

Business briefing:

Using life cycle assessment as part of robust biodiversity strategy design

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Why use Life Cycle Assessment?

As businesses start on their nature positive journey, a range of tools and approaches are emerging to help assess risks and impacts on biodiversity. Sustainability frameworks like the Corporate Sustainability Reporting Directive (CSRD), Science Based Targets Network (SBTN) and the Taskforce on Nature-related Financial Disclosures (TNFD) ask companies to take a whole lifecycle approach to understanding impacts (1,2). This recognises that considerable biodiversity impacts can occur beyond direct business operations, including within investments and upstream and downstream supply chains.

A holistic approach is needed to account for the substantial biodiversity impacts that business activity can have across entire life cycles (from raw material inputs and processing to use and end-of-life impacts). However, such an holistic view requires a huge amount of information on company activities, the impacts of all those activities all the way from production, through manufacturing and transportation, to sale and end-of-life. Understanding biodiversity impacts also requires an appreciation of how these life cycle stages produce all the pressures that drive biodiversity loss – including pollution, climate change, habitat loss, invasive species and overexploitation (3). Even for one simple commodity this may be a challenging task, let alone the entirety of a complex organisation with an array of purchases, activities, sites and investments.

One leading approach increasingly recommended for assessing organisational impacts on biodiversity is Life Cycle Assessment (LCA). LCA-based tools are very powerful for helping organisations map and quantify their environmental impacts. LCA allows for a methodical analysis of the entire value chain (from raw material sourcing to product end-of-life), revealing both direct and indirect impacts on biodiversity, which can be measured and compared across environmental pressures, commodities, and business activities. Businesses may be more familiar with LCA used for other environmental and social topics – for example, it is commonly used to help with carbon footprinting assessments – but it is increasingly being used for assessments of biodiversity impacts.

The substantial impacts embedded within organisational value chains:

- An assessment of the impacts of the University of Oxford's activities revealed the majority of impacts occurred within the upstream supply chains associated with its research outputs (4).
- An LCA of the Finnish Company S Group identified supply chain impacts were responsible for over 90% of the overall impact of the company (5).
- Kering's Profit and Loss assessment identified the majority of environmental impacts occurred within their upstream supply chains associated with agricultural production (6).
- An assessment of the dairy sector in the Netherlands revealed substantial biodiversity impacts embedded within the upstream supply chains for cattle feed (7).
- An assessment of the value chain impacts of a large mining company, using LCA-based approaches, identified that the majority of impacts occurred in downstream value chains due to the conversion of the mined products into steel and aluminium (8).





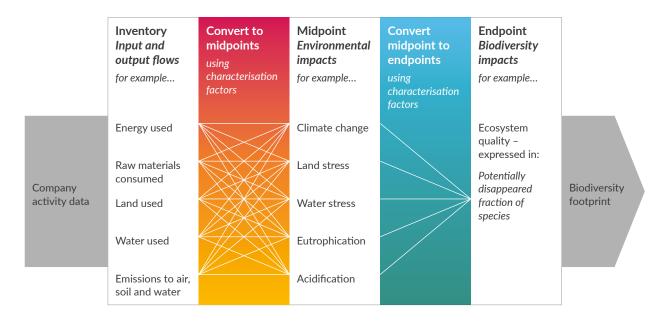
By providing an understanding of the entire suite of business impacts on nature, **LCA serves** as a powerful tool for a range of business uses (9). Combining with other assessments and sources of evidence, LCA's quantitative foundation can be used to support:

- Understanding of biodiversity impacts at the corporate level across business activities, or at the level of individual commodities, products or services.
- Alignment with key frameworks such as SBTN (Step 1b), TNFD, and CSRD (Evaluate of LEAP approach), enabling organisations to meet evolving disclosure requirements and stakeholder expectations.
- Mapping of supply chain impacts and vulnerabilities related to biodiversity loss and environmental pressures.
- Assessments of materiality by highlighting the most significant environmental impacts.
- Assessments of trade-offs between different environmental pressures (e.g., between land use and climate change).
- Scenario analysis by modelling how different business decisions might affect environmental impacts.
- Building in biodiversity assessments into existing approaches for assessing climatechange impacts across value chains, and identifying synergies and trade-offs between the actions taken as part of biodiversity and climate strategies.

