



Institute
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of Actuaries

Biodiversity & Nature Related Risks Policy

Webinar

July 2023

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Agenda

- Background to BDNRR and their importance
- BDNRR relevance to actuaries and overview of the policy
- Overview of introductory guide, broader IFoA efforts/resource and future efforts



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What is 'nature'?

Nature	The natural world, with an emphasis on the diversity of living organisms (including people) and their interactions among themselves and with their environment.
Natural capital	The stock of renewable and non-renewable natural resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.
Biodiversity	The variability among living organisms from all sources, including diversity within species, between species and of ecosystems.
Ecosystem services	Provisioning services (e.g. food), Supporting services (e.g. flood defences), Regulating services (e.g. carbon sequestration) & Cultural services

Source: TNFD Beta Framework (v1.0 release)



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Why does nature matter?

- The degradation of nature is happening at an unprecedented rate.
- The drivers of degradation are broader than just climate change.
- Investors are exposed to companies who both depend on and impact nature.
- Risks can be large, material and unrecognised.
- Nature also presents a huge investment opportunity.



'We now have to shape [the finance sector's commitments to net zero] ...to include biodiversity and nature.'

Mark Carney, UN Special Envoy for Climate Action and Finance

'Biodiversity is now a financially material investment risk and is only set to grow further - making a compelling case for it to be on every investor's agenda.'

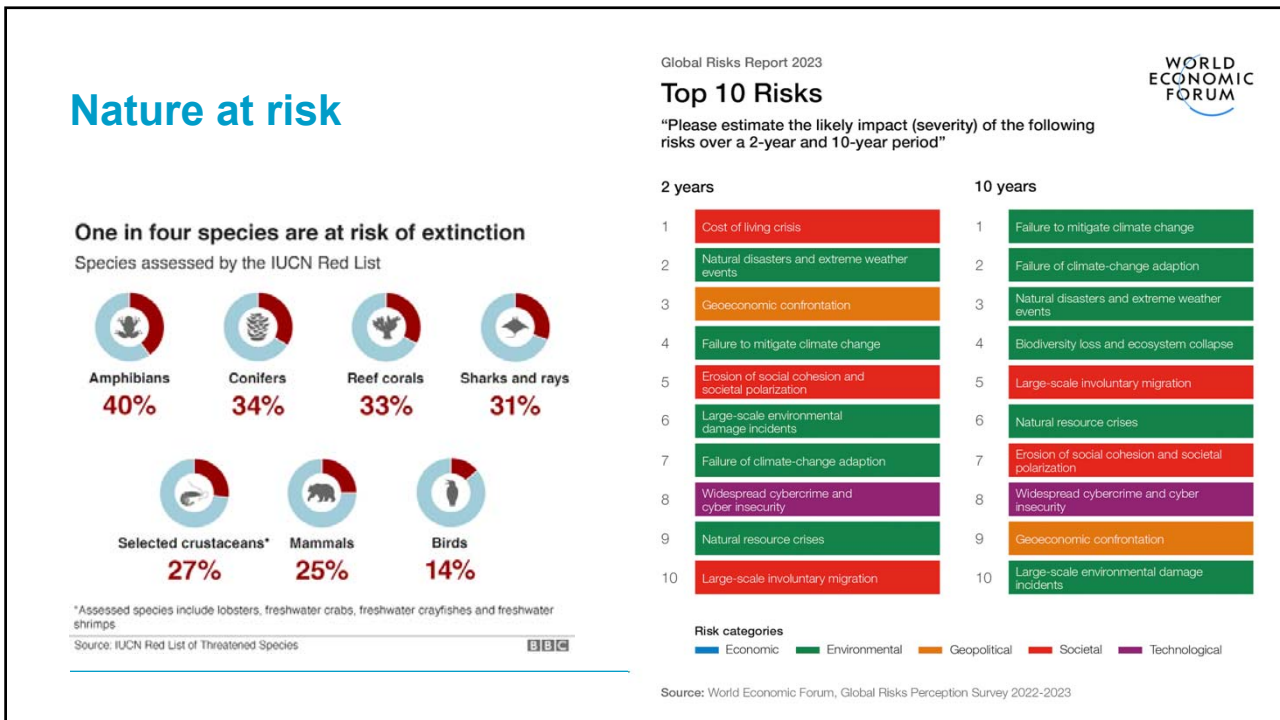
Faith Ward, Chief Responsible Investment Officer, Brunel Pension Partnership Limited

'Third-party impacts are a risk tomorrow but then the day after tomorrow is when they become a cost as they hit the bottom line.'


