Using STAR, the global Species Threat Abatement and Restoration metric

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Nicholas Macfarlane and Frank Hawkins, IUCN

Amboli Bush Frog
Pseudophilautus amboli
Critically Endangered

Outline

1. What STAR is and why it's useful
2. How STAR scores are calculated
3. Applying STAR
4. Accessing STAR through IBAT

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What is STAR?

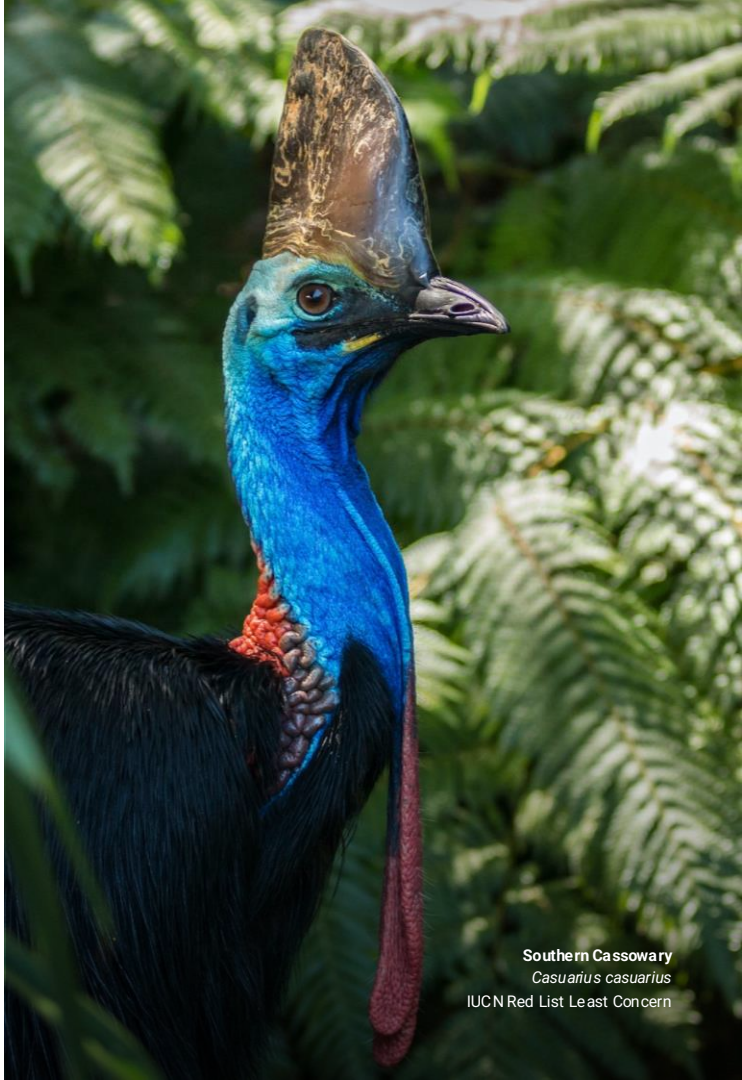
STAR is a **biodiversity metric**
based on The IUCN Red List of Threatened Species.
Identifies the potential to reduce species extinction risk

The STAR methodology has been applied to produce two complementary global data layers:

1. **Threat abatement ($STAR_T$)** – actions to address threats.
2. **Restoration ($STAR_R$)** – actions to restore species habitat.

STAR is completely scaleable.
It enables quantitative comparison between sites.

The STAR global layers are currently based on threatened and near-threatened terrestrial mammals, birds and amphibians.



