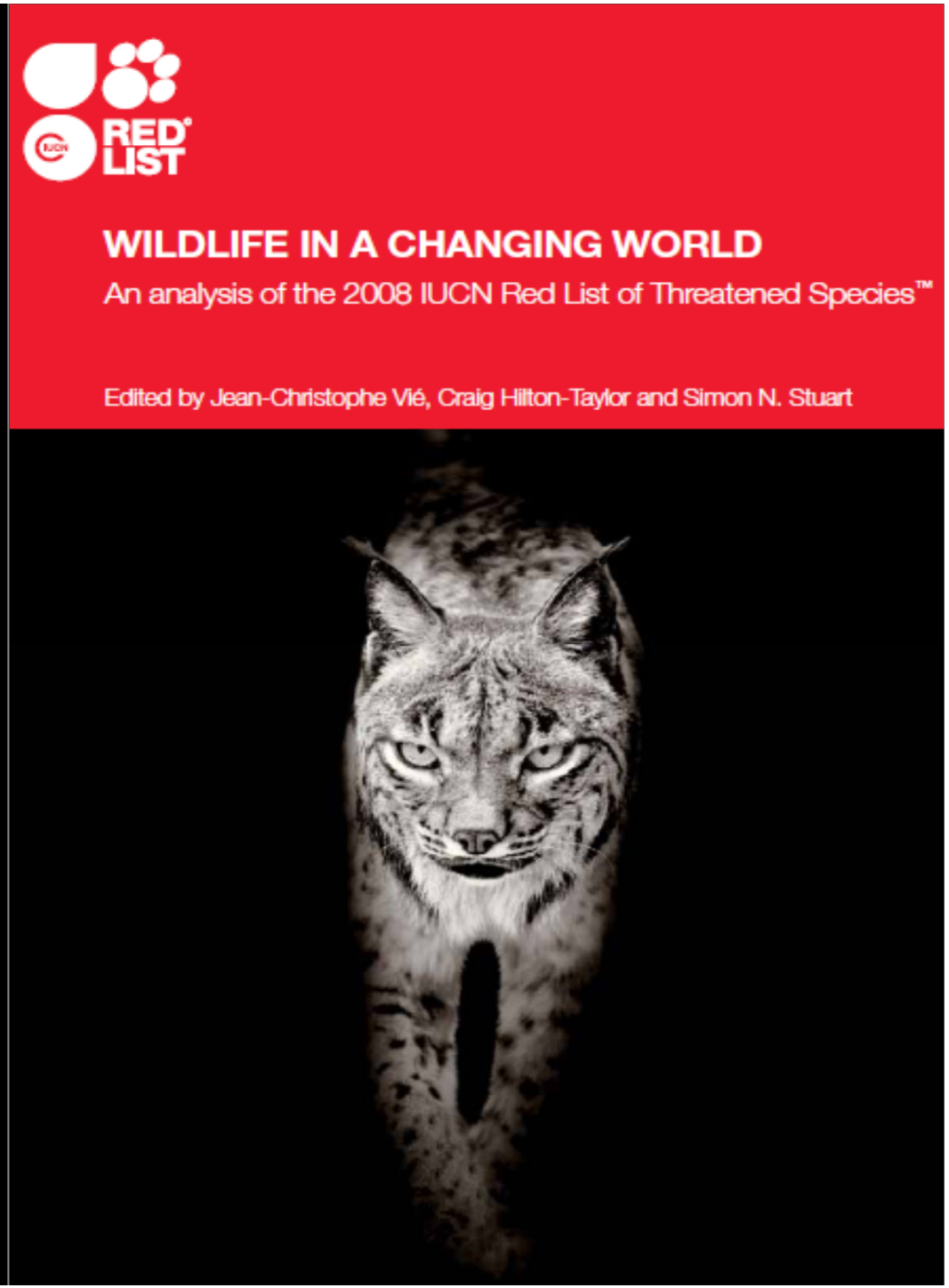
Biodiversità e Conservazione animale

Luciano Bani

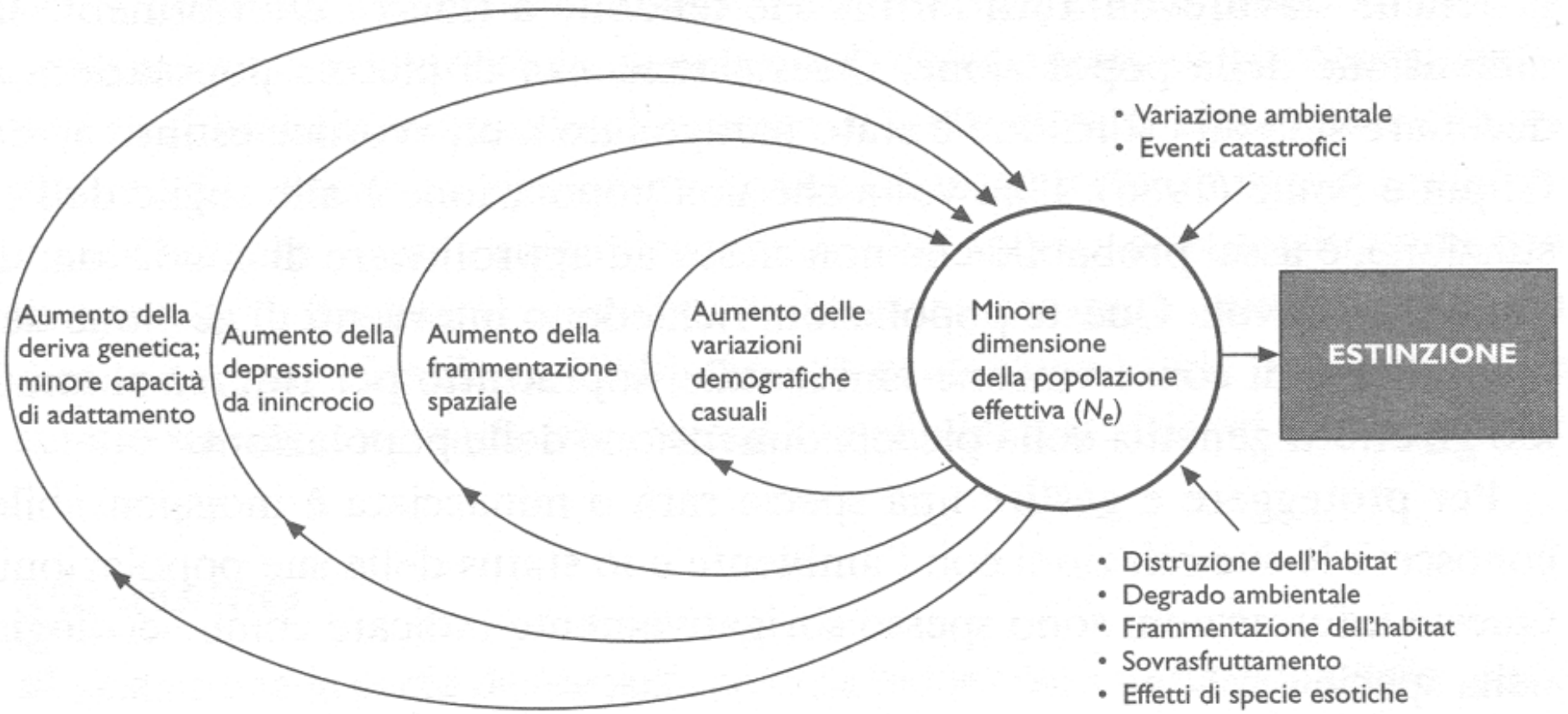


Vortice di estinzione

Cause degli attuali fenomeni di estinzione:

1. Riduzione e frammentazione degli habitat naturali
2. Isolamento degli habitat naturali in matrici antropiche
3. Degrado degli habitat naturali
4. Eccessivo sfruttamento delle specie e delle risorse naturali
5. Inquinamento
6. Introduzione di specie esotiche e diffusione di agenti patogeni
7. Cambiamenti climatici globali

Vortice di estinzione



Il «vortice dell'estinzione». Una volta che la popolazione di una specie cade sotto una certa dimensione, essa entra in una sequenza di eventi, nella quale i fattori che influenzano le piccole popolazioni tendono ad abbassare la dimensione della popolazione fino a livelli incompatibili con la sopravvivenza.

Vortice di estinzione

Fattori di minaccia per vari gruppi di specie negli USA.

Gruppi di specie minacciate	Percentuale di specie influenzate negativamente da ciascun fattore[a]				
	Degradazione e distruzione dell'habitat	Inquinamento	Sovra-sfruttamento	Competizione/ predazione da parte di specie esotiche	Malattie
Tutte le specie (1880)	85	24	17	49	3
Tutti i vertebrati (494 specie)	92	46	27	47	8
Mammiferi (85 specie)	89	19	47	27	8
Uccelli (98 specie)	90	22	33	69	37
Anfibi (60 specie)	87	47	17	27	0
Pesci (213 specie)	97	90	15	17	0
Tutti gli invertebrati (331 specie)	87	45	23	27	0
Mitili d'acqua dolce (102 specie)	97	90	15	17	0
Farfalle (33 specie)	97	24	30	36	0
Piante (1055 specie)	81	7	10	57	1

Fonte: Dati da Wilcove et al., 1998.

[a] Le specie possono essere influenzate da più di un fattore, e perciò il totale delle percentuali per ciascuna riga non è pari a 100. Per esempio l'87% delle specie di anfibi risente negativamente della degradazione e della distruzione dell'habitat e il 47% delle stesse specie è influenzato anche dall'inquinamento.

Alcuni dati della "6ª estinzione"

EXTINCTION IS FOREVER

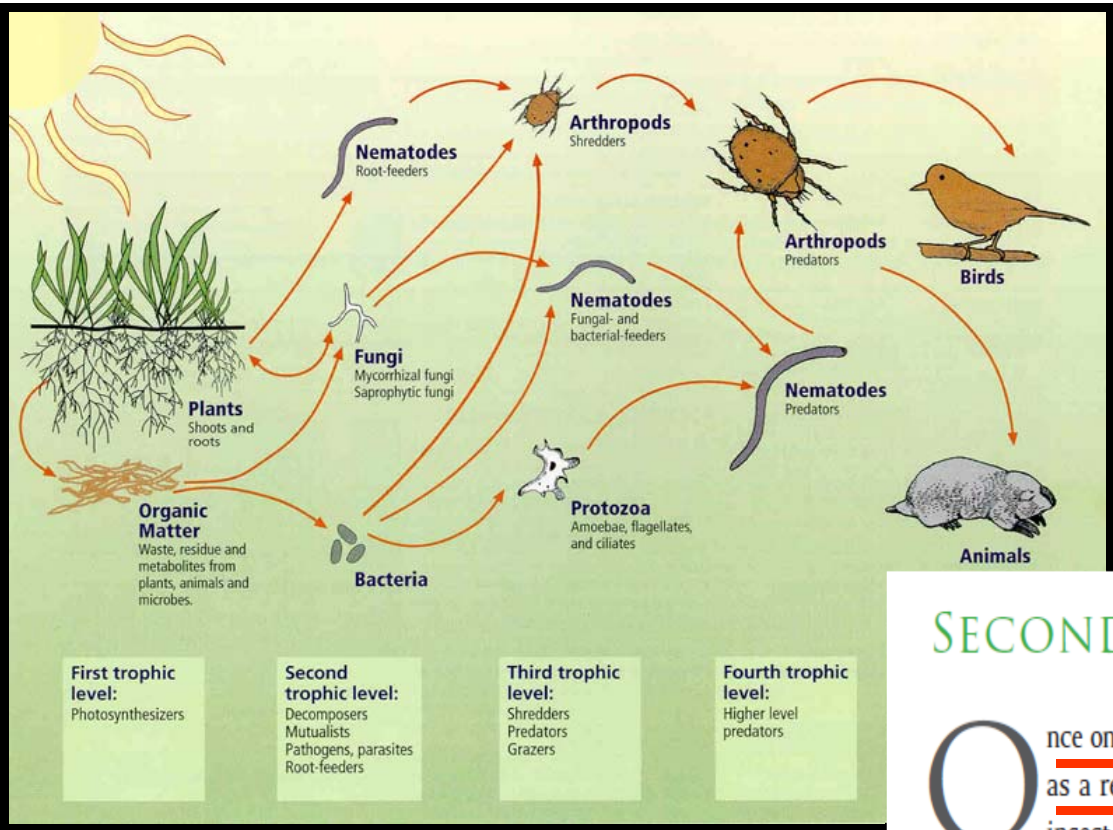
- **Tasso di estinzione naturale (reperti fossili):**
  fino a 25 specie / anno

based upon findings from the marine fossil record, we would expect one species out of a sample of a million to go extinct about every one to ten years. The background extinction rate can then be estimated at approximately one extinction for every million species each year, which, given the marine fossil data, is a number at the higher end of the range (the lower end would be one extinction per million species every ten years). This number can be transformed into a ratio that is stated as "one extinction per million species-years." We think of this as the background rate of extinction.

- **Tasso di estinzione attuale (Wilson 1992):**
  3 specie / ora
  >25.000 specie / anno
  (su una stima di 10.000.000 di specie)

da 1000 fino a probabilmente oltre 10.000 volte più elevato rispetto al tasso di estinzione naturale

50% delle circa 23.000 specie descritte di Mammiferi, Uccelli e Rettili perse entro i prossimo 300-400 anni.



Secondary Extinctions

Once one species goes extinct, it is likely that many others will go extinct as a result. Some are easy to understand. For every bird or mammal or insect that goes extinct, those species of parasites or bacteria that can live on and/or in no other host will also disappear (see box 3.1 on microbial ecosystems in chapter 3). An example may be seen with some termite species, which have within them flagellated protozoa that are, in turn, associated with different types of bacteria. Presumably, these species of termites, protozoa, and bacteria, having co-evolved, are highly specific to one another, so if the termite went extinct, so would the protozoa and the bacteria. Other changes can be quite complicated. Species are bound together in ecological communities to form a food web of interactions. Once a species is lost, other species that fed upon that species or that benefited from it, competed with it, or were food for it would also be affected. These species, in turn, may affect yet other species. Ecological theory suggests that the patterns of secondary extinctions may be highly complex and thus difficult both to demonstrate and predict.

RED LIST

WILDLIFE IN A CHANGING WORLD

An analysis of the 2008 IUCN Red List of Threatened Species™

Edited by Jean-Christophe Vié, Craig Hilton-Taylor and Simon N. Stuart

Available from: IUCN (International Union for Conservation of Nature)
www.iucn.org/publications

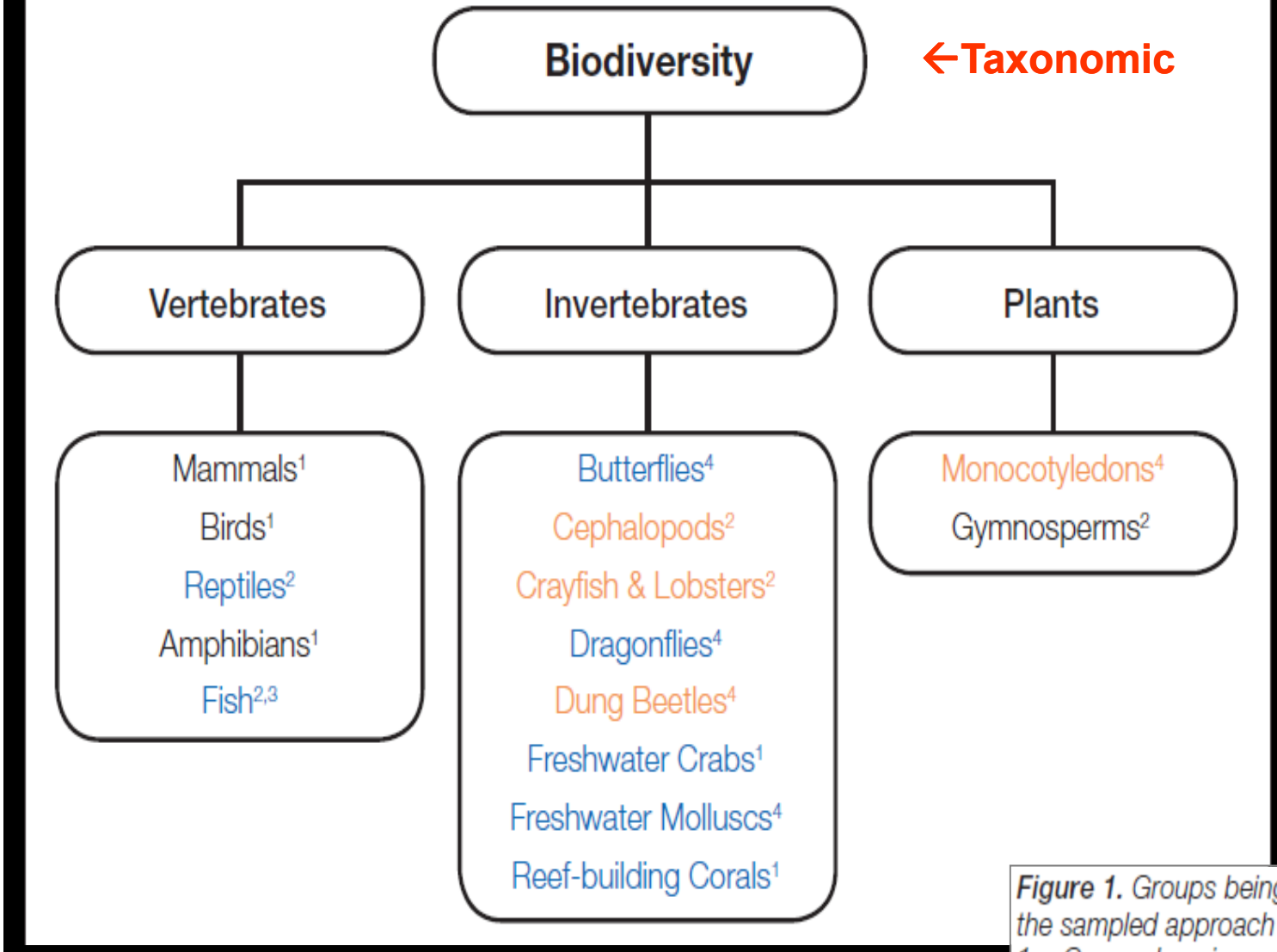
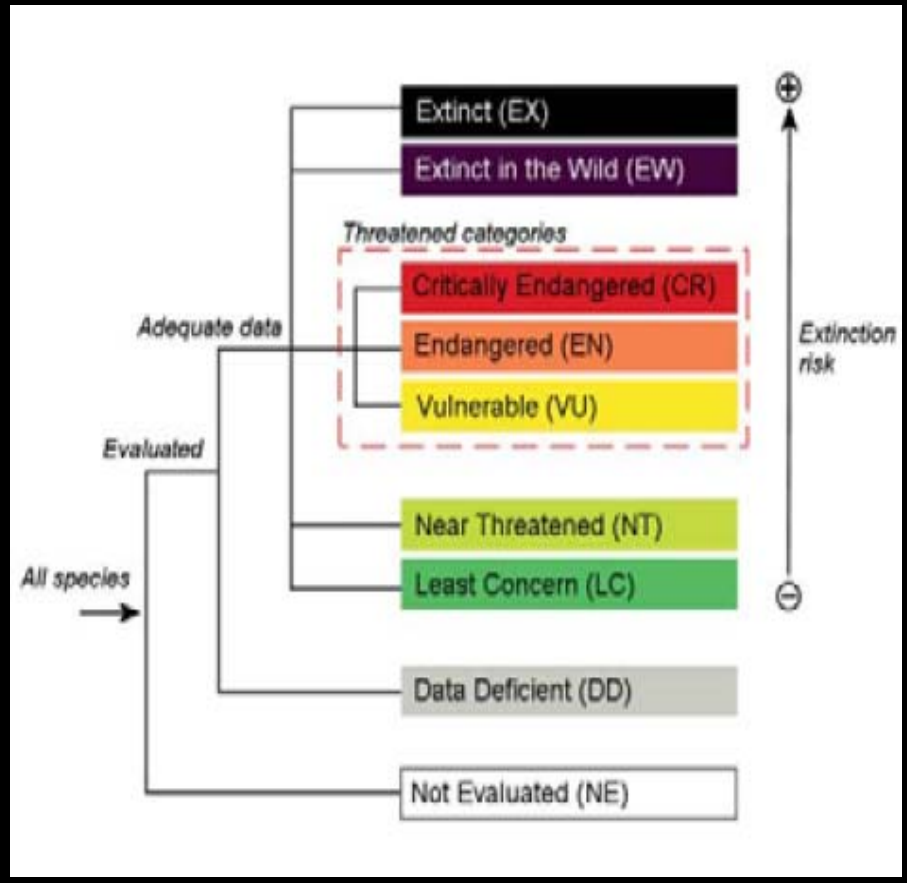
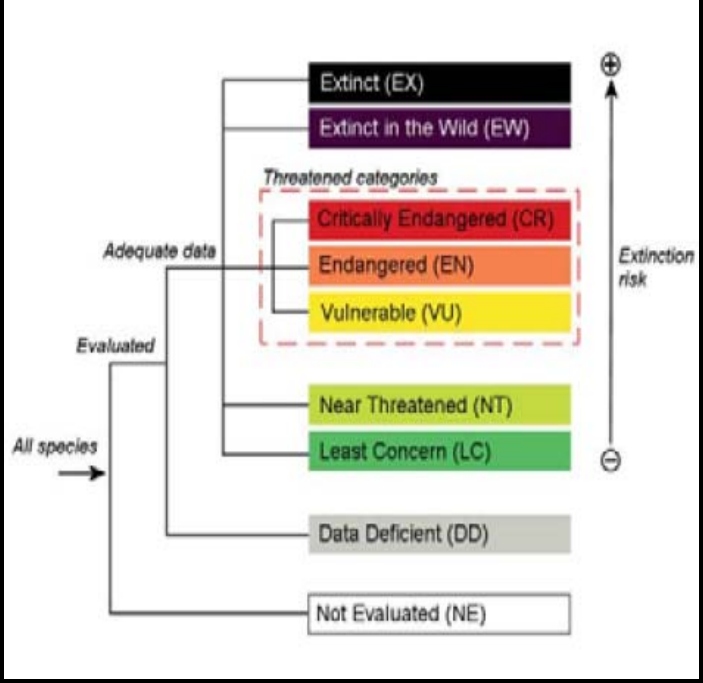


Figure 1. *Groups being assessed using the sampled approach and comprehensively. 1 = Comprehensive assessment complete; 2 = Comprehensive assessment underway; 3 = Sample of Freshwater fish complete, marine fish underway; 4 = sampled approach group. Blue are phase 1 groups (2007-2009), orange are phase 2 groups (2008-2010).*

Categorie IUCN



Categorie IUCN



IV. THE CATEGORIES [1]

A representation of the relationships between the categories is shown in Figure 1.

