



Because data archived in Dryad are publicly available, make sure any data involving endangered species is appropriate for sharing.

Suggested criteria for species risk assessment

- What are current conservation efforts for this species?
- Will this information aid or harm conservation efforts?
- Is the information already in the public domain?
- Is the species located on a protected wildlife preserve or sanctuary?
- Is the species located on an environmentally sensitive area under special protection?
- Does the species hold significant cultural or religious value to local indigenous people?

Congress passed the Endangered Species Act (ESA) in 1973 to help conserve and recover endangered species and their habitats. All species of plants and animals, except pest insects, are eligible for listing as endangered or threatened under the ESA. The ESA provides the public with information for protected species nationally and worldwide.

Refer to the ESA and similar organizations for information on current conservation efforts and programs relevant to your research. Use resources such as the Encyclopedia of Life or the IUCN Red List of Threatened Species to find the current threat level for individual species and determine if your data meets any of the following criteria:

- The species is flagged by the IUCN Red List as "vulnerable", "endangered", or "critically endangered".
- The IUCN mentions threats to the species from poaching/illegal hunting or other malicious human activity.
- Your data includes exact geo-coordinates for this species.
- The species is not located on a protected wildlife preserve.

If your data meets any of the criteria listed, especially the first one, evaluate whether you should mask location information. Masking involves modifying or converting geographic coordinates for a species. Depending on the level of risk for a species, data may be generalized using decimal degrees. This preserves the integrity of the overall geographic distribution but gives confidentiality.

Tools / resources

- The Global Biodiversity Information Facility's (GBIF) "Guide to Best Practices for Generalising Primary Species-Occurrence Data" provides guidance in determining whether sensitive occurrence data should be restricted.

References:

Chapman, AD, Grafton O (2008) Guide to best practices for generalising: sensitive species occurrence data, version 1.0. Copenhagen: Global Biodiversity Information Facility, 27 pp. ISBN: 87-92020-06-2. Available online at <http://www.gbif.org/resource/80512>.

Clarke, KC (2016) A multiscale masking method for point geographic data. *International Journal Of Geographical Information Science* 30(2): 300-315. <https://doi.org/10.1080/13658816.2015.1085540>

Lindenmayer D, Scheele B (2017) Do not publish. *Science* 356(6340): 800-801. <https://doi.org/10.1126/science.aan1362>

Lowe, AJ Smyth, AK Atkins, K Avery, R, Belbin, L, Brown, N, Budden, AE Sparrow, B (2017) Publish openly but responsibly. *Science* 357(6347): 141. <https://doi.org/10.1126/science.aao0054>

U. S. Fish and Wildlife Service Endangered Species Program (2013) *ESA Basics 40: Years of Conserving Endangered Species*. Arlington, VA: U. S. Fish and Wildlife Service. Available online at https://www.fws.gov/endangered/esa-library/pdf/ESA_basics.pdf