



# Discussion paper on state of nature measurement

April 2026

For consultation and feedback



Taskforce on Nature-related  
Financial Disclosures

In collaboration with:



SCIENCE  
BASED  
TARGETS  
NETWORK

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## Acknowledgements

This discussion paper has been prepared by the [Taskforce on Nature-related Financial Disclosures \(TNFD\)](#) Secretariat, in collaboration with [Global Reporting Initiative \(GRI\)](#) Secretariat and [Science Based Targets Network \(SBTN\)](#) Secretariat technical teams, and with guidance from the TNFD Working Group on Measurement and Data.

The teams would like to thank the [Nature Positive Initiative \(NPI\)](#) for the two-year consensus building process, including extensive pilot testing, which led to the proposed common state of nature metrics on which this discussion paper draws.

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# 1. Executive summary

The Taskforce on Nature-related Financial Disclosures (TNFD), Global Reporting Initiative (GRI) and Science Based Targets Network (SBTN) are seeking feedback from market participants on how to incorporate state of nature metrics into their frameworks, standards and guidance for nature-related assessment, disclosure, transition planning and target setting by corporates and financial institutions. The proposals draw on the consensus metrics for measuring state of nature outcomes developed by the Nature Positive Initiative (NPI).<sup>1</sup>

This discussion paper supports that objective by:

- Explaining how state of nature measurement is currently incorporated into the TNFD framework, GRI Standards and SBTN target-setting guidance across four key use cases: assessment, disclosure, transition planning and target setting. This includes both existing requirements and examples of use in practice.
- Presenting TNFD, GRI and SBTN's proposals for embedding NPI's state of nature outcome metrics within frameworks and standards for market feedback.

The state of nature is foundational to organisations' **nature-related dependencies, impacts, risks and opportunities**. Business operations and value chains rely on environmental assets, including ecosystems, which provide **ecosystem services**. The capacity of ecosystems to supply ecosystem services depends on **ecosystem extent** (the area and distribution of ecosystem types) and **ecosystem condition** (their quality and functioning, including composition, structure and function). The measurement of **species extinction risk**, particularly for small-range and threatened species, and **species populations** complements the measurement of ecosystem extent and condition. Species statuses reflect key aspects of ecosystem composition and help organisations to identify locally relevant impact drivers and the delivery of the ecosystem services on which they depend. Reducing species extinction risk is also foundational to the Kunming-Montreal Global Biodiversity Framework (KMGBF).

As the state of nature underpins ecosystem services on which an organisation depends, changes in the state of nature can lead to financial risks and opportunities for a business. The evidence of financial effects of nature-related risks for businesses and the economy is extensive, with a 2025 global review finding over 600 examples, ranging from inflationary

<sup>1</sup> The NPI's proposed state of nature outcome metrics are the result of a 2 year global consensus building process, led by 27 core NPI members. This process has developed an aligned minimum set of state of nature metrics for embedding in a consistent manner across frameworks and standards ([www.naturepositive.org/metrics](http://www.naturepositive.org/metrics)).

impacts on food production, supply disruptions due to water shortages and liability risks from environmental pollution.<sup>2</sup>

### State of nature measurement supports four corporate and financial institution<sup>3</sup> use cases:

- **Assessment:** Organisations may use state of nature metrics in assessments to prioritise locations across their direct operations and value chains and to understand their dependencies and impacts on nature and the resulting nature-related risks and opportunities. Many organisations already use state of nature measurement in their assessments.
- **Disclosure:** Reporting frameworks and standards increasingly recommend or require disclosure of state of nature information. GRI requires some state of nature indicators, and the Draft Amended European Sustainability Reporting Standards (ESRS) issued in November 2025 require disclosure of entity-specific metrics (to be defined by the undertaking) if a state of nature sub-topic (e.g. ecosystem condition) is deemed material. The TNFD currently includes placeholder core global disclosure indicators on the state of nature, which the TNFD encourages organisations to consider and report against where possible. At the time of publishing the TNFD's recommendations and disclosure metrics (2023), there were not yet widely accepted metrics for these indicators, but the Taskforce recognised their importance and continued to work with knowledge partners to develop metrics further.<sup>4</sup>
- **Transition planning:** In defining how organisations plan to respond and contribute to the transition implied by the Kunming-Montreal Global Biodiversity Framework, organisations may use aspects of state of nature measurement to inform their prioritisation of dependencies, impacts, risks and opportunities in their transition plans. They may also target specific outcomes for the state of nature in such transition plans (see target setting) and/or use aspects of state of nature measurement to inform their implementation and engagement strategies.
- **Target setting:** Organisations may establish **impact driver/pressure-based targets** (addressing drivers of nature loss) and **outcome-based targets** (focusing on improvements in ecosystem condition, species statuses or ecosystem services), which create risks and opportunities to the organisation. State of nature metrics help organisations to define priorities and track performance for both approaches.

To integrate **state of nature metrics**, drawing on the consensus metrics developed by NPI, this paper proposes updates to the existing TNFD framework, GRI standards and SBTN guidance, and invites stakeholder feedback.

<sup>2</sup> TNFD and the University of Oxford (2025) [Evidence review on the financial effects of nature-related risks](#)

<sup>3</sup> Corporates and financial institutions are referred to in the rest of this paper as 'organisations' for short-hand.

<sup>4</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

### Proposed TNFD updates include:

- **LEAP assessment guidance updates:**
  - Reference NPI measurement guidance and state of nature metrics for site and landscape/seascape level evaluations of changes in the state of nature outcomes in the **Evaluate** and **Prepare** phases.
  - Expand guidance on the **relationship between state of nature measurement and ecosystem services**, to incorporate suggesting ecosystem condition variables relevant to service provision, based on ecosystem service modelling tools, and applying stakeholder engagement and participatory methods.
  - Strengthen guidance in the **Locate** phase on applying state of nature prioritisation approaches to identify sensitive locations, including how to get started with state of nature metric measurement when a large number of priority locations have been identified, and on identifying additional datasets.
- **Disclosure metric updates:**
  - Elevate **ecosystem condition** and **species extinction risk** from placeholder indicators to **core global TNFD disclosure indicators**.
  - Incorporate final **NPI state of nature metrics on ecosystem extent, ecosystem condition and species extinction risk** as core disclosure metrics at site and landscape/seascape levels, and the **NPI metric on species populations** as an additional disclosure metric.
  - Encourage disclosure of ecosystem attributes relevant to ecosystem services in measuring both impacts and dependencies.

### Proposed GRI updates:

GRI will use the consultation to assess the extent to which NPI's state of nature metrics support existing GRI biodiversity disclosures and inform potential future guidance or revisions, with a focus on interoperability.

Feedback will help GRI better understand whether and how elements currently included under Disclosure 101-7 may warrant further clarification, strengthening or future standard-setting consideration. It will also help to identify potential gaps or areas where NPI guidance may go beyond current GRI requirements, and test what state of nature information is most relevant and decision-useful for both report preparers and users.

### Proposed SBTN updates:

The SBTN takes a pressure-based target approach, integrating state of nature data to support and contextualise targets. This approach is outlined in *Business action for biodiversity via science-based targets for nature*.

Based on the outcome of this consultation, SBTN is exploring the following updates to its target-setting methodology:

- Based on SBTN's public consultation on V2 Steps 1 and 2 and the finalisation of the draft NPI state of nature metrics, SBTN may revise the Step 1 Assessment and Step 2 Prioritisation approach, signposting to NPI measurement guidance.
  - This includes referencing NPI measurement guidance on metrics and measurement within assessment and prioritisation.
  - Exploring the application of NPI species metrics and site-level approaches through the consultation process to determine feasibility and interpretability of these data.
  - Addressing challenges for the application of NPI guidance in the broader value chain context.
  - Refining the use of biodiversity data in prioritisation of target setting, in combination with data on impacts and dependencies.
  - Understanding the need for modified approaches in sensitive locations and in direct operations sites.

Pending resourcing, SBTN may also explore the integration of state of nature data in target implementation and monitoring through its work on Step 5 monitoring, reporting and verification (MRV):

- This work would be exploratory and offer opportunities for collaboration between civil sector organisations to understand the need and applicability of biodiversity metrics in a monitoring context.
- This may offer opportunities to explore topics like site-level measurement and the responsibility and feasibility of corporate actors (versus civil society or the public sector) in long-term biodiversity monitoring.

The TNFD, GRI and SBTN will continue to coordinate closely to support interoperability and avoid fragmentation in market expectations.

## 2. Introduction

### 2.1. Objective and context

The **Taskforce on Nature-related Financial Disclosures (TNFD)** is comprised of 40 business and finance leaders from around the world and was launched in 2021 with the support of the G20. The TNFD aims to provide decision-makers in business and capital markets with better quality information on nature through the identification, assessment, disclosure, and management of nature-related dependencies, impacts, risks and opportunities (DIROs).<sup>5</sup> The TNFD also refers to these collectively as ‘nature-related issues’.<sup>6</sup>

The TNFD has developed a set of disclosure recommendations and additional guidance to help organisations with this assessment and disclosure, including a set of indicators and metrics. Adoption of the framework is growing – by November 2025, there were over 730 adopters of the TNFD disclosure recommendations, including 480 corporates and 179 financial institutions. These represent over USD 9 trillion in market capitalisation among listed companies and over USD 22 trillion in assets under management (AUM).<sup>7</sup> There is also significant uptake of the TNFD’s LEAP approach by organisations conducting internal assessments of their nature-related issues.<sup>8</sup> The TNFD has identified over 120 TNFD-aligned reports from different organisations and 80 reports are provided on the TNFD website as illustrative examples.

State of nature measurement is an important aspect of assessment within the TNFD’s LEAP approach. Organisations are encouraged to use state of nature screening to identify sensitive locations in the Locate phase, use state of nature measurement to evaluate their impacts and dependencies in the Evaluate phase, and consider the state of nature in the context of target setting in the Prepare phase.<sup>9</sup> Annex 2 of the TNFD’s LEAP approach gives guidance on state of nature measurement.<sup>10</sup> The TNFD includes ‘placeholder’ global disclosure indicators on the state of nature covering ecosystem condition and species

<sup>5</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#). Within the LEAP Approach’s Prepare phase, component P2 shows that targets can focus on impact drivers, state of nature and ecosystem services (see Figure 28 in the LEAP Approach).

<sup>6</sup> These four concepts – dependencies and impacts on nature, and the nature-related risks and opportunities to organisations that they give rise to – are collectively referred to by the TNFD as nature-related issues.

<sup>7</sup> TNFD (2025) [Status Report](#).

<sup>8</sup> TNFD (2025) [Status Report](#).

<sup>9</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>10</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

extinction risk.<sup>11</sup> The TNFD also includes additional disclosure metrics on the state of nature, including species populations, ecosystem extent and ecosystem connectivity.<sup>12</sup>

**The Global Reporting Initiative (GRI)** is an independent non-profit organisation developing sustainability reporting Standards through multistakeholder engagement with businesses, investors, policymakers, civil society, labour organisations and other experts.<sup>13</sup> The GRI Standards enable an organisation to report information about its most significant impacts on the economy, environment and people, including impacts on their human rights, and how it manages these impacts. The GRI Standards are structured as a system of interrelated standards that are organised into three series: GRI Universal Standards, GRI Sector Standards and GRI Topic Standards.

Used by over 14,000 organisations in over 100 countries, the GRI's Standards are advancing the practice of sustainability reporting, and enabling companies and other stakeholders to build sustainable, long-term value which benefits both people and planet.<sup>14</sup>

GRI has developed a Topic Standard on biodiversity: GRI 101: Biodiversity 2024.<sup>15</sup> The Standard, aligned with the goals and targets of the Kunming-Montreal Global Biodiversity Framework, helps organisations to better understand which decisions and business practices lead to biodiversity loss, where in their value chain impacts occur, and how they can be managed.<sup>16</sup> In addition to *GRI 101*, GRI has developed other topic standards that are relevant to nature-related impacts. These include *GRI 301: Materials 2016*; *GRI 303: Water and Effluents 2018*; *GRI 305: Emissions 2016*; *GRI 306: Effluents and Waste 2016*; and *GRI 306: Waste 2020*.

**The Science Based Targets Network (SBTN)** is a civil-society and science-led initiative, developing science-based targets for nature both for companies and cities, so they can comprehensively address their environmental impacts across biodiversity, land, freshwater and ocean, in addition to climate through the Science Based Targets initiative.<sup>17</sup>

The SBTN provides a framework for companies to set quantitative targets to reduce their pressures on biodiversity and support its protection and restoration. These science-based targets (SBTs) for nature are grounded in scientific evidence, in line with the IPBES assessments and the Global Biodiversity Framework (GBF). They reflect what is needed

<sup>11</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

<sup>12</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

<sup>13</sup> GRI (2022) [The GRI Standards – Enabling transparency on organizational impacts](#).

<sup>14</sup> GRI (2022) [The GRI Standards – Enabling transparency on organizational impacts](#).

<sup>15</sup> GRI (2024). [GRI 101: Biodiversity](#).

<sup>16</sup> GRI (2024) [GRI 101: Biodiversity](#).

<sup>17</sup> SBTN 'Who We Are', [Science Based Targets Network, n.d.](#), accessed 2026.

from corporate actors to reduce human-caused pressures responsible for some of the most significant harm to nature and to help meet local, regional and global goals.<sup>18</sup>

More than 150 companies are preparing to set science-based targets for nature. Currently, 30 companies across 19 countries and 11 sectors are publicly signalling their ambition through [Step Up for Nature](#) and more than 50 targets have been validated across 11 companies.

The SBTN takes a pressure-based target approach, outlined in *Business action for biodiversity via science-based targets for nature*.<sup>19</sup>

The TNFD, GRI and SBTN are core members of NPI, and participated in the two-year consensus building process that resulted in the NPI's proposed consensus set of state of nature outcome metrics.

The TNFD, GRI and SBTN will continue to coordinate closely to support interoperability and avoid fragmentation in market expectations.

## 2.2. About this document

The TNFD, GRI and SBTN are seeking feedback from market participants on how to include state of nature metrics in their respective frameworks, standards and guidance for nature-related assessment, disclosure, transition planning and target setting by corporates and financial institutions, drawing on the consensus state of nature metrics proposed by the Nature Positive Initiative (NPI).

To support this objective, this discussion paper:

Outlines how state of nature measurement is currently included in the TNFD framework, GRI Standards and SBTN target setting guidance for the use cases of assessment, disclosure, transition planning and target setting by corporates and financial institutions (Section 4).

Sets out proposals to embed state of nature metrics in the TNFD framework, GRI standards and SBTN target setting guidance for market feedback, drawing on the NPI metrics (Section 5).

<sup>18</sup> SBTN (2026) [Business Action for Biodiversity via Science-Based Targets for Nature](#).

<sup>19</sup> SBTN (2026) [Business Action for Biodiversity via Science-Based Targets for Nature](#).

## 2.3. Consultation questions

These consultation questions relate to the proposed updates to assessment guidance and disclosure requirements, outlined in Section 5.

### TNFD questions:

These consultation questions relate primarily to proposed disclosure recommendations for corporates. Separately, the TNFD recently consulted on identifying, assessing and disclosing dependencies and impacts on nature within financial portfolios. The Taskforce is currently considering feedback and next steps for how state of nature measurement might be used by financial institutions in their assessments and disclosures.<sup>20</sup>

- 1. Familiarity with the TNFD framework:** Has your organisation used the TNFD's LEAP approach to assess nature-related issues, and/or prepared a disclosure aligned with the TNFD recommendations? (*Multiple choice*)
  - My organisation has applied the LEAP approach
  - My organisation plans to apply the LEAP approach in the near future
  - My organisation has prepared a disclosure aligned with the TNFD recommendations
  - My organisation plans to prepare a disclosure aligned with the TNFD recommendations in the near future
  - My organisation has not applied the LEAP approach or prepared a TNFD-aligned disclosure, and does not plan to do so in the near future
- 2. Core global indicators:** Do you agree with the TNFD proposal to make ecosystem condition and species extinction risk TNFD core global disclosure indicators, removing their current status as 'placeholder' indicators (C5.0)? Please explain your answer.
- 3. Priority locations with material nature-related dependencies and impacts:** Do you agree with the TNFD proposal to keep the location requirements for state of nature disclosure consistent with the existing approach to priority locations with material nature-related impacts and dependencies, as required under *Metrics and Targets B* (see TNFD recommendations) – requesting state of nature information be disclosed for material locations in the value chain, as well as in direct operations? Please explain your answer.
- 4. Proposed NPI outcome metrics:** Do you agree with the TNFD proposal to include the final Nature Positive Initiative (NPI) state of nature metrics<sup>21</sup> and measurement guidance as TNFD core global disclosure metrics for ecosystem extent, ecosystem condition and

<sup>20</sup> TNFD (2025) [Discussion paper on identification, assessment and disclosure of dependencies and impacts on nature in financial portfolios](#)

<sup>21</sup> Based on the final NPI consultation on its draft state of nature metrics.

species extinction risk site outcomes and landscape/seascape context, and signpost to the accompanying NPI measurement guidance? Please explain your answer.

5. **Measurement scale:** Do you agree with the TNFD proposals to recommend disclosure of site outcomes, landscape/seascape context and location sensitivity (screening) metrics for priority locations with material impacts and dependencies, under Metrics and Targets B as follows? Please explain your answer.

Material locations	Location sensitivity	Site outcomes	Landscape context
Areas in direct control	Recommended	Recommended	Where possible
Upstream and downstream value chain	Recommended	Where possible	Where possible

6. **Species populations:** Do you agree with the TNFD proposal to retain species population size as a TNFD additional disclosure metric (A5.4) and not change it to be a core metric? Please explain your answer.
7. **Updates to assessment guidance:** Do you agree with the TNFD proposal to update content on state of nature measurement in its guidance in the LEAP approach (as set out in Section 5.1.1)? Please explain your answer.
8. **Further suggestions:** Do you have any further suggestions for how the TNFD should proceed with embedding state of nature metrics in its framework?

**GRI questions:**

1. **Familiarity with the GRI Standards:** Has your organisation used GRI standards for its reporting on nature-related issues? (*Multiple choice*)
- My organisation uses the GRI Standards for its reporting
  - My organisation plans to use the GRI Standards in the near future
  - My organisation has not used the GRI Standards, and does not plan to do so in the near future
2. **Identification of impacts:** While the NPI state of nature metrics are designed for assessing outcomes, do they have additional utility in supporting the earlier steps of identifying an organisation’s most significant impacts (Disclosure 101-4), especially when measured at preparatory granularity level?

3. **Site and landscape/seascape-level disclosure:** GRI 101 disclosures focus on ecosystems affected by organisational activities, typically at operational sites, while also encouraging consideration of the broader ecosystem affected beyond the site where relevant. Given the focus on reporting an organisation's most significant impacts, what considerations should guide the choice of spatial scale for disclosure? In particular, in what situations would it be most relevant to disclose state of nature metrics at:
  - Site level (e.g. sites owned, leased or managed by the organisation) and
  - Landscape/seascape level (e.g. sourcing regions or areas of influence)?
4. **Applicability across value chains:** GRI 101-7 requirements focus on reporting biodiversity impacts at an organisation's sites, while reporting on supply chains and downstream value chains is recommended but not required.  
Are the proposed NPI state of nature metrics suitable for application in supply chain and downstream value chain contexts where site-level data may not be available? Please explain your answer.  
If so, which spatial scale (site, landscape, seascape) is most relevant and feasible in these contexts, and why?
5. **Species metrics:** GRI 101 currently recommends, but does not require, organisations to report information on affected species, with species extinction risk and population size included as optional metrics. Would it be relevant to feature species-based metrics (species extinction risk and/or species population) more prominently in biodiversity disclosures, particularly as a recommendation or requirement under GRI Disclosure 101-7? Please explain your answer.
6. **Overall alignment:** Are there aspects of the proposed NPI state of nature metrics that could introduce implementation challenges for organisations reporting under GRI 101? Please explain your answer.

#### SBTN questions:

1. **Engagement with SBTN methods and progress toward SBTs for nature**
  - My organisation is familiar with the SBTN methods
  - My organisation plans to apply the SBTN methods in the near future
  - My organisation has applied the SBTN methods
  - My organisation plans to validate SBTs for nature in the future
  - My organisation has validated progress toward SBTs for nature
  - My organisation has not applied the SBTN methods or set SBTs for nature and does not plan to do so in the near future
2. **Integration of terrestrial metrics in Steps 1 and 2:** While the NPI state of nature metrics are designed for assessing outcomes, do you believe they have additional value

in supporting the assessment (SBTN Step 1) and prioritisation (Step 2) of science-based targets, especially when measured at preparatory granularity level?

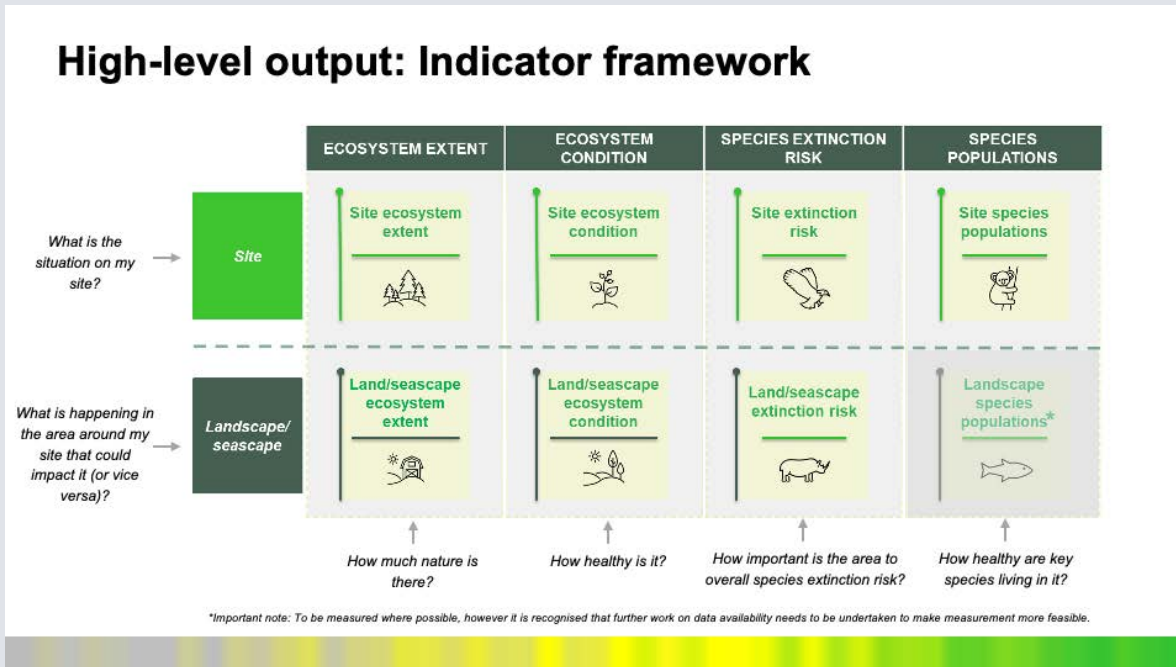
3. **Species metrics:** Do you agree with maintaining SBTN's current use of species richness and extinction risk metrics to support assessment and prioritisation of targets as well as species population data, where available, to set Ocean science-based targets? Please explain why.
4. **Spatial scale:** Do you agree with SBTN's approach of incorporating NPI state of nature metrics primarily at the landscape/basin/seascape level, consistent with the scale of most science-based targets, with the possible exception of site-level monitoring data (discussed below)?
5. **Value chain applications:** Which types of state of nature metrics are most feasible and interpretable for use across a company's value chain? What challenges do you see in utilising the NPI state of nature metrics in contexts of lower traceability?
6. **State of nature metrics in MRV:** SBTN considers monitoring, reporting and verification of progress (MRV) a shared responsibility. To what extent are the NPI state of nature metrics important for companies to incorporate into their plans for monitoring progress and achieving SBTs? Which data are feasible or desirable for companies to collect themselves versus civil society or public sector actors?
7. **Opportunities and challenges:** Do you see any opportunities or challenges associated with the integration of NPI state-of-nature metrics in SBTN when it comes to enhancing corporate action for nature?

#### **Box 1: The Nature Positive Initiative state of nature metrics**

The Nature Positive Initiative (NPI) is coordinating a global process to develop a common, minimum set of state of nature metrics that can be used across terrestrial, freshwater and marine realms to track progress toward the global goal of halting and reversing biodiversity loss by 2030 and achieving full recovery of nature by 2050 (aligned with the mission of the Kunming-Montreal Global Biodiversity Framework (KMGBF)). The initiative was launched to address the current fragmentation of biodiversity measurement, which makes it difficult for organisations to know how best to assess whether nature is improving or declining. The NPI process has involved extensive collaboration across business, finance, science, civil society and standard-setting organisations to build consensus around a minimum set of credible, practical indicators that can be applied consistently across sectors and geographies.<sup>22</sup>

<sup>22</sup> NPI (2026) [Consultation Brief: Finalising consensus on a universal state of nature metrics framework](#).