Southern Cassowary
Casuarius casuarius
IUCN Red List Least Concern

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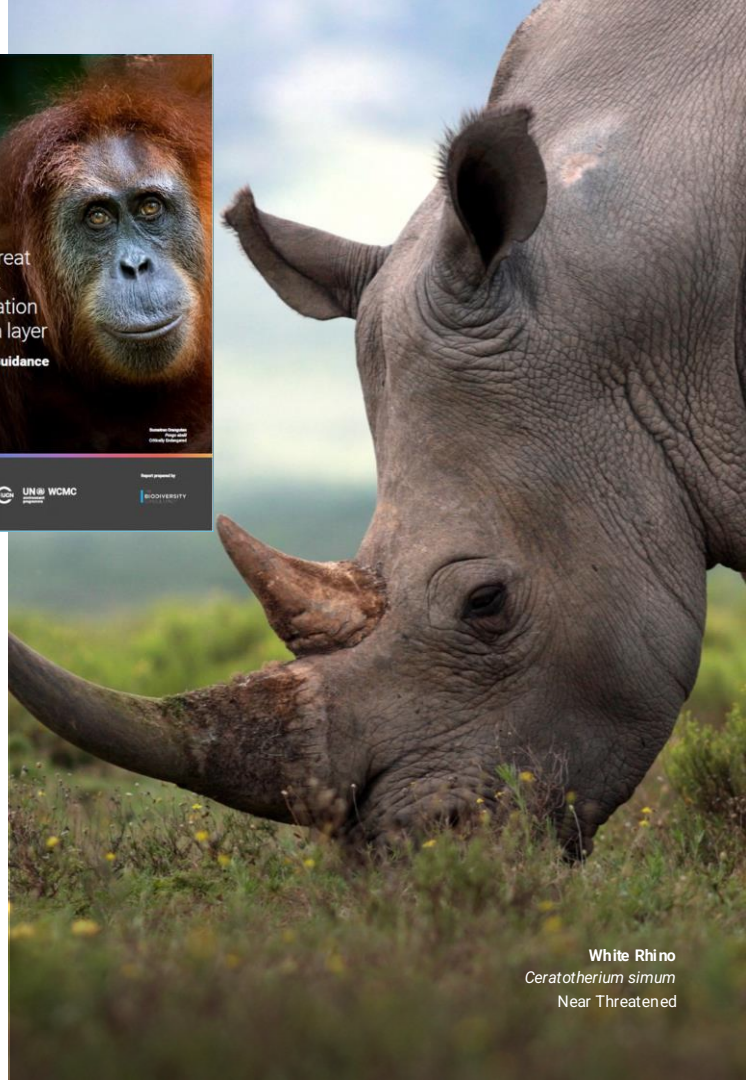
Business application of STAR

STAR can enable companies to

- Set and measure progress on species-focused ‘science-based targets’ for nature
- Quantify contributions towards wider national or international conservation goals
- Guide and prioritise investments in species conservation
- Undertake a portfolio assessment of biodiversity opportunity and risk
- Identify potential impacts across supply chains



White Rhino
Ceratotherium simum
Near Threatened

Convention on Biological Diversity

SUSTAINABLE DEVELOPMENT GOALS

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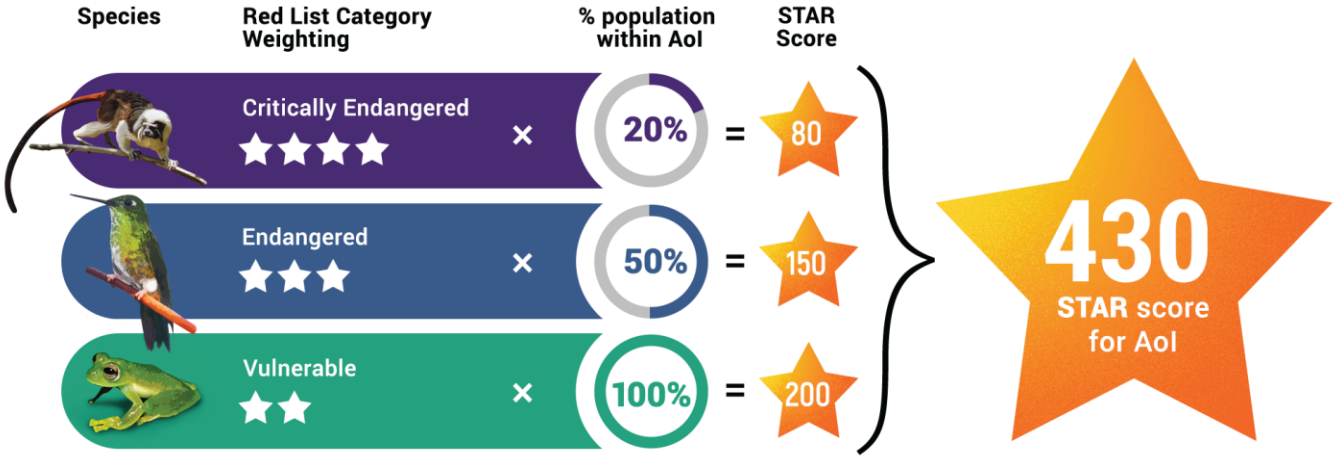
Weighted species values are combined to produce STAR scores



