

Table 1a: Number of species evaluated in relation to the overall number of described species, and numbers of threatened species by major groups of organisms.

	Estimated Number of described species ¹	Number of species evaluated by 2023 (IUCN Red List version 2023-1)	% of described species evaluated by 2023 (IUCN Red List version 2023-1)	Number of threatened species ² by 2023 (IUCN Red List version 2023-1)	Estimated % threatened species in 2023 (IUCN Red List version 2023-1) ^{2,3,4}		
					Lower estimate (threatened spp. as % of extant evaluated species)	Best estimate (threatened spp. as % of extant data sufficient evaluated species)	Upper estimate (threatened and DD spp. as % of extant evaluated species)
VERTEBRATES							
Mammals ⁵	6,631	5,980	90%	1,339	23%	26%	37%
Birds	11,197	11,197	100%	1,354	12%	12%	13%
Reptiles	12,060	10,254	85%	1,848	18%	21%	33%
Amphibians	8,707	8,020	92%	2,876	36%	41%	47%
Fishes	36,367	27,042	74%	3,778	Insufficient coverage		
Subtotal	74,962	62,493	83%	11,195			
INVERTEBRATES							
Insects	1,053,578	12,568	1.2%	2,361	Insufficient coverage		
Molluscs	86,254	9,063	11%	2,409	Insufficient coverage		
Crustaceans ⁶	84,382	3,207	4%	746	Insufficient coverage		
Corals	5,614	830	15%	253	Insufficient coverage		
Arachnids	92,766	591	0.64%	268	Insufficient coverage		
Velvet Worms	210	11	5%	9	Insufficient coverage		
Horseshoe Crabs	4	4	100%	2	50%	100%	100%
Others	157,543	1,089	0.69%	173	Insufficient coverage		
Subtotal	1,480,351	27,363	2%	6,221			
PLANTS⁷							
Mosses ⁸	21,925	327	1.5%	181	Insufficient coverage		
Ferns and Allies ⁹	11,800	814	7%	316	Insufficient coverage		
Gymnosperms	1,113	1,059	95%	450	42%	43%	44%
Flowering Plants	369,000	64,240	17%	25,320	Insufficient coverage		
Green Algae ¹⁰	13,644	17	0.1%	0	Insufficient coverage		
Red Algae ¹⁰	7,553	78	1.0%	9	Insufficient coverage		
Subtotal	425,035	66,535	16%	26,276			
FUNGI & PROTISTS¹¹							
Lichens	17,000	121	0.7%	70	Insufficient coverage		
Mushrooms, etc.	151,316	660	0.4%	248	Insufficient coverage		
Brown Algae ¹⁰	4,630	18	0.4%	6	Insufficient coverage		
Subtotal	172,946	799	0.5%	324			
TOTAL	2,153,294	157,190	7%	44,016			

NOTES:

- The numbers of described species in Table 1a should be used with caution as these are not always be up to date for all taxonomic groups. The sources used for the figures currently shown in the table are listed below.
- Threatened species are those listed as Critically Endangered (CR), Endangered (EN) or Vulnerable (VU).
- Where <80% 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 (>80% 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.
- Crustaceans include six classes: Branchiopoda (fairy shrimp, clam shrimp, etc.); Cephalocardia (horseshoe shrimp); Malacostraca (crabs, lobsters, shrimp, woodlice, etc.); Maxillopoda (barnacles, copepods, etc.); Ostracoda (seed shrimp) and Remipedia (remipedes)
- The plant numbers **DO NOT** include species from the 1997 IUCN Red List of Threatened Plants (Walter and Gillett 1998) as those assessments used the pre-1994 IUCN system of threat categories. Hence the numbers of threatened plants in Table 1b are much lower when compared to the 1997 results. When reporting on threatened plants, the results from the current web version of The IUCN Red List should be combined with the 1997 Plants Red List. Since there have been many taxonomic changes for plant species since 1997, careful comparison of the current and 1997 species lists will be needed when combining these results to avoid double-counting.
- Mosses include the true mosses (Bryophyta), the hornworts (Anthocerotophyta), and liverworts (Marchantiophyta).
- The ferns and allies include club mosses and spike mosses (Lycopodiopsida), quillworts (Isoetopsida), horsetails (Equisetopsida) and ferns (Marattiopsida, Polypodiopsida and Psilotopsida).
- Seaweeds are included in the green algae (Chlorophyta, Charophyta), red algae (Rhodophyta), and brown algae (Ochrophytina).
- Many of the described species in these groups are not eligible for assessment on the IUCN Red List as they are considered micro-organisms.

Sources for Numbers of Described Species:

Vertebrates

Mammals – Mammal Diversity Database. 2023. v. 1.11, released 15 April 2023. www.mammaldiversity.org. American Society of Mammalogists. Accessed 01 December 2023.

Birds – Handbook of the Birds of the World and BirdLife International. 2023. Handbook of the Birds of the World and BirdLife International digital checklist of the birds of the world. Version 8. Available at: http://datazone.birdlife.org/userfiles/file/Species/Taxonomy/HBW-BirdLife_Checklist_v8_Dec23.zip. Accessed: 11 December 2023.

Reptiles – Based on the figures (as of October 2023) provided by The Reptile Database compiled by Peter Uetz and Jiri Hošek. Available at: <http://www.reptile-database.org>. Accessed: 01 December 2023. For current total number of species on this website, see <http://www.reptile-database.org/db-info/SpeciesStat.html>

Amphibians – Frost, D.R. 2023. Amphibian Species of the World: an Online Reference. Version 6.2 (01 December 2023). Electronic Database accessible at: <https://amphibiansoftheworld.amnh.org/index.php>. American Museum of Natural History, New York, USA. doi.org/10.5531/db.vz.0001.