Figure 1: NPI's indicator framework, currently undergoing final revisions following public consultation.<sup>23</sup>



Source: NPI (2026) [Consultation Brief: Finalising consensus on a universal state of nature metrics framework.](#)

<sup>23</sup> NPI (2026) [Consultation Brief: Finalising consensus on a universal state of nature metrics framework.](#)

Figure 2: NPI’s metrics table, currently undergoing final revisions following public consultation.<sup>24</sup>

### Core output: Metrics table

	Metrics			
	Ecosystem extent	Ecosystem condition	Species extinction risk	Species populations
Site	Area (absolute and percentage) of loss, gain and net change in extent of natural ecosystems (ha, %)	Area and change by condition class (ha, %)	Species extinction risk measurement showing the contributions of the site to global extinction risk	Number and proportion of priority species with populations that are 1) declining, 2) slowing in decline, 3) stable, and 4) increasing.
Landscape/ Seascape	Area (absolute and percentage) of loss, gain and net change in extent of natural ecosystems (ha, %)	Values and change in structural and functional connectivity between natural ecosystems	Species extinction risk measurement showing the contributions of the landscape/seascape to global extinction risk	Number and proportion of priority species with populations that are 1) declining, 2) slowing in decline, 3) stable, and 4) increasing.*

\*Important note: To be measured where possible, however it is recognised that further work on data availability needs to be undertaken to make measurement more feasible.

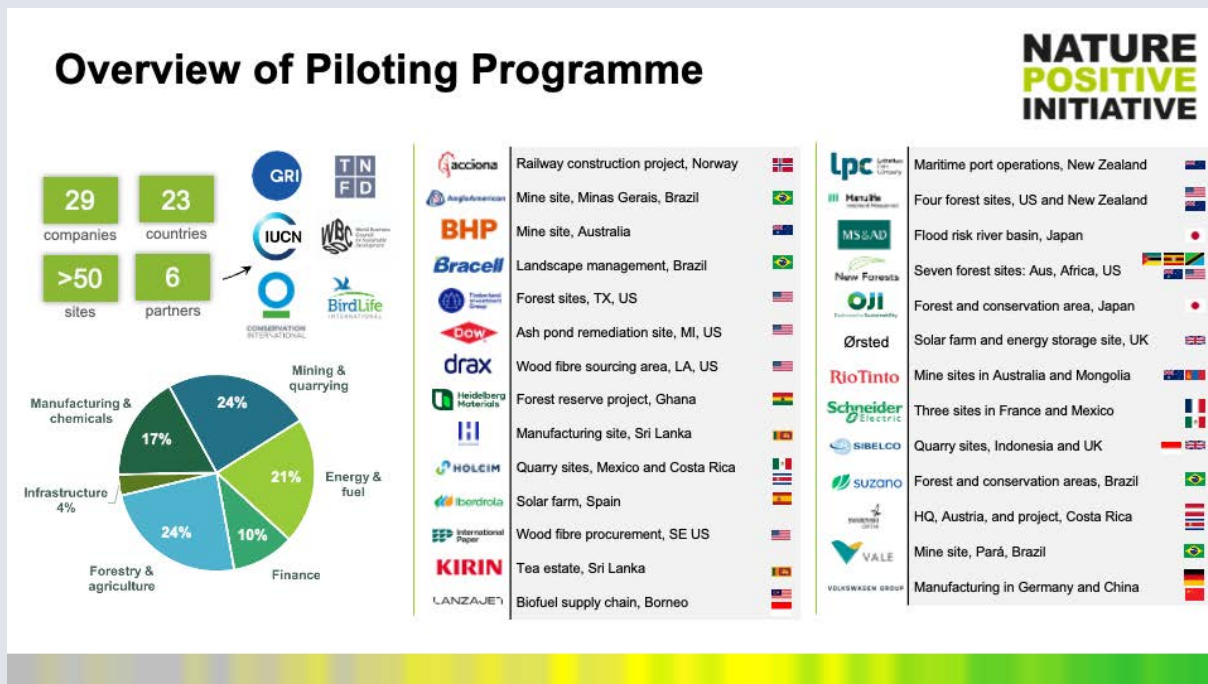
Source: NPI (2026) [Consultation Brief: Finalising consensus on a universal state of nature metrics framework.](#)

To test the metrics, NPI, together with partner organisations including the TNFD and GRI, ran a piloting process. Twenty nine companies across over 50 sites in 23 countries, covering sectors including food and agriculture, mining, forestry, energy, chemicals, forestry investment and insurance, piloted the metrics (Figure 3). This mainly focused on applying the metrics in the terrestrial realm.

Learnings from piloting the metrics in terrestrial ecosystems were combined with a gap analysis and extensive stakeholder consultation to identify and develop additional measurement guidance for applying the metrics in the freshwater and ocean realms. This guidance has undergone a feasibility assessment by 18 companies which have now shared their feedback. This will be used to further enhance the NPI measurement guidance useability.

<sup>24</sup> NPI (2026) [Consultation Brief: Finalising consensus on a universal state of nature metrics framework.](#)

Figure 3: Overview of the NPI state of nature metrics piloting programme<sup>25</sup>



Source: NPI (2026) Consultation Brief: Finalising consensus on a universal state of nature metrics framework.

Alongside the indicator framework and metrics table, NPI published draft summary guidance and measurement specifications for public consultation. This summary guidance makes clear that, while these metrics represent an extensive consensus-building exercise, embedding them for different use cases, including assessment, disclosure, transition planning and target setting is the responsibility of standard setters and framework developers.

The NPI ran a final public consultation from February to March 2026 on this set of state of nature metrics, incorporating practitioner feedback from the terrestrial piloting program. One of the key consultation findings is that over two thirds of respondents agreed or partially agreed that the proposed metrics met each of the following design criteria: clarity, practicality, comprehensiveness, robustness and decision-usefulness. The fuller findings and how they inform the evolving measurement guidance will be available around Q3 2026.

<sup>25</sup> NPI (2026) Consultation Brief: Finalising consensus on a universal state of nature metrics framework.



### 3. Conceptual foundations for state of nature measurement in assessment, disclosure, transition planning and target setting

Business operations and value chains are underpinned by environmental assets, including ecosystem assets which provide ecosystem services.<sup>26</sup> The capacity of ecosystems to generate ecosystem services is a function of their extent and condition, including the abundance of species that play key functional roles. Ecosystem extent refers to the area and distribution of ecosystem types across a defined spatial area. Ecosystem condition describes the quality and functioning of those ecosystems (which can be broken down into composition, structure and function)<sup>27</sup> using indicators related to characteristics such as species evenness, soil nutrient levels, water quality, air pollutant concentrations or vegetation structure.<sup>28</sup> Ecosystem extent and condition measurement are discussed in the context of nature-related assessment in Annex 2 of the TNFD LEAP approach, in [SBTN's Step 1](#) methods and data toolbox, and further refined through target setting in [SBTN Step 3: Set Targets](#).<sup>29</sup>

More specifically, ecosystem extent and condition attributes, as well as species abundance, reflect the capacity of ecosystems to supply multiple ecosystem services. These include provisioning services (e.g. timber or food), regulating and maintenance services (e.g. climate regulation, water filtration or flood mitigation) and cultural services (e.g. recreation or spiritual value).<sup>30</sup> While activities that degrade ecosystems may improve the flow of

<sup>26</sup> Villamagna A. M. et al. (2013) [Capacity, Pressure, Demand, and Flow: A Conceptual Framework for Analyzing Ecosystem Service Provision and Delivery](#).

<sup>27</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>28</sup> UN Department of Economic and Social Affairs Statistics Division (2024) [System of Environmental-Economic Accounting Ecosystem Accounting](#).

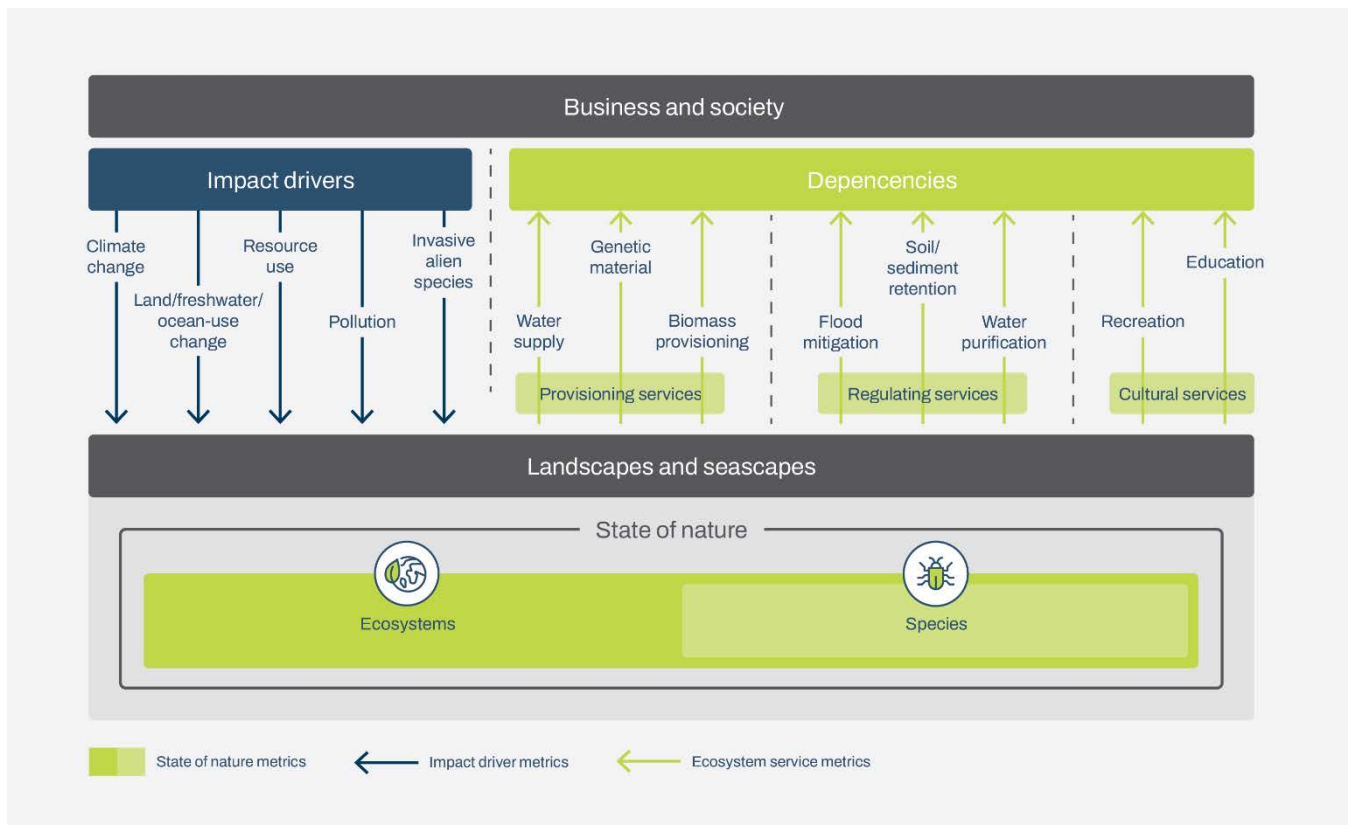
<sup>29</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>30</sup> UN Department of Economic and Social Affairs Statistics Division (2024) [System of Environmental-Economic Accounting Ecosystem Accounting](#).

provisioning services (such as crop production), this often reduces the availability of regulating and maintenance and cultural services.<sup>31,32 33</sup>

This can create financial risks for businesses by reducing the flow of services that they depend on and also affects the availability of ecosystem services to Indigenous Peoples, Local Communities and other affected stakeholders. Reducing negative impacts and protecting, conserving, restoring and regenerating environmental and ecosystem assets can enhance the resilience of the shared landscapes and seascapes in which businesses operate, contribute to local and global biodiversity goals, and present business opportunities that can benefit both the organisation and nature (Figure 4).

**Figure 4: State of nature measurement describes the state of ecosystem assets, and wider landscapes and seascapes. Reducing negative impacts on nature and protecting, conserving, restoring and regenerating the state of nature can contribute to landscape and seascape resilience, and help to meet local, regional and global biodiversity goals.**



<sup>31</sup> IPBES (2019) [Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services](#).

<sup>32</sup> Dasgupta (2024) [The Economics of Biodiversity: The Dasgupta Review](#).

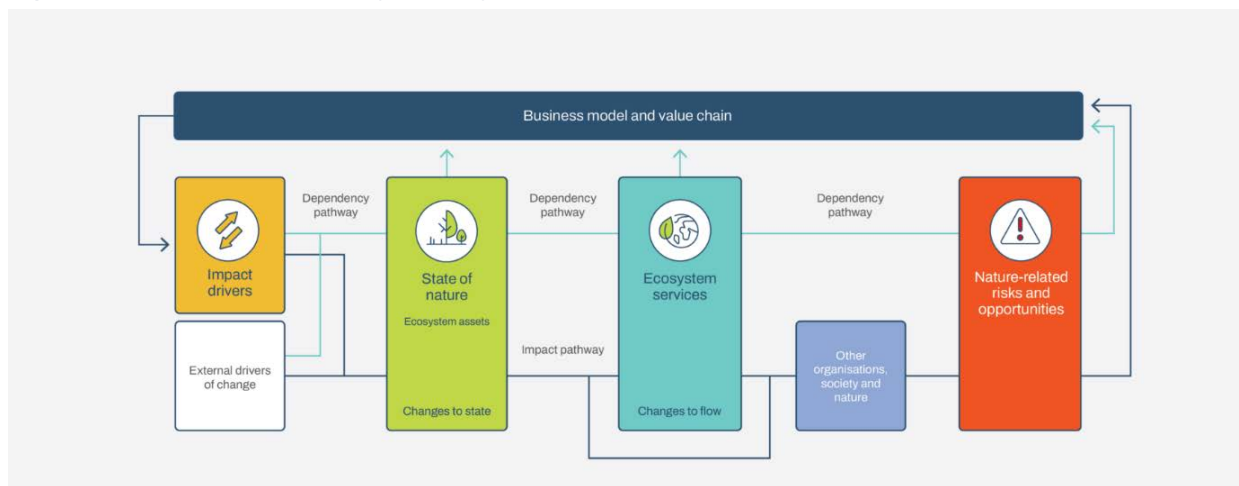
<sup>33</sup> Bennett et al. (2009) [Understanding Relationships among Multiple Ecosystem Services](#).

The links between environmental and ecosystem assets, the state of nature, ecosystem services, and risks and opportunities are summarised through impact and dependency pathways (Figure 5). State of nature measurement captures aspects of the extent and condition of ecosystem assets, and abundance and extinction risk of species, within these pathways, and their status in line with nature-related targets. Both impacts and dependencies on nature can lead to risks and opportunities to business. The evidence of the financial effects of nature-related risks on businesses and the economy is extensive, with a 2025 global review finding over 600 examples, ranging from inflationary impacts on food production, supply disruptions due to water shortages and liability risks from environmental pollution.<sup>34</sup>

In the metrics architecture of the TNFD, the state of nature is assessed through indicators of extent and condition at the ecosystem level, and extinction risk and population size at the species level (see Annex 2 of the LEAP approach for TNFD guidance on state of nature measurement).<sup>35</sup> These two levels are nested, and measuring at both ecosystem and species-level metrics provides complementary information on the state of ecosystem assets.

Similarly, in the SBTN methods, state of nature data at the ecosystem and species level are used to prioritise land, freshwater and ocean SBTs alongside data on environmental impacts and business dependencies. The selection of state of nature datasets is captured in [SBTN's Step 1](#) (Table 10 in [Step 1](#) guidance) and Appendix 1. These address the need to measure biodiversity across biomes/environmental realms, which is often challenging when moving beyond the terrestrial context. SBTN also includes guidance on measuring ecosystem services or nature's contributions to people (NCPs), including emphasising critical areas for the delivery of NCP benefits, especially to Indigenous peoples and local communities.

**Figure 5: Impact and dependency pathways within the TNFD framework.**



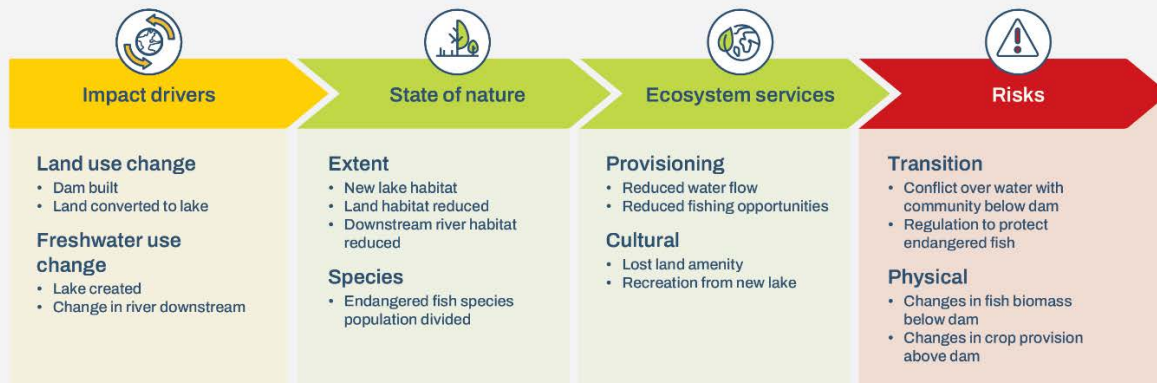
Source: TNFD 2023, [Guidance on the identification and assessment of nature-related issues: the LEAP approach](#)

<sup>34</sup> TNFD and the University of Oxford (2025) [Evidence review on the financial effects of nature-related risks](#)

<sup>35</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

**Box 2: State of nature within impact and dependency pathways – hypothetical example of an energy company building a new hydroelectric dam**

**Figure 6: Hypothetical examples of reporting metrics across an impact and dependency pathway by an energy company building a new hydroelectric dam.**



An organisation can measure metrics across impact and dependency pathways for different use cases, such as assessment and disclosure. These can include its impact drivers, changes to the state of nature, changes in the availability of ecosystem services, and resulting risks and opportunities to the organisation.

In the example of an energy company building a new hydroelectric dam, ecosystem use change (reducing terrestrial habitat, expanding freshwater lake habitat, and altering downstream freshwater river habitat) alters the ecosystem’s extent and condition, and contributes to species extinction risk. Ecosystem services are altered as a result – fish biomass provision is reduced, land-based services, such as crop provision, are lost because of the new lake, while the potential for new services such as recreation are increased.

As a result of altered ecosystem services, the organisation may experience material financial risks, including community conflict and threats to its social licence, as well as physical risks from changes in fish biomass and crop provision. Construction of the dam also creates a new dependency as the company is now dependant on the upstream watershed to retain sediment so that it can maintain the dam’s operation, prolong its lifespan and reduce maintenance costs.

Impacts and dependencies on nature (that create associated risks and opportunities to corporates and financial institutions) may manifest at a range of spatial scales. For example, the direct spatial footprint of a site will likely at a minimum impact the ecosystems and species within the boundary of the operations. Changes in the state of nature may affect ecosystem services that are provided at these local spatial scales, such as reduced vegetation on slopes that no longer provide protection from landslides. In turn, impact drivers such as land use change or pollution can have cumulative impacts on the state of

nature at wider landscape scales. Many ecosystem services, such as water supply and water purification, the provision of nursery habitat for fish, and local climate regulation, are typically provided at these wider spatial scales and are determined by the state of nature within the surrounding landscape and seascape.<sup>36</sup>

The link between the state of nature and ecosystem service delivery is context dependent. The different components of the state of nature can play a direct functional role in the delivery of a service, or act as proxies where state of nature and ecosystem service delivery is correlated across landscapes/seascapes, even without a clear functional link.<sup>37</sup> Examples of links between impact drivers, aspects of the state of nature and ecosystem service delivery are provided in Table 1.

**Table 1: Examples of links between impact drivers, state of nature and ecosystem service delivery**

Component of state of nature	Ecosystem type	Drivers of change	Change in state of nature	Link to capacity for ecosystem services
<b>Ecosystem extent</b>	Tropical and sub-tropical Savannah	Land use change	Reduction in extent of woody savannah, ecosystem increase in extent of cropland and pastureland	Local climate regulation- In the Brazilian Cerrado, land use change from woody savannah to anthropogenic cropland and pastureland has been shown to affect land surface temperature and evapotranspiration. This 'warming and drying' impact of change in ecosystem extent presents risks for agricultural yield. <sup>38</sup>
<b>Ecosystem condition (structure)</b>	Intertidal forests and shrublands	Land/sea use change, pollution, direct exploitation	Change in vegetation height and density of mangroves	Storm surge attenuation- Vegetation height and density in mangrove ecosystems influence their frontal surface area and ability to absorb energy from waves. Change in ecosystem

<sup>36</sup> Zhang et al. (2025) [Servicesheds connect people to the landscapes upon which they depend.](#)

<sup>37</sup> Ricketts et al. (2016) [Disaggregating the Evidence Linking Biodiversity and Ecosystem Services.](#)

<sup>38</sup> Rodrigues et al. (2022) [Cerrado Deforestation Threatens Regional Climate and Water Availability for Agriculture and Ecosystems.](#)

Component of state of nature	Ecosystem type	Drivers of change	Change in state of nature	Link to capacity for ecosystem services
				structure potentially increases risks from coastal flooding. <sup>39</sup>
<b>Species population abundance</b>	Annual cropland	Land use change, pollution	Reduction in population abundance of wild pollinators, reducing pollinator visitation rates	Pollination- Many crop species are pollinator limited – where a deficit in pollinator visits directly reduces yield. Reductions in local pollinator abundance can reduce agricultural yield. <sup>40</sup>

### Species extinction risk

Measurement of species extinction risk, where emphasis is specifically on species with small range sizes and/or species that are listed as threatened or endangered, can complement measures of ecosystem extent and condition:

- Threatened species can be important aspects of the composition element of ecosystem condition that supports the availability of ecosystem services. For example, many species of freshwater bivalve, which provide multiple ecosystem services such as water purification and nutrient cycling, are listed as Threatened on the IUCN Red List of Threatened Species.<sup>41</sup>
- Measuring species extinction risk can be used to identify locally relevant impact drivers (that are manifesting as threats to species) to drive action (e.g. to reduce poaching in an area that poses a threat to specific species).<sup>42</sup>
- Threatened species can be useful proxy indicators ('species surrogates'), where their presence and abundance reflect high ecosystem condition (known as 'indicator species'), or reflect patterns in other species (known as 'umbrella species').<sup>43</sup>

<sup>39</sup> van Hespen *et al.* (2023) [Mangrove Forests as a Nature-Based Solution for Coastal Flood Protection: Biophysical and Ecological Considerations](#).

<sup>40</sup> Turo *et al.* (2024) [Insufficient Pollinator Visitation Often Limits Yield in Crop Systems Worldwide](#).

<sup>41</sup> Alexandra *et al.* (2022) [A Global Synthesis of Ecosystem Services Provided and Disrupted by Freshwater Bivalve Molluscs](#).

<sup>42</sup> Leisher *et al.* (2022) [Ranking the Direct Threats to Biodiversity in Sub-Saharan Africa](#).

<sup>43</sup> Gilby *et al.* (2017) [Umbrellas Can Work under Water: Using Threatened Species as Indicator and Management Surrogates Can Improve Coastal Conservation](#).

- Reducing species extinction risk is foundational to the Kunming-Montreal Global Biodiversity Framework.<sup>44</sup> Measurement can therefore help to identify related transition risks and help with the species extinction risk aspects of transition planning.

### Species populations

Populations of individual species can be key to organisations' nature-related dependencies, risks and opportunities, as well as their impacts. For example, there are several marine and coastal species populations that are critical for maintaining the ecosystem functions on which organisations depend:

- **Commercial fish species** are a direct input into food production systems, underpinning dependencies for organisations along the seafood value chain. Fishing organisations depend on healthy stocks, with sustainable fishing yields being carefully monitored and healthy stocks certified.<sup>45</sup>
- **Reef building bivalves**, including oysters and mussels, play a crucial role in coastal ecosystems by forming complex structures that influence the sedimentary environment and local habitats. Therefore, their populations underpin dependencies, including seawater quality (their filtration regulates quality), coastal protection (stabilising shorelines and preventing erosion) and providing habitat for other species (e.g. nurseries for fish on which people depend for food).<sup>46, 47</sup>

### Box 3: State of nature within natural capital accounts

Measurements of ecosystem assets can be organised into accounts of ecosystem extent and ecosystem condition, which collectively form 'stock' accounts within corporate natural capital accounting methodologies and standards.<sup>48</sup> These underpin accounts for the flow and values of ecosystem services produced by stocks of ecosystem assets.

