

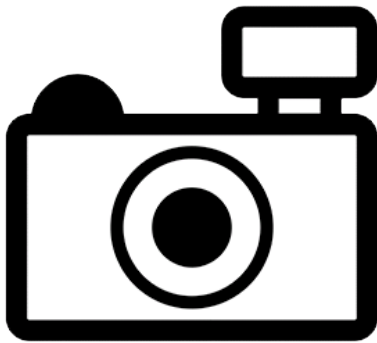
Glossy Koonac (*Cherax glaber*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, September 2011

Revised, September 2012 and November 2017

Web Version, 5/9/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Fetzner (2017):

“Australia: Western Australia (SW coastal)”

From Morgan and Beatty (2005):

“[...] all of the 11 species of freshwater crayfishes native to Western Australia are endemic to the southwest. Six of these belong to the genus *Cherax*, i.e. restricted Koonac *Cherax glaber* (Dunsborough to Windy Harbour) (Austin and Knott 1996, Beatty and Morgan unpublished data).”

Status in the United States

This species has not been reported as introduced or established in the United States. There is no indication that the species is in trade in the United States.

From FFWCC (2017):

“Prohibited nonnative species are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities. Very limited exceptions may be made by permit from the Executive Director [...] [The list of prohibited nonnative species includes] *Cherax glaber*”

From Washington Department of Fish & Wildlife (2017):

“(1) Prohibited aquatic animal species. RCW 77.12.020

These species are considered by the commission to have a high risk of becoming an invasive species and may not be possessed, imported, purchased, sold, propagated, transported, or released into state waters except as provided in RCW 77.15.253.”

“[The list of prohibited aquatic animal species includes] Family Parastacidae: Crayfish: All genera except *Engaeus*, and except the species *Cherax quadricarinatus* [sic], *Cherax papuanus*, and *Cherax tenuimanus*.”

Means of Introduction into the United States

This species has not been reported as introduced or established in the United States.

Remarks

Cherax glaber may be referred to simply as “koonac,” but this common name is not exclusively applied to *C. glaber*. Morgan and Beatty (2005) apply it to *C. preissii*, and Anonymous (2002) applies it to *C. plebejus*.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From GBIF Secretariat (2017):

“Kingdom	Animalia
Phylum	Arthropoda
Class	Malacostraca
Order	Decapoda
Family	Parastacidae
Genus	<i>Cherax</i> Erichson, 1846
Species	<i>Cherax glaber</i> Riek, 1967”

“SPECIES | ACCEPTED”

Size, Weight, and Age Range

From Department of Fisheries (2011):

“Koonacs are also relatively large freshwater crayfish, growing up to 200 mm in total length.”

Environment

From Fetzner (2017):

“[...] freshwater.”

From Department of Fisheries (2011):

“[...] often found in seasonal rivers and swamps that dry-up during summer.”

Climate/Range

No information available.

Distribution Outside the United States

Native

From Fetzner (2017):

“Australia: Western Australia (SW coastal)”

From Morgan and Beatty (2005):

“[...] all of the 11 species of freshwater crayfishes native to Western Australia are endemic to the southwest. Six of these belong to the genus *Cherax*, i.e. restricted Koonac *Cherax glaber* (Dunsborough to Windy Harbour) (Austin and Knott 1996, Beatty and Morgan unpublished data).”

Introduced

No introductions of this species have been reported.

Means of Introduction Outside the United States

No introductions of this species have been reported.

Short Description

From Department of Fisheries (2011):

“Koonacs have four keels on the head and two are very prominent. Koonacs have no spines on the rostrum or telson. The chelipeds (claws) are unique, being very broad and serrated on the inside edge. Koonacs are usually very dark in colour, ranging from blueblack to mottled brown-black.”

From Allen et al. (2012):

“Very similar to [*Cherax preissii*] but distinguished by having fewer fine punctuations (i.e. dimples) on the dorsal surface of the cephalothorax giving the shell a glossy appearance (Riek

1967; Horwitz 1995; Morgan et al. 2011). Colour is a mottled black-brown ([...] Riek 1967; Morgan et al. 2011). Possesses broad, spade-like claws adapted for burrowing, which allows them to inhabit ephemeral habitats (Morgan et al. 2011).”

Biology

From Fetzner (2017):

“Habitat [is] Swampy areas with sedges, as the swamp dries out the burrows are sealed with a mud chimney.”

From Department of Fisheries (2011):

“Koonacs survive drought because they can burrow and remain there for months at a time.”

From Allen et al. (2012):

“Very little is known of the biology of this species.”

