The Integrated Biodiversity Assessment Tool

Moremi Game Reserve
World Database on Protected Areas
World Database of Key Biodiversity Areas

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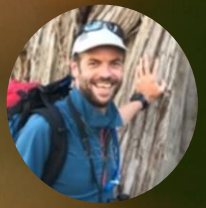
BirdLife INTERNATIONAL
CONSERVATION INTERNATIONAL
IUCN
UN environment programme
WCMC

Webinar: A Deep Dive into the IBAT Species Report

Tuesday, 25th November, 2025

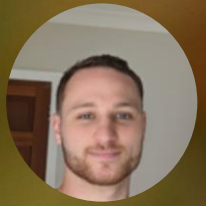
Jake Tatum

Florence Curet



Thomas Starnes

Warwick Mostert



Mark Leckie

Agenda

- Introduction to IUCN RHINO
- Introduction to STAR
- Using IBAT for IUCN RHINO
- Summary
- Q&A

Hawksbill Turtle
Eretmochelys imbricata
Critically Endangered

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What is IBAT?

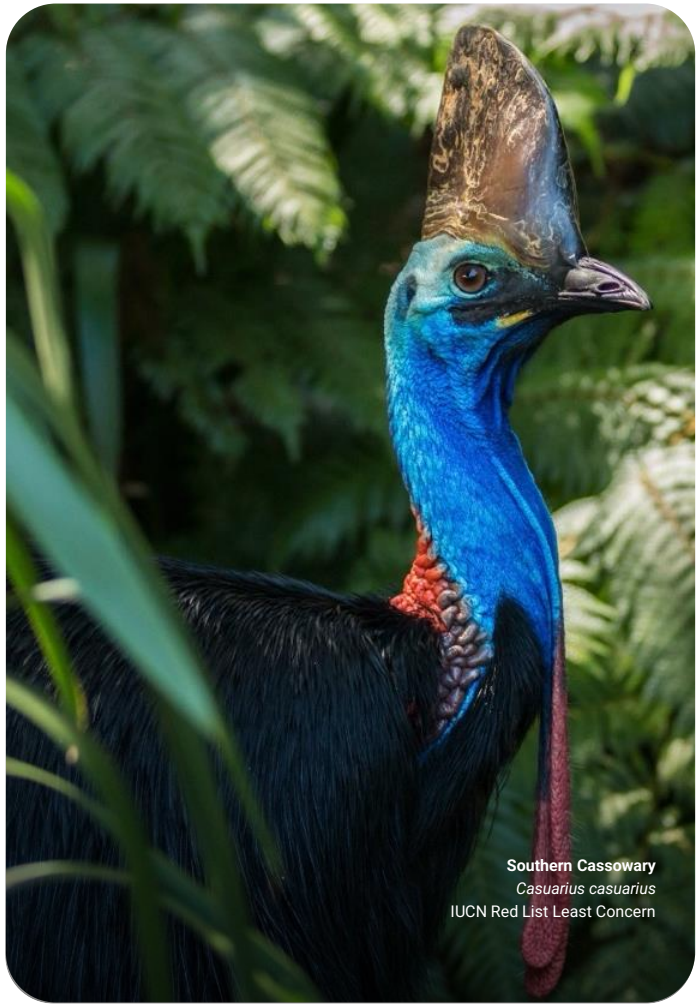
Integrated Biodiversity Assessment Tool

- A web-based reporting and mapping tool that provides access to global, authoritative, biodiversity datasets for early-stage impact, risk and opportunity screening

- An alliance between:

BirdLife INTERNATIONAL · CONSERVATION INTERNATIONAL · IUCN · UN environment programme · WCMC

- A cost recovery mechanism that directly supports the update and maintenance of three of the world's most authoritative global datasets.



Southern Cassowary
Casuarius casuarius
IUCN Red List Least Concern

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Defining Nature Positive

IUCN RHINO

Halt and reverse nature loss

Nature Positive is a global societal goal defined as 'halt and reverse nature loss by 2030 on a 2020 baseline, and achieve full recovery by 2050', in line with the mission of the Kunming-Montreal Global Biodiversity Framework.

