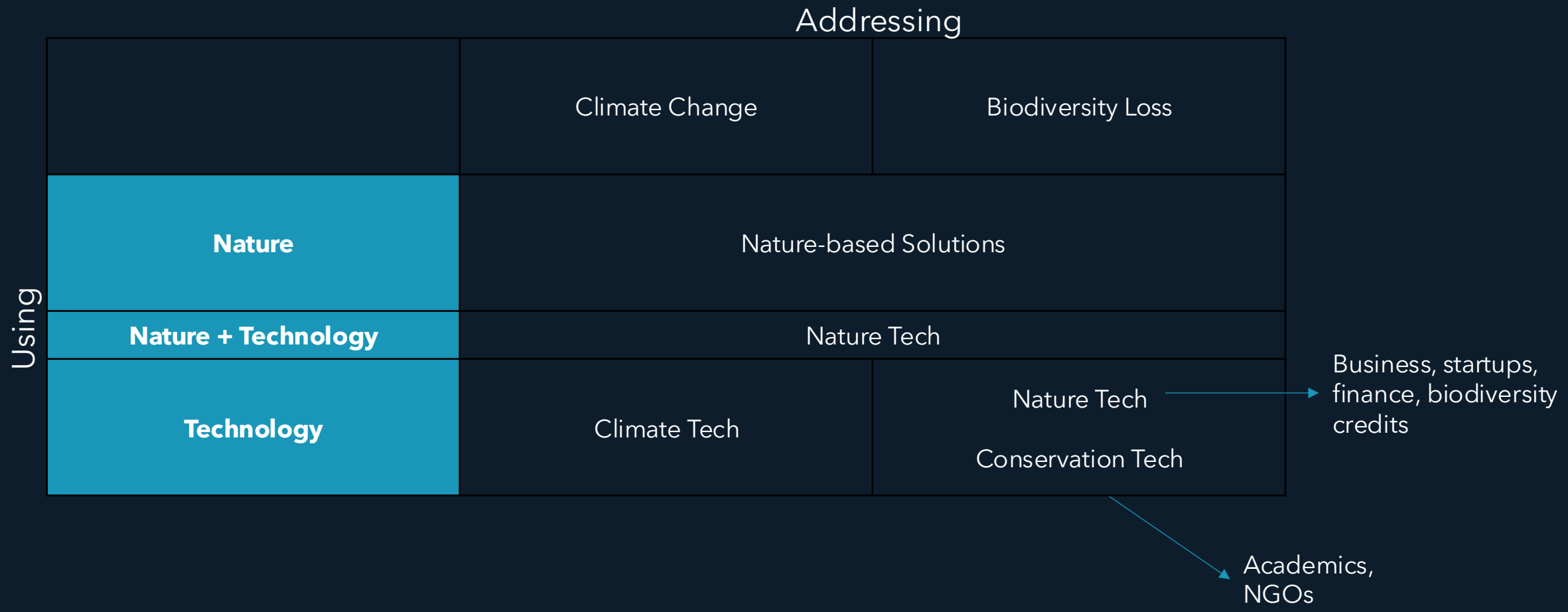
›› We need to invent them

	Industry groups ranked by biodiversity impact
1	Food, Beverages and Tobacco • Food Products • Beverages • Tobacco
2	Materials • Chemicals • Metals & Mining • Paper & Forestry Products • Containers & Packaging • Construction Materials
3	Energy • Oil, Gas & Consumable Fuels • Energy Equipment & Services
4	Consumer Staples Distribution & Retail
5	Utilities
6	Pharmaceuticals, Biotechnology & Life Sciences
7+	Others…

Source:
https://www.financeforbiodiversity.org/wp-content/uploads/Top10_biodiversity-impact_ranking.pdf

What's already happening?