How does Life Cycle Assessment work?

When using Life Cycle Assessment to calculate biodiversity impacts, the first step is to gather data on **company activities**, such as volumes of materials sourced, energy and water used and, if available, emissions to air, water and soil. All the information on the company activities is used as inputs into LCA models that calculate so-called 'midpoint environmental impacts', which broadly correspond to the **different pressures to biodiversity** caused by those activities. For example, this could be the amount of greenhouse gases, land use change or nitrogen emissions caused by the activity. Methods usually use LCA inventory databases with thousands of datapoints to approximate emissions, energy use and resource use of value chains and company activities.

These estimates of pressures are then converted into 'endpoint indicators' that look at the consequences of these pressures for a range of outcomes including human health, natural resources and ecosystem quality. In LCA, the output of most relevance for biodiversity strategies is estimates of damage to ecosystems, usually expressed as *potentially disappeared fraction of species* (PDF). For example, greenhouse gases cause climate change, while nitrogen pollution causes eutrophication, which in turn both cause increased pressure on species. Commonly used biodiversity impact assessment methods frameworks include ReCiPe 2016 (10), LC-IMPACT (11) and IMPACT World+ (12), all of which use variations of this biodiversity metric.



PDF is an estimate of the local or regional loss in species richness as a result of a company's activities – a proxy for localised biodiversity impacts within a certain timeframe (13). In some models, results are presented as species.year – where the PDF estimates are multiplied by an estimate of global species density or vulnerability to estimate how company activities may result in species extinctions at a global scale (10,14). These estimates are based on underlying models that link increases in different pressures to biodiversity with changes in species composition. Other biodiversity metrics, such as Mean Species Abundance, are also being integrated into LCA-based approaches (13). Whatever metric is used, LCA methods estimate the pressures on biodiversity caused by different company activities across different life cycle stages and combine them into an overall estimate of value-chain driven biodiversity impacts.

Making sense of LCA: The biodiversity impacts of a chocolate cake

To provide an example of how LCA works in practice, imagine biting into a delicious chocolate cake. What lies beneath those layers of sweetness in terms of environmental impact? A typical chocolate cake contains ingredients sourced from across the globe – e.g., cocoa from Africa or Latin America, sugar from Europe, wheat from the USA, and eggs from local farms. The LCA model first estimates the different life cycle inputs and outputs for each ingredient, converts these into midpoints (or estimates of biodiversity pressures), and then combines these into an overall estimate of changes in the composition of species communities as a result of the life cycle of those different ingredients.



When applying LCA methods to this seemingly simple product, we discovered that among all these ingredients, chocolate is the key driver of biodiversity impacts, primarily through land use change and climate change pressures in cocoa-growing regions. This insight helps focus action where it matters most – suggesting that efforts to reduce the overall levels of biodiversity impacts of the cake should prioritise sustainable chocolate sourcing. For example this may be through gaining greater transparency in upstream sourcing locations and assessing the potential of opportunities for investment in landscape conservation and sustainable sourcing. In this way, organisations can cut through complexity to identify and prioritise efforts to address their most significant impacts on biodiversity.

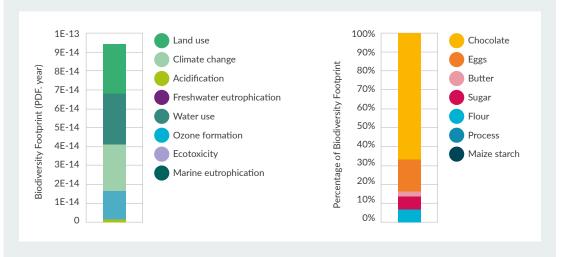


Figure modified from Bromwich et al, 2025 (9).