Pavan Sukhdev, WWF International

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But nature is missing

- Nature, natural capital and biodiversity is largely **absent from measurement**
- Where present valuation is **partial** (only considers 'use' value)
- **Valuation is complex** – timescales of impact, thresholds, non-linear changes, indirect impacts (e.g. food supply disruption)
- Each person/organisation may put a **different value** on nature



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Why Biodiversity & Nature Related risks matter to actuaries



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Regulators & Policymakers

- DNB "Indebted to Nature", June 2020
 - "Biodiversity is a driver of financial risks"
- NGFS "Statement on Nature-related financial risks", 2022
 - Professor Nick Robins, **"Biodiversity loss is potentially as economically and financially impactful as climate change... This report shows that these twin threats now need to be tackled in a joined-up way by central banks and supervisors..."**
- WEF, The Future Of Nature And Business, 2022
 - **There is no future for business as usual... we are reaching irreversible tipping points for nature and climate, and over half of the global GDP, \$44 trillion, is potentially threatened by nature loss."**
- Frank Elderson, ECB Executive Board, FT 8 June 23
 - **"Understanding the threats from biodiversity loss was critical for the economy and "not some kind of flower power" exercise. ...72 per cent of eurozone companies and three-quarters of bank loans in the region are exposed to loss of biodiversity."**

Kunming-Montreal 2022 Global Biodiversity Framework

- "Maintain & enhance"
- "Sustainable economic use"
- "Benefits shared fairly and equitably"
- "Adequate financial resources made available"

Three key targets (#14,15,19) for the financial sector

14. Integrating biodiversity into investment decision-making
 - into policy, strategy, governance, risk management, operations and targets
15. Disclosure of nature-related dependencies, impacts, risks and opportunities
 - to create a better understanding across portfolios of assets and economic value chains, and of the associated risks and opportunities
19. Investing in innovative financial solutions
 - closing the \$700 bn pa investment gap



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BDNRR impact all aspects of actuarial work

Actuarial Impact	Risk	Risk type
Life & Health liabilities	Impact on health and longevity of (a) Zoonotics: (i) changes in vector-borne geographies and (ii) emergent pathogens (b) AMR	Physical risk
Extreme weather (GI)	Risk and opportunity of Nature in mitigating impacts of extreme weather events	Physical risk
Economic impact	Risks & opportunities in assets, business lines, liabilities, macro-economic projections (a) Dependent sectors: disruption & opportunity (b) Impactful sectors: regulation and stranded asset risks (c) Macro-economic variables: inflation, GDP, interest rates	Physical, transition & liability risks
Asset Opportunities	Nature-Based Solutions – nature as an asset class and role of carbon/biodiversity credits	Physical & transition risks
Regulation and reputation risks	(a) Direct reporting, disclosure, and regulatory requirements on actuarial work (b) Economic impact on assets (c) Reputation risks and stakeholder expectations	Transition risk
Inter-sectoriality (Climate, Social)	Need to understand and integrate within climate assessments, to understand a just nature transition and the impacts on inequality and fairness.	Physical & transition risks
Opportunities for the Actuarial Profession	Including: (a) Projections on uncertainty with Biodiversity and disclosures in finance (b) Projections on uncertainty with Biodiversity and disclosures outside of finance (c) Public interest: including work on future impacts and fairness	Physical & transition risks

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Biodiversity & Nature Related Risk Policy

The IFoA recognises the significant social, economic, and financial risks posed by biodiversity loss. The potential impacts of biodiversity loss are global and systemic. The loss of biodiversity threatens the health of ecosystems that provide services to the economy, including animal pollination of food crops, natural water treatment and fertile soil and has significant implications for the population's health, longevity and the entire financial system. Furthermore, support for biodiversity and nature is critical to climate change's net-zero emissions ambitions through its carbon capture and sequestration.

The IFoA supports the aims of the UN Convention on Biological Diversity (CBD), which sets out to conserve global biological diversity, the sustainable use of its components and the fair and equitable sharing of its benefits. We support the aims of the 2022 Kunming-Montreal Global Biodiversity Framework (GBF) and seek to support our members in the achievement of its goals and targets.