EXTINCT (EX)

A taxon is Extinct when there is no reasonable doubt that the last individual has died. A taxon is presumed Extinct when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

EXTINCT IN THE WILD (EW)

A taxon is Extinct in the Wild when it is known only to survive in cultivation, in captivity or as a naturalized population (or populations) well outside the past range. A taxon is presumed Extinct in the Wild when exhaustive surveys in known and/or expected habitat, at appropriate times (diurnal, seasonal, annual), throughout its historic range have failed to record an individual. Surveys should be over a time frame appropriate to the taxon's life cycle and life form.

CRITICALLY ENDANGERED (CR)

A taxon is Critically Endangered when the best available evidence indicates that it meets any of the criteria A to E for Critically Endangered (see Section V), and it is therefore considered to be facing an extremely high risk of extinction in the wild.

ENDANGERED (EN)

A taxon is Endangered when the best available evidence indicates that it meets any of the criteria A to E for Endangered (see Section V), and it is therefore considered to be facing a very high risk of extinction in the wild.

VULNERABLE (VU)

A taxon is Vulnerable when the best available evidence indicates that it meets any of the criteria A to E for Vulnerable (see Section V), and it is therefore considered to be facing a high risk of extinction in the wild.

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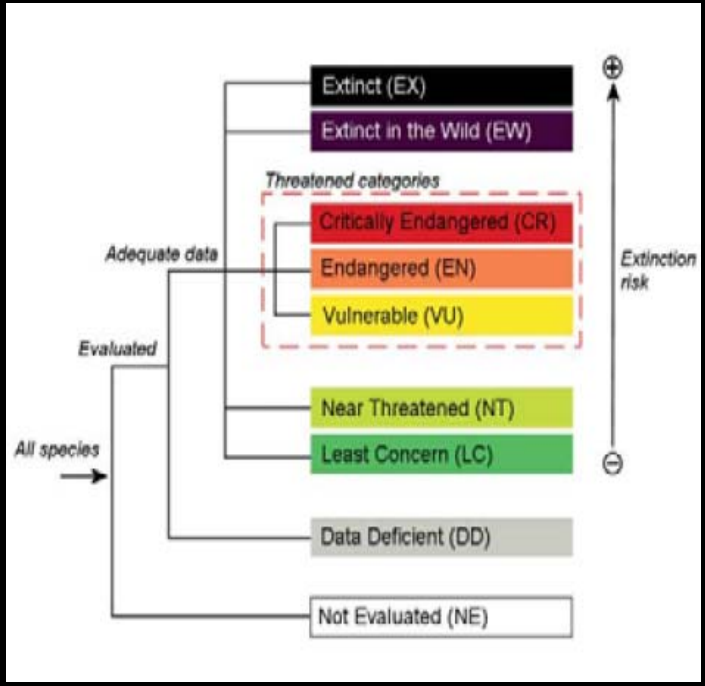
[1] *Note: As in previous IUCN categories, the abbreviation of each category (in parenthesis) follows the English denominations when translated into other languages (see Annex 2).*

Categorie IUCN



NEAR THREATENED (NT)

A taxon is Near Threatened when it has been evaluated against the criteria but does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future.

LEAST CONCERN (LC)

A taxon is Least Concern when it has been evaluated against the criteria and does not qualify for Critically Endangered, Endangered, Vulnerable or Near Threatened. Widespread and abundant taxa are included in this category.

DATA DEFICIENT (DD)

A taxon is Data Deficient when there is inadequate information to make a direct, or indirect, assessment of its risk of extinction based on its distribution and/or population status. A taxon in this category may be well studied, and its biology well known, but appropriate data on abundance and/or distribution are lacking. Data Deficient is therefore not a category of threat. Listing of taxa in this category indicates that more information is required and acknowledges the possibility that future research will show that threatened classification is appropriate. It is important to make positive use of whatever data are available. In many cases great care should be exercised in choosing between DD and a threatened status. If the range of a taxon is suspected to be relatively circumscribed, and a considerable period of time has elapsed since the last record of the taxon, threatened status may well be justified.

NOT EVALUATED (NE)

A taxon is Not Evaluated when it is has not yet been evaluated against the criteria.

RED LIST

WILDLIFE IN A CHANGING WORLD

An analysis of the 2008 IUCN Red List of Threatened Species™

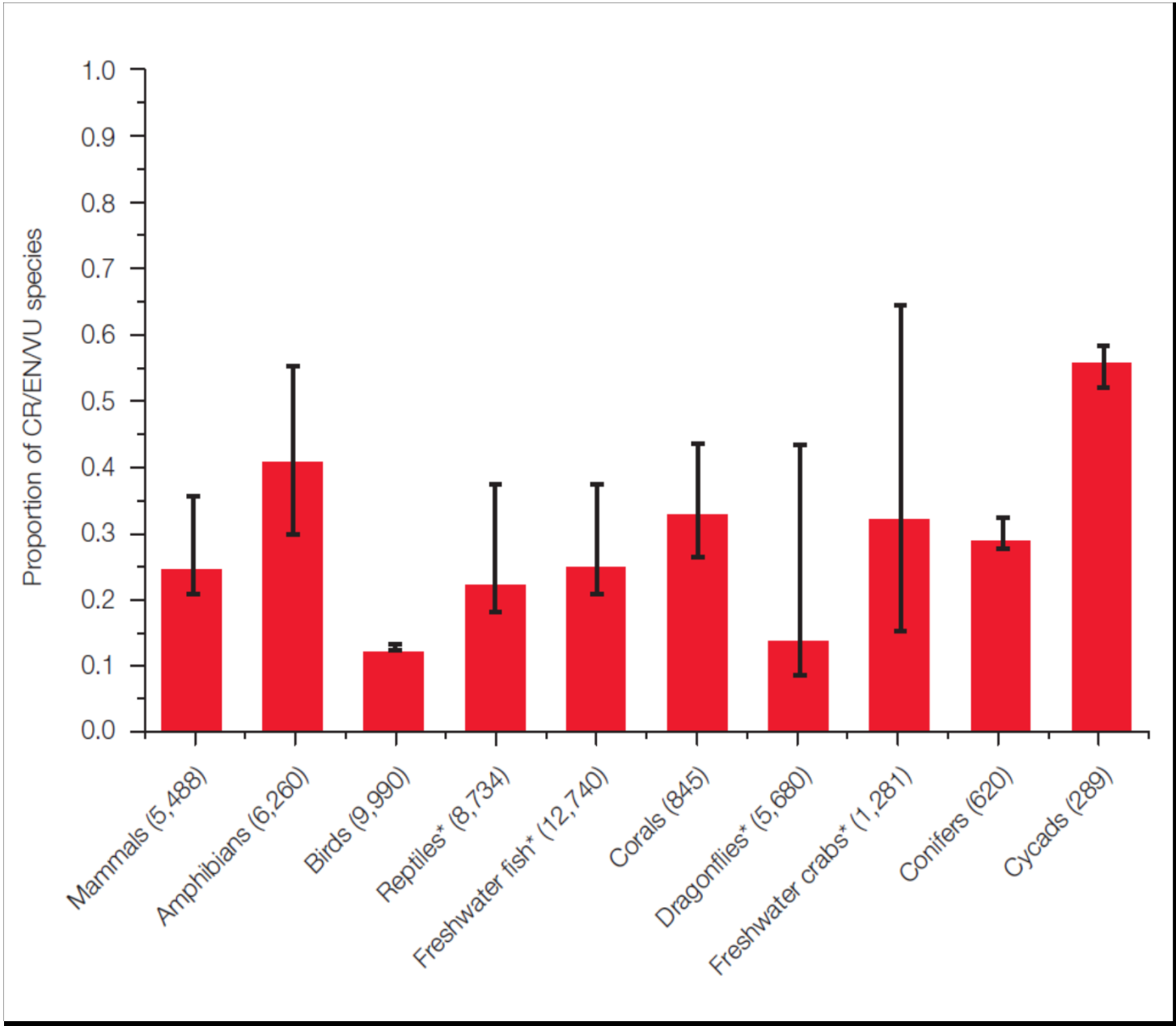
Terraphosa leblondi, the world's largest spider.

Plant and invertebrate species are currently under-represented on the Red List but a dedicated effort is being made to increase their number.

Rafflesia magnifica is among the group of plants that produce the largest single flowers in the world. Endemic to the Philippines, only a few individuals of *R. magnifica* have been recorded, all of them male. The species is listed as Critically Endangered.

	Estimated Number of described species[7]	Number of species evaluated	Number of threatened species[8]	Number threatened, as % of species described[8]	Number threatened, as % of species evaluated[8,9]
Vertebrates					
Mammals[1]	5,488	5,488	1,141	21%	21%
Birds	9,990	9,990	1,222	12%	12%
Reptiles	8,734	1,385	423	5%	31%
Amphibians[2]	6,347	6,260	1,905	30%	30%
Fishes	30,700	3,481	1,275	4%	37%
Subtotal	**61,259**	**26,604**	**5,966**	**10%**	**22%**
Invertebrates					
Insects	950,000	1,259	626	0%	50%
Molluscs	81,000	2,212	978	1%	44%
Crustaceans	40,000	1,735	606	2%	35%
Corals	2,175	856	235	11%	27%
Arachnids	98,000	32	18	0%	56%
Velvet Worms	165	11	9	5%	82%
Horseshoe Crabs	4	4	0	0%	0%
Others	61,040	52	24	0%	46%
Subtotal	**1,232,384**	**6,161**	**2,496**	**0.20%**	**41%**
Plants[3]					
Mosses[4]	16,000	95	82	1%	86%
Ferns and allies[5]	12,838	211	139	1%	66%
Gymnosperms	980	910	323	33%	35%
Dicotyledons	199,350	9,624	7,122	4%	74%
Monocotyledons	59,300	1,155	782	1%	68%
Green Algae[6]	3,962	2	0	0%	0%
Red Algae[6]	6,076	58	9	0%	16%
Subtotal	**298,506**	**12,055**	**8,457**	**3%**	**70%**
Others					
Lichens	17,000	2	2	0%	100%
Mushrooms	30,000	1	1	0%	100%
Brown Algae[6]	3,040	15	6	0%	40%
Subtotal	**50,040**	**18**	**9**	**0.02%**	**50%**
TOTAL	**1,642,189**	**44,838**	**16,928**	**1%**	**38%**

Table 1. Numbers and proportions of species assessed and species assessed as threatened on the 2008 IUCN Red List by major taxonomic group.



Proportion of species threatened with extinction in different taxonomic groups.

Numbers on the horizontal axis indicate the total number of described species in each group. Corals include only warm water reefbuilding species.

Asterisks indicate those groups in which estimates are derived from a randomized sampling approach. The estimates assume that Data Deficient species are equally threatened as non-Data Deficient species; error bars show minimum and maximum estimates if all Data Deficient species are Least Concern or Threatened, respectively.

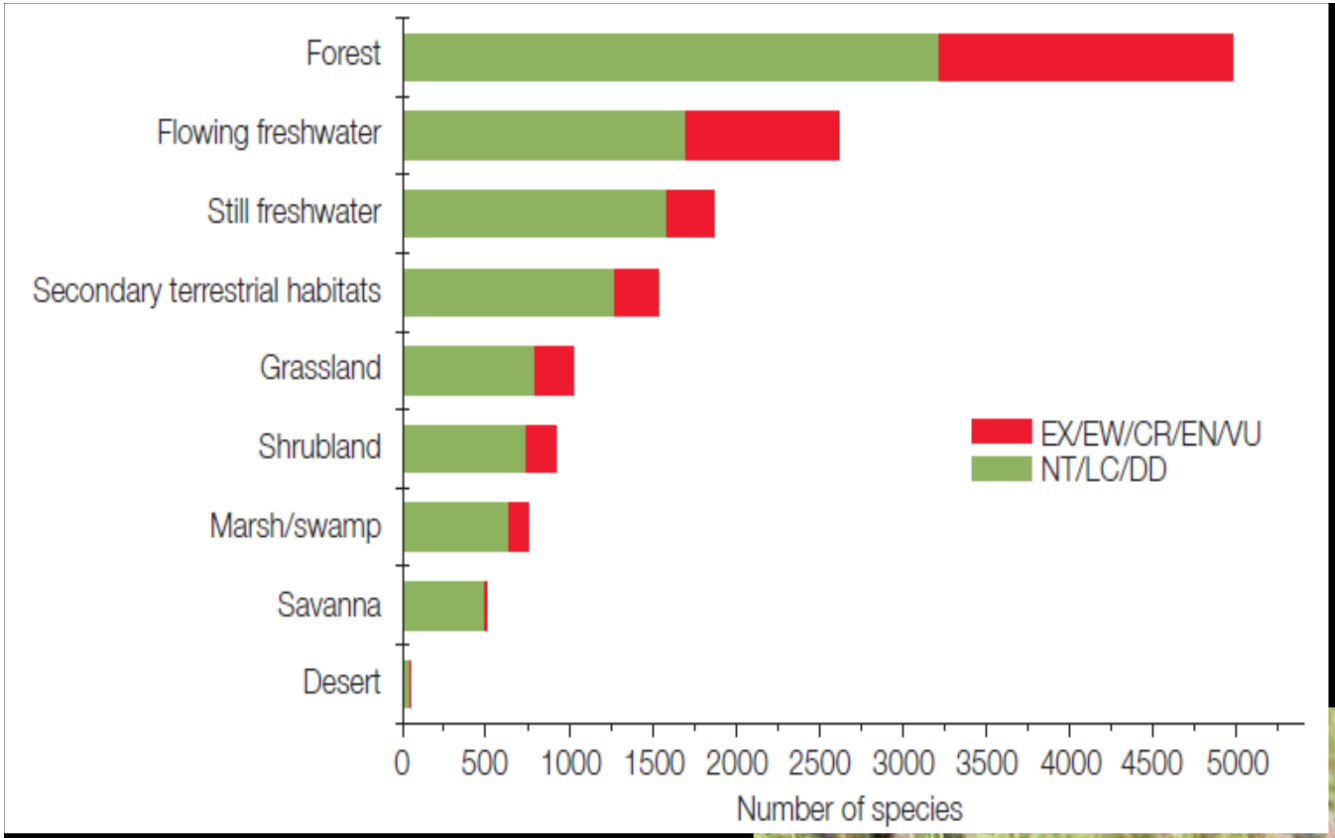
Box 1. Summary of the 2008 IUCN Red List update

The 2008 update of The IUCN Red List (as released on 6th October 2008) includes conservation assessments for 44,838 species (see Table 1 for break-down):

- There are 869 recorded extinctions, with 804 species listed as Extinct and 65 listed as Extinct in the Wild;
- The number of extinctions increases to 1,159 if the 290 Critically Endangered species tagged as 'Possibly Extinct' are included;
- 16,928 species are threatened with extinction (3,246 are Critically Endangered, 4,770 are Endangered and 8,912 are Vulnerable);
- 3,796 species are listed as Near Threatened*;
- 5,570 species have insufficient information to determine their threat status and are listed as Data Deficient;
- 17,675 species are listed as Least Concern, a listing which generally indicates that these have a low probability of extinction, but the category is very broad and includes species which may be of conservation concern (e.g., they may have very restricted ranges but with no perceived threats or their populations may be declining but not fast enough to qualify for a threatened listing).

Note that The IUCN Red List is a biased sample of the world's species, and for the incompletely assessed groups, there is a a general tendency to assess species that are more likely to be threatened. It is therefore not possible to take the Red List as a whole (in which 38% of listed species are threatened), and say that this means that 38% of all species in the world are likely to be threatened.

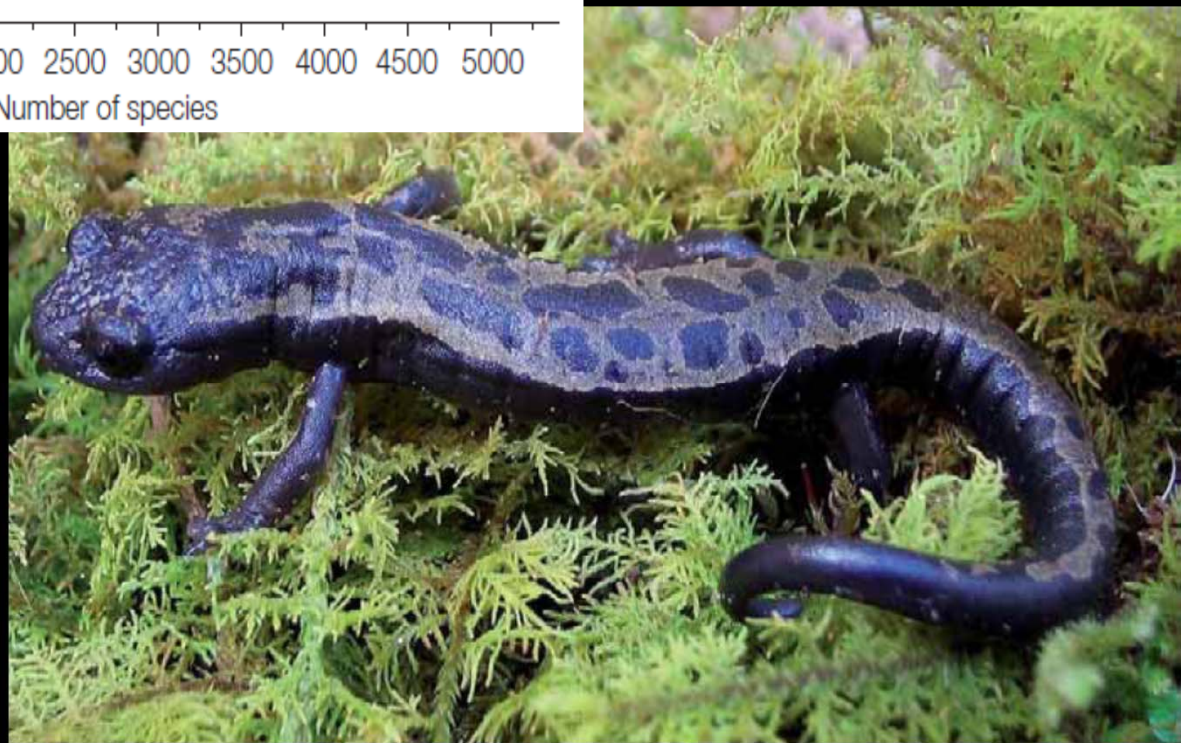
* Includes species listed as Conservation Dependent (LR/cd), an old Red List Category which is now subsumed under the Near Threatened category.