The broad scope of LCA means we make big assumptions in analysis

Despite the power of LCA tools and their widespread use, there are inevitably a lot of uncertainties involved, that come with any complex analysis, particularly when methods are still being developed and data are lacking. There are therefore risks that, if the limitations of LCAs are not understood (e.g., <u>15,16</u>). their results can be difficult to interpret. If used inappropriately, and if their limitations are not recognised and accounted for, LCAs could even represent material, reputational or physical risks to businesses (<u>9</u>). Expertise is needed to navigate this complexity, appropriately use and interpret LCA results, so that they can guide robust and effective action for biodiversity.

When you delve into the methods and the databases underpinning LCAs, it becomes apparent there are substantial uncertainties within the biodiversity footprint estimates provided by LCAs, which are rarely fully understood or communicated in results (9). These uncertainties include those inherent in the model structure (e.g., what components of biodiversity are included, what pressures on biodiversity are being modelled) and uncertainty in the data underlying the models (e.g., uncertainties in parameters used in the models to convert different pressures to biodiversity impacts and in the calculation of metrics of biodiversity impacts). There are also uncertainties caused by different choices made by the LCA practitioner (e.g. deciding what LCA model to use, how to match company data to LCA inventories), and uncertainties associated with communicating the biodiversity metrics (results are often presented as potentially disappeared fraction of species, which is challenging to interpret). We provide some examples in the figure below.



What pressures to biodiversity are being modelled?

LCA methods model the impact of different biodiversity pressures to estimate biodiversity footprints. Most models focus on land use change, pollution and climate, but miss key pressures including overexploitation and invasive species.



What method should we use?

The choice of model and approach used can have a big impact on the results of the analysis. For example, should a researcher choose to use LCImpact or ReCiPe – two commonly used approaches for biodiversity footprinting.



What are the gaps in the underlying datasets?

LCA models draw upon impressive datasets where researchers have measured how changes in biodiversity pressures to state. But this is not a globally comprehensive dataset – there are some pressures, regions, and species groups which will be poorly represented in the underlying data.



What does the biodiversity footprint estimate mean?

Results expressed in units such as PDF can be difficult to interpret and explain, raising uncertainty into how these results should be used to guide biodiversity strategy design.

There are thus risks associated with the use of LCAs, which could lead to poorly prioritised or inappropriate action to address biodiversity impacts. Below, we provide suggestions for better understanding, reducing and navigating these uncertainties to support robust decision making in addressing biodiversity impacts.

Making sense of LCA results: Uncertainty in chocolate cake impact estimates

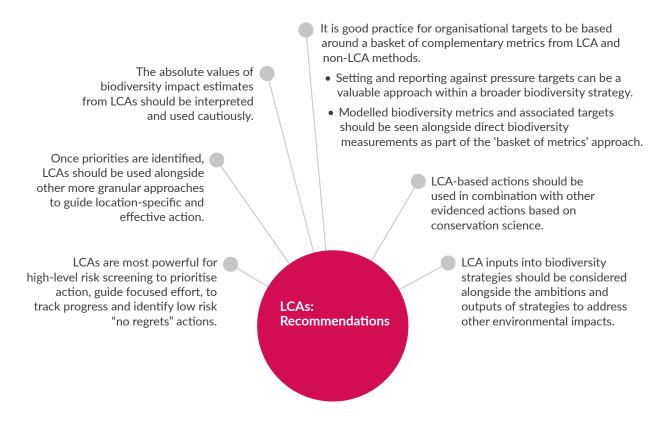
Whilst it is challenging to get to the bottom of all uncertainties in LCAs, we can investigate some of them with some simple tests. Take the example of the chocolate cake we gave earlier. In the graphs below we have changed the Life Cycle Impact Assessment (LCIA) framework so as to use either ReCiPe (left hand plots) or LC-IMPACT (right hand plots on the left versus plots on the right). We have also used several different LCA inventories (databases; shown by different bars along the x-axis in each plot). You'll see that changing the datasets and models used here makes quite a big difference to the estimates of the total magnitude of impacts, as well as to the proportions of impact attributed to different pressures (top two plots) and ingredients (lower two plots)!



