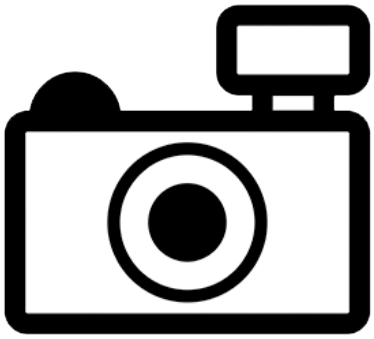
Cherax punctatus (a crayfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, September 2011
Revised, September 2012 and April 2018
Web Version, 5/21/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Riek (1951):

"Coorari; Eumundi [southeastern Queensland, Australia]."

From Lew Ton and Poor (1987):

"The type locality as published by Clark contains a typographical error and is Cooran (not Coorari)."

Status in the United States

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

Means of Introductions to the United States

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

The Florida Fish and Wildlife Conservation Commission (2018) has listed the crayfish *Cherax punctatus* as a prohibited species. 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."

From Washington Department of Fish & Wildlife (2018):

"(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 […] The following species are classified as prohibited animal species: […] Family Parastacidae: Crayfish: All genera except *Engaeus*, and except the species *Cherax quadricarninatus* [*sic*], *Cherax papuanus*, and *Cherax tenuimanus*."

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From WoRMS (2018):

"Biota > Animalia (Kingdom) > Arthropoda (Phylum) > Crustacea (Subphylum) > Multicrustacea (Superclass) > Malacostraca (Class) > Eumalacostraca (Subclass) > Eucarida (Superorder) > Decapoda (Order) > Pleocyemata (Suborder) > Astacidea (Infraorder) > Parastacoidea (Superfamily) > Parastacidae (Family) > *Cherax* (Genus) > *Cherax punctatus* (Species)"

"Status accepted"

Size, Weight, and Age Range

No information available.

Environment

No information available.

Climate/Range

From Bureau of Meteorology (2018):

"The South East Queensland region has a subtropical climate. Rainfall occurs throughout the year with most rainfall falling during the summer and autumn months. Higher streamflows typically occur during these months."

Distribution Outside the United States

Native
From Riek (1951):

"Coorari; Eumundi [southeastern Queensland, Australia]."

From Lew Ton and Poor (1987):

"The type locality as published by Clark contains a typographical error and is Cooran (not Coorari)."

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 Bentley (2014):

"[…] wide chelae […]"

Biology
From Riek (1951):

"This is described as a terrestrial species of *Cherax*, some of the specimens having been collected under a rotten log, others burrowing down several feet to ground-water level. The burrows are marked by large cones of excavated earth."

From Jones and Lester (1992):

"Temnocephalids occur on decapod crustaceans […] and are generally considered to be commensals […] Cannon & Jennings (1987) reported that *Temnocephala minor* inhabited the external surface of the carapace of its hosts, *Cherax dispar* and *Cherax punctatus*."

Human Uses
No information available.

Diseases
No information available.

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 (2018) and the Washington Department of Fish and Wildlife (2018) have listed this species as a prohibited species.

4 Global Distribution

Figure 1. Reported global distribution of *Cherax punctatus*, showing occurrences in southeast Queensland, Australia. Map from GBIF Secretariat (2017).

5 Distribution within the United States

This species has not been reported within 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 in the northwestern and northeastern contiguous U.S. Climate match was medium along the Atlantic Coast in the southeastern U.S. and across much of Texas. A high climate match was found in peninsular Florida. Climate 6 score indicated that the contiguous U.S. has a medium climate match overall. Scores between 0.005 and 0.103 are classified as medium match; Climate 6 score for *Cherax punctatus* was 0.023.

