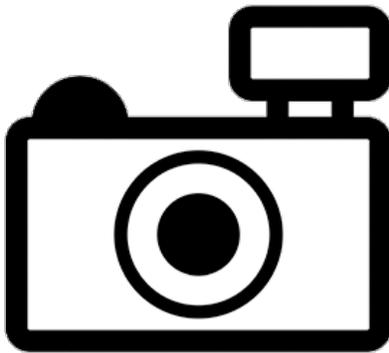


***Cherax cartalacoolah* (a crayfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, August 2011
Revised, September 2012 and October 2017
Web Version, 12/14/2017



No Photo Available

1 Native Range and Status in the United States

Native Range

From Short (1993):

“Cape Flattery, northeast Queensland [Australia]. It is likely, with further collecting, that the range of this species will be extended into other sand dune areas between Cape Bedford and Lookout Point.”

Status in the United States

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

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*, *Cherax papuanus*, and *Cherax tenuimanus*.”

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 [...]

[Included on the prohibited species list:]

Crayfish – Genus *Cherax* [...]

Cherax cartalacoolah”

Means of Introduction into the United States

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

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From GBIF Secretariat (2017):

“Kingdom Animalia
Phylum Arthropoda
Class Malacostraca
Order Decapoda
Family Parastacidae
Genus *Cherax* Erichson, 1846
Species *Cherax cartalacoolah* Short, 1993”

“SPECIES | ACCEPTED”

Size, Weight, and Age Range

From Short (1993):

“Material examined [...]

♂ (30.3mm CL) [...]

♀ (23.6mm CL, right cheliped missing, left damaged at based of pollex) [...]

♀ (14.4mm CL) [...]

♂ (18.4mm CL) [...]

♀ (16.2mm CL) [...]

♂ (13.7mm CL), 1 imm. (7.3mm CL) [...]

4 ♂♂ (12.5-24.9mm CL), ♀ (19.8mm CL) [...]

Environment

From Short (1993):

“Freshwater [...]

“Recorded physiochemical tolerances: pH 5, hardness 40-80ppm, [...] dissolved oxygen 1.7ppm.”

Climate/Range

From Short (1993):

“Collected from low altitude <15m [...]”

“[...] water temperature 33°C [...]”

Distribution Outside the United States

Native

From Short (1993):

“Cape Flattery, northeast Queensland. It is likely, with further collecting, that the range of this species will be extended into other sand dune areas between Cape Bedford and Lookout Point.”

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 Short (1993):

“Body colour varying from rusty brown to bluish-grey, ventral manus of first chelipeds magenta to cyanine blue, articular membrane between merus and carpus geranium red.”

“[*C. cartalacoolah*] most closely resembles *C. robustus* Riek, 1951, from southeast Queensland, which also occurs in acidic, peaty-sand habitats and has similar colouration.”

“[...] no tubercles behind the [mesial carpal] spine [on the first chelipeds].”

“The ventral setation on the pollex of the first chelipeds [...] is restricted to the opposing edge of the pollex and does not continue onto the manus.”

“The mesial serrations on the manus of the first chelae [...] are restricted to the proximal half.”

“Large adults of [*C. cartalacoolah*] have well-developed, branchiocardiac grooves [...]”

“The punctuations along the portorbital carinae form an irregular sulcus in the present species.”

Biology

From Short (1993):

“[...] fossorial, burrows terminating slightly below level of water table, supralittoral to shallow littoral areas around perch lakes and along creek banks. Collected from [...] peaty sand areas within sand dune formations, generally amongst rushes, fringing heathland.”

Human Uses

No information available.

Diseases

No information available. No OIE-reportable diseases have been reported in this species.

Threat to Humans

No information available.

3 Impacts of Introductions

No information available. No introductions of this species have been reported.

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*, *Cherax papuanus*, and *Cherax tenuimanus*.”

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 [...]

[Included on the prohibited species list:]

Crayfish – Genus *Cherax* [...]

Cherax cartalacoolah”

4 Global Distribution

Figure 1. Map of Australia showing the known global distribution of *Cherax cartalacoolah*. 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 for *Cherax cartalacoolah* (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low for nearly all of the contiguous United States. Southern Florida showed a low match tending toward medium. Climate 6 score indicated a low climate match overall for the contiguous U.S. with a score of 0.000.