Fishes – Based on Frick, R. Eschmeyer, W.N. and Van der Lan, R. (eds). 2023. Eschmeyer's Catalog of Fishes: genera, species, references (<http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>). Electronic version accessed: 01 December 2023.

Invertebrates

Insects – Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P.M., Bourgoin T., DeWalt R.E., Decock W., Nieukerken E. van, Zarucchi J., Penev L., eds. (2019). Species 2000 & ITIS Catalogue of Life, 2019 Annual Checklist. Digital resource at <http://www.catalogueoflife.org/annual-checklist/2019/info/totals>. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X. Accessed 01 December 2023.

Crustaceans – Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P.M., Bourgoin T., DeWalt R.E., Decock W., Nieukerken E. van, Zarucchi J., Penev L., eds. (2019). Species 2000 & ITIS Catalogue of Life, 2019 Annual Checklist. Digital resource at www.catalogueoflife.org/annual-checklist/2019. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X. Accessed 01 December 2023.

Molluscs – MolluscaBase (2023). MolluscaBase. Available at <http://www.molluscabase.org>. Accessed: 01 December 2023.

Corals – Corals fall under the phylum Cnidaria and include subclass Octocorallia, and orders Antipatharia, Corallimorpharia and Scleractinia. The number of described living species reported here are from WoRMS Editorial Board (2023). World Register of Marine Species. Available from <https://www.marinespecies.org> at VLIZ. Accessed 2023-12-04. doi:10.14284/170

Arachnids (spiders, scorpions, etc) – Note that in previous IUCN Red Lists, this figure was noted as 110,615, based on information from the Catalog of Life. This is now revised down, also based on Catalog of Life but looking at reported number of accepted species names only. Reference: Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Bourgoin T., DeWalt R.E., Decock W., Nieukerken E. van, Zarucchi J., Penev L., eds. (2019). Species 2000 & ITIS Catalogue of Life, 2019 Annual Checklist. Digital resource at www.catalogueoflife.org/annual-checklist/2019. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X. Accessed 04 December 2023.

Velvet Worms (Udeonychophora) – Oliveira, I.S., Hering, L. and Mayer, G. (2006-2023). The Onychophora Website. Digital resource at <http://www.onychophora.com/index.htm>. Accessed 04 December 2023. For number of described species see <http://www.onychophora.com/list.htm>.

Horseshoe Crabs (Merostomata) – Class Merostomata excludes the fossil sea scorpions; only four species are extant today: Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P.M., Bourgoin T., DeWalt R.E., Decock W., Nieukerken E. van, Zarucchi J., Penev L., eds. (2019). Species 2000 & ITIS Catalogue of Life, 2019 Annual Checklist. Digital resource at www.catalogueoflife.org/annual-checklist/2019. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X. Accessed 04 December 2023.

Others – "Others" includes all of the invertebrate groups listed in Catalog of Life that are not included in the groups listed above. Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P.M., Bourgoin T., DeWalt R.E., Decock W., Nieukerken E. van, Zarucchi J., Penev L., eds. (2019). Species 2000 & ITIS Catalogue of Life, 2019 Annual Checklist. Digital resource at www.catalogueoflife.org/annual-checklist/2019. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X. Accessed 04 December 2023.

Plants

Mosses – Christenhusz, M.J.M. and Byng, J.W. 2016. The number of known plant species in the world and its annual increase. *Phytotaxa*. 261(3): 201-217. <http://dx.doi.org/10.11646/phytotaxa.261.3.1>

Ferns and allies – State of the World's Plants 2017: https://stateoftheworldsplants.org/2017/report/SOTWP_2017.pdf

Gymnosperms – Christenhusz, M.J.M. *et al.* (2011). A new classification and linear sequence of extant gymnosperms. *Phytotaxa*. 19: 55–70 (cited in State of the World's Plants 2017: https://stateoftheworldsplants.org/2017/report/SOTWP_2017.pdf).

Flowering Plants (Magnoliophyta = Magnoliopsida+Liliopsida) – State of the World's Plants 2017: https://stateoftheworldsplants.org/2017/report/SOTWP_2017.pdf.

Fungi & Protists

Lichens - The estimated total number of lichen species currently ranges between 17,000 (Chapman 2009) and 28,000 (Thell *et al.* 2012). The figure presented in Table 1a will be updated as soon as a more accurate figure can be confirmed.

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.

Thell, A., Crespo, A. Divakar, P.K., Kärnefelt, I., Leavitt, S.D., Lumbsch, H.T. and Seaward, M.R.D. 2012. A review of the lichen family Parmeliaceae - history, phylogeny and current taxonomy. *Nordic Journal of Botany* 30(6): 641-664

Mushrooms, brackets, rusts, smuts, jelly fungi, etc. - Ascomycota and Basidiomycota (excluding the lichenised species).

Kirk P.M. (2019). Species Fungorum (version Oct 2017). In: Species 2000 & ITIS Catalogue of Life, 2019 Annual Checklist (Roskov Y., Ower G., Orrell T., Nicolson D., Bailly N., Kirk P.M., Bourgoin T., DeWalt R.E., Decock W., Nieukerken E. van, Zarucchi J., Penev L., eds). Digital resource at www.catalogueoflife.org/annual-checklist/2019. Species 2000: Naturalis, Leiden, the Netherlands. ISSN 2405-884X. Accessed 04 December 2023.

Green (Charophyta, Chlorophyta), Red (Rhodophyta) and Brown (Ochrophytina) Algae – From Guiry, M.D. and Guiry, G.M. 2023. AlgaeBase. World-wide electronic publication, National University of Ireland, Galway. <http://www.algaebase.org>. Accessed on 04 December 2023. For taxonomy search, see <https://www.algaebase.org/browse/taxonomy/>