Understanding the risks posed when there are high levels of uncertainty is vital for **ensuring** decisions are robust to these uncertainties, and therefore critical for designing effective biodiversity strategies.

Opportunities for better use of LCA-based approaches in biodiversity strategy design

Importantly, the large assumptions made in LCAs should not justify inaction, and they provide incredibly useful outputs for guiding corporate action to address biodiversity impacts. Indeed, we do not need perfect data to take effective action to address biodiversity loss, and failing to address biodiversity impacts carries large business and ecological costs in itself.

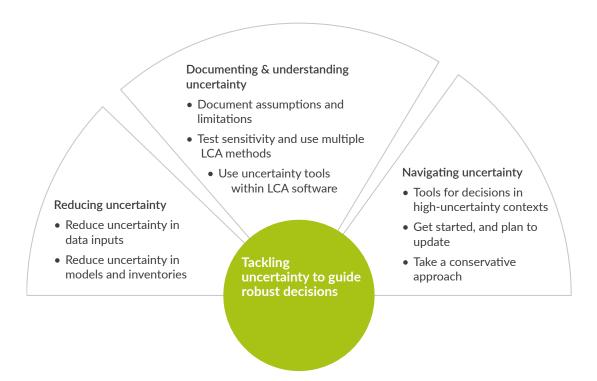


When used appropriately, LCA-based methods can be important components of organisational biodiversity strategy design, guiding effective and robust action. We provide the following recommendations for using LCAs, to make the most of these powerful tools:

- LCAs are most powerful for high-level risk screening to prioritise action and highlight
 areas where focused effort and more granular data are needed, to track progress
 towards abating impacts year-on-year and identify low risk "no regrets" actions.
- Once the highest impact areas are identified, LCAs should be used alongside other more specific approaches and methods to gain robust estimates of biodiversity impact, and to guide location-specific and effective action to protect and restore biodiversity. This might include detailed assessments of different sourcing locations, field-based data collection and experimental approaches to designing and evaluating targeted actions to reduce biodiversity impacts.

- The absolute values of biodiversity impact estimates from LCAs should be interpreted
 and used cautiously. Whilst useful for communicating a high-level impact profile and
 tracking change over time (using the same methods), the simple numerical values mask
 substantial uncertainties and are often not linked to pressures on specific taxa, habitats or
 locations making them poorly suited for setting and reporting against goals and targets.
- Until uncertainties can be reduced, it is good practice for organisational targets to be based around a basket of complementary metrics from LCA and non-LCA methods including metrics that measure company actions, pressures on biodiversity, and primary data on the state of biodiversity (7).
- Setting and reporting against pressure targets such as LCA midpoints like land use, eutrophication, and climate change can be a valuable approach within a broader biodiversity strategy. These targets are generally more robust than biodiversity impact estimates, as they involve fewer intermediate modelling steps and approximations. Pressure targets also offer a more responsive way to measure the impact of company actions and still contribute to reducing overall biodiversity impacts. However, it is important to keep in mind that the scale of biodiversity impacts associated with different pressures, once translated into endpoints, can vary significantly. This is because different pressures elicit different responses within ecosystems. This means that only monitoring and acting on midpoint pressure targets will not guarantee that actions to mitigate biodiversity impacts are appropriately targeted or effective this requires ground-truthing with real-world data and monitoring over time.
- Modelled biodiversity metrics (such as PDF) and associated targets should be seen
 alongside direct biodiversity measurements as part of the 'basket of metrics' approach.
 Where targets are set that relate to the state of biodiversity (e.g. an improvement in
 biodiversity as a result of company actions), these should wherever possible be based on
 direct biodiversity measurement, rather than inferred from LCA.
- LCA-based actions should be used in combination with other evidenced actions based
 on conservation science. The time and resources invested in LCA and data analysis
 should be proportionate to different decision contexts, and not detract from low-risk
 mitigation actions. Many mitigation actions can are well evidenced and have low risks
 of unintended biodiversity impacts. For example, seeking to avoid and reduce different
 pressures (e.g. eliminating deforestation in supply chains), reducing consumption of
 non-business critical activities, improving resource efficiency, or investing in evidenced
 proactive conservation actions.
- Biodiversity strategies should be considered alongside the ambitions and outputs of strategies to address other environmental impacts within an overarching sustainability strategy. LCA considers several environmental drivers which may be addressed by other sustainability targets (climate change and water consumption, for example). The results of LCA analyses related to biodiversity should therefore be looked at in concert with the results of analyses for these other impacts, in order to assess the potential for tradeoffs and synergies between elements of a company's overall sustainability strategy, and ensure the strategy is coherent (17).