Nature Tech is an emerging field with an evolving definition



Nature Tech is an emerging field with an evolving definition

Using \ Addressing	Climate Change	Biodiversity Loss
Nature	Afforestation, mangrove protection, wetland creation, natural flood management…	
Nature + Technology	AI to guide landscape restoration, data collection & processing to monitor results …	
Technology	DACCS, renewables, electrification…	Sustainable fishing, smart irrigation, supply chain traceability… Camera traps, tracking tags…

What's Next?

Nature Tech fits into three broad categories

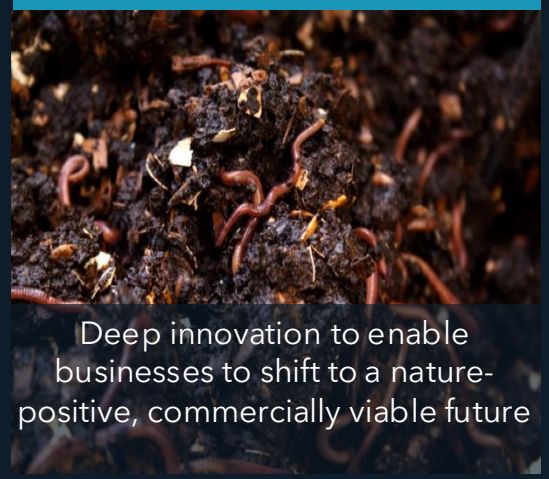
Direct intervention

Developing technology to directly protect or restore species or habitats

Measurement

Scalable monitoring solutions for biodiversity, ecosystem health and human impacts

Business transition



Deep innovation to enable businesses to shift to a nature-positive, commercially viable future

Nature Tech fits into three broad categories

Direct intervention

Developing technology to directly protect or restore species or habitats

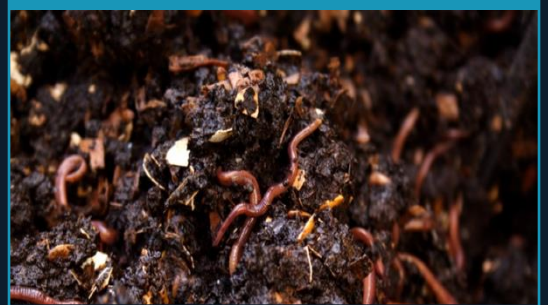
- Aerial seeding
- Coral restoration
- Law enforcement (e.g. illegal wildlife trafficking)
- Human-wildlife conflict prevention

Measurement

Scalable monitoring solutions for biodiversity, ecosystem health and human impacts

- eDNA
- Bioacoustics
- Cameras
- Earth observation
- Digital platforms

Business transition



Deep innovation to enable businesses to shift to a nature-positive, commercially viable future

- Alternative proteins
- Supply chain tracking
- Circular economy solutions
- Waste to value
- Precision agriculture
- Vertical farming

The balance of Nature Tech will shift

Direct intervention

Developing technology to directly protect or restore species or habitats

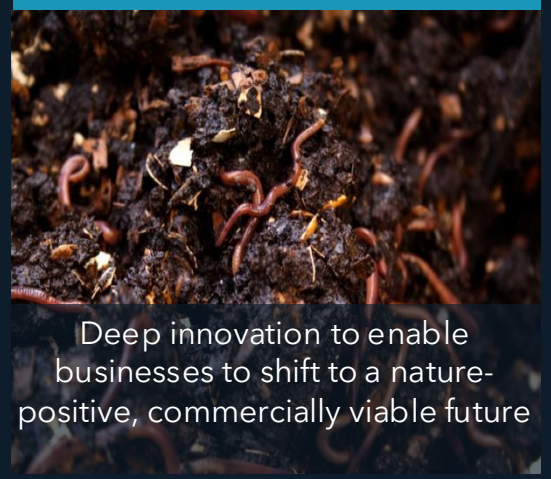
Remaining Niche

Measurement

Scalable monitoring solutions for biodiversity, ecosystem health and human impacts

At Scale & Consolidated

Business transition



Deep innovation to enable businesses to shift to a nature-positive, commercially viable future

Will accelerate

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Thank you for listening!

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Feel free to connect with me on LinkedIn:

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