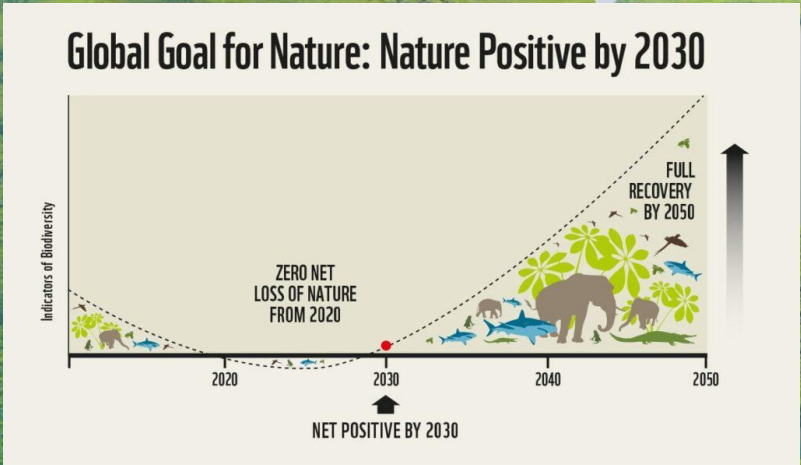
By 2030

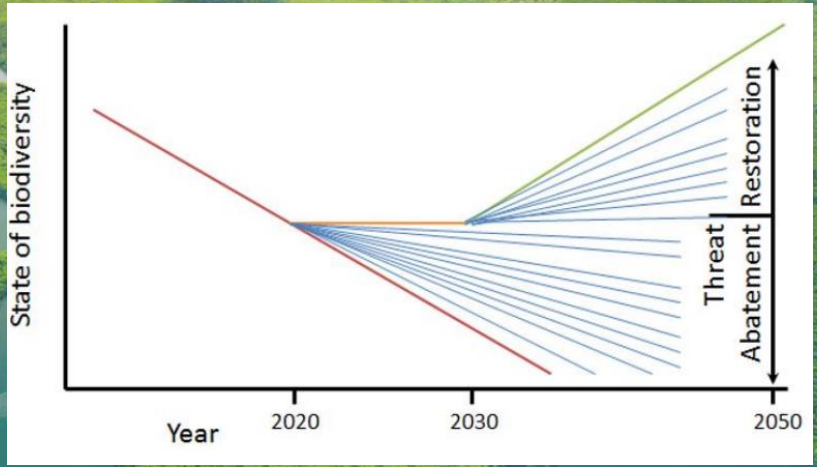
More nature at the end of the decade than at its start

