Distributional overlap and potential competition between a threatened habitat specialist and generalist frog species in coastal wallum habitats of South-East Queensland, Australia.

Austral Ecology

Alannah Filer*, Berndt J. van Rensburg, and Edward A. Meyer

* Centre for Biodiversity and Conservation Science, School of Biological Sciences, The University of Queensland, St Lucia, Qld, Australia. E-mail: alannah.filer@uq.net.au

Appendix S1 The 13 environmental, anthropogenic and climatic variables used to derive species distribution models. Note: resampling using bilinear and nearest neighbour methods were utilised with continuous and categorical data respectively; polygon data were converted using the maximum combined area approach.

	Name	Source	Resolution	Extent	Creation date
1	Mean annual maximum temperature [in text: annual temperature]	Commonwealth Scientific and Industrial Research Organisation (CSIRO) Ecosystem Sciences: 0.01 degree stack of climate layers for continental analysis of biodiversity pattern, version 1.0	36 arc- seconds	National	2015
2	Mean annual rainfall [in text: annual rainfall]	CSIRO Ecosystem Sciences: 0.01 degree stack of climate layers for continental analysis of biodiversity pattern, version 1.0	36 arc- seconds	National	2015
3	Mean annual rainfall- modified solar radiation [in text: annual rainfall- modified solar radiation]	CSIRO Ecosystem Sciences: 0.01 degree stack of climate layers for continental analysis of biodiversity pattern, version 1.0	36 arc- seconds	National	2015
4	Soil and Landscape Grid National Soil Attribute Maps - Sand (3" resolution) 005-015cm - Version 1 [in text: soil properties, sand]	CSIRO; Soil and Landscape Grid of Australia	3 arc- seconds	National	2014
5	Soil and Landscape Grid National Soil Attribute Maps - Clay (3" resolution) 005-015cm - Version 1 [in text: soil properties, clay]	CSIRO; Soil and Landscape Grid of Australia	3 arc- seconds	National	2014
6	Soil and Landscape Grid National Soil Attribute Maps – pH CaCl ₂ (3" resolution) 005-015cm - Version 1 [in text: soil properties, pH]	CSIRO; Soil and Landscape Grid of Australia	3 arc- seconds	National	2014

7	Digital elevation model [in text: elevation]	Department of Natural Resources and Mines (DNRM), Queensland	3 arc- seconds	QLD	2013
8	Slope	Calculated from processed Elevation layer	50x50m	SEQLD	2021
9	Present Major Vegetation Groups - NVIS Version 6.0 (Albers 100m analysis product) [in text: dominant vegetation type]	Department of Agriculture, Water and the Environment, Australian Government	100x100m	National	2020
10	Catchment Scale Land Use of Australia - Update December 2020 (CLUM) (December 2020 update) [in text: land use]	Australian Collaborative Land Use and Management Program (ACLUMP). Department of Agriculture and Water Resources, Australian Bureau of Agricultural and Resource Economics and Sciences	50x50m	National	2021
11	Baseline roads and tracks - Queensland [in text: road density]	Department of Natural Resources, Mines and Energy, Queensland	Vector dataset	QLD	2020
12	Queensland wetland data version 5 - wetland areas [in text: wetlands (presence and type)]	Department of Science, Information Technology and Innovation	Shape file dataset	QLD	2019
13	Biodiversity status of 2017 remnant regional ecosystems - Queensland (Version 11) [in text: land zone]	Department of Environment and Science	Shape file dataset	QLD	2018

- 1-3. Williams K., Stein J., Storey R., Ferrier S., Austin M., Smyth A. et al. (2015) 0.01 degree stack of climate layers for continental analysis of biodiversity pattern. CSIRO. Version 1. [Spatial data]. Retrieved from: https://doi.org/10.4225/08/54C96117894C4
- 4. Viscarra Rossel R., Chen C., Grundy M., Searle R., Clifford D., Odgers N. et al. (2014) Soil and Landscape Grid National Soil Attribute Maps - Sand (3" resolution) - Release 1. CSIRO. Version 1. [Spatial data]. Retrieved from: http://doi.org/10.4225/08/546F29646877E
- Viscarra Rossel R., Chen C., Grundy M., Searle R., Clifford D., Odgers N. et al. (2014) Soil and Landscape Grid National Soil Attribute Maps - Clay (3" resolution) - Release 1. CSIRO. Version 1. [Spatial data]. Retrieved from: http://doi.org/10.4225/08/546EEE35164BF
- 6. Viscarra Rossel R., Chen C., Grundy M., Searle R., Clifford D., Odgers N. et al. (2014) Soil and Landscape Grid National Soil Attribute Maps pH CaCl2 (3" resolution) Release 1.

CSIRO. Version 1. [Spatial data]. Retrieved from: http://doi.org/10.4225/08/546F17EC6AB6E

- 7-8. Department of Natural Resources and Mines. (2013). Digital elevation model 3 second Queensland. Queensland Spatial Catalogue – Qspatial. Version 1. [Spatial data]. Retrieved from: https://data.qld.gov.au/dataset/digital-elevation-model-3-secondqueensland/resource/fe9bc768-b6d5-4355-9302-ff441a3a3a95
- 9. Department of Agriculture, Water and the Environment. (2020). Australia Present Major Vegetation Groups - NVIS Version 6.0 (Albers 100m analysis product). Australian government. Version 6.0. [Spatial data]. Retrieved from: http://www.environment.gov.au/land/native-vegetation/national-vegetation-informationsystem/data-products
- 10. Australian Bureau of Agricultural and Resource Economics and Sciences (2021) Catchment Scale Land Use of Australia - Update December 2020 (CLUM). Australian Collaborative Land Use and Management Program (ACLUMP), Australian Bureau of Agricultural and Resource Economics and Sciences. [Spatial data]. https://doi.org/10.25814/aqjw-rq15
- 11. Department of Natural Resources, Mines and Energy. (2020). Baseline roads and tracks -Queensland. Queensland government. [Spatial data]. Retrieved from: https://www.data.qld.gov.au/dataset/baseline-roads-and-tracks-queensland
- 12. Department of Science, Information Technology and Innovation. (2019). Queensland wetland data version 5 - wetland areas. Queensland Spatial Catalogue – Qspatial. Version 5. [Spatial data]. Retrieved from: https://wetlandinfo.des.qld.gov.au/wetlands/facts-maps/wetlandbackground/
- 13. Department of Environment and Science. (2018). Biodiversity status of remnant regional ecosystems – Queensland series. Queensland Spatial Catalogue – Qspatial. Version 11. [spatial data]. Retrieved from: https://www.data.qld.gov.au/dataset/biodiversity-status-of-preclearing-and-2017-remnant-regional-ecosystems-queensland-series

Appendix S2 Colour map showing areas of overlap between the modelled distributions of wallum sedgefrog and eastern sedgefrog where areas of wallum sedgefrog only occurrence are blue, eastern sedgefrog only occurrence are orange, and areas of overlap are red. The map is overlayed with the boundaries of protected areas (national parks, scientific national parks, conservation parks, state forests, resource reserves, forest reserves, and timber reserves).