The total of STAR values across all included species represents the global threat abatement effort needed for all these species to become Least Concern.

STAR scores for a given area of interest (AoI) show the potential contribution to reducing global species extinction risk.

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STAR scores can also be further broken down by threat type

Species	IUCN Red List category	IUCN Red List category weight	Population in AoI (%)	Invasive species	Energy & mining	Biol Res Use	Agriculture	Climate change	Pollution	Potential $STAR_T$
1	EN	3 ★★★	5%	0	0	2	9	4	0	15
2	VU	2 ★★	10%	8	9	0	0	3	0	20
3	CR	4 ★★★★	2%	0	0	4	3	0	1	8
4	NT	1 ★	7%	0	0	3	4	0	0	7
			Total Potential $STAR_T$	8	9	9	16	7	1	50 STAR score for AoI
			(% of total STAR score for AoI)	(16%)	(18%)	(18%)	(32%)	(14%)	(2%)	

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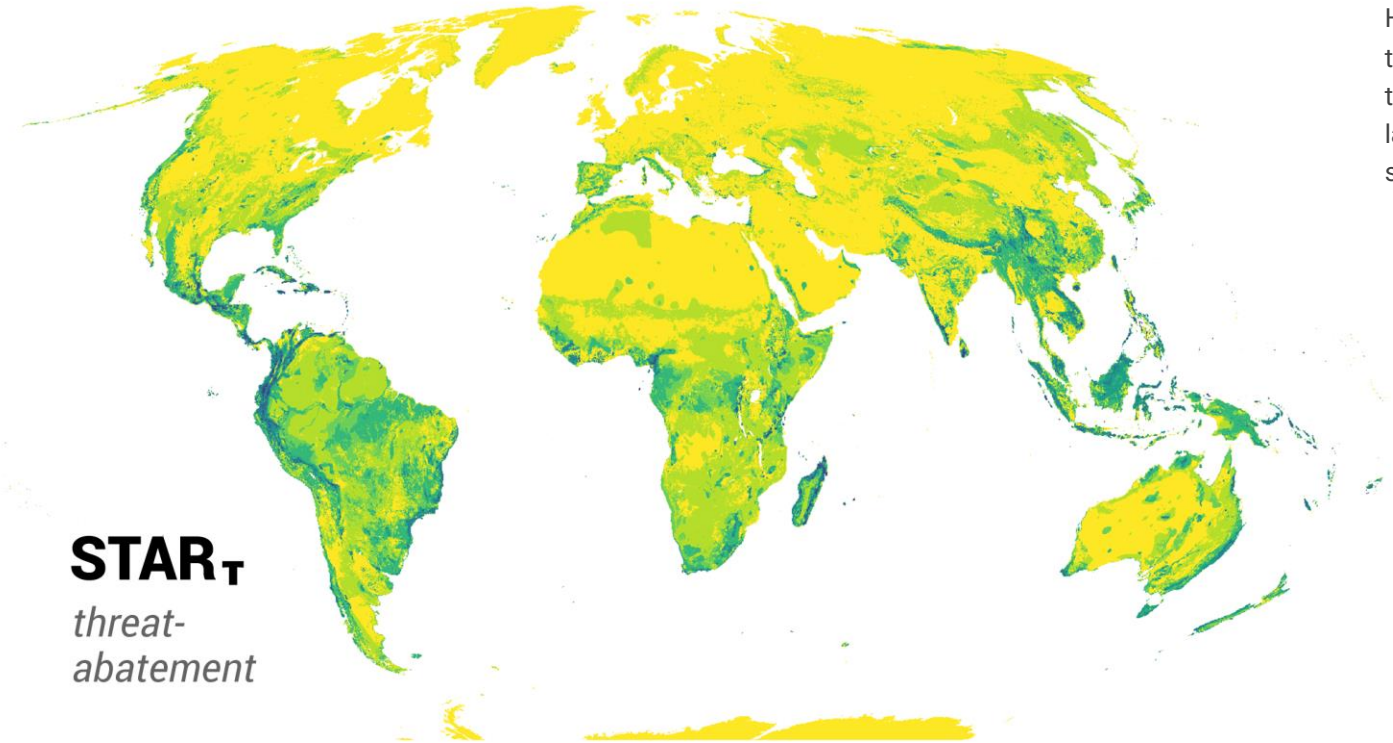
$STAR_T$ threat abatement



