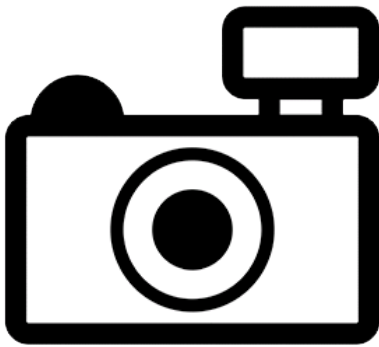


***Cherax rhynchotus* (a crayfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, November 2011
Revised, September 2012 and April 2018
Web Version, 5/23/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Austin (2010):

“This species is known from Wepeia, Wicheura, North Cape York, Andoon Swamp, Mapoon, Jardine River, Lake Wichera and Lake Boranto, Australia, and the Fly River and Bensbach in Papua New Guinea and Badu Island, Torres Strait (C.M. Austin pers. comm. 2008)”

Austin (2010) is the only source that reports *C. rhynchotus* from Papua New Guinea.

From Eprilurahman (2014):

“Cape York, QLD [Queensland]”

From McCormack (2012):

“Queensland, Cape York Peninsula and Badu Island, Torres Strait”

Status in 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 rhynchotus* 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):

“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

Eprilurahman (2014) does not consider *C. rhynchotus* to be a valid species on the basis of molecular genetics studies.

From Eprilurahman (2014):

“[...] the genetic analysis of what can be referred [*sic*] to as the “white-claw” crayfish complex from across northern Australia, comprising the putative species, *C. bicarinatus*, *C. barretti* and *C. rhynchotus*, is consistent with only a single widespread species that also extends into southern New Guinea (Austin 1996). The oldest available name for this species *C. bicarinatus* originally recorded from Port Essington, Northern Territory, which resolves, finally, what has been the subject of major confusion and disputation in *Cherax* nomenclature (Clark 1936; Holthuis 1949; Riek 1969).”

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 rhynchotus* (Species)”

“Status accepted”

Size, Weight, and Age Range

No information available.

Environment

From Austin (2010):

“This is a burrowing species which is found in acidic coastal swamps, perched lakes and in burrows connected to open water or the water table. It is found in pristine environments (C.M. Austin pers. comm. 2008).”

Climate/Range

From World Wildlife Fund (2018):

“The climate [on the Cape York peninsula, Queensland, Australia] is strongly monsoonal, with most rain falling in the summer. The northern and eastern areas receive more rain than the south and southwest (Cape York Regional Advisory Group 1996). Dry season rainfall is normally associated with the influx of moist trade winds over the coast. Summers are hot and humid, and maximum temperatures reach 33[°C] to 36[°C] in January. Rainfall varies greatly with proximity to the coast, with the north receiving an average of 2,400 mm of rain per annum, and falling to an average of 800 mm per year in the south. Winter, or dry season, temperatures in July fall to an average minimum of 21[°C] in the north and 15[°C] in the south (Tropical Savannas CRC undated).”

Distribution Outside the United States

Native

From Austin (2010):

“This species is known from Wepeia, Wicheura, North Cape York, Andoon Swamp, Mapoon, Jardine River, Lake Wichera and Lake Boranto, Australia, and the Fly River and Bensbach in Papua New Guinea and Badu Island, Torres Strait (C.M. Austin pers. comm. 2008)”

Austin (2010) is the only source that reports *C. rhynchotus* from Papua New Guinea.

From Eprilurahman (2014):

“Cape York, QLD [Queensland]”

From McCormack (2012):

“Queensland, Cape York Peninsula and Badu Island, Torres Strait”

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

No information available.

Biology

From Austin (2010):

“This is a burrowing species which is found in acidic coastal swamps, perched lakes and in burrows connected to open water or the water table. It is found in pristine environments (C.M. Austin pers. comm. 2008).”

“There is no population information available for this species.”

Human Uses

No information available.

Diseases

Longshaw and Stebbing (2016) report *C. rhynchotus* as a host for *Temnosewellia phantasmella*, citing Cannon and Sewell (2001).

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 (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 rhynchotus*, showing occurrences on the Cape York Peninsula, Queensland, Australia. Map from GBIF Secretariat (2017).

