The importance of Regional Red Lists for conservation: from assessments to action

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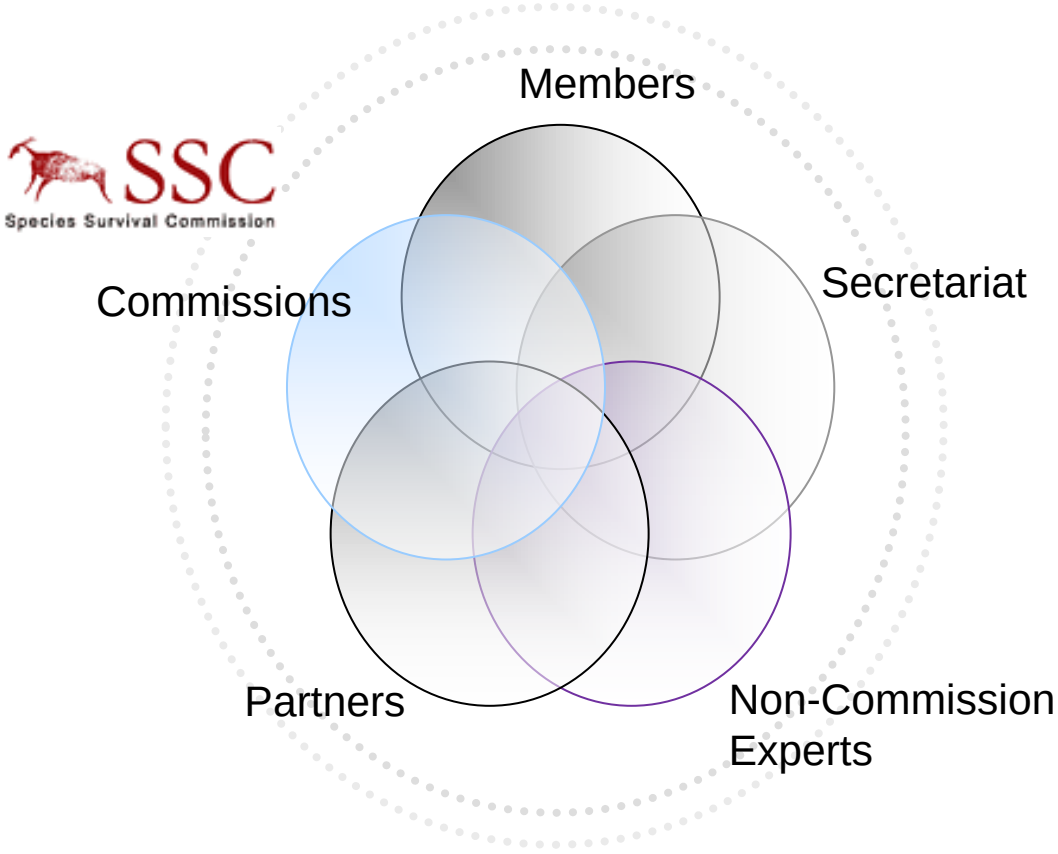
LIVING CONSERVATION

The IUCN – brief intro!

IUCN



Created in 1948

>1,000 member organizations
- >80 States
- >100 Government agencies
- >800 NGOs

>1,000 staff ***(including Regional Offices)***

10,000 Commission members (scientists and experts)

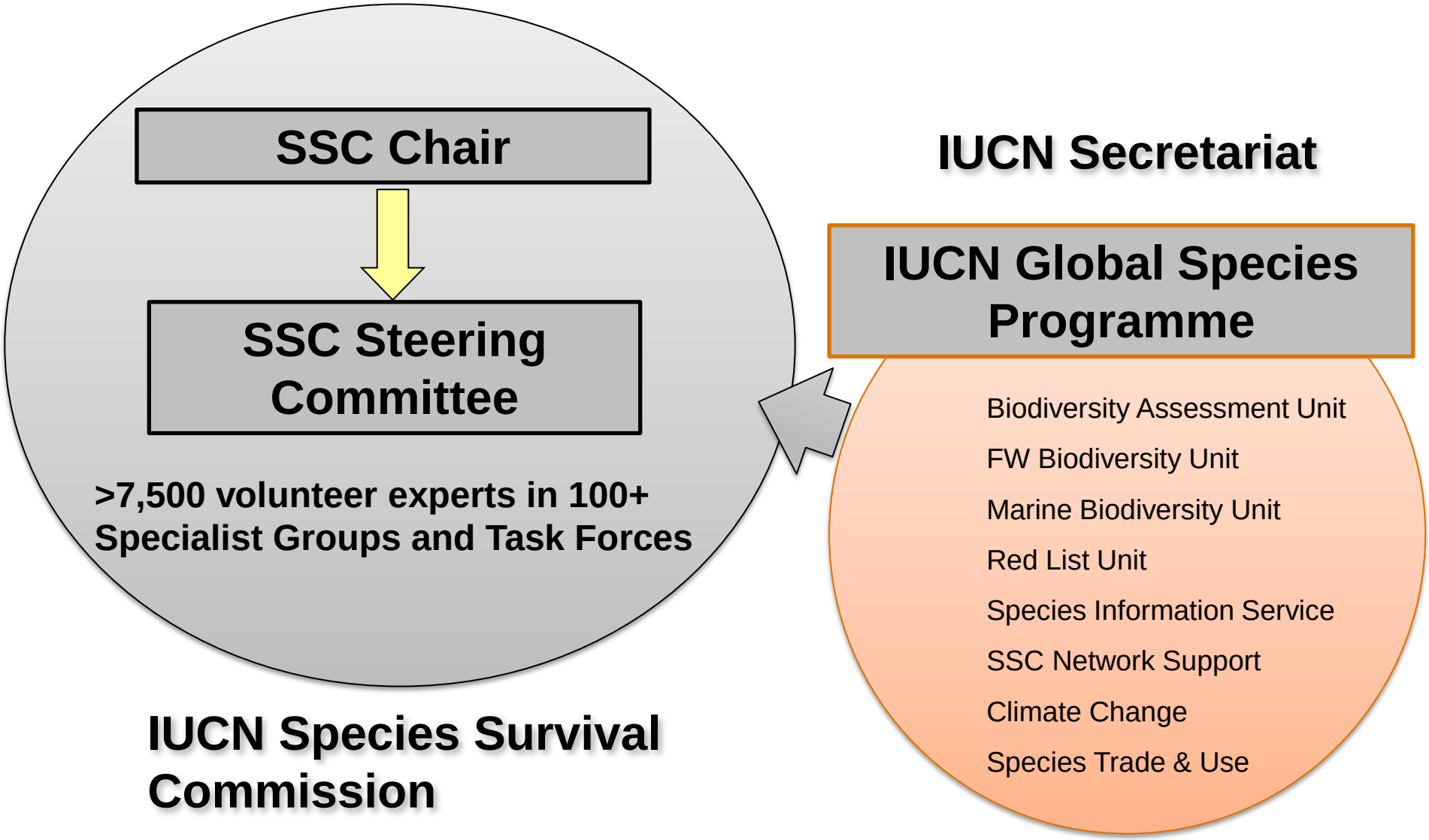
~5,000 representatives from partner organizations

