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**BIG DATA**  
& Data Science for Official Statistics

**BILBAO 2024**

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Sustainable Development Policies  
with Integrated Data

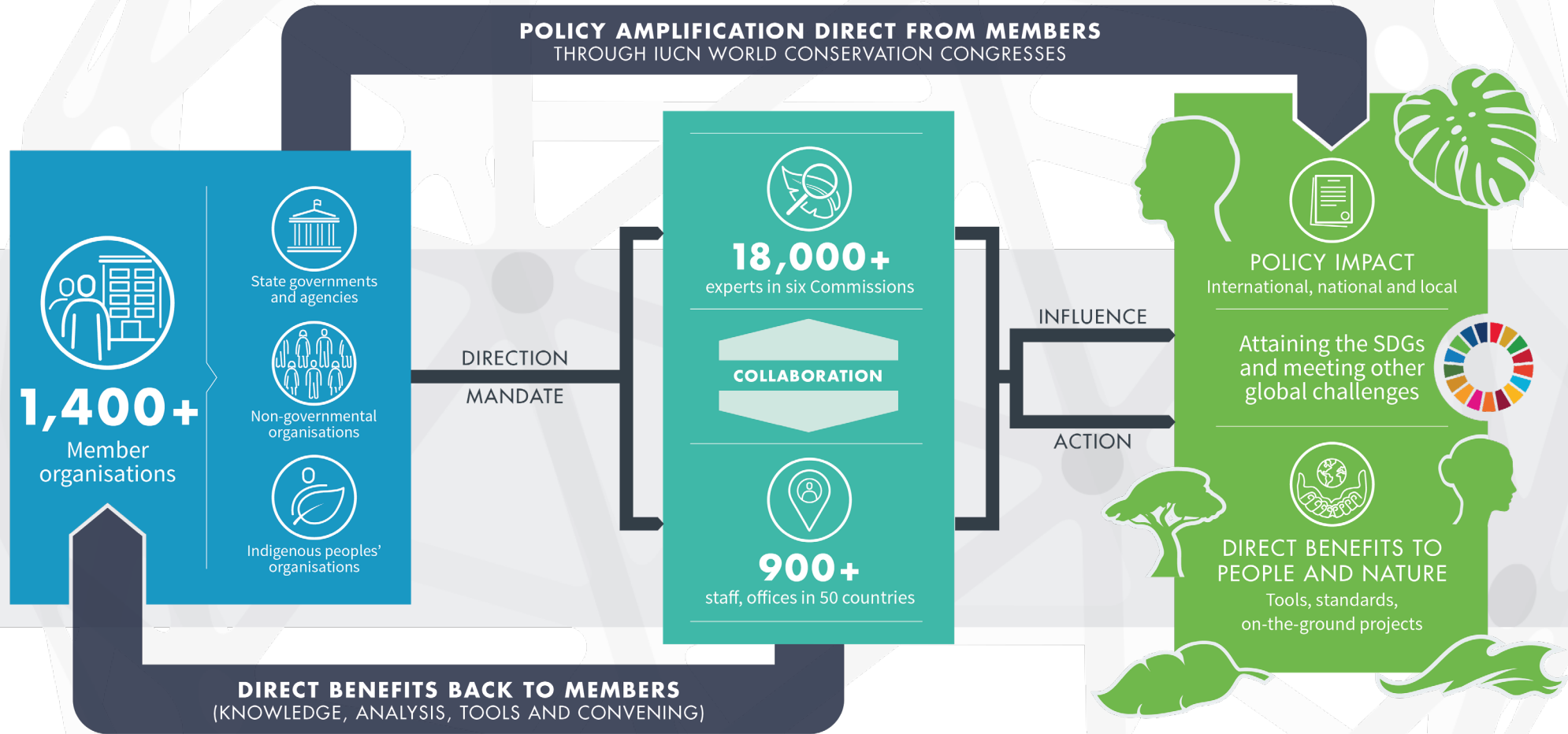
**BILBAO. SPAIN** | **10-14 JUNE 2024** | **#UNBigData2024**

# Data needs for the Red List of Species and Key Biodiversity Areas initiatives

**Konstantin Gospodinov**, European Biodiversity Conservation Coordinator  
Biodiversity Assessment and Knowledge, IUCN European Regional Office Brussels



# The world's largest environmental network



**INTERNATIONAL UNION FOR CONSERVATION OF NATURE**



The IUCN Red List has assessed species extinction risk for >50 years; it encompasses >150,000 species, and is widely used in policy and practice

THE IUCN RED LIST OF THREATENED SPECIES

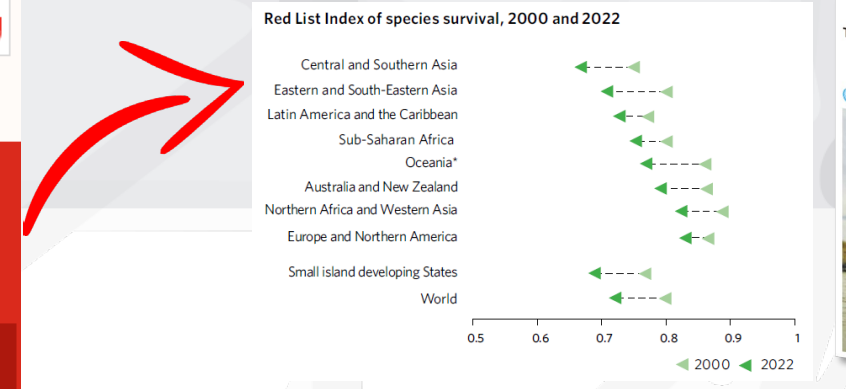
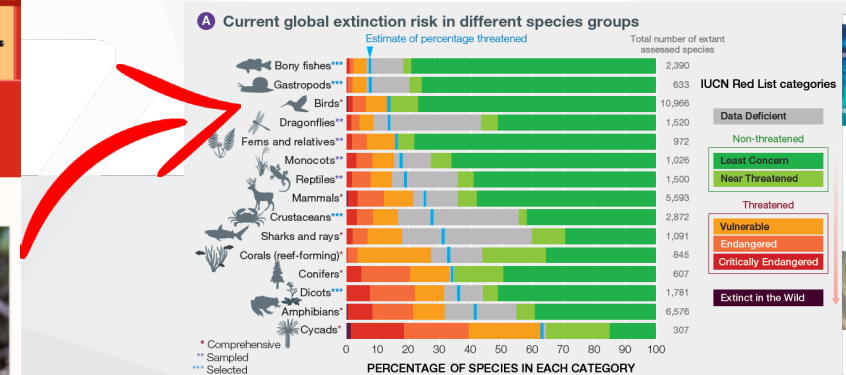
Names - common, scientific, regions etc...