Navigating uncertainties to support robust decision-making



When using LCAs it is also important to appreciate their inherent uncertainties and assumptions, and take actions to document, understand, reduce and navigate these uncertainties. Some uncertainties cannot be eliminated, and instead need to be acknowledged, and lived with. The following steps can be taken to navigate these uncertainties and limitations:

Reducing uncertainty

- Reduce uncertainty in data inputs Businesses can work to improve the quality and transparency of data on their activities and sourcing, which will reduce uncertainty in their LCA footprints. This includes engaging with their suppliers and relevant stakeholders to improve their sourcing information.
- Reduce uncertainty in models and inventories Researchers are working to improve LCA
 models and inventories, which will reduce uncertainties in outputs. For example, including
 new threats to biodiversity in LCA models, developing new metrics that capture different
 components of biodiversity.

Documenting & understanding uncertainty

- Document assumptions and limitations When using LCAs, it is important to document
 choices and assumptions made, to allow others to better interpret the results and reduce
 uncertainties in communication. Transparent documentation is important for external
 accountability, but also for internal purposes to allow full understanding of analyses
 and to enable them to be updated and compared in future as models continue to be
 advanced.
- Test sensitivity / Use multiple LCA methods Using multiple LCA methods, and testing
 the sensitivity of the results to different methods, is key to triangulating methods
 and identifying those high impact activities or pressures that are robust to these
 methodological changes.
- Use uncertainty tools within LCA software Some LCA software now enable users to explore some of these uncertainties and assess how results change under different assumptions. These should be used wherever possible.

Navigating uncertainty

- Tools for decisions in high-uncertainty contexts Tools are available to help make decisions when uncertainties are high and unclear. These include tools such as info-gap theory, which help a user think through "how wrong would this estimate have to be for me to change my decision?".
- **Get started**, **and plan to update** Uncertainty shouldn't be used as an excuse for inaction. Getting started now, with a clear plan to update methods for biodiversity impact estimation in future as the methods and tools develop, should be a clear part of any biodiversity strategy.
- Take a conservative approach Where uncertainties are high, taking a precautionary approach to impact calculations leaning towards overestimating rather than underestimating impacts can sometimes help reduce business risks associated with their use (although see the full manuscript for further considerations (9)).

For further detail on any of these recommendations, please see the full paper: <u>Navigating</u> uncertainty in life cycle assessment-based approaches to biodiversity footprinting.

Conclusion 14

Life Cycle Assessment is a powerful approach for assessing organisational biodiversity footprints. It can help understand an organisation's impacts across the complexity of organisational activities, at different stages of the value chain, and across a range of biodiversity pressures – lending it to a range of important business applications in biodiversity strategy design.

