

FEBRUARY 2024

## MEASURING CONTRIBUTIONS TOWARDS TERRESTRIAL AND MARINE BIODIVERSITY TARGETS

- Biodiversity is declining at a faster rate than at any other time in human history, driven by unsustainable economic activity.
- Businesses, governments and civil society around the world **lack the ability to measure their potential positive impacts on biodiversity** in comparable and consistent ways.
- To deliver on the **Global Biodiversity Framework**, which guides conservation action over the next decade and beyond, we need to be able to quantify contributions to conserving biodiversity around the world.
- The **Species Threat Abatement and Restoration (STAR) metric** estimates the potential contributions of specific actions in specific places towards international biodiversity targets.
- The STAR metric can help all actors – companies, the finance industry, governments and civil society – **better plan projects that would bring benefits for threatened species, assess biodiversity risk, and align contributions to achieve global targets.**

### What is the issue?

**Global biodiversity is declining** at a faster rate than at any other time in human history. This is **driven by pressures from human actions, including commercial activities.**

For example, species are being lost through the conversion of natural habitat to **agriculture, forestry, and urban expansion**, as well as through hunting, unsustainable fishing practices, or collection for local consumption or international trade. Consequently, **reversing species loss requires action from a range of actors** – governments, business, industry, civil society, the finance sector, and investors.

However, in the past we have **lacked the ability to measure contributions made by these actors** to biodiversity conservation and restoration, and to add up the potential impact from different sectors and from around the world. This leaves efforts to tackle biodiversity loss uncoordinated and hampers the implementation of international goals aimed at conserving biodiversity.

### Why is this important?

The ‘transformational change’ required to bend the curve of biodiversity loss will only be realised if everyone can **identify and deliver their potential contributions towards global biodiversity targets.** As with climate change mitigation, it is essential to quantify contributions by specific actors to achieve global impact.

The **Global Biodiversity Framework**, [adopted in December 2022](#), guides global conservation action

over the next decade, aligned in turn to the 2030 Agenda for Sustainable Development. To deliver on the framework, we need to be able to quantify potential contributions to biodiversity conservation from around the world. **The ability to quantify contributions will make it easier to reward positive action, as well as highlighting where change is needed to mitigate negative impact.**

Enabling effective conservation action would in turn improve human well-being, prosperity, and health, which are inextricably linked to the health of the natural world.



The Species Threat Abatement and Restoration (STAR) metric was developed by experts at IUCN and other organisations to allow businesses, governments, and civil society to better measure how their actions are helping meet biodiversity targets.

### What can be done?

The **Species Threat Abatement and Restoration (STAR) metric** allows business, governments and civil society to quantify their potential contributions to

stemming global species loss, and can be used to calculate national, regional, sector-based, or institution-specific targets. The STAR metric was developed in 2021 in a collaboration between 55 organisations, and is based on the IUCN Red List of Threatened Species™. The Red List is the most comprehensive global assessment of the status of biodiversity.

Because biodiversity is distributed unequally around the world, **STAR assesses the potential of specific actions at specific locations to contribute to international conservation targets.** STAR estimates the contribution of two kinds of action to reduce species extinction risk – **threat abatement and habitat restoration.**

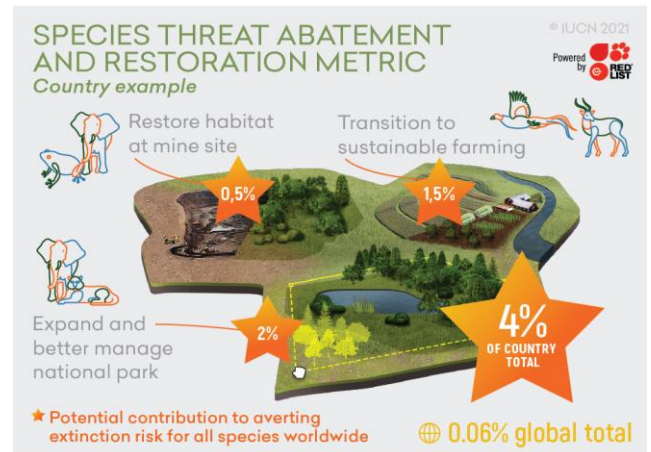
This makes it possible to **compare specific threat abatement and habitat restoration actions** in different places toward reducing global species extinction risk. This will help companies, countries, and others plan their conservation efforts. It also permits actors to add up their **total contributions.** Currently STAR uses extinction risk and threat information on a range of terrestrial and marine species. This will soon be augmented by [freshwater species as well as plants](#). In due course, the STAR methodology will be extended to apply to genetic diversity and to ecosystems, the latter likely drawing from the [IUCN Red List of Ecosystems](#) Categories and Criteria.

#### Setting science-based targets

STAR scores for a particular location (which can be of any size, e.g. a site, landscape, or country) show the potential contribution of conservation or restoration actions in that location to reducing the extinction risk for all species globally.

Target 4 of the [Global Biodiversity Framework](#) relates to reducing species extinction risk. STAR provides a means quantify this target in terms of STAR units, and to measure individual contributions to this target. Target 3 relates to safeguarding sites of particular importance to biodiversity through protected areas or other area-based conservation measures. **Key Biodiversity Areas** (KBAs) correspond to such sites, and so far, **cover 8.8% of land surface but capture 47% of the global STAR threat-abatement score** for vertebrate species.

The STAR metric can be used by **individual institutions.** For instance, a mining company can use STAR to measure the impact of restoring habitat for threatened species across a network of mines.



STAR quantifies the potential contribution of specific threat abatement and habitat restoration actions, or the sum contribution of multiple actions, to reducing extinction risk. STAR can be applied at any scale and STAR scores calculated as a proportion of extinction risk locally, nationally or globally.

**At a national scale,** STAR scores show how governments can plan their policy to deliver on their Global Biodiversity Framework commitments, for example by increasing protected areas, incentivising sustainable agriculture, or developing reporting and disclosure requirements. Use of STAR can also help governments to fit corporate commitments into their national targets.

STAR has been used to identify [policy options for reducing habitat loss due to agricultural expansion in Colombia, to quantify and categorise national extinction-risk footprints, to quantify and map species threat abatement opportunities for national target-setting,](#) and to [assess sub-national threats to Indian biodiversity and opportunities for restoration.](#) It can now also be used by the fisheries industry.

#### Where can I get more information?

The STAR metric is available for use by business in the through the Integrated Biodiversity Assessment Tool (IBAT), and for non-commercial users through IBAT and likely also additional third-party platforms.

[Mair et al. \(2021\) Nature Ecology & Evolution](#)  
[Turner et al \(2024\) npj Ocean Sustainability.](#)

IBAT: <https://www.ibat-alliance.org/>

IUCN SSC post-2020 taskforce at Newcastle University:  
<https://research.ncl.ac.uk/biodiversitypost2020>