AMAZING SPECIES

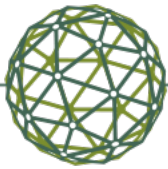
- Wandering Albatross** (*Diomedea exulans*) - Decreasing (CR)
- Burmese Roofed Turtle** (*Batagur trivittata*) - Decreasing (CR)
- Utila Spiny-tailed Iguana** (*Ctenosaura bakeri*) - Decreasing (CR)
- Akohekohe** (*Palmeria dolei*) - Decreasing (CR)

More than 42,100 species are threatened with extinction. That is still 28% of all assessed species.

Group	Percentage
Amphibians	41%
Mammals	27%
Conifers	34%
Birds	13%
Sharks & Rays	37%
Reef Corals	36%
Selected Crustaceans	28%
Reptiles	21%
Cycads	69%



IUCN Red List of Threatened Species



# Red List Partnership

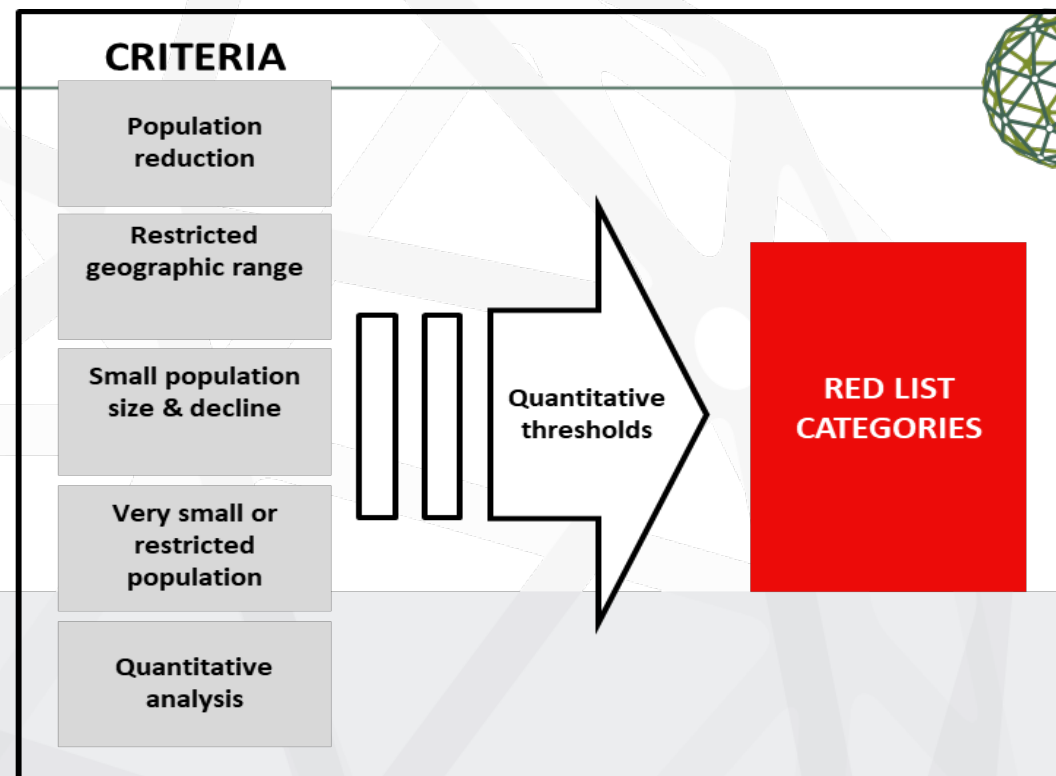




# Species extinction risks

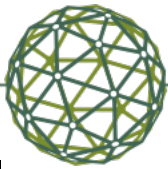
The IUCN Red List assesses extinction risks based on:

- Declining population trends
- Geographic concentration
- And/or small population size



The screenshot shows the IUCN Red List website interface. At the top, the logo and name 'THE IUCN RED LIST OF THREATENED SPECIES™' are displayed. Navigation links include 'About', 'Assessment process', 'Resources & Publications', and 'Support us'. A search bar contains the text 'Names - common, scientific, regions etc...' and an 'Advanced' button. Below the search bar, a section titled 'AMAZING SPECIES' features four species cards:

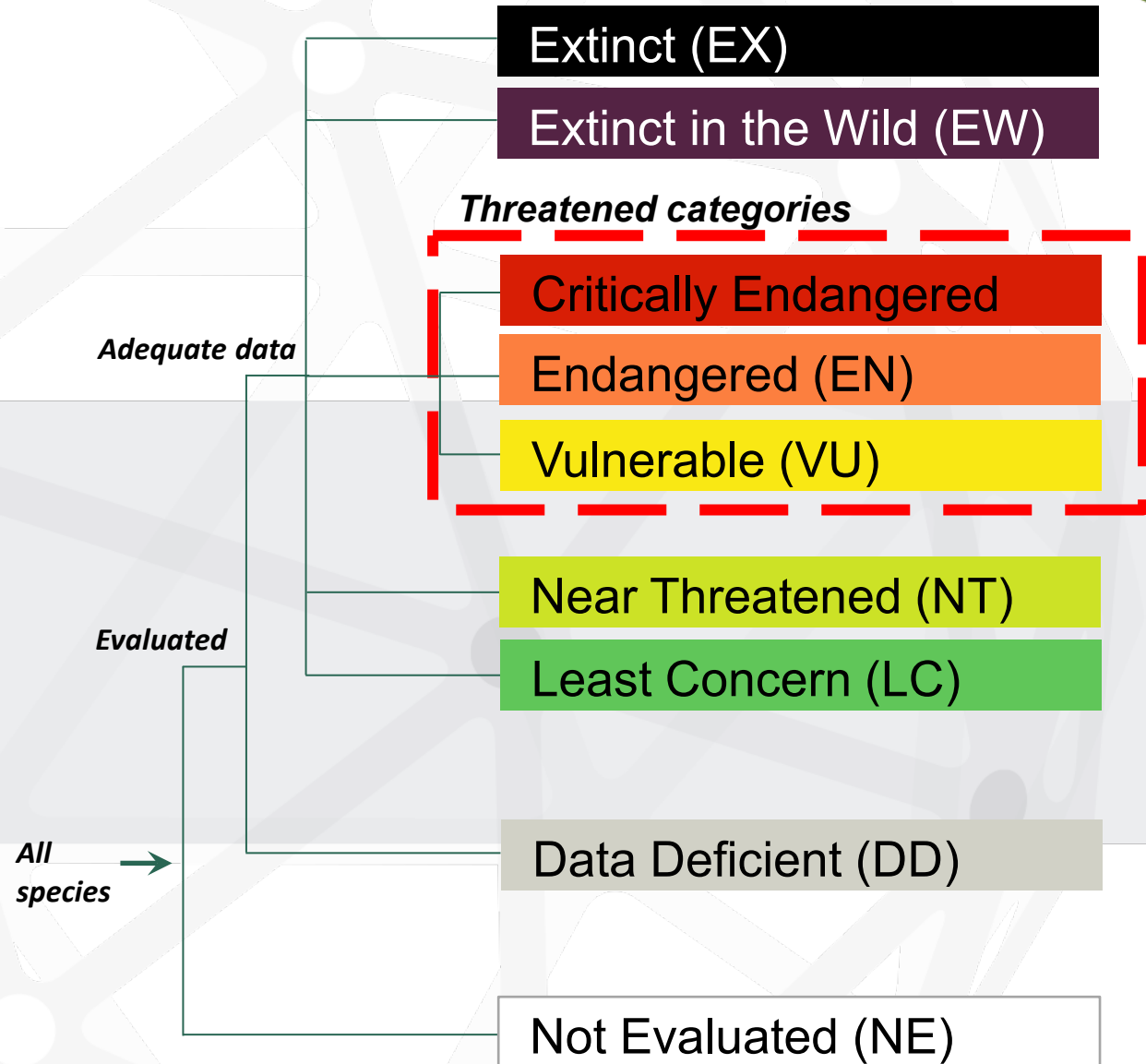
- Scaly-foot Snail** (*Chrysomallon squamiferum*): ANIMALIA - GASTROPODA, GLOBAL, Unknown status.
- Siamese Rosewood** (*Dalbergia cochinchinensis*): PLANTAE - MAGNOLIOPSIDA, GLOBAL, Vulnerable (VU) status.
- Summers' Poison Frog** (*Ranitomeya summersi*): ANIMALIA - AMPHIBIA, GLOBAL, Decreasing status.
- Snowy Owl** (*Bubo scandiacus*): ANIMALIA - AVES, GLOBAL, Decreasing status.

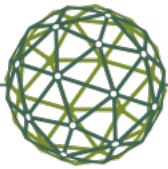


# Species extinction risks

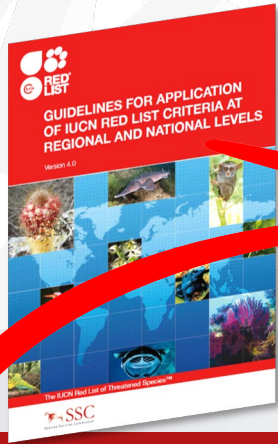
Three threatened categories:

- Critically Endangered (CR)
- Endangered (EN)
- Vulnerable (VU)





# National and Regional Red Lists



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Names - common, scientific, regions etc...

### AMAZING SPECIES



ANIMALIA - AVES GLOBAL

**Wandering Albatross**  
*Diomedea exulans*

↓ Decreasing <CR>



ANIMALIA - REPTILIA GLOBAL

**Burmese Roofed Turtle**  
*Batagur trivittata*

↓ Decreasing <CR>



ANIMALIA - REPTILIA GLOBAL

**Uta Spiny-tailed Iguana**  
*Ctenosaura bakeri*

↓ Decreasing <CR>



ANIMALIA - AVES GLOBAL

**Akohekohe**  
*Palmeria dolei*

↓ Decreasing <CR>

## The National Red List Project

Please note, this National Red List website contains a subset of data for development purposes and the Terms of Use including citation guidance are found [here](#).

The previous dataset is available via: <https://archive.nationalredlist.org/>. This site is no longer updated but can help with most enquiries whilst we focus on redevelopment.

Search assessments | Search publications

Query information

Showing **7388** assessments

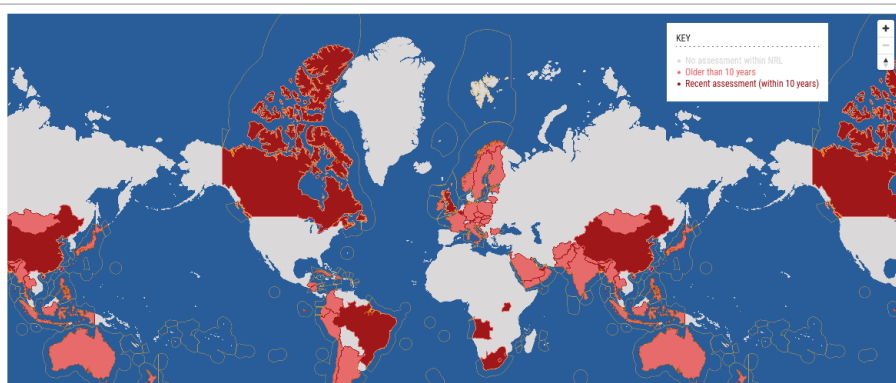
Change filters below to see new results on the map

