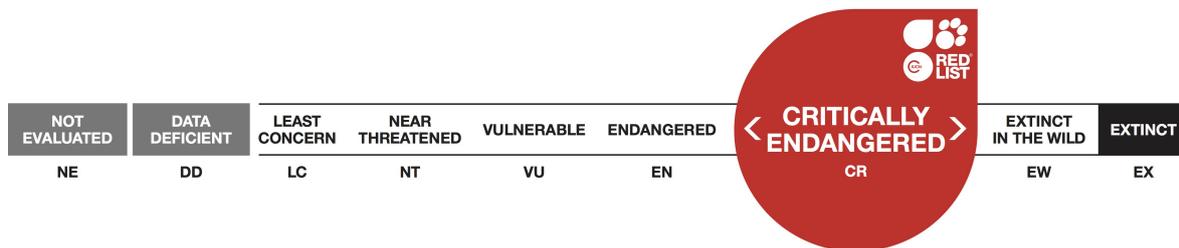


Riekoperla darlingtoni, Mount Donna Buang Wingless Stonefly

Assessment by: Suter, P.



View on www.iucnredlist.org

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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Arthropoda	Insecta	Plecoptera	Gripopterygidae

Taxon Name: *Riekoperla darlingtoni* (Illies, 1968)

Common Name(s):

- English: Mount Donna Buang Wingless Stonefly

Assessment Information

Red List Category & Criteria: Critically Endangered B1ab(v)+2ab(v) [ver 3.1](#)

Year Published: 2014

Date Assessed: March 1, 2013

Justification:

This species has a highly restricted range; it has an extent of occurrence (EOO) of 4 km², an area of occupancy (AOO) of between 2-4 km² and is known from a single location. Its habitat is threatened by changes in water flow resulting from climate change, from fires and development. Habitat change caused by myrtle wilt disease may also threaten the species in the future. There has been a continuing decline in the number of mature individuals, observed from 2005 to 2012. Therefore, this species is assessed as Critically Endangered.

Previously Published Red List Assessments

1996 – Vulnerable (VU)

1994 – Rare (R)

1990 – Rare (R)

1988 – Rare (R)

1986 – Rare (R)

1983 – Rare (R)

Geographic Range

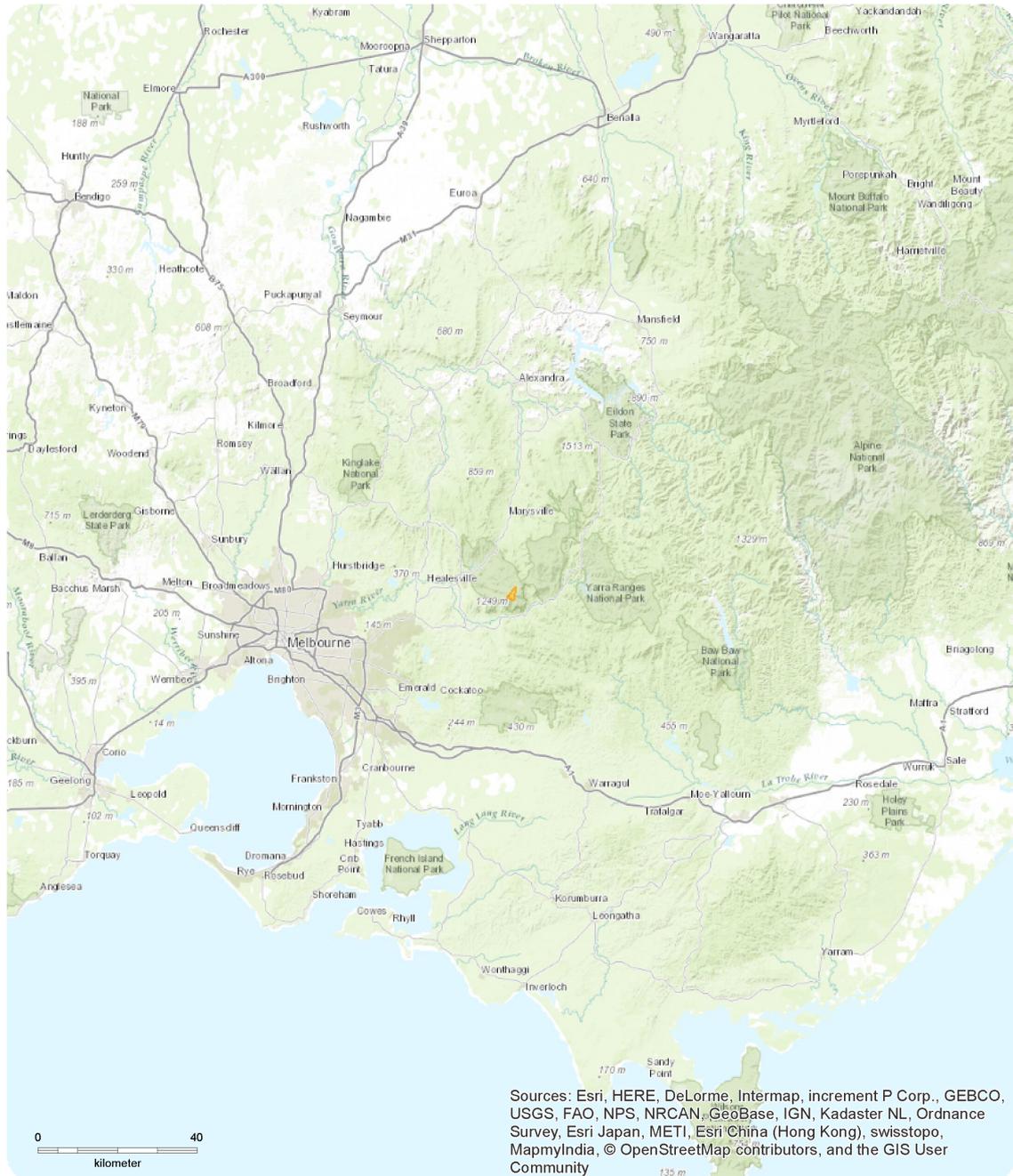
Range Description:

This species is known from the Mt Donna Buang area, near Warburton, in the Victorian Central Highlands, Australia. Most specimens have been recorded within c. 1 km from the summit of Mt Donna Buang, with a single record from a location 3 km northeast of the summit (Ahearn and Tsyrlin 2003). No specimens have been recorded from the site 3 km northeast of the summit since 1999. If this site is not included then the area of occupancy (AOO) is less than 2 km².

Country Occurrence:

Native: Australia (Victoria)

Distribution Map



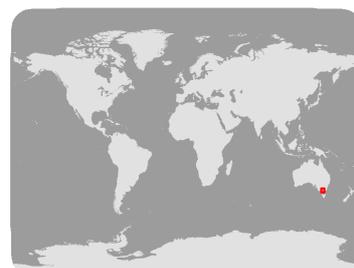
Riekoperla darlingtoni

Range
■ Extant (resident)

Compiled by:
 IUCN (International Union for Conservation of Nature)

NE	DD	LC	NT	VU	EN	CR	EW	EX
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CR
CRITICALLY ENDANGERED



The boundaries and names shown and the designations used on this map do not imply any official endorsement, acceptance or opinion by IUCN.



Population

Limited qualitative data have been collected annually since 2005. Approximately 5000 nymphs were recorded in 2005 at the type locality but the population appears to be declining since then. Estimated numbers were approximately 500 at the type locality in 2011 and 2012.

Current Population Trend: Decreasing

Habitat and Ecology (see Appendix for additional information)

This species occurs in small ephemeral streams in montane wet forest dominated by Alpine Ash (*Eucalyptus delegatensis*) and Shining Gum (*Eucalyptus nitens*) with cool temperate rainforest patches of Myrtle Beech (*Nothofagus cunninghamii*).

Systems: Terrestrial, Freshwater

Threats (see Appendix for additional information)

Threats include changes in climate, particularly reduction in precipitation in the long term, sustained drought and fire, and increased development for tourism, storm water run-off from development, construction and maintenance of roads and tracks and possibly the fungal disease Myrtle Wilt (*Davidsoniella australis*) as a threat to the myrtle beech understorey (Ahern and Tsyrlin 2003).

Conservation Actions (see Appendix for additional information)

An Action Statement was prepared under the Victorian Flora and Fauna Guarantee Act (Ahern and Tsyrlin 2003). The species needs continued site protection and vigilant management of road, track and car park maintenance, and listing under the Commonwealth Environment Protection and Biodiversity Act 1999. Note this species was deemed to not meet the criteria to be listed under the Australian Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (see <http://www.environment.gov.au/biodiversity/threatened/species/riekoperla-darlingtoni.html>).

Continued listing under the Victorian Fauna and Flora Guarantee Act 1988 is required. New (2008) used *R. darlingtoni* to highlight ambiguities and inconsistencies in legislation for listing species for conservation status.

For research there is a need for non-destructive quantitative evaluation of population numbers to confirm population trends.

Credits

Assessor(s): Suter, P.

Reviewer(s): Gerlach, J.

