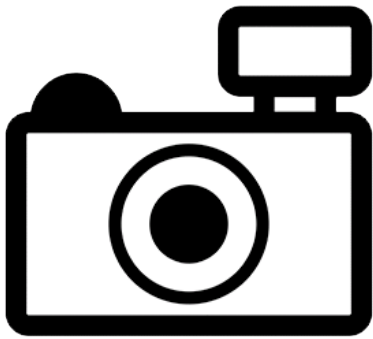


Restricted Gilgie (*Cherax crassimanus*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011
Revised, September 2012 and November 2017
Web Version, 5/8/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Morgan and Beatty (2005):

“The restricted gilgie, *C. crassimanus* [a crayfish] is found in the extreme corner of southwestern Australia from approximately Margaret River to Denmark (Austin 1986; Horwitz and Adams, 2000).”

From Allen et al. (2012):

“Has been recorded from the Ellen Brook (northern limit of range), Margaret River, and Turner Brook catchments in the Cape to Cape region (Austin & Knott 1996; Morgan & Beatty [2004], 2005). Also ranges southwards in coastal drainages as far as Denmark (Morgan et al. 2011).”

Status in the United States

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

From Washington Department of Fish and Wildlife (2017):

“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 following species are classified as prohibited animal species: [...]

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

Allen et al. (2012) use the common name “Restricted Koonac” for this species.

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 crassimanus</i> Riek, 1967”

“SPECIES | ACCEPTED”

Size, Weight, and Age Range

From Allen et al. (2012):

“[...] maximum length 70 mm [...]”

Environment

From Fetzner (2017):

“[...] freshwater [...]”

Climate/Range

No information available.

Distribution Outside the United States

Native

From Morgan and Beatty (2005):

“The restricted gilgie, *C. crassimanus* is found in the extreme corner of south-western Australia from approximately Margaret River to Denmark (Austin 1986; Horwitz and Adams, 2000).”

From Allen et al. (2012):

“Has been recorded from the Ellen Brook (northern limit of range), Margaret River, and Turner Brook catchments in the Cape to Cape region (Austin & Knott 1996; Morgan & Beatty 2004a, 2005). Also ranges southwards in coastal drainages as far as Denmark (Morgan et al. 2011).”

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 Allen et al. (2012):

“A small (maximum length 70 mm) species that is difficult to distinguish from other *Cherax*, particularly the Gilgie and Koonac (Morgan et al. 2011). It has four head ridges that are less pronounced and a spine on the inner edge of the carpus (i.e. wrist) that is more acutely curved than the other species ([...] Horwitz 1995; Morgan et al. 2011). Colour is variable from light to dark greenish-brown, often mottled with a central reddish-orange stripe, and pale orange at the base of the legs and claws ([...] Morgan et al. 2011).”

Biology

From Allen et al. (2012):

“Inhabits permanent and ephemeral streams, more often encountered in smaller creek systems (Morgan et al. 2011). Very little is known of the biology of this species.”

“The preference shown for ephemeral habitats suggests a burrowing capability therefore this species may fare better than aquatic species reliant on permanent water in the face of declining rainfall and dropping water tables.”

From Morgan and Beatty (2005):

“[*C. crassimanus*] has been shown to have considerable genetic variability between populations (Austin and Knott, 1996).”

Human Uses

No information available.

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 reported. The Florida Fish and Wildlife Conservation Commission (FFWCC 2017) and the Washington Department of Fish and Wildlife (2017) have listed the crayfish *Cherax crassimanus* as a prohibited species.

4 Global Distribution



Figure 1. Known global distribution of *C. crassimanus*, reported from southwest Australia. Map from GBIF Secretariat (2017).

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 low for most of the contiguous United States. The highest scores were located near San Francisco and San Jose, California. Much of the Pacific Coast showed medium match. Climate 6 score indicated that the contiguous U.S. has a low climate match overall. The range of scores classified as low climate match is between 0.000 and 0.005, inclusive; Climate 6 score for *Cherax crassimanus* was 0.004.