High scores indicate areas that currently contain many threatened species and a large proportion of individual species' ranges.

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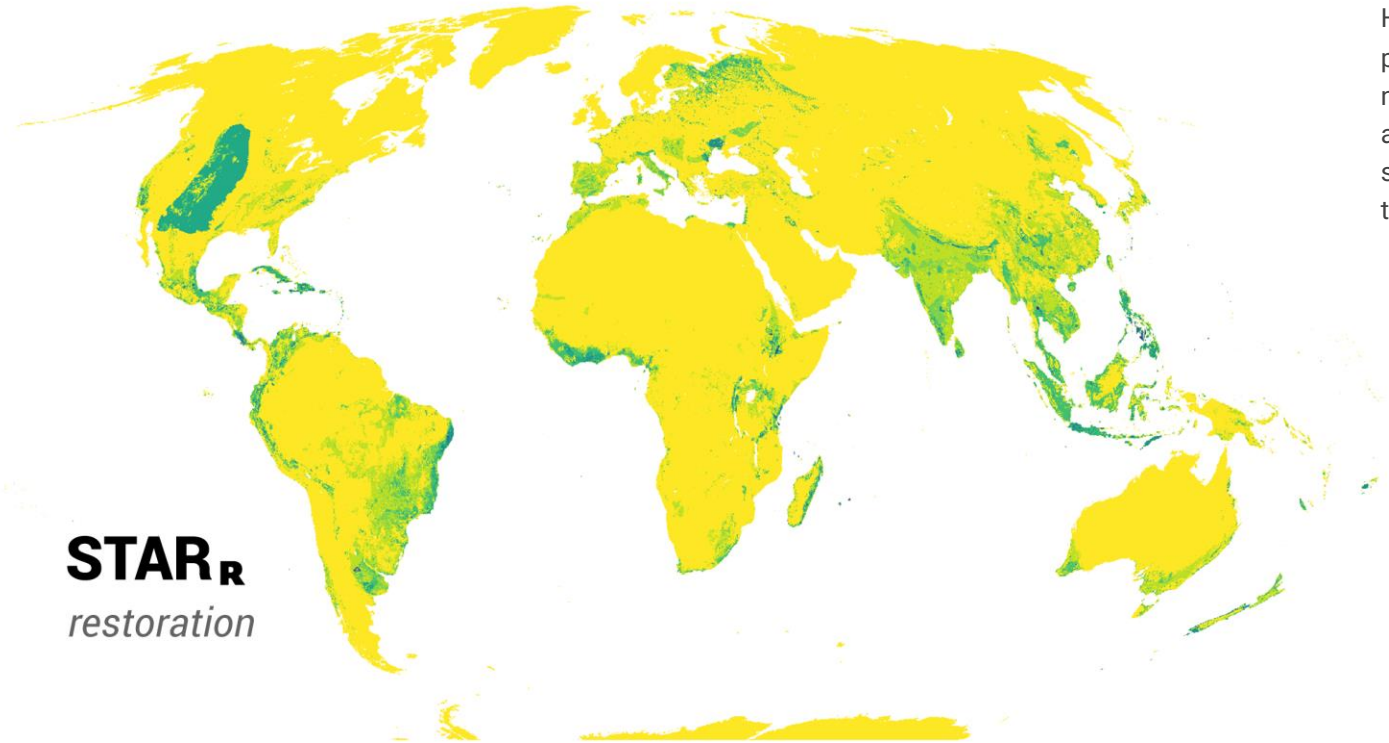
$STAR_R$ restoration



High scores indicate areas that previously supported high numbers of threatened species, a large proportion of individual species' ranges, and/or species that are severely threatened.