Natural capital accounts can be used to organise the underlying information required for assessment and disclosure of state of nature and ecosystem services indicators and metrics.<sup>49</sup>

<sup>44</sup> McGowan et al. (2024) [Understanding and Achieving Species Elements in the Kunming–Montreal Global Biodiversity Framework](#).

<sup>45</sup> TNFD (2025) [Additional Sector Guidance for Fishing](#) includes guidance on reporting where fish are sourced from sustainably managed stocks (which are fished at a level consistent with maximum sustainable yield (MSY)).

<sup>46</sup> Ysebaert, T., Walles, B., Haner, J., Hancock, B. (2019). [Habitat Modification and Coastal Protection by Ecosystem-Engineering Reef-Building Bivalves](#). In: Smaal, A., Ferreira, J., Grant, J., Petersen, J., Strand, Ø. (eds) Goods and Services of Marine Bivalves. Springer, Cham.

<sup>47</sup> zu Ermgassen PSE, Thurstan RH, Corrales J, et al. (2020) [The benefits of bivalve reef restoration: A global synthesis of underrepresented species](#). Aquatic Conserv: Mar Freshw Ecosyst.

<sup>48</sup> International Organization for Standardization (2025) [ISO 14054:2025 - Natural Capital Accounting for Organizations — Principles, Requirements and Guidance](#).

<sup>49</sup> Carter Ingram et al. (2024) [Leveraging Natural Capital Accounting to Support Businesses with Nature-Related Risk Assessments and Disclosures](#).

Examples of corporate natural capital accounts include Forico, which values the ecosystem services provided by its forest assets, including carbon sequestration and water filtration. Underpinning these is assessment of the extent and condition (through a vegetation condition assessment) of underlying ecosystem assets.<sup>50,51,52</sup>

#### **Box 4: State of nature as an input to ecosystem service modelling**

State of nature measurement provides a critical evidence base for ecosystem service modelling. Tools such as Integrated Valuation of Ecosystem Services and Tradeoffs (InVEST®) use ecological data to estimate how ecosystems generate benefits for people and the economy. InVEST is an open-source suite of spatial modelling tools developed by the Natural Capital Alliance for mapping and quantifying the delivery of ecosystem services across landscapes and seascapes. The platform includes models for services such as pollination, water yield and water purification, carbon storage and sequestration, sediment retention, coastal protection, recreation and access to urban nature, and fisheries production. These models are widely used by governments, development banks, conservation organisations and businesses to assess how land use decisions influence ecosystem services and associated economic outcomes.<sup>53</sup>

##### **Ecosystem extent and condition inputs:**

All InVEST models rely on spatial data describing ecosystem extent and change over time, typically in the form of land-use or land-cover (LULC) maps. These datasets allow the models to represent the distribution of different ecosystem types (such as forests, wetlands, agricultural land, grasslands, or urban areas) and to simulate how changes in extent or condition affect ecosystem service delivery. For example, the carbon storage model estimates above- and below-ground carbon stocks associated with different land-cover classes, while the sediment retention model assesses how vegetation cover and land management influence soil erosion and downstream water quality. In this way, metrics on ecosystem extent and condition serve as core inputs that translate ecological state into estimates of ecosystem service provision.<sup>54</sup>

##### **Species-related inputs:**

Some models incorporate species-related information to represent ecological processes that underpin ecosystem services. For instance, the Crop Pollination model focuses on the resource needs and flight behaviours of wild pollinator species, particularly bees. The model uses information about nesting habitat availability, floral resources and the distance pollinators can travel across landscapes. However, it does not require direct measurements of pollinator abundance or population size. Instead, the model converts land-cover data into a habitat suitability index (scaled from 0 to 1) to produce a 'pollinator source map'. Higher values indicate landscapes that are more likely to support relatively greater pollinator presence and activity. This approach allows the model to estimate pollination service supply even where detailed species population

<sup>50</sup> Forico (2025) [Natural Capital Report](#).

<sup>52</sup> Forico (2025) [Natural Capital Report](#)

<sup>53</sup> Natural Capital Alliance (2026) [InVEST \(Integrated Valuation of Ecosystem Services and Tradeoffs\)](#).

<sup>54</sup> Natural Capital Alliance (2026) [InVEST \(Integrated Valuation of Ecosystem Services and Tradeoffs\)](#).



data are unavailable, illustrating how state of nature indicators (such as ecosystem extent and condition) can act as practical proxies for modelling biodiversity-dependent ecosystem services.<sup>55</sup>

### Land and seascape-level condition and connectivity

Many ecosystem services are provided at land- or seascape scales, so understanding the capacity of the wider land or seascape to provide services is important for assessing location-specific dependencies, impacts, risks and opportunities. This can be done in two ways:

- Understanding the types, extent and condition (structure, composition and function) of ecosystem assets in the surrounding landscape that may provide services (e.g. riparian vegetation upstream from a site affecting flood risk, or the extent and condition of assets providing nursery habitat for fish).
- Capturing specific landscape/seascape structural attributes of connectivity and fragmentation (the degree to which the landscape/seascape facilitates the movement of organisms and other environmentally important resources such as nutrients between similar habitats). The overall level of connectivity/fragmentation at a landscape/seascape scale can influence levels of biodiversity and the flow of ecosystem services.<sup>56</sup>

<sup>55</sup> Natural Capital Alliance (2026) [InVEST Model: Crop Pollination](#).

<sup>56</sup> Fletcher Jr and Robert J (2025) [Biodiversity Declines across Fragmented Forests](#); Julia C. Assis et al. (2023) [Linking Landscape Structure and Ecosystem Service Flow](#).

## 4. State of nature measurement across use cases

State of nature measurement is an important input to four corporate and financial institution use cases: assessment, disclosure, transition planning and target setting. This section describes how state of nature measurement is currently included in the TNFD framework, GRI Standards and SBTN target-setting guidance for each use case, with examples of state of nature measurement in practice.

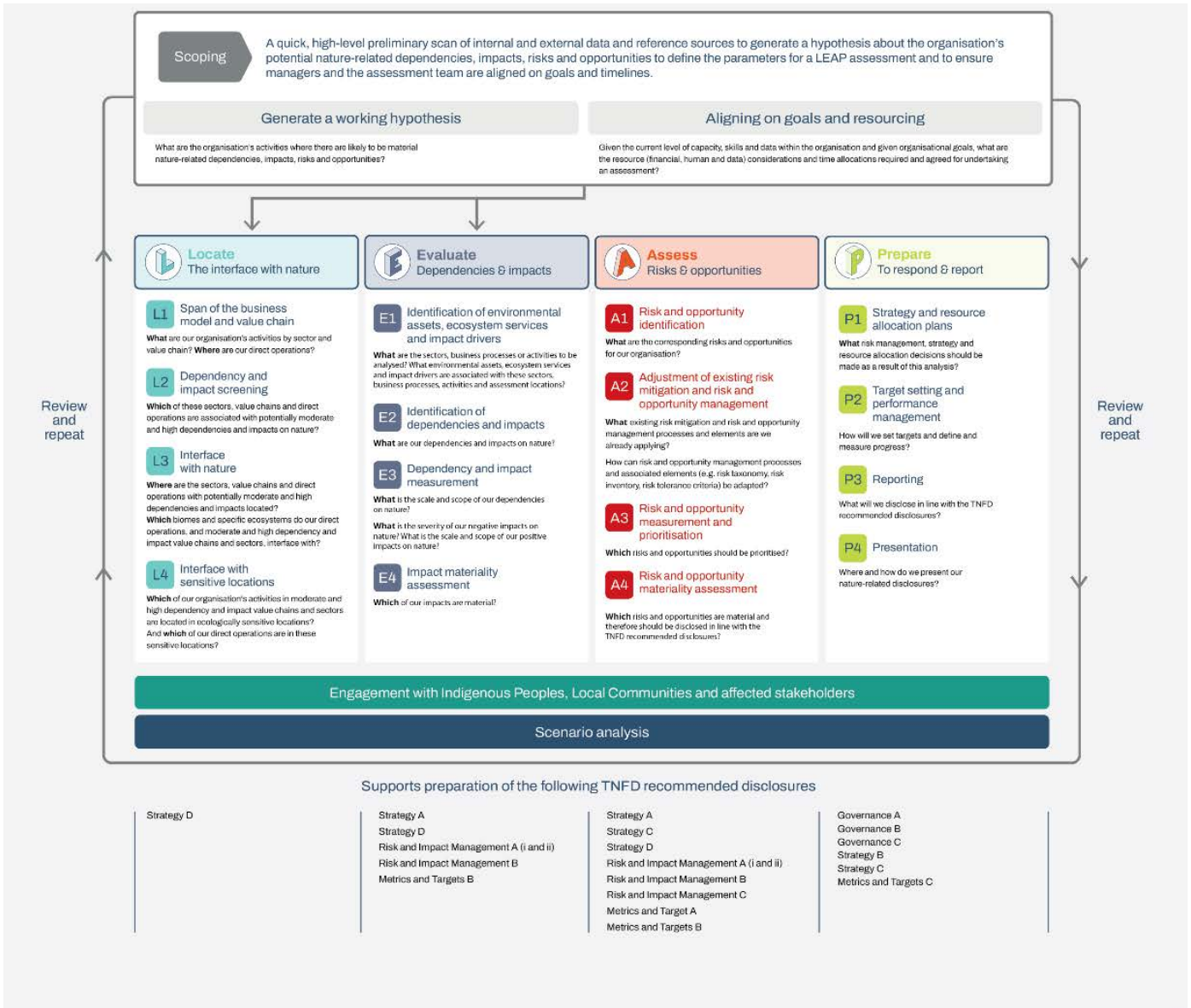
### 4.1. Assessment

The TNFD recommends assessment of nature-related dependencies, impacts, risks and opportunities (nature-related issues) through its guidance on the LEAP approach. The LEAP approach has four phases each divided into four components (summarised in Figure 7).<sup>57</sup>

Assessment metrics are recommended for each phase of the LEAP approach. A number of these are state of nature metrics: the Locate phase includes assessment metrics on ecosystem integrity and biodiversity importance to inform the identification of sensitive locations; and the Evaluate phase includes state of nature and ecosystem service metrics to evaluate an organisation's dependencies and impacts.<sup>[60]</sup> In turn, measurement of the state of nature within both the Locate and Evaluate phase can be used for a number of different purposes and in a variety of decision-making contexts (Table 2).

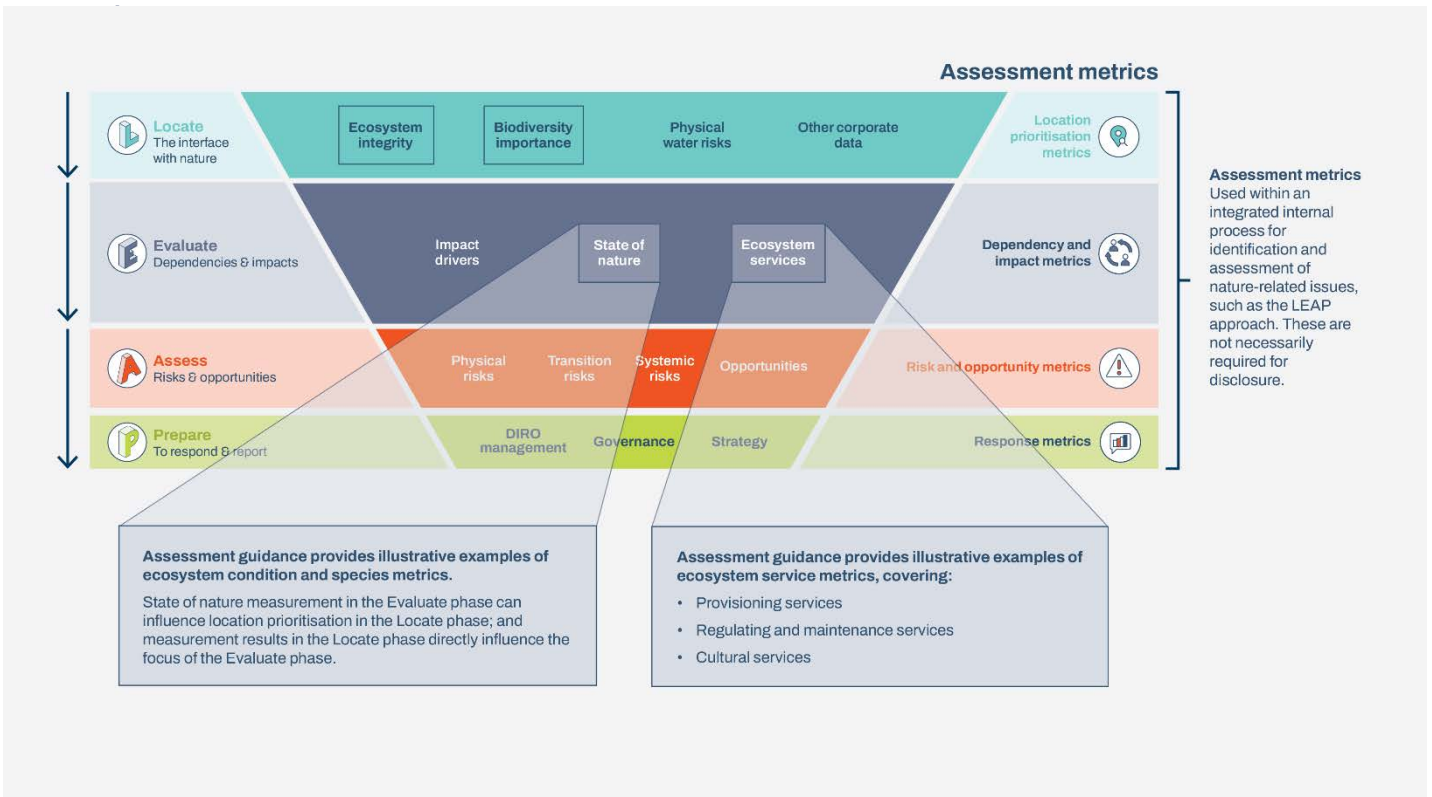
<sup>57</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

**Figure 7: The TNFD's LEAP approach.**



Source: TNFD 2023, [Guidance on the identification and assessment of nature-related issues: the LEAP approach](#)

**Figure 8: Assessment metrics recommended by the TNFD for each phase of the LEAP**



**Table 2. Use cases (context and purpose) for state of nature measurement in assessments of nature-related dependencies, impacts, risks and opportunities**

Context (area within LEAP where measurement is applied)	Purpose (role of measurement)	Relevant TNFD areas informed
<b>Locate - location sensitivity</b>	Prioritisation of locations through screening	Locate
	Screening of locations to inform potential dependencies, impacts, risks and opportunities	Evaluate/Assess
<b>Evaluate - impacts</b>	Prioritisation within LEAP	Evaluate/Assess
	Measuring impacts (broad materiality lens)	Evaluate
	Measuring impacts at locations to inform financial risks and opportunities	Evaluate/Assess

	Measuring impacts to track performance against strategy targets	Evaluate/Respond
<b>Evaluate-dependencies</b>	Prioritisation within LEAP	Evaluate/Assess
	Measuring stocks supporting dependencies at locations to inform risks and opportunities	Evaluate/Assess
	Measuring stocks supporting dependencies to track performance against strategy targets	Evaluate/Respond

#### 4.1.1. Requirements for state of nature measurement in assessments

##### State of nature measurement for location prioritisation

During the Locate phase of the TNFD’s LEAP assessment process, locations along the value chain are screened against five sensitive location criteria, outlined in Table 3.

State of nature measurement is relevant for three of these criteria: biodiversity importance, high ecosystem integrity and rapidly declining ecosystem integrity. Measurement typically involves overlaying locations with local to global data layers.

While the primary purpose of state of nature measurement in the Locate phase is location prioritisation, the information from location sensitivity analysis can be used to inform the evaluation of impacts and dependencies in the Evaluate phase (Table 4).

**Table 3: State of nature measurement to evaluate TNFD sensitive location criteria**

Sensitive location criteria	State of nature measurement
<b>Areas important for biodiversity, including species</b>	Organisations use species extinction risk measures to prioritise areas of importance for biodiversity (including species). For example, some organisations use extinction risk scores for this sensitive location criterion: any location in their direct operations and/or value chain falling above an extinction risk threshold, or with a specified number of threatened species present, is classed as sensitive, and therefore, a priority location. <sup>58, 59</sup>
<b>Areas of high ecosystem integrity</b>	Ecosystem integrity describes the degree to which condition metrics of composition, structure and function fall within their natural range of variation, and so is a measure of degradation away from pristine ‘natural’ state – or the possible reference conditions outlined in Annex 2 of the LEAP

<sup>58</sup> British American Tobacco (2024) [Taskforce on Nature-Related Financial Disclosures \(TNFD\) Reporting](#).

<sup>59</sup> Kao Corporation and Accenture Japan (2023) [Business Risk and Opportunity on Biodiversity-TNFD Case Study with Location Analysis](#).

	approach. Some organisations use a biodiversity intactness or ecosystem integrity threshold or ranking to determine priority locations. <sup>60</sup>
<b>Areas of rapid decline in ecosystem integrity</b>	To determine areas of rapid decline in ecosystem integrity, measures of ecosystem condition are needed, against a baseline. Deterioration in ecosystem condition over a short period of time (e.g. one to five years) signals to an organisation that the area should be considered a priority. <sup>61</sup>
<b>Areas of high physical water risks</b>	Organisations can assess indicators of water availability and quality, which are abiotic characteristics of ecosystem condition, to determine areas of high physical water risk. For example, some organisations use water scarcity thresholds, or indicators of declining water quality or increasing flood or drought risk, to identify locations where freshwater ecosystems and water resources are under pressure. <sup>62</sup>
<b>Areas of importance for ecosystem service provision, including benefits to Indigenous Peoples, Local Communities and stakeholders.</b>	Organisations can identify locations where ecosystems provide critical services such as water regulation, pollination, soil fertility or coastal protection, or where ecosystem services support the livelihoods, cultural values or wellbeing of Indigenous Peoples, Local Communities and stakeholders. Locations where ecosystems provide important services to the organisation or local people should be considered a priority.

The GRI Biodiversity Standard (*GRI 101*) also provides location prioritisation guidance: GRI 101-4 includes guidance to organisations on how to identify the most significant impacts on biodiversity. This identification process involves locating where impacts are most likely to be present and significant and assessing the significance of its impacts. An organisation should assess the activities it undertakes, or products sourced, that lead or could lead to direct drivers of biodiversity loss, which in turn can result in impacts on biodiversity and related ecosystem services. Information on the location of the organisation’s sites, as well as the activities of its suppliers and their proximity to ecologically sensitive areas, helps organisations understand where these activities could be particularly harmful to biodiversity.<sup>63</sup>

**State of nature measurement for evaluating impacts and dependencies**

State of nature measurement underpins how organisations identify and assess their nature-related dependencies and impacts in the Evaluate phase of the LEAP approach.

Measurements of the state of nature may be sourced by users through various tools and data platforms or collected through primary data collection. Within the Evaluate phase of an

<sup>60</sup> ITOCHU Corporation (2025) [Natural Capital and Biodiversity \(Information Disclosure Based on the TNFD Recommendations\)](#).

<sup>61</sup> Sumitomo Forestry (2026) [Analysis Based on TNFD’s LEAP Approach](#).

<sup>62</sup> Coca-Cola Bottlers Japan Inc. (2026) [Coca-Cola Bottlers Japan Inc. - TNFD](#).

<sup>63</sup> GRI (2024) [GRI 101: Biodiversity](#).

assessment, state of nature measurement is applied to evaluate both impacts and dependencies.

### Evaluating impacts

Unlike location screening in the Locate phase, evaluation of impacts during the Evaluate phase of a LEAP assessment involves understanding changes in the state of nature in relation to impact drivers (and external factors). Measuring observed changes in state of nature metrics over time at a location can help to demonstrate realised impacts. This requires measurements at fine spatial and temporal resolution.<sup>64</sup> In the absence of time-series or baseline data for comparison, potential changes in the state of nature may be inferred by contextualising impact driver measurements with static ‘snapshot’ measurements of biodiversity importance and ecosystem condition. These lower granularity measurements can draw from location sensitivity analyses in the Locate phase (Table 4).

### Evaluating dependencies

Changes in the state of nature reflect changes in the underlying ‘stocks’ of ecosystem assets that provide flows of ecosystem services that businesses depend on. Measuring the state of nature at relevant spatial scales (e.g. relevant service sheds)<sup>65,66</sup> informs the evaluation of dependencies. Measurements to support the evaluation of dependencies may draw from location sensitivity analyses in the Locate phase (Table 4).

**Table 4: Evaluation of impacts and dependencies can occur at different levels of spatial granularity, and can use static ‘snapshot’ measurements, drawing from location sensitivity analyses, or measure change against a baseline.**

Locate - sensitive locations	Evaluate - impacts	Evaluate - dependencies
Landscape/seascape-level condition and species extinction risk measurement used to identify sensitive locations	Landscape/seascape-level condition and species extinction risk measurement used to contextualise impact drivers	Landscape/seascape-level condition measurement used to contextualise measures of reliance on ecosystem services
	Site-level measurement of state of nature metrics against a baseline to evaluate realised impacts	Site-level measurement of state of nature metrics against a baseline to understand potential changes in ecosystem services

<sup>64</sup> Jones et al. (2026) [IPBES Business and Biodiversity Assessment: Summary for Policymakers](#).

<sup>65</sup> Farley (2012) [A service shed can be defined as the geographic area affected by the service](#).

<sup>66</sup> Farley (2012) [Ecosystem Services: The Economics Debate](#).

## State of nature in SBTN assessment and prioritisation steps

Within the SBTN framework for target setting, state of nature metrics (including ecosystem condition, ecosystem extent, and species extinction risk) play an important role in the first steps of the target-setting process, particularly Assess ([Step 1](#)), and Prioritise ([Step 2](#)). SBTN's target-setting methodology contributes to biodiversity outcomes through incentivising actions that address pressures within land, freshwater and marine systems that are linked to biodiversity loss.<sup>67</sup>

State of nature metrics are used to understand the current condition of biodiversity and ecosystems, identify where business activities pose the greatest threats to nature, and support the development of science-based targets. The framework broadly reflects a causal logic in which business activities generate pressures on nature, which affect the state of nature and the availability of ecosystem services.

During the first steps of the SBTN process, the role of state of nature metrics evolves from diagnostic assessment to prioritisation and finally to target setting.

### Step 1 – Assess: Understanding the baseline state of nature

The objective of [Step 1](#) (Assess) is to map a company's activities and pressures on nature across its value chain and to understand the baseline condition of ecosystems and species in relevant locations.

State of nature metrics are used to provide context about the ecological condition and vulnerability of the areas where the company operates, sources from, or otherwise has impacts. This helps companies understand how their activities intersect with threats to nature.

The SBTN guidance distinguishes between two broad types of state of nature indicators:

#### **Biodiversity state of nature indicators:**

General state of nature indicators describe the overall status of biodiversity, independent of any specific business pressure. These indicators capture broad biodiversity conditions across three key dimensions:

- Species, such as extinction risk or species richness;
- Ecosystems, including ecosystem extent and integrity; and
- Nature's contributions to people (also known as ecosystem services) – recommended but not required in the current guidance in contrast to ecosystems and species-level metrics.

Examples of metrics used in this category include:

<sup>67</sup> SBTN (2026) [Business Action for Biodiversity via Science-Based Targets for Nature](#).

- Measures of species extinction risk, such as the Species Threat Abatement and Restoration (STAR) metric;
- Rarity-weighted species richness;
- Ecosystem integrity or intactness indices; and
- Indicators of ecosystem condition.

These metrics help companies understand whether the ecosystems or species present in a location are already degraded, threatened or relatively intact.

#### **Pressure-sensitive state of nature indicators:**

Pressure-sensitive state of nature indicators represent specific ecological attributes that respond to particular environmental pressures. These indicators link business activities more directly to ecological change.

Examples include:

- Ecosystem structure and extent;
- Water availability and water quality;
- Soil quality; and
- Ecosystem composition and ecological function.

Together, general and pressure-sensitive state of nature metrics allow companies to develop a spatial understanding of ecosystem condition across their value chain.

#### **Outcome of Step 1:**

By combining information on business pressures and the state of nature, companies can identify locations where their activities overlap with sensitive ecosystems or threatened species. This provides the foundation for prioritising action in the next step.