Many experts that are not Commission members

In 160+ countries

Official observer to the UN General Assembly

IUCN species work



Red List Partnership

IUCN

SSC
Species Survival Commission

BirdLife
INTERNATIONAL

BGCI
Plants for the Planet

CONSERVATION
INTERNATIONAL

NatureServe

Kew
ROYAL BOTANIC GARDENS

TEXAS A&M
UNIVERSITY

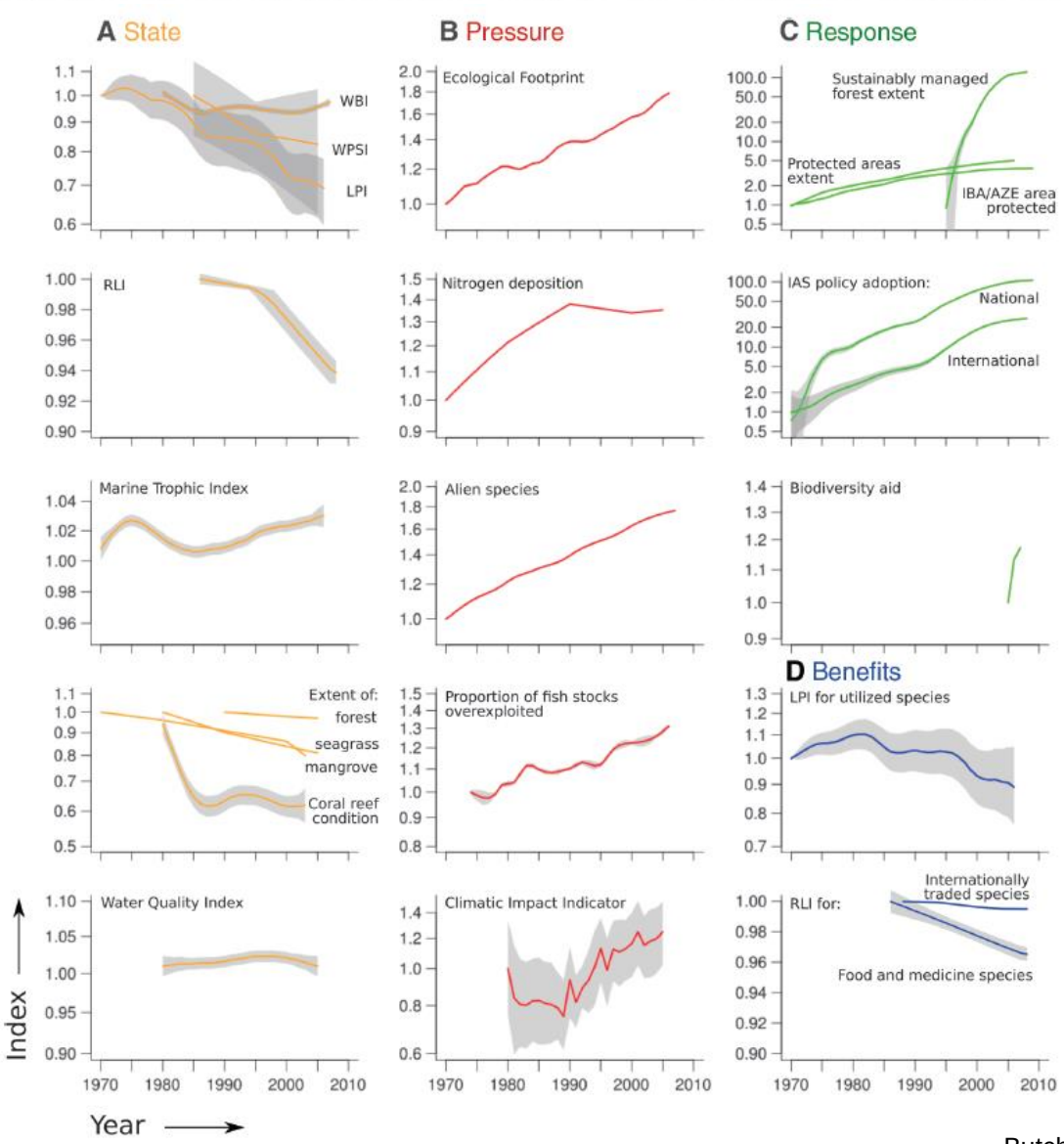
ZSL
LIVING CONSERVATION

SAPIENZA
UNIVERSITÀ DI ROMA

WILDSCREEN
PROMOTING CONSERVATION THROUGH WILDLIFE IMAGERY

Microsoft

The motivation: biodiversity in crisis



Butchart, Walpole, Collen, *et al*. 2010 *Science;* Walpole *et al.* 2009 *Science*

Global commitment to biodiversity

Convention on Biological Diversity

- CBD Strategic Plan for Biodiversity 2011-2020
- VISION: a world "*Living in harmony with nature*" where *"By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people".*
- INCLUDES: Aichi Biodiversity Targets
  - 20 strategic targets under five goals

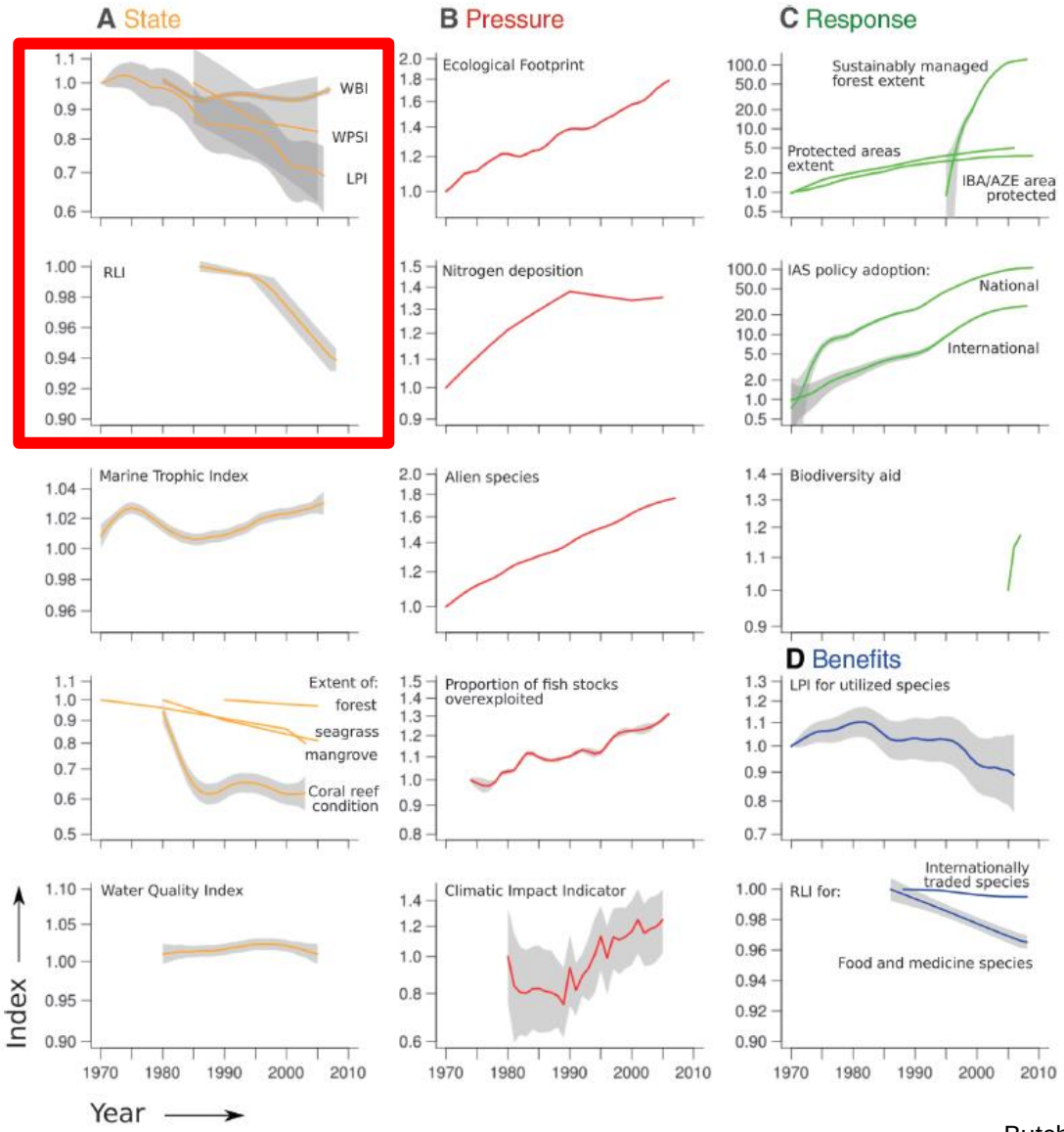
The biodiversity crisis

Convention on Biological Diversity

Goal A	Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
Goal B	Reduce the direct pressures on biodiversity and promote sustainable use
Goal C	Improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
Goal D	Enhance the benefits to all from biodiversity and ecosystem services
Goal E	Enhance implementation through participatory planning, knowledge management and capacity building