Whilst there are large uncertainties that result from embracing this complexity, these uncertainties should not be used as an excuse for inaction. Inaction in addressing biodiversity loss, predicated on this uncertainty, arguably has greater business risks. There are now many tools and methods available that can provide organisations with valuable information on their impacts, in order to guide effective corporate action to address biodiversity loss.

Here we have highlighted opportunities and recommendations on how best to use LCA-based biodiversity footprinting tools as part of the design and monitoring of biodiversity strategies. We have given advice on how ,to navigate the inevitable uncertainties and limitations of these tools. Used appropriately, LCA-based approaches can help track and disclose impacts on nature, prioritise areas and impact pathways for further investigation, and be used as part of a 'basket of metrics' approach for developing biodiversity-relevant targets and guiding action aligned with nature-positive goals.

About us 15



Leverhulme Centre for Nature Recovery, University of Oxford

The Leverhulme Centre for Nature Recovery acts as a hub for innovative thinking, discussion and analysis of nature recovery nationally and worldwide, it unites leading researchers from a wide range of disciplines across the University, its interdisciplinary approach bringing together expertise from the departments of geography, ecology, social science, finance, economics, psychiatry, anthropology, artificial intelligence, statistics and earth observation, to collaborate on a range of projects, in conjunction with national and international partners.



The Biodiversity Consultancy

The Biodiversity Consultancy exists to bridge the worlds of business and biodiversity. Our work aims to accelerate organisations' journeys towards nature positive futures. The Biodiversity Consultancy was born of a very clear premise: in the future, all businesses will need to think, operate and act with respect to nature and biodiversity. For more information visit www.thebiodiversityconsultancy.com.



ICCS, University of Oxford

We are an academic research group based in the <u>Department of Biology</u>, <u>University of Oxford</u>. Our work addresses the challenges that humanity faces in halting the decline of global biodiversity. We work at the interface of social and ecological systems, using a range of methodologies and interdisciplinary approaches to address key issues in current conservation. Our underlying philosophy is that in order to make progress we need to consider the incentives, pressures and challenges faced by individual decision-makers, and to bring together multidisciplinary teams who are best placed to address these issues.



School of Resource Wisdom, University of Jyväskylä

The <u>School of Resource Wisdom</u> (JYU.Wisdom) is an open, scientific community actively promoting planetary well-being in society. Our activities include progressive research, education development, impactful societal interaction, and support for the sustainability work of the University of Jyväskylä. The <u>Biodiversity Footprint Team</u> is a research group in the community focusing on research around biodiversity footprint assessment of organisations.

References 16

- 1 TNFD, 2023. <u>Guidance on the identification and assessment of nature-related issues: The LEAP approach</u>. Version 1.0.
- 2 SBTN, 2023. SBTN Technical Guidance Step 1 and 2.
- 3 IPBES, 2019 (cited 2021). Summary for policymakers of the global assessment report on biodiversity and ecosystem services. Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, IPBES.
- 4 Bull, J.W., Taylor, I., Biggs, E., Grub, H.M.J., Yearley, T., Waters, H., et al. 2022. <u>Analysis: the biodiversity</u> <u>footprint of the University of Oxford</u>. Nature, 604(7906): 420-4.
- 5 Peura, M., El Geneidy, S., Pokkinen, K., Vainio, V., and Kotiaho, J.S. 2023. Väliraportti: S-ryhmän luontojalanjälki. JYU Reports. May 9: 1–45.
- Kering, 2018. 2018 Group environmental profit & loss results.
 Paris, France: Kering.
- 7 Bull, J.W., Taylor, I., De Valença, A., IJspeert, R., Van Erve, B., Modernel, P., et al. 2025. <u>Towards positive net outcomes</u> <u>for biodiversity, and developing</u> <u>safeguards to accompany headline</u> <u>biodiversity indicators</u>. NPJ Biodiversity, 4(1): 31. doi: <u>10.1038/s44185-025-</u> 00095-5
- 8 Lammerant, J., Driesen, K.,
 Vanderheyden, G., Starkey, M.,
 De Horde, A., Bor, A.M., et al.
 2021. <u>Assessment of biodiversity</u>
 measurement approaches for businesses
 and financial institutions, Update Report
 3. Brussels, Belgium: EU Business and
 Biodiversity Platform.