#### **Step 2 – Prioritise: Identifying priority locations for action**

The objective of Step 2 (Prioritise) is to determine which locations, ecosystems and pressures should be addressed first when setting science-based targets for nature.

State of nature metrics play a critical role in this prioritisation process. The SBTN framework recommends identifying priority areas by considering three main factors:

- The magnitude of business pressures on nature;
- The state of nature in the affected locations; and
- Societal, ecological and strategic considerations.

The key principle is that locations where significant business pressures coincide with vulnerable ecosystems or species should be prioritised for action.

Examples of how state of nature metrics inform prioritisation:

- **Species extinction risk:** Metrics such as STAR scores help identify locations where business activities contribute significantly to global species extinction risk.
- **Ecosystem condition or integrity:** Areas with low ecosystem integrity may require restoration, while areas with high ecological integrity may be prioritised for conservation.
- **Nature's contributions to people:** Ecosystems that provide critical services, such as water regulation or soil stability, may also be prioritised due to their importance for both nature and society.

### Outcome of Step 2:

The result of the prioritisation process is a set of priority locations and pressures where the company will focus its target setting and action. These priority areas represent the places where interventions are likely to have the greatest benefit for biodiversity.

#### 4.1.2. Use of state of nature measurement in assessment

Companies may use state of nature metrics during location prioritisation (the Locate phase of the TNFD's LEAP Approach and Step 2 in SBTN's approach) to identify and prioritise locations where their activities interact with ecosystems of high biodiversity importance and/or high or rapidly declining ecosystem integrity. These metrics cover ecosystem condition, species extinction risk and species abundance (population size), and they may be used to screen operational sites or sourcing regions, helping organisations identify priority locations for closer assessment or biodiversity management.

The examples in Table 5 illustrate how companies have used state of nature metrics to support location prioritisation, biodiversity sensitivity screening and to identify areas for further analysis.

#### **Box 5: Illustrative examples of tools, databases and methodologies used for state of nature measurement in assessment and disclosure**

**Biodiversity Indicator and Reporting System (BIRS):** A methodology developed to establish biodiversity baselines and assess biodiversity conditions at quarry sites, supporting biodiversity management and restoration monitoring.<sup>68</sup>

<sup>68</sup> IUCN (2014) [Biodiversity Management in the Cement and Aggregates Sector: Biodiversity Indicator and Reporting System \(BIRS\)](#).

**Biodiversity Intactness Index (BII):** An indicator that estimates the average abundance of originally present species in a given area relative to their abundance in minimally disturbed ecosystems. This is used to assess how much biodiversity remains following human pressures such as land-use change.<sup>69</sup>

**GBNAT (Global Biodiversity and Nature Assessment Tool):** Spatial assessment tool that provides quantitative global data on biodiversity importance, ecosystem intactness, deforestation, human impact and water risks across corporate operations and value chains.<sup>70</sup>

**GCCA Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management:** Guidelines providing best practices for quarry rehabilitation, biodiversity management and ecosystem restoration in the cement and aggregates sector.<sup>71</sup>

**Global Forest Watch:** Global monitoring platform that uses satellite data and geospatial analysis to track forest cover, deforestation and forest change over time.<sup>72</sup>

**Global Nature Watch:** An open platform that compiles and provides access to global datasets and indicators used to monitor and assess the state of nature.<sup>73</sup>

**IBAT (Integrated Biodiversity Assessment Tool):** Spatial biodiversity database combining datasets such as protected areas, Key Biodiversity Areas and the IUCN Red List to identify areas of biodiversity importance and potential biodiversity risks around project sites.<sup>74</sup>

**Importance Value Index (IVI):** A quantitative measure used in ecology to assess the relative importance of a species within a community. It combines metrics such as species density, frequency and dominance to provide a comprehensive index that reflects a species' ecological significance and contribution to biodiversity.<sup>75</sup>

**Methodology for the Net Impact Assessment of Biodiversity in the Cement Sector (NIA):** A methodology developed to evaluate biodiversity impacts associated with quarry operations and assess progress toward No Net Loss (NNL) or Net Positive Impact (NPI) outcomes.<sup>76</sup>

**Shannon–Wiener index:** Commonly used ecological diversity index used to quantify species diversity within an ecosystem by accounting for both the number of species present and their relative abundance.<sup>77</sup>

<sup>69</sup> Newbold et al. (2016) [Has Land Use Pushed Terrestrial Biodiversity beyond the Planetary Boundary? A Global Assessment](#).

<sup>70</sup> ThinkNature (2025) [GBNAT & TNFD: Biodiversity Compliance in Business](#).

<sup>71</sup> Global Cement and Concrete Association (2020) [Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management](#).

<sup>72</sup> Global Forest Watch (2026) [Global Forest Watch](#)

<sup>73</sup> Global Nature Watch (2026) [Global Nature Watch](#)

<sup>74</sup> IBAT (2026) [IBAT Alliance](#)

<sup>75</sup> Curtis, J.T. and McIntosh, R.P. (1950) [The Interrelations of Certain Analytic and Synthetic Phytosociological Characters](#).

<sup>76</sup> WBCSD (2018) [Methodology for the Net Impact Assessment of Biodiversity in the Cement Sector](#).

<sup>77</sup> Ortiz-Burgos, S. (2016) [Shannon-Weaver Diversity Index](#).

**Society for Ecological Restoration’s “Recovery Wheel”:** A framework used to assess ecosystem restoration progress by evaluating indicators such as ecosystem structure, species composition and ecological functioning relative to reference conditions.<sup>78</sup>

**Species Threat Abatement and Restoration (STAR) metric:** A spatial indicator that estimates how actions in a specific location, such as threat reduction or habitat restoration, could contribute to reducing the global extinction risk of threatened species.<sup>79</sup> (Accessible via IBAT.)

**WWF Biodiversity Risk Filter:** Geospatial screening tool that helps organisations identify and assess biodiversity- and nature-related risks by analysing ecosystem condition, species importance, land-use change and other environmental pressures at site or portfolio level.<sup>80</sup>

**WWF Water Risk Filter:** Corporate and portfolio-level screening tool to help companies and investors to prioritise action on what and where it matters the most to address water risks for enhancing business resilience and contributing to a sustainable future.<sup>81</sup>

**Xylo Systems:** Cloud-based artificial intelligence platform that analyses biodiversity data around project sites to identify species presence, ecosystem characteristics and potential biodiversity risks or pressures.<sup>82</sup>

This is a non-exhaustive list of examples. A range of data sources, tools and methods can be used to inform nature-related assessments. Additional resources are available in the [TNFD Tools Catalogue](#) and [Nature Tools Compass](#).

<sup>78</sup> McDonald et al. (2019) [International principles and standards for the practice of ecological restoration](#).

<sup>79</sup> IUCN (2026) [IUCN – Species Threat Abatement and Restoration \(STAR\) metric](#).

<sup>80</sup> WWF (2026) [WWF Risk Filter Suite - Biodiversity](#)

<sup>81</sup> WWF (2026) [WWF Risk Filter Suite - Water](#)

<sup>82</sup> [Xylo Systems – Features](#)

**Table 5. Examples of state of nature measurement in assessment, for location prioritisation and evaluation of dependencies and impacts.**

Meiji Holdings is a Japanese company operating in the food and pharmaceutical sectors, producing dairy products, confectionery, nutritional foods and medicines.		
Ecosystem condition	Species extinction risk	Species abundance (populations)
	<p>Assessed the biodiversity sensitivity around its production sites using the IBAT biodiversity assessment tool. The analysis screened a 3 km radius around 61 production sites to identify proximity to areas of biodiversity importance, including World Heritage sites, Ramsar wetlands, UNESCO Man and the Biosphere reserves, IUCN protected areas, and the presence of threatened species listed on the IUCN Red List.</p> <p>The results of this analysis were used to identify sites located near biodiversity-important areas and those potentially exposed to species extinction risk. Nineteen production sites were identified as being in close proximity to areas of biodiversity importance, including two sites located near habitats of species classified as Vulnerable or higher on the IUCN Red List.</p> <p>These findings informed the company’s environmental governance and biodiversity management approach, including the Meiji Group Environmental Policy and Biodiversity Conservation Activity Policy, which seeks to reduce nature-related impacts and support biodiversity conservation around operational sites.<sup>84</sup></p>	

<sup>83</sup> Meiji Group (2025) [Biodiversity](#).

<sup>84</sup> Meiji Group (2025) [Biodiversity](#).

**City Developments Limited (CDL)** is a Singapore-based real estate conglomerate with presence in 29 countries and regions that develops, owns and manages residential, commercial and mixed-use properties in multiple countries.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Assessed ecosystem condition across selected properties using biodiversity indicators derived from the Xylo Systems platform. The analysis applied the Ecosystem Integrity Index (EII) and Biodiversity Intactness Index (BII) to evaluate ecosystem stability, ecological processes and biodiversity relative to minimally disturbed conditions.</p> <p>These metrics were used to assess the ecological context of assets in Singapore and New Zealand and understand the extent of ecosystem modification associated with highly urbanised environments. The results supported site-level biodiversity assessments and informed restoration and ecological planning initiatives.<sup>86</sup></p>	<p>Applied the Species Threat Abatement and Restoration (STAR) metric to evaluate how restoration and threat-reduction actions at project locations could contribute to reducing extinction risk for threatened species. STAR scores were analysed alongside ecosystem condition indicators to identify locations with potential for biodiversity restoration and conservation actions. The results informed CDL’s biodiversity risk assessments and helped to identify opportunities to integrate restoration and conservation into development planning.<sup>87</sup></p>	<p>Analysed species occurrence, diversity and flagship species threat information through the Xylo platform as part of the biodiversity assessment process. These observations were not used as standalone population metrics; instead, they served as inputs to ecosystem condition indicators and the extinction-risk analysis.<sup>88</sup></p>

<sup>85</sup> CDL (2025) [Integrated Sustainability Report](#).

<sup>86</sup> CDL (2025) [Integrated Sustainability Report](#).

<sup>87</sup> CDL (2025) [Integrated Sustainability Report](#).

<sup>88</sup> CDL (2025) [Integrated Sustainability Report](#).

**Oji Holdings** is a Japanese company that produces paper, packaging materials and forestry products, with operations spanning forest management, pulp production and paper manufacturing.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Assessed its largest operational area using the WWF Biodiversity Risk Filter to evaluate biodiversity importance, ecosystem integrity (reflecting the degree to which ecosystems remain intact and free from human influence), land-use change, ecosystem service provision and water stress. The assessment enabled the identification of priority areas for further analysis.</p> <p>A similar analysis was conducted for wood chip suppliers' locations. The assessment identified several supplier sites located in environmentally sensitive areas. In response, Oji Holdings incorporated biodiversity considerations into its supplier management approach and set targets to enhance supplier engagement as part of its Environmental Action Program 2040.<sup>89</sup></p>		

<sup>89</sup> Oji Holdings (2025) [TNFD Report](#).

**Swire Properties** is a Hong Kong-based real estate company that develops, owns and manages commercial, retail and residential properties in Asia and the United States. Swire Properties has established a Nature Transition Plan which aims to halt and reverse biodiversity loss while supporting the company’s placemaking efforts and creating a harmonious environment for business, people and nature. Swire Properties has committed to proactively adopting nature-based solutions, nature-positive design and management practices in its operations and collaborating with its value chain partners to achieve no net loss of biodiversity and, wherever possible, delivering a biodiversity net gain, through minimising land use conversion, sustainably using natural resources and enhancing urban biodiversity and water resource management.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Conducted asset-level mapping to evaluate the portfolios’ interfaces with nature, by using international databases such as Resolve, WWF-TNC, Aqueduct, Global Biodiversity Information Facility, the UN Environment Programme World Conservation Monitoring Centre and the Hong Kong Biodiversity Information Hub to assess the current integrity and resilience of these areas and assets’ proximity to critical habitats. Used the Biodiversity Intactness Index (BII), which measures the average abundance of originally present species at a site and its surrounding area relative to their abundance under a minimally disturbed baseline, to assess the ecosystem condition across its new and existing developments. BII was applied to evaluate the overall state of biodiversity at sites and surrounding areas within predominantly urban ecosystems. The analysis also considered indicators such as proximity to protected areas and critical habitats, threatened species, species richness and water stress to prioritise assets for further analysis.<sup>90</sup></p>	<p>The analysis covers threatened species, which examines the number of threatened species within a specified radius distance from the site and the relative abundance of threatened species at the site compared to hundreds of randomly selected locations within a specified radius distance from the site.</p>	<p>The analysis covers species richness which considers the number of distinct species observed within a specified radius distance from the site. These are benchmarked against hundreds of randomly selected locations within a specified radius distance from the site.</p>

<sup>90</sup>Swire Properties (2024) [Climate- and Nature-related Financial Disclosures](#)

**DENSO** is a Japanese automotive components manufacturer that supplies electronic, thermal and powertrain systems to vehicle manufacturers globally.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Assessed ecosystem condition at priority sites using the GBNAT indicator for biodiversity/ecosystem intactness, which reflects the degree of ecosystem modification due to land use.<sup>91</sup></p>	<p>DENSO assessed biodiversity importance and exposure to species extinction risk using spatial datasets such as the IUCN Red List, Protected Areas (Protected Planet) and Key Biodiversity Areas (KBA). In Japan, this was complemented with the GBNAT conservation priority indicator, which reflected the relative importance of a location in reducing species extinction risk. By analysing biodiversity and ecosystem intactness alongside conservation priority, the company identified sites with both relatively intact ecosystems and high conservation importance, such as the DENSO Abashiri Test Center, which was prioritised for ecosystem monitoring and conservation.<sup>92, 93</sup></p>	

<sup>91</sup> Denso (2025) [Integrated Report](#).

<sup>93</sup> Denso (2026) [TNFD](#).

**Mitsui & Co. is** a Japanese trading and investment company involved in a wide range of sectors including energy, minerals, infrastructure, chemicals and food through global investments and partnerships.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Assessed using indicators of ecosystem integrity and change. These included the Biodiversity Intactness Index (BII), which measures how current species abundance compares with expected levels under minimal human pressure, and loss of tree cover around business sites based on Global Forest Watch data as an indicator of ecosystem degradation. These indicators were used to evaluate the ecological condition of locations where Mitsui’s operations interact with nature and to identify regions where ecosystems may be experiencing degradation or reduced integrity. The results informed the identification of priority regions for further assessment.<sup>94</sup></p>	<p>Assessed using indicators such as proximity to protected areas and Key Biodiversity Areas (KBAs) and the STAR (Species Threat Abatement and Restoration) metric, which estimates the potential contribution of actions at a location to the reduction of global species extinction risk based on IUCN Red List data. The analysis showed that approximately 10% of assessed sites are located within 500 metres of protected areas or KBAs, indicating potential exposure to biodiversity-sensitive locations. The results were used alongside ecosystem condition indicators to identify priority regions and inform the selection of business activities and locations for further analysis under the next LEAP approach phases.</p>	

**Nissin Foods** is a Japanese food company that produces instant noodles and other packaged food products, with operations and distribution across multiple global markets.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Used species-based biodiversity metrics to screen nature-related impacts associated with the procurement of key raw materials. For terrestrial commodities such as palm oil, cacao and wheat, the company combined ENCORE with large biodiversity datasets and applied the Mean Species</p>		

<sup>94</sup> Mitsui&CO (2025) [Disclosure Based on TNFD Recommendations](#).

Abundance (MSA) metric to quantitatively assess how production-related impact drivers affect biodiversity across sourcing regions. <sup>95</sup>		
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<sup>95</sup> Nissin Foods (2026) [Disclosure Based on the Taskforce on Nature-related Financial Disclosures \(TNFD\) Recommendations](#).

## 4.2. Disclosure

### 4.2.1. Requirements for state of nature measurement in disclosure

Disclosure frameworks and standards are already recommending or requiring disclosure of information on the state of nature. Both GRI and the Draft Amended European Sustainability Reporting Standards (ESRS – issued in November 2025) include disclosure of some state of nature indicators as requirements. The TNFD currently includes placeholder global disclosure state of nature indicators.

This section describes the current status of the state of nature in the TNFD disclosure framework, GRI Standards and the Draft Amended ESRS of November 2025.

#### **TNFD's existing recommendations on disclosure of state of nature metrics**

The TNFD adopts a flexible approach to materiality, enabling organisations to disclose nature-related information using financial materiality, impact materiality or both (double materiality).<sup>96</sup> Financial materiality focuses on nature-related dependencies and impacts that may translate into risks and opportunities affecting an organisation's financial performance.<sup>97</sup> Impact materiality considers the organisation's most significant impacts on nature and ecosystems, reflecting broader stakeholder interests, including but not limited to investors.<sup>98</sup> The flexible approach to materiality enables organisations to select and disclose metrics (including on the state of nature) that reflect the nature-related issues identified as material through the LEAP approach, according to their chosen approach to materiality.<sup>99</sup>

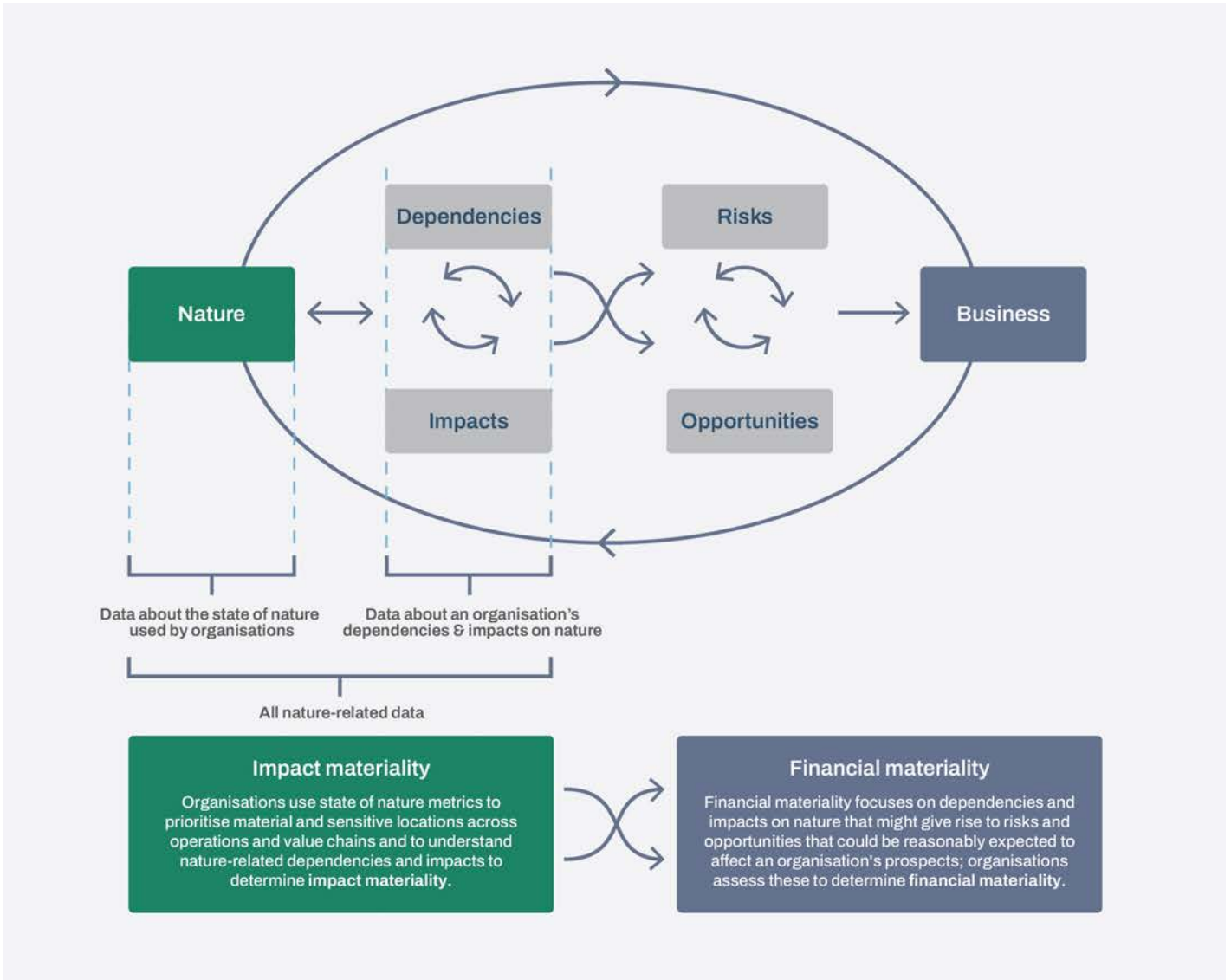
<sup>96</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

<sup>97</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

<sup>98</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

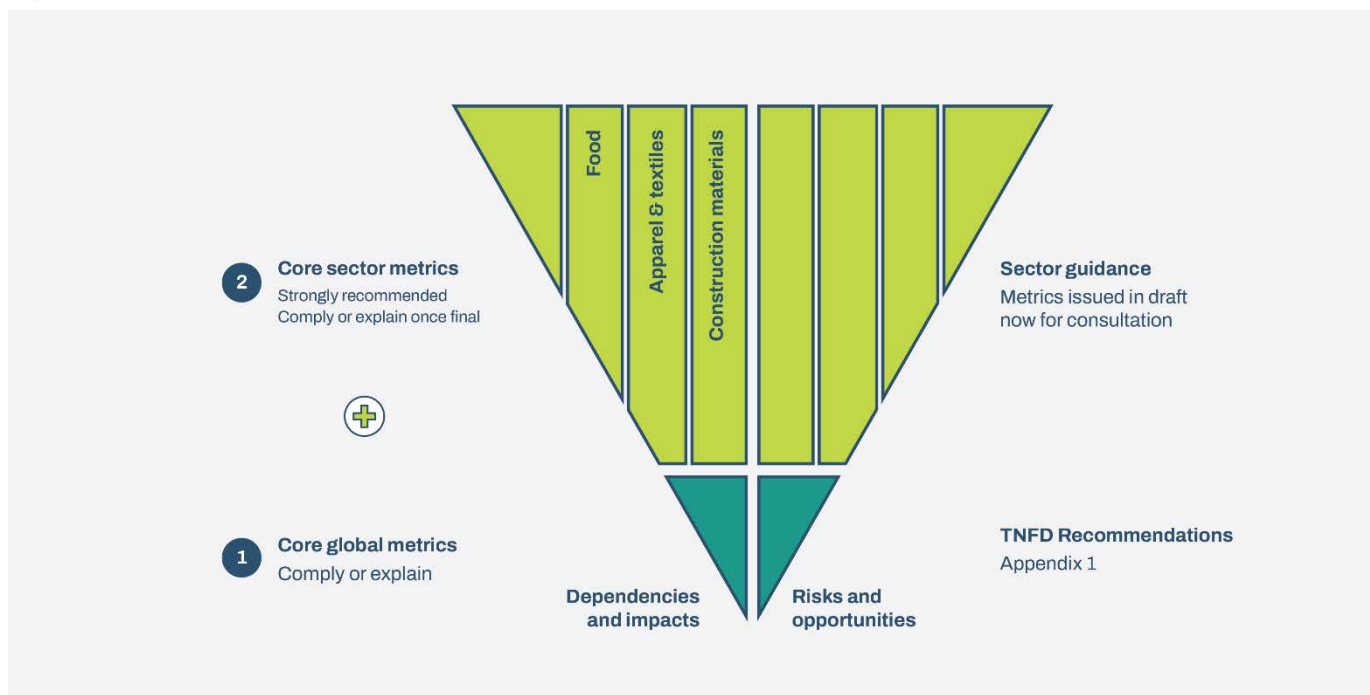
<sup>99</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

**Figure 9: State of nature mapped to nature-related dependencies, impacts, risks and opportunities<sup>100</sup>**



<sup>100</sup> Adapted from TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

**Figure 10: TNFD disclosure metrics: three-tiered approach.**<sup>101</sup>



Source: TNFD 2023, [Taskforce on Nature-related Financial Disclosures \(TNFD\) Recommendations](#)

For disclosure metrics, the TNFD takes a three-tiered approach, developed through extensive engagement with knowledge partners and market participants, to provide comparability (for report users) and flexibility (for report preparers):

**Core global metrics** – for cross-sector comparability. These are expected to be disclosed by all organisations on a comply or explain basis by report preparers.

**Core sector metrics** – for within sector comparability. These are included as part of the TNFD sector-specific guidance and are expected to be disclosed on a comply or explain basis by report preparers in those sectors.

**Additional metrics** – which are recommended for disclosure, where relevant, to best represent an entity’s ‘material nature-related issues’, based on their specific circumstances.

