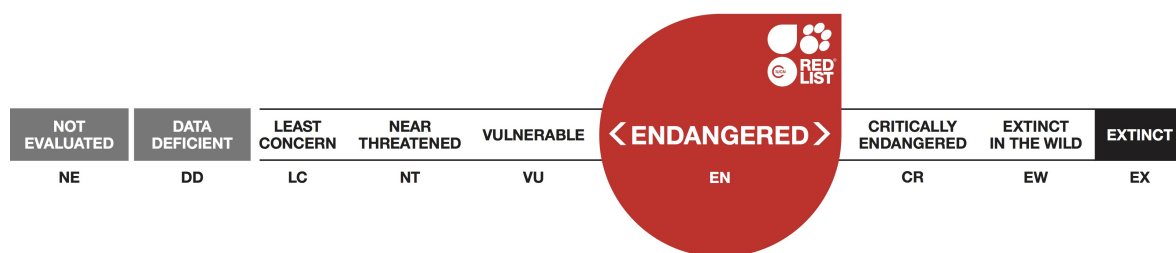


Neochanna cleaveri, Australian Mudfish

Assessment by: Whiterod, N., Hammer, M., Freeman, R., Raadik, T. & Coleman, R.



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Taxonomy

Kingdom	Phylum	Class	Order	Family
Animalia	Chordata	Actinopterygii	Osmeriformes	Galaxiidae

Taxon Name: *Neochanna cleaveri* (Scott, 1934)

Synonym(s):

- *Galaxias cleaveri* Scott, 1934
- *Galaxias upcheri* Scott, 1942
- *Saxilaga anguilliformis* Scott, 1936

Common Name(s):

- English: Australian Mudfish

Taxonomic Source(s):

Eschmeyer, W.N., Fricke, R., and Ven der Laan, R. (eds.). 2017. Catalog of Fishes: genera, species, references. Updated 01 November 2017. Available at: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>.

Assessment Information

Red List Category & Criteria: Endangered B2ab(iii) [ver 3.1](#)

Year Published: 2019

Date Assessed: February 13, 2019

Justification:

This species is assessed as Endangered. It has an area of occupancy (AOO) of 312-400 km², occurs in five locations based on the threat of drought and associated habitat loss and degradation, and there is projected continuing decline in its habitat.

Geographic Range

Range Description:

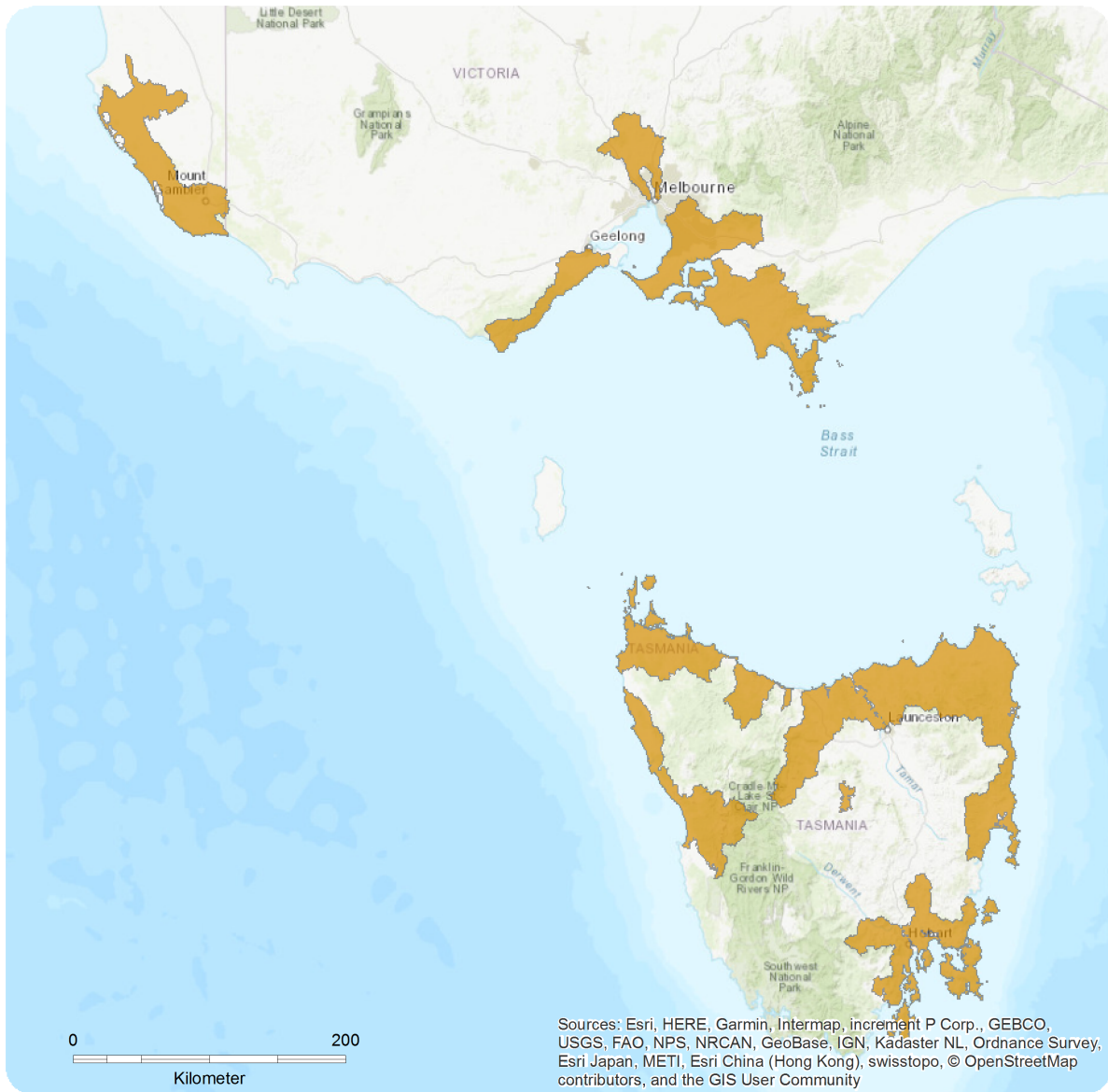
This species occurs across southern Australia, from the coastal habitats of Tasmania, Flinders Island, southern Victoria from Wilsons Promontory and the Otway Ranges and two drain catchments (lower Drain M/Sutherland Drain and Drain L/Lake Hawdon/Bray Drain) from south-eastern South Australia.