By 2050

Nature is fully recovered and flourishing

How to deliver Nature Positive contributions





Reduce Species extinction risk and Ecosystem collapse risk by

1. Reducing human-induced pressures and threats
2. Restoring habitats and ecosystems

Nature & People


IUCN
RHINO
Rapid
High-
Integrity
Nature-positive
Outcomes

An approach that guides organisation on

what to do,

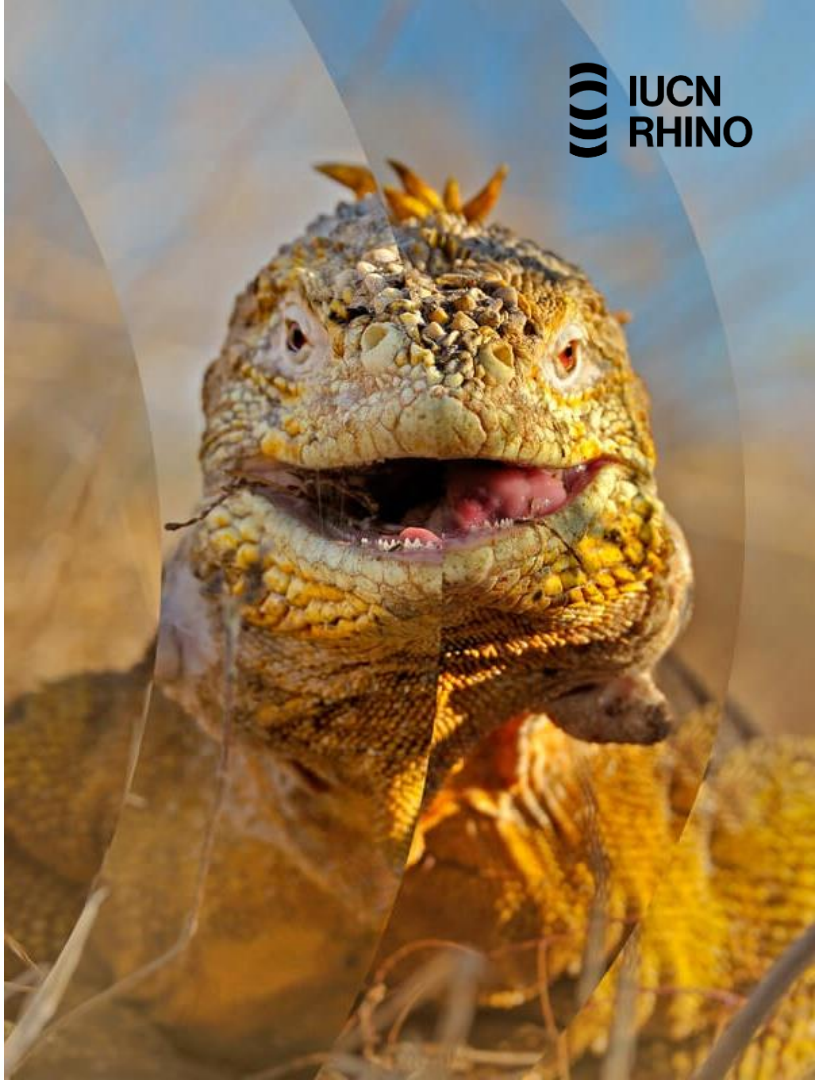
where to act, and

how to measure progress

towards Nature Positive outcomes

aligned with

TNFD



Core tools and metrics

STAR

Species Threat Abatement and Restoration metric

To be developed

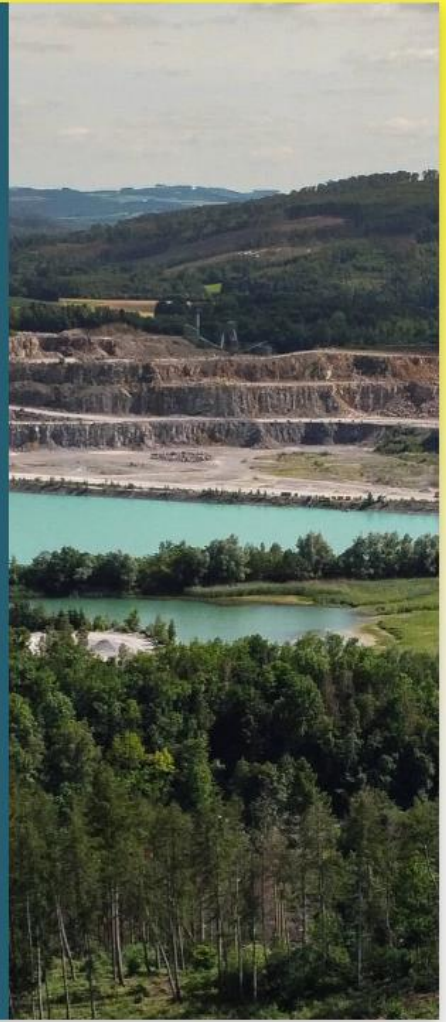
Track A

Direct Impact Track

Suitable for companies that:

- have direct impacts on biodiversity
- have management agency for landholdings
- work with stakeholders in landscapes around them

Get Started >



Track B

Value Chain Impact Track

Suitable for companies that:

- have connections to land holdings through the purchase and processing of commodities
- combine a direct footprint through their productive or extractive activities

Get Started >

Track C

Investor Impact Track

Suitable for companies that:

- generate impacts via their investments
- have portfolios that contain combinations of companies with direct impacts and value chain impacts

Get Started >

Track A

Direct Impact Track

IUCN RHINO

A1
Locate
the organisation's interface with nature

A2
Evaluate
potential contributions to Nature Positive

A3
Assess
the most important threats to mitigate

A4
Prepare
your action plan to address the most important biodiversity-related threats

A5
Implement
actions for Nature Positive outcomes

A6
Report
delivery of impacts

Track A

Direct Impact Track

IUCN RHINO

A1 Locate

the organisation's interface with nature

Estimated STAR

A2 Evaluate

potential contributions to Nature Positive

Calibrated STAR

A3 Assess

the most important threats to mitigate

Calibrated STAR

A4 Prepare

Target STAR

your action plan to address the most important biodiversity-related threats

A5 Implement

actions for Nature Positive outcomes

A6 Report

delivery of impacts

Realised STAR

20 pilots and case studies with companies, governments, cities, civil societies

IUCN RHINO

SOLVAY

Newmont

HOLCIM

AngloAmerican

Fortescue

suzano

IUCN RHINO will help organisations

- Identify high-impact areas for conservation
- Measure and aggregate biodiversity contributions across sites, portfolios and value chains
- Report and disclose their nature-related risks and opportunities (e.g. TNFD)
- Align with global biodiversity targets
- Contribute meaningfully to reversing nature loss

What is STAR?

Species Threat Abatement and Restoration Metric

STAR quantifies the potential reduction of extinction risk in specific places

STAR is additive, comparable and scalable

STAR supports organisations to identify, prioritise and report on nature-positive actions

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How is STAR made?

A metric based on the IUCN Red List

For each species, we take three pieces of information from the IUCN Red List assessment:

Red List Status

Area of Habitat map

Species Threats

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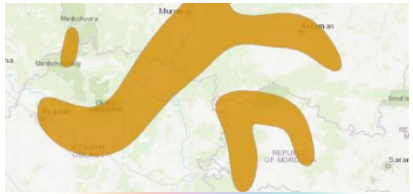
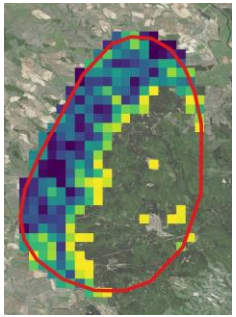
How is STARt made?

From Species Range to Global Metric

1. Start with the Ranges of Threatened and near Threatened terrestrial **Mammals, Birds, Amphibians** and **Reptiles**

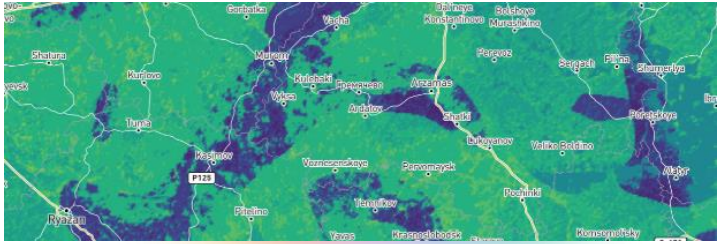


2. Refine the ranges by validating the **habitats** and **elevation** the species is reported to live in to create global Area of Habitat (AoH) maps