The IFoA will:

- **Advocate for the development of effective policy frameworks** worldwide and methods for managing biodiversity risk including by understanding the unintended consequences of the concept of natural capital and different valuation metrics;
- **Use the actuarial skill set and influence to help equip the wider global financial services markets to fully incorporate biodiversity risk;**
- **Support actuaries in their understanding of biodiversity risk** through a set of think pieces, webinars, education resources and blogs;
- **Advocate for better disclosure** of consistent and robust information about biodiversity risk by corporates and other market participants;
- **Support collaborations** between its members and other organisations to help develop and align national and global financial systems with a just, sustainable economy that manages biodiversity risk and seeks to enhance the natural environment.

The IFoA is a signatory of the Sustainable Finance Education Charter, the UN's Principles for Responsible Investment, and the UN's Principles for Sustainable Insurance. We will continue to work with these and other organisations, such as the Taskforce for Nature Related Financial Disclosure (TNFD), to better align the finance system with an understanding of biodiversity risk.



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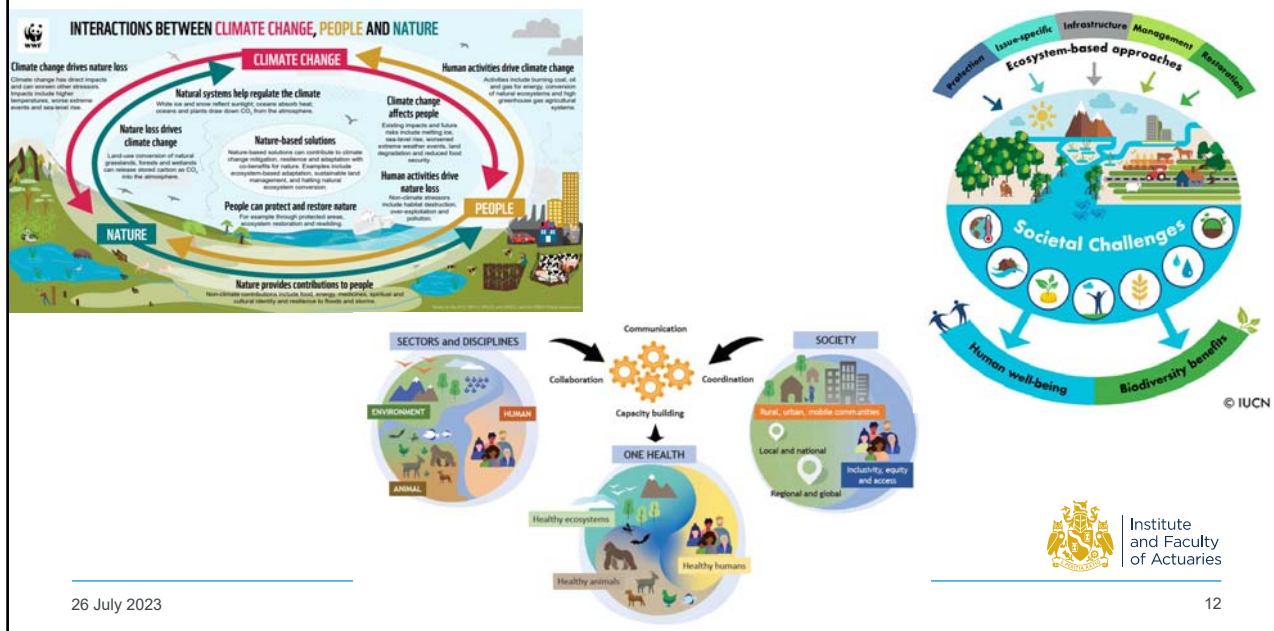
Biodiversity & Nature Related Risks Practical Guide

- Tailored to an actuarial audience but useful for anyone working in financial services
- Overview of the main scientific concepts
- Explores how economy & society depends and impacts on nature
- Implications for actuaries
 - Economics & systemic risks
 - Liability impacts (GI & Life/Health including Nature Based Solutions & One Health)
 - Investments & pensions
 - Reporting
 - Reputation
 - Regulatory



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Biodiversity & Nature related risks are systemic



