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

Author/Creator	Calvin Lee and Nick Murray
Programming language	R
URL to access app/tool	https://cran.r-project.org/web/packages/redlistr/index.html
Access rights (Open/license etc.)	General public license
Brief summary: What is it and what is it trying to do?	- Set of tools suitable for calculating metrics required for making assessments of species and ecosystems against the IUCN Red List of Threatened Species and the IUCN Red List of Ecosystems categories and criteria. - Focusses on metrics for Criterion A (rate of change) and Criterion B (EOO and AOO) only - Primarily designed for the Red List of Ecosystems, but can also support Red List of Species through EOO, AOO and rate of change estimates - Includes function which moves AOO grid to ensure moves possible AOO grids around to ensure that the AOO calculated is the smallest possible, and not subjected to the geometric uncertainty due - For EOO, AOO and change in area, accepts coordinate files converted to R's spatial points format, or rasters (e.g. species distributions converted to tif rasters) - Can calculate rate of change in abundance between two time points, which requires four variables: abundance in year x and abundance in year y. - Calculates rate of change as Proportional Rate of Decline (PRD), Absolute Rate of Decline (ARD) and/or Annual Rate of Change (ARC)
Associated research publication(s) / examples of where it has been used	Lee, C. K., Keith, D. A., Nicholson, E., & Murray, N. J. (2019). Redlistr: tools for the IUCN Red Lists of ecosystems and threatened species in R. Ecography 42(5): 1050-1055. doi: 10.1111/ecog.04143
Help/vignette file	**Calculating rate of change, EOO and AOO:** https://cran.r-project.org/web/packages/redlistr/vignettes/redlistr-vignette.html; **How to iterate over multiple files:** https://cran.r-project.org/web/packages/redlistr/vignettes/iteration-vignette.html
Support network? Who can we ask for help	calvinkflee@gmail.com
Relevant Red List Parameters	**Criterion A:** Rate of change in abundance or area from two time points

	Criterion B: AOO (in km2) – 2km grid cell as per guidelines EOO (in km2)
Input data formats	Various: Raster (tif) or spatial points format, needs CRS with units measured in metres; point data can be read in via rgbif or as data file (csv), but need to be transformed into Spatial Points format by user
Can it do batch processing?	Yes (https://cran.r-project.org/web/packages/redlistr/vignettes/iteration-vignette.html)
Is internet access needed or can it be used offline?	Offline after installation
Technical knowledge required?	Spatial R coding
Computing requirements (e.g. will it run on low spec laptop in the field)	Standard
Stability - long term support - maintenance?	
Notes	Includes gridUncertainty function which moves possible AOO grids around to ensure that the AOO calculated is the smallest possible, and not subjected to the geometric uncertainty due to the placements of the AOO grids.