Country Occurrence:

Native: Australia (South Australia, Tasmania, Victoria)

Distribution Map

Neochanna cleaveri



Range

Extant (resident)

Compiled by:

Lintermans, M. and colleagues 2019 IUCN Red List assessment for Australian freshwater fish.



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



Population

The status of the species across its range is largely unknown. Whilst still occurring broadly across Tasmania and Victoria, there is insufficient understanding of changes over time. In South Australia, it appears stable across the two altered drain systems within some wetland habitat that occurs (Hammer *et al.* 2010, Veale and Whiterod unpublished data), with it considered extinct from the historical record locality (Bool Lagoon).

Current Population Trend: Unknown

Habitat and Ecology (see Appendix for additional information)

The Australian Mudfish is a nocturnal and cryptic (hiding within dense habitat) species occupying freshwater habitats which are typically semi-permanent, shallow and often-muddy with dense vegetation. It is capable of burrowing into mud or sheltering in moist substrates under rocks or debris helping it to tolerate partial or full drying of habitat (Fulton 1986, Koehn and Raadik 1991). This ability to survive without surface water for a short period is known as aestivation, and is one of several physical and ecological adaptations 'Mudfish' as a group have developed to adapt to life in harsh swampy conditions (Waters and McDowall 2005).

It is the only member of the genus that is considered amphidromous (McDowall 2010) but it always facultative as some populations occur in landlocked systems or without obvious indication of migrations (Andrew 1991, Hammer *et al.* 2011, Koehn and Raadik 1991). Its amphidromous movements involve spawning late in winter with newly hatched larvae washed downstream and spend their first two to three months at sea or in estuaries. The 'whitebait' juveniles migrate upstream from estuaries into freshwater habitats.

Systems: Freshwater, Marine

Use and Trade

This species is not used.

Threats (see Appendix for additional information)

The species is threatened by the loss of suitable wetland habitat across its range due to water availability and drainage and clearing of swamps and development. Stock access is a threat and can result in habitat degradation (and the loss of aquatic vegetation). Barriers to hydrological connectivity impact its movement patterns. Introduction of alien species such as Brown Trout (*Salmo trutta*), Rainbow Trout (*Oncorhynchus mykiss*) and Redfin Perch (*Perca fluviatilis*), and application of herbicides and fertilisers may cause a significant threat to the health of habitat and continuation of species (Koehn and Raadik 1991, DELWP 2003). The overriding influence of climate change will strongly impact this species.