Metrics are disclosed according to Metrics and Targets B. The existing requirement text can be found in the TNFD recommendations:

“The organisation should disclose the indicators and metrics used to measure and manage the material nature-related dependencies and impacts described in Strategy A.

<sup>101</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

To achieve this, an organisation should disclose the metrics that are most relevant to and most accurately represent the nature-related dependencies and impacts on which it is reporting on. This should include, for each dependency and impact described in Strategy A:

- **All core global and core sector metrics** for dependencies and impacts listed in Annex 4 and in relevant sector guidance; and
- **Any other relevant metrics**, drawing on the TNFD additional disclosure indicators and metrics listed in Annex 2 and the organisation’s own assessment metrics as appropriate.”

“It is also recommended that the organisation considers covering in its disclosure, for the location of each dependency and impact described in Strategy A, with reference to Strategy D:

- Other elements of the dependency and impact pathway (qualitatively if quantitative metrics are not yet available) including:
  - Changes in the **state of nature** (e.g. ecosystem condition and extent, and species population size and extinction risk); and
  - Changes in the availability of **ecosystem services.**”

The state of nature is defined by the TNFD to include the condition and extent of ecosystems and species population size and extinction risk. This builds on the approach of the UN System of Environmental Economic Accounting – Ecosystem Accounting (UN SEEA EA).<sup>102</sup> State of nature is currently a placeholder global disclosure indicator, including ecosystem condition and species extinction risk (C5.0).

<sup>102</sup> UN Department of Economic and Social Affairs Statistics Division (2024) [System of Environmental-Economic Accounting Ecosystem Accounting](#).

Figure 11: TNFD core global disclosure indicators



Core, placeholder and additional disclosure metrics on state of nature in TNFD's metrics architecture are highlighted in Table 6.

**Table 6: Current status of state of nature in TNFD's existing core, placeholder and additional disclosure metrics**

TNFD Metric number	Indicator	Metric
<b>Placeholder core disclosure metrics</b>		
<b>C5.0</b>	Placeholder indicator: Ecosystem condition	For those organisations that choose to report on state of nature metrics, the TNFD encourages them to report the following indicators, and to refer to the TNFD additional guidance on measurement of the state of nature in Annex 2 of the LEAP approach: • Level of ecosystem condition by type of ecosystem and business activity; and • Species extinction risk.
	Placeholder indicator: Species extinction risk	There are a number of different measurement options for these indicators. The TNFD does not currently specify one metric as there is no single metric that will capture all relevant dimensions of changes to the state of nature and a consensus is still developing.  The TNFD will continue to work with knowledge partners to increase alignment.
<b>Additional disclosure metrics</b>		
<b>A5.0</b>	Ecosystem condition	Level of ecosystem condition by type of ecosystem and business activity – refer to TNFD additional guidance on state of nature measurement in Annex 2 of the LEAP approach.
<b>A5.1</b>	Ecosystem extent	Quantitative measure of ecosystem extent, e.g. change in habitat cover (km <sup>2</sup> )
<b>A5.2</b>	Ecosystem connectivity	Quantitative measure of ecosystem connectivity, e.g. Singapore Index.
<b>A5.3</b>	Species extinction risk	Quantitative measure of species extinction risk – refer to TNFD additional guidance on state of nature measurement in Annex 2 of the LEAP approach.



The NPI state of nature indicators map to the TNFD's existing core global, placeholder and additional disclosure metrics as follows (also see Table 7):

**Ecosystem extent** is captured by existing core global disclosure metrics C1.0 (on spatial footprint) and C1.1 (on ecosystem use change), and additional metric A5.1 (on ecosystem extent, such as habitat cover).

**Ecosystem condition** is covered by the current placeholder indicator on state of nature (C5.0). Ecosystem connectivity is covered by an additional disclosure metric (A5.2). However, the TNFD retains a flexible approach to exact metrics used for ecosystem condition under the core global indicator. A list of potential metrics and useful tools is given in LEAP Annex 2. The TNFD includes both natural and anthropogenic ecosystems in its approach – organisations are encouraged to measure extent and condition across both.<sup>103</sup> Guidance on reference states and baselines for ecosystem condition are given in LEAP Annex 2.<sup>104</sup>

**Species extinction risk** is covered within the placeholder core global disclosure indicator on state of nature (C5.0). However, individual metrics underpinning this indicator are not specified. LEAP Annex 2 provides guidance on quantitative measures of species extinction risk.<sup>105</sup>

**Species population size** is an additional disclosure metric (A5.4). Guidance on quantitative measurement of species populations is given in LEAP Annex 2.<sup>106</sup>

NPI's indicator framework breaks suggested metrics down to a site and landscape level. The TNFD's approach to the identification of priority locations (assessment in L4 of LEAP, and disclosure through recommendation Strategy D) does not make this distinction for state of nature metrics.

<sup>103</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>104</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>105</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>106</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

**Table 7: NPI state of nature metrics<sup>107</sup> mapped to TNFD current disclosure metrics (including placeholder metrics)\***

	Ecosystem extent	Ecosystem condition	Species extinction risk	Species populations
Site	Area (absolute and percentage) of loss, gain and net change in extent of natural ecosystems (ha, %).  <i>Core global metrics C1.0 and C1.1; additional global metric A5.1</i>	Area and change by condition class (ha, %).  <i>Placeholder core global metric C5.0; additional global metric A5.0</i>	Species extinction risk measurement showing the contributions of the site to the global extinction risk of threatened species.  <i>Additional global metric A5.3</i>	Change in the number and proportion of priority species with populations that are 1) declining, 2) slowing in decline, 3) stable, and 4) increasing.  <i>Additional global metric A5.4</i>
Landscape/Seascape	Area (absolute and percentage) of loss, gain and net change in extent of natural ecosystems (ha, %).  <i>Core global metrics C1.0 and C1.1; additional global metric A5.1</i>	Values and change in structural and functional connectivity between natural ecosystems.  <i>Additional global metric A5.2</i>	Species extinction risk measurement showing the contributions of the landscape/seascape to the global extinction risk of threatened species.  <i>Additional global metric A5.3</i>	Change in the number and proportion of priority species with populations that are 1) declining, 2) slowing in decline, 3) stable, and 4) increasing.  <i>Additional global metric A5.4</i>

\* **Note:** TNFD priority locations are identified during assessment in the Locate phase and disclosed according to recommendation Strategy D. Currently, there is no distinction between site and landscape/seascape in TNFD's approach to priority locations.

<sup>107</sup> NPI state of nature metrics - version for public consultation during February and March 2026.



### State of nature in GRI disclosure requirements

*GRI 101: Biodiversity 2024* enables an organisation to publicly disclose its most significant impacts on biodiversity and how it manages them. The standard follows an impact-based reporting logic aligned with the GRI approach to impact materiality. Organisations first identify where their most significant biodiversity impacts occur across the value chain, then report the geographic locations of those impacts, and disclose information about direct drivers, changes in biodiversity state, related ecosystem services, and how they manage those impacts.

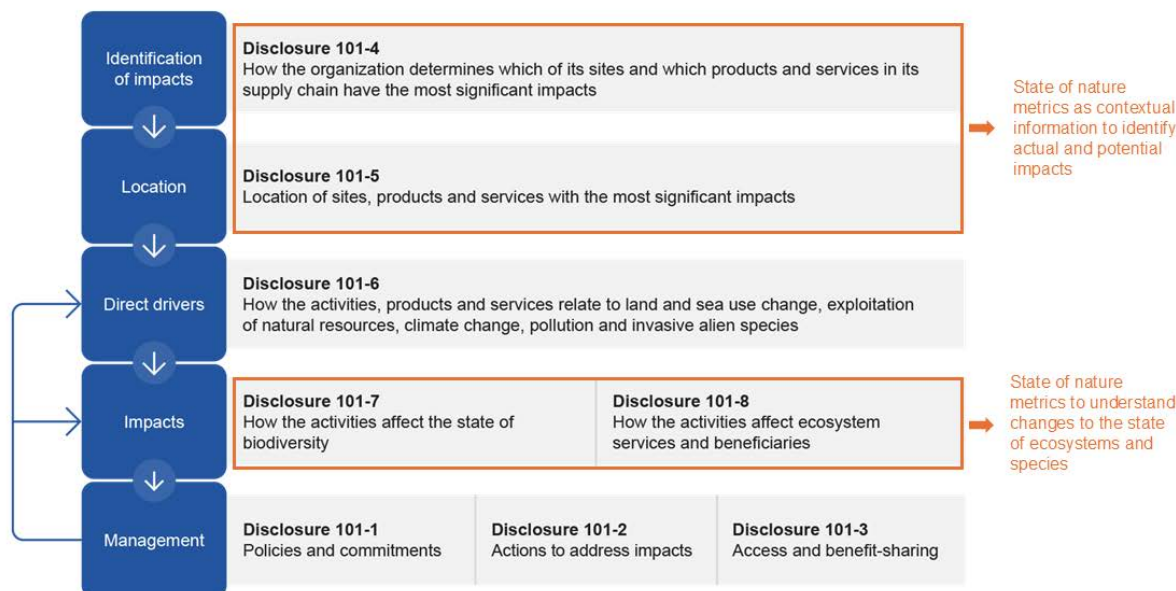
Within *GRI 101*, the concept of ‘state of biodiversity’ broadly corresponds to ecosystem condition, extent and species-related attributes, and can be understood as aligned with the concept of ‘state of nature’ used in this paper.

State of biodiversity information is primarily reflected in, or informs, four disclosures (see Figure 12):

- Disclosure 101-4 Identification of biodiversity impacts
- Disclosure 101-5 Locations with biodiversity impacts
- Disclosure 101-7 Changes to the state of biodiversity
- Disclosure 101-8 Ecosystem services

Across these disclosures, the standard addresses biodiversity impacts occurring in the organisation’s own operations, its upstream supply chains, and, where relevant, downstream value chains. Requirements in the standard (“shall”) define the minimum information that organisations must disclose to report in accordance with the GRI Standards. Guidance may also include additional disclosure recommendations and options, where a particular course of action is encouraged or possible but not required. The word “should” indicates a recommendation, while “can” indicates a possibility or option.

**Figure 12: State of biodiversity metrics in GRI 101**



Source: Global Reporting Initiative

**Identification of biodiversity impacts (Disclosure 101-4)**

Disclosure 101-4 requires an organisation to explain how it has determined which of its sites and which products and services in its supply chain have the most significant actual and potential impacts on biodiversity. The requirement therefore explicitly covers impacts occurring both in the organisation’s own operations (sites owned, leased or managed by the organisation) and in upstream supply chains.

The disclosure also provides guidance for organisations on how to identify the most significant impacts on biodiversity (see section 4.2.1. on location prioritisation guidance).

State of nature information plays an important role at this stage as contribution to the direct drivers, the proximity to ecologically sensitive areas, and the changes to the state of nature can all increase the severity and likelihood of an impact.

The standard recognises that an organisation may use different types of information to support this assessment. Primary monitoring data may be used where available, while secondary or modelled datasets can also be applied. For example, geospatial datasets describing ecosystem condition or species distributions can be combined with site or supplier location data to identify areas where biodiversity impacts may be significant.

Guidance further indicates that organisations can draw on existing tools and frameworks such as the SBTN, the TNFD LEAP approach and/or biodiversity risk screening tools to support impact identification.

### Locations with biodiversity impacts (Disclosure 101-5)

Disclosure 101-5 addresses location-specific information on biodiversity impacts. The organisation is required to report the location and size of its sites with the most significant impacts on biodiversity and to indicate whether these sites are located in or near ecologically sensitive areas.

The disclosure also requires that organisations report the products and services in the supply chain with the most significant biodiversity impacts and the countries or jurisdictions where the associated activities occur. If information is available, the organisation is encouraged, but not required, to report if these supply chain activities occur in or near ecologically sensitive areas.

Within this disclosure, state of biodiversity information can therefore help characterise the ecological context of both operational sites and supply chain regions.

### Changes to the state of biodiversity (Disclosure 101-7)

Disclosure 101-7 explicitly addresses changes in the state of biodiversity associated with an organisation's activities. For each site prioritised as having the most significant biodiversity impacts, organisations are required to report information on affected ecosystems, including ecosystem type, ecosystem size and ecosystem condition. This means Disclosure 101-7 is the disclosure within GRI 101 for reporting outcome-oriented information on biodiversity, complementing pressure-based disclosures under Disclosure 101-6.

When reporting information on the affected or potentially affected ecosystems, the organisation should consider all ecosystem types in the area affected by its activities, including areas beyond its sites, if relevant.

Although the requirements focus on the organisation's sites, the Standard also recommends that organisations consider impacts occurring through their supply chains and downstream value chains. Organisations should additionally report information on affected or potentially affected species for their prioritised sites. This can include the species concerned, its extinction risk and population size, where such information is available.

Guidance to this disclosure also clarifies that observed changes in the state of biodiversity may reflect the cumulative impacts of the organisation's activities as well as those of other actors. It is therefore not always possible to determine the extent to which changes in the state of biodiversity are attributable to the organisation itself. However, this information, together with information on direct drivers of biodiversity loss (e.g. land use change, pollution) helps provide a clearer understanding of the organisation's biodiversity impacts and can inform how these impacts are managed.

*GRI 101* does not prescribe specific metrics for reporting on ecosystem size and condition or on species. Instead, organisations are expected to select appropriate metrics based on the ecological context, the availability of data and the nature of their biodiversity impacts.

## Ecosystem services (Disclosure 101-8)

Disclosure 101-8 addresses impacts on ecosystem services associated with organisational activities. Ecosystem services refer to the benefits that people obtain from ecosystems, such as water regulation, soil fertility, climate regulation and cultural services.

Through this disclosure, organisations report information on ecosystem services that are affected or potentially affected by their biodiversity impacts. The disclosure helps connect ecological changes described under Disclosure 101-7 with potential consequences for people, communities and economic activities.

This information can be particularly relevant where biodiversity impacts influence the availability or functioning of ecosystem services that support livelihoods, supply chains or other economic activities.

## State of nature in the European Sustainability Reporting Standards (ESRS)

**ESRS's** 2025 proposed update simplifies reporting requirements. The Corporate Sustainability Reporting Directive (CSRD) has also updated the scope of organisations expected to report. The updated standards apply to EU companies with over EUR 450 million net turnover and more than 1,000 employees.

ESRS includes the Environmental topical Standard **ESRS E4 on Biodiversity and Ecosystems**.<sup>108</sup> Within draft Amended ESRS E4, organisations are required to disclose metrics related to biodiversity and ecosystem change in relation to the following sub-topics, if material.<sup>109</sup>

- Drivers of biodiversity and ecosystem change;
- The state of species (e.g. extinction risk);
- The condition and extent of ecosystems; and
- Ecosystem services.<sup>110</sup>

The 'state of species' and the 'condition and extent of ecosystems' together constitute the core components of the state of nature. No specific metrics are prescribed, allowing organisations to select those most appropriate to their specific context, in alignment with draft Amended ESRS 1 section 1.1 on entity-specific disclosures.

<sup>108</sup> The proposed 2025 update to ESRS is undergoing finalisation, and is due to be adopted within 2026.

<sup>109</sup> EFRAG (2025) [Draft ESRS E4: Biodiversity and Ecosystems](#).

<sup>110</sup> General requirements for preparing ESRS sustainability statements state: "Except when reporting ESRS E1-8 metrics, if the undertaking can provide without incurring undue cost or effort reliable direct or estimated data only for an objectively defined part of its own operations or its upstream or downstream value chain, it shall disclose that it has identified material impacts, risks or opportunities but that the corresponding metric can currently only be reported on a partial reporting scope or for a subset of the value chain." EFRAG (2025) [Draft ESRS S1: General Requirements](#).



### 4.2.2. Use of state of nature measurement in disclosure

#### Examples of disclosure of state of nature by report preparers

Organisations are starting to disclose state of nature indicators and metrics in sustainability or nature-related reports to provide information on ecosystem condition, species extinction risk and species abundance, helping to communicate how companies monitor nature outcomes and assess nature-related dependencies, impacts, risks and opportunities. These disclosures appear in different reporting formats, including standalone TNFD reports, sustainability or integrated reports prepared under ESRS, GRI or other standards, and supporting sustainability factbooks, often accompanied by cross-reference tables linking disclosures to multiple reporting frameworks.

The examples in Table 8 illustrate how report preparers disclose different types of state of nature indicators and metrics, highlighting the information reported, the purposes for which these indicators are used, and the reporting formats through which they are disclosed.

**Table 8: Examples of state of nature disclosure**

<p><b>Ferrovial SE</b> is a multinational company focused on the development and operation of transport infrastructure and urban mobility solutions, with business areas including highways, airports and construction.</p> <p><b>Disclosure format consideration:</b> Ferrovial’s Integrated Annual Report consulted for this review follows the ESRS disclosure structure (before the 2025 draft amended version) and includes references to multiple standards and frameworks such as SASB and the TNFD, including a cross-reference table mapping TNFD disclosure recommendations to their corresponding ESRS disclosures.</p>		
Ecosystem condition	Species extinction risk	Species abundance (populations)
	<p>The company disclosed information on species listed on the IUCN Red List and national conservation lists whose habitats are located in areas affected by its operations, as well as protected and/or sensitive areas near its assets and construction sites, including information on the management of potential impacts on these areas.</p>	
<p><b>Rio Tinto</b> is a global mining company with operations focused on the extraction and processing of minerals such as iron ore, aluminium and copper.</p> <p><b>Disclosure format consideration:</b> State of nature related information was disclosed in Rio Tinto’s Sustainability Fact Book, an excel document which provides supporting sustainability data</p>		
Ecosystem condition	Species extinction risk	Species abundance (populations)
	<p><b>Rio Tinto</b> discloses a ranking of its locations based on biodiversity sensitivity. The score combines relative biodiversity value (derived from species richness and ecosystem integrity datasets) and relative biodiversity vulnerability (based on datasets on potential critical habitat, STAR threat abatement and critical natural assets).<sup>112</sup></p>	

<sup>111</sup> Ferrovial (2024) [Integrated Annual Report](#).

<sup>112</sup> Rio Tinto (2025) [Sustainability Fact book](#).

**Holcim** is a Swiss building materials company producing cement, aggregates and concrete, with operations in more than 70 countries

**Disclosure format consideration:** The Holcim Integrated Annual Report 2025 was prepared with reference to multiple reporting frameworks, including ESRS, GRI, SASB and the TNFD. The report includes multiple disclosure indexes that map the same sections of the report to the requirements of these frameworks, allowing the nature-related information disclosed to be referenced across different reporting standards.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Holcim discloses biodiversity indicators for its operational sites, particularly quarries, using a Biodiversity Indicator and Reporting System (BIRS) developed in collaboration with the International Union for Conservation of Nature (IUCN). BIRS assesses site-level biodiversity baselines and ecosystem condition by evaluating factors such as habitat types present at quarry sites, habitat quality, ecological value and the presence of species of conservation concern. Using this methodology, the company reports the proportion of quarries assessed for biodiversity baselines, the number of sites located in or near areas of biodiversity importance, and the share of those sites with biodiversity management plans in place.<sup>114</sup></p>	<p>In 2025, Holcim tested the implementation of the IUCN RHINO approach and the use of the STAR metric at two quarries in Mexico and Costa Rica to assess how they complement BIRS and what insights they provide for the company’s biodiversity management plans.<sup>115</sup> However, this exploratory exercise was not included in the reporting.</p>	

<sup>113</sup> Holcim (2025) [Integrated Annual Report](#).

<sup>114</sup> Holcim (2026) [Biodiversity](#).

<sup>115</sup> [Cross-sector pioneers share insights after piloting the IUCN RHINO approach - Story | IUCN](#)

**TCC Group Holding’s (Taiwan Cement Corporation)** is a Taiwan-based industrial group, with operations centred on the production of cement, concrete and construction materials.

**Disclosure format consideration:** The information was disclosed in TCC Group Holdings’ standalone TNFD Report, which presents nature-related disclosures aligned with the TNFD recommendations and includes a GRI 101 Standards Reference Table referencing the corresponding biodiversity disclosures.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p><b>TCC</b> discloses ecosystem condition indicators to monitor restoration outcomes at its mining sites. Using the Society for Ecological Restoration’s “Recovery Wheel” framework, the company assesses restoration areas against natural forest reference conditions through indicators such as canopy cover, vegetation structure (including strata and vegetation height), regeneration, species composition, biodiversity index and the Important Value Index of Indigenous Species (IVI), enabling the evaluation of ecosystem recovery over time.<sup>117</sup></p>		<p><b>TCC</b> referred to the GCCA Sustainability Guidelines for Quarry Rehabilitation and Biodiversity Management and employed the Methodology for the Net Impact Assessment of Biodiversity in the Cement Sector (NIA), released by the World Business Council for Sustainable Development (WBCSD), to analyse changes in biodiversity index curves at the Hoping Mine, aiming to achieve No Net Loss (NNL) by 2040 and Net Positive Impact (NPI) thereafter. The approach combines GIS-based habitat mapping with assessments of habitat importance and condition from environmental impact assessments to generate a weighted biodiversity score for the mine area, incorporating the Shannon–Wiener Species Diversity Index (H’).<sup>118</sup></p>

<sup>116</sup> TCC Group Holdings (2023) [TNFD Report - From no net loss to net positive impact](#).

<sup>117</sup> TCC Group Holdings (2023) [TNFD Report - From no net loss to net positive impact](#).

<sup>118</sup> TCC Group Holdings (2023) [TNFD Report - From no net loss to net positive impact](#).

**Nissui Corporation** is a Japan-based seafood company that engages in wild-capture fisheries, aquaculture, and the procurement, processing and sale of marine products and food products globally.

**Disclosure format consideration:** The information was disclosed in The Nissui Corporation’s 2025 Sustainability Report, as well as in its second standalone TNFD report, also published in 2025.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>In its 2025 TNFD report, Nissui disclosed indicators of ecosystem condition in the Locate phase of LEAP to identify sensitive locations and prioritise two areas in its direct aquaculture locations. The company assessed the health of natural habitats using ecosystem-specific indicators. Terrestrial conditions were evaluated using the Biodiversity Intactness Index (BII) and Mammal Movement Probability (MMP). Freshwater ecosystem condition was assessed through a river fragmentation indicator. Marine ecosystem condition was measured using an average condition index across six ecosystem types: coral reefs, mangroves, sea ice, seagrass, saline marshes, and soft-bottom habitats such as sand and mud.</p>	<p>Nissui also uses species extinction risk information in its procurement targets.<sup>119</sup></p>	<p>Nissui monitors species abundance through regular resource assessments used to evaluate the status of marine stocks used in its supply chains. The company reports that it conducts resource surveys based on the volumes of natural and processed marine products handled by Nissui and its 36 group companies. These assessments support the company’s commitment to procure 100% of marine species from sustainably managed stocks.<sup>120</sup></p>

<sup>119</sup> Nissui Corporation (2025) [Sustainability Report](#); Nissui Corporation (2025) [TNFD Report 2025](#).

<sup>120</sup> Nissui Corporation (2025) [Sustainability Report](#).

**Wallenius Wilhelmsen** is a global shipping and logistics company that transports vehicles, heavy equipment and other rolling cargo worldwide, and provides integrated supply-chain services from factory to end customer.

**Disclosure format consideration:** The information was disclosed in Wallenius Wilhelmsen’s 2024 Annual Report and further described in a use case Wallenius Wilhelmsen published in 2025 detailing the biodiversity impact assessment it conducted using the guidelines and methodology recommended by the TNFD.

Ecosystem condition	Species extinction risk	Species abundance (populations)
	<p>Wallenius Wilhelmsen used state of nature information to define priority locations for nature-related issues management by assessing the vulnerability of marine mammals along its shipping routes. In its 2024 Annual Report, Wallenius Wilhelmsen highlights that whales are endangered species, and are particularly vulnerable to vessel strikes and noise pollution because their feeding and migration routes often overlap with major shipping lanes and ports. Building on this understanding of species vulnerability, the company analysed marine mammal vulnerability using datasets such as the whale-density hotspot datasets from the World Shipping Council’s Whale Chart and combined this with vessel traffic exposure – measured as the time its vessels spent in each area – to identify locations where shipping activity overlaps with sensitive marine species. This analysis enabled the company to identify three of the nine assessed locations as high-priority areas for biodiversity risk management.</p>	

<sup>121</sup> Wallenius Wilhelmsen (2025) [2024 Annual Report](#); Wallenius Wilhelmsen (2025) [Enhancing Maritime Biodiversity Considerations - Wallenius Wilhelmsen’s LEAP approach](#).

#### 4.2.3. Use of disclosure of state of nature metrics by report users

Financial institutions, including asset owners and asset managers, lenders, insurers and development finance institutions, as well as ratings agencies, use state of nature information to engage with corporates and to strengthen decision making. Examples of financial institutions using both ecosystem and species metrics are provided in Table 9.