“This species generally inhabits near-coastal swamps and wetlands (Morgan et al. 2011) that are not usually sampled during aquatic macrofauna surveys.”

Human Uses

From Gherardi (2011):

“There is no doubt that the use of crayfish as food is important for some countries and sectors of society, but human consumption is not the unique – and possibly not the most important – use we make of them. Indeed, only a tiny fraction of the over 640 crayfish species described so far (Crandall and Buhay, 2008) occurs in the market. [...] Other species with some potentials of entering the market include [...] *Cherax glaber* Riek [...]”

This species may be kept as a pet:

From Hoskins (2017):

“AQUARIUM KOONAC

Surprise your friends and family with a live souvenir of your vacation here [in Denmark, Western Australia].

This fun critter can easily travel to Perth or alternate location in WA [Western Australia].

Koonac stay small and live a number of years - like a [sic] turtles or crazy crabs they can survive out of their tank for small durations too.”

Diseases

No information available. No OIE-reportable diseases have been documented for this species.

Threat to Humans

No information available.

3 Impacts of Introductions

No information available. No introductions of this species have been documented. The Florida Fish and Wildlife Conservation Commission (2017) and the Washington Department of Fish and Wildlife (2017) have listed the crayfish *Cherax glaber* as a prohibited species.

4 Global Distribution



Figure 1. Location of Augusta, Western Australia, 12 miles south of the type locality of *Cherax glaber* (Fetzner 2017). The native range extends approximately 50 miles north and 65 miles southeast of the type locality. No complete range map is available for this species. Map image by NordNordWest. Licensed under Creative Commons BY-SA 3.0 DE. Available: <https://commons.wikimedia.org/w/index.php?curid=9058250>.

5 Distribution Within the United States

This species has not been reported as introduced or established in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was high for the central Pacific Coast and medium along most of the remainder of the Pacific Coast. The climate match was low across the rest of the contiguous United States. Climate6 score indicated that the contiguous U.S. has a low climate match overall. Scores of 0.005 or less are classified as low match; Climate6 score for *Cherax glaber* was 0.004.