AMPHIBIANS

… are one of the most threatened groups of species worldwide.

Bolitoglossa franklini is an Endangered salamander from Mexico and Guatemala. Its range is becoming severely fragmented as forest habitats are lost to agricultural lands and human settlements



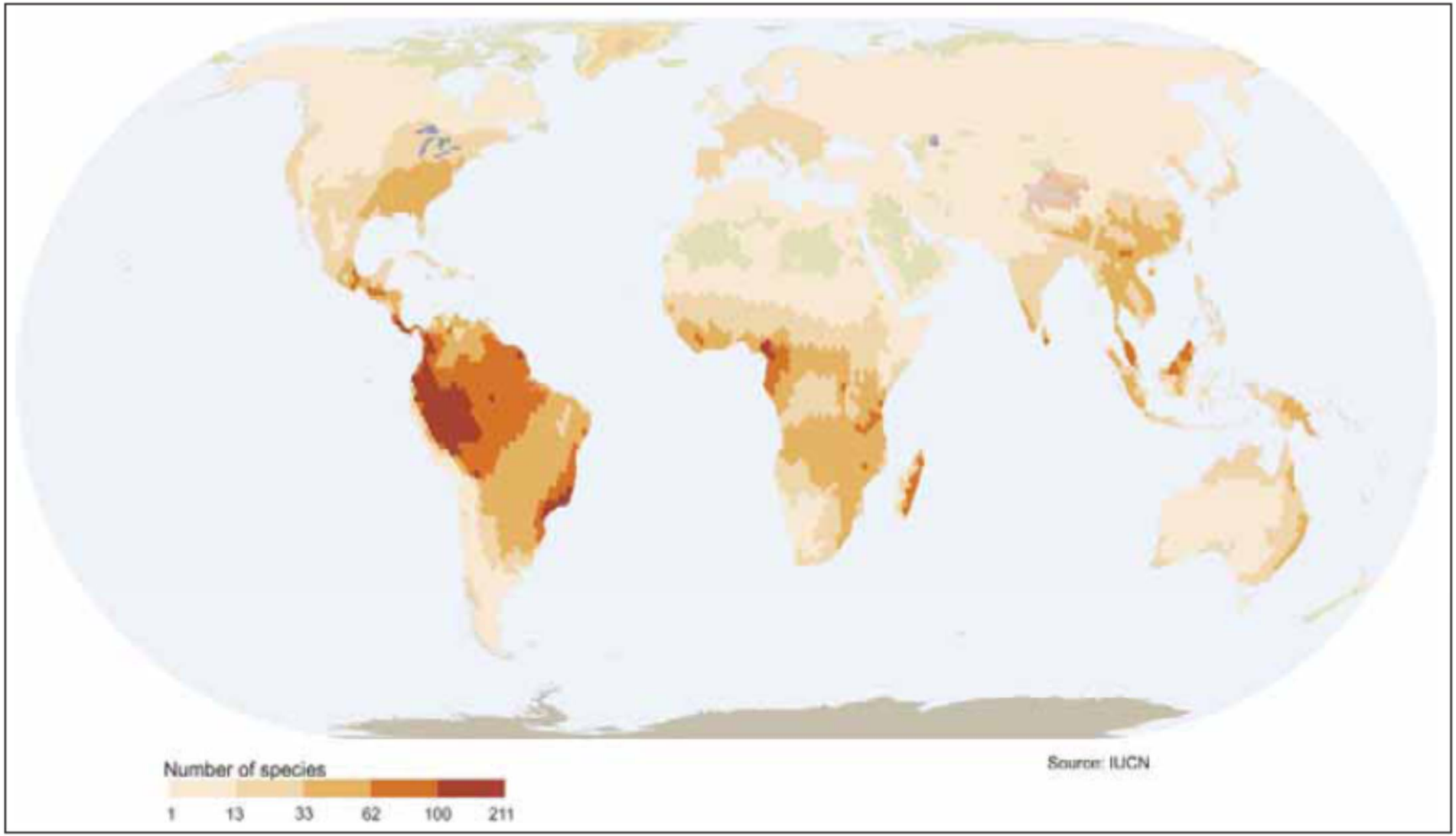
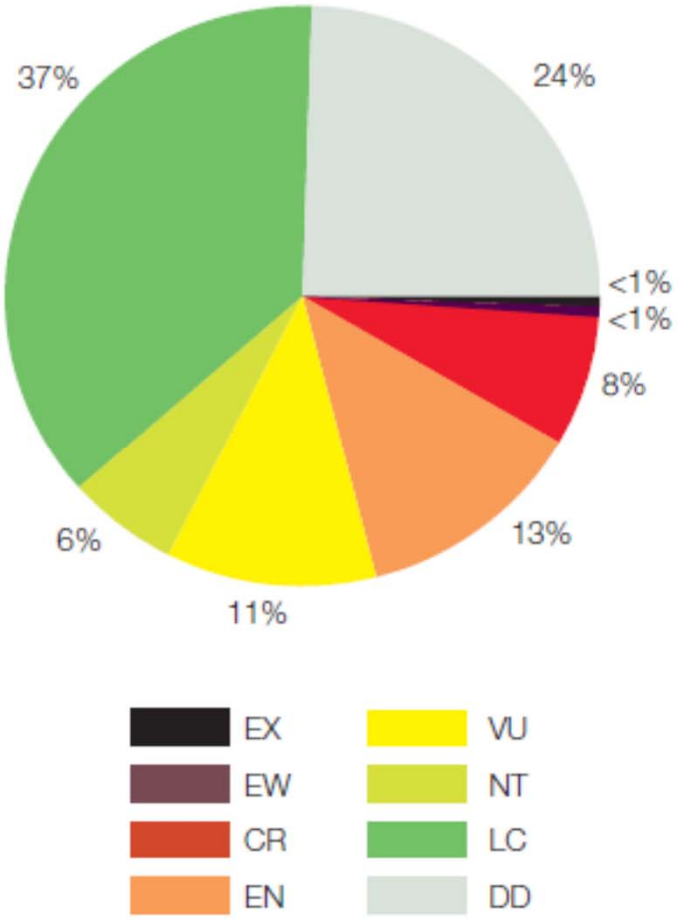


Figure 3. *Global diversity of amphibian species.*



The Golden Mantella *Mantella aurantiaca* [CR] has a very restricted distribution in east-central Madagascar.

AMPHIBIANS

… are one of the most threatened groups of species worldwide.

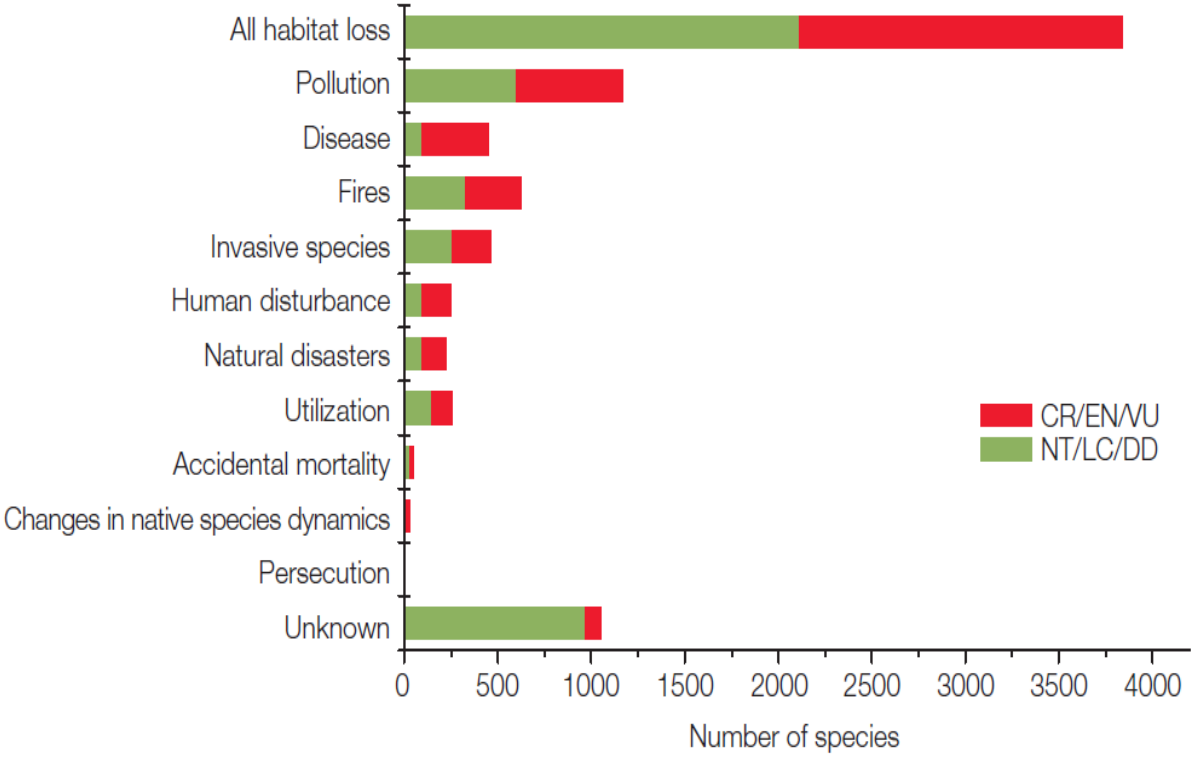


Table 2. Top twenty countries with the most amphibian species.*

Rank	Country	Number of amphibians
1	Brazil	798
2	Colombia	714
3	Ecuador	467
4	Peru	461
5	Mexico	364
6	Indonesia	363
7	China	333
8	Venezuela	311
9	United States	272
10	Papua New Guinea	266
11	India	252
12	Madagascar	242
13	Bolivia	230
14	Australia	223
15	Congo, The Democratic Republic of the	215
16	Malaysia	212
17	Cameroon	199
18	Panama	197
19	Costa Rica	186
20	Tanzania, United Republic of	178

Rank	Country	Number of threatened amphibians
1	Colombia	214
2	Mexico	211
3	Ecuador	171
4	Brazil	116
5	Peru	96
6	China	92
7	Guatemala	80
8	Venezuela	72
9	India	65
10	Madagascar	64
11	Costa Rica	59
	Honduras	59
13	United States	56
14	Cameroon	53
	Sri Lanka	53
16	Tanzania, United Republic of	50
17	Panama	49
	Cuba	49
19	Australia	48
	Philippines	48

Table 3. Countries with the largest number of threatened amphibian species.

Rank	Country	% threatened & Extinct
1	Haiti	92.0
2	Dominican Republic	83.3
3	Jamaica	81.0
4	Cuba	80.3
5	Puerto Rico	73.7
6	Sri Lanka	70.5
7	Mexico	58.0
8	Guatemala	57.1
9	Seychelles	54.5
10	Honduras	48.8
11	Philippines	48.0
12	Ecuador	37.0
13	Chile	36.2
14	Japan	35.7
15	Turkey	34.5
16	Costa Rica	33.3
17	El Salvador	31.3
18	Colombia	30.0
19	Taiwan, Province of China	29.4
20	Tanzania, United Republic of	28.1

Note: only countries with 10 or more species are included in the analysis.

Table 4. Countries with the highest percentage of threatened and Extinct amphibians.

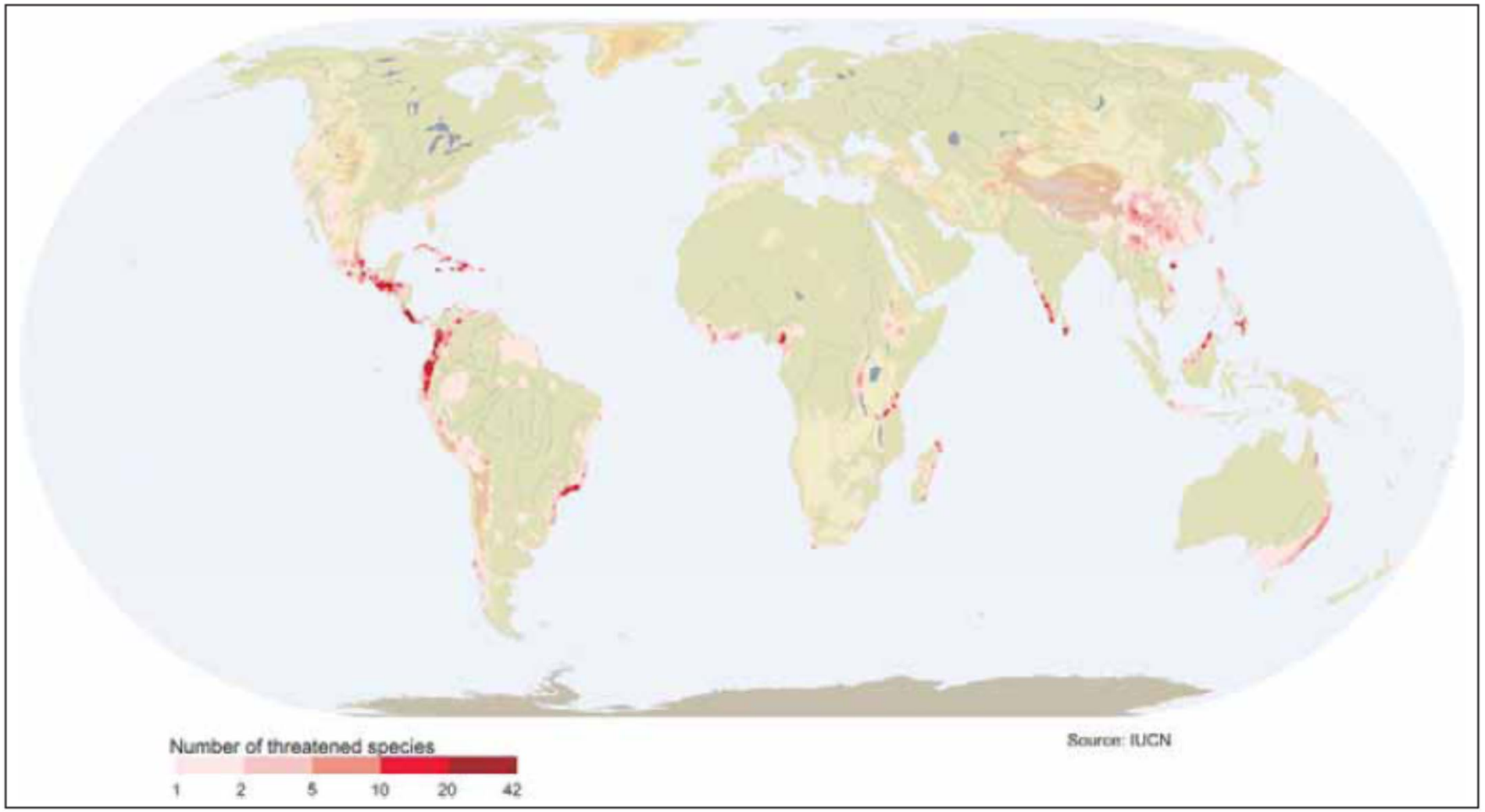


Figure 4. *Global distribution of threatened amphibians.*

Box 2. Summary of results for amphibians

- Nearly one-third (32%) of the world's amphibian species are known to be threatened or Extinct, 43% are known not to be threatened, and 25% have insufficient data to determine their threat status.
- As many as 159 amphibian species may already be Extinct. At least 38 amphibian species are known to be Extinct, one is Extinct in the Wild, while at least another 120 species have not been found in recent years and are 'Possibly Extinct'.
- At least 42% of all species are declining in population, indicating that the number of threatened species can be expected to rise in the future. In contrast, less than one per cent of species show population increases.
- The largest numbers of threatened species occur in Latin American countries such as Colombia (214), Mexico (211), and Ecuador (171). The highest levels of threat, however, are in the Caribbean, where more than 80% of amphibians are threatened or extinct in the Dominican Republic, Cuba, and Jamaica, and a staggering 92% in Haiti.
- Although habitat loss clearly poses the greatest threat to amphibians, the fungal disease chytridiomycosis is seriously affecting an increasing number of species. Perhaps most disturbing, many species are declining for unknown reasons, complicating efforts to design and implement effective conservation strategies.

Although the disease chytridiomycosis, caused by the chytrid fungus *Batrachochytrium dendrobatidis,* appears to be a relatively less significant threat for amphibians, for those species affected, it can cause sudden and dramatic population declines resulting in very rapid extinction.

Plectrohyla dasypus is a Critically Endangered amphibian from Honduras. The population is undergoing drastic declines as a result of chytridiomycosis.

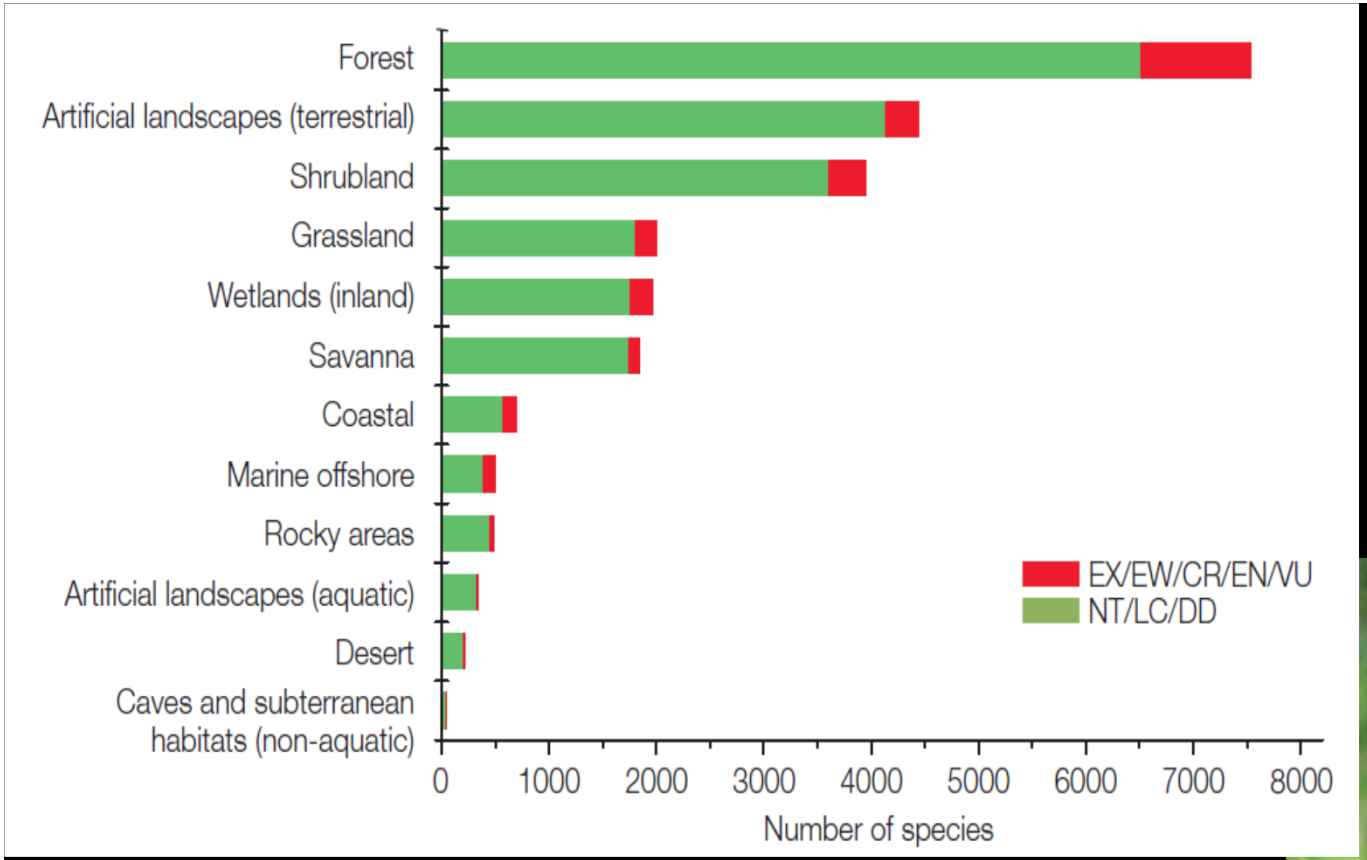
There are ongoing efforts to complete assessments of all **REPTILES**, all **FISHES**, and selected groups of **PLANTS** and **INVERTEBRATES**

The Radiated Tortoise *Astrochelys radiata* is found only on Madagascar. In 2008 its Red List status changed from Vulnerable to Critically Endangered. Wild Radiated Tortoises are collected for the international pet trade, and also for local use (food and pets), which is of greater concern for the species. Habitat loss due to agricultural expansion and invasive plant species also threaten the remaining wild population.