There are three main routes through which financial institutions are using state of nature information:

- **Nature-related expectations:** Asset owners and managers are beginning to set expectations on stewardship for the corporates they invest in. One example is Norges Bank Investment Management's nature expectations.<sup>122</sup> The information requested can include expectations on deforestation or conversion-free value chains, water stewardship in water stressed basins or protection of high-integrity habitats. State of nature metrics, particularly ecosystem extent and condition metrics, provide an evidence base for determining where corporate activities pose heightened nature-related risks. Financial institutions tend to use nature expectations as an engagement tool, through which they can encourage investee corporates to change their strategy and decision making, rather than as a tool to inform divestment.<sup>123</sup>
- **Portfolio screening:** State of nature metrics are also used by financial institutions to understand nature-related risk across their portfolios. Metrics used for this purpose are generally dependent on global data layers, rather than on-the-ground measurement.<sup>124</sup> Widely used metrics linking impact drivers to changes in the state of nature include: Mean Species Abundance (MSA) (modelled average abundance of native species compared to against undisturbed reference conditions); Potentially Disappeared Fraction of species (PDF) (potential loss of species in an area due to pressures, commonly used in life-cycle-assessment (LCA)); Biodiversity Intactness Index (BII) (estimating how much of a region's natural undisturbed baseline biodiversity still remains, on average);<sup>125</sup> Ecosystem Integrity Index (ecosystem integrity (structure, composition and function) compared to a natural baseline);<sup>126</sup> and, Species Threat

<sup>122</sup> Norges Bank Investment Management (2021) [Biodiversity and Ecosystems](#).

<sup>123</sup> Norges Bank Investment Management (2025) [Biodiversity and Ecosystems](#); BlackRock (2023) [Our Approach to Engagement on Natural Capital](#); HSBC (2025) [Stewardship Plan](#).

<sup>124</sup> Visentin (2026) [Financial Risks of Biodiversity Loss: A Review](#).

<sup>125</sup> De Palma et al. (2021) [Annual Changes in the Biodiversity Intactness Index in Tropical and Subtropical Forest Biomes](#).

<sup>126</sup> Samantha L. L. Hill et al. (2022) [The Ecosystem Integrity Index: A Novel Measure of Terrestrial Ecosystem Integrity with Global Coverage](#).

Abatement and Restoration (STAR) (quantifying the potential of conservation and restoration activities in an area to reduce global extinction risks for species).<sup>127,128,129,130</sup>

- Measurement of impacts and dependencies in financial portfolios is also discussed in the TNFD's 2025 discussion paper.<sup>131</sup> The TNFD also provides a core disclosure metric for financial institutions on exposure to sensitive locations.<sup>132,133</sup>
- **Shaping financial instruments:** State of nature information and metrics are also increasingly used to determine key performance indicators (KPIs) for financial products, including well-known models, such as real-estate, project finance and infrastructure finance. State of nature aspects may already be considered where International Finance Corporation (IFC) Performance Standard 6 (PS6) on biodiversity conservation is triggered. State of nature KPIs can also be integrated into instruments specifically adapted to support more sustainable nature-related activities, including new, innovative designs, such as parametric insurance.<sup>134</sup>

<sup>127</sup> Mair et al. (2021) [A Metric for Spatially Explicit Contributions to Science-Based Species Targets](#).

<sup>128</sup> TNFD (2023) [Discussion paper on biodiversity footprinting approaches for financial institutions](#)

<sup>129</sup> BNP Paribas Asset Management (2025) [Sustainable by Nature Sequel: Reconnecting to Our Ocean](#).

<sup>130</sup> BNP Paribas Asset Management (2026) [Statement from the Private Financial Sector to ESG Data Providers: The Urgent Need for Better Ocean-Related Data to Make Informed Investment Decisions](#).

<sup>131</sup> TNFD (2025) [Discussion Paper on Identification, Assessment and Disclosure of Dependencies and Impacts on Nature in Financial Portfolios](#).

<sup>132</sup> Financial institution core disclosure metric (FI.C0.1): Exposure to sensitive locations: "This metric demonstrates that a financial institution has undertaken an initial nature-related exposure assessment with a sensitive location lens. For banks: absolute amount or percentage of lending volume; for asset owners and managers: absolute amount or percentage of invested or owned assets; for re/insurers: absolute amount or percentage of gross written premiums (excluding external acquisition costs if appropriate) or total sums insured."

<sup>133</sup> TNFD (2024) [Additional Guidance for Financial Institutions](#).

<sup>134</sup> TNFD (2025) [Discussion paper on nature-related opportunities](#).

**Table 9: Examples of use of state of nature information by report users (financial institutions)**

	Ecosystem condition	Species extinction risk	Species abundance (populations)
<p><b>Banks (asset owners/managers and lending banks)</b></p>	<ul style="list-style-type: none"> <li>Norges Bank Investment Management (NBIM)’s expectations on nature and biodiversity outline ecosystem-specific expectations, setting out how companies should manage activities specifically related to land, water and ocean ecosystems. Companies are asked to consider how their activities can maintain “ecosystem resilience and productivity across land, freshwater and marine ecosystems.”<sup>135</sup></li> <li>Barclays applied ecosystem integrity to identify high-integrity locations and locations rapidly declining in its mining and power generation portfolios.<sup>136</sup></li> <li>BNP Paribas researchers have published a paper exploring use of BII, MSA and PDF for understanding ecosystem condition in the context of financial portfolios with the conclusion that they can be used “to measure their investments and financings biodiversity footprints”.<sup>137</sup></li> <li>Aviva Investors has developed a corporate biodiversity risk tool (for public markets) using MSA to explore</li> </ul>	<ul style="list-style-type: none"> <li>Aviva Investors use the IUCN Red List of Threatened Species as the basis of its Private Markets Biodiversity Risk Tool, to assess where assets provide habitat to, or are in close proximity to, species on the Red List.<sup>140</sup></li> <li>WWF undertook an anonymous survey of Multilateral Development Banks to understand how they conduct biodiversity risk screening. Responses indicated that “the great majority of institutions use IBAT for screening (88%, 15/17 respondents)”. To quote one MDB respondent, it is standard practice to “conduct a baseline survey of species to assess whether there are any endangered species present”.<sup>141</sup></li> <li>SMBC Group, in collaboration with MS&amp;AD group and UNEP-FI, use STAR<sub>(T)</sub> to analyse the impact of loans on</li> </ul>	<ul style="list-style-type: none"> <li>Norges Bank Investment Management (NBIM) has set expectations on ocean sustainability that encourage companies to disclose information on their reliance on the sustainability of marine resources. For example, companies buying or selling wild-caught seafood are expected to ensure activities do not involve overfished or exploited stocks beyond maximum sustainable yield, and can demonstrate this through credible certification. Such information enables investors to assess how corporate</li> </ul>

<sup>135</sup> Norges Bank Investment Management (2026) [Nature](#).

<sup>136</sup> Barclays (2025) [Navigating Nature Risk: Applying The TNFD’s LEAP Framework](#).

<sup>137</sup> Imène Ben Rejeb-Mzah et al. (2024) [Quantifying Biodiversity Loss Risk Biodiversity Intactness Indices](#).

<sup>140</sup> Aviva Investors (2025) [Navigating Nature: Opportunities for the Investor of Tomorrow](#).

<sup>141</sup> WWF and The Biodiversity Consultancy (2021) [Public Development Banks and Biodiversity: How PDBs Can Align with the Post-2020 Global Biodiversity Framework](#).



	<p>positive and negative impacts, and dependence on biodiversity.<sup>138</sup></p> <ul style="list-style-type: none"> <li>• Several thematic bonds and loans targeting nature-related opportunities are increasingly being issued, with proceeds allocated to activities that support ocean and water ecosystem outcomes. For example, Banco Bolivariano issued a USD 80 million blue bond in 2023, supported by investments from IDB Invest and FinDev Canada. The bond finances projects including sustainable seafood production, water and wastewater management, and circular economy initiatives that contribute to ocean conservation. As part of the bond structure, Banco Bolivariano committed to make at least two TNFD-aligned disclosures between issuance and maturity.<sup>139</sup></li> </ul>	<p>threatened species. It found that impacts on biodiversity were expected to be relatively large in Japan as well as Southeast Asian countries such as Indonesia and the Philippines.<sup>142</sup></p> <ul style="list-style-type: none"> <li>• BNP Paribas has set up dedicated criteria to frame its financing and investing activities towards ocean protection, and recognises the importance of issues impacting species extinction risks, such as sustainable fish stock management.<sup>143</sup> Drawing on information on the conservation status of marine species and fisheries sustainability, the bank has also divested from companies involved in the trade of protected fish species, including sharks.<sup>144</sup> BNP Paribas also engages with pharmaceutical companies to require them to stop using horseshoe crabs – one</li> </ul>	<p>activities interact with the condition of fish stocks.<sup>146</sup></p>
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<sup>138</sup> Aviva Investors (2025) [Navigating Nature: Opportunities for the Investor of Tomorrow](#).

<sup>139</sup> [IDB Invest \(2023\) IDB Invest, Banco Bolivariano Announce the Issuance of the World's First Blue Bond with Targeted Incentives](#).

<sup>142</sup> SMBC Group (2025) [SMBC Group TNFD Report](#).

<sup>143</sup> BNP Paribas [BNP Paribas and ocean protection](#).

<sup>144</sup> BNP Paribas (2025) [Sustainable by nature sequel: reconnecting to our ocean](#).

<sup>146</sup> Norges Bank Investment Management (2026) [Nature](#).

		species of which is endangered – in biomedical testing. <sup>145</sup>	
<b>Insurers</b>	<ul style="list-style-type: none"> <li>Swiss Re has developed a Biodiversity and Ecosystem Services (BES) Index, which aggregates multiple ecosystem condition layers. These are mainly related to ecosystem service delivery and include water security, habitat intactness, pollination, soil fertility, water quality, erosion control and coastal protection. This is effectively an ecosystem integrity metric used to assess spatial ecosystem condition with a resolution down to ~1km<sup>2</sup>. It is available via Swiss Re’s <a href="#">CatNet®</a> system.<sup>147</sup> Swiss Re offers bespoke access to the BES indicator system in combination with ENCORE, such that clients can conduct a directional multi-location, multi-sector comparability analysis to broadly screen potential ecosystem service related risks, which may inform them to prioritise site visits.</li> <li>Recognising that coral reefs provide vital ecosystem services such as protection against disasters and coastal erosion, Swiss Re, in partnership with The Nature Conservancy and the State Government of Quintana Roo, developed a parametric insurance solution to provide repair funding for the Mesoamerican coral reef.</li> </ul>	<ul style="list-style-type: none"> <li>Allianz uses IBAT to screen for biodiversity risk in underwriting decisions. It is used to assess the biodiversity impacts of insurance clients or potential investment targets on their local environment, including an understanding of the impact on threatened species.<sup>149</sup> These impacts are mainly related to physical assets, such as infrastructure investments, real estate and renewable energy.</li> </ul>	<ul style="list-style-type: none"> <li>Aviva Canada’s Surety team has worked with TransAlta – a large Canadian electrical utility company – providing a surety bond to support the reclamation of its Highvale Coal mine. This includes identifying and monitoring species that are culturally important for Indigenous communities.<sup>150</sup></li> </ul>

<sup>145</sup> BNP Paribas (2025) [Sustainable by nature sequel: reconnecting to our ocean](#).

<sup>147</sup> Swiss Re (2020) [Biodiversity and Ecosystem Services Index: Measuring the Value of Nature](#). Swiss Re [CatNet®](#).

<sup>149</sup> Finance for Biodiversity Foundation (2024) [Biodiversity Measurement Approaches Guide](#).

<sup>150</sup> Aviva (2023) [Biodiversity Report 2022](#).

	The cover is triggered by wind speed within a pre-defined area. <sup>148</sup>		
<b>Ratings agencies</b>	<ul style="list-style-type: none"> <li>• S&amp;P Global, together with UNEP WCMC, launched the Nature Risk Profile, which assesses organisations' nature risk using 130+ metrics, including ecosystem footprint and proximity to areas of high biodiversity importance (e.g. Key Biodiversity Areas and the Ecosystem Integrity Index (EII) as a measure of ecosystem health).<sup>151, 152, 153</sup></li> <li>• Moody's factors ecosystem protection into ratings decisions: "Principal metrics used in our assessment include indicators of the share of a country's terrestrial and marine areas and forest area that are protected; and the share of the country's land area covered by forests, both provided by the World Bank."<sup>154</sup></li> </ul>	<ul style="list-style-type: none"> <li>• S&amp;P Global's Nature Risk Profile's methodology promotes STAR as a suggested metric to facilitate understanding of location significance.<sup>155</sup></li> </ul>	

<sup>148</sup> Swiss Re (2018) [Protecting the world's second biggest coral reef with an innovative parametric solution](#); GFI (2024) [Quintana Roo Reef Protection \(Parametric Insurance\)](#).

<sup>151</sup> S&P Global (2026) [Nature & Biodiversity Risk Dataset](#).

<sup>152</sup> S&P Sustainable (2025) [Companies around the World Face Risks from Their Reliance on Nature](#).

<sup>153</sup> UNEP and S&P Global Sustainable (2023) [Nature Risk Profile: A Methodology for Profiling Nature Related Dependencies and Impacts](#).

<sup>154</sup> Moody's (2021) [General Principles for Assessing Environmental, Social and Governance Risks Methodology](#).

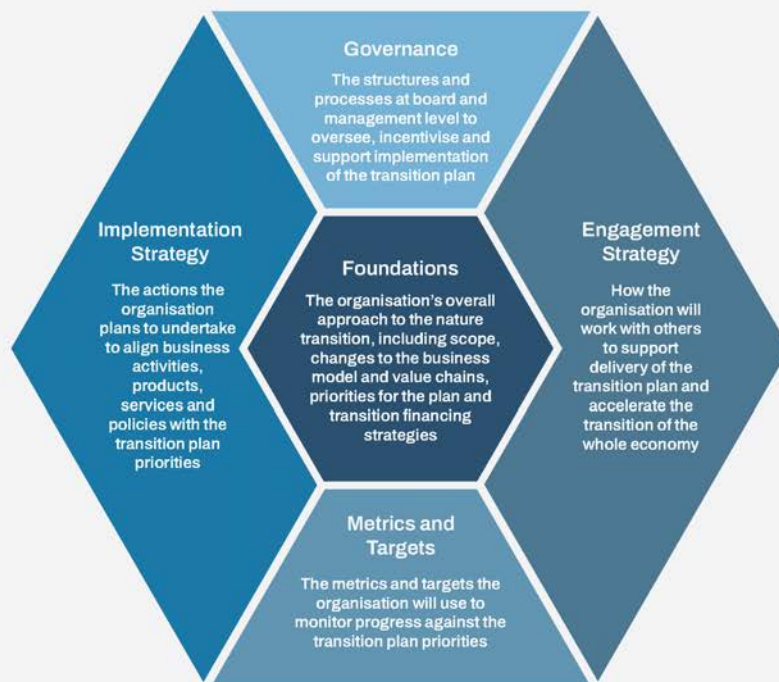
<sup>155</sup> UNEP and S&P Global Sustainable (2023) [Nature Risk Profile](#).

### 4.3. Transition planning

Transition planning offers a coherent, structured way to manage an organisation’s responses and contributions to the transition implied by the Kunming-Montreal Global Biodiversity Framework (KMGBF) – “moving towards halting and reversing biodiversity loss, and the overall vision of ‘a world living in harmony with nature’”. This process is already well established for the net zero transition. The TNFD has developed guidance to help organisations incorporate nature into their transition plans and to disclose information about those plans.<sup>156</sup>

The TNFD recommends disclosing information on transition plans in disclosure Strategy B: “Describe the effect nature-related dependencies, impacts, risks and opportunities have had on the organisation’s business model, value chain, strategy and financial planning, as well as any transition plans or analysis in place”.<sup>157</sup> Themes for nature in transition planning are summarised in Figure 13.

**Figure 13: Key elements of nature in transition plans.**<sup>158</sup>



Source: TNFD (2025) [Guidance on Nature in Transition Plans](#).

<sup>156</sup> TNFD (2025) [Guidance on Nature in Transition Plans](#).

<sup>157</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

<sup>158</sup> TNFD (2025) [Guidance on Nature in Transition Plans](#).

#### 4.3.1. Requirements for state of nature measurement in transition planning

The state of nature is one of the key nature-related considerations for corporates and financial institutions when they are designing a process and rationale to prioritise their dependencies, impacts, risks and opportunities. Businesses are also asked to apply the mitigation hierarchy.<sup>159, 160</sup>

There are several considerations when using state of nature measurement in transition planning and target setting within transition plans.<sup>161</sup>

##### Location-specific issues and consequences:

- **Changes in location:** Organisations should include assumptions about outcomes for nature that result from any changes to the locations of assets and activities in their business model and value chain. When an organisation ends its association with a location, it loses leverage over the state of nature in that location, which may then decline.
- **Outcomes depend on external factors:** Changes in the state of nature in a location reflect external factors, including cumulative impacts from the assets and activities of other stakeholders in and outside of the location. Consequently, improvements or declines in the state of nature may occur, despite an organisation's actions. For example, impact leakage occurs when an organisation reduces its impacts on nature in a location and others in the landscape/seascape, or in a connected location, increase theirs. For example, restoration efforts to support migratory bird populations in their summer habitat could be offset by increased hunting in their winter location. Within a transition plan, the engagement strategy will be particularly important to address leakage and to build collaborations with other stakeholders to support a coordinated approach to the management of nature.

##### Metrics to monitor and incentivise transition plan progress:

- **State of nature in dependency and impact metrics:** Three metric categories are recommended for nature in transition planning: dependency and impact metrics and targets; governance, engagement, business and operational metrics and targets; and financial metrics and targets. Measurement of changes to the state of nature and ecosystem services in the relevant locations can further strengthen an organisation's understanding of whether the actions taken are contributing to halting and reversing nature loss and improving the resilience of the ecosystem services on which the organisation and wider society depend. They need to be measured at the appropriate scale and interpreted carefully, bearing in mind that changes in the state of nature and ecosystem services in

<sup>159</sup> TNFD (2025) [Guidance on Nature in Transition Plans](#).

<sup>160</sup> [SBTN Step 4: Act](#)

<sup>161</sup> TNFD (2025) [Guidance on Nature in Transition Plans](#).



any location are determined by the cumulative actions of all actors with impacts on that location, and may respond to businesses' actions on different timescales to usual business planning.<sup>162</sup>

### Target setting within a transition plan:

**A credible transition plan should involve targets.** An organisation may consider setting targets for state of nature and ecosystem service metrics, although it is recognised that organisations have less direct control over these outcomes, compared to impact drivers. They may be most relevant where an organisation has included in a plan priority a priority commitment to nature protection, conservation, restoration or regeneration, for example, to secure a supply of ecosystem services or to address historic negative impacts.

<sup>162</sup> TNFD (2025) [Guidance on Nature in Transition Plans](#).

#### 4.3.2. Use of state of nature measurement in transition planning

**Table 10: Examples of state of nature metrics in nature and climate transition plans**

<p><b>Iberdrola</b> has presented its Climate Transition Plan to achieve net zero emissions by 2040. The plan is grounded in a just transition approach that includes positive outcomes for both people and nature. It is supported by a Climate Action Plan and a Biodiversity Plan, the latter aiming to achieve a net positive impact on species and ecosystems by 2030. In line with its target-setting goals, Iberdrola has adopted a net balance accounting framework for biodiversity. This framework includes two metrics that quantify the positive and negative impacts on species and ecosystems and is applied across operational facilities, new developments, and the decommissioning of projects.</p>		
Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>Iberdrola uses an ecosystem metric that “measures the change in the extent and condition of ecosystems before and after the installation of the facility in equivalent hectares”.</p> <p>The state of the ecosystem is evaluated through various indicators such as:</p> <ul style="list-style-type: none"> <li>• Land use;</li> <li>• Vegetation cover; and</li> <li>• The presence of protected species.<sup>165</sup></li> </ul>	<p>Iberdrola has also identified the number of threatened species using the IUCN Red List, along with national and regional conservation lists for habitats in the areas where it operates.<sup>166</sup></p>	<p>Iberdrola uses a species metric that “measures the balance between impacts and actions in species. The species index, calculated with potential or actual impact data and the protection category, is calculated to prioritise actions.”<sup>167</sup></p>
<p><b>The National Trust</b> is a heritage conservation charity in the United Kingdom. It manages many historic and cultural buildings and landscapes. Its transition plan set out actions to achieve net zero by 2030 through two main components: reducing emission across Scopes 1, 2 and 3 in line with science-based pathways and increasing carbon capture and storage through land monitoring and use.</p>		

<sup>163</sup> Iberdrola (2023) [Iberdrola Climate Transition Plan 2023](#).

<sup>164</sup> Iberdrola (2023) [We Present Our Accelerated Climate Transition Plan to the United Nations](#).

<sup>165</sup> Iberdrola (2024) [Biodiversity Report 2024](#).

<sup>166</sup> Iberdrola (2024) [Biodiversity Report 2024](#).

<sup>167</sup> Iberdrola (2024) [Biodiversity Report 2024](#).

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>As part of its Restore Nature ambition, the National Trust includes the creation of climate-resilient and nature-rich landscapes through the restoration of peatlands, coastal systems and well-connected landscapes. This is important for net zero goals because degraded land, such as peatland and farmland, can release carbon into the atmosphere, while healthy ecosystems, such as trees, freshwater habitats and marine environments, can absorb and store carbon through natural carbon sequestration ecosystem services.</p> <p>The metrics used by National Trust include:</p> <ul style="list-style-type: none"> <li>• Habitat type (including condition) and age from GIS x flux model from 2021 Natural England Habitat Carbon review. This applies to degrading peatland and farmland, which act as sources of carbon emissions.</li> <li>• Habitat type (including condition) and age from GIS x flux model from 2021 Natural England Habitat Carbon review or Woodland Carbon Code sequestration models. This applies to trees, other terrestrial habitats, freshwater systems and marine habitats that act as carbon sinks by removing and storing carbon through natural sequestration.</li> </ul>		
<p><b>BT Group plc</b> is a multinational telecommunications holding company in the United Kingdom. It provides fixed-line, broadband, mobile and television services to consumers and businesses. Its transition plan outlines actions to reach net zero emissions across Scopes 1 and 2 by 2031, and Scope 3 by 2041, primarily by reducing operational emissions across Scopes 1, 2 and 3 through energy efficiency, renewable electricity and supply-chain engagement, while supporting wider digital solutions that help customers lower their own carbon emissions.</p>		

<sup>168</sup> BT Group Plc (2025) [Climate Transition Plan](#).



Ecosystem condition	Species extinction risk	Species abundance (populations)
	<p>BT Group plc's Climate Transition Plan 2025 pledge includes managing its environmental impact by monitoring wildlife-related incidents and risks across their sites. It measures performance by tracking these incidents and ensuring respect for legally designated protected areas, while avoiding negative impacts on threatened and protected species.<sup>169</sup></p>	

<sup>169</sup> BT Group Plc (2025) [Climate Transition Plan](#).

#### 4.4. Target setting

There is a distinction between pressure-based targets, which focus on the drivers of nature loss, and state-based targets, which focus on state of nature or ecosystem service outcomes (likely better suited to locations under an organisation’s direct control). The TNFD’s LEAP guidance notes that organisations may set and track performance against targets across several metric categories, including impact drivers/pressures, changes in the state of nature, and changes in ecosystem services.<sup>170</sup>

The TNFD LEAP approach provides guidance on target setting in the Prepare phase – component P2 specifically covers target setting and performance management.<sup>171</sup>

The TNFD’s disclosure requirement Metrics and Targets C asks organisations to: “Describe the targets and goals used by the organisation to manage nature-related dependencies, impacts, risks and opportunities and its performance against these.”<sup>172</sup> Organisations may use targets to support and enhance the credibility of a transition plan.<sup>173</sup>

In the GRI Biodiversity Standard, Disclosure 101-1 requires organisations to describe their policies and commitments to halt and reverse biodiversity loss, including their goals, targets and indicators used to measure progress. These should relate to the most significant impacts and therefore may address the direct drivers to which the organisations’ activities contribute, as well as changes in the state of nature and ecosystem services.