3. Weight the proportions of species global AoH in an area by the IUCN threat status of that species

4. Creates a **global** layer at **1km resolution** quantifying the **potential reduction** in extinction risk that can be made by abating threats in each cell



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STAR Threats

How does STAR use IUCN threat data

Major threats that affect a species are included in its Red List assessment

The assessment determines if the threat:

Affects the **minority, majority,** or **whole population** of a species

Causes a decline ranging from **slow** to **very rapid**

These two elements are combined to weight the **relative importance** of each threat for a species

IUCN Classifies threats into **12 categories** (e.g. Pollution)

- Each category has two sub-category levels

Examples of IUCN Threat categories

Agriculture

Aquaculture

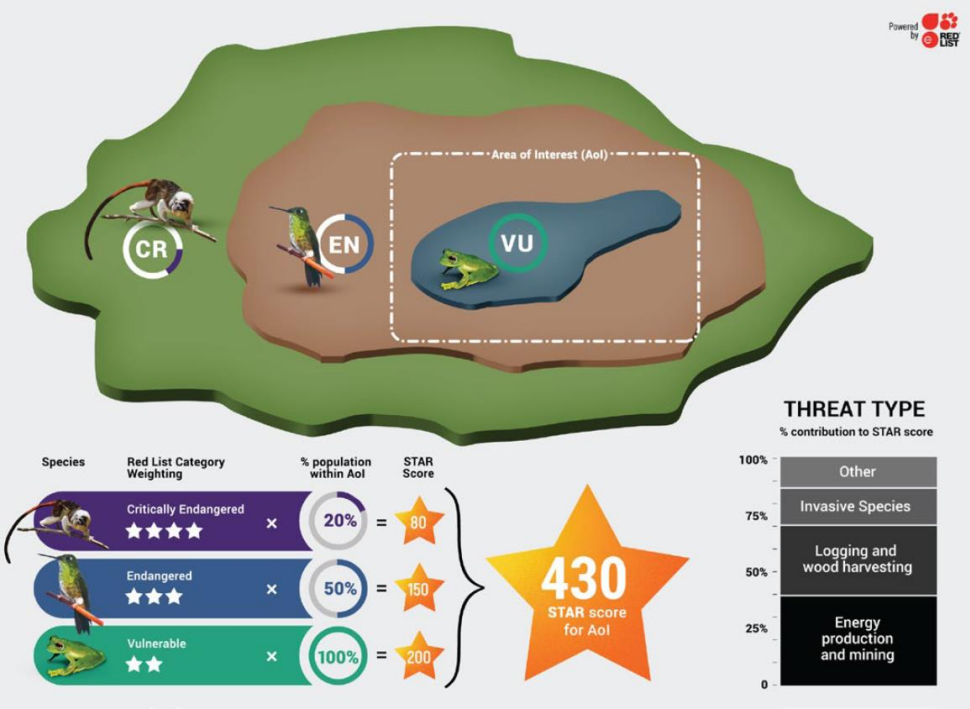
Energy production & mining

Fire & fire suppression

Pollution

How STAR can screen sites

Let's put it all together!



At a site level STARt is calculated by:

1. Estimating the proportion of global population of a species within your site
2. Weighting by the IUCN threat status of that species
3. Summing all the species scores together

This score can be broken down to see how much each threat or species contributes to the extinction risk reduction potential of a site.

Threat contributions can be combined to see how important each threat is estimated to be across all species in the site.

STAR Summary

What have we learnt

- STAR quantifies the **potential contribution** that abating threats and restoring habitats in specific places offer towards **reducing extinction risk** of species.
- STAR allows users to focus on specific **species** and threats that **interface** with their value chain.
- Using STAR, IUCN RHINO can demonstrate how **local interventions** can contribute to global **Nature Positive targets**.
- These contributions can be **quantified, added, and compared** across **sites, regions or projects**

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Moschata Ltd. Case Study

A hypothetical walkthrough of IUCN RHINO

Moschata Ltd.

Energy company (Renewables)

Moschata Ltd. Aim to contribute to a Nature Positive Future through adopting TNFD and following the RHINO Direct Impact Track

