

Table 1: Numbers of threatened species by major groups of organisms (1996–2012)

Changes in number of threatened species from year to year **should not** be directly interpreted as trends in the status of biodiversity. The figures displayed below reflect increased assessment efforts by IUCN and its Partners over time, rather than genuine changes in numbers of threatened species. For a clearer view of genuine trends in the status of biodiversity please refer to the IUCN Red List Index (see the section [Trends in the status of biodiversity](http://www.iucnredlist.org/about/summary-statistics#TrendsInBiodiversityStatus) on the IUCN Red List web site: <http://www.iucnredlist.org/about/summary-statistics#TrendsInBiodiversityStatus>).

	Estimated Number of described species ¹	Number of species evaluated by 2012 (IUCN Red List version 2012.1)	Number of threatened species ² in 1996/98	Number of threatened species ² in 2000	Number of threatened species ² in 2002	Number of threatened species ² in 2003	Number of threatened species ² in 2004	Number of threatened species ² in 2006	Number of threatened species ² in 2007	Number of threatened species ² in 2008	Number of threatened species ² in 2009 (IUCN Red List version 2009.2)	Number of threatened species ² in 2010 (IUCN Red List version 2010.4)	Number of threatened species ² in 2011 (IUCN Red List version 2011.2)	Number of threatened species ² in 2012 (IUCN Red List version 2012.1)	Species evaluated in 2012, as % of species described ^{2,3}	Lower estimate of % threatened species in 2012 (number threatened as % of extant evaluated species) ^{2,3,4}	Best estimate of % threatened species in 2012 (number threatened as % of extant data sufficient evaluated species) ^{2,3,4}	Upper estimate of % threatened species in 2012 (number threatened + DD as % of extant evaluated species) ^{2,3,4}
VERTEBRATES																		
Mammals ⁵	5,501	5,501	1,096	1,130	1,137	1,130	1,101	1,093	1,094	1,141	1,142	1,131	1,138	1,140	100%	21%	25%	36%
Birds	10,064	10,064	1,107	1,183	1,192	1,194	1,213	1,206	1,217	1,222	1,223	1,240	1,253	1,313	100%	13.22%	13.30%	14%
Reptiles	9,547	3,663	253	296	293	293	304	341	422	423	469	594	772	802	38%	Insufficient coverage		
Amphibians	6,771	6,370	124	146	157	157	1,770	1,811	1,808	1,905	1,895	1,898	1,917	1,931	94%	30%	41%	56%
Fishes	32,400	10,359	734	752	742	750	800	1,171	1,201	1,275	1,414	1,851	2,028	2,041	32%	Insufficient coverage		
Subtotal	64,283	35,957	3,314	3,507	3,521	3,524	5,188	5,622	5,742	5,966	6,143	6,714	7,108	7,227	56%			
INVERTEBRATES																		
Insects	1,000,000	3,897	537	555	557	553	559	623	623	626	711	733	741	776	0.4%	Insufficient coverage		
Molluscs	85,000	6,028	920	938	939	967	974	975	978	978	1,036	1,288	1,673	1,729	7%	Insufficient coverage		
Crustaceans	47,000	2,399	407	408	409	409	429	459	460	606	606	596	596	596	5%	Insufficient coverage		
Corals	2,175	856	1	1	1	1	1	1	4	235	235	235	235	235	39%	Insufficient coverage		
Arachnids	102,248	33	11	11	11	11	11	11	11	18	18	19	19	19	0.03%	Insufficient coverage		
Velvet Worms	165	11	6	6	6	9	9	9	9	9	9	9	9	9	7%	Insufficient coverage		
Horseshoe Crabs	4	4	0	0	0	0	0	0	0	0	0	0	0	0	100%	0%	0%	75%
Others	68,658	52	9	9	9	9	9	24	24	24	24	24	24	24	0.08%	Insufficient coverage		
Subtotal	1,305,250	13,280	1,891	1,928	1,932	1,959	1,992	2,102	2,109	2,496	2,639	2,904	3,297	3,388	1%			
PLANTS⁶																		
Mosses ⁷	16,236	102	---	80	80	80	80	80	80	82	82	80	80	76	0.6%	Insufficient coverage		
Ferns and Allies ⁸	12,000	311	---	---	---	111	140	139	139	139	139	148	163	167	3%	Insufficient coverage		
Gymnosperms	1,052	1,014	142	141	142	304	305	306	321	323	322	371	377	375	96%	39%	41%	42%
Flowering Plants	268,000	13,084	5,186	5,390	5,492	6,279	7,796	7,865	7,899	7,904	7,948	8,116	8,527	8,566	5%	Insufficient coverage		
Green Algae ⁹	4,242	13	---	---	---	---	---	---	0	0	0	0	0	0	0.3%	Insufficient coverage		
Red Algae ⁹	6,144	58	---	---	---	---	---	---	9	9	9	9	9	9	0.9%	Insufficient coverage		
Subtotal	307,674	14,582	5,328	5,611	5,714	6,774	8,321	8,390	8,448	8,457	8,500	8,724	9,156	9,193	5%			
FUNGI & PROTISTS																		
Lichens	17,000	2	---	---	---	2	2	2	2	2	2	2	2	2	0.01%	Insufficient coverage		
Mushrooms	31,496	1	---	---	---	---	---	1	1	1	1	1	1	1	0.003%	Insufficient coverage		
Brown Algae ⁹	3,127	15	---	---	---	---	---	---	6	6	6	6	6	6	0.5%	Insufficient coverage		
Subtotal	51,623	18	---	---	---	2	2	3	9	9	9	9	9	9	0.03%			
TOTAL	1,728,830	63,837	10,533	11,046	11,167	12,259	15,503	16,117	16,308	16,928	17,291	18,351	19,570	19,817	4%			