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Business application of STAR: **screening**

STAR is valuable for screening as it allows *quantitative comparison* of opportunities and risks:

- Screening for **opportunities** to invest in the conservation actions with greatest impact

- Screening for **risks** associated with business operations (in combination with other biodiversity information)

Keel-billed Toucan
Ramphastos sulfuratus
Least Concern

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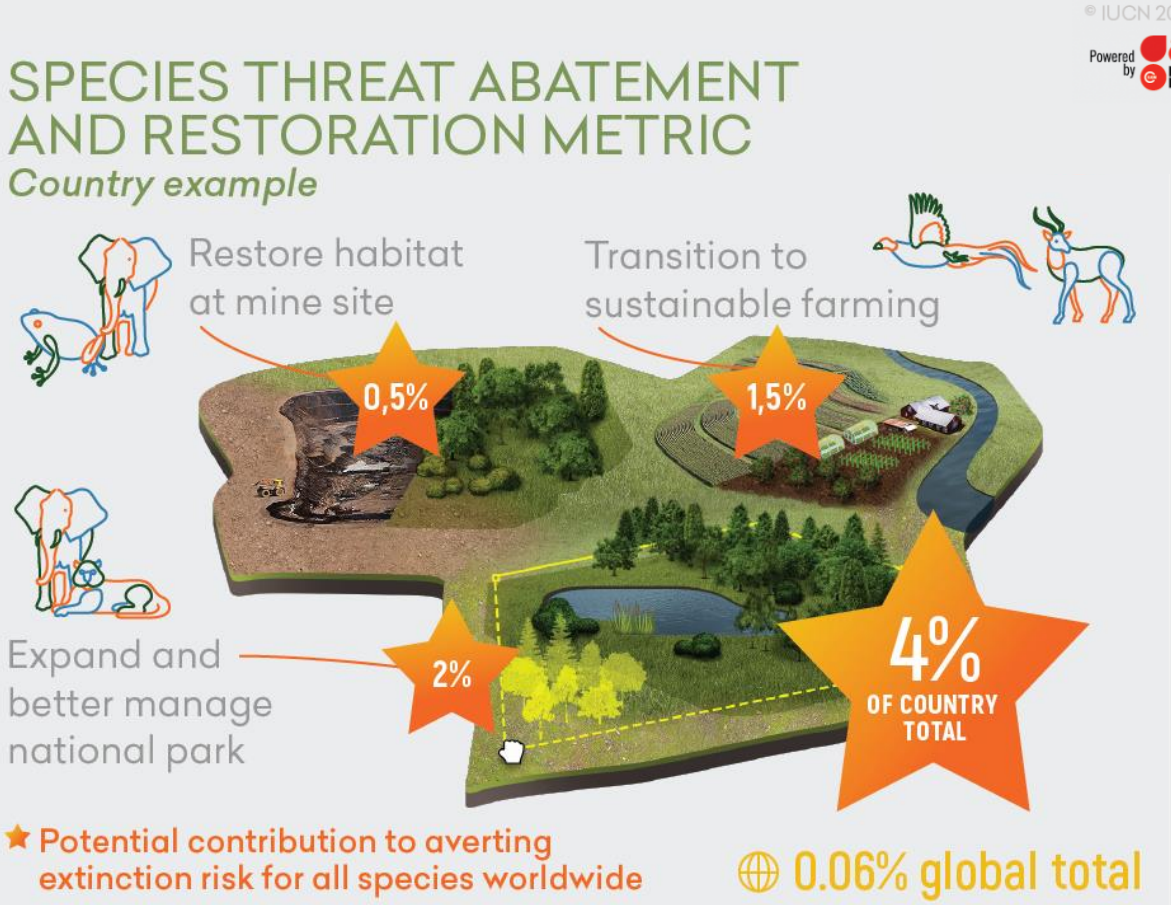
Business application of STAR: **planning**