STATE OF THE WORLD'S BIRDS

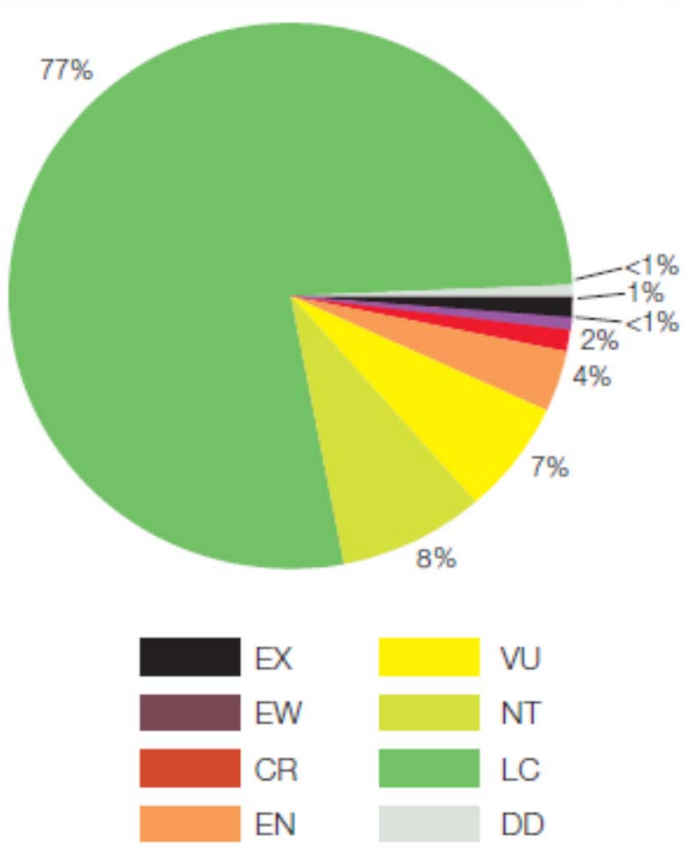
Indicators for our changing world

BirdLife
INTERNATIONAL



BIRDS

The Philippine Eagle *Pithecophaga jefferyi* has an extremely small population as a result of rapid declines caused by extensive deforestation. The species is listed as Critically Endangered



BIRDS

Slender-billed Curlew
[Chiurlottello]
(*Numenius tenuirostris*)

A massive effort is required in order to stop the Slender-billed Curlew from becoming the first bird extinction in Europe since the Great Auk."

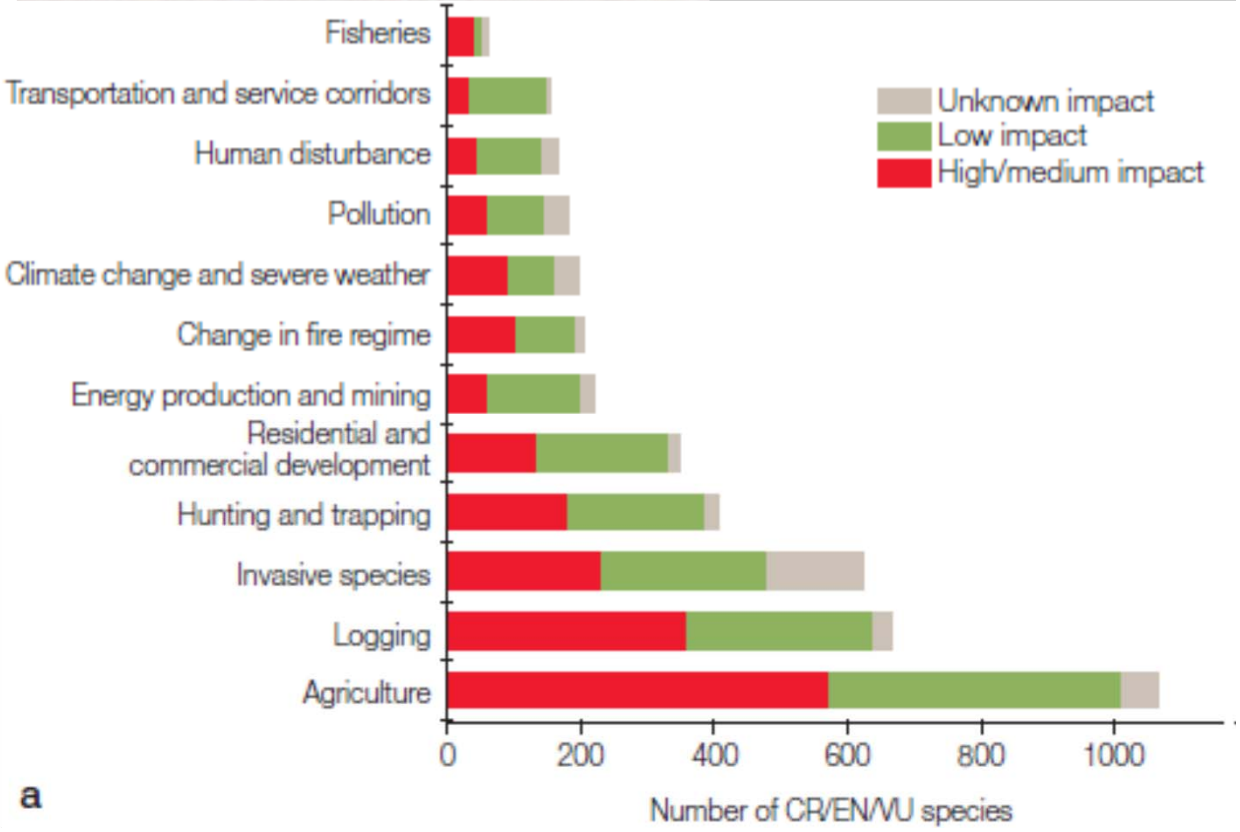


Table 5. Top twenty countries with the largest number of bird species.

Rank	Country	Number of birds
1	Colombia	1,799
2	Peru	1,772
3	Brazil	1,704
4	Ecuador	1,578
5	Indonesia	1,561
6	Bolivia	1,416
7	Venezuela	1,347
8	China	1,237
9	India	1,178
10	Congo, The Democratic Republic of the	1,084
11	Mexico	1,077
12	Tanzania, United Republic of	1,050
13	Kenya	1,019
14	Myanmar	1,003
15	Argentina	993
16	Uganda	988
17	Sudan	919
18	Thailand	918
19	Panama	913
20	Angola	894

Rank	Country	Number of threatened birds
1	Brazil	122
2	Indonesia	115
3	Peru	93
4	Colombia	86
5	China	85
6	India	76
7	United States	74
8	New Zealand	69
	Ecuador	69
10	Philippines	67
11	Mexico	54
12	Russian Federation	51
13	Argentina	49
	Australia	49
15	Thailand	44
16	Malaysia	42
17	Myanmar	41
18	Tanzania, United Republic of	40
	Japan	40
20	Viet Nam	39

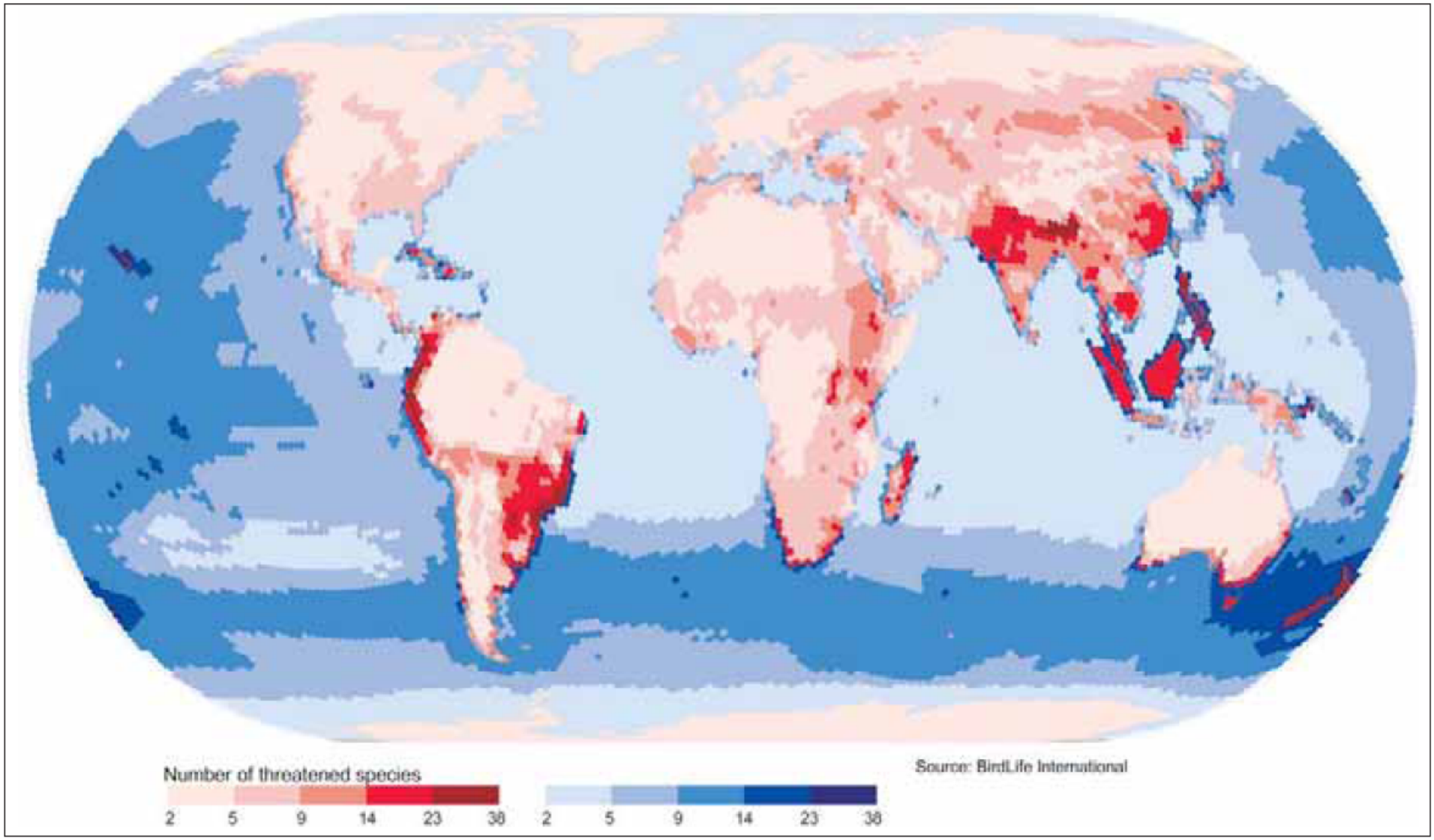
Table 6. Countries with the largest number of threatened bird species.

Rank	Country	% threatened & Extinct
1	French Polynesia	47.8
2	Cook Islands	44.4
3	Saint Helena	42.2
4	Pitcairn	41.7
5	Norfolk Island	39.6
6	Mauritius	38.9
7	Heard Island and McDonald Islands	38.5
8	New Zealand	38.0
9	Niue	33.3
10	Réunion	29.1
11	French Southern Territories	27.5
12	United States Minor Outlying Islands	27.3
13	Wallis and Futuna	25.7
14	American Samoa	19.5
15	Samoa	15.6
16	Madagascar	14.8
17	Antarctica	14.7
18	Kiribati	13.5
19	Guam	13.1
20	New Caledonia	12.4

Note: only countries with 10 or more species are included.

Table 7. Countries with the highest percentage of threatened and Extinct birds.

Figure 8. Global distribution of threatened birds. The red shades indicate terrestrial species and the blue shades indicate marine species.



Box 3. Summary of results for birds

- Birds are the best-known group of species, with less than 1% having insufficient data to determine their threat status. More than one in seven (14%) bird species are globally threatened or Extinct, 86% are not threatened.
- At least 134 birds have become Extinct since the year 1500, four species have become Extinct in the Wild, and a further 15 species are 'Possibly Extinct'.
- The highest numbers of bird species are found in South America, with Colombia supporting 18% of the world's birds (1,799 species). Africa and Asia are the next most diverse regions for bird species.
- 97% of the world's countries hold at least one globally threatened bird species. The highest numbers of threatened birds occur in Brazil (122 threatened species) and Indonesia (115 threatened species).
- Although they are much less diverse than tropical countries on the continents, oceanic island nations hold the highest proportions of threatened and extinct species. The majority (88%) of known extinctions since the year 1500 have been on islands.
- Agriculture, logging and invasive species are the most severe threats driving bird species towards extinction. The most common stress affecting bird populations is habitat loss and degradation.

Pinguini del Capo
Spheniscus demersus

Good news!

In Brazil, Lear's Macaw *Anodorhynchus leari* has moved from Critically Endangered to Endangered.

Named after the English artist and poet Edward Lear, this spectacular blue parrot has increased four-fold in numbers as a result of a joint effort of many national and international non-governmental organizations, the Brazilian government and local landowners.

MAMMALS

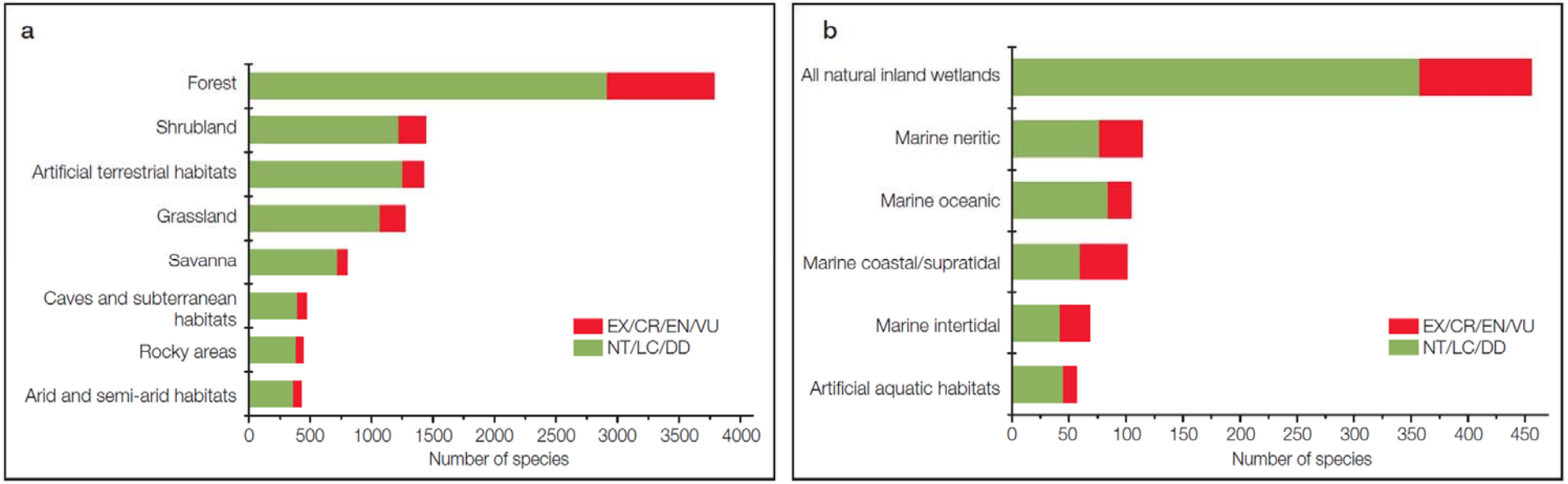
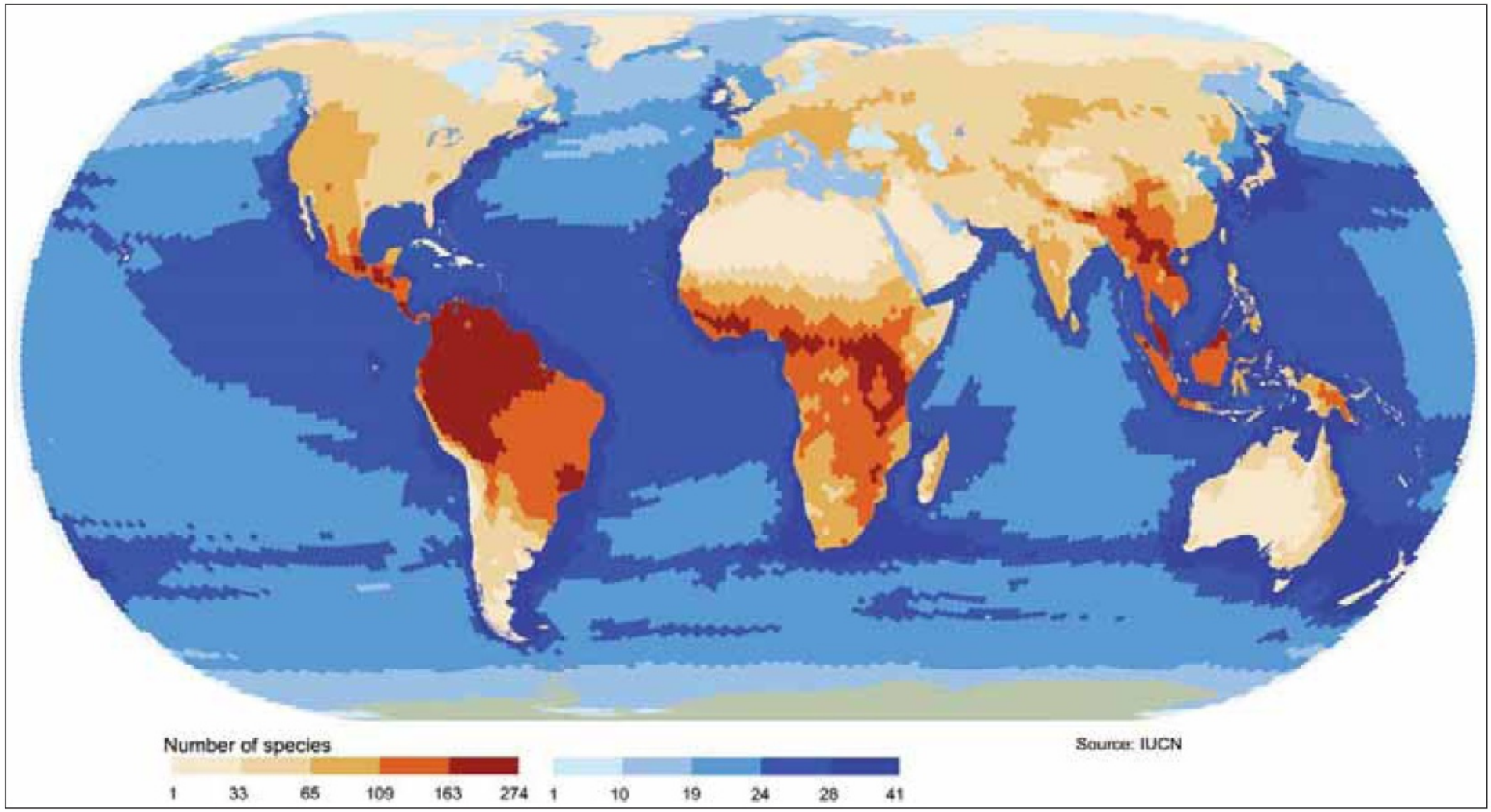
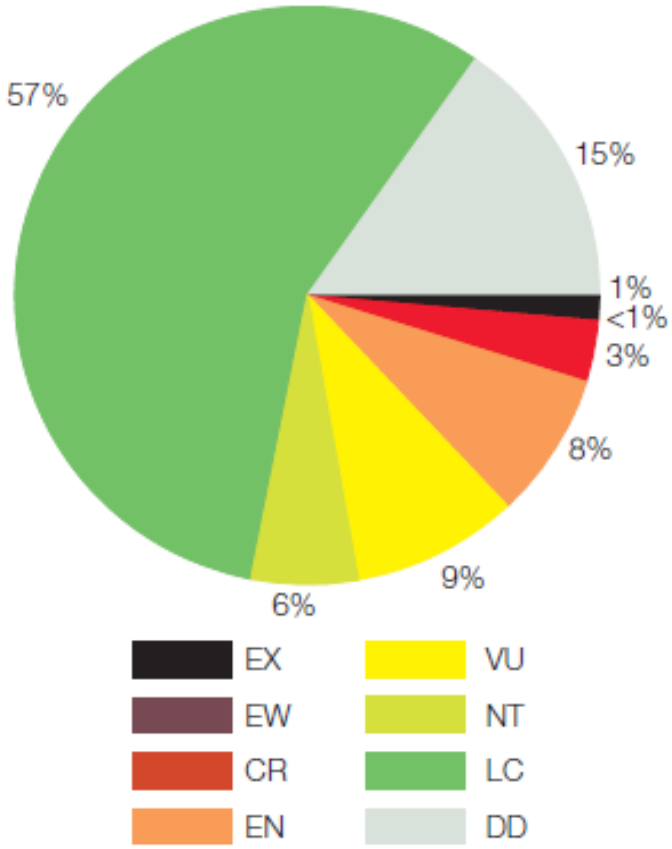


Figure 14. *Habitat preferences of mammals:* ***(a)*** *terrestrial habitats, and* ***(b)*** *aquatic habitats.*

The Fishing Cat *Prionailurus viverrinus* is an Asian species found mainly in wetland habitats. In 2008, this species moved up from Vulnerable to Endangered because of the severe decline throughout much of its range over the last ten years. Over 45% of protected wetlands in Southeast Asia are now considered threatened. In addition, clearance of coastal mangroves over the past decade has been rapid.