20 targets

Keeping track of biodiversity



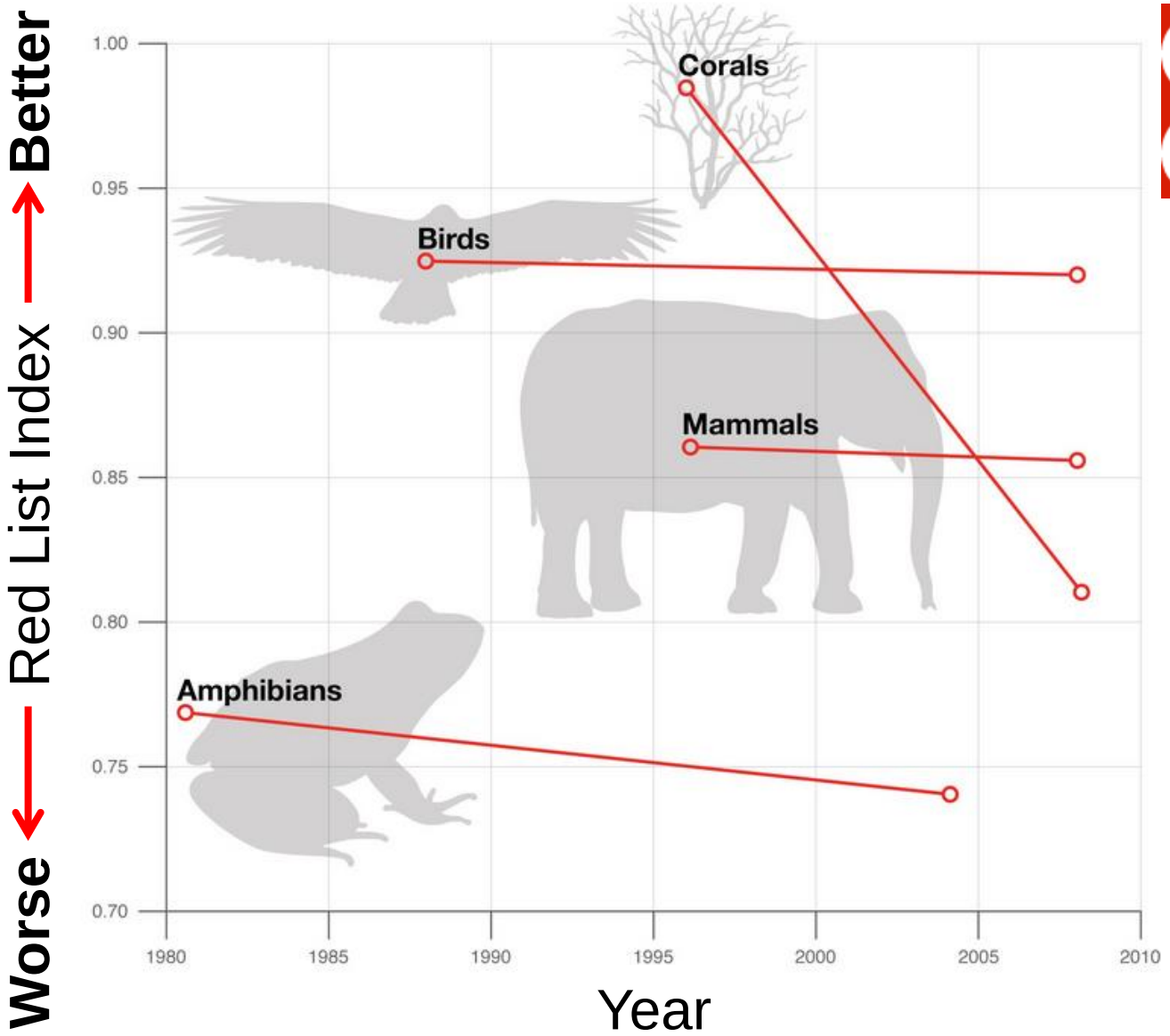
e.g.

Extinction risk of species

Population trends

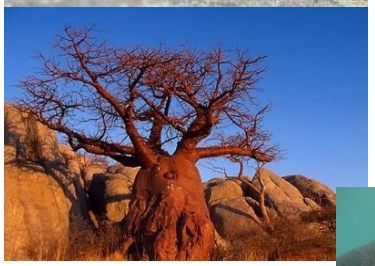
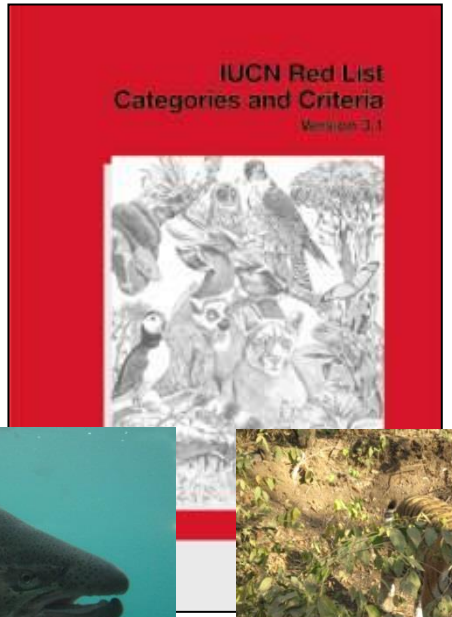
Butchart, Walpole, Collen, *et al*. 2010 *Science;* Walpole *et al.* 2009 *Science*

The IUCN Red List Index

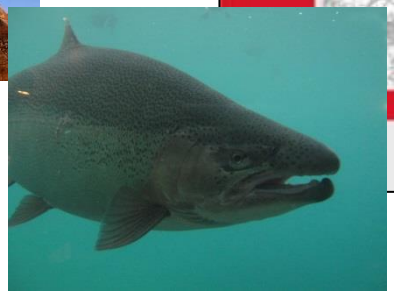


The IUCN Red List

- most comprehensive information source for extinction risk of species
- provides an explicit, objective framework for the classification of the broadest range of species according to their extinction risk

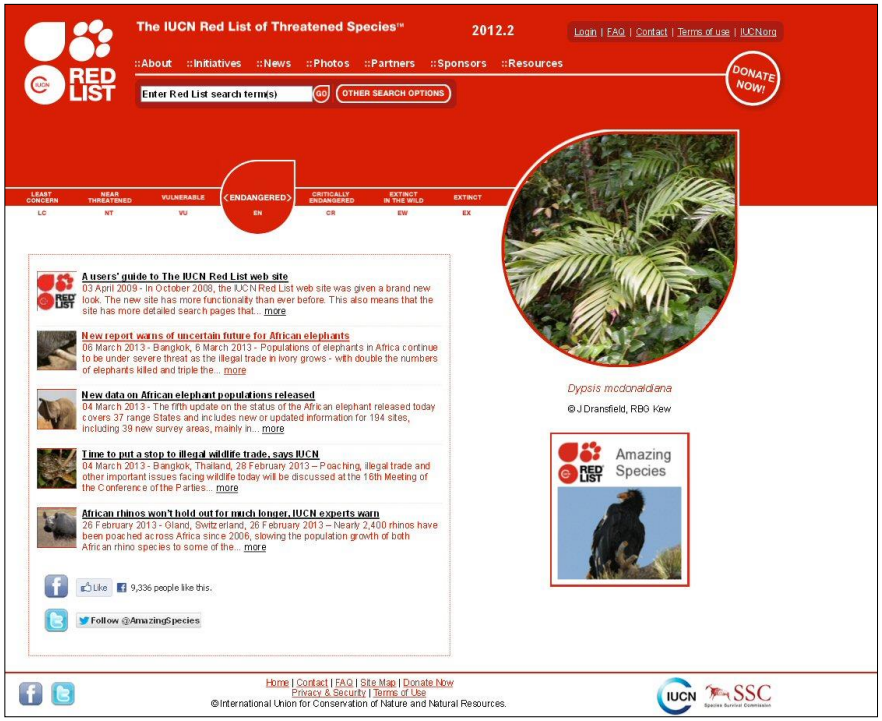









The IUCN Red List

- Not just a list, but a compilation of the status of species at the global level:
  - threats (e.g. invasive species), ecological requirements, and conservation actions
- Based on the best scientific information available
- Widely used to inform and influence biodiversity conservation
- Based on five criteria which are used to estimate extinction risk of species