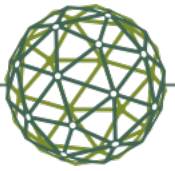
Categories:

- Amphibians
- Arachnids
- Birds
- Brown Algae
- Corals
- Crustaceans
- Ferns and Allies
- Fishes
- Flowering Plants
- Fungi
- Green Algae
- Gymnosperms
- Horseshoe Crabs
- Insects
- Lichens
- Mammals
- Molluscs
- Mosses
- Other (Invertebrates)
- Red Algae
- Reptiles
- Velvet Worms

**Disclaimer**

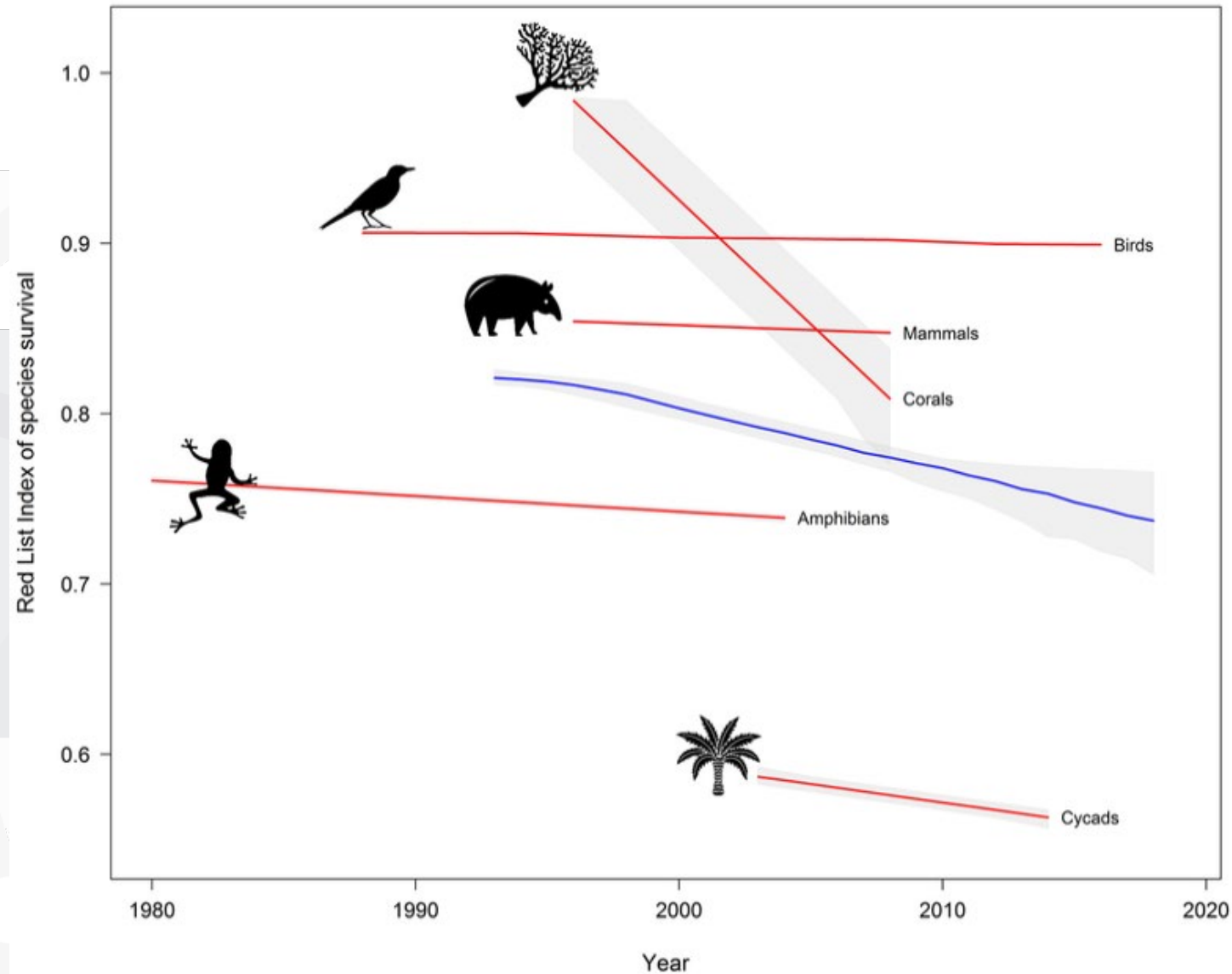
This map shows the current availability of sub-global level species assessments within the National Red List Database (NRLD). By selecting a country from the map, or using the search bar below, you can retrieve details of the assessments and source publication.



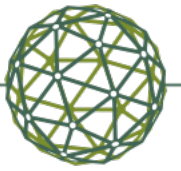


# The Red List Index (RLI)

- shows trends in overall extinction risk for species
- used to track progress towards targets for reducing biodiversity loss.







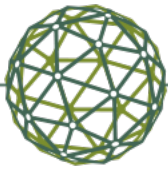
# KBA Global Standard (2016)

## Areas of importance for biodiversity

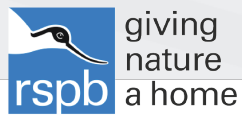
- Many different approaches at various scales
- Most conservation action occurs at the site scale
- BirdLife International's success has led to similar approaches for other taxa
- But this can be confusing for decision-makers...