5 Distribution within the United States

This species has not been recorded in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) for *Cherax rhynchotus* was low for all of the contiguous United States. The highest matches can be found in southern Florida. Climate 6 score indicated that the contiguous U.S. has a low climate match overall. Scores of 0.005 and below are classified as low match; Climate 6 score for *C. rhynchotus* was 0.000.

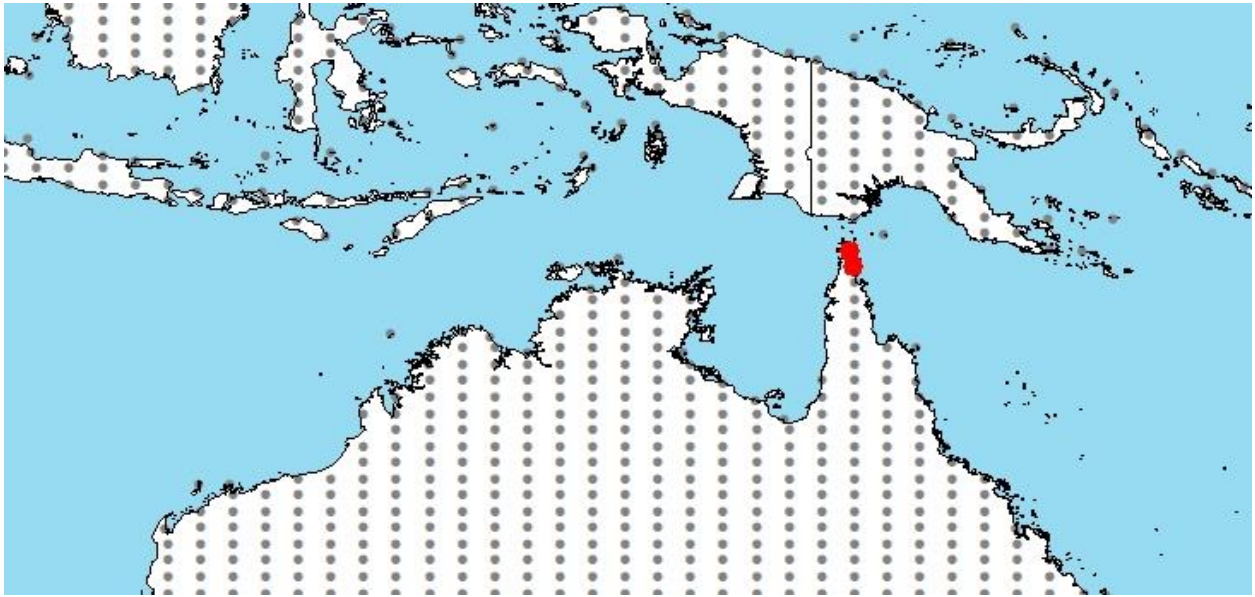


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Australia and Papua New Guinea selected as source locations (red) and non-source locations (gray) for *Cherax rhynchotus* climate matching. Source locations from GBIF Secretariat (2017).