Bibliography

Ahearn L.D. and Tsyrlin E. 2003. Mount Donna Buang Wingless Stonefly Riekoperla darlingtoni. *Action Statement Flora and Fauna Guarantee Act 1988 No. 125 Department of Sustainability and Environment, Victoria.*

Groombridge, B. (ed.). 1994. *1994 IUCN Red List of Threatened Animals*. IUCN, Gland, Switzerland and Cambridge, UK.

Hynes H.B.N. 1974. Comments on the taxonomy of Australian Austroperlidae and Gripopterygidae (Plecoptera). . *Australian Journal of Zoology Supplementary Series* 29: 1-36.

Hynes H.B.N. 1974. Observations on the adults and and eggs of Australian Plecoptera. *Australian Journal of Zoology Supplementary Series* 29: 37-52.

Hynes H.B.N. and Hynes M.E. 1975. The life histories of many of the stoneflies (Plecoptera) of southeastern mainland Australia. *Australian Journal of Marine and Freshwater Research* 26: 113-153.

Illies J. 1968. The first wingless stonefly from Australia. *Psyche* 75(329-333).

IUCN. 1990. *IUCN Red List of Threatened Animals*. IUCN, Gland, Switzerland and Cambridge, UK.

IUCN. 2014. The IUCN Red List of Threatened Species. Version 2014.1. Available at: www.iucnredlist.org. (Accessed: 12 June 2014).

Neumann F.G. and Morey J.L. 1984. A study of the rare wingless stonefly, Riekoperla darlingtoni (Illies), near Mount Donna Buang, Victoria. . Forest Commission Victoria, Victoria.

New T. 2008. Legislative inconsistencies and species conservation status: understanding or confusion? The case of Riekoperla darlingtoni (Plecoptera) in Australia.

Sephton D.H. and Hynes, H.B.N. 1982. Observations on the first instar nymphs of several Australian stoneflies (Plecoptera). *Aquatic Insects* 4: 237-252. *Aquatic Insects* 4(237-252).

Wells, S.M., Pyle, R.M. and Collins, N.M. (compilers) 1983. *The IUCN Invertebrate Red Data Book*. IUCN, Gland, Switzerland and Cambridge, UK.

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External Resources

For [Images and External Links to Additional Information](#), please see the Red List website.

Appendix

Habitats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Habitat	Season	Suitability	Major Importance?
1. Forest -> 1.4. Forest - Temperate	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Breeding	Suitable	Yes

Threats

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.3. Tourism & recreation areas	Future	Majority (50-90%)	Causing/could cause fluctuations	Low impact: 4
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
4. Transportation & service corridors -> 4.1. Roads & railroads	Ongoing	Minority (50%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
7. Natural system modifications -> 7.1. Fire & fire suppression -> 7.1.1. Increase in fire frequency/intensity	Future	Whole (>90%)	Unknown	Unknown
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation		
8. Invasive & other problematic species & genes -> 8.1. Invasive non-native/alien species -> 8.1.2. Named species (Davidsoniella australis)	Ongoing	Unknown	Causing/could cause fluctuations	Unknown
	Stresses:	1. Ecosystem stresses -> 1.2. Ecosystem degradation		
11. Climate change & severe weather -> 11.2. Droughts	Future	Whole (>90%)	Causing/could cause fluctuations	Low impact: 5
	Stresses:	1. Ecosystem stresses -> 1.1. Ecosystem conversion 1. Ecosystem stresses -> 1.2. Ecosystem degradation 2. Species Stresses -> 2.1. Species mortality		

Conservation Actions in Place

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions in Place
In-Place Research, Monitoring and Planning
Action Recovery plan: Yes
Systematic monitoring scheme: Yes

Conservation Actions in Place
In-Place Land/Water Protection and Management
Conservation sites identified: Yes, over entire range
Occur in at least one PA: Yes
Percentage of population protected by PAs (0-100): 51-60
Area based regional management plan: No
Invasive species control or prevention: Not Applicable
In-Place Species Management
Harvest management plan: No
Successfully reintroduced or introduced benignly: No
Subject to ex-situ conservation: No
In-Place Education
Subject to recent education and awareness programmes: No
Included in international legislation: No
Subject to any international management/trade controls: No

Conservation Actions Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Conservation Actions Needed
5. Law & policy -> 5.1. Legislation -> 5.1.2. National level

Research Needed

(<http://www.iucnredlist.org/technical-documents/classification-schemes>)

Research Needed
3. Monitoring -> 3.1. Population trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 2-4,3
Estimated extent of occurrence (EOO) (km ²): 4
Number of Locations: 1
Lower elevation limit (m): 1000

Distribution
Upper elevation limit (m): 1200
Population
Continuing decline of mature individuals: Yes
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: No
Generation Length (years): 3

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