Key Biodiversity Areas provide an umbrella framework designed to harmonize existing approaches



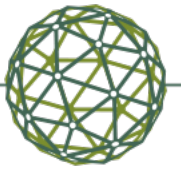
# KBA Partnership



## KEY BIODIVERSITY AREAS

A Programme for Sustaining the Most Important Sites for Nature



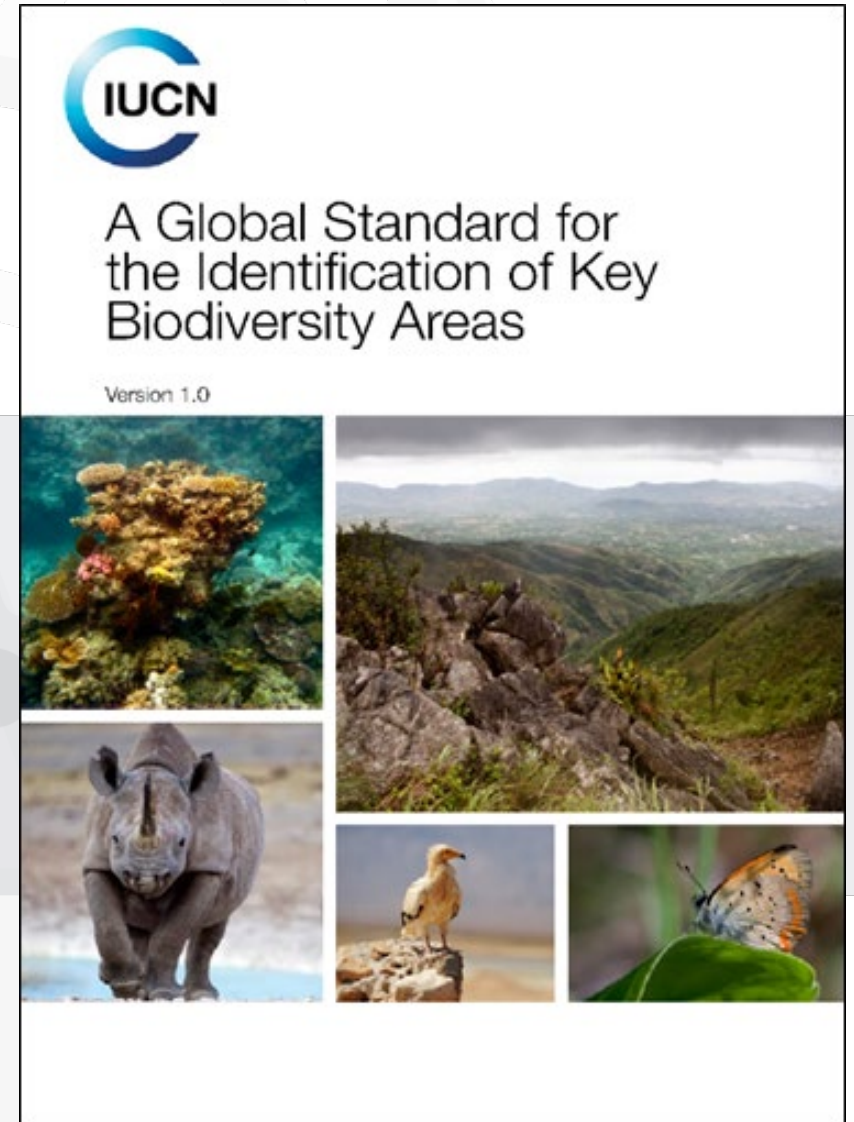


# KBA Global Standard (2016)

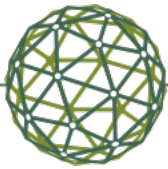
KBAs = sites contributing significantly to the global persistence of biodiversity

- 11 criteria
- Objective, Repeatable & Transparent
- Allows comparison between countries and regions
- Standard metric for sites of importance for biodiversity

“A geographical area on land and/or in water with defined ... boundaries that is actually or potentially manageable as a single unit (e.g., a protected area or other managed conservation unit)...” (KBA Guidelines 2021, pg 200)







# KBA Criteria

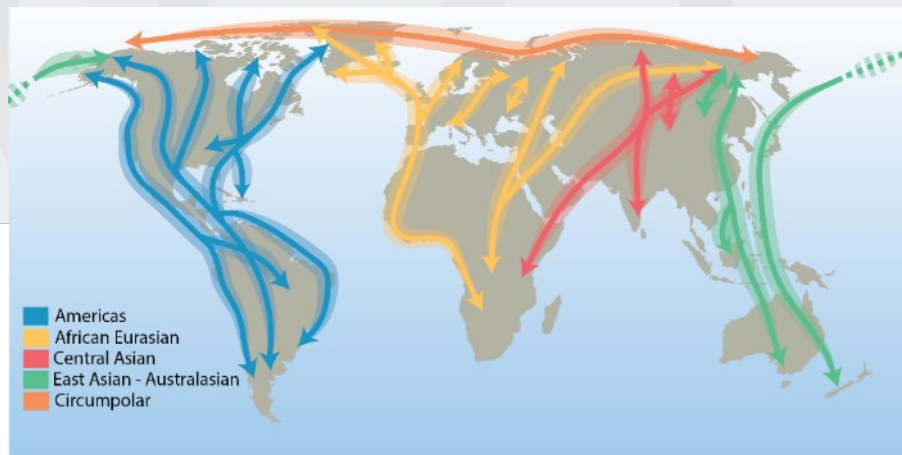
applicable to marine, freshwater, terrestrial, and subterranean systems