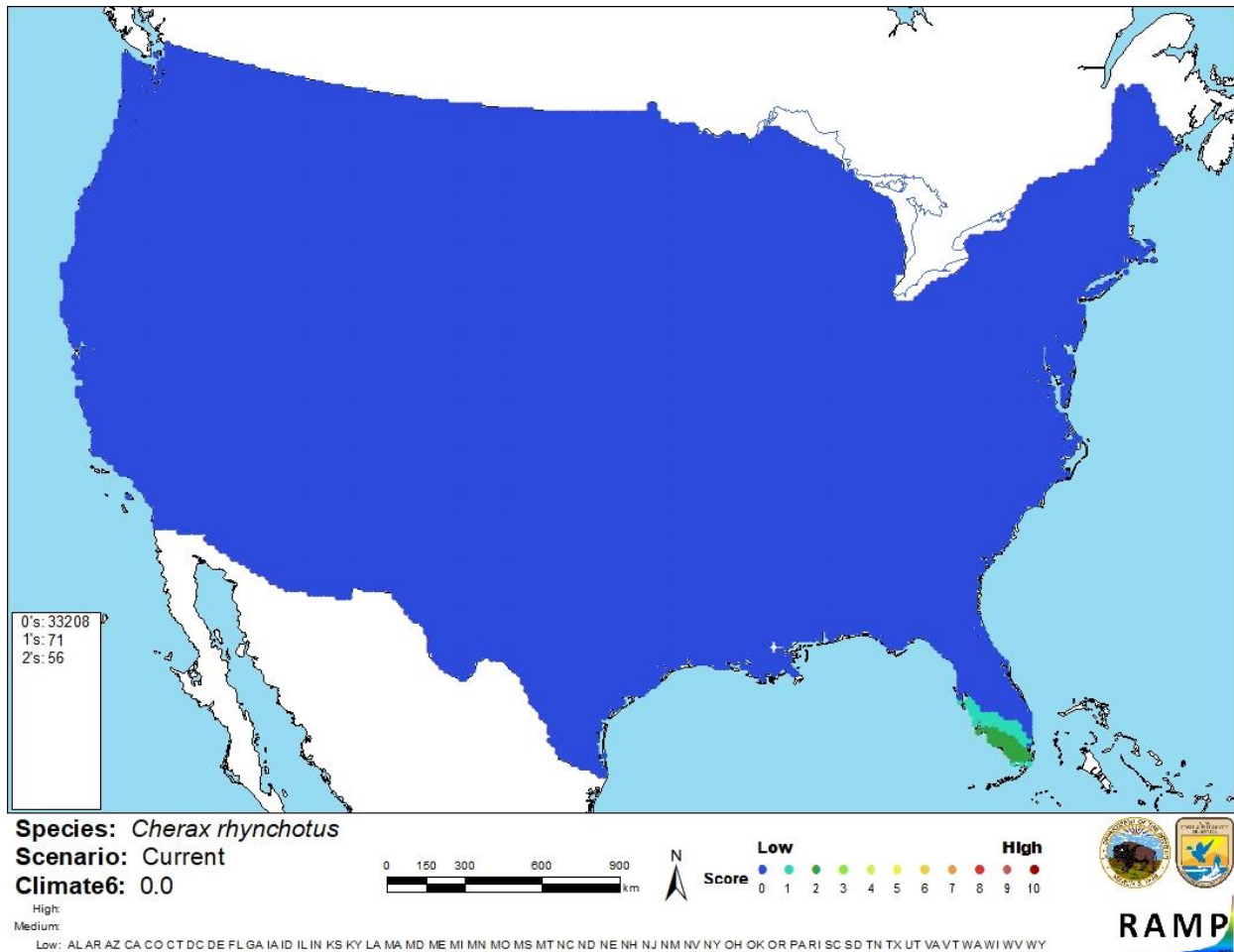


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax rhynchotus* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

7 Certainty of Assessment

Little information is available on the biology or ecology of *Cherax rhynchotus*, with no information available on impacts of introduction because no introductions have been reported. Additionally, there is some disagreement in the literature about the geographic distribution and taxonomic standing of *C. rhynchotus*. For all these reasons, certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax rhynchotus is a crayfish native to tropical northeast Queensland, Australia. It may also be native to southwestern Papua New Guinea, but most sources do not report the species distribution as extending to that country. There is also taxonomic uncertainty about the validity of the species, after molecular genetics work showed no discernable difference between *C. rhynchotus*, *C. bicarinatus* and *C. barretti*. No introductions of the species have been reported so impacts of introduction remain unknown, although the possibility of impacts has led Florida and Washington to prohibit the possession, trade, and transport of the species. *C. rhynchotus* has a low climate match to the contiguous U.S. Overall risk assessment 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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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. 1996. Systematics of the freshwater crayfish genus *Cherax* Erichson (Decapoda: Parastacidae) in northern and eastern Australia: electrophoretic and morphological variation. *Australian Journal of Zoology* 44:259-296.

Cannon, L. R. G., and K. B. Sewell. 2001. A review of *Temnosewellia* (Platyhelminthes: Temnocephalida) ectosymbionts of *Cherax* (Crustacea: Parastacidae) in Australia. *Memoirs of the Queensland Museum* 46(2):385-399.

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