Within SBTN’s approach, target setting is structured around the AR3T action hierarchy (Avoid, Reduce, Restore, Regenerate and Transform) including actions that avoid impacts, reduce pressures on biodiversity, adopt regenerative approaches to enhance biodiversity in anthropogenic systems, restore degraded ecosystems, and catalyse business transformation.<sup>174</sup> Pressure-based targets are therefore central and typically focus on reducing the key drivers of nature loss across corporate operations and value chains. Examples include targets to avoid conversion of natural ecosystems, reduce land use footprint, lower nutrient pollution in freshwater systems, or decrease water withdrawals, all of which directly address the ecological pressures associated with land use change, pollution and resource extraction.<sup>175</sup>

<sup>170</sup> TNFD (2023) [Guidance for Corporates on Science-Based Targets for Nature](#).

<sup>171</sup> TNFD (2023) [Guidance on the Identification and Assessment of Nature-Related Issues: The LEAP Approach](#).

<sup>172</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

<sup>173</sup> TNFD (2025) [Guidance on Nature in Transition Plans](#).

<sup>174</sup> [SBTN Step 4: Act](#).

<sup>175</sup> SBTN (2026) [Business Action for Biodiversity via Science-Based Targets for Nature](#); [SBTN Step 4: Act](#).

#### 4.4.1. Requirements for state of nature measurement in target setting

For pressure-based targets, state of nature measurement is an important requirement of scoping and location prioritisation. SBTN currently requires companies to use state of nature metrics to prioritise where to set targets to maximise positive nature outcomes ([SBTN Step 2](#)).<sup>176</sup> While this approach has been effective in highlighting areas of biodiversity significance where environmental impacts have the potential to create a disproportionate impact on biodiversity, this could be expanded by using a wider range of state of nature metrics to inform the prioritisation process.<sup>177</sup>

In some cases, biodiversity outcomes (i.e. changes in the biodiversity state) are very closely linked to science-based targets for nature. Examples of this include the ocean science-based targets that provide mechanisms for translating impacts on fish and other marine species populations into corporate responsibility for pressure reduction. Likewise, measures of ecosystem extent and condition, as well as other complementary biodiversity metrics, are embedded within land science-based targets (available in Version 2 mid-2026). Land, freshwater (upcoming in methods) and ocean targets also include landscape/seascape approaches that create opportunities to directly incorporate state-based indicators, guiding collective action by companies in specific areas to effectively address systemic biodiversity challenges. These are often most applicable in direct operations rather than in an organisation's value chain.

For state-based targets, the target is a measurable element of the state of nature (or ecosystem services). These include:

- 'No net loss' or 'net gain' targets (which can involve ecosystem and species outcomes as targets).<sup>178,179,180</sup>
- Restoration targets (e.g. restoring X hectares of degraded ecosystems by 2030).<sup>181</sup>
- Species protection targets (e.g. protecting priority species, evidenced by their abundance increasing).<sup>182</sup>

<sup>176</sup> [SBTN Step 4: Act.](#)

<sup>177</sup> SBTN (2026) [Business Action for Biodiversity via Science-Based Targets for Nature.](#)

<sup>178</sup> GOV UK (2025) [Understanding Biodiversity Net Gain.](#)

<sup>179</sup> Hahn et al. (2022) [No Net Loss of Biodiversity, Green Growth, and the Need to Address Drivers.](#)

<sup>180</sup> Some organisations argue that only absolute 'no loss' approaches to forestry and agriculture projects are consistent with remaining within planetary boundaries.

<sup>181</sup> University of Cambridge Institute for Sustainability Leadership (CISL)(2023) [From Risk to Resilience: The Business Imperative of Nature Restoration.](#)

<sup>182</sup> UNEP Finance Initiative et al. (2020) [Beyond 'Business as Usual': Biodiversity Targets and Finance.](#)



- Extinction risk reduction targets (e.g. reducing extinction risk for priority species, evidenced by a change in local extinction risk, which could be supported by the IUCN RHINO (Rapid High-Integrity Nature-positive Outcomes) approach).<sup>183</sup>
- Ecosystem service delivery targets (e.g. increasing water provision by X m<sup>3</sup>/year; or increasing carbon sequestration by X tonnes/year).<sup>184,185,186</sup>

#### 4.4.2. Use of state of nature measurement in target setting

There are many examples of organisations setting targets using state of nature measurement, both pressure-based targets (where state of nature measurement guides scoping and location prioritisation and, in some cases, informs target thresholds) and state-based targets which directly use state of nature indicators.

**Box 6: Science-based targets for nature (SBTs) are defined as measurable, actionable and time-bound objectives, based on the best available science, allowing actors to align with Earth’s limits and societal sustainability goals**

By setting science-based targets (SBTs) for nature, companies can align their actions to both the scientific boundaries that define a safe and just operating space for humanity in terms of Earth’s limits and the societal sustainability goals that set out global objectives for equitable human development. These targets are applicable to land, freshwater and ocean impacts in companies’ direct operations and value chain, addressing direct drivers of biodiversity loss.

Landscape and jurisdictional approaches are embedded throughout SBTs for nature. These approaches directly integrate biodiversity metrics, and other complementary social metrics, as indicators of systemic action on biodiversity loss.

For example, a company is aiming to implement their adopted land and freshwater science-based targets via an integrated landscape approach, incorporating terrestrial and freshwater biodiversity metrics.

The company conducted a detailed baseline of freshwater impacts, risks and opportunities alongside indicators of soil health, and measures of ecosystem and species-level biodiversity. Following this assessment, the company is planning to implement their targets, leveraging collective action where possible, by addressing water use and pollution from material processing, implementing regenerative agricultural practices and land management approaches, and targeting restoration efforts that increase ecosystem functioning and climate resilience. In addition to monitoring both recycled water volumes and reductions in water consumption per supplier, the company will work with stakeholders in the region to understand the outcomes on ecological integrity, threatened terrestrial species populations and aquatic species diversity.

**Box 7: Example of use of species extinction risk metrics for target setting**

<sup>183</sup> IUCN (2025) [The IUCN Approach to Setting Robust Targets and Implementing Rapid, Verifiable Actions for Species and Ecosystems](#).

<sup>184</sup> Microsoft (2023) [Water Replenishment Program](#).

<sup>186</sup> SBTi (2023) [Forest, Land and Agriculture Science-Based Target Setting Guidance](#).



The IUCN RHINO approach provides a science-based, actionable track for companies, governments and civil society to deliver Rapid, High-Integrity Nature-positive Outcomes and contribute to the Kunming-Montreal Global Biodiversity Framework and the UN Sustainable Development Goals (SDGs).

IUCN RHINO adopts the Nature Positive Initiative definition: “Halt and reverse nature loss by 2030 on a 2020 baseline and achieve full recovery by 2050.” Companies adopting a nature-positive goal or target should base their actions on 10 fundamental principles, including avoiding and mitigating impacts, mainstreaming biodiversity, collaborating across landscapes and sectors, ensuring transparency and equity, and aligning with global goals.

While IUCN RHINO is not a complete solution, it provides a means for companies to embark on actions that are robust and scientifically supported. It is structured around three impact tracks: 1. Direct Impact (for companies with spatial control over landscape/seascapes); 2. Value Chain Impact (for companies sourcing commodities with biodiversity footprints); 3. Investor Impact (for financial institutions influencing biodiversity via portfolios).<sup>187</sup>

Suzano, a Brazilian company and the world’s largest pulp manufacturer, has pilot-tested this approach, using the Direct Impact track.

To assess species extinction risk, Suzano applied the Species Threat Abatement and Restoration (STAR) metric, which estimates how actions in a given location could contribute to reducing the global extinction risk of threatened species. The analysis combined species distribution data from IBAT with Suzano’s biodiversity monitoring data, including long-term primary fauna data.

The assessment identified 125 threatened species across Suzano’s forestry operations. A subset of nine species was selected for detailed threat analysis. The analysis also identified the main threats contributing to extinction risk in the landscape, including fire, hunting, agricultural expansion, livestock farming, logging and infrastructure.

The spatial distribution of STAR scores across the landscape enabled the identification of priority areas where threat-reduction and restoration actions could contribute to lowering extinction risk for threatened species, supporting the definition of science-based biodiversity targets and informing priority management actions within the pilot area.<sup>188</sup>

<sup>187</sup> IUCN (2025) [The IUCN approach to setting robust targets and implementing rapid, verifiable actions for species and ecosystems: IUCN Rapid High-Integrity Nature-positive Outcomes \(IUCN RHINO\). Technical Source Document. Version 2.0.](#)

<sup>188</sup> Suzano (2025) [Implementing the IUCN RHINO approach in forest areas across several biomes in Brazil](#)

**Table 11: Examples of state of nature measurement in target setting**

**BHP:** A company in the mining sector, focused on extracting and supplying commodities such as iron ore, copper, nickel and coal for global industrial use. As part of its 2030 Healthy Environment goal, the company aims to achieve nature-positive outcomes by ensuring that at least 30% of the land and water under its stewardship is managed through conservation, restoration or regenerative practices.

Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>The metrics to track progress on delivery of the 2030 Healthy Environment goals include:</p> <ul style="list-style-type: none"> <li>• Land (ha) under regenerative practice;</li> <li>• Land (ha) under nature-positive management practices;</li> <li>• Land (ha) and waters the company stewards, excluding areas it holds under greenfield exploration licences (or equivalent tenements); and</li> <li>• % Land under nature-positive management practices.<sup>190</sup></li> </ul>		

<sup>189</sup> BHP (2025) [Nature and Environmental Performance](#).

<sup>190</sup> BHP (2025) [BHP ESG Standards and Databook](#).

<p><b>Taiwan Semiconductor Manufacturing Company Limited (TSMC):</b> A semiconductor company committed to a 2050 net zero vision. TSMC recognises the connection between nature and climate and, in line with this, has published a Water Statement and set targets related to water use and management, mindful of how its operations and supply chain both depend upon and impact water resources. TSMC has also established a biodiversity commitment that aims “to achieve net zero deforestation, no net loss of nature and biodiversity, and a net positive impact by 2050.” This target is expected to be supported by programmes such as the TSMC Honey Program, which supports bee population recovery, the Eco Plus! Ecological Harmony Program, which aims to develop habitats, protect species and advance citizen science initiatives, and the Plant-A-Tree Program, which promotes afforestation.</p>		
Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>The Plant-A-Tree Program addresses environmental degradation through afforestation, habitat restoration and ecological corridor development. TSMC has used and disclosed:</p> <ul style="list-style-type: none"> <li>• The number of trees, shrubs and ground cover plants planted across different locations as an indicator of progress. As a complement, the company has also disclosed the number of hectares of greened areas and shorelines as outputs of this program.</li> </ul> <p>Additionally, to evaluate TSMC effects on biodiversity, the company uses “the Potentially Disappeared Fraction (PDF)” as a metric for evaluating the potential impacts of its activities on biodiversity, examining key influencing factors in detail that can influence response strategies.</p>		<p>TSMC has conducted on-site and seasonal ecological surveys covering its fabrication plants and surrounding areas as a foundation for its conservation efforts. The surveys assess terrestrial and aquatic fauna and terrestrial flora. The company has recorded and documented:</p> <ul style="list-style-type: none"> <li>• Total number of animal species, including protected and non-protected species.<sup>192</sup></li> </ul>

<sup>191</sup> TSMC (2024) [Biodiversity Statement](#); TSMC (2024) [Water Statement](#).

<sup>192</sup> TSMC (2024) [Climate And Nature Report](#).

<p><b>Arauco:</b> A forestry and wood products company that, through its Nature Strategy 2023, seeks to become nature positive by implementing ARAUCO’s ABC+ Plan, which is built around four key pillars, including biodiversity. The company has established commitments and goals specifically related to species and ecosystems.</p>		
Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>In relation to ecosystem condition, ARAUCO’s commitments include the protection, conservation and restoration of native forests, maintenance of the percentage of certified assets under responsible forest management, expansion and maintenance of the network of High Conservation Value Areas, and accountability through the inventory of natural capital within its forest assets in Chile.</p> <p>Some of the metrics for managing progress include:</p> <ul style="list-style-type: none"> <li>• Amount of hectares of native forest for preservation, protection and/or conservation;</li> <li>• Amount of hectares in the restoration process;</li> <li>• % of certified productive land;</li> <li>• Quantity and area of High Conservation Value Areas (HCVA); and</li> <li>• Value of the natural capital present in the company’s assets in Chile.<sup>194</sup></li> </ul>		<p>In its Nature Strategy 2023, the company aims to protect 1,234 species listed in the IUCN Red List and National Conservation Lists within its local habitats. Its management indicator is the ‘number of species listed in the IUCN Red List and National Conservation Lists that occur within local habitats’.<sup>195</sup></p> <p>The company seeks to increase existing biodiversity present in its assets in Chile by considering 22 species of flora and fauna outlined in its Nature Strategy 2023.</p>

<sup>193</sup> Arauco (2023) [Nature Strategy, Renovables Para Una Vida Mejor.](#)

<sup>194</sup> Arauco (2023) [Nature Strategy, Renovables Para Una Vida Mejor.](#)

<sup>195</sup> Arauco (2023) [Nature Strategy, Renovables Para Una Vida Mejor.](#)

		Progress is being monitored through the ‘number of protected and monitored species each year’. <sup>196</sup>
<p><b>Anglo American:</b> A global mining company producing metals and minerals such as copper, iron ore, platinum group metals and diamonds. Through its Sustainable Mining Plan, the company has set nature-related ambitions that include achieving a Net Positive Impact on biodiversity across its operations by 2030. This involves establishing site-level biodiversity action plans, protecting and restoring ecosystems in the regions where it operates, and integrating nature-related targets into its environmental management and land stewardship practices.</p>		
Ecosystem condition	Species extinction risk	Species abundance (populations)
<p>As part of its Net Positive Impact target, Anglo American, a mining company, in partnership with Fauna &amp; Flora International, has developed the Quality Habitat Hectares (QHH) metric to assess the ecological context and ecosystem condition across its locations. This tool and approach aim to quantify progress, and drive efforts to prevent disturbance, restore habitats and identify opportunities to contribute to nature-positive outcomes across operations. The metric is calculated by combining the habitat quality (based on ecosystem composition, structure and function) with the impacted habitat area measured in hectares.<sup>198,199</sup></p>	<p>Anglo American was one of the first companies to pilot test the IUCN RHINO approach at its mining site of Minas-Rio, Brazil to understand how using the STAR metric could provide meaningful insights for the company’s biodiversity management programme (BMP). The STAR metric was calibrated during the first phase of the project (see case study)<sup>200</sup>. The second phase of the project is ongoing – to define an action plan with stakeholders of the landscape and calculate a Target STAR that would reflect the resulting reduction of the species extinction risk that could be expected.</p>	

<sup>196</sup> Arauco (2023) [Arauco Nature Strategy 2023](#).

<sup>197</sup> Anglo American (2026) [Targeting Net Positive Impact](#).

<sup>198</sup> Anglo American (2026) [Targeting Net Positive Impact](#).

<sup>199</sup> Fauna & Flora (2024) [Conservation Impact Report](#).

<sup>200</sup> IUCN and Anglo American (2024) [IUCN RHINO | Case Study – Anglo American](#)

## **Incorporation of state of nature data in Measurement, Reporting and Verification (MRV) for tracking target progress**

Step 5 of the SBTN target-setting process – Measurement, Reporting and Verification (MRV) – is essential for tracking progress, ensuring transparency and verifying outcomes. By providing robust data and insights, MRV enables organisations to stay on track toward their science-based targets for nature, adapt their strategies as needed and demonstrate accountability to stakeholders. MRV for corporate nature impact is a collective civil society need, necessitating strong collaboration across organisations and frameworks. Reflecting the focus of SBTN on target setting, Step 5 will aim to leverage existing MRV frameworks, clarify roles and responsibilities between companies and civil society/academia, and avoid significant additional resourcing or data demands for companies to enable uptake of target-setting.

MRV is a critical framework for ensuring transparency, accountability and effectiveness in environmental management and sustainability initiatives, including in global frameworks like the Kunming-Montreal Global Biodiversity Framework. It is recognised that there is a fundamental need to monitor progress through appropriate indicators to meet the targets within the framework and address biodiversity loss. In the context of setting science-based targets for nature, MRV plays a pivotal role in tracking progress, validating outcomes and ensuring that actions align with scientific evidence and global sustainability goals.

SBTN methods rely on the causal relationship between pressures and states. Captured through the use of the DPSIR framework, SBTs are set using pressure data due to the actionability of this approach. For the same reason, SBTN's MRV focus is primarily on pressure data, corresponding to target indicators within SBTs for nature. However, SBTN recognises that a range of complementary indicators, describing intermediate outcomes and governance, and state of nature outcomes, are necessary to inform company progress and longer-term biodiversity monitoring. To that end, SBTN will use this consultation to help inform possible further collaboration with partners and the NPI to understand how their recommendations for standardised state of nature metrics can help to inform a collective MRV approach.

## 5. Proposed framework and standards updates

The TNFD, GRI and SBTN have worked closely with the Nature Positive Initiative (NPI) and its core stewardship group of 27 organisations to achieve consensus on a small set of state of nature metrics. GRI and the TNFD worked with corporates and financial institutions to pilot test the NPI's draft state of nature metrics in 2025, directly engaging with piloting organisations on use of the metrics within each framework/standard.

As a result of their participation in the NPI core stewardship group and state of nature metrics pilot-testing process, the TNFD, GRI and SBTN are now considering potential updates to their respective frameworks and standards to integrate the NPI's agreed metrics. Feedback on these proposed updates is welcomed through public consultation from 9 April to 4 June 2026.

### 5.1. TNFD

#### 5.1.1. Proposed updates to the TNFD's LEAP assessment guidance

State of nature measurement is already embedded in the TNFD's LEAP assessment guidance. The TNFD proposes to make the following three additions in a future refresh of the LEAP assessment guidance:

- Signpost NPI's measurement guidance and NPI state of nature outcome metrics as a resource for site-level and landscape/seascape evaluations of changes in the state of nature, especially in the Evaluate and Prepare phases.
- As ecosystem services were not within the scope of NPI's work on state of nature metrics, add further details on the links between state of nature measurement and ecosystem services when assessing dependencies and impacts on nature in the Evaluate phase and in specific guidance on state of nature measurement (LEAP Annex 2). This would include additional guidance on:
  - Selecting ecosystem condition and species variables that have a functional role in ecosystem service provision;
  - Use of ecosystem service modelling tools; and
  - Use of stakeholder engagement and participatory approaches to measure state of nature and ecosystem services.

- Expand guidance on the use of state of nature measurement in assessing sensitive location criteria, in the Locate phase (L4). This would include additional guidance on:
  - How to get started with measurement, assessment and disclosure metrics at priority locations when a large number of priority locations emerge from an initial screening; and
  - How to identify further suitable datasets.

### 5.1.2. Proposed update to the TNFD's state of nature disclosure metrics

The TNFD set out in its September 2023 recommendations that it would continue to work with knowledge partners to develop further consensus on disclosure metrics for its placeholder disclosure indicators on state of nature and invasive alien species. The TNFD has consulted with technical and market participants on how these metrics can be used within LEAP assessments and disclosures, which included two technical expert workshops and two pilot testing workshops. The TNFD also led support to sting with 15 pilot testing corporates and financial institutions, as part of the NPI's wider pilot programme.

Based on the learning and feedback from this extensive piloting and engagement process on state of nature metrics over the past two years, the TNFD proposes to update the TNFD's disclosure position on the state of nature, drawing on the NPI state of nature metrics. It aims to finalise its state of nature disclosure metrics and accompanying guidance by September 2026.

The TNFD's proposal for embedding state of nature metrics in its disclosure recommendations has been developed using the TNFD's principles for metrics (see Box 8), which were also used to develop the TNFD's metrics architecture, published in September 2023.

#### Box 8: TNFD principles for metrics

The TNFD's approach to measurement and metrics is anchored in the principles that metrics should be:<sup>201</sup>

- **Science-based** and provide insights into the consequences of business and finance activities;
- Be sensitive enough to **reflect change** on an annual basis;
- **Relevant to the business model and value chain of report preparers**, recognising that issues within sectors, business models and value chains can vary significantly;
- **Proportionate**, reflecting the practical capacity and cost constraints of report preparers to assemble, assess and report information on an annual reporting cycle basis;
- **Decision-useful** to the primary users of corporate sustainability reports, including providing current insights and comparability within and across sectors;
- Subjectable to independent limited assurance in the medium term; and
- **Aligned to global and national policy goals and targets**, such as the indicators and metrics in the Kunming-Montreal Global Biodiversity Framework – as organisations are now aligning to

<sup>201</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

the Paris Agreement and net zero targets with respect to their climate-related corporate reporting – as well as other international treaties and other standards and target-setting frameworks.<sup>202</sup>

This update to state of nature does not impact expectations for financial institutions. The TNFD has already conducted a separate consultation on measuring dependencies and impacts on nature in financial portfolios, and responses to that consultation are being considered separately by the TNFD.

The proposals have the following elements:

- The TNFD proposes that companies and financial institutions should report state of nature metrics only for locations with material nature-related impacts and dependencies, as defined by the TNFD's recommended disclosure Metrics and Targets B.
- The TNFD proposes that the final NPI state of nature metrics and associated measurement guidance should be the basis of disclosures in against state of nature indicators.

### **Ecosystem extent, ecosystem condition and species extinction risk**

*Ecosystem extent and condition, as well as species extinction risk, metrics would be incorporated into the TNFD's existing core global disclosure metrics, replacing the current placeholder global disclosure indicators on the state of nature published in September 2023.*

As core global disclosure metrics, these would be reported on a comply or explain basis for identified *priority locations with material nature-related impacts and dependencies*.

Companies should *report these metrics reflecting site-level outcomes for material locations in their direct control and for material locations in their value chains where possible (see point (4))*. Reporting at landscape/seascape level to provide context is also recommended where possible.

*Where measurement of site outcomes or landscape/seascape context is unfeasible or not decision relevant* to their upstream and downstream nature-related dependencies and impacts, companies can report using screening metrics that reflect location sensitivity, for example, by drawing from the analysis used for *Strategy D* priority location disclosure.

For ecosystem condition disclosure at landscape/seascape level, organisations should consider reporting *condition class of ecosystems* where they have identified material dependencies and impacts, *in addition to connectivity*.

<sup>202</sup> Including the GBF, ISSB IFRS-S1 and S2 standards; TCFD; Carbon Disclosure Standards Board (CDSB) and Sustainability Accounting Standards Board (SASB), which are now part of the ISSB; GRI, CDP and ESRS; and corporate target setting methods developed by the Science Based Targets Network (SBTN); Taskforce on Nature-related Financial Disclosures - TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).

## Species population size

**Species population size** would be incorporated into the TNFD's metrics architecture as an additional disclosure metric. This is based on results from pilots of the NPI metrics which showed this metric is the most challenging to measure, interpret and use in decisions.

*Organisations can report species populations for priority species. A species selection filter giving criteria for priority species is currently being developed and tested by NPI.*

## Disclosure of location sensitivity

- The TNFD proposes that location sensitivity level disclosures are solely contextual, as they are not required to be measured against a baseline, and the sensitivity of locations is not attributable solely to a single organisation's activities.
- Location sensitivity level disclosure can be based on the assessment of ecologically sensitive locations, and much of the state of nature information required for this disclosure is already recommended for the identification of sensitive locations, to be disclosed under recommendation Strategy D.<sup>203</sup> In this sense, state of nature metrics used for the identification of sensitive and material locations under Strategy D can thereby be disclosed under Metrics and Targets B (which recommends the disclosure of locations of material nature-related impacts and dependencies only).
- In many cases, the landscape context metrics proposed by the NPI, when measured at 'preparatory' granularity levels, are aligned with the globally available screening metrics that reflect location sensitivity (for example, for landscape species extinction risk).

For site outcomes and landscape/seascape context, organisations should report against a baseline, according to TNFD recommendations which encourage organisations to report metrics against a clear and transparent baseline where possible, and NPI's measurement guidance. NPI's current measurement guidance advises organisations to use a baseline year of 2020 in the context of NPI's focus on the definition of Nature Positive, and to align with the goals and targets of the Kunming-Montreal Global Biodiversity Framework. However, if the data needed for a particular metric is not available then a later baseline year can be used. In situations where a significant impact on nature occurred just before 2020 (e.g. a new mine site began operations in 2019 or 2020 saw a significant wildfire event), companies should use a pre-impact baseline to ensure credibility. Organisations should give a rationale for baseline selection.

Organisations should work to align with NPI's measurement guidance. Organisations may apply best available data, including proxy and modelled data where this is appropriate (e.g. for location sensitivity disclosure), in line with the TNFD principle of proportionality.