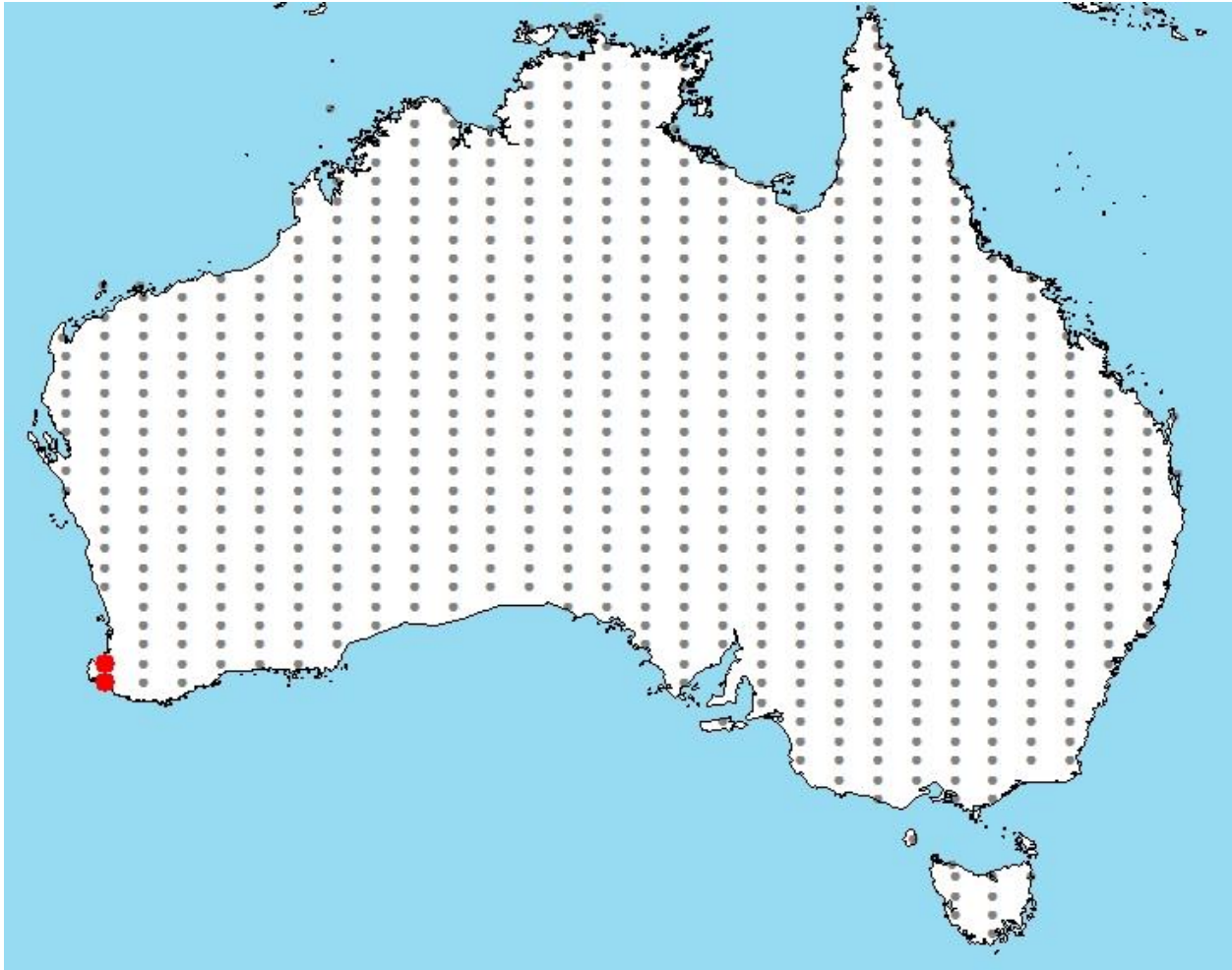


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Australia selected as source locations (red) and non-source locations (gray) for *Cherax crassimanus* climate matching. Source locations from GBIF Secretariat (2017).