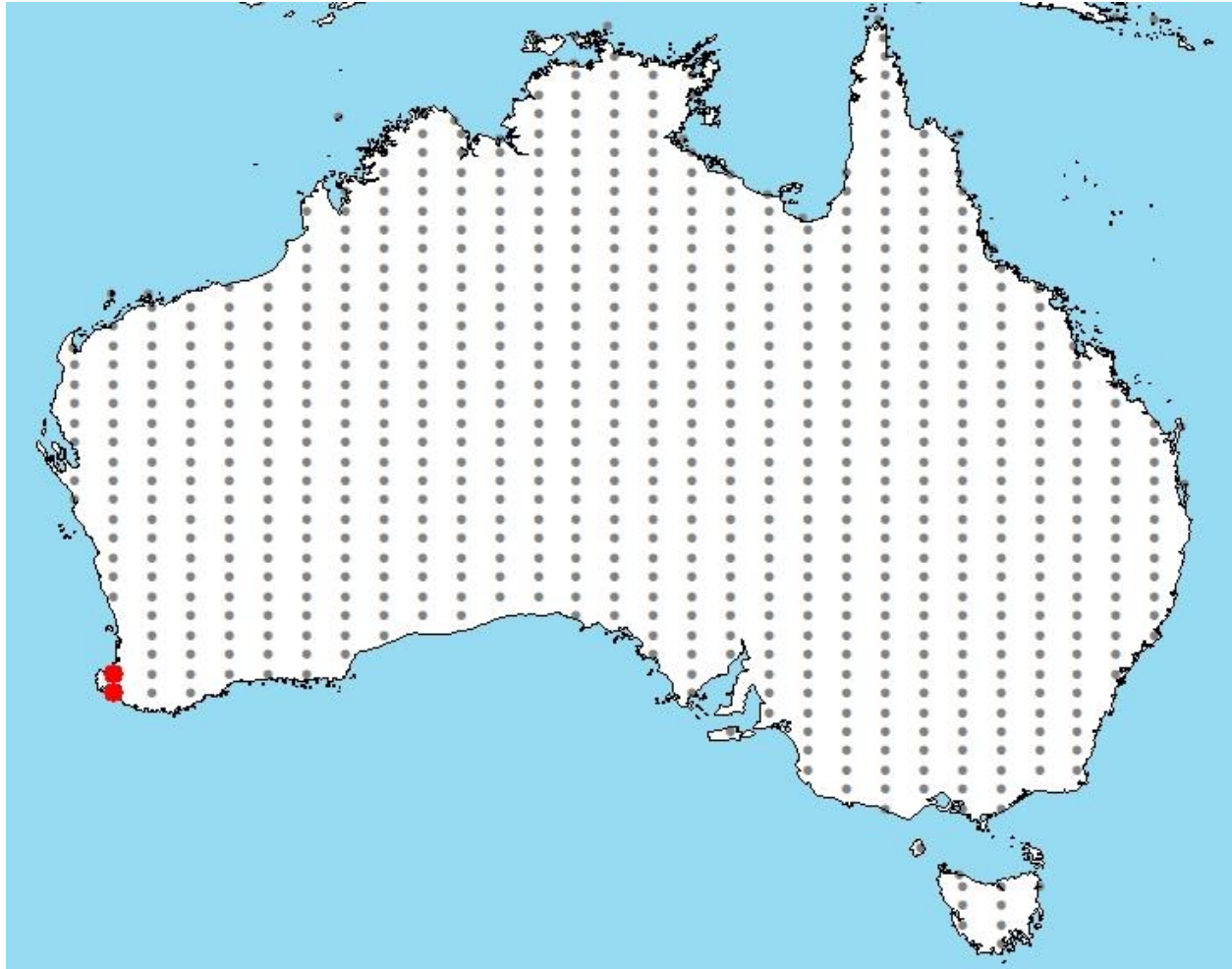


Figure 2. RAMP (Sanders et al. 2014) source map of Australia showing weather stations selected as source locations (red) and non-source locations (gray) for *Cherax glaber* climate matching. Source locations approximated from Fetzner (2017) and Morgan and Beatty (2005).