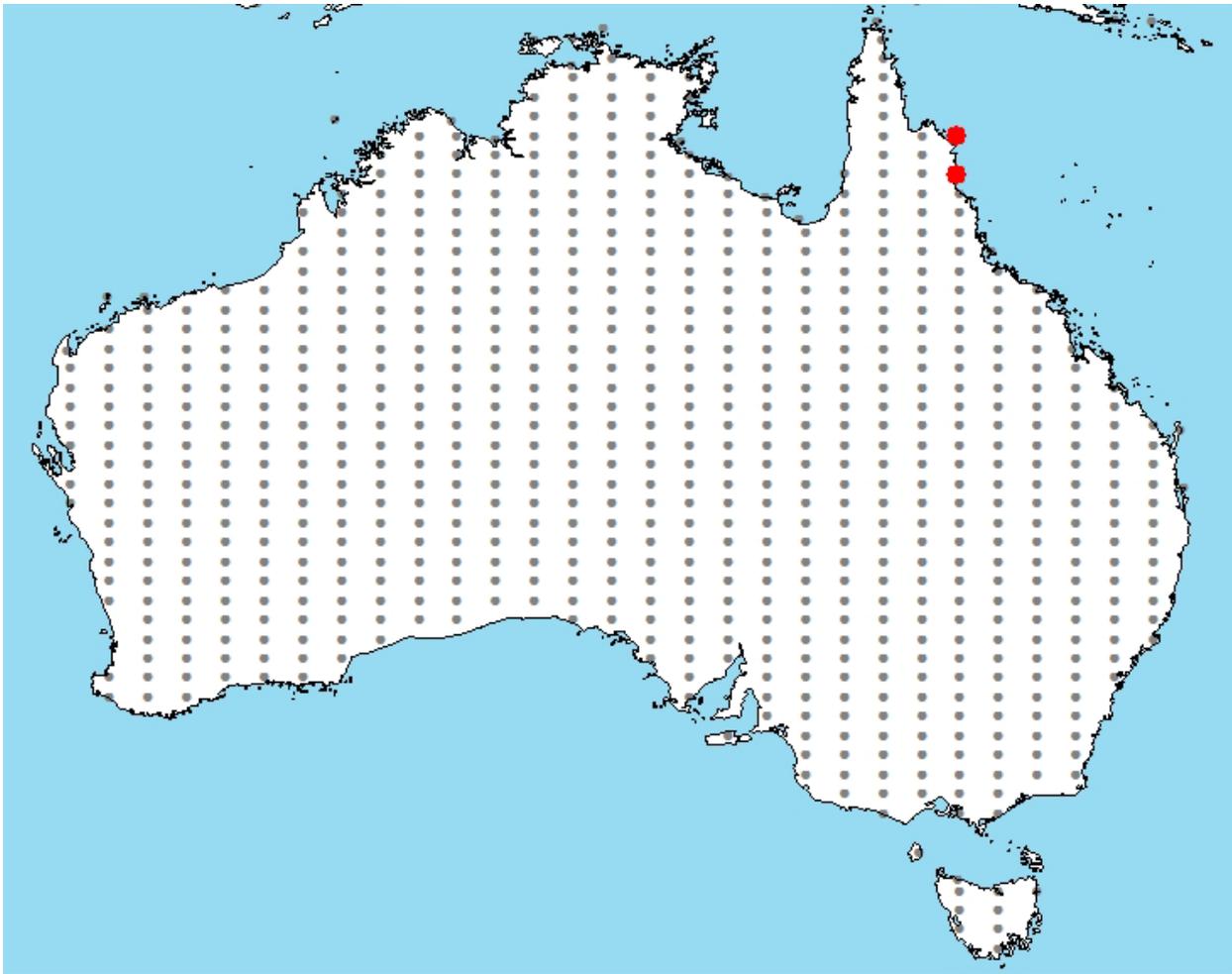


Figure 2. RAMP (Sanders et al. 2014) source map of Australia showing weather stations selected as source locations (red) and non-source locations (gray) for *Cherax cartalacoolah* climate matching. Source locations from GBIF Secretariat (2017).