- **Target setting**: to set science-based targets for nature, focused on species extinction risk
- **Mitigation planning**: to plan and prioritise mitigation effort
- **Offset planning**: to identify suitable areas for biodiversity offsets



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Three phases of STAR outputs

STAR typology	Description	Uses	Effort required
Potential STAR (estimated)	STAR score derived using the global STAR layers	Screening and initial planning	Low – desk-based exercise
Potential STAR (calibrated)	Ground-truthed, validated, version of Potential STAR (estimated)	Planning interventions	Moderate to high - requires information from the field
Realised STAR	STAR score of the actual conservation gains achieved	Corporate tracking and reporting of progress	Moderate to high – requires assessment and tracking of threat levels

Screening, planning and tracking using STAR

Powered by RED LIST

EVALUATE OPPORTUNITIES AND IDENTIFY ACTIONS

to help achieve commitments to nature

A company purchases cotton from India, Brazil and the USA. They have a **commitment to protect biodiversity** in their production sites. They **use STAR to review these sites and find that the most important threat** is the impact of water pollution on globally threatened frogs in Brazil

Company **uses STAR to identify actions** to reduce species extinction risk — in this case improving water quality

Company **develops targets and action plan** to work with farmers to reduce pollutants known to kill threatened amphibians

Company **implements action plan to reduce water pollution**. Monitoring shows that pollutant levels decline

Company **uses STAR to track and report** progress towards achievement of threat reduction targets

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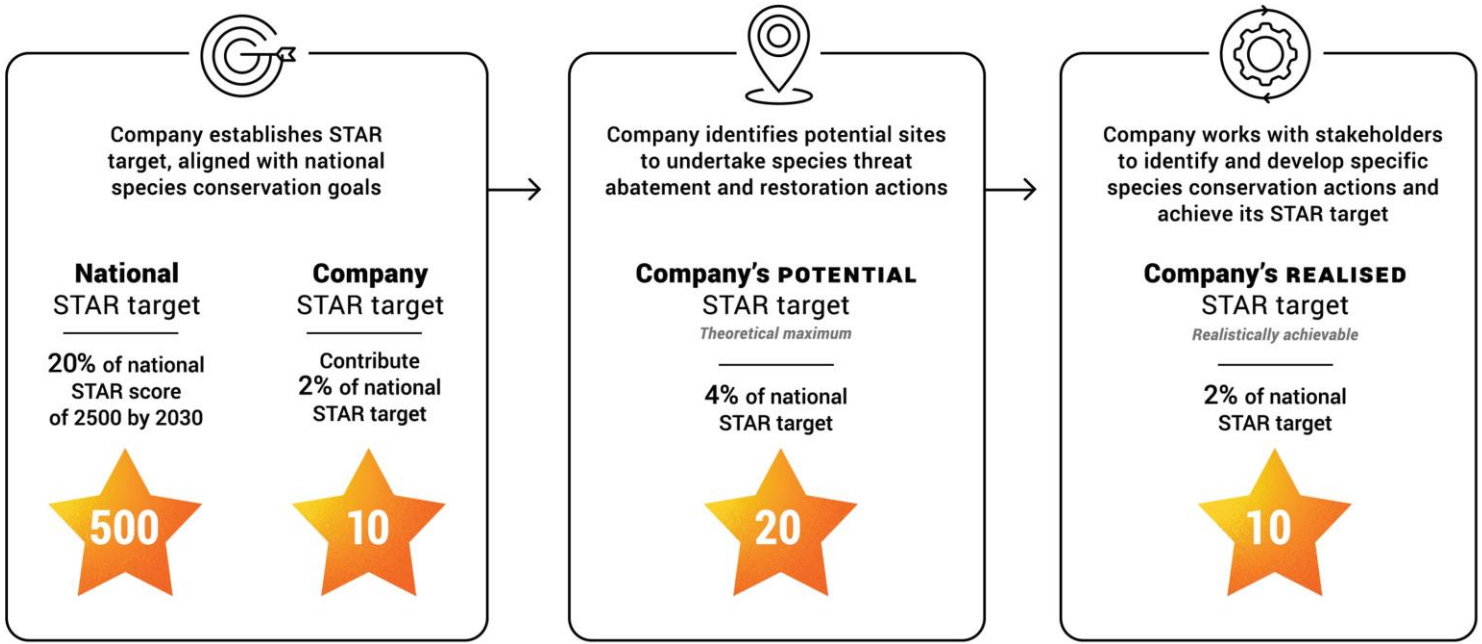
Example: Using STAR to set and achieve targets

Large consumer goods company looking to contribute towards global and national conservation goals



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Limitations of STAR

Like all biodiversity metrics, STAR has limitations!