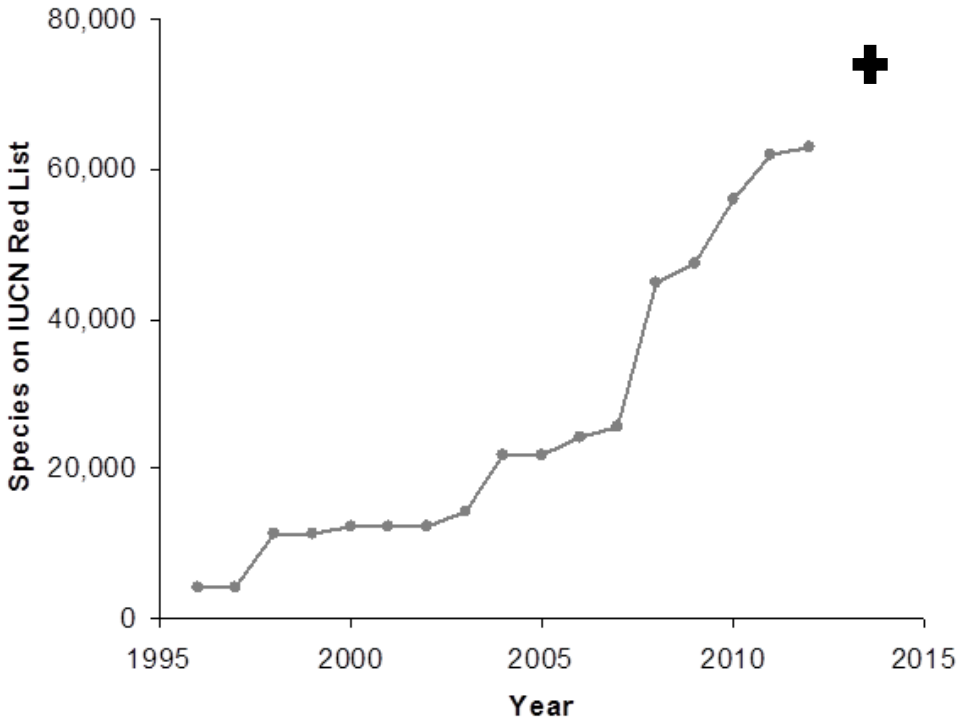
The IUCN Red List

Global-scale assessments of species

Increasing extinction risk

- Extinct (EX)
- Extinct in the Wild (EW)
- Critically Endangered (CR)
- Endangered (EN)
- Vulnerable (VU)
- Near Threatened (NT)
- Least Concern (LC)
- Data Deficient (DD)
- Not Evaluated (NE)

IUCN Red List Categories & Criteria



Currently: 74,106 species (v. 2014.2)

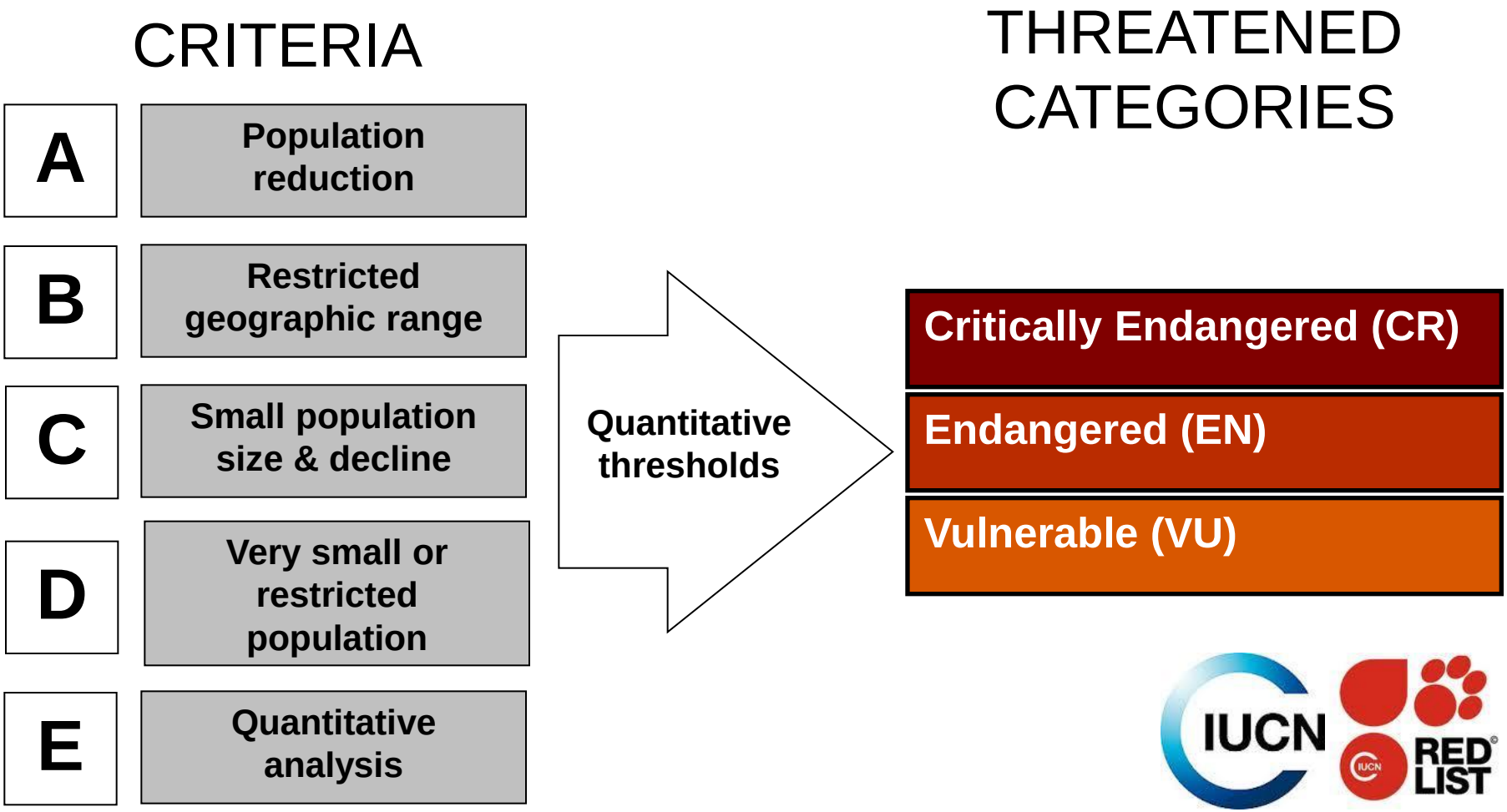
IUCN Red List Criteria: brief overview

- Five criteria are used, because:
  - number of factors contribute to extinction risk
  - not all criteria are appropriate to all taxa
  - e.g. population data may be available for large vertebrates, but not for smaller taxa/invertebrates
- Meeting <u>any one</u> of the criteria qualifies a taxon for listing at that level of threat



IUCN Red List Criteria: brief overview

- Criteria relate to factors which heighten the extinction risk of a species:



IUCN Red List Criteria: brief overview

Five criteria account for:

A. Population reduction (past, present or future)

B. Restricted geographic range and fragmentation, decline or extreme fluctuations

C. Small population size and decline

D. Very small or restricted populations

E. Estimated extinction risk from quantitative analysis (very rare!)

A. Population size reduction. Population reduction (measured over the longer of 10 years or 3 generations) based on any of A1 to A4

	Critically Endangered	Endangered	Vulnerable
A1	≥ 90%	≥ 70%	≥ 50%
A2, A3 & A4	≥ 80%	≥ 50%	≥ 30%

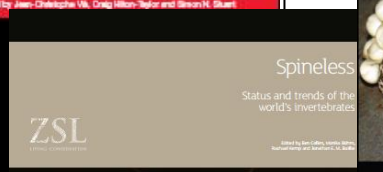
A1 Population reduction observed, estimated, inferred, or suspected in the past where the causes of the reduction are clearly reversible AND

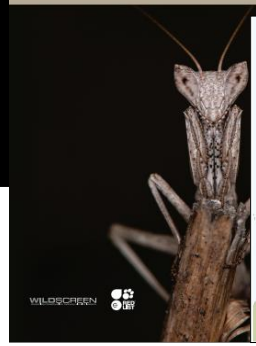
(a) direct observation *[Except A3]*

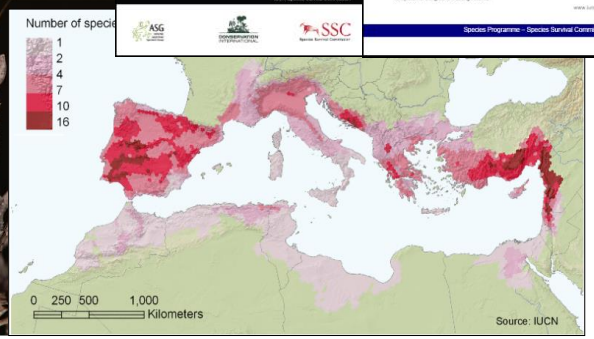
(b) an index of abundance

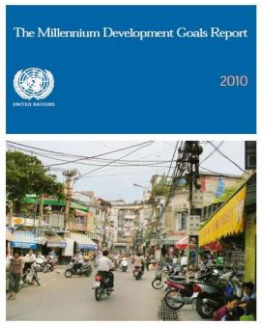
IUCN Red List – why?

- **Analysis and information**
- **Conservation planning and priority-setting**
- **International conservation policy**
- **Influencing funding allocations**
- **Private sector decision-making**
- **Education and public awareness**









Why National Red Lists?

Decision making occurs at national or regional levels

Tools for:

- Local, national or regional conservation planning
- National-level biodiversity monitoring and biodiversity indicators
- Measuring progress towards the CBD 2020 Aichi Targets

www.nationalredlist.org

CBD & National Red Lists

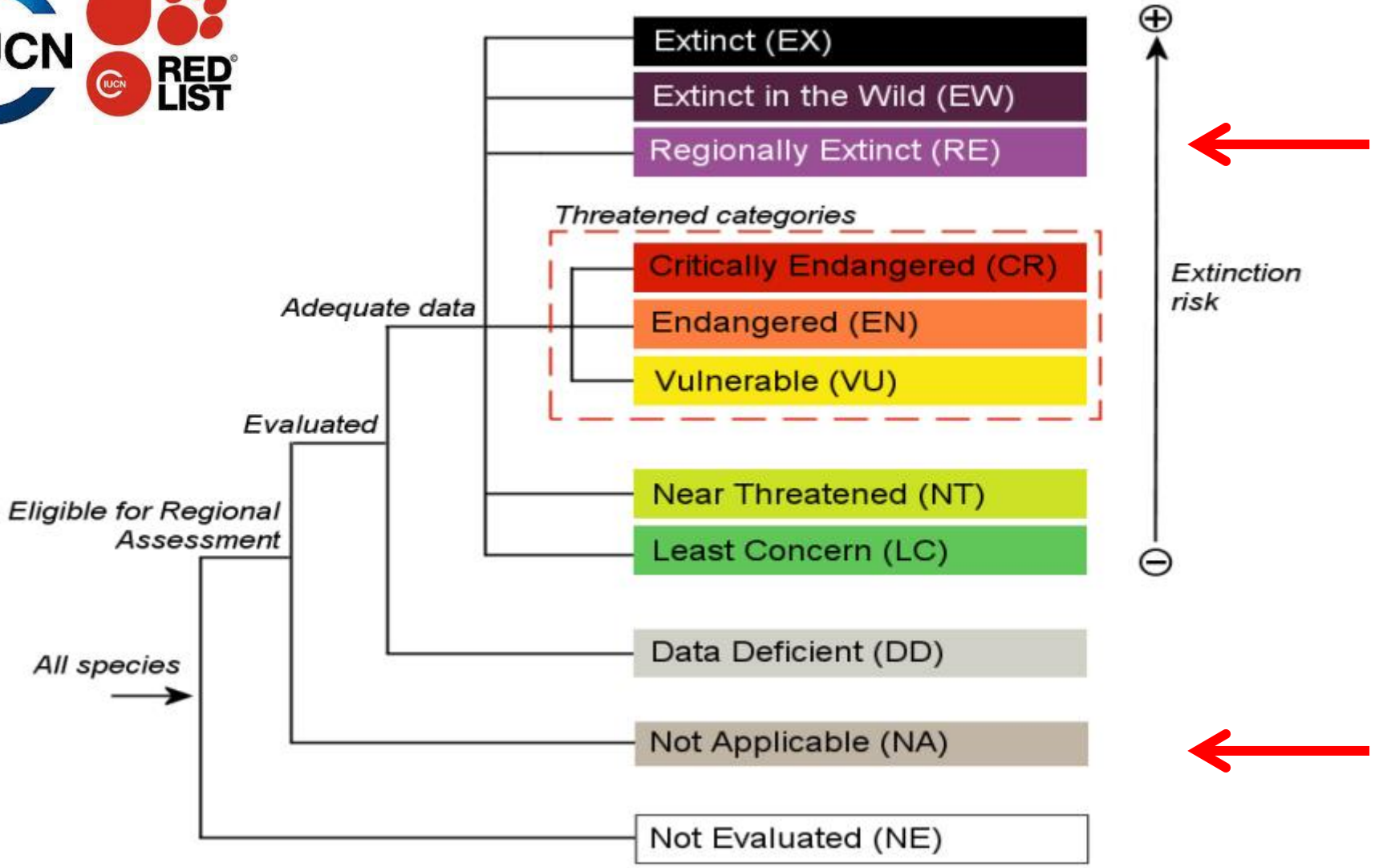
Target 12: By 2020, the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.

Which species are threatened?