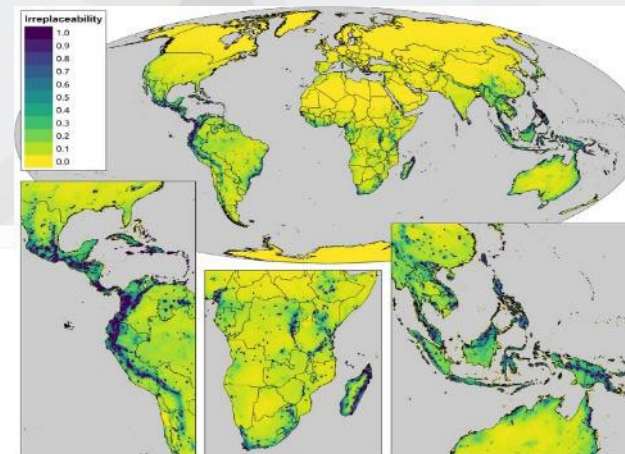
**A: Threatened biodiversity**

**B: Geographically restricted biodiversity**

**C: Ecological integrity**

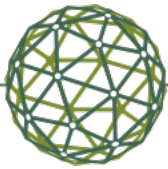


**D: Biological processes**

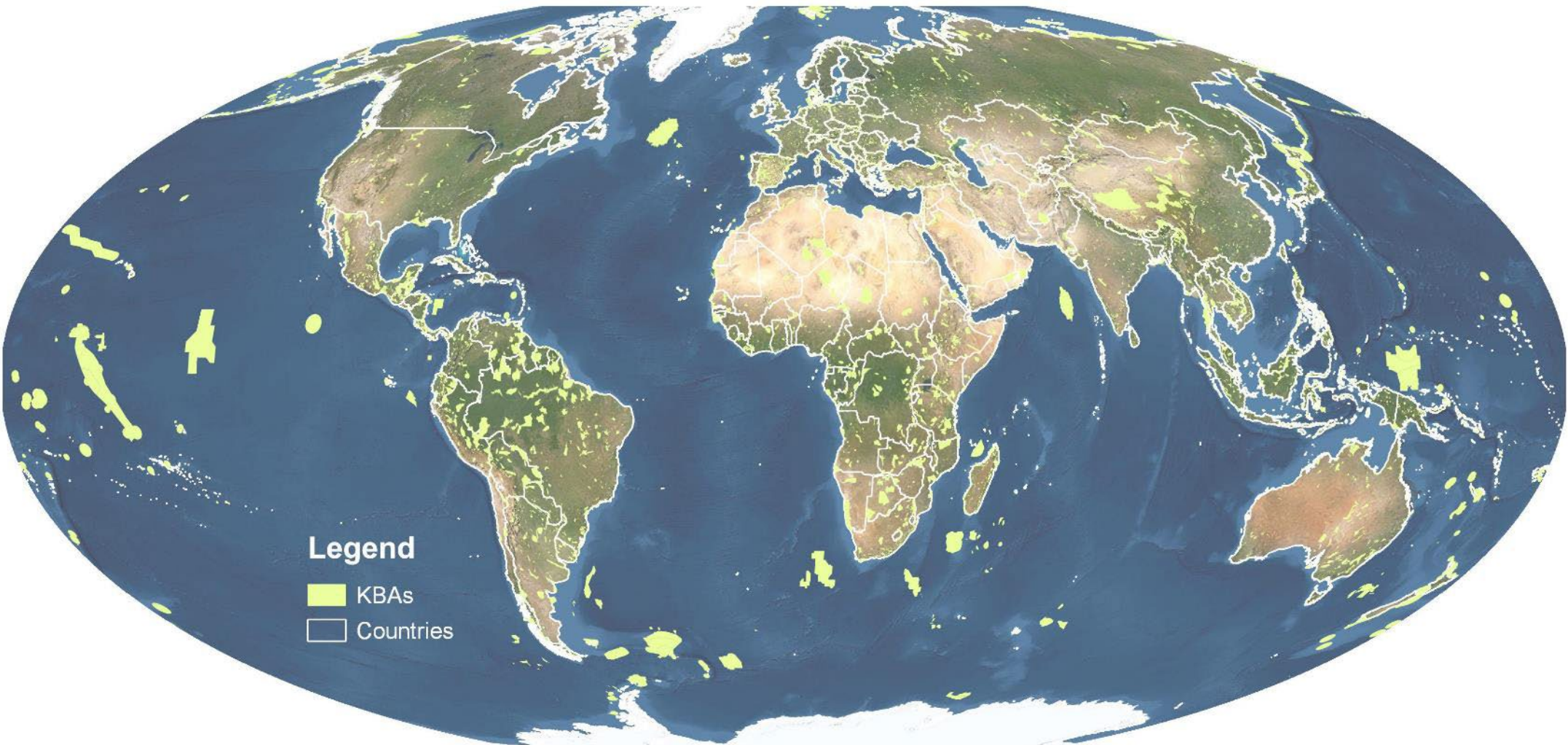


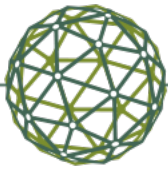
