

Tool profile: ConR: Computation of Parameters Used in Preliminary Assessment of Conservation Status

Author/Creator	Gilles Dauby
Programming language	R
URL to access app/tool	https://cran.r-project.org/web/packages/ConR/index.html
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Brief summary: What is it and what is it trying to do?	<ul style="list-style-type: none"> - Multi-species tool to estimate geographical range parameters for IUCN Red List assessment - Gives preliminary IUCN Red List category following Criterion B - Calculates AOO and EOO based on species occurrence records - Estimates number of subpopulations and locations - Lat/longs of species occurrences are read in by user as data file (e.g. csv or Excel file) - Produces output maps (e.g. to share with species experts) and shapefiles (for input into GIS)
Associated research publication(s) / examples of where it has been used	<p>Dauby G, Stévant T, Droissart V, Cosiaux A, Deblauwe V, Simo-Droissart M, Sosef MSM, Lowry II PP, Schatz GE, Gereau RE, Couvreur TLP (2017). ConR: An R package to assist large- scale multispecies preliminary conservation assessments using distribution data. <i>Ecology and Evolution</i> 7(24): 11292-11303. doi: 10.1002/ece3.3704</p> <p>Some functions are based on: Rivers MC, Bachman SP, Meagher TR, Lughadha EN, Brummitt NA (2010) Subpopulations, locations and fragmentation: applying IUCN red list criteria to herbarium specimen data. <i>Biodiversity and Conservation</i> 19: 2071-2085. doi: 10.1007/s10531-010-9826-9</p>
Help/vignette file	https://cran.r-project.org/web/packages/ConR/vignettes/my-vignette.html
Support network? Who can we ask for help	gildauby@gmail.com
Relevant Red List Parameters	<p>AOO (in km²) – default is 2km grid cell as per guidelines</p> <p>EOO (in km²)</p> <p>Number of locations – default area over which a single threat event affects the species is 10 km</p> <p>NOTE: Also computes alpha hulls – starting point for continuing decline in EOO?</p>
Input data formats	Matrix of coordinates of species records (lat [required]; long [required]; taxon name [optional]). Can be Excel or csv file
Can it do batch processing?	Yes
Is internet access needed or can it be used offline?	Offline after installation

Technical knowledge required?	Basic R knowledge
Computing requirements (e.g. will it run on low spec laptop in the field)	Standard
Stability - long term support - maintenance?	
Notes	<p>EOO calculations: two data points only: estimates EOO for species as $\text{Dist} * \text{Dist} * 0.1$ where Dist is the distance in kilometres separating the two points.</p> <p>EOO calculation uses buffer in cases where the data points are localized on a straight line (default is 0.1).</p> <p>Limitation to EOO calculation: For a species whose occurrences span more than 180 degrees, EOO is not computed (e.g. species with distribution spanning the 180th meridian).</p> <p>EOO calculation also provides functionality to exclude unsuitable areas in EOO calculation, which is not recommended in the IUCN Red List Guidelines for criterion B! Does not include explanation that this is not recommended in the vignette, nor the R documentation.</p> <p>Allows computation of alpha hulls (allowed method for assessing reductions of continuing declines in EOO): vignette refers to Red List Guidelines. Note: requires installation of package 'alphahull'</p> <p>Can produce output shapefiles (EOO, alpha hull) for input into GIS.</p> <p>Can run provisional Red List evaluation against criterion B (estimates EOO, AOO, number of subpopulations, number of locations). This evaluation only takes into account B1 and B2 and subcriterion (a); condition (b)(iii) is assumed to be true (note: Red List guidance on careful application of b(iii))</p>