

APRIL 2021

## MEASURING CONTRIBUTIONS TOWARDS 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 the **post-2020 global biodiversity framework**, which will guide conservation action over the next decade and beyond, we need to be able to quantify contributions to conserving biodiversity around the world.
- The new **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**, and through hunting, fishing or collection for local consumption or international trade. Consequently, **reversing species loss requires action from a range of actors** – national and subnational governments, business, industry, cities, civil society, the finance industry and investors.

However, we **lack 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 **post-2020 global biodiversity framework** will guide global conservation action over the next

decade, aligned in turn to the 2030 Agenda for Sustainable Development. To deliver the post-2020 framework, we need to be able to quantify and add up 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 allows business, governments and civil society to quantify their potential contributions to stemming global species loss.

### 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 (Mair et al. 2021) was developed based on the IUCN Red List of Threatened Species™, in a collaboration between 55 organisations. The IUCN Red List is the most comprehensive global assessment of the status of biodiversity.

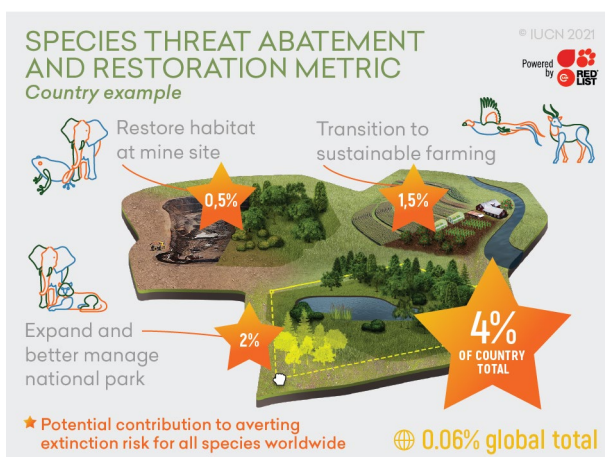
Because biodiversity is distributed unequally around the world, STAR assesses the potential of **specific actions at specific locations** to contribute to international conservation targets. STAR estimates the contribution of two kinds of action to reduce species extinction risk – **threat abatement 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, which will help companies, countries and others plan their conservation efforts. It also permits actors to add up their **total contributions**.

### Setting science-based targets

STAR scores for a particular location (which can be of any size e.g. a site, landscape, country) show the potential contribution of conservation or restoration actions in that location to reducing the extinction risk for all species globally. STAR can therefore be used to establish science-based targets that reflect contributions from individual actors towards goals under the post-2020 global biodiversity framework.

The STAR metric can be used by **individual institutions**. For instance, an extractives 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.

To demonstrate its utility **at a local scale**, STAR was used to measure the potential impact of removing threats across an 88,000-hectare commercial rubber company in central Sumatra, Indonesia. By tackling threats such as habitat loss and hunting, the company could report having reduced extinction risk by 0.2% across Sumatra, 0.04% across Indonesia and 0.003% globally. This would be due in part to safeguarding the area's populations of tigers (*Panthera tigris*; Endangered) and Asian elephants (*Elephas maximus*; Endangered), as well as the leaf-nosed bat *Hipposideros orbiculus*, assessed as Vulnerable on the IUCN Red List and only found in this region.

**At a country scale**, STAR scores show how governments can plan their policy to deliver on post-2020 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.

Currently STAR uses extinction risk and threat information on birds, amphibians and mammals. This will soon be augmented by marine and freshwater species as well as plants and reptiles. 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.

The proposed post-2020 global biodiversity framework includes a target for 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. **Protecting KBAs** account for large proportions of some national STAR threat-abatement scores: **>70% in Mexico and Venezuela, and >50% in Madagascar, Ecuador, the Philippines and Tanzania**. This indicates the particularly strong contribution that tackling biodiversity threats in KBAs would have to conserving global biodiversity.

### Where can I get more information?

The STAR metric will be available for use by business in the second quarter of 2021 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*.

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

IUCN SSC post-2020 taskforce at Newcastle University:

<https://research.ncl.ac.uk/biodiversitypost2020>