**E: Irreplaceability**





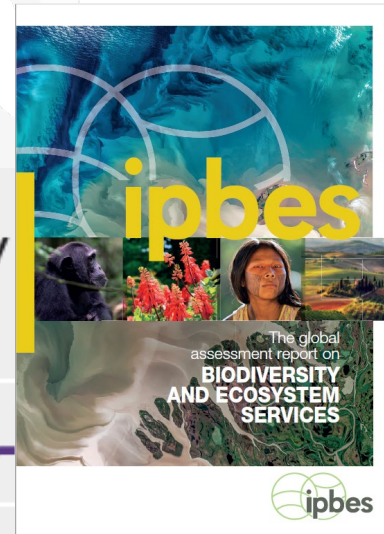
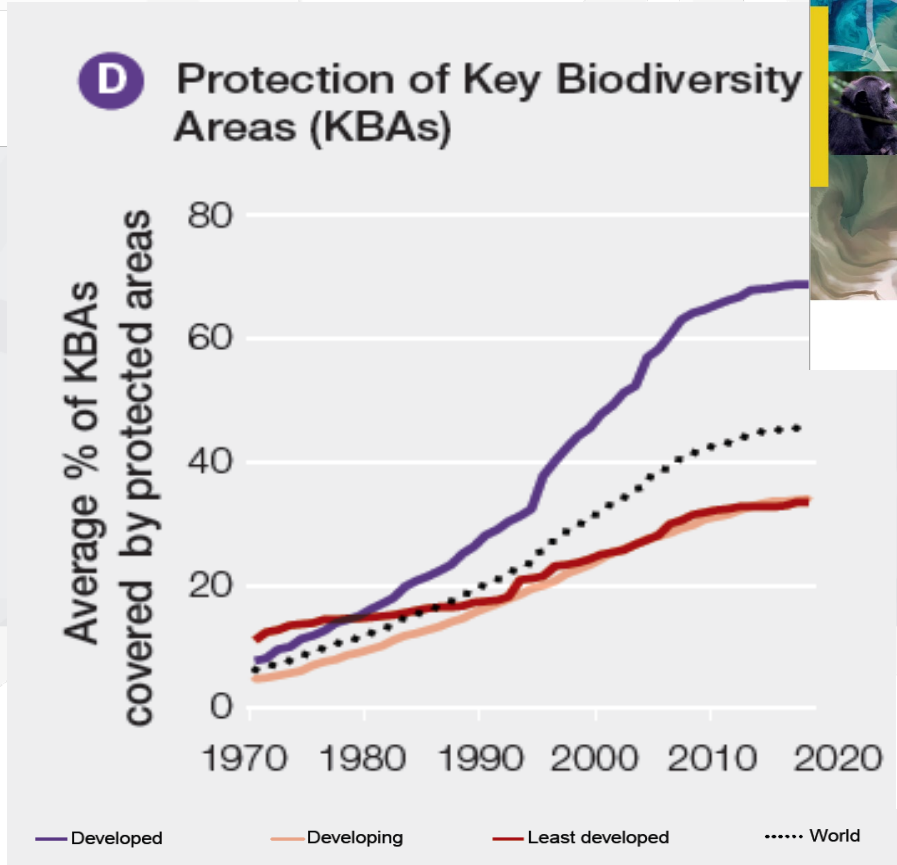
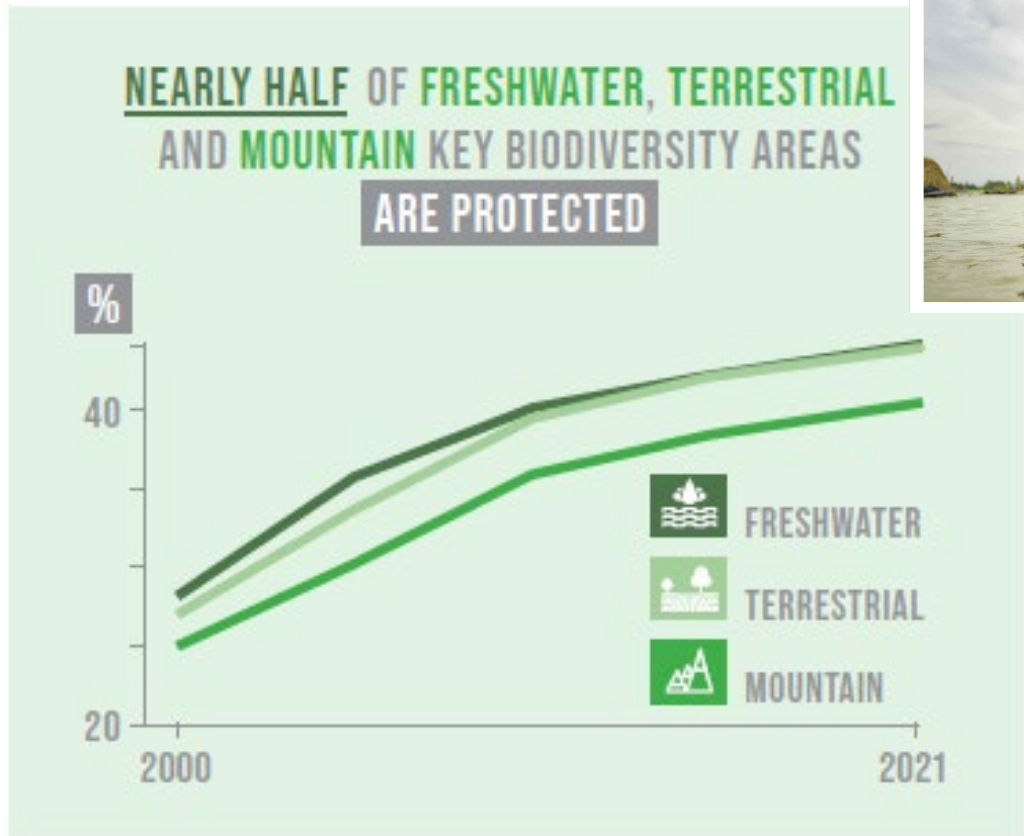
# More than 16,300 KBA sites globally





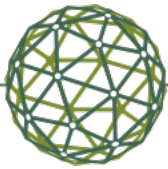
# KBAs as global indicators: SDGs, CBD GBF, IPBES