Figure 12. *Global diversity of mammal species. Brown shades indicate terrestrial species and blue shades marine species.*





MAMMALS

Sumatran Orangutan
(*Pongo abelii*)

Habitat loss and poaching are pushing Sumatran Orangutan towards imminent extinction

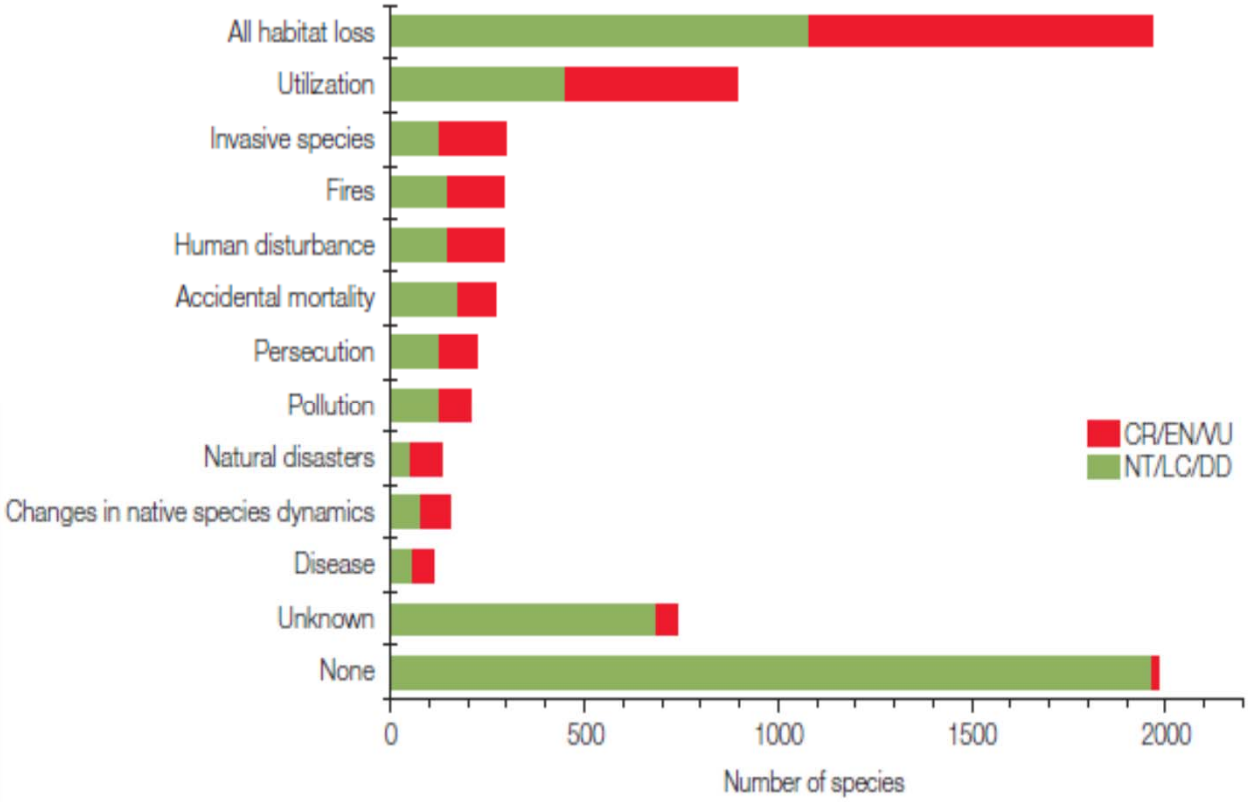
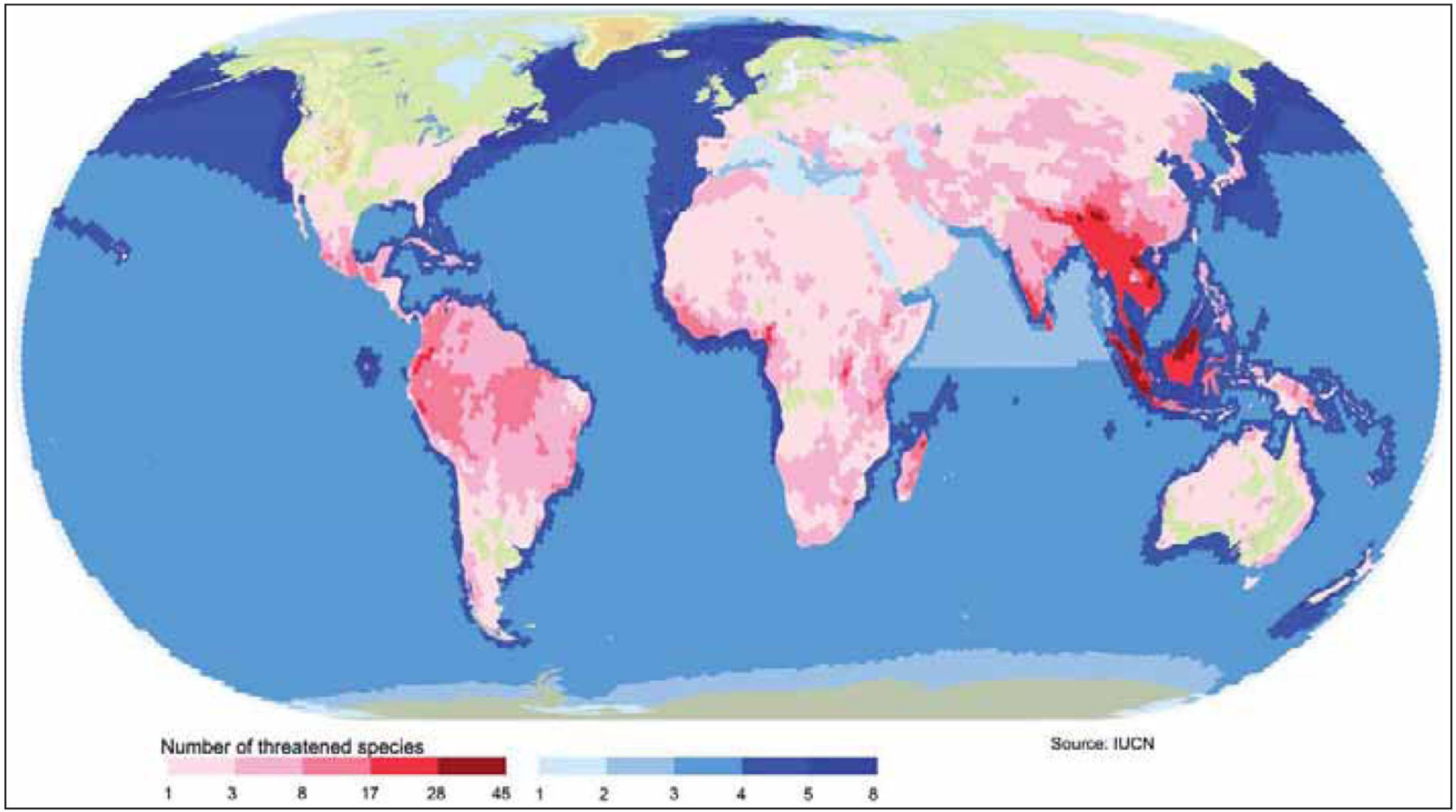
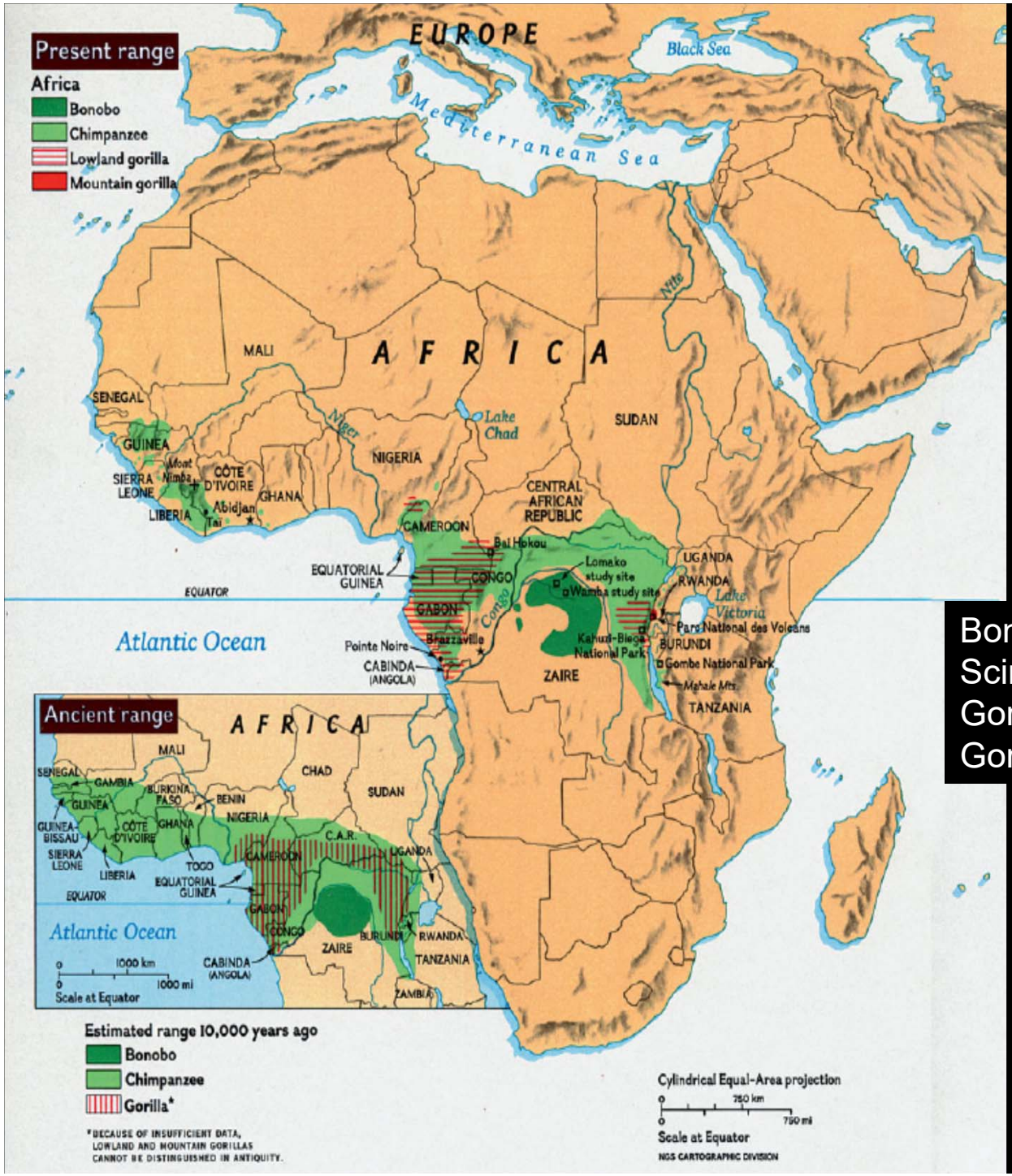


Figure 13. *Global distribution of threatened mammals. Red shades indicate terrestrial species and blue shades marine species.*



The Black-and-White Ruffed Lemur *Varecia variegata* from Madagascar is Critically Endangered because of habitat destruction and over-hunting; it is one of the more expensive and desired meats.



Bonobo *Pan paniscus*
Scimpanzé *Pan troglodytes*
Gorilla di pianura *Gorilla gorilla*
Gorilla di montagna *Gorilla beringei*

Table 8. Top twenty countries with the largest number of mammal species.

Rank	Country	Number of mammals
1	Indonesia	670
2	Brazil	648
3	China	551
4	Mexico	523
5	Peru	467
6	Colombia	442
7	United States	440
8	Congo, The Democratic Republic of the	430
9	India	412
10	Kenya	376
11	Argentina	374
12	Ecuador	372
13	Bolivia	363
	Venezuela	363
15	Tanzania	359
16	Australia	349
17	Malaysia	336
18	Cameroon	335
19	Uganda	319
20	Thailand	311

Table 9. Countries with the most threatened mammal species.

Rank	Country	Number of threatened mammals
1	Indonesia	183
2	Mexico	100
3	India	96
4	Brazil	82
5	China	74
6	Malaysia	70
7	Madagascar	62
8	Australia	57
	Thailand	57
10	Viet Nam	54
11	Peru	53
12	Colombia	52
13	Lao People's Democratic Republic	46
14	Myanmar	45
15	Ecuador	43
16	Papua New Guinea	41
	Cameroon	41
18	Philippines	39
19	Cambodia	37
	United States	37

Table 10. Countries with the highest percentage of threatened (including Extinct) mammals.

Rank	Country	% threatened & Extinct
1	Mauritius	63.6
2	Réunion	42.9
3	Seychelles	38.5
4	Vanuatu	33.3
5	Cuba	30.8
6	Madagascar	28.9
7	Dominican Republic	28.6
	Haiti	28.6
9	Bhutan	28.3
10	Solomon Islands	27.8
	Faroe Islands	27.8
12	Indonesia	27.5
13	New Caledonia	27.3
14	Sri Lanka	25.6
15	Brunei Darussalam	25.4
16	Micronesia, Federated States of	25.0
	Bahrain	25.0
18	Bangladesh	24.3
19	India	23.3
20	Montserrat	23.1

Note: only countries with 10 or more species are included.

Il bisonte americano

Specie che ha subito una forte riduzione di diversità genetica

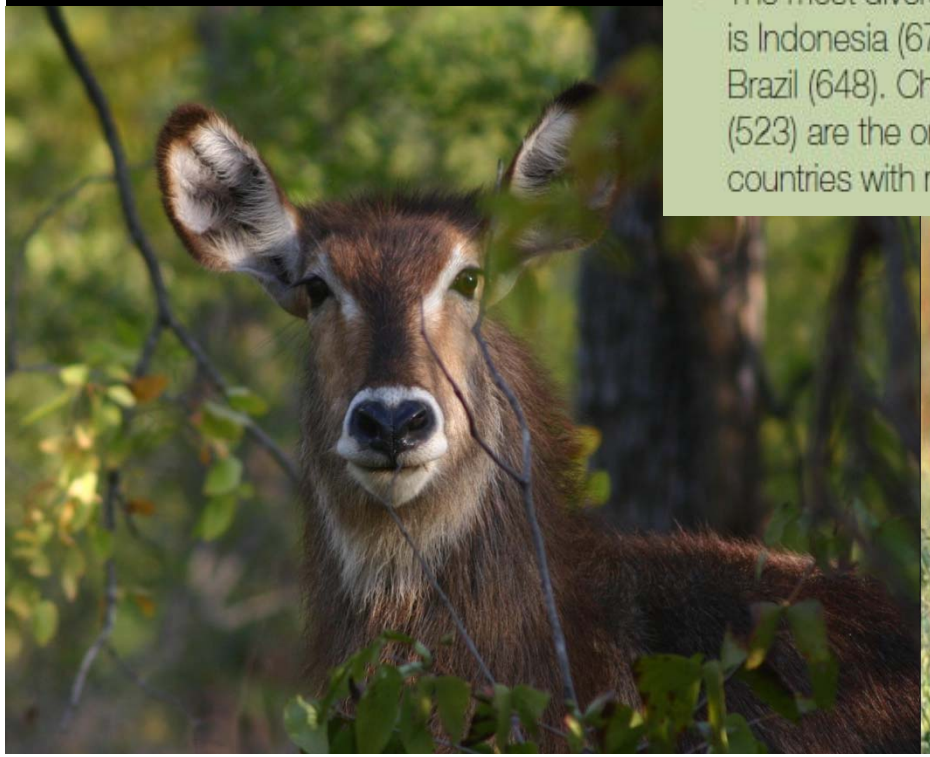
Bison suffered a well documented population decline that between 1840 to 1905. - Population numbers were reduced from millions to a few hundred animals distributed across North America.

The Alpine Ibex Capra ibex is endemic to Europe. It was driven very close to extinction in the early 19th century and is now listed as Least Concern.

Portato quasi sull'orlo dell'estinzione da un sovrasfruttamento venatorio non sempre lecito, nella seconda metà del XIX secolo lo stambecco delle Alpi sopravviveva esclusivamente nel Gran Paradiso con una popolazione inferiore a 100 esemplari.
La consistenza stimata di stambecco delle Alpi ammonta oggi complessivamente a circa 31 mila capi, dei quali 10 mila presenti nelle 60 colonie italiane, distribuite in tutte le regioni alpine.