- 9 Bromwich, T., White, T.B., Bouchez, A., Hawkins, I., Zu Ermgassen, S., Bull, J., et al. 2025. <u>Navigating uncertainty in life</u> <u>cycle assessment-based approaches</u> <u>to biodiversity footprinting</u>. *Methods* in Ecology and Evolution, 2041-210X.70001. doi: 10.1111/2041-210X.70001
- 10 Huijbregts, M.A.J., Steinmann, Z.J.N., Elshout, P.M.F., Stam, G., Verones, F., Vieira, M., et al. 2017. ReCiPe2016: a harmonised life cycle impact assessment method at midpoint and endpoint level. International Journal of Life Cycle Assessment, 22(2): 138–47. doi: 10.1007/s11367-016-1246-y
- 11 Verones, F., Hellweg, S., Antón,. A, Azevedo, L.B., Chaudhary, A., Cosme, N., et al. 2020. <u>LC-IMPACT: A regionalized life</u> <u>cycle damage assessment method</u>. *Journal* of Industrial Ecology, 24(6): 1201–19. doi: 10.1111/jiec.13018
- 12 Bulle, C., Margni, M., Patouillard, L., Boulay, A.M., Bourgault, G., De Bruille, V., et al. 2019. IMPACT World+: a globally regionalized life cycle impact assessment method. International Journal of Life Cycle Assessment, 24(9): 1653–74. doi: 10.1007/s11367-019-01583-0?
- 13 Damiani, M., Sinkko, T., Caldeira, C., Tosches, D., Robuchon, M., Sala, S. 2023.

 Critical review of methods and models for biodiversity impact assessment and their applicability in the LCA context.

 Environmental Impact Assessment Review, 101: 107134. doi: 10.1016/j. eiar.2023.107134

- 14 Verones, F., Kuipers, K., Núñez, M., Rosa, F., Scherer, L., Marques, A., et al. 2022. Global extinction probabilities of terrestrial, freshwater, and marine species groups for use in Life Cycle <u>Assessment</u>. Ecological Indicators, 142: 109204. doi: 10.1016/j. ecolind.2022.109204
- 15 Huijbregts, M.A.J. 1998. Application of uncertainty and variability in LCA. International Journal of Life Cycle Assessment, 3(5): 273. doi: 10.1007/BF02979835
- 16 Scrucca, F., Baldassarri, C., Baldinelli, G., Bonamente, E., Rinaldi, S., Rotili, A., et al. 2020. <u>Uncertainty in LCA: An estimation of practitioner-related effects</u>. *Journal of Cleaner Production*, 268: 122304. doi: 10.1016/j.jclepro.2020.122304
- 17 Maddinson, C., Bromwich, T., White, T., Cox, C., and Bull, J. 2025. <u>Assessing the implications of a 'Net Zero' strategy for biodiversity</u> (preprint). doi: 10.21203/rs.3.rs-5393552/v1

Leverhulme Centre for **Nature Recovery**



About LCNR

The ongoing loss and degradation of nature is one of the greatest challenges of our time. To halt and reverse this global biodiversity decline, the Leverhulme Centre for Nature Recovery was created as a hub for innovative research on nature recovery nationally and worldwide. It brings together experts from disciplines across the University of Oxford, including geography, ecology, social science, finance, economics, psychiatry, anthropology, artificial intelligence, statistics and earth observation. Our team collaborates on a range of projects, working with national and international partners.

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