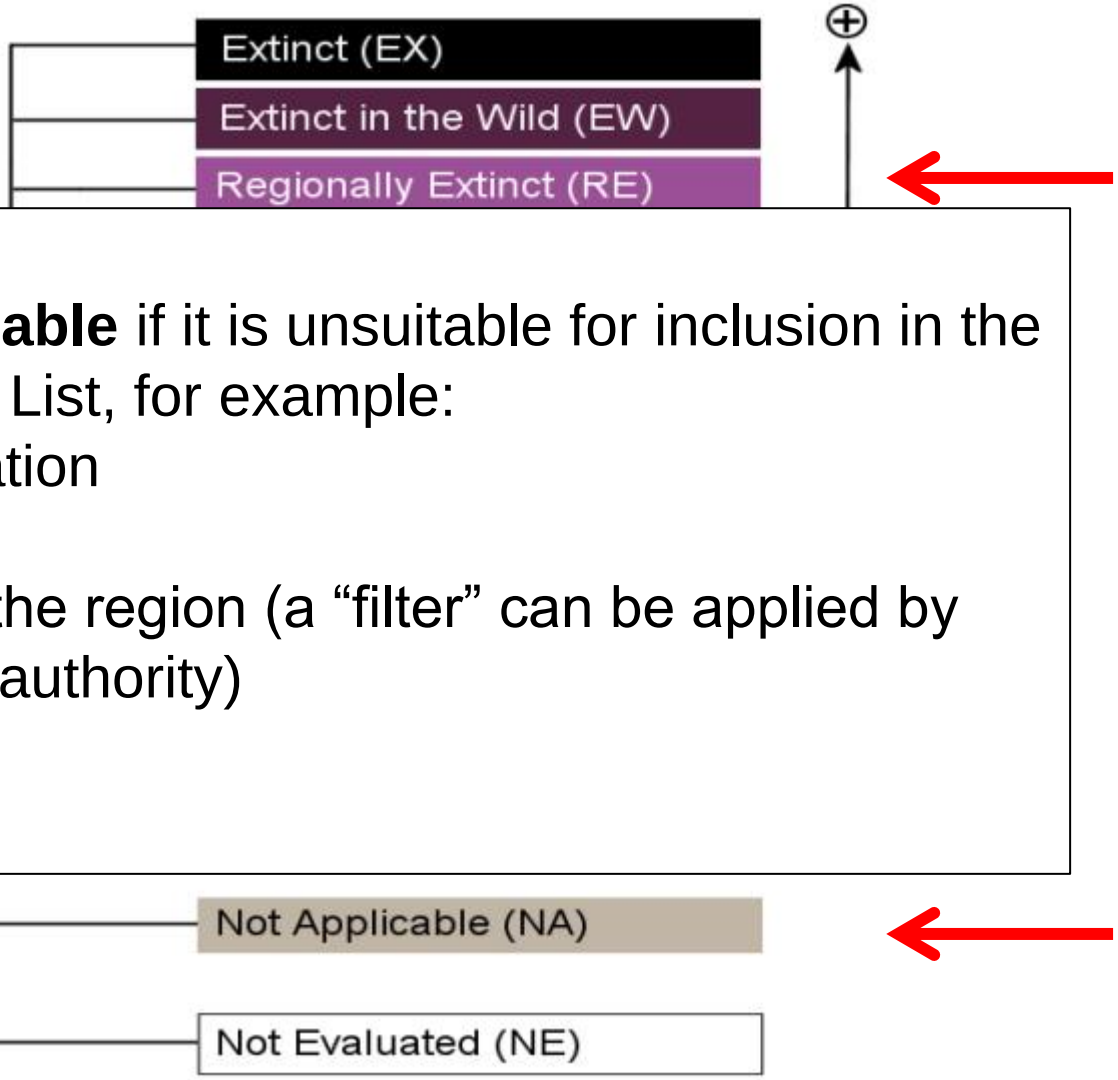
Targeted conservation action for species recovery

Red Lists (incl. National and Regional) + **Action Plans**

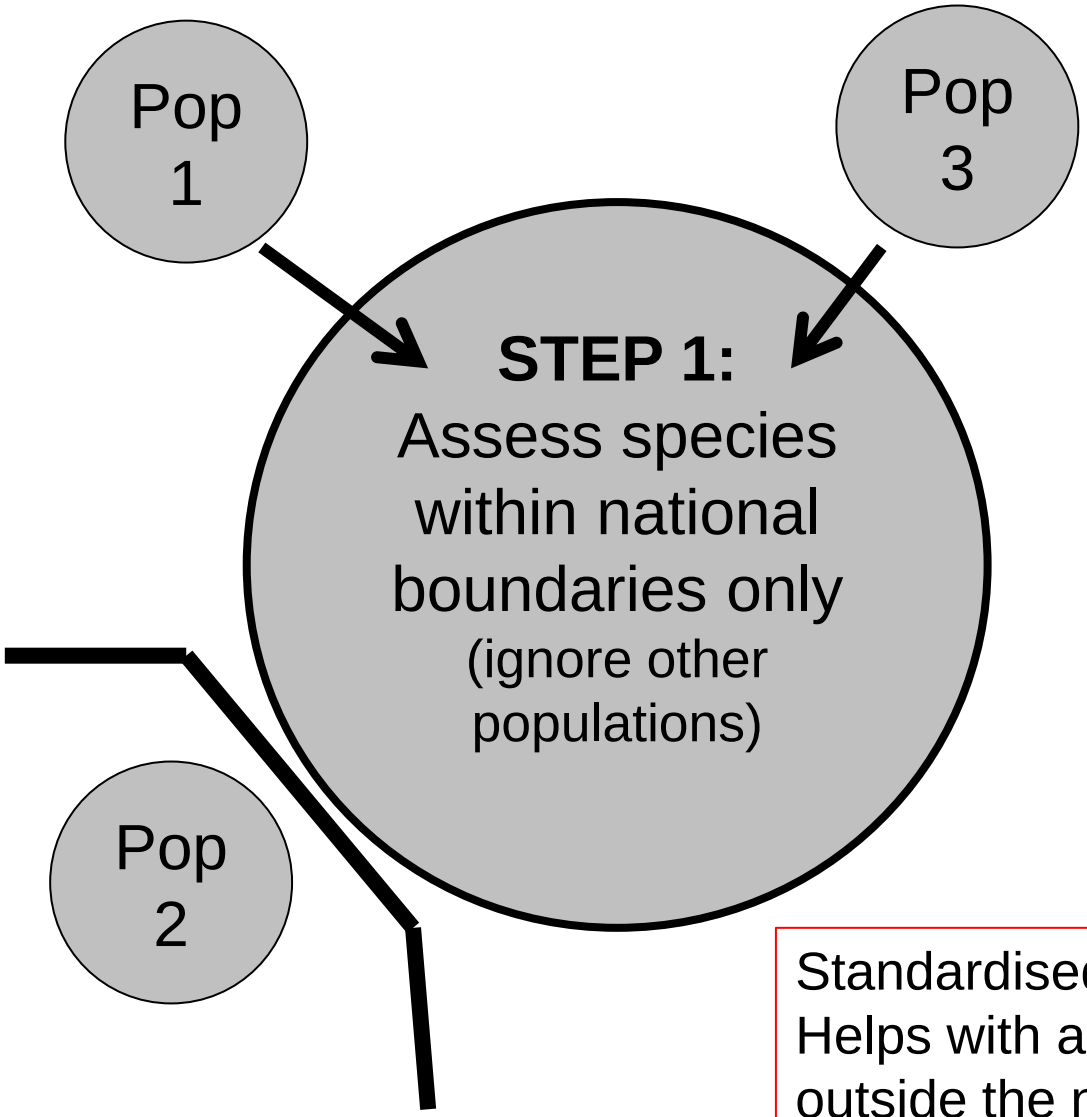
IUCN Red List Categories for NRLs



IUCN Red List Categories for NRLs



Assessing at national level



STEP 2:
Consider effect of populations outside national boundaries
→ Rescue effects?

Standardised assessment across regions:
Helps with assessing status of populations outside the national range

Advantages of using IUCN standards

- Most widely used system for assessments of species status
- Assessments are comparable across regions/countries
  - Reliance on the same data types, e.g. occurrence records
  - Helps with assessing status of populations outside the national range
  - Introduces consistency & helps build global picture of species status
- Facilitates inclusion of assessments onto IUCN Red List
- Achieving harmonization of Red Lists – e.g. Europe



National Red List coverage

- 122 countries have national lists (77 use the IUCN system)
  (Zamin et al. 2010 Cons. Biol.)