Female of Waterbuck
Kobus ellipsiprymnus

Lions
Panthera leo



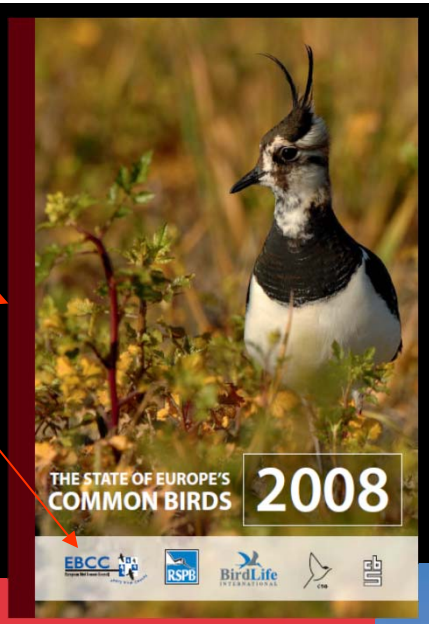
Box 4. Summary of results for mammals

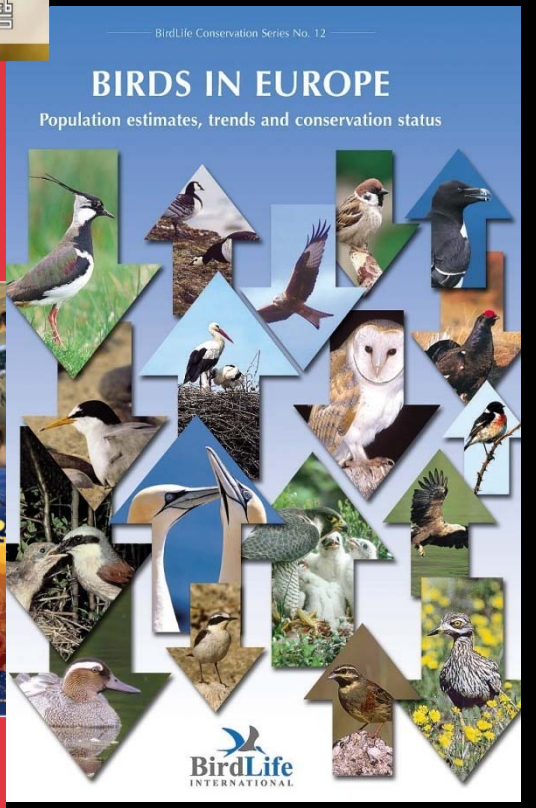
- Nearly one-quarter (22%) of the world's mammal species are known to be globally threatened or Extinct, 63% are known to not be threatened, and 15% have insufficient data to determine their threat status.
- There are 76 mammals which have gone Extinct since 1500, two are Extinct in the Wild and 29 are 'Possibly Extinct'.
- The most diverse country for mammals is Indonesia (670), followed closely by Brazil (648). China (551) and Mexico (523) are the only other two other countries with more than 500 species.
- The country with by far the most threatened species is Indonesia (184). Mexico is the only other country in triple figures with 100 threatened species. Half of the top 20 countries for numbers of threatened species are in Asia; for example, India (96), China (74) and Malaysia (70). However, the highest levels of threat are found in island nations, and in particular the top three are islands or island groups in the Indian Ocean: Mauritius (64 %), Réunion (43 %) and the Seychelles (39%).
- Habitat loss, affecting over 2,000 mammal species, is the greatest threat globally. The second greatest threat is utilization which is affecting almost 1,000 mammal species, especially those in Asia.

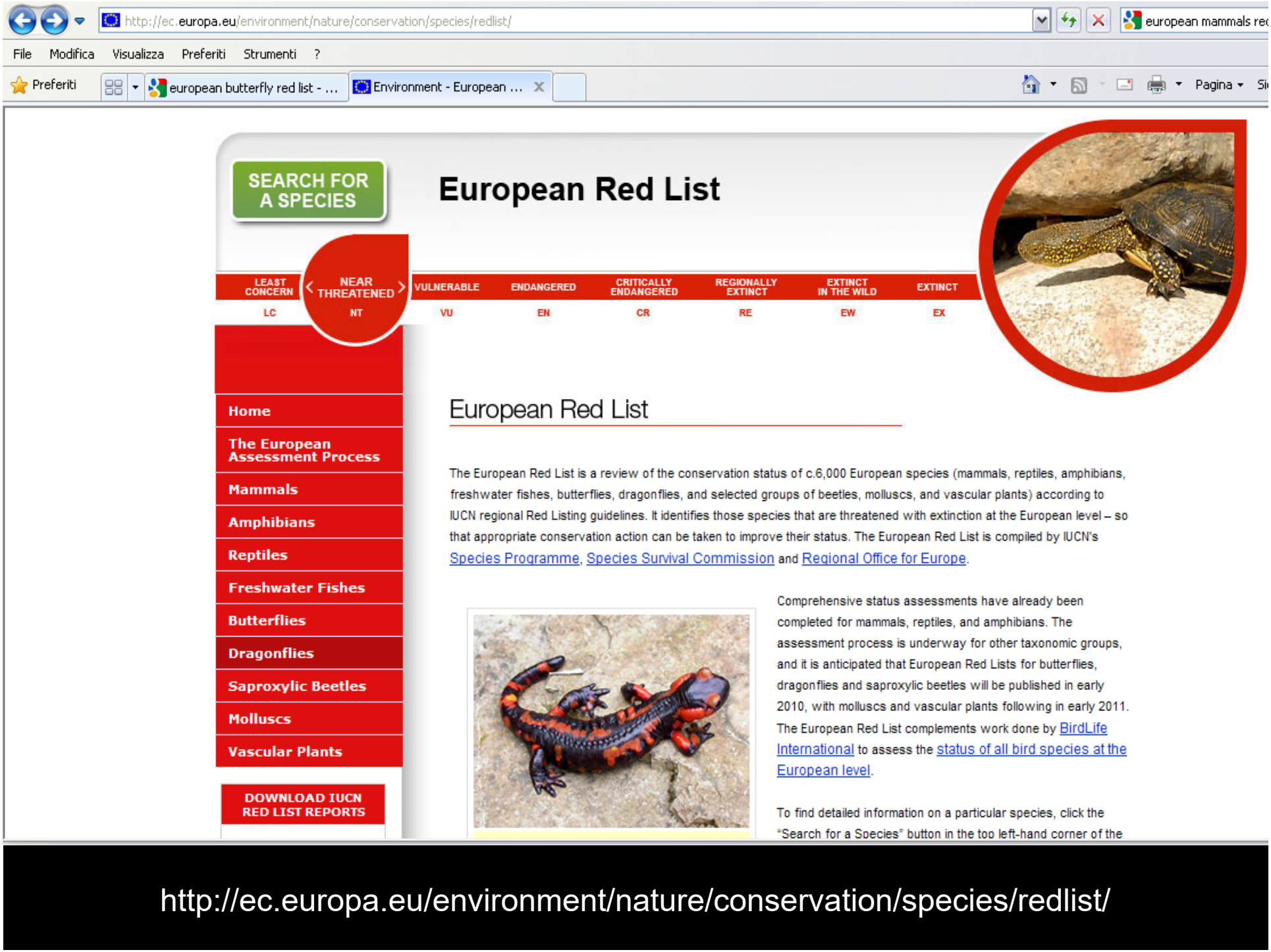
Box 6. Key messages

- Not all species groups are equally threatened, but the proportion of species threatened is substantial in all groups that have been comprehensively assessed so far;
- Habitat loss (resulting in particular from agriculture, logging and residential and commercial development) remains the primary threat to most species, with over-exploitation and the impact of invasive alien species being additional significant threats;
- Assessing the conservation status of the most species-rich and less well-known groups remains a significant challenge, but new approaches are improving our understanding of the status, trends and threats to biodiversity;
- The Red List Index (RLI) shows that all species groups assessed to date are deteriorating in status: more species are slipping towards extinction than are improving in status as a result of successful conservation action;
- The fastest rate of decline of the groups measured so far is seen in the reef-building corals;
- For those groups with longer term data, the declines started to be documented over 20-30 years ago;
- The RLI shows that at a global scale the 2010 Target has not been met for the species groups we know most about: the risk of biodiversity loss is increasing rather than decreasing;
- The RLI shows that species are deteriorating in status in all biogeographic realms and ecosystems across the world;
- For birds, declines have been particularly steep in the Indomalayan and Oceania realms, and in the marine ecosystem;
- Among mammals, declines have also been most steep in the Indomalayan realm, as a result of the combined effects of hunting and habitat loss;
- Amphibians are most threatened, and have deteriorated fastest, in the Neotropical realm, in particular owing to chytridiomycosis; terrestrial amphibians are more threatened than freshwater species;
- Maintaining biodiversity is important to maintain a healthy human population as many thousands of species are used by societies all around the world for food and medicine;
- The bird, mammal and amphibian species used by humans for food and medicine are all showing declining trends in their conservation status similar to or higher than for species that are not used. The loss of these and other food and medicinal species could have a significant impact on human health in some parts of the world;
- Human use of plants and animals is not always the main threat to the species used; habitat loss and degradation or combinations of factors are often the drivers pushing these species towards extinction.

Disponibili
on-line in PDF







http://ec.europa.eu/environment/nature/conservation/species/redlist/

EUROPEAN RED LIST

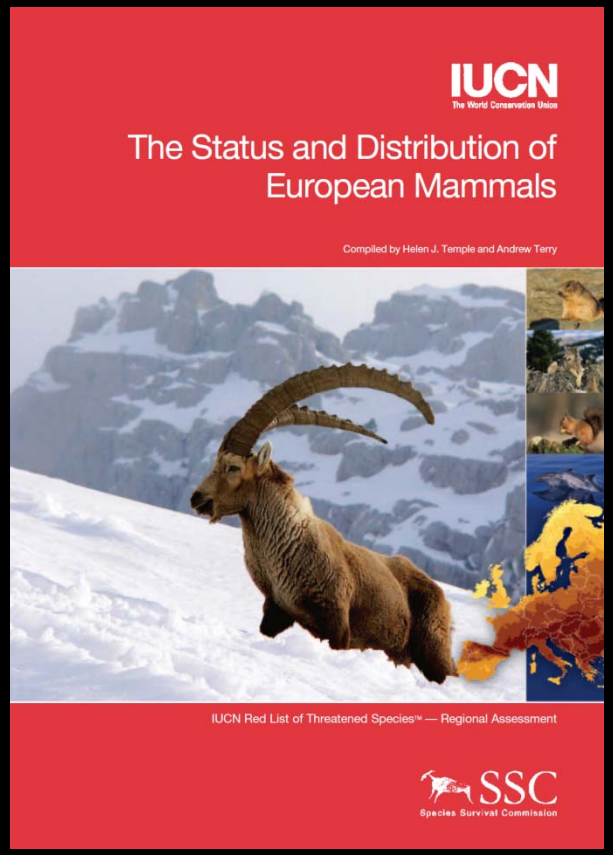
The European Red List is a review of the conservation status of c. 6000 European species of

- Mammals
- Reptiles
- Amphibians
- Freshwater fishes
- Butterflies
- Dragonflies

and selected groups of

- Beetles
- Molluscs
- Vascular plants

according to IUCN regional Red Listing guidelines.



It identifies those species that are threatened with extinction at the regional level – in order that appropriate conservation action can be taken to improve their status.

AMPHIBIANS

Hyla sarda

Amphibians are a class of vertebrates that includes frogs, toads, salamanders, newts and caecilians. All amphibians are coldblooded, and most lay eggs.
The majority of species undergo metamorphosis, moving from a larval stage (usually aquatic) through the development of limbs and lungs to become terrestrial adults.However, a significant minority of the species develop directly from eggs, usually laid on land, without a larval stage. There are also a few viviparous species that give birth to young, without laying eggs. Almost all species are dependent on moist conditions, and many require freshwater habitats in which to breed.
Amphibians are entirely absent from marine environments.

Amphibians are excellent indicators of the quality of the overall environment, as they are very sensitive to perturbations in ecosystems.

AMPHIBIANS

Pelobates fuscus

Among the European amphibians there are two distinctive orders,
Anura (frogs and toads; 50 European species) and
Caudata [Urodela] (newts and salamanders; 35 species).

Two thirds of the 85 amphibian species recorded are endemic to Europe.

Within the past few years alone several new species have been described, or identified as truly distinct species, including *Speleomantes sarrabusensis* (Carranza *et al*., 2008), *Calotriton arnoldi* (Carranza and Amat, 2005), *Pseudepidalea balearica* (Stock *et al*., 2006; Stock *et al*., 2008), *Pseudepidalea sicula* (Stock *et al*., 2008) and *Pelodytes ibericus* (Sanchez-Herraiz *et al*., 2000).

AMPHIBIANS

Table 1. Diversity and endemism in amphibian orders and families in Europe[2]

Class	Order	Family	Europe		EU 27	
			Number of species	Number of endemic species (% endemic)	Number of species	Number of endemic species (% endemic)
Amphibia	Anura	Alytidae	9	8 (88.8%)	9	7 (77.7%)
		Bombinatoridae	3	2 (66.7%)	3	1 (33.3%)
		Bufonidae	7	3 (42.9%)	8	2 (25.0%)
		Hylidae	5	2 (20.0%)	5	2 (20.0%)
		Pelobatidae	3	1 (33.3%)	3	1 (33.3%)
		Pelodytidae	2	2 (100%)	2	2 (100%)
		Ranidae	21	16 (76.2%)	20	9 (45.0%)
	Caudata	Plethodontidae	8	8 (100%)	8	8 (100%)
		Proteidae	1	1 (100%)	1	0 (0%)
		Salamandridae	26	21 (80.8%)	25	14 (56%)
Total			**85**	**64 (75.3%)**	**84**	**46 (54.8%)**

[2] This table includes species that are native or naturalised since before AD 1500; species introduced after this date are not included. Species of marginal occurrence in Europe and/or the EU are included.

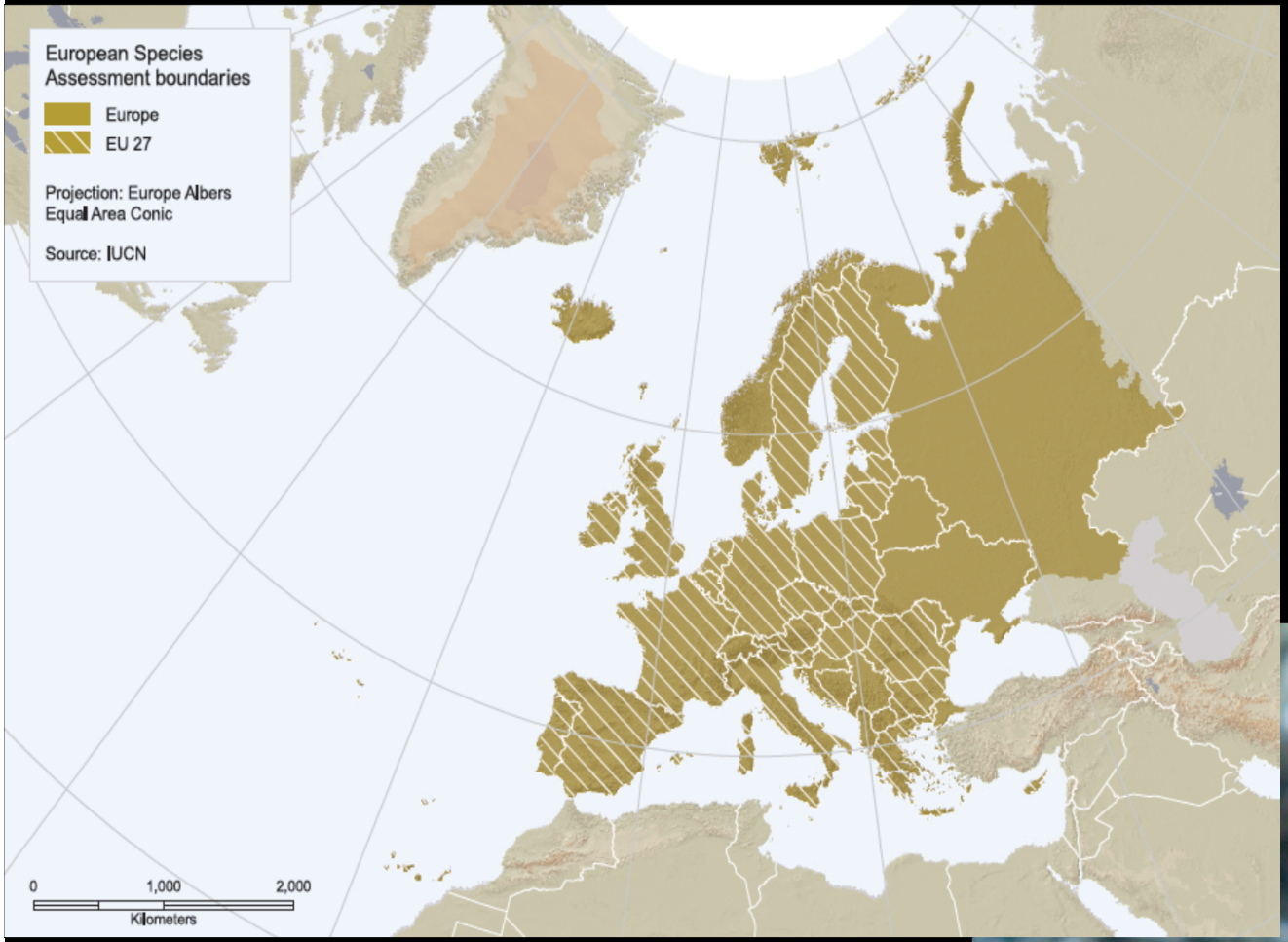
EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

The European regional assessment has four main objectives:

- To contribute to regional conservation planning through provision of a baseline dataset reporting the **status of European amphibians**.
- To identify those geographic **areas and habitats needing to be conserved** to prevent extinctions and to ensure that European amphibians reach and maintain a favourable conservation status.
- To **identify the major threats and to propose mitigating measures** and conservation actions to address them.
- To strengthen the network of experts focused on amphibian conservation in Europe, so that the assessment **information can be kept current**, and expertise can be targeted to address the highest conservation priorities.

Tyrrhenian Painted Frog
Discoglossus sardus
(Least Concern).
[Discoglosso sardo]

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT



EUROPE & EU27

Northern Spectacled Salamander
Salamandrina perspicillata
(Least Concern).

This species is endemic to peninsular Italy, mainly in the Appenine Mountains. It is protected by law in several provinces in Italy, and is listed in Appendix II of the Bern Convention.

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

For every amphibian species native to Europe or naturalised before AD 1500, the following data were compiled.

- Species' taxonomic classification
- Geographic range (including a distribution map)
- Red List Category and Criteria
- Population information
- Habitat preferences
- Major threats
- Conservation measures (in place, and needed)
- Species utilisation
- Other general information
- Key literature references

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Figure 4. Species richness of European amphibians