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Opportunities for actuaries



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IFoA Biodiversity Resources

Resource	Link
Introductory guide for actuaries	https://actuaries.org.uk/about-us/practice-areas/sustainability/biodiversity-and-nature-related-risks-for-actuaries-an-introduction/
Sessional papers	Importance of biodiversity risks: https://actuaries.org.uk/about-us/practice-areas/sustainability/biodiversity-and-nature-related-risks-for-actuaries-an-introduction/ Biodiversity & zoonotic disease: https://www.actuaries.org.uk/system/files/field/document/The Importance of Biodiversity Risks Link to Zoonotic Diseases.pdf Introduction to valuation tools: https://www.actuaries.org.uk/system/files/field/document/Introduction to biodiversity valuation tools.pdf Natural capital an actuarial perspective: https://www.actuaries.org.uk/system/files/field/document/Biodiversity_NatCap_Sessional.pdf Biodiversity & Justice: https://www.actuaries.org.uk/system/files/field/document/Biodiversity_Justice_Sessional.pdf
SDG's podcast: biodiversity	https://audioboom.com/posts/7743976-2-biodiversity
Series of blogs	Nature-related risks and opportunities: commonly used terms and definitions Comparing nature-related and climate-related risks Assessing nature-related risks Understanding nature-related physical risks Transition risks arising from nature-related risks Impacts of biodiversity loss Part 1: Economic impacts Impacts of biodiversity loss Part 2: Sovereign credit ratings Impacts of biodiversity loss Part 3: Biodiversity disclosures Reversing the trend: Managing biodiversity loss in the UK Biodiversity and the role of actuaries
IFoA responses to consultations	Consultation Response - FCA consultation on Sustainability Disclosure Requirements (SDR) and Investment labels Discussion Paper 7 January 2022 Consultation Response - Environmental Audit Committee inquiry into Aligning the UK's Economic Goals with Environmental Sustainability, 7 January 2022 IFoA response to the EAC's inquiry into biodiversity and ecosystems, 15 April 2021

Ongoing updates can be found by joining IFoA Sustainability Board Community [Weekly Newsletter](#), articles in [The Actuary](#) and IFoA Members can join the [Sustainability IFoA Community](#). Those looking at their CPD needs can use the [CPD Reflective Practice Discussion \(RPD\) Toolkit on Climate change and sustainability](#) as a helpful guide.

For IFoA members, there are also many webinar and event resources within the [Virtual Learning Environment \(VLE\)](#). Log in and search for Sustainability or Biodiversity for webinars and thought leadership events.



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Actuary Magazine Articles

Article	Overview
Nurturing nature with biodiversity scenarios , July 2023	While most businesses scenario-test for climate change, hardly any do for biodiversity. This needs addressing, argue Aled Jones and Ian Trim.
Blended finance explained , July 2023	What opportunities do developing nations have to secure the funds they need to tackle climate change? Blended finance is one way, say Neha Bhatia and Ranjan Pant.
Actuaries' role in the game of 'Earth Jenga' , April 2023	Like a game of Jenga, we keep whittling away at the building blocks of the Earth to make new things to precariously pile on top. But actuaries can help anchor the wobble, says Sandy Trust
Natural capital investing , February 2023	Chris Howells and Andrew Dreaneen discuss how today's investments in natural capital can profit portfolios as well as the planet and humanity
Interview: chemist and climate expert Sir David King on how actuaries can save the Arctic , February 2023	Actuaries can save the Arctic, according to esteemed chemist and climate-change expert Sir David King. He tells Alex Martin that risk management is as relevant to preserving the planet as groundbreaking science
Can we embrace a circular economy? , February 2023	With our pull on the planet's resources, are we bold enough to embrace a circular economy? The potential benefits are not just material, argues Travis Elsum
A steep decline - actuaries must get to grips with the biodiversity crisis , November 2022	Alex Martin and Ryan Allison discuss the upcoming UN Biodiversity Conference – and why biodiversity is an aspect of the sustainability crisis that actuaries must not ignore
Interview: Professor Paul Dalziel on changing the focus of economies from growth to wellbeing , November 2022	Paul Dalziel talks to Alex Martin about the true purpose of economics and the lessons we can draw from the 2019 New Zealand wellbeing budget
Interview: Catherine Howarth on shaping responsible investing , September 2022	Catherine Howarth talks to Travis Elsum about shaping responsible investing, and the changes needed to accelerate the transition to a sustainable and ethical economy
A tale of three capitals: preserving natural capital , September 2022	Ian Trim explores The Dasgupta Review's findings on the importance of preserving natural capital, and the role actuaries can play in achieving this
Show your working: new standards from the ISSB , September 2022	Wendy Walford outlines the need for consistent and comparable sustainability disclosures, and discusses why two new standards from the International Sustainability Standards Board are a step in the right direction
A fairer measure: does GDP fail to measure up? , August 2022	GDP is increasingly being seen as too crude a tool, failing to reflect factors such as well-being and sustainability. Nick Spencer and Aled Jones consider some alternatives, and the implications for actuaries.
Nature and society: examining the scope of the Taskforce on Nature-related Financial Disclosures , August 2022	Monica Filkova discusses the scope and activity of the Taskforce on Nature-related Financial Disclosures
Climate change guidance published for actuaries , June 2022 (news)	The Joint Forum on Actuarial Regulation (JFAR) has published an extensive report on the science of climate change and how actuaries can help mitigate risks.
Reversing the decline: understanding nature-related risks , June 2022	Oliver Schelske places nature-related risks within an actuarial context, and explains why it is so important for insurers to understand such risks
Fabiola Schneider: Keeping up appearances , May 2022	Fabiola Schneider talks to Travis Elsum about detecting and addressing corporate greenwashing, the new EU Taxonomy, and investors' role in the journey to a low-carbon economy
A sustainable solution: is sustainability-linked lending the answer? , May 2022	Wojciech Herchel, Sam Taylor, Clarence Er and David Devlin consider whether sustainability-linked lending is the answer to changing corporate behaviour