The Sustainable Development Goals Report  
2022

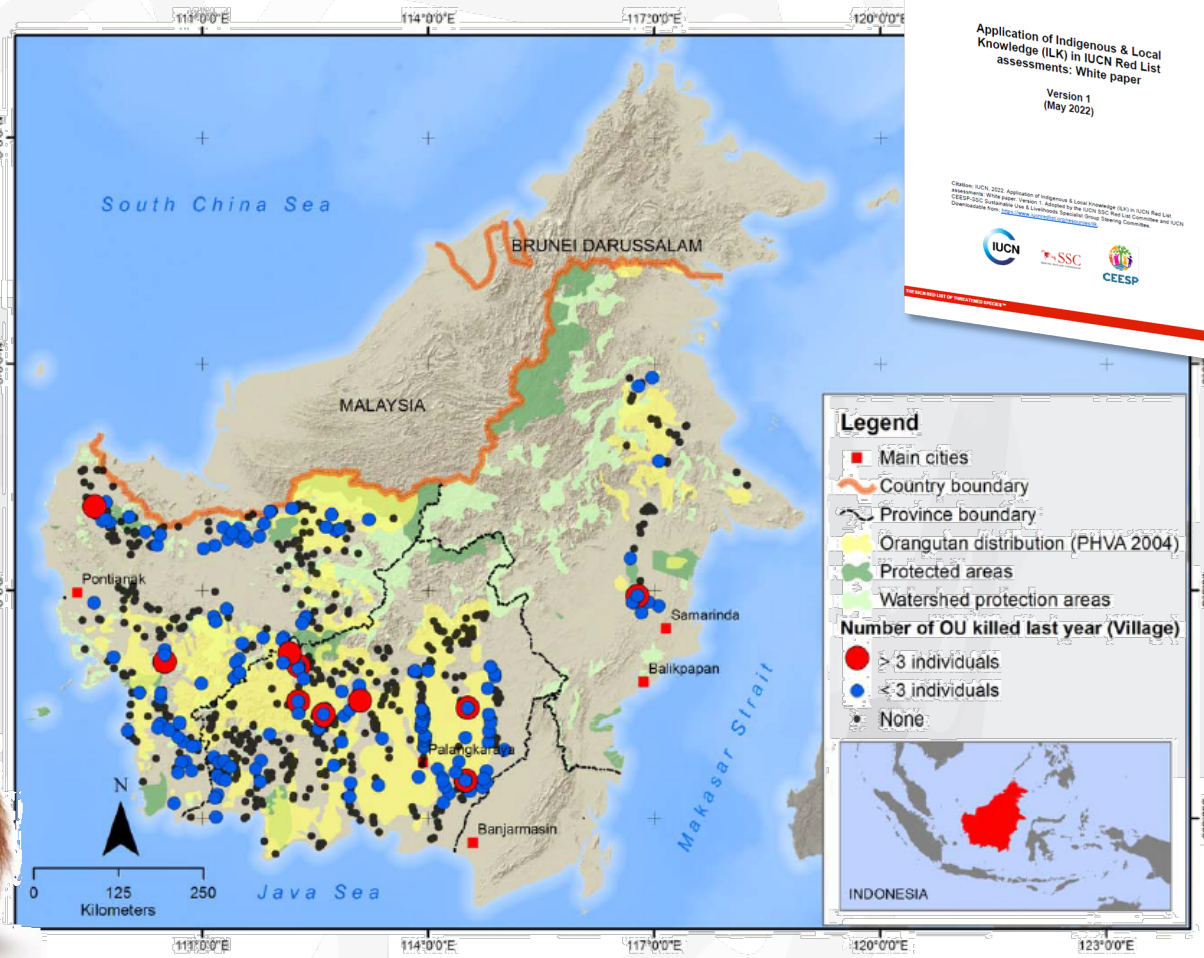
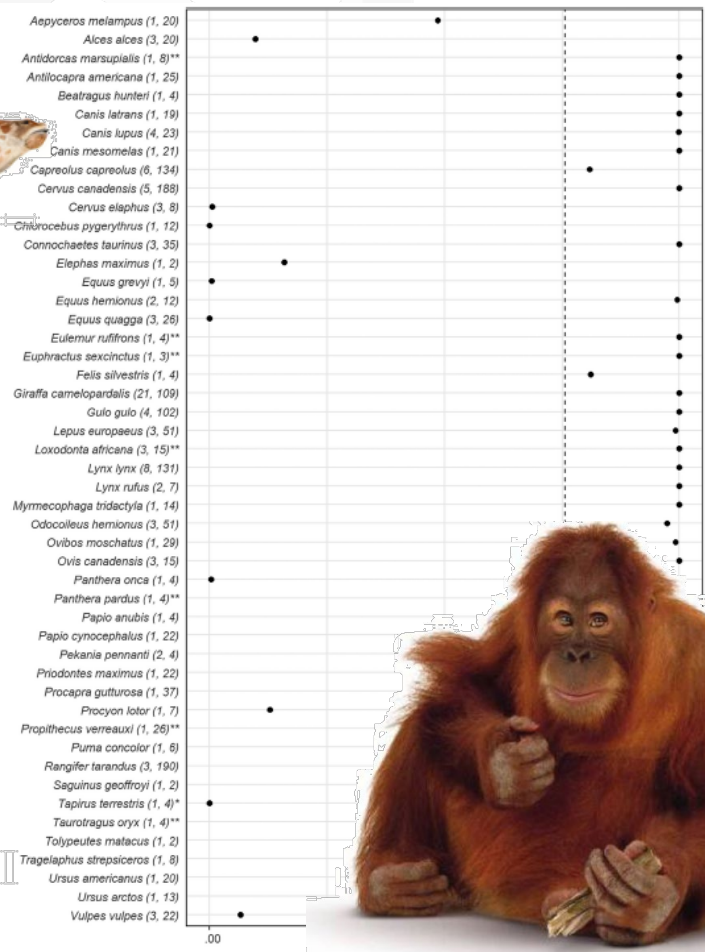
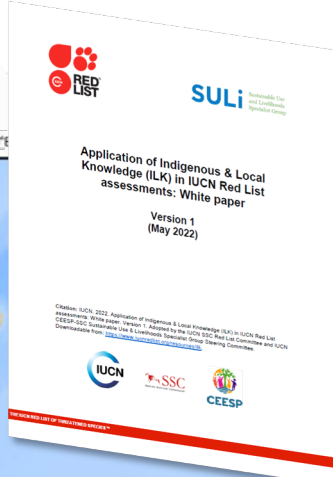


<https://unstats.un.org/sdgs/report/2021>





# Knowledge frontiers: documenting species distribution, habitats and threats, changes, and synthesis

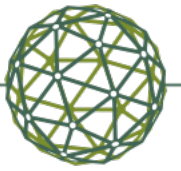




# Data needs for the Red List of Species and Key Biodiversity Areas initiatives

- ❑ Monitoring habitat loss and degradation
  - ❑ Monitoring development of infrastructure
  - ❑ Mapping ecosystems at level 5 - at a national level only in a consistent manner
  - ❑ Mapping of suitable habitat for species
  - ❑ Identify potential management units where KBAs might be established
- Big Data
  - Remote Sensing
  - Satellite imagery
  - eDNA
  - Citizen science
  - Indigenous and local knowledge
  - Social media
  - AI





# Data needs for the Red List of Species and Key Biodiversity Areas initiatives

Thank you!