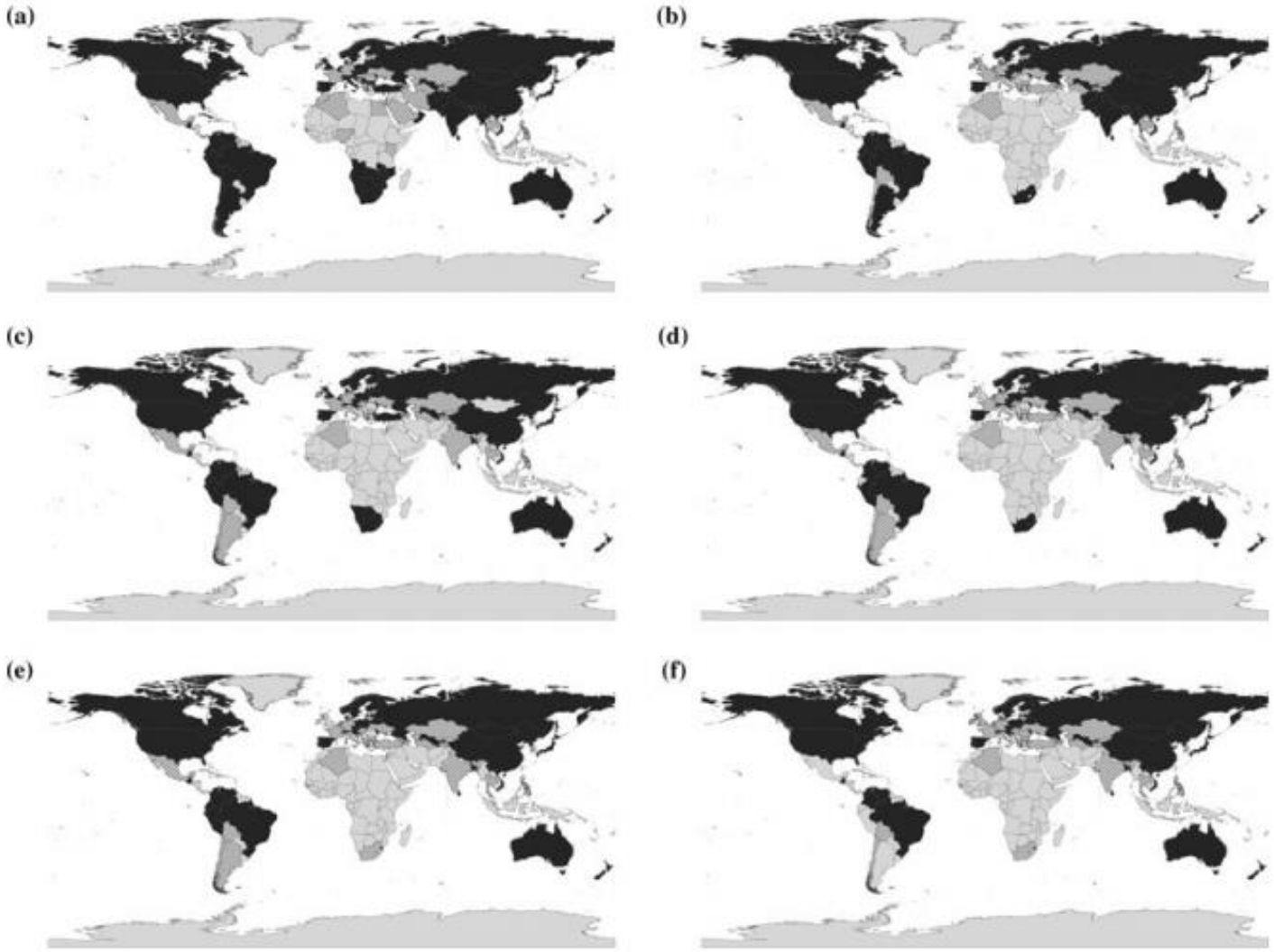
- **Criteria systems used by current data:**
  IUCN Categories and Criteria: 70%
  Modified-IUCN: 7%
  Non-IUCN: 23%

  (National Red List database, 12/08/14)

These statistics are currently being updated

National Red List workshop,
Dushanbe (TJK), November 2010

National Red List coverage

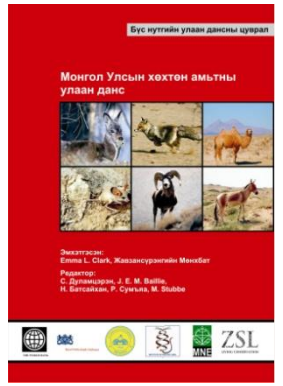


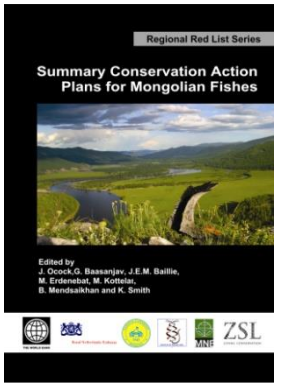
(a) At least 1 NRL
(b) Mammals
(c) Birds
(d) Amphibians
(e) Reptiles
(f) Fishes

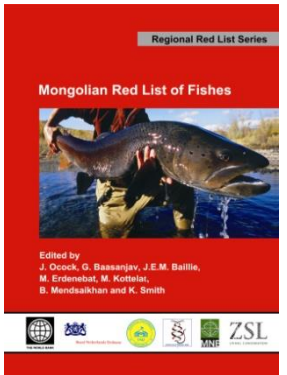
(Zamin et al. 2010 Cons. Biol.)

Mongolian National Red List

- First country in Asia to have produced regional Red Lists of all their vertebrate species
- Summary Conservation Action Plans
- Mongolian Biodiversity Databank established
- Initiated by Zoological Society of London:
  - Steppe Forward (managing)
  - Dutch Government, World Bank (funders)
  - Mongolian Ornithological Society, National University of Mongolia, Mongolian Academy of Science and the Ministry of Nature, Environment and Tourism (collaborators)







Mongolian National Red List

Mammals

Category	Percentage
Regionally Extinct (RE)	1%
Critically Endangered (CR)	2%
Endangered (EN)	11%
Vulnerable (VU)	3%
Near Threatened (NT)	6%
Least Concern (LC)	40%
Data Deficient (DD)	37%

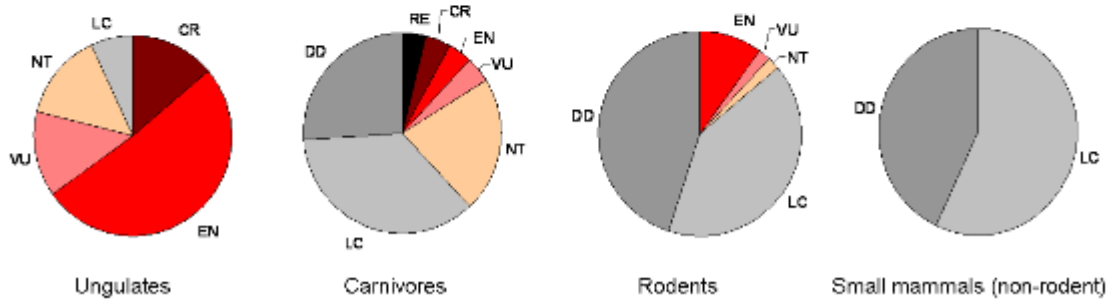
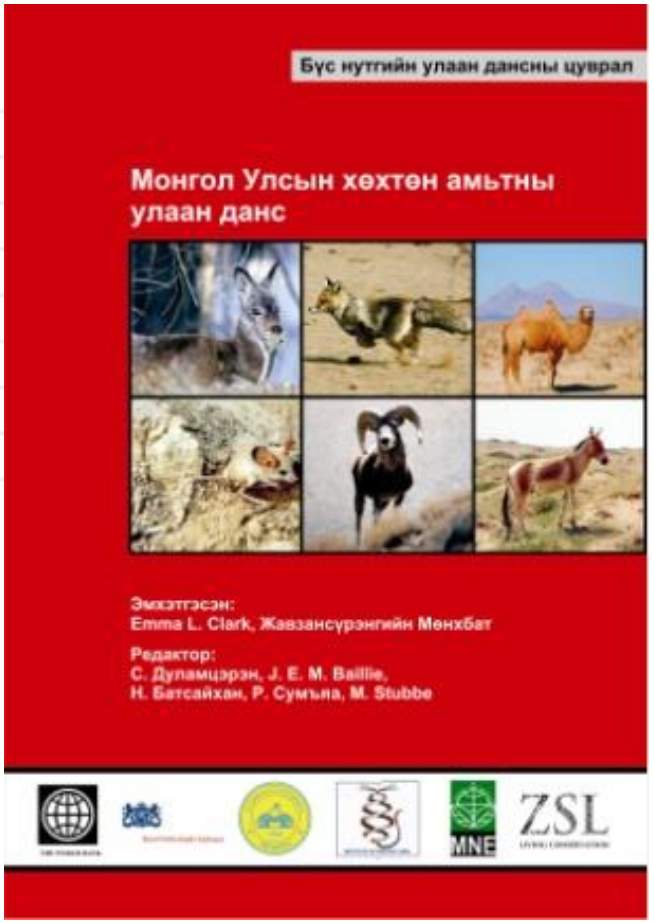


Figure 1. Percentage of Mongolian mammal species threatened by taxonomic group.