3 major **operational sites**

Davis HydroPower Site

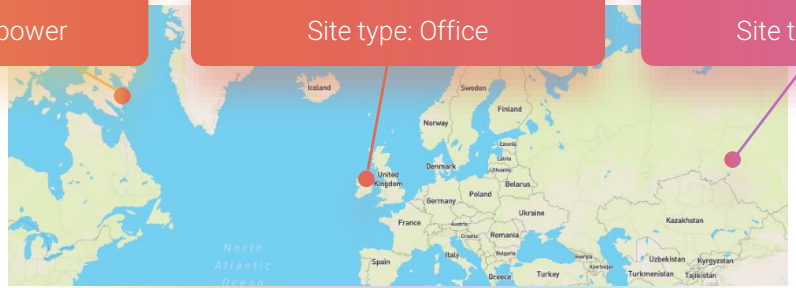
Site type: Hydropower

Moschata HQ

Site type: Office

Severnoye Wind Farm

Site type: Wind Farm



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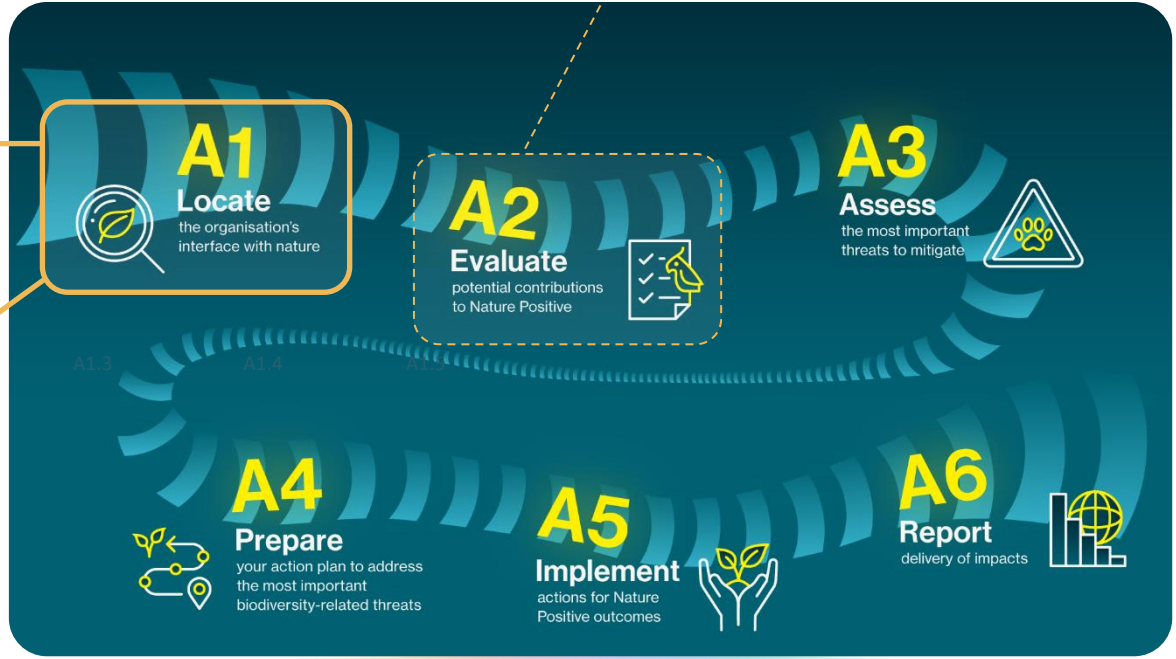
Moschata Ltd. follow RHINO to meet their nature positive goals

Upcoming webinar (early 2026):
- STAR Calibration module in IBAT

Focus for today

- Using IBAT Disclosure Preparation Report & Species Reports

- A1.1 Gather location information
- A1.2 Screen and prioritise
- A1.3 Map stakeholders at the landscape level
- A1.4 Map stakeholders at the landscape level
- A1.5 Compile preliminary threatened species and associated threat data



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Moschata Ltd. Nature team gather information on the location of their sites.

A1 Locate the organisation's interface with nature

A1.1 Gather location information | A1.2 | A1.3 | A1.4 | A1.5

Davis Hydropower Site

Site type: Hydropower

Moschata HQ

Site type: Office

Severnoye Wind Farm

Site type: Onshore Wind

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Next, they run an IBAT Disclosure Preparation Report to identify sites with highest biodiversity value.

A1 Locate the organisation's interface with nature

A1.1 | A1.2 Screen and prioritise | A1.3 | A1.4 | A1.5

IBAT Disclosure Preparation Report (DPR) Results:

Site name	Sensitive: Pas and/or KBAs	Sensitive: STAR	Significance Based on Proximity to a Protected Area	Significance Based on Proximity to a Key Biodiversity Area	Significance Based on STAR Scores
Severnoye Wind Farm	Yes	Yes	High		High
Davis Hydropower Site	No	Yes			Low

Severnoye Wind Farm selected for further actions:

DPR analysis for Severnoye site:

- ✓ The maximum STARt and STARr scores exceed the global median values
- ✓ Site is in or near ecologically sensitive location
- ✓ Area of protected areas and KBAs within Area of Influence: 632 km^2

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Moschata map stakeholders and define the areas of influence for the target site

A1 Locate the organisation's interface with nature

A1.1 A1.2

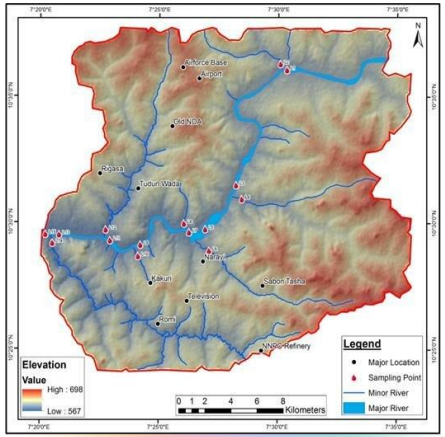
A1.3 Map stakeholders at the landscape level

A1.4. Define the Areas of Influence

A1.5

Map stakeholders at the landscape level

Define the Areas of Influence of their selected site: **Severnoye Wind Farm**



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Moschata Ltd. compile threatened species and associated threat data using the IBAT Estimated Species Report