NOTES (for rows and columns as indicated by the superscripted numbers):

- The sources used for the numbers of described species in each taxonomic group are listed below.
- Threatened species are those listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU).
- Where <90% of species within a group have been evaluated, figures for % threatened species are not provided because there is insufficient coverage for these groups. It is only possible to provide reliable figures for % threatened species for those groups that are completely or almost completely evaluated (e.g., mammals, birds, amphibians and gymnosperms).
- The percentage of threatened species can be calculated for those groups that are completely or almost completely evaluated (>90% of species evaluated), but the actual number of threatened species is often uncertain because it is not known whether Data Deficient (DD) species are actually threatened or not. Therefore, a range of percentages is provided: **lower estimate** = % threatened extant species (if all DD species are not threatened); **best estimate** = % threatened extant species (if DD species are equally threatened as data sufficient species); **upper estimate** = % threatened extant species (if all DD species are threatened). If a single figure is required for reporting purposes, the best estimate figure should be used.
- The number of described and evaluated mammals excludes domesticated species like sheep (*Ovis aries*), goats (*Capra hircus*), Dromedary (*Camelus dromedarius*), etc.
- The plant numbers **DO NOT** include species from the 1997 IUCN Red List of Threatened Plants (Walter and Gillett 1998) as those were all assessed using the pre-1994 IUCN system of threat categorization. Hence the numbers of threatened plants are very much lower when compared to the 1997 results. The results from this Red List and the 1997 Plants Red List should be combined together when reporting on threatened plants.
- Mosses include the true mosses (Bryopsida), the hornworts (Anthocerotopsida), and liverworts (Marchantiopsida).
- The ferns and allies include the club mosses (Lycopodiopsida), spike mosses (Sellaginellopsida), quillworts (Isoetopsida), and ferns (Polypodiopsida, Ophioglossopsida and Osmundopsida).
- Seaweeds are included in the green algae (Chlorophyta, Charophyta), red algae (Rhodophyta), and brown algae (Ochrophyta or Heterokontophyta).

Sources for Numbers of Described Species:

Vertebrates

Mammals – Largely from Wilson, D.E. and Reeder, D.M. (eds). 2005. *Mammal Species of the World*, 3rd Edition. John Hopkins University Press, Baltimore (available at <http://vertebrates.si.edu/msw/mswCFApp/msw/index.cfm>). But there are some deviations, especially in cases where there are alternative taxonomic treatments; in such cases the Global Mammal Assessment coordinating team working with the relevant IUCN SSC Specialist Group advise on which treatment to follow. A number of differences and deviations are also based on new revisions and published papers that have appeared since the accounts in Wilson and Reeder (2005) were published. There are a number of recently described species which are currently under review and hence these are not included in the numbers cited here.

Birds – BirdLife International. 2012. The BirdLife checklist of the birds of the world, with conservation status and taxonomic sources. Available from <http://www.birdlife.org/datazone/info/taxonomy>. Accessed: 19 June 2012.

Amphibians – From Frost, D.R. 2011. *Amphibian Species of the World: an Online Reference. Version 5.5 (31 January, 2011)*. Electronic Database accessible at: <http://research.amnh.org/herpetology/amphibia/>. American Museum of Natural History, New York, USA. Accessed: 17 June 2012.

Reptiles – Based on the figures (as of 01 February 2012) provided by *The Reptile Database* compiled by Peter Uetz and Jakob Hallermann. Available at: <http://www.reptile-database.org>. Accessed: 17 June 2012.

Fishes – Based on Froese, R. and Pauly, D. (eds). 2012. *FishBase*. World Wide Web electronic publication. www.fishbase.org, version (06/2012). Accessed: 17 June 2012.