STAR will improve in comprehensiveness and accuracy over time.

Currently, STAR:

- reflects a sub-set of terrestrial biodiversity.
- does not yet reflect differences in the intensity of threats or density of populations across species' ranges.
- focuses on potential to reduce extinction risk – so STAR scores are highest where there are many threatened species with small global ranges.

For a more comprehensive picture of biodiversity, STAR can be complemented with other metrics.

Black Snub-nosed Monkey
Rhinopithecus bieti
Endangered

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Further development of STAR

Planned improvements to the global STAR layers include:

- Inclusion of additional taxonomic groups including freshwater and marine species
- Detailed threat mapping across species ranges to improve STAR's ability to identify site-specific threats
- Updating and refining species range information to capture spatial variation in species' population density, making it more suitable for site-level mitigation planning
- Ability to disaggregate STAR site scores for individual species
- Draft guidance for Calibrated and Realised STAR in development
- Work underway in IBAT on tabulation and automation to make calibration easier

Indian Pangolin
Manis crassicaudata
Endangered

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Accessing STAR

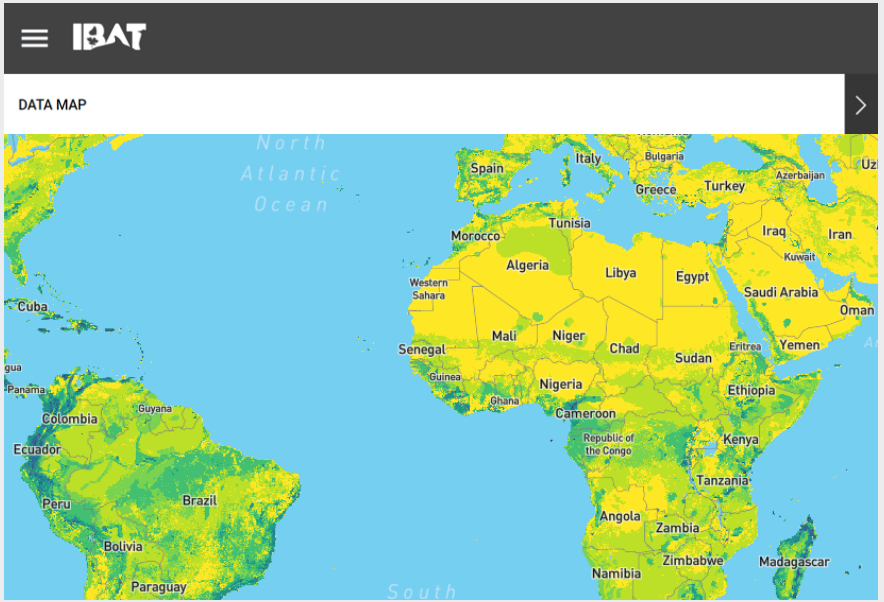
STAR now available for all IBAT users through STAR Beta programme

Free to join, grants 30 free bespoke STAR reports

Opportunity to provide feedback on the future development of STAR

Sign up through the IBAT Platform (www.ibat-alliance.org)