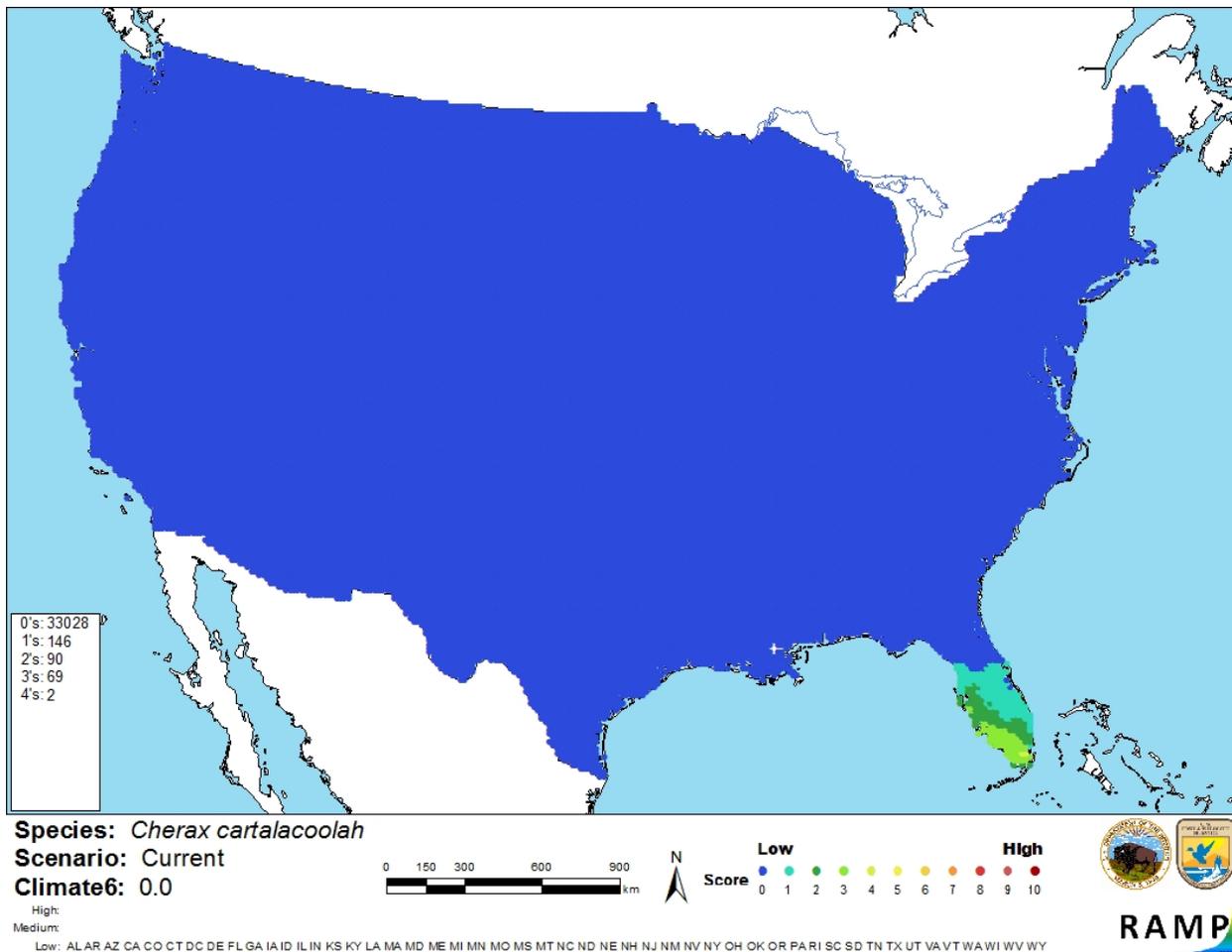


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax cartalacoolah* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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

There is very little information available on the biology, ecology, and distribution of *Cherax cartalacoolah*. No introductions of this species have been reported, so impacts of introduction remain unknown. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax cartalacoolah is a crayfish recently described from sand dune environments in northeastern Australia. The climate matching analysis indicated low match to the contiguous U.S. The history of invasiveness for this species is uncertain because no introductions of this species have been reported and further information would be needed to determine the risks posed to native U.S. species and ecosystems. Overall risk posed by *C. cartalacoolah* to the contiguous U.S. is uncertain.

Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: Low**
- **Overall Risk Assessment Category: Uncertain**

9 References

- 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/>. (September 2017).
- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cherax cartalacoolah* Short, 1993. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/4648593>. (October 2017).
- Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.
- Short, J. W. 1993. *Cherax cartalacoolah*, a new species of freshwater crayfish (Decapoda: Parastacidae) from northeast Australia. *Memoirs of the Queensland Museum* 33(1):55-59.
- 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>. (September 2017).