Conservation Actions (see Appendix for additional information)

This species is listed as Threatened under the Victorian Flora and Fauna Guarantee Act (1988) and as Critically Endangered in Victoria under the Advisory List of Threatened Vertebrate Fauna (DSE 2013). In South Australia, it is considered Critically Endangered (Hammer *et al.* 2009). Protection and

enhancement of its swampy seasonal vegetated habitats is recommended but through consideration of water and inundation regimes and protection of aquatic vegetation. Given its amphidromy addressing barriers to movement to allow hydrological connectivity is important. A greater understanding of the status of the species is required.

Credits

Assessor(s): Whiterod, N., Hammer, M., Freeman, R., Raadik, T. & Coleman, R.

Reviewer(s): Bruce, A., Koehn, J., Lintermans, M., Pearce, L., Scott, K., Tims, A. & Tonkin, Z.

**Facilitators(s) and
Compiler(s):** Barker, J. & Sayer, C.

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Citation

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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?
5. Wetlands (inland) -> 5.1. Wetlands (inland) - Permanent Rivers/Streams/Creeks (includes waterfalls)	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.2. Wetlands (inland) - Seasonal/Intermittent/Irregular Rivers/Streams/Creeks	Resident	Suitable	Yes
5. Wetlands (inland) -> 5.4. Wetlands (inland) - Bogs, Marshes, Swamps, Fens, Peatlands	-	Suitable	-
5. Wetlands (inland) -> 5.6. Wetlands (inland) - Seasonal/Intermittent Freshwater Lakes (over 8ha)	-	Suitable	-
5. Wetlands (inland) -> 5.7. Wetlands (inland) - Permanent Freshwater Marshes/Pools (under 8ha)	-	Suitable	-
5. Wetlands (inland) -> 5.8. Wetlands (inland) - Seasonal/Intermittent Freshwater Marshes/Pools (under 8ha)	-	Suitable	-
5. Wetlands (inland) -> 5.9. Wetlands (inland) - Freshwater Springs and Oases	-	Suitable	-
9. Marine Neritic -> 9.1. Marine Neritic - Pelagic	-	Suitable	-
9. Marine Neritic -> 9.10. Marine Neritic - Estuaries	Breeding season	Suitable	Yes

Threats

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

Threat	Timing	Scope	Severity	Impact Score
1. Residential & commercial development -> 1.1. Housing & urban areas	Ongoing	-	-	-
1. Residential & commercial development -> 1.2. Commercial & industrial areas	Ongoing	-	-	-
11. Climate change & severe weather -> 11.1. Habitat shifting & alteration	Ongoing	-	-	-
11. Climate change & severe weather -> 11.2. Droughts	Ongoing	-	-	-
7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.2. Abstraction of surface water (commercial use)	Ongoing	-	-	-

7. Natural system modifications -> 7.2. Dams & water management/use -> 7.2.6. Abstraction of ground water (commercial use)	Ongoing	-	-	-
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Perca fluviatilis)	Ongoing	-	-	-
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Salmo trutta)	Ongoing	-	-	-
8. Invasive and other problematic species, genes & diseases -> 8.1. Invasive non-native/alien species/diseases -> 8.1.2. Named species (Oncorhynchus mykiss)	Ongoing	-	-	-
9. Pollution -> 9.3. Agricultural & forestry effluents -> 9.3.3. Herbicides and pesticides	Ongoing	-	-	-

Conservation Actions Needed

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

Conservation Actions Needed
1. Land/water protection -> 1.2. Resource & habitat protection
2. Land/water management -> 2.1. Site/area management
2. Land/water management -> 2.3. Habitat & natural process restoration
4. Education & awareness -> 4.3. Awareness & communications

Research Needed

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

Research Needed
1. Research -> 1.2. Population size, distribution & trends
1. Research -> 1.3. Life history & ecology
1. Research -> 1.5. Threats
3. Monitoring -> 3.1. Population trends
3. Monitoring -> 3.4. Habitat trends

Additional Data Fields

Distribution
Estimated area of occupancy (AOO) (km ²): 312-400
Estimated extent of occurrence (EOO) (km ²): 252815
Number of Locations: 5
Lower elevation limit (m): 0
Upper elevation limit (m): 30
Lower depth limit (m): 0
Upper depth limit (m): 3
Habitats and Ecology
Continuing decline in area, extent and/or quality of habitat: Yes
Movement patterns: Full Migrant

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