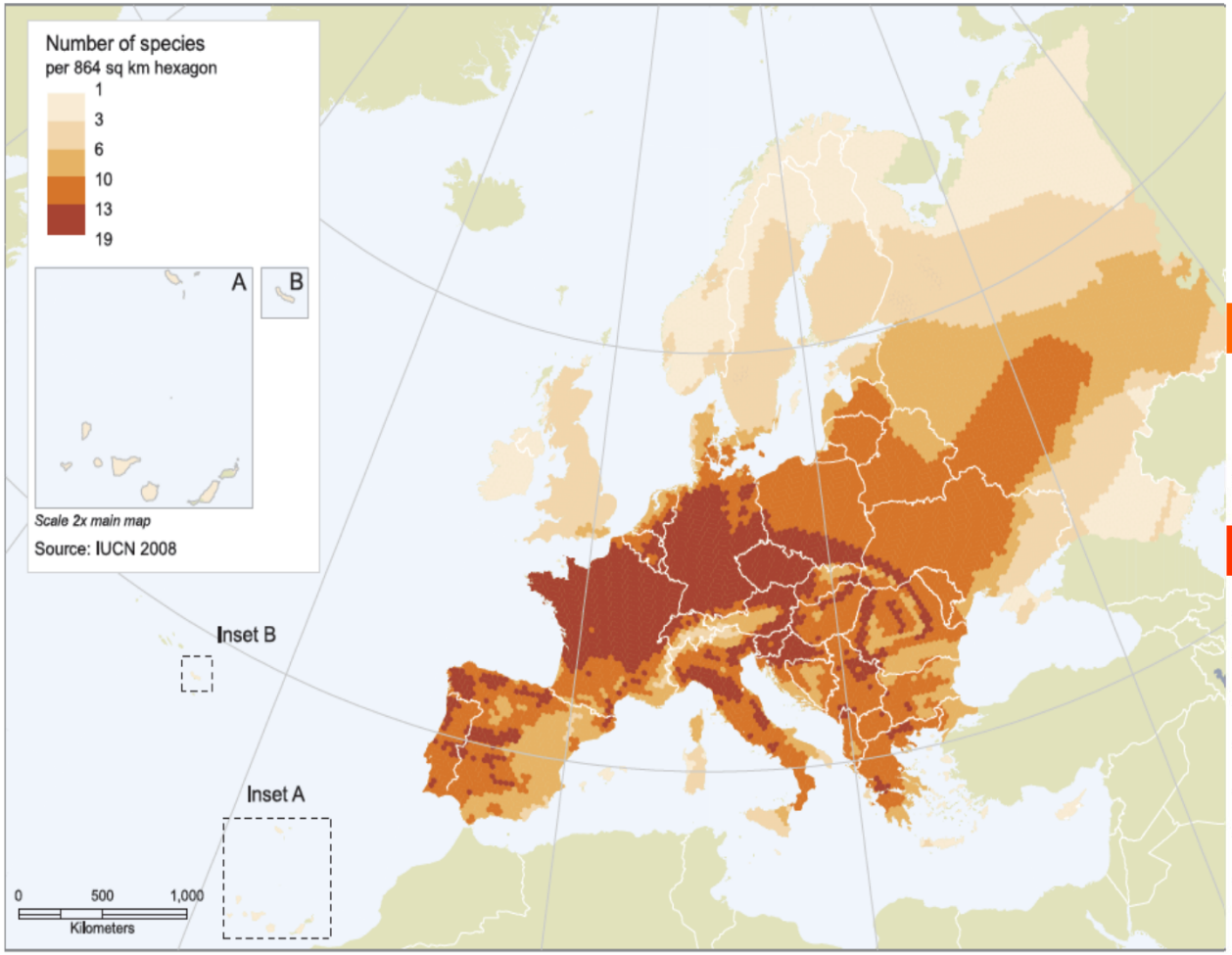
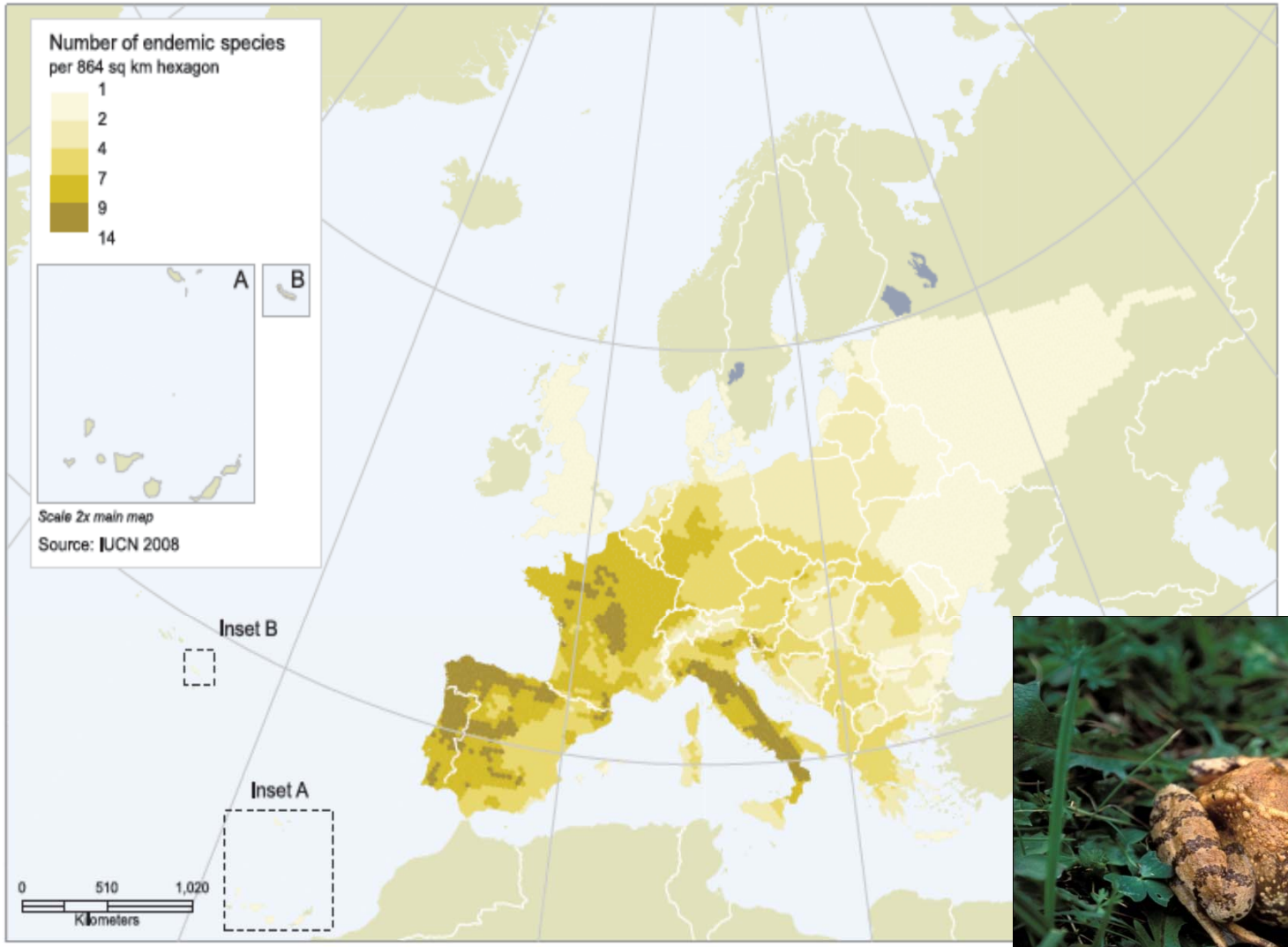


Table 5. Number of amphibian species in the 27 current EU member states (excluding species classed as Not Applicable)

Country	Total number of species
Austria	20
Belgium	17
Bulgaria	17
Cyprus	3
Czech Republic	21
Denmark	15
Estonia	10
Finland	4
France	38
Germany	23
Greece	22
Hungary	18
Ireland	3
Italy	42
Latvia	12
Lithuania	11
Luxembourg	14
Malta	2
Netherlands	17
Poland	17
Portugal	20
Romania	19
Slovakia	19
Slovenia	21
Spain	34
Sweden	13
United Kingdom	17

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Figure 6. Distribution of endemic amphibians in Europe



Rana latastei Rana di Lataste

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

At the European level 22.9% were considered threatened, of which
2.4% Critically Endangered,
7.2% Endangered, and
13.3% Vulnerable.

A similar pattern was seen in the EU 27 (22.0% threatened, of which
2.4% CR, 6.1% EN and 13.4%VU)

Euproctus platycephalus is highly endangered. There are only a few populations known. It may even be the rarest and most threatened salamander of Europe. Endemic of Sardinia.

There are three probable causes for the decline of *E. platycephalus*:
(1) Treatment of water bodies with DDT in the 1950's in the battle against malaria;
(2) The introduction of trout, that may be a threat to the salamanders themselves or compete with the salamanders for food;
(3) The reduction of water levels due to increasing anthropomorphic pressures. This is a direct result of the increasing demand for water due to increasing tourism and agriculture

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

RED LISTS

Figure 2. Red List status of amphibians in Europe

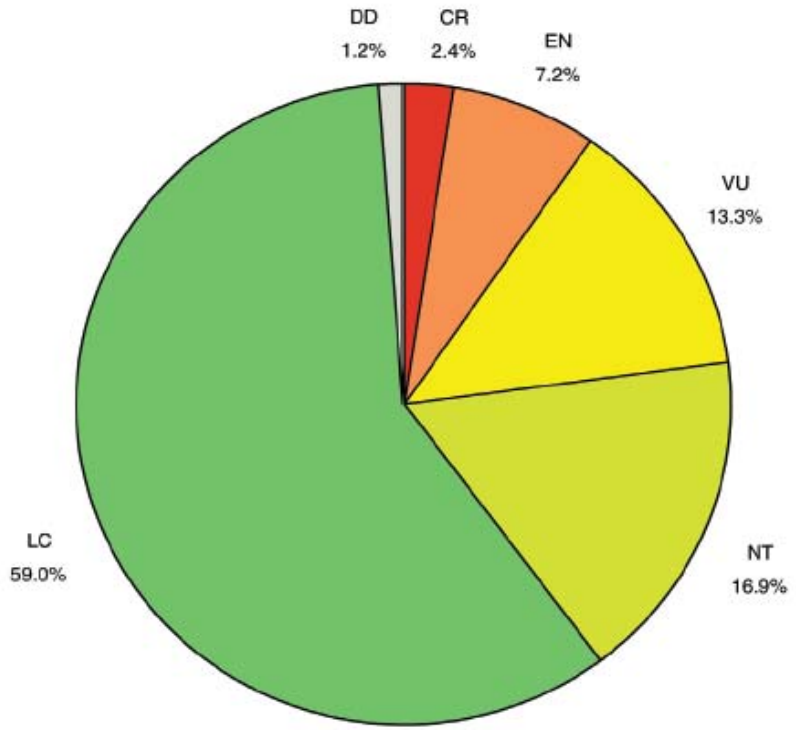
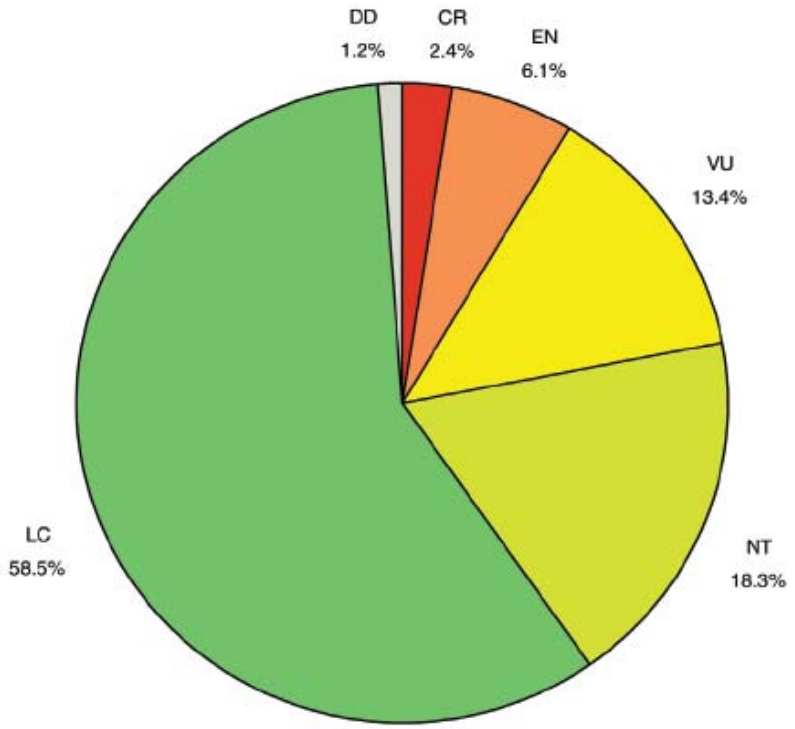


Figure 3. Red List status of amphibians in the EU 27



EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Table 2. Summary of numbers of amphibian species within each category of threat

	IUCN Red List categories	No. species Europe (no. endemic species)	No. species EU 27 (no. endemic species)
	Extinct (EX)	0	0
	Extinct in the Wild (EW)	0	0
	Regionally Extinct (RE)	0	0
Threatened categories	Critically Endangered (CR)	2 (2)	2 (2)
	Endangered (EN)	6 (6)	5 (5)
	Vulnerable (VU)	11 (11)	11 (8)
	Near Threatened (NT)	14 (13)	15 (12)
	Least Concern (LC)	49 (32)	48 (19)
	Data Deficient (DD)	1 (0)	1 (0)
	Total number of species assessed*	83 (64)	82 (46)

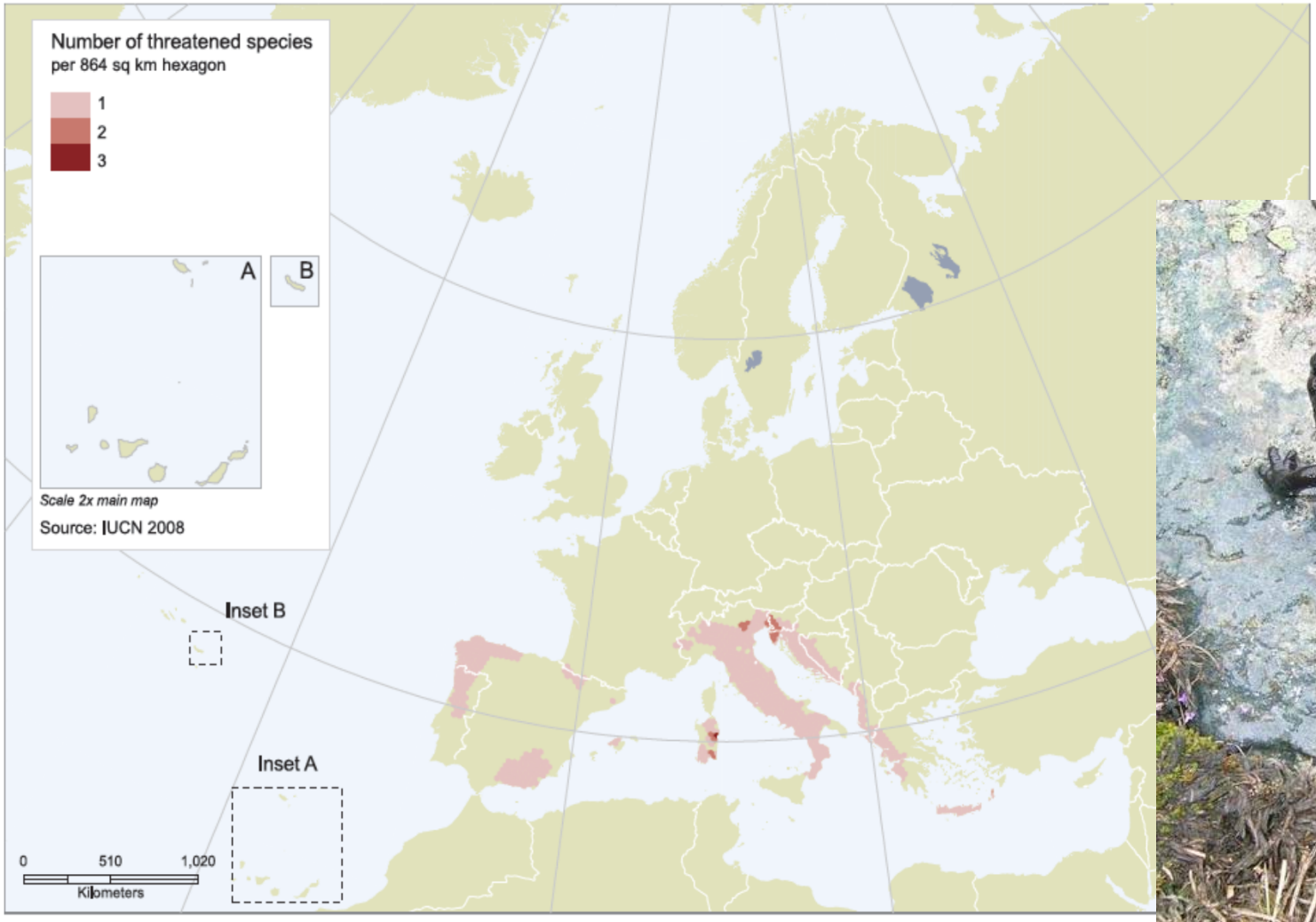
EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Family	Genus	Species	Common Name	Red List status	
				Europe	EU 27
RANIDAE	*Pelophylax*	*cerigensis*	Karpathos Frog	CR	CR
SALAMANDRIDAE	*Calotriton*	*arnoldi*	Montseny Brook Newt	CR	CR
BOMBINATORIDAE	*Bombina*	*pachypus*	Appenine Yellow-bellied Toad	EN	EN
PLETHODONTIDAE	*Speleomantes*	*supramontis*	Supramonte Cave Salamander	EN	EN
RANIDAE	*Pelophylax*	*cretensis*	Cretan Frog	EN	EN
RANIDAE	*Pelophylax*	*shqipericus*	Albanian Water Frog	EN	NE
RANIDAE	*Rana*	*pyrenaica*	Pyrenean Frog	EN	EN
SALAMANDRIDAE	*Euproctus*	*platycephalus*	Sardinian Brook Salamander	EN	EN
ALYTIDAE	*Alytes*	*dickhilleni*	Betic Midwife Toad	VU	VU
ALYTIDAE	*Alytes*	*muletensis*	Mallorcan Midwife Toad	VU	VU
PLETHODONTIDAE	*Atylodes*	*genei*	Sardinian Cave Salamander	VU	VU
PLETHODONTIDAE	*Speleomantes*	*flavus*	Monte Albo Cave Salamander	VU	VU
PLETHODONTIDAE	*Speleomantes*	*sarrabusensis*	Sette Fratelli Cave Salamander	VU	VU
PROTEIDAE	*Proteus*	*anguinus*	Olm	VU	VU
RANIDAE	*Pelophylax*	*epeiroticus*	Epirus Water Frog	VU	VU
RANIDAE	*Rana*	*latastei*	Italian Agile Frog	VU	VU
SALAMANDRIDAE	*Chioglossa*	*lusitanica*	Golden-striped Salamander	VU	VU
SALAMANDRIDAE	*Lyciasalamandra*	*helverseni*	Lycian Salamander	VU	VU
SALAMANDRIDAE	*Salamandra*	*lanzai*	Lanza's Alpine Salamander	VU	VU

[1] Species listed as NE (Not Evaluated) in the EU 27 do not occur in the region.

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Figure 5. Distribution of threatened amphibians in Europe



Salamandra lanzai

The greatest concentration of threatened amphibian species is found in the Iberian peninsula, the Italian peninsula, the Balkan coast, and several Mediterranean islands.

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

THREATS

For amphibians, habitat loss is the most significant threat, affecting 17 out of 19 threatened species and 76 species in total.

Pollution (which here also includes global climate change caused by greenhouse gas emissions) is the second most important threat, impacting on 62 species.

In third place, invasive alien species threaten nearly half of Europe's amphibian species. These invasive species include predators such as introduced salmonid fishes and pathogens such as the fungal disease chytridiomycosis, which has been implicated in amphibian population collapses and extinctions in many parts of the world. Non-native species of amphibians have been introduced in some areas, which may compete or hybridise with native populations and act as vectors of disease.

Common Toad *Bufo bufo* (Least Concern). This species is widespread in Europe; it is an adaptable species present in coniferous, mixed and deciduous forests, groves, bushlands, meadows, arid areas, parks and gardens.

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

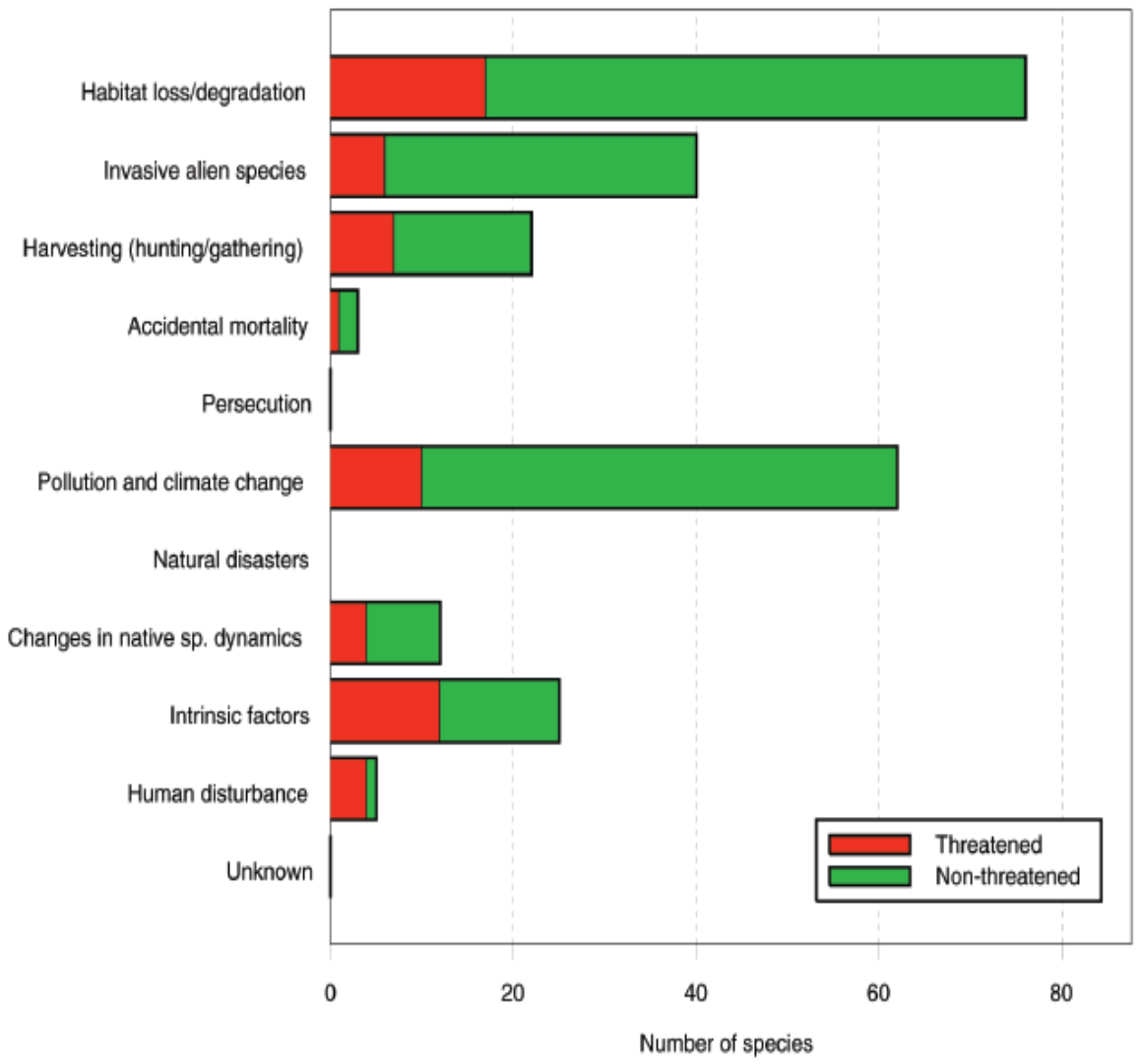
THREATS

Common Fire Salamander *Salamandra salamandra* (Least Concern). This species is present across much of central, eastern and southern Europe. It is associated with wet cool deciduous, mixed, or rarely, coniferous forests with well shaded brooks and small rivers. Although a number of large, stable populations of this salamander exist in Central Europe, some severe declines have been reported in western parts of its range (e.g. Spain, the Netherlands).