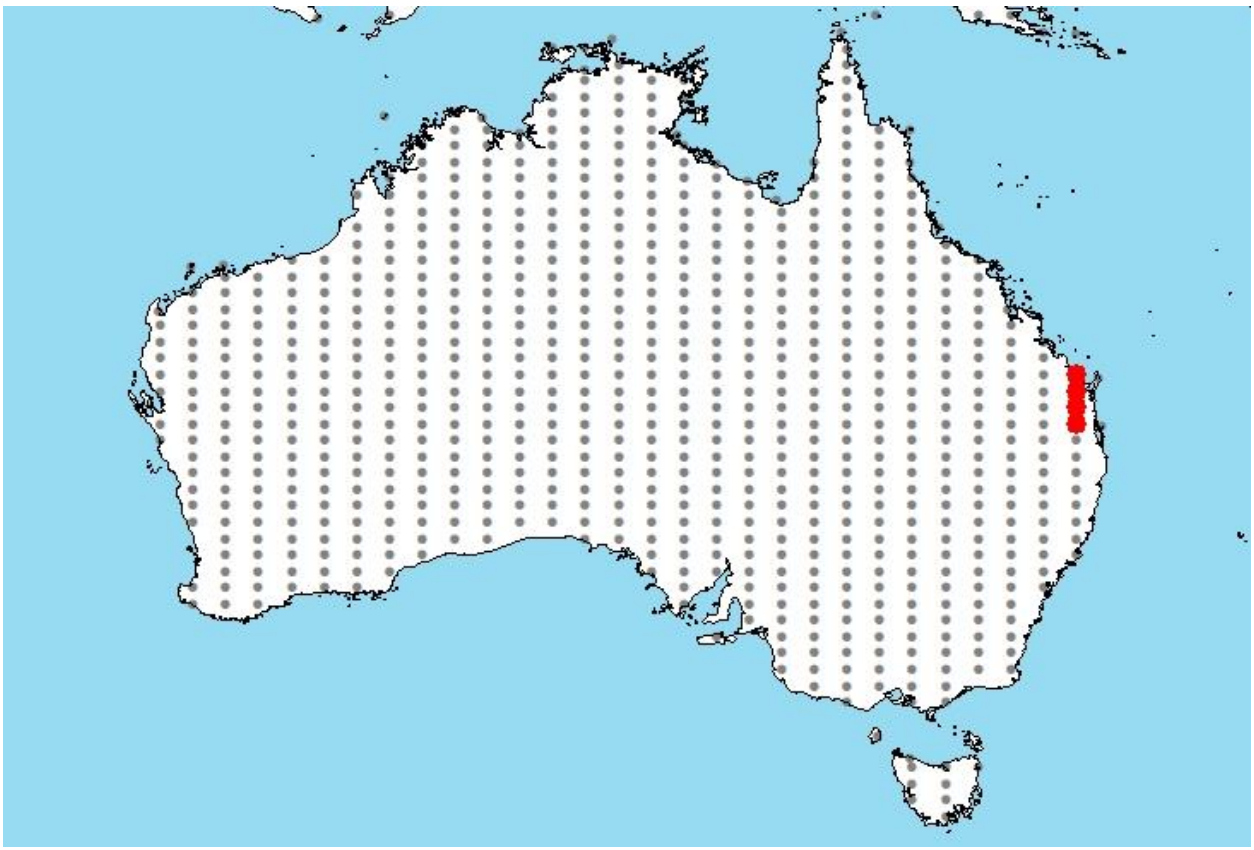


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Australia selected as source locations (red) and non-source locations (gray) for *Cherax punctatus* climate matching. Source locations from GBIF Secretariat (2017).