A1 Locate the organisation's interface with nature

A1.1 | A1.2 | A1.3 | A1.4

A1.5 Compile preliminary threatened species and associated threat data

Species report

- Site's STAR score
- Species' threats present at site
- Red List species highlights

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IBAT Species report shows the site's high STAR scores and identifies highest priority species

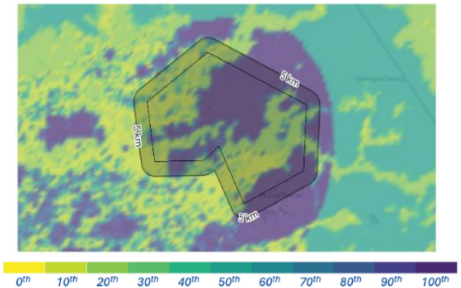
A1 Locate the organisation's interface with nature

A1.1 A1.2 A1.3 A1.4

A1.5 Compile preliminary threatened species and associated threat data

IBAT Estimated Species Report results:

- Site's STAR score (mean): 82nd percentile vs Global STAR scores
- Site covers **0.02%** of country's terrestrial area and contains **0.217% of its STAR score.**



STAR scores are split by Taxonomic Groups and Species:

Mammals 94.2%	Desmana moschata (Russian Desman) 93.6%
Birds 6.1%	OTHER Birds 5.0%
	Whiteheaded duck 1.1%

Russian Desman found to be the primary driver behind the site's high STAR score Site is **2.9%** of this species' area of habitat

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IBAT Species report shows highest threats impacting species on the site

A1 Locate the organisation's interface with nature

A1.1 A1.2 A1.3 A1.4

A1.5 Compile preliminary threatened species and associated threat data

Each threat's contribution to the STAR score is calculated

Invasive & non-native species estimated to be the biggest threat to species on the site

Next 5 threats also contribute highly

Invasive & other problematic species, genes & diseases 28.6%	Invasive & non-native species/diseases 28.5%
Climate Change 19.7%	Storms & Flooding 9.4%
	Droughts 9.4%
Natural system modifications 18.8%	Other ecosystem mods 9.4%
	Dams & Water Management 9.4%
Bio resource use 10.6%	Fishing 9.6%
Agri- & Aqua-culture 10.4%	Crops 10.2%
Pollution 10.1%	Agriculture/forestry effluents 9.9%

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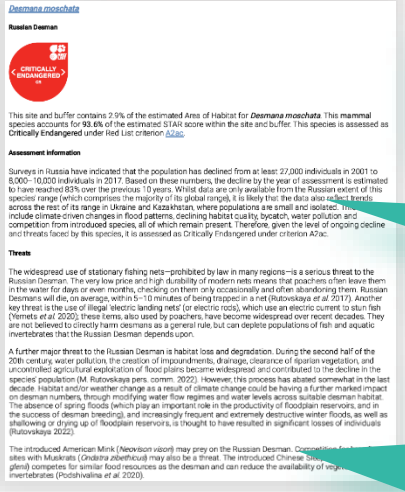
"Species Highlights" section, based on IUCN Red List entry shows specific threat context



Desmana moschata

Russian Desman

CRITICALLY ENDANGERED

This site and buffer contains 2.9% of the estimated Area of Habitat for ***Desmana moschata***. This mammal species accounts for 93.6% of the estimated STAR score within the site and buffer. This species is assessed as **Critically Endangered** under Red List criterion A2ac.

Assessment information

Surveys in Russia have indicated that the population has declined from at least 27,000 individuals in 2001 to 8,000–10,000 individuals in 2017. Based on these numbers, the decline by the year of assessment is estimated to have reached 83% over the previous 10 years. Whilst data are only available from the Russian extent of this species' range (which comprises the majority of its global range), it is likely that the data also reflect trends across the rest of its range in Ukraine and Kazakhstan, where populations are small and isolated. This include climate-driven changes in flood patterns, declining habitat quality, bycatch, water pollution and competition from introduced species, all of which remain present. Therefore, given the level of ongoing decline and threats faced by this species, it is assessed as Critically Endangered under criterion A2ac.

Threats

The widespread use of stationary fishing nets—prohibited by law in many regions—is a serious threat to the Russian Desman. The very low price and high durability of modern nets means that poachers often leave them in the water for days or even months, checking on them only occasionally and often abandoning them. Russian Desmans will die, on average, within 5–10 minutes of being trapped in a net (Rutovskaya *et al.* 2017). Another key threat is the use of illegal 'electric landing nets' (or electric rods), which use an electric current to stun fish (Yemets *et al.* 2020); these items, also used by poachers, have become widespread over recent decades. They are not believed to directly harm desmans as a general rule, but can deplete populations of fish and aquatic invertebrates that the Russian Desman depends upon.

