Progress, challenges and opportunities for plant Red Listing

Supporting information

S1. List of Plant specialist groups and Red List Authorities

S2. Importance of specialist groups for assessing – chi square test

S3. List of spatial tools

References

**Table S1.**

List of existing Plant specialist groups and authorities including status.

<https://www.iucn.org/ssc-groups/plants-fungi>

|  |  |  |  |
| --- | --- | --- | --- |
| **Group** | **Type** | **Status** | **Megadiverse**  **Country** |
| Arabian Plant Specialist Group | Geographic | Not active |  |
| Arctic Plant Specialist Group | Geographic | Active |  |
| Brazil Plant Red List Authority | Geographic | Active | Yes [Brazil] |
| Bryophyte Specialist Group (mosses, liverworts, and hornworts) | Taxonomic | Active |  |
| Cactus and Succulent Plant Specialist Group | Taxonomic | Active |  |
| Carnivorous Plant Specialist Group | Thematic | Active |  |
| Caucasus Plant Red List Authority | Geographic | Active |  |
| Central African Plant Red List Authority | Geographic | Active |  |
| Chinese Plant Specialist Group | Geographic | Active | Yes [China] |
| Colombian Plant Specialist Group | Geographic | Newly established | Yes [Colombia] |
| Conifer Specialist Group | Taxonomic | Active |  |
| Crop Wild Relative Specialist Group | Thematic | Active |  |
| Cuban Plant Specialist Group | Geographic | Active |  |
| Cycad Specialist Group | Taxonomic | Active |  |
| Eastern Africa Plant Red List Authority | Geographic | Active | Yes [DRC Congo] |
| Freshwater Plant Specialist Group | Thematic | Active |  |
| Galapagos Plant Specialist Group | Geographic | Active |  |
| Global Trees Specialist Group | Thematic | Active |  |
| Hawaiian Plant Specialist Group | Geographic | Active |  |
| Indian Subcontinent Plant Specialist Group | Geographic | Not active |  |
| Indonesian Plant Red List Authority | Geographic | Newly established | Yes [Indonesia] |
| Korean Plant Specialist Group | Geographic | Active |  |
| Macaronesian Island Plant Specialist Group | Geographic | Active |  |
| Madagascar Plant Specialist Group | Geographic | Active | Yes [Madagascar] |
| Mangrove Specialist Group | Thematic | Active |  |
| Mascarene Island Plant Specialist Group | Geographic | Active |  |
| Medicinal Plant Specialist Group | Thematic | Active |  |
| Mediterranean Plant Specialist Group | Geographic | Active |  |
| New Caledonia Plant Red List Authority | Geographic | Active |  |
| North American Plant Red List Authority | Geographic | Active | Yes [USA] |
| Orchid Specialist Group | Taxonomic | Active |  |
| Palm Specialist Group | Taxonomic | Active |  |
| Seagrass Specialist Group | Taxonomic | Active |  |
| Sonoran Desert Plants Specialist Group | Geographic | In preparation | Yes [USA] |
| Southern African Plant Specialist Group | Geographic | Active | Yes [South Africa] |
| Temperate South American Plant Specialist Group | Geographic | Active |  |
| West African Plants Red List Authority | Geographic | In preparation |  |
| Western Ghats Plant Red List Authority | Geographic | In preparation | Yes [India] |

**Table S2.**

The number of described vascular plants\* that have received a Red List assessment1, grouped by whether they fall under the remit of a plant SG/RLA or not. Species under the remit of a SG/RLA were assessed more than you would expect by chance (χ2 = 1940.7, d.f. = 1, p < 0.0001).

\*Estimate taken from (Nic Lughadha et al. 2016), 1based on Red List version 2018\_1

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **# Red List Assessments** | **# Not Evaluated** | **Total** | **Proportion assessed** |
| **Species under remit of taxonomic SGs/RLAs** | 4,600 | 33,758 | 38,853 | 13.6% |
| **Species outside the remit of taxonomic SGs/RLAs** | 20,865 | 324,628 | 345,313 | 6.4% |
| **Total** | 25,285 | 353,786 | **383671** |  |

**Table S3**. A selection of tools and technology that could be used to support Red Listing.

|  |  |  |
| --- | --- | --- |
| **Name** | **Tool/Data** | **Reference** |
| GeoCAT | Web based tool for extent of occurrence (EOO) and area of occupancy (AOO) using online occurrence data. | <http://geocat.kew.org/> |
| rCAT | Calculates extent of occurrence (EOO) and area of occupancy (AOO) | <https://cran.r-project.org/web/packages/rCAT/index.html> |
| ConR | Calculates extent of occurrence (EOO) and area of occupancy (AOO) and other parameters | <https://cran.r-project.org/web/packages/ConR/index.html> |
| red | Calculates extent of occurrence (EOO), area of occupancy (AOO), mapping species ranges, species distribution modelling using climate and land cover and calculating the Red List Index for groups of species | <https://cran.r-project.org/web/packages/red/index.html> |
| downscale | Supports calculation of AOO by downscaling species occupancy at coarse grain sizes to predict species occupancy at fine grain sizes. | <https://cran.r-project.org/web/packages/downscale/index.html> |
| Google Earth Engine | Using deforestation rates as a surrogate for population declines | <https://earthengine.google.com/>  See also Tracewski et al. 2016 |
| BioModelos | Platform to display species distribution models and elicit feedback from relevant experts | <http://biomodelos.humboldt.org.co/> |

**References**

Nic Lughadha, E.M. et al., 2016. Counting counts: revised estimates of numbers of accepted species of flowering plants, seed plants, vascular plants and land plants with a review of other recent estimates. *Phytotaxa*, 272(1), pp.82–88.

Tracewski, Ł. et al., 2016. Toward quantification of the impact of 21(st) -century deforestation on the extinction risk of terrestrial vertebrates. *Conservation biology : the journal of the Society for Conservation Biology*. Available at: http://www.ncbi.nlm.nih.gov/pubmed/26991445 [Accessed April 6, 2016].