The principal threats to this species are habitat destruction and fragmentation, pollution of breeding sites by agrochemicals, and predation by invasive salmonid fishes and American Crayfish *Procambarus clarkii*.

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Figure 7. Major threats to amphibians in Europe



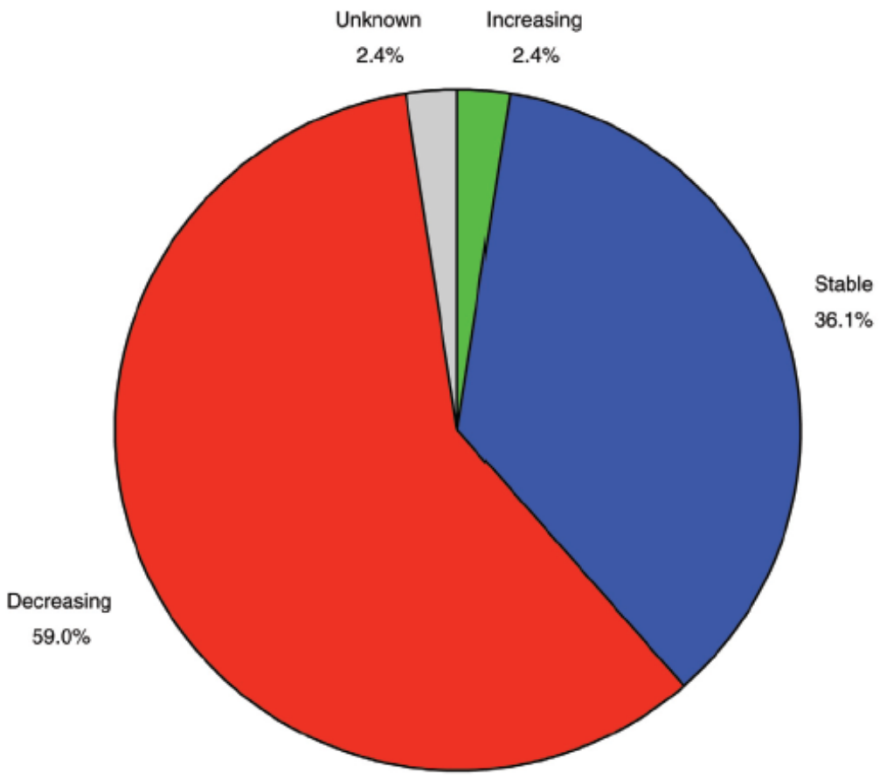
THREATS

Appenine Yellow-bellied Toad *Bombina pachypus* (Endangered). This species is endemic to Italy, where it occurs south of the Po Valley, through the Appenine region, south to the southern tip of the Italian mainland.

It is listed as Endangered on the basis of rapid recent population declines, suspected to have been caused by the introduced fungal disease chytridiomycosis.

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Figure 8. Population trends of European amphibians



The two species with increasing population trend are *Alytes muletensis* and *Pelophylax ridibundus*. The former is a threatened species that has increased in number as a result of intensive conservation efforts, while the latter is a European native that is highly invasive in some areas.

TRENDS

The Supramonte Cave Salamander *Speleomantes supramontis* (Endangered) is only found in a small area in central-eastern Sardinia (Italy), where it is threatened by habitat loss and illegal collection. It is listed on Appendix II of the Bern Convention, and it is also listed on Annexes II and IV of the Habitats Directive. Further research into the threats leading to the recent apparent declines in this species is needed.

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Rana latastei

Table 6. The threatened amphibian taxa identified by the assessment and their presence on either Annexes II and IV of the Habitats Directive or Appendices II or III of the Bern Convention. All amphibians not listed on Appendix II of the Bern Convention are automatically listed on Appendix III. An asterisk (*) indicates that the species is a priority species for the Habitats Directive

Genus	Species	Red List status		Habitats Directive Annexes	Bern Convention Appendices
		Europe	EU 27		
Pelophylax	*cerigensis*	CR	CR		
Calotriton	*arnoldi*	CR	CR	IV[1]	II[1]
Bombina	*pachypus*	EN	EN	II/IV[2]	II[2]
Speleomantes	*supramontis*	EN	EN	II/IV	II
Pelophylax	*cretensis*	EN	EN		
Pelophylax	*shqipericus*	EN	NE	n/a	
Rana	*pyrenaica*	EN	EN		
Euproctus	*platycephalus*	EN	EN	IV	II
Alytes	*dickhilleni*	VU	VU	IV[3]	II[3]
Alytes	*muletensis*	VU	VU	II*/IV	II
Atylodes	*genei*	VU	VU	II/IV[4]	II[4]
Speleomantes	*flavus*	VU	VU	II/IV	II
Speleomantes	*sarrabusensis*	VU	VU	II/IV[5]	II[5]
Proteus	*anguinus*	VU	VU	II*/IV	II
Pelophylax	*epeiroticus*	VU	VU		
Rana	*latastei*	VU	VU	II/IV	II
Chioglossa	*lusitanica*	VU	VU	II/IV	II
Lyciasalamandra	*helverseni*	VU	VU	II/IV[6]	
Salamandra	*lanzai*	VU	VU	IV[7]	II[7]

1 As part of *Euproctus asper*.
2 As part of *Bombina variegata*.
3 As part of *Alytes obstetricans*.
4 As *Hydromantes (Speleomantes) genei*.
5 As part of *Hydromantes (Speleomantes) imperialis*.
6 As part of *Mertensiella luschani (Salamandra luschani)*.
7 As part of *Salamandra atra*.

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Box 1. Selected provisions of the EU Habitats Directive (92/43/EEC)

Article 1(i) defines the conservation status of a species as "the sum of the influences acting on the species concerned that may affect the long-term distribution and abundance of its populations in the European territory of the Member States". It states that a species' conservation status will be taken as Favourable when:

- Population dynamics data on the species concerned suggests that it is maintaining itself on a long-term basis as a viable component of its natural habitats; and
- The natural range of the species is neither being reduced nor is likely to be reduced for the considerable future; and
- There is, and probably will continue to be, a sufficiently large habitat to maintain its populations on a long-term basis.

Rospo smeraldino *Pseudepidalea viridis* ♀

EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Across Europe there are significant geographic, geopolitical and taxonomic biases in the quality of data available on the distribution and status of species.

Few European countries have any kind of organised and systematic monitoring for amphibian species, even though monitoring of amphibian species of European interest is now a statutory responsibility under EU legislation. National amphibian population monitoring schemes have been initiated in some EU Member States, for example in the Netherlands (since 1964) and the United Kingdom, but in a number of countries of the EU even basic data on species distribution and population status are limited.

Sardinian Tree Frog *Hyla sarda* (Least Concern).

Alytes dickhilleni

VU

Taxonomic Authority: Arntzen and García-París, 1995

☐ Global Assessment ☑ Regional Assessment Region: Europe ☑ Endemic to region

No synonyms available

Common names

Betic Midwife Toad	English
Sapo Partero Bético	Spanish; Castilian

Upper Level Taxonomy

Kingdom: ANIMALIA Phylum: CHORDATA

Class: AMPHIBIA Order: ANURA

Family: ALYTIDAE

Lower Level Taxonomy

Rank: Infra- rank name: ☐ Plant Hybrid

Subpopulation: Authority:

General Information

Distribution

This species is restricted to the mountains of south-eastern Spain. It occurs at altitudes of 700-2,140m asl (Sierra Nevada, Almería).

Range Size

Area of Occupancy:

Extent of Occurrence:

Map Status: done

Elevation

Upper limit: 2140

Lower limit: 700

Depth

Upper limit:

Lower limit:

Depth Zones

☐ Shallow photic ☐ Bathyl ☐ Hadal

☐ Photic ☐ Abyssal

Biogeographic Realm

☐ Afrotropical
☐ Antarctic
☐ Australasian
☐ Neotropical
☐ Oceanian
☑ Palearctic
☐ Indomalayan
☐ Nearctic

Population

Populations of this species are very fragmented, many of them confined to isolated mountains and valleys. It is relatively common in the Alcaraz, Segura, and Cazorla mountains, but it is rare in drier mountains (Filabres, Baza, Gádor), where it is associated with springs. Populations in drier areas can consist of only a few adults.

Total Population Size

Minimum Population Size: Maximum Population Size:

Habitat and Ecology

The species is present in pine and oak forests, most often on calciferous substrate, in open, very rocky landscapes. Adults occur in rock fissures and on stones next to water sources. Reproduction and larval development takes place in permanent mountain streams, man-made reservoirs and cattle troughs, and the larvae may take a long time to mature. Almost all known breeding habitats are human-modified water bodies.

System

☑ Terrestrial ☑ Freshwater ☐ Marine

Movement pattern

☐ Nomadic ☐ Congregatory/Dispersive ☐ Migratory ☐ Altitudinally migrant

Crop Wild Relative

☐ Is the species a wild relative of a crop?

The species is threatened by loss of suitable breeding habitat as a result of excessive water withdrawal, droughts, and modernization of agricultural practices leading to the abandonment of cattle troughs and other man-made water sources. A potential future threat is the fungal disease chytridiomycosis, which has already impacted the related Alytes obstetricans in Spain.

	Past	Present	Future
1 Habitat Loss/Degradation (human induced)	☑	☑	☑
1.1 Agriculture	☑	☑	☑
1.1.1 Crops	☑	☑	☑
1.1.1.3 Agro-industry farming	☑	☑	☑
1.1.5 Abandonment	☑	☑	☑
1.3 Extraction	☑	☑	☑
1.3.6 Groundwater extraction	☑	☑	☑
1.3.8 Unknown	☑	☑	☑
8 Changes in native species dynamics	☐	☐	☑
8.5 Pathogens/parasites	☐	☐	☑
9 Intrinsic factors	☑	☑	☑
9.7 Slow growth rates	☑	☑	☑
9.9 Restricted range	☑	☑	☑

Conservation Measures

This species is listed on Appendix II of the Bern Convention (as part of obstetricans). It is listed in regional Red Data Books and is present in the protected areas of Parque Nacional Sierra Morena, Parque Nacional de Sierra Nevada, and the Natural Park of Cazorla, Segura y las Villas. Protection measures in Castilla-La Mancha, Andalusia, such as restoration and construction of new breeding habitats, are under way.

	In Place	Needed
1 Policy-based actions	☑	☐
1.2 Legislation	☑	☐
1.2.1 Development	☑	☐
1.2.1.1 International level	☑	☐
1.2.1.2 National level	☑	☐
1.2.2 Implementation	☑	☐
1.2.2.1 International level	☑	☐
1.2.2.2 National level	☑	☐
2 Communication and Education	☑	☑
2.2 Awareness	☑	☑
3 Research actions	☐	☑
3.2 Population numbers and range	☐	☑
3.3 Biology and Ecology	☐	☑
3.4 Habitat status	☐	☑
3.5 Threats	☐	☑
3.8 Conservation measures	☐	☑
3.9 Trends/Monitoring	☐	☑
4 Habitat and site-based actions	☑	☑
4.1 Maintenance/Conservation	☐	☑
4.4 Protected areas	☑	☑
4.4.1 Identification of new protected areas	☐	☑
4.4.2 Establishment	☑	☑
4.4.3 Management	☐	☑

Countries of Occurrence

	PRESENCE							ORIGIN				
	Year Round	Breeding Season only	Non-breeding season only	Passage migrant	Possibly extinct	Extinct	Presence uncertain	Native	Introduced	Re-Introduced	Vagrant	Origin uncertain
Spain	☑	☐	☐	☐	☐	☐	☐	☑	☐	☐	☐	☐

General Habitats	Score	Description	Major Importance
1 Forest	1	Suitable	Unset
1.4 Forest - Temperate	1	Suitable	Unset
5 Wetlands (inland)	2	Marginal	Not applicable
5.7 Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	2	Marginal	Not applicable
5.8 Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	2	Marginal	Not applicable
14 Artificial/Terrestrial	2	Marginal	Not applicable
14.2 Artificial/Terrestrial - Pastureland	2	Marginal	Not applicable
15 Artificial/Aquatic & Marine	1	Suitable	Unset
15.2 Artificial/Aquatic - Ponds (below 8ha)	1	Suitable	Unset
15.3 Artificial/Aquatic - Aquaculture Ponds	1	Suitable	Unset

Species Utilisation

☑ Species is not utilised at all

Trend in the level of wild offtake/harvest in relation to total wild population numbers over the last five years:

Trend in the amount of offtake/harvest produced through domestication/cultivation over the last five years:

CITES status: Not listed

IUCN Red Listing

Red List Assessment: (using 2001 IUCN system) Vulnerable (VU)

Red List Criteria: B2ab(iii,iv)

Date Last Seen (only for EX, EW or Possibly EX species):

Is the species Possibly Extinct? ☐ Possibly Extinct Candidate? ☐

Rationale for the Red List Assessment

Listed as Vulnerable, because its Area of Occupancy is less than 2,000 km2, its distribution is severely fragmented, and there is a continuing decline in the extent and quality of its habitat and in the number of subpopulations.

Reason(s) for Change in Red List Category from the Previous Assessment:

- ☐ Genuine Change
  - ☐ Genuine (recent)
  - ☐ Genuine (since first assessment)
- ☐ Nongenuine Change
  - ☐ New information
  - ☐ Knowledge of Criteria
  - ☐ Incorrect data used previously
    - ☐ Taxonomy
    - ☐ Criteria Revisio
    - ☐ Other
- ☑ No Change
  - ☑ Same category and criteria
  - ☐ Same category but change in criteria

Current Population Trend: Decreasing

Date of Assessment: 14/12/2008

Name(s) of the Assessor(s): Jaime Bosch, Miguel Tejedo, Miguel Lizana, Iñigo Martínez-Solano, Alfredo Salvador, Mario García

Evaluator(s): Neil Cox and Helen Temple

Notes:

% population decline in the past:

Time period over which the past decline has been measured for applying Criterion A or C1 (in years or generations):

% population decline in the future:

Time period over which the future decline has been measured for applying Criterion A or C1 (in years or generations):

Number of Locations: Severely Fragmented: ☐

Number of Mature Individuals:

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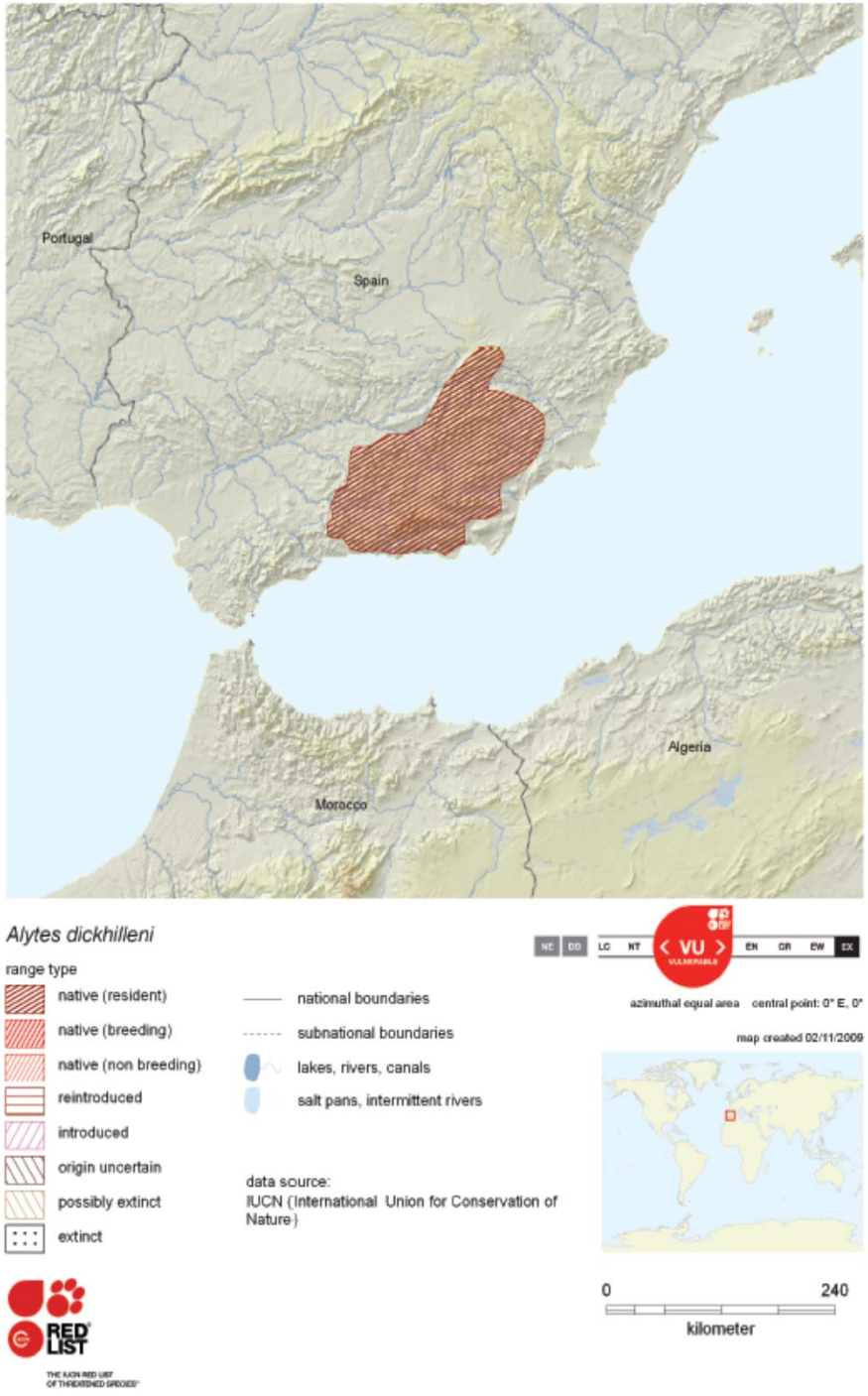
EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

Alytes dickhilleni



EUROPEAN AMPHIBIAN REGIONAL ASSESSMENT

■ **Threatened amphibians in Europe require urgent action to improve their status.** While many species already receive some conservation attention, others do not. Priorities identified in this study include addressing threats such as destruction and degradation of freshwater habitats.

Mallorcan Midwife Toad *Alytes muletensis*

■ **Species can be, and some already have been, saved from extinction.** Species like the Mallorcan Midwife Toad *Alytes muletensis* would almost certainly now be extinct were it not for intensive ongoing conservation efforts. However, recovery often remains precarious in the face of emerging threats such as invasive alien species, disease, and climate change.

■ **Sustained investment in species-, site- and landscapelevel conservation is needed from all European countries** to ensure that European species are secure in the long term. This needs to be combined with the political will to truly integrate biodiversity conservation into all policy sectors.