A further major threat to the Russian Desman is habitat loss and degradation. During the second half of the 20th century, water pollution, the creation of impoundments, drainage, clearance of riparian vegetation, and uncontrolled agricultural exploitation of flood plains became widespread and contributed to the decline in the species' population (M. Rutovskaya pers. comm. 2022). However, this process has abated somewhat in the last decade. Habitat and/or weather change as a result of climate change could be having a further marked impact on desman numbers, through modifying water flow regimes and water levels across suitable desman habitat. The absence of spring floods (which play an important role in the productivity of floodplain reservoirs, and in the success of desman breeding), and increasingly frequent and extremely destructive winter floods, as well as shallowing or drying up of floodplain reservoirs, is thought to have resulted in significant losses of individuals (Rutovskaya 2022).

The introduced American Mink (*Neovison vison*) may prey on the Russian Desman. Competition for [illegible] sites with Muskrats (*Ondatra zibethicus*) may also be a threat. The introduced Chinese Sleeper (*Perccottus glenii*) competes for similar food resources as the desman and can reduce the availability of vegetation invertebrates (Podshivalina *et al.* 2020).

The widespread use of stationary fishing nets—prohibited by law in many regions—is a serious threat to the Russian Desman

Another key threat is the use of illegal 'electric landing nets' (or electric rods), which use an electric current to stun fish

The introduced American Mink may prey on the Russian Desman.

Competition for breeding sites with Muskrats may also be a threat.

The introduced Chinese Sleeper competes for similar food resources as the desman

Summary of findings from Locate phase

A1 Locate — the organisation's interface with nature

1 IBAT Disclosure Preparation Report identified the priority site

2 IBAT Species Report calculated the STAR score for the site and identified the Russian Desman as the priority species for Threat Abatement

Russian Desman (Desmana moschata)
94% of STAR score

CRITICALLY ENDANGERED
CR

Next priority species: White-headed Duck
1.1% of STAR score

ENDANGERED
EN

3 IBAT Species Report highlighted biggest threats to species on the site

- Widespread use of **stationary fishing nets**
- Introduced **American Mink, Muskrat** and **Chinese Sleeper** also pose a risk
- **Floods, Pollution, Crops, Dams** and **Drought** were also listed as threats




IUCN Threat Category "8.1 Invasive non-native/alien species/diseases"

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Step A2: Evaluate

Potential contributions to Nature Positive

A2 Evaluate potential contributions to Nature Positive

1. Confirm species
2. Confirm threats
3. Calculate first version of baseline

STAR Calibration module - Coming soon to IBAT!

Join us on a dedicated webinar in early 2026

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Step A3: Assess

The most important threats to mitigate

A3 Assess the most important threats to mitigate

1. Assessing the most important threats
2. Stakeholder engagement and collaboration
3. Recalculating baselines

Step A4: Prepare

Your action plan to address the most important biodiversity-related threats

A4 Prepare your action plan to address the most important biodiversity-related threats

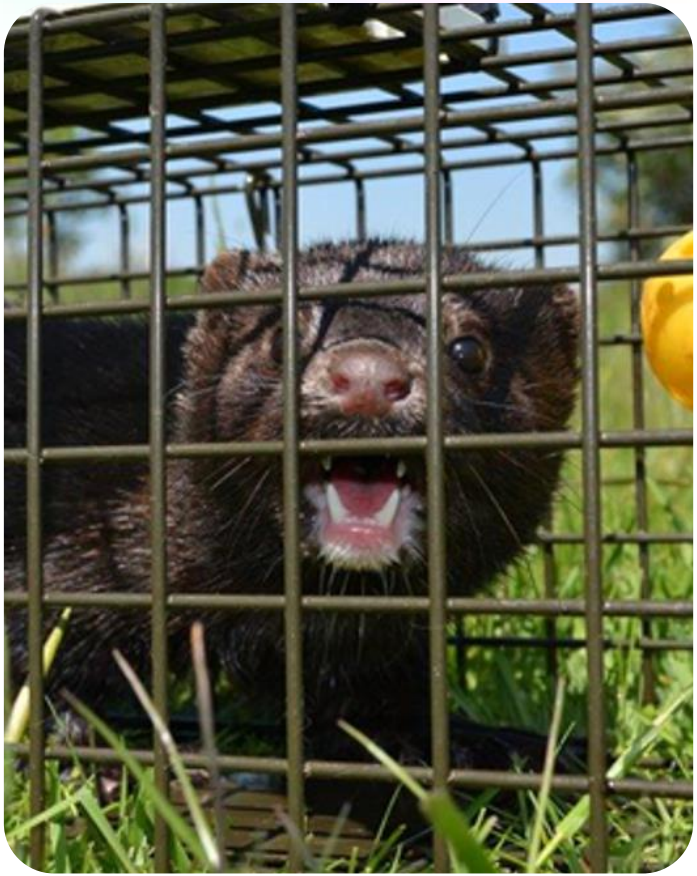
1. Define priorities and develop an action plan
2. Identify resources for implementation
3. Quantify baselines and index measures
4. Set targets, objectives, and indicators

Step A5: Implement

Actions for Nature Positive outcomes

A5 Implement actions for Nature Positive outcomes

1. Implement and monitor management actions
2. Adaptive landscape-level management
3. Managing risks and unintended impacts
4. Monitoring threat intensity