Translating NRLs into legislation

- Many examples from Scandinavian countries where this has ben successfully achieved
- Example Mongolia:
  - Species protection of the Mongolian designated species
  - Environmental Impact Assessments now required prior to mining development
  - Based on spatial information about species occurrence

Species mapping tool for Mongolia

Map courtesy of www.freeworldmaps.net

Search results:

Scientific name	Common name	National status	Distance	
Barbatula toni	Siberian stone loach	LC	within	View page
Cobitis melanoleuca	Siberian spiny loach	LC	within	View page
Phoxinus phoxinus	Common minnow	LC	within	View page
Esox lucius	Pike	LC	within	View page
Lota lota	Burbot	DD	within	View page

38 species were found.

Control panel

Current position: 43.52 °N, 106.01 °E

Latitude: 0 °N

Longitude: 0 °E

Search

Range: 0 km

Last searched: 46.88 °N, 106.06 °E

Download results

Species shown: -

Map visibility:

Regions visibility: on / off

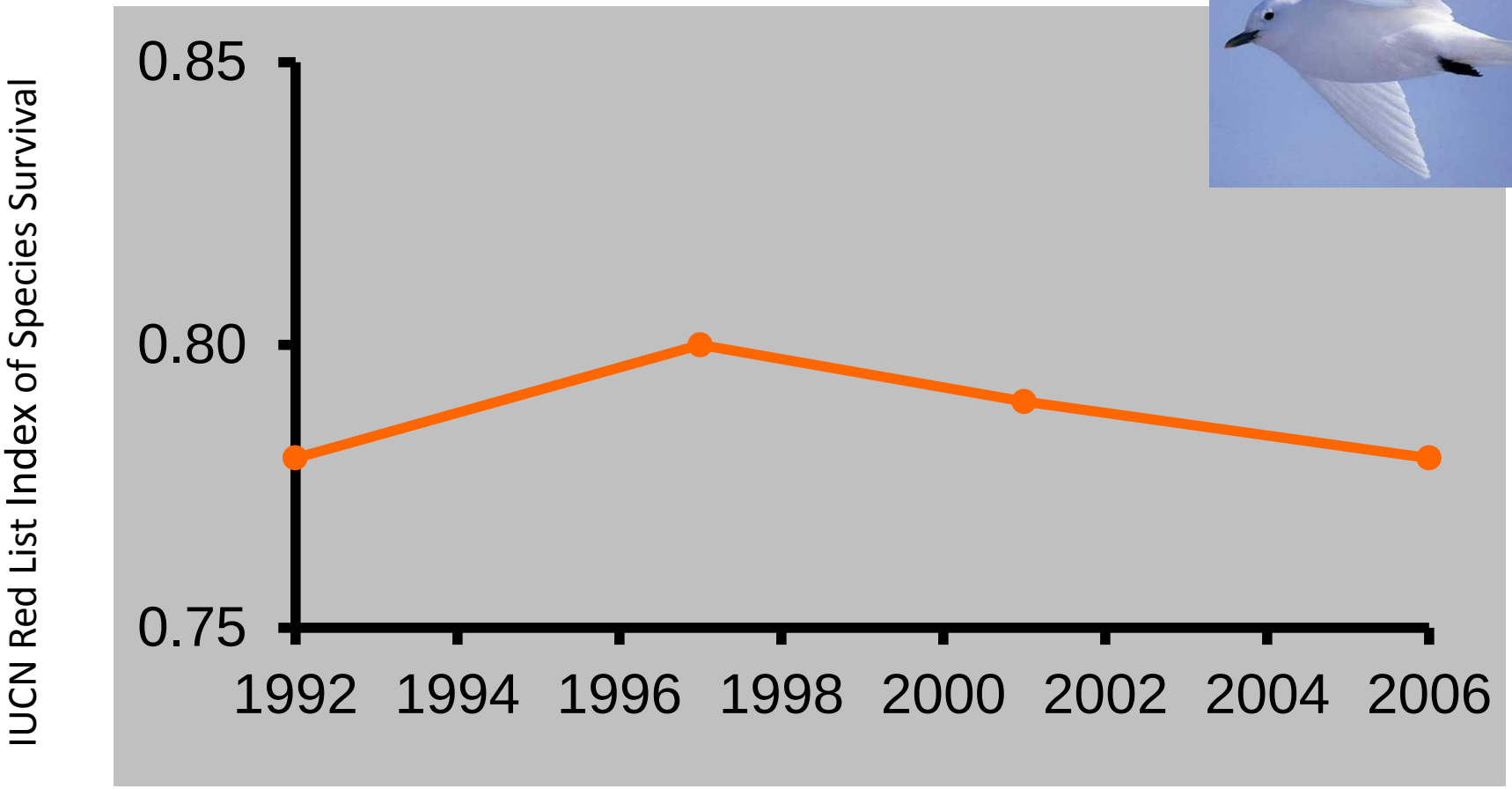
Order results: taxonomically

More information

National Red List

National RLIs to track trends

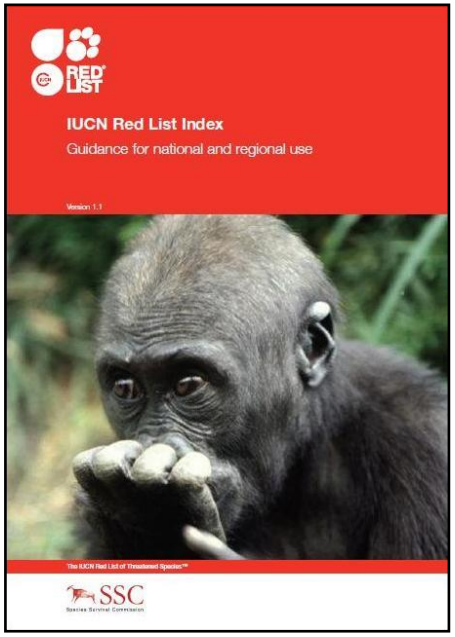
Red List Index at sub-global level



Based on birds in British Columbia (Quayle *et al*. 2008 *Conservation Biology*)

Re-visit: why National Red Lists?

- Monitor status of biodiversity in the region
- Identify priority species & habitats
- Identify knowledge gaps
- Assist in site-based conservation planning
- Communication & awareness raising
- Provide species inputs for environmental impact assessment
- Help guide allocation of resources for biodiversity conservation
- Support policy development



Re-visit: why IUCN Cats & Crits?

- Most widely used system for assessments of species status
- Assessments are consistent/comparable across regions/countries
- Based on comparable data
- Helps with assessing status of populations outside the national range & across regions
- Facilitates inclusion of assessments onto IUCN Red List
- Guidance and support available
- Sharing of experiences and knowledge

National Red List Alliance & website

- National Red List Alliance:
  - established in 2013 to promote National Red listing
  - help countries monitor their progress towards achieving Millennium Development Goal 7 and the Aichi Biodiversity Targets (particularly target 12)

- National Red List website & database:
  - Assessment resources and help
  - Case studies
  - Repository for national and regional assessments
  - In future, better integration with the IUCN Red List
  - www.nationalredlist.org

Acknowledgements