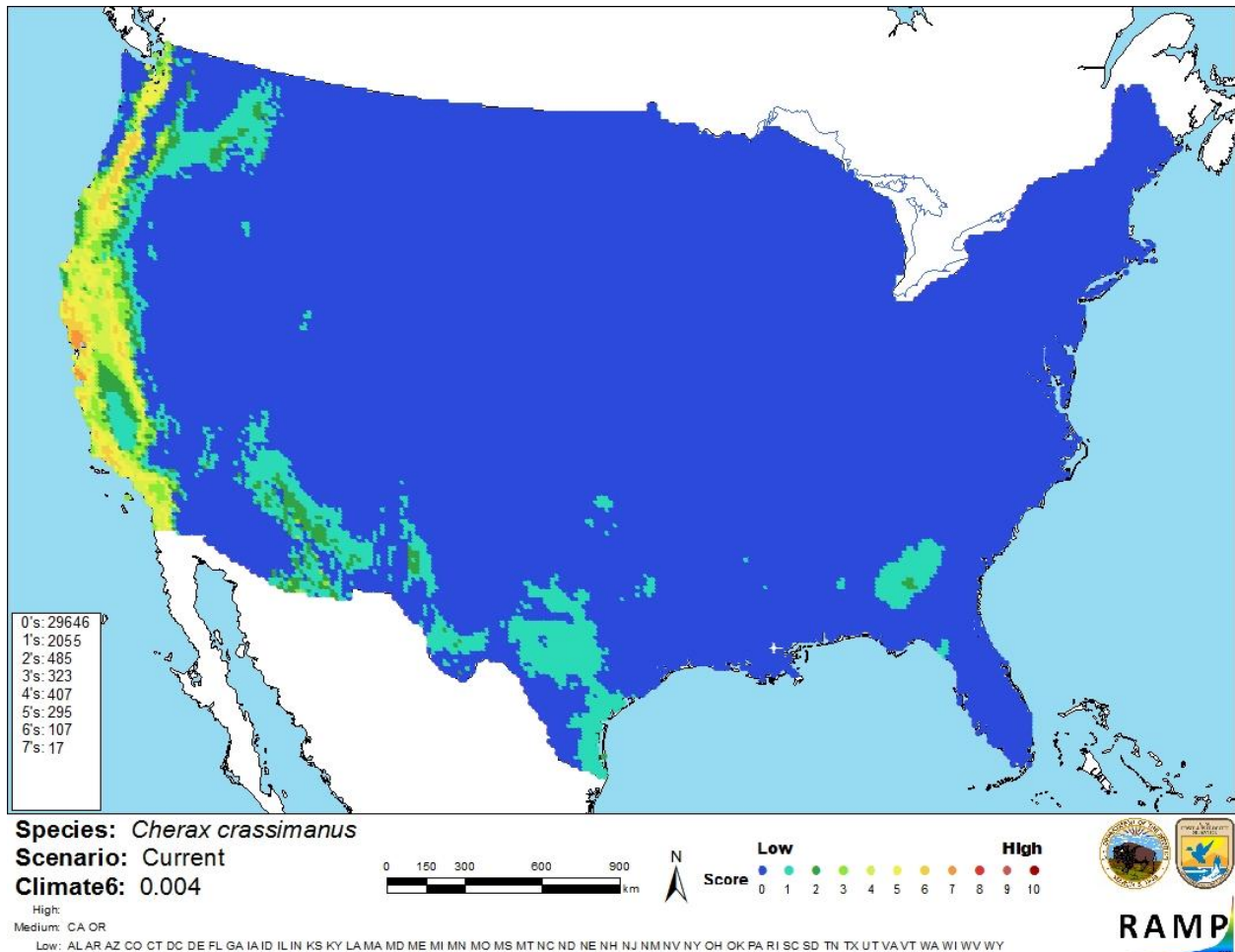


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax crassimanus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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
$0.000 < X < 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Limited information was available on the biology and ecology of *Cherax crassimanus*. The species has a small native range and has not been reported as introduced outside that range, so no information is available on impacts of introduction of this species. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax crassimanus is a small crayfish in the family Parastacidae. It is native only to southwestern Australia and has not been reported as introduced elsewhere. *C. crassimanus* has a low climate match to the contiguous U.S. overall, but medium to high match to parts of California, Oregon, and Washington. With the lack of a history of introductions, further information is needed to determine the risk posed by *C. crassimanus* to the contiguous U.S. The Florida Fish and Wildlife Conservation Commission and the Washington Department of Fish and Wildlife have listed the crayfish *C. crassimanus* as a prohibited species. The overall risk posed by this species is uncertain.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: 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.

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- Beatty, S., D. Morgan, C. Jury, and J. Mitchell. 2006. Fish and freshwater crayfish in streams in the Cape Naturaliste region & Wilyabrup Brook. Report to the Cape to Cape Catchments Group and GeoCatch.
- Fetzner, J. W. 2017. *Cherax crassimanus* Riek, 1967. In The crayfish & lobster taxonomy browser. Available: <http://iz.carnegiemnh.org/crayfish/NewAstacidea/species.asp?g=Cherax&s=crassimanus&ssp=>. (November 2017).
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Morgan, D., and S. Beatty. 2005. Fish and crayfish fauna of Ellen Brook, Cowaramup Brook and Gunyulgup Brook in the Cape to Cape region of Western Australia. Report to Ribbons of Blue/Waterwatch WA.

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Washington Department of Fish and Wildlife. 2017. WAC 220-12-090 classification – nonnative aquatic animal species. Washington Department of Fish and Wildlife, Olympia, Washington. Available: <http://wdfw.wa.gov/ais/wac.html>. (November 2017).

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 1986 [Source did not provide full citation for this reference.]

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* 44:223-258.

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, Australia.

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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, Australia.