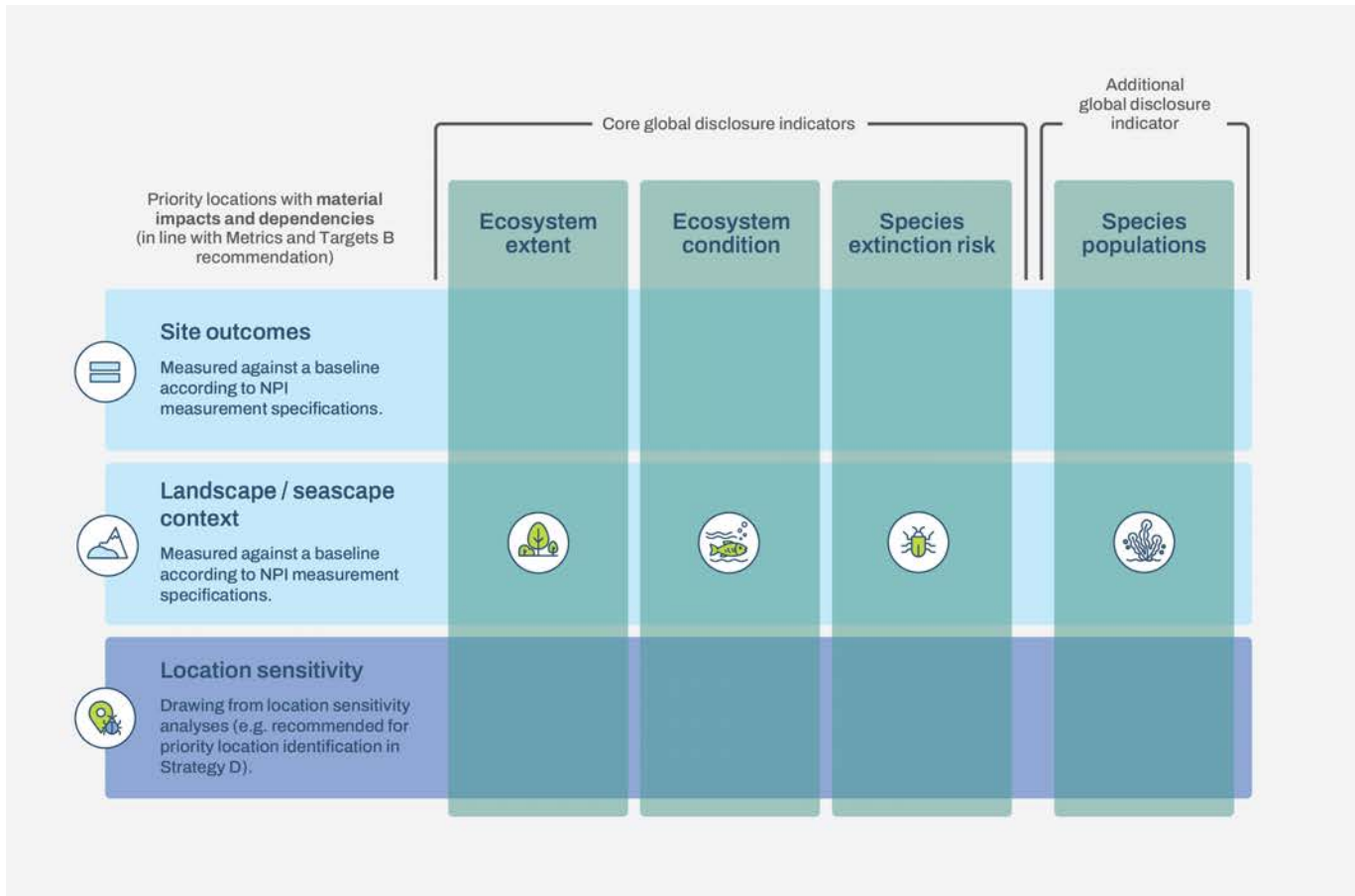
The suggested metrics are intended to be applied across terrestrial, freshwater and ocean realms. However, the NPI piloting process focused on testing metrics in practice mainly in

<sup>203</sup> TNFD (2023) [Recommendations of the Taskforce on Nature-Related Financial Disclosures](#).







the terrestrial realm. Feasibility testing, focused on applying the metrics in freshwater and ocean realms, has taken place during the NPI's public consultation phase, and measurement guidance for these realms will be further developed as a result. The TNFD will closely monitor feedback on application of the proposed metrics to ocean and freshwater realms and consider this when updating its state of nature disclosure metrics and associated guidance.

**Figure 14: Proposed disclosure indicators for the state of nature, building on current TNFD placeholder core global indicators, and NPI’s consensus building process. Metrics for these indicators could be reported at site outcome level, landscape/seascape context level and location sensitivity level, according to the context of the organisation’s material nature-related issues.**



**Figure 15: Disclosure options for spatial scale across areas in direct control and the value chain.**

 Material locations	 Location sensitivity	 Site outcomes	 Landscape/ Seascape context
Areas in direct control	Recommended	Recommended	Where possible
Upstream and downstream value chain	Recommended	Where possible	Where possible

**Table 12: Proposed updates to TNFD core global disclosure metrics on the state of nature**

TNFD metric number	Indicator	Metric		
		Site outcomes	Landscape/ seascape context	Location sensitivity
<b>C5.0</b>	Ecosystem extent	Area (absolute and percentage) of loss, gains and net change in extent of natural ecosystems.		Disclosure of location sensitivity screening values reflecting aspects of ecosystem extent and condition.
<b>C5.1</b>	Ecosystem condition	Area and change by condition class (ha, %).	Area and change by condition class (ha, %)  Values, and change in structural and functional connectivity between natural ecosystems.	



<b>C5.2</b>	Species extinction risk	Species extinction risk measurement showing the contributions of the site to global extinction risk.	Species extinction risk measurement showing the contribution of the landscape/seascape to global extinction risk.	Disclosure of location sensitivity screening values reflecting species extinction risk.
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**Table 13: Proposed updates to additional global disclosure metrics on the state of nature**

<b>TNFD Metric number</b>	<b>Indicator</b>	<b>Metric</b>
<b>A5.0</b>	Species population size	Number and proportion of priority species with populations that are 1) declining, 2) slowing in decline, 3) stable and 4) increasing.
<b>A6.0</b>	Ecosystem services the organisation has an impact on	See guidance on measuring changes in ecosystem services in the TNFD additional guidance on the LEAP approach.
<b>A6.1</b>	Ecosystem services the organisation depends on	See Measuring changes in ecosystem services in the TNFD additional guidance on the LEAP approach.

Figure 16: Current status of state of nature in TNFD's existing core, placeholder and additional disclosure metrics

### Current state of nature disclosure metrics

TNFD Metric number	Indicator	Metric
A5.0	Ecosystem condition	Level of ecosystem condition by type of ecosystem and business activity – refer to TNFD additional guidance on state of nature measurement in Annex 2 of the LEAP approach.
A5.1	Ecosystem extent	Quantitative measure of ecosystem extent, e.g. change in habitat cover (km <sup>2</sup> )
A5.2	Ecosystem connectivity	Quantitative measure of ecosystem connectivity, e.g. Singapore Index.
A5.3	Species extinction risk	Quantitative measure of species extinction risk – refer to TNFD additional guidance on state of nature measurement in Annex 2 of the LEAP approach.
A5.4	Species population size	Quantitative measure of species population size.
A6.0	Ecosystem services the organisation has an impact on	See guidance on measuring changes in ecosystem services in the TNFD additional guidance on the LEAP approach.
A6.1	Ecosystem services the organisation depends on	See Measuring changes in ecosystem services in the TNFD additional guidance on the LEAP approach.



### Additional metrics

Recommended for disclosure, where relevant, to best represent an organisation's material nature-related issues, based on their specific circumstances

### Proposed update to state of nature disclosure metrics

TNFD Metric number	Indicator	Metric
A5.0	Species population size	Number and proportion of priority species with populations that are 1) declining, 2) slowing in decline, 3) stable and 4) increasing.
A6.0	Ecosystem services the organisation has an impact on	See guidance on measuring changes in ecosystem services in the TNFD additional guidance on the LEAP approach.
A6.1	Ecosystem services the organisation depends on	See Measuring changes in ecosystem services in the TNFD additional guidance on the LEAP approach.

TNFD Metric number	Indicator	Metric
C5.0	Placeholder indicator: Ecosystem condition	For those organisations that choose to report on state of nature metrics, the TNFD encourages them to report the following indicators, and to refer to the TNFD additional guidance on measurement of the state of nature in Annex 2 of the LEAP approach: <ul style="list-style-type: none"> <li>Level of ecosystem condition by type of ecosystem and business activity; and</li> <li>Species extinction risk.</li> </ul>
	Placeholder indicator: Species extinction risk	There are a number of different measurement options for these indicators. The TNFD does not currently specify one metric as there is no single metric that will capture all relevant dimensions of changes to the state of nature and a consensus is still developing.  The TNFD will continue to work with knowledge partners to increase alignment.

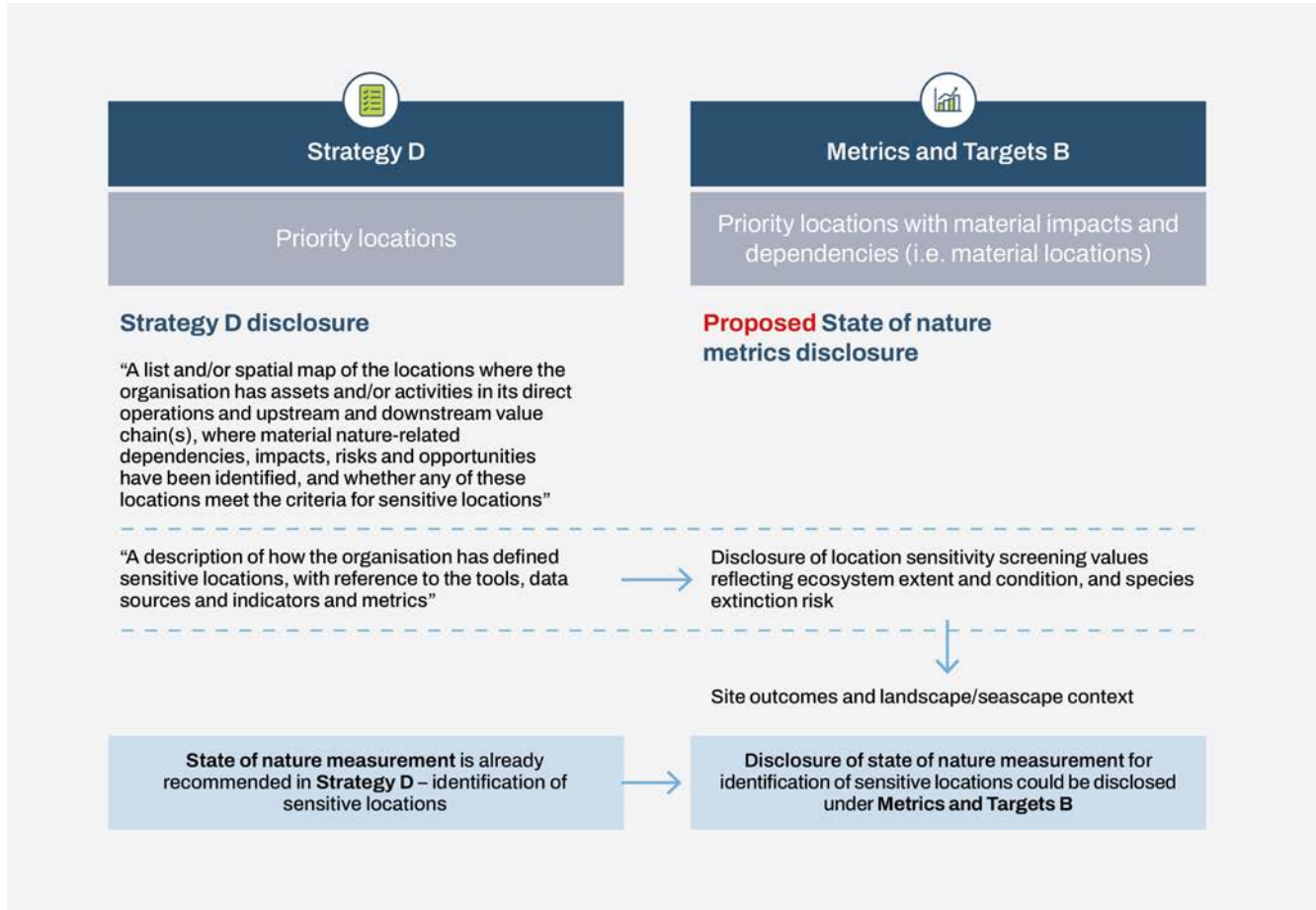


### Core global metrics

Comply or explain

TNFD Metric number	Indicator	Metric	Location sensitivity
		Site outcomes	Landscape/seascape context
C5.0	Ecosystem extent	Area (absolute and percentage) of loss, gains and net change in extent of natural ecosystems.	Disclosure of location sensitivity screening values reflecting aspects of ecosystem extent and condition.
C5.1	Ecosystem condition	Area and change by condition class (ha, %).	Area and change by condition class (ha, %) Values, and change in structural and functional connectivity between natural ecosystems.
C5.2	Species extinction risk	Species extinction risk measurement showing the contributions of the site to global extinction risk.	Species extinction risk measurement showing the contribution of the landscape/seascape to global extinction risk. Disclosure of location sensitivity screening values reflecting species extinction risk.

**Figure 17: Flow of state of nature information from TNFD recommended disclosure Strategy D to Metrics and Targets B**



Box 9 outlines worked examples, highlighting what location sensitivity and site outcome disclosures could look like in practice.

**Box 9: Location sensitivity and site-level disclosure: hypothetical examples**

**Location sensitivity disclosure: hypothetical example**

**Table 14: Hypothetical location sensitivity disclosure**

Priority location	Landscape condition (water basin scale)		Landscape extinction risk (e.g. STAR values at water basin scale)
	e.g. Water stress	e.g. Average ecosystem integrity	
Location 1	Water stress= 'Very high'	Very low (0.2)	Top 10 percentile of global values
Location 2	Water stress= 'Very low'	Very high (0.9)	Lowest 10 percentile of global values
Location 3	Water stress= 'Medium'	Medium (0.45)	Top 30 percentile of global values



- A food and beverage company with global value chains has identified five sourcing regions as priority locations, from which it sources commodities from multiple farms.
- Given a specific material dependency on water supply, water purification and water flow regulation, the company uses water basins to define relevant measurement boundaries in its context.
- The company has integrated spatial analysis of state of nature into its supply chain strategy using screening metrics, and discloses against the ecosystem condition and species extinction risk core disclosure metrics using these analyses. The company includes water stress within its disclosure of location sensitivity to reflect a relevant measure of ecosystem condition for its context.
- It discloses against the ecosystem condition and species extinction risk core global disclosure metrics at this location sensitivity level.
- The company is working towards being able to disclose changes in ecosystem extent and condition in the landscape (landscape context) against a baseline to provide a more granular disclosure of emerging risks and opportunities.

**Key information gained:**

- Location 1 has high dependency driven risk because it is currently water stressed and the landscape likely has reduced capacity for regulating water supply, given its low integrity.
- Location 1 also has high significance for global species extinction risk, meaning that impact drivers in this location likely have large negative impacts on species persistence.

**Link to use cases:**

- The report preparing company use the water stress and species extinction risk disclosure to contextualise its disclosure of its risk management strategy (*Risk and Impact Management B*).
- Report users (e.g. the company’s investors) use the location sensitivity disclosures to refine their engagement with the company, focusing on its management of supply chain impacts and dependencies in the highest priority locations.

**Site outcome disclosure: hypothetical example**

**Table 15: Hypothetical site-level disclosure.**

<b>Site 1- Ecosystem extent and condition</b>				
<b>Ecosystem type</b>	<b>Metric</b>	<b>Baseline area (ha)</b>	<b>Reporting period area (ha)</b>	<b>Notes</b>
Broadleaf forest	Ecosystem extent	100	50	(converted to mining land use)
	Condition class - high	80	0	
	Condition class - medium	10	20	
	Condition class - low	10	30	
Grassland	Ecosystem extent	80	80	(no net change in high condition grassland)
	Condition class-high	80	80	

Species extinction risk	
Site	Extinction risk measurement (e.g. calibrated STAR)
Site 1	Very high
Site 2	High
Site 3	Low

- An extractives company has identified 12 sites as priority locations with material impacts and dependencies
- For each site, following measurement specifications from the NPI, it discloses change in the area of ecosystem types per condition class compared to a pre-development baseline. It also discloses the values for species extinction risk for each site, calibrated with ground-truthed data on species presence and local threats.

**Key information gained**

- Site 1 has had a large negative impact on ecosystem condition because the expansion of industrial land has led to a reduction in forest condition. There has been no change in the baseline extent and condition of grassland ecosystems.
- Habitat loss is a large driver of extinction risk for the species present at the location, meaning these impacts also have large impact on species persistence.

**Link to use cases**

- The report preparing company use the disclosure to support its reporting that site-level targets of no net loss for grassland ecosystems have been met.
- Report users use the disclosures to assess the level of transition risk associated with the company’s operations, focusing on risks associated with the large footprint on forest ecosystems with high species extinction risk.

**5.2. GRI**

The Global Sustainability Standards Board (GSSB), which oversees the development of the GRI Standards, does not plan to revise *GRI 101: Biodiversity 2024* in the short term. Any future revisions will follow the GSSB Due Process and be informed by evidence of market demand, feasibility and decision-usefulness. This consultation will help assess whether elements under Disclosure 101-7, such as ecosystem and species-related metrics, warrant further clarification or strengthening. In the near term, GRI considers developing non-authoritative guidance to support the application of the NPI state of nature metrics in reporting *GRI 101*.

This consultation provides an important opportunity to assess how the state of nature metrics developed under the NPI can support existing GRI disclosures and inform any future

revision of *GRI 101*. Feedback will help GRI better understand whether and how elements currently included under Disclosure 101-7 may warrant further clarification, strengthening or future standard-setting consideration. It will also help to identify potential gaps or areas where NPI guidance may go beyond current GRI requirements, as well as test what state of nature information is most relevant and decision-useful for both report preparers and users.

In particular, the consultation seeks inputs on:

- The relevance and use of landscape and site-level state of nature metrics in the context of reporting;
- Whether the current approach in Disclosure 101-7, which recommends (not requires) reporting state of nature metrics in the supply and downstream value chain, remains sufficient or should be strengthened; and
- Whether the current optional approach to reporting species extinction risk and species populations remains appropriate or should be strengthened.

GRI will continue to coordinate closely with the TNFD and SBTN to support interoperability and avoid fragmentation in market expectations.

### 5.3. SBTN

The integration of biodiversity within the SBTN framework has been clarified in a recently published SBTN paper: Business action for biodiversity via science-based targets for nature.

Following SBTN's public consultation on V2 Steps 1 and 2 and the finalisation of the draft NPI metrics, SBTN may revise the [Step 1](#)

Assessment and [Step 2](#) Prioritisation approach, signposting to NPI guidance. Pending resourcing, SBTN may also explore the integration of state of nature data in target implementation and monitoring through upcoming work on Step 5 on the SBTN framework on Monitoring, Reporting and Verification (MRV).

# Glossary of key concepts

Term	Definition
<b>Term</b>	Starting point or benchmark against which changes in the state of nature attributed to business activities can be compared. <sup>204</sup>
<b>Baseline</b>	A dynamic complex of plant, animal and microorganism communities and the non-living environment, interacting as a functional unit. <sup>205</sup>
<b>Ecosystem</b>	The quality of an ecosystem measured by its abiotic and biotic characteristics. Condition is assessed by an ecosystem’s composition, structure and function which, in turn, underpins the ecological integrity of the ecosystem, and supports its capacity to supply ecosystem services on an ongoing basis. <sup>206</sup>
<b>Ecosystem condition</b>	Area coverage of a particular ecosystem, usually measured in terms of spatial area. <sup>207</sup>
<b>Ecosystem extent</b>	The flow of energy and materials through the biotic and abiotic components of an ecosystem. This includes many processes such as biomass production, trophic transfer through plants and animals, nutrient cycling, water dynamics and heat transfer. <sup>208</sup>
<b>Ecosystem function</b>	The ability of an ecosystem to support and maintain ecological processes and a diverse community of organisms. It is measured as the degree to which a diverse community of native organisms is maintained, and is used as a proxy for ecological resilience, intended as the capacity of an ecosystem to adapt in the face of stressors, while maintaining the functions of interest. <sup>209</sup>
<b>Ecosystem integrity</b>	The contributions of ecosystems to the benefits that are used in economic and other human activity. <sup>210</sup>

<sup>204</sup> Capitals Coalition (2016) [Natural Capital Protocol](#); TNFD (2026) [Glossary](#).

<sup>205</sup> IPBES secretariat (2022) [Glossary](#); TNFD (2026) [Glossary](#).

<sup>206</sup> TNFD (2026) [Glossary](#); UN Department of Economic and Social Affairs Statistics Division (2024) [System of Environmental-Economic Accounting Ecosystem Accounting](#).

<sup>207</sup> TNFD (2026) [Glossary](#); UN Department of Economic and Social Affairs Statistics Division (2024) [System of Environmental-Economic Accounting Ecosystem Accounting](#).

<sup>208</sup> IPBES secretariat (2022) [Glossary](#); TNFD (2026) [Glossary](#).

<sup>209</sup> IPBES secretariat (2022) [Glossary](#).

<sup>210</sup> UN Department of Economic and Social Affairs Statistics Division (2024) [System of Environmental-Economic Accounting Ecosystem Accounting](#).

<b>Ecosystem service</b>	A measurable quantity of a natural resource that is used as a natural input to production (e.g. the volume of sand and gravel used in construction) or a measurable non-product output of a business activity (e.g. a kilogram of NOx emissions released into the atmosphere by a manufacturing facility). <sup>211</sup>
<b>Landscape/Seascape</b>	Defined geographic areas with common ecological and socioeconomic characteristics. They may be delineated based on watersheds, ecosystems, jurisdictional boundaries, company sourcing areas or in other ways. <sup>212</sup>
<b>Nature's contributions to people</b>	All the contributions, both positive and negative, of living nature (i.e. diversity of organisms, ecosystems, and their associated ecological and evolutionary processes) to the quality of life of people. <sup>213</sup>
<b>Pressures</b>	Human activities that directly or indirectly change the state of the environment and ecosystem. Following the IPBES, five key pressures contribute most to the loss of nature globally: land and sea use change; direct exploitation of organisms; climate change; pollution; and invasion of alien species. In the SBTN methods, the following categories are used to describe these pressures: Ecosystem use and ecosystem use change; resource exploitation; climate change; pollution; and invasives and others. <sup>214</sup>
<b>Serviceshed</b>	A serviceshed is defined as the area that provides a specific ecosystem service to a specific beneficiary (individual or group of people). Servicesheds are characterised by three components: 1) ecosystem service supply, 2) institutions (formal or informal legal access), and 3) physical access. For example, the serviceshed for crop pollination is the area around farm fields of interest within the flight range of native pollinators. For water-related services, the serviceshed is the catchment area that delivers water to a population or beneficiary of interest that has legal and physical access to the source.. <sup>215</sup>
<b>Site</b>	Area of direct operations or influence, e.g. farm, ranch, mine site, infrastructure development, factory, office. <sup>216</sup>

<sup>211</sup> TNFD (2026) [Glossary](#); Capitals Coalition (2021) [Natural Capital Protocol](#).

<sup>212</sup> Accountability Framework Initiative (2026) [Landscape Initiative](#); Nature Positive Initiative (2026) [Draft Measurement Guidance Executive Summary: State of Nature Metrics - February 2026](#).

<sup>213</sup> IPBES secretariat (2022) [Glossary](#).

<sup>214</sup> SBTN (2023) [SBTN Glossary of Terms](#).

<sup>215</sup> Farley (2012) [A service shed can be defined as the geographic area affected by the service](#); Joshua Farley (2012) [Ecosystem Services: The Economics Debate](#).

<sup>216</sup> Nature Positive Initiative (2026) [Draft Measurement Guidance Executive Summary: State of Nature Metrics - February 2026](#).



<b>Species extinction risk</b>	Threat status of a species and how activities/pressures may affect the threat status. The indicator may also measure change in the available habitat for a species as a proxy for impact on local or global extinction risk. <sup>217</sup>
<b>State of nature</b>	The condition and extent of ecosystems, and species population size and extinction risk, including positive or negative changes. <sup>218</sup> This is closely linked to biodiversity: the variability among living organisms from all sources, including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are part. This includes diversity within species, between species and of ecosystems. <sup>219</sup>

<sup>217</sup> TNFD (2026) [Glossary](#).

<sup>218</sup> TNFD (2026) [Glossary](#).

<sup>219</sup> Convention on Biological Diversity (1992) [Article 2. Use of Terms](#)

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