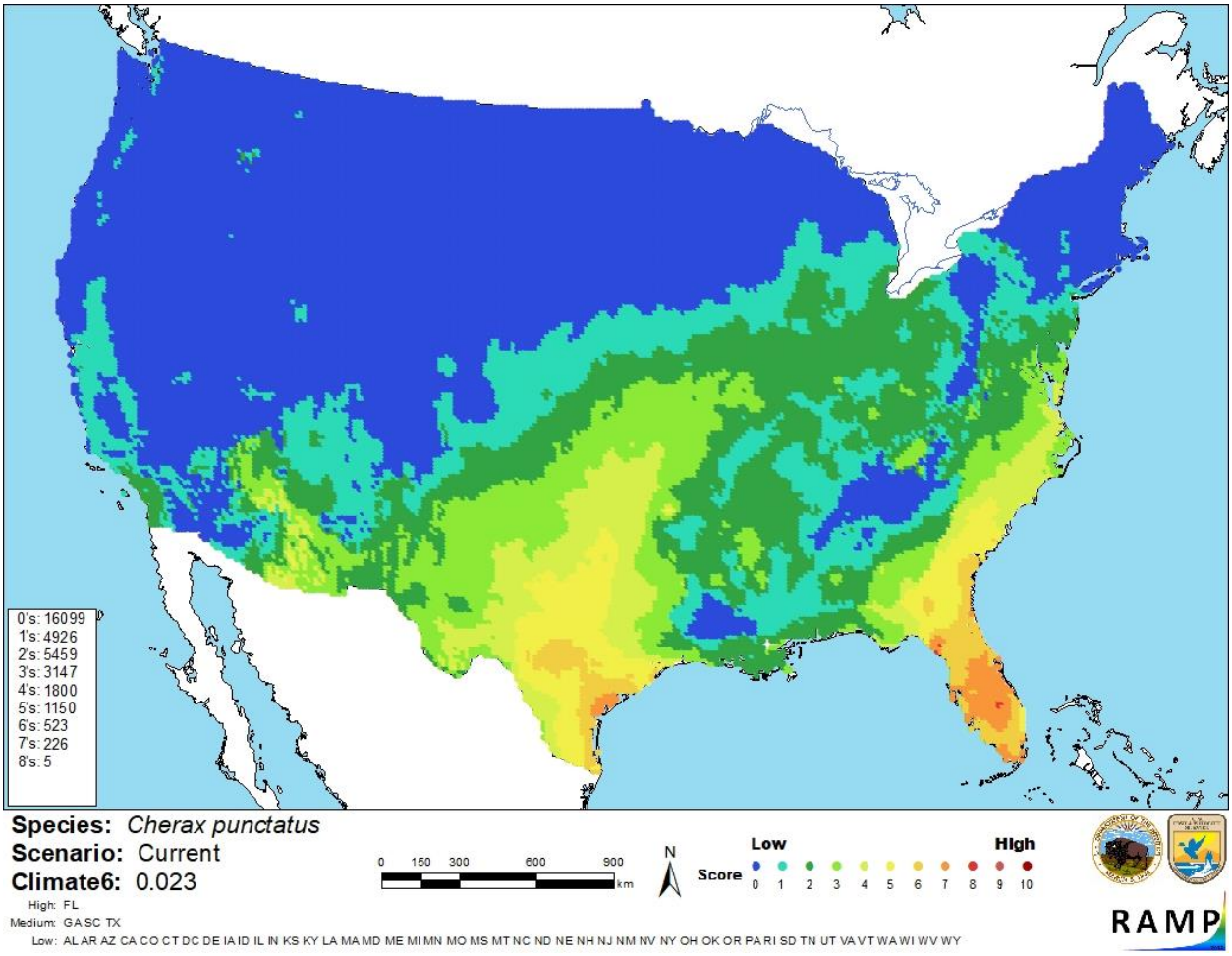


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax punctatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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 is available on the biology, ecology, and distribution of *Cherax punctatus*. No information is available on impacts of introduction because no introductions of this species have been reported. Without any history of introduction on which to judge the likelihood of impacts, certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax punctatus is a crayfish native to southeastern Queensland, Australia. Climate match to the contiguous U.S. is medium overall, with high match occurring in parts of Florida. Due to perceived risk to the ecology and people of their respective states, the States of Florida and Washington have prohibited the import, transport, and possession of nearly all *Cherax* crayfish, including *C. punctatus*, with few exceptions. *C. punctatus* has not been reported as introduced outside its native range, so its history of invasiveness is uncertain and the overall risk posed to the contiguous U.S. is uncertain.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Medium**
- **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.

Bentley, A. 2014. Contemporary and historical influences on the taxonomy and distributions of *Cherax* species in South Eastern Queensland, Australia. Doctoral dissertation. Griffith University, Queensland, Australia.

Bureau of Meteorology. 2018. NWA 2016: South East Queensland: climate and water. Australian Government Bureau of Meteorology, Melbourne, Australia. Available: http://www.bom.gov.au/water/nwa/2016/seq/climateandwater/climateandwater.shtml. (April 2018).

Florida Fish and Wildlife Conservation Commission. 2018. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/. (April 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cherax punctatus* Clark, 1936. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/4648592. (April 2018).

Jones, T. C., and R. J. G. Lester. 1992. The life history and biology of *Diceratocephala boschmai* (Platyhelminthes; Temnocephalida), an ectosymbiont on the redclaw crayfish *Cherax quadricarinatus*. Hydrobiologia 248:193-199.

Lew Ton, H. M., and G. C. B. Poore. 1987. Types of Parastacidae (Crustacea: Decapoda) held in the Museum of Victoria. Occasional Papers from the Museum of Victoria 3:21-29.

Riek, E. F. 1951. The freshwater crayfish (family Parastacidae) of Queensland. Records of the Australian Museum 22(4):368-388.

Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.

Washington Department of Fish & Wildlife. 2018. WAC 220-12-090 classification - nonnative aquatic animal species. Washington Department of Fish & Wildlife, Olympia, Washington. Available: https://wdfw.wa.gov/ais/wac.html. (April 2018).

WoRMS. 2018. *Cherax punctatus* Clark, 1936. *In* World Register of Marine Species. Available: http://marinespecies.org/aphia.php?p=taxdetails&id=885572. (April 2018).

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.

Cannon, L. R. G., and J. B. Jennings. 1987. Occurrence and nutritional relationships of four ectosymbionts of the freshwater crayfishes *Cherax dispar* Riek and *Cherax punctatus* Clark (Crustacea: Decapoda) in Queensland. Australian Journal of Marine and Freshwater Research 38:419-427.