STAR can be visualised on IBAT's map



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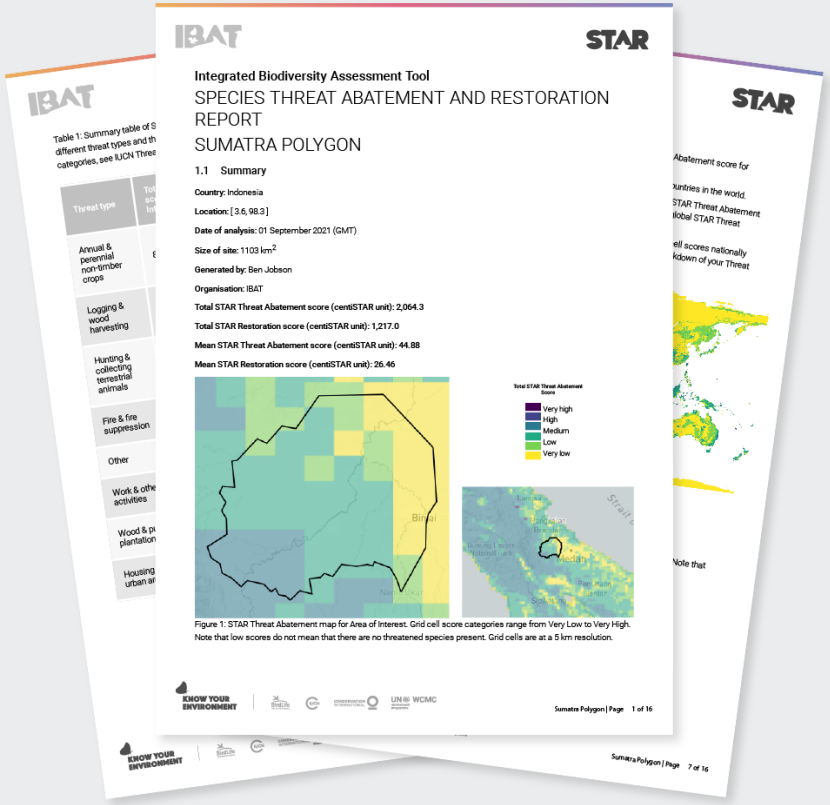
STAR Report

Define your Area of Interest (project site)

IBAT generates bespoke STAR report for your chosen location

Report provides a detailed breakdown of the STAR values, threats and their relative significance at national and global scales



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Additional benefits for IBAT subscribers

Access to more STAR reports

View STAR raster data layer at higher (5km) resolution

Quotas to download STAR global data layer, in full or in part according to subscription level

STAR incorporated into IBAT's Multi-site Report

Pay-as-you-go options to unlock more STAR reports and GIS downloads

Full details at https://www.ibat-alliance.org/subscriptions

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star@ibat-alliance.org
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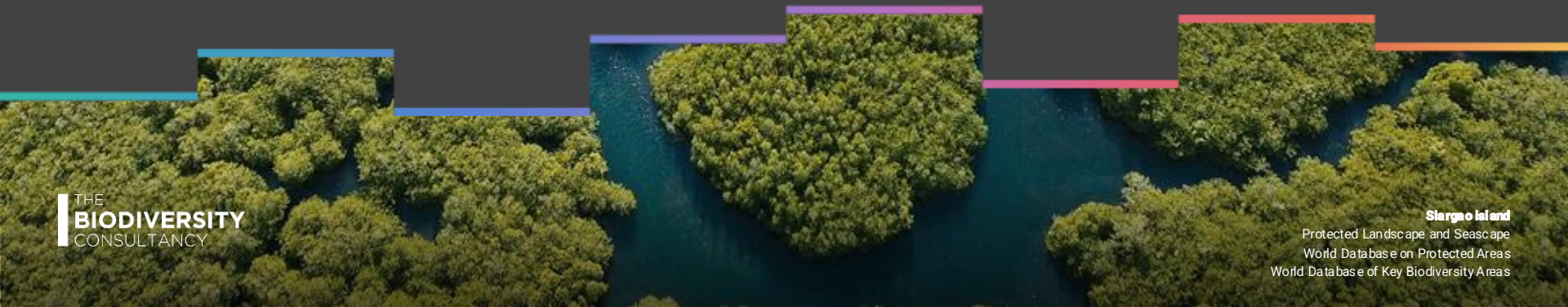
BirdLife INTERNATIONAL
CONSERVATION INTERNATIONAL
IUCN
UN environment programme
WCMC



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Siargao Island
Protected Landscape and Seascape
World Database on Protected Areas
World Database of Key Biodiversity Areas