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Actuary Magazine Articles

Article	Overview
Better than cure , April 2022	Actuaries are well placed to help humanity prevent many of the gravest risks it faces, argues Sanjay Joshi
Biodiversity loss to become 'material risk' for global businesses by 2024 , March 2022 (news)	Businesses may soon struggle to access financial services as requirements to protect biodiversity raise significant liability and litigation risks over the next two years, Clyde & Co has warned.
Natural Justice: issues of fairness posed by the environmental crisis , March 2022	Aled Jones sets out the issues of fairness posed by the environmental crisis, and why actuaries are well placed to help in this area
Jørgen Randers: An end to growth? , December 2021	Professor Jørgen Randers talks to Chris Seekings almost 50 years after the publication of The Limits to Growth, and outlines what we can expect for the world during the next half-century
Caught on camera: how data can help preserve biodiversity , November 2021	Olga Mierzwa-Sulima, Robin Whytock and Jędrzej Świeżewski share their experience of building a machine-learning algorithm that helps track biodiversity in Gabon's tropical forests
The butterfly defect: Global connectivity makes us vulnerable to collapse , November 2021	Aled Jones discusses how the environmental pressures of a complex global economy increase the risk of collapse, and which parts of the world are best placed to survive such an event
Unhealthy planet, unhealthy people , October 2021	Richard Purcell and Anna Spender present a selection of experts' opinions on how climate change could affect health, care and protection, drawn from a recent IFOA Health and Care webinar
Fall of the wild? , October 2021	Gillian Rutherford-Liske and Samantha Dunn explain the role general insurers can play in tackling extreme weather and ecosystem loss
Taking responsibility on ESG investment and risk management , October 2021	Rui Wang provides a primer for how general insurance firms should approach ESG investment and risk management
James Dyke: Almost out of time , September 2021	James Dyke talks to Travis Elsum about the hidden pitfalls of net-zero policies and the need for more academic activism
Hand in glove: aligning SDGs and the Paris Agreement , September 2021	Lucy Saye, Melissa Leitner, Shyam Charial and Thrinayani Ramakrishnan discuss how the UN Sustainable Development Goals and Paris Agreement are aligned in their aim to balance climate action and poverty eradication
The human error in biodiversity loss and the rise of zoonotic diseases , August 2021	Georgina Bedenham, Amy Shields and Andrew Kirk present the findings from their recent IFOA Biodiversity Working Party paper on the link between biodiversity and zoonotic diseases
Taskforce on Nature-related Financial Disclosures launched , June 2021 (news)	A new market-led initiative has today been launched to support financial institutions and corporates in assessing and managing emerging nature-related risks and opportunities.
Interview with Cassandra Coburn: Age Concern , May 2021	Cassandra Coburn talks to Travis Elsum about healthy longevity, diet and sustainability, and how they are connected
Act natural: how the economy and biodiversity loss can impact actuarial work , May 2021	Aled Jones and Lucy Saye discuss the link between the economy and the environment, and how biodiversity destruction and loss could impact on the work of actuaries
Preserving ecology to prevent pandemic risk , April 2021	Gordon Woo considers the effects of ecological change on pandemic risk, and when it is likely we will face an even worse pandemic than COVID-19
Vanishing wilderness , March 2021	Travis Elsum assesses the financial consequences of biodiversity loss.
New economic framework needed to protect nature, review finds , February 2021 (news)	The world must rethink how it measures economic success to ensure that humanity's demands on nature can meet supply, an independent review on global biodiversity has concluded today.
Nature-based solutions in tackling climate change , September 2020	John Carstensen discusses the role of nature-based solutions in tackling climate change.

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