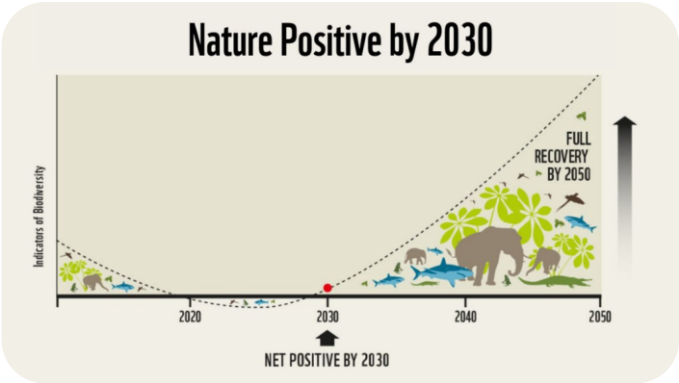


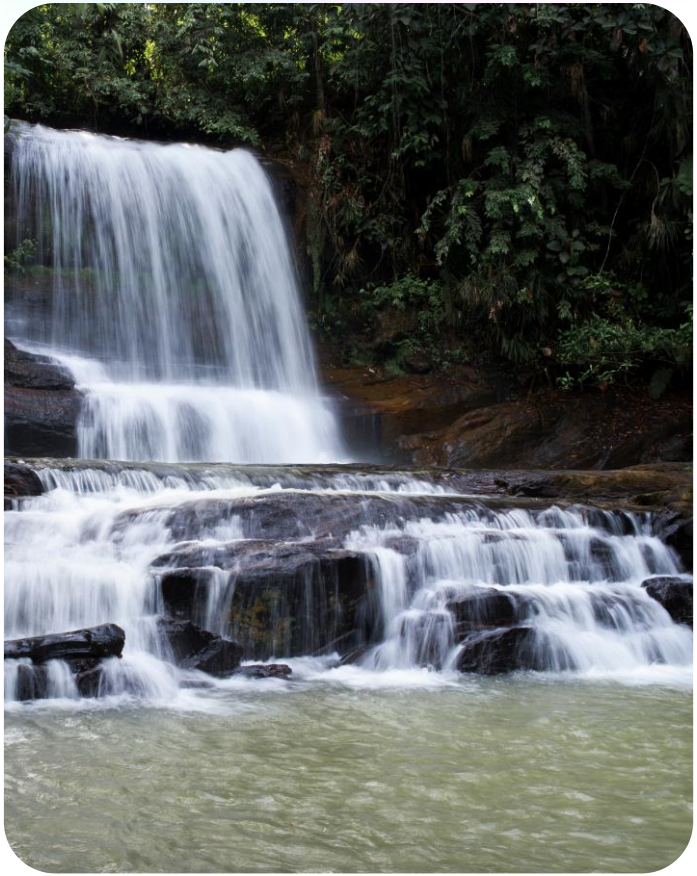
Step A6: Report

Delivery of impacts

A6 Report — Delivery of impacts

1. Quantifying impact on extinction risk
2. Reporting contributions to national and global targets





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Summary (key takeaways)

IUCN RHINO allows you to take meaningful action while aligning with TNFD

STAR quantifies potential reductions to extinction risk

IBAT provides the tools to support this journey

The IBAT Alliance is available to respond to any questions and training requests.

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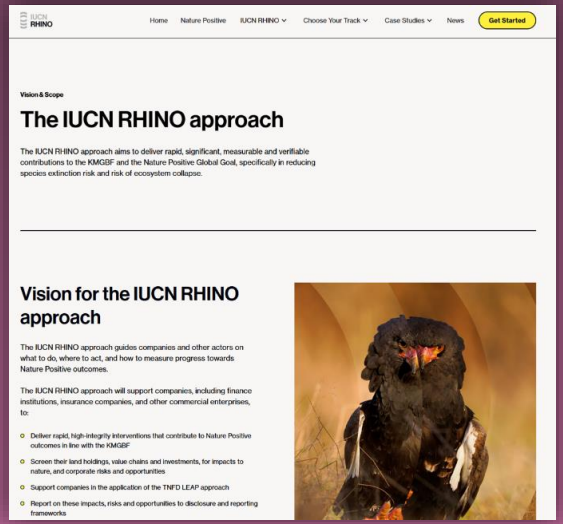
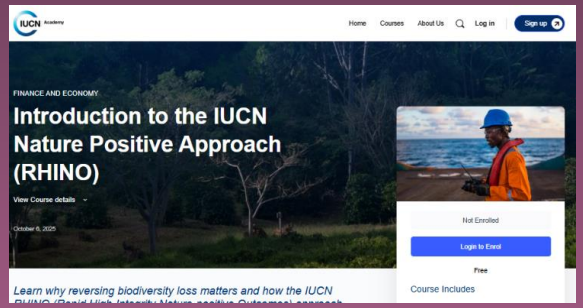
Sierra Nevada De Santa Marta
Natural National Park
World Database on Protected Areas
World Database of Key Biodiversity Areas

Knowledge base for action

Technical Source Document



IUCN RHINO website



Training course (IUCN Academy)

Case Studies – Anglo American & Suzano

Get in touch with us

ibat@ibat-alliance.org
www.ibat-alliance.org

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