Invertebrates

Insects – Estimates of the number of insects in the world vary from about 720,000 to more than 1 million, but the most reasonable mid-point figure appears to be about 1 million (see discussion in Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-02-groups-invertebrates.html#insecta>. Accessed 17 June 2012).

Crustaceans – The estimated number of described species of Crustacea in the world varies from 25,000 to 68,171 but the best estimate is 47,000 (see discussion in Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-02-groups-invertebrates.html#crustacea>. Accessed 17 June 2012).

Molluscs – The estimated number of described mollusc species ranges from 50,000 to 120,000. The best estimate by Chapman (2009) appears to be about 85,000 species. (For further discussion on the numbers of molluscs, see Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-02-groups-invertebrates.html#mollusca>. Accessed 17 June 2012).

Corals – Corals fall under the Phylum Cnidaria and are primarily in the Class Anthozoa, although there are some in the Class Hydrozoa. The number of described species reported here are for species typically regarded as 'corals' and are largely based on Spalding *et al.* (2001) (Alcyonarian corals); and Cairns (1999) (Scleractinian corals). The remainder of the cnidarians, anemones, jellyfish, etc., are treated under 'Others'.

Arachnids (spiders, scorpions, etc) – Estimates of the number of described arachnids vary from 60,000 to 102,248, the latter is from Chapman (2009) and is calculated from a breakdown of the numbers by Order and appears to be the best figure to use (see discussion in Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-02-groups-invertebrates.html#arachnida>. Accessed 17 June 2012).

Velvet Worms – The number of described species of Onychophora (velvet worms) would appear to be around 165 (for further details see discussion in Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-02-groups-invertebrates.html#onychophora>. Accessed 17 June 2012).

Horseshoe Crabs – Horseshoe crabs are placed on the Red List under the traditional class "Merostomata" which excludes the fossil sea scorpions; only four species are extant today (see <http://en.wikipedia.org/wiki/Merostomata> for further details).

Others – This is a miscellaneous group of invertebrate species that have been assessed for the IUCN Red List. The total number of described species is based on the estimated totals for the following groups from which the assessed species come: Annelida - segmented worms (16,763), Cnidaria - anemones, jellyfish, etc. but excluding the corals which are treated separately (7,620), Echinodermata - starfish (7,003 species), Myriapoda - centipedes and millipedes (16,072), Nemertina - ribbon worms (1,200), and Platyhelminthes - flat worms (20,000). (For further details on the numbers in these groups see: Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-02-groups-invertebrates.html>. Accessed 17 June 2012).

Plants

Mosses – Based on information provided by Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-03-groups-plants.html#bryophyta>. Accessed 17 June 2012.

Ferns and allies – Based on information provided by Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-03-groups-plants.html#ferns>. Accessed 17 June 2012.

Gymnosperms – Cycads based on Osborne *et al.* in press (in Haynes 2009); conifers based on Farjon (2010); Ephedraceae and Gnetaceae based on Govaerts (2010); others based on Mabberley (2008) and Chapman (2009). (For further discussion see Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-03-groups-plants.html#gymnosperms>. Accessed 17 June 2012).

Flowering Plants (Magnoliophyta = Magnoliopsida+Liliopsida) – The number of described species ranges from 223,300 to 315,903. The number used here is based on Chapman (2009). For alternative views on the numbers of seed plant species see Mabberley (1997), Schmid (1998), Govaerts (2001, 2003), Bramwell (2002), Thorne (2002), Scotland and Wortley (2003), Paton *et al.* (2008), Kier *et al.* (2009), and Joppa *et al.* (2010). (For further discussion see Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-03-groups-plants.html#magnoliophyta>. Accessed 17 June 2012).

Fungi & Protists

Lichens - The figure of 10,000 from Groombridge and Jenkins (2002) appears to be too low, so the number described is now based on information provided by Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-04-groups-fungi.html#lichen>. Accessed 02 September 2010.

Mushrooms - Number of mushroom-forming fungi (=Basidiomycota excluding the 7 lichenised species) based on Kirk *et al.* (2008) (for discussion see Chapman, A.D. 2009 . *Numbers of Living Species in Australia and the World, 2nd edition*. Australian Biological Resources Study, Canberra. Available at: <http://www.environment.gov.au/biodiversity/abrs/publications/other/species-numbers/2009/04-04-groups-fungi.html#fungi>. Accessed 02 September 2010).

Green (Chlorophyta), Red (Rhodophyta) and Brown (Ochrophyta or Heterokontophyta) Algae – From Guiry, M.D. and Guiry, G.M. 2010. *AlgaeBase*. World-wide electronic publication, National University of Ireland, Galway. <http://www.algaebase.org>. Accessed on 02 September 2010.