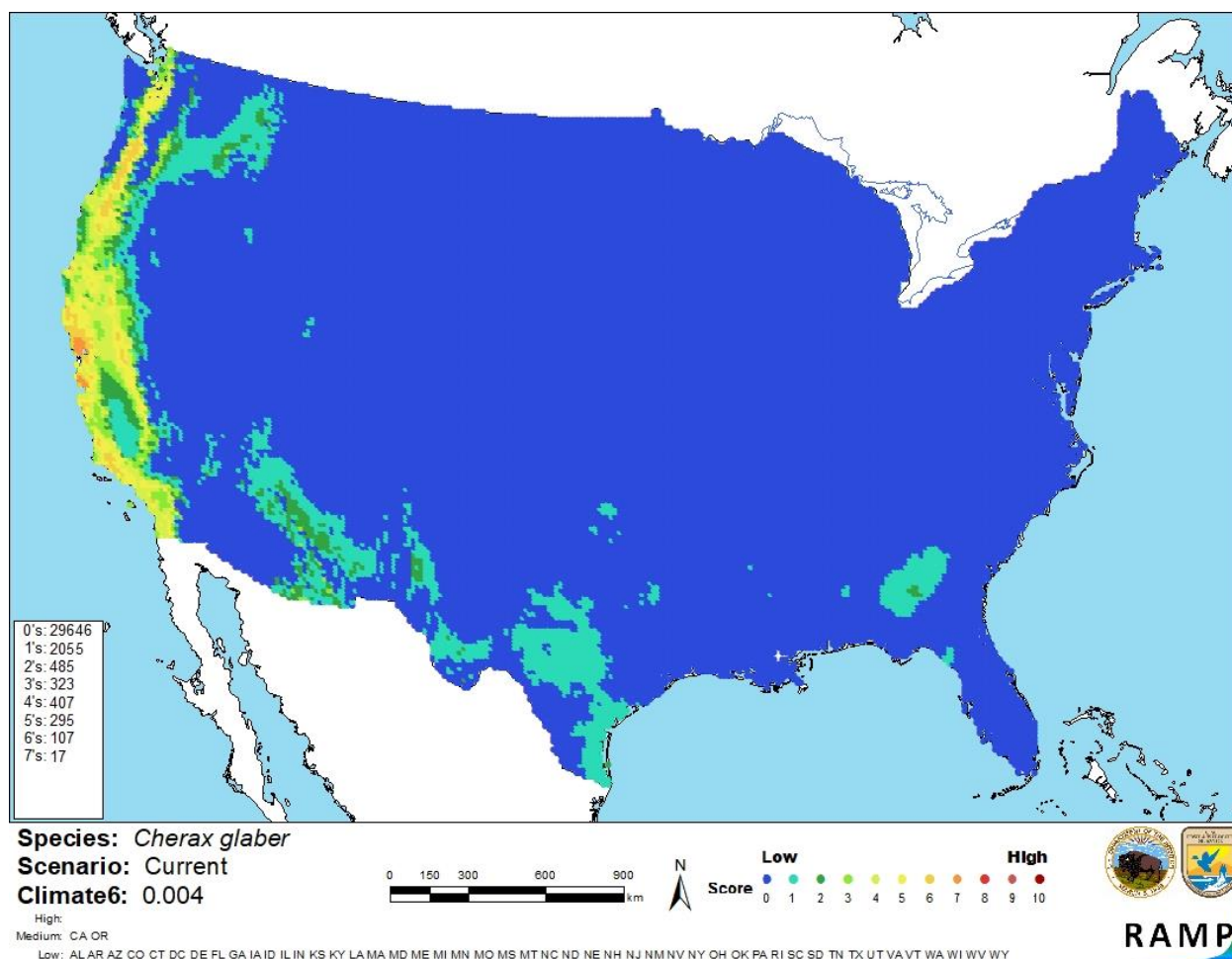


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax glaber* in the contiguous United States based on source location reported by Morgan and Beatty (2005) and Fetzner (2017). 0=Lowest match, 10=Highest match.

The “High”, “Medium”, and “Low” climate match categories are based on the following table:

Climate 6: Proportion of (Sum of Climate Scores 6-10) / (Sum of total Climate Scores)	Climate Match Category
$0.000 < X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Little information is available on the biology, ecology, or distribution of *C. glaber*. The species has not been reported as introduced outside its native range, so any impacts of introductions of *C. glaber* remain unknown. Because of the lack of information, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax glaber is a crayfish with a restricted native range in southwestern Western Australia. Little is known about the biology of *C. glaber*. The species has potential commercial value as a food source or aquarium pet. No introductions of *C. glaber* have been reported, so impacts of introduction remain unknown. The Florida Fish and Wildlife Conservation Commission and the Washington Department of Fish and Wildlife have listed the crayfish *C. glaber* as a prohibited species. Climate match to the contiguous U.S. is low overall, with highest match occurring along the Pacific Coast of California. Overall risk posed to the contiguous U.S. by *C. glaber* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.

- Allen, M. G., S. J. Beatty, and D. L. Morgan. 2012. Strategic action plan for protecting aquatic biodiversity in the Cape to Cape region. Freshwater Fish Group & Fish Health Unit (Murdoch University) report to the Cape to Cape Catchments Group and Department of Environment and Conservation, Government of Western Australia, Australia.
- Anonymous. 2002. The translocation of brown trout (*Salmo trutta*) and rainbow trout (*Oncorhynchus mykiss*) into and within Western Australia. Fisheries Management Paper no. 156. Department of Fisheries, Perth, Australia.
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- Fetzner, J. W., Jr. 2017. *Cherax glaber* Riek, 1967. In The crayfish & lobster taxonomy browser. Carnegie Museum of Natural History, Pittsburgh, Pennsylvania. Available: <http://iz.carnegiemnh.org/crayfish/NewAstacidea/species.asp?g=Cherax&s=glaber&ssp=>. (November 2017).
- FFWCC (Florida Fish and Wildlife Conservation Commission). 2017. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/>. (November 2017).

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- Hoskins, L. 2017. Marron. Nutkin Lodge, Denmark, Western Australia, Australia. Available: <https://www.nutkinlodge.com.au/marron>. (November 2017).
- Morgan, D. L., and S. J. Beatty. 2005. Baseline study on the fish and freshwater crayfish fauna in the Blackwood River and its tributaries receiving discharge from the Yarragadee Aquifer. Centre for Fish & Fisheries Research, Murdoch University. Prepared for the Department of Environment, Government of Western Australia, Perth, Australia.
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10 References Quoted But Not Accessed

Note: The following references are cited within quoted text within this ERSS, but were not accessed for its preparation. They are included here to provide the reader with more information.

- Austin, C. M., and B. Knott. 1996. Systematics of the freshwater crayfish genus *Cherax* Erichson (Decapoda: Parastacidae) in south-western Australia: electrophoretic, morphological and habitat variation. *Australian Journal of Zoology* 44:223-58.
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- Horwitz, P. A. 1995. A preliminary key to the species of Decapoda (Crustacea: Malacostraca) found in Australian inland waters. Cooperative Research Centre for Freshwater Ecology, Albury, New South Wales, Australia.
- Morgan, D. L., S. J. Beatty, M. W. Klunzinger, M. G. Allen, and Q. F. Burnham. 2011. A field guide to freshwater fishes, crayfishes and mussels of south-western Australia. South East Regional Centre for Urban Landcare (SERCUL), Perth, Western Australia, Australia.
- Riek, E. F. 1967. The freshwater crayfish of Western Australia (Decapoda: Parastacidae). *Australian Journal of Zoology* 15:103-121.