

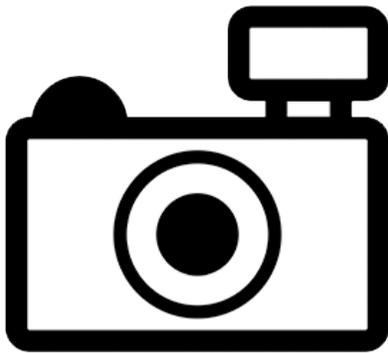
***Cherax nucifraga* (a crayfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, September 2011

Revised, September 2012, December 2017

Web Version, 5/17/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Fetzner (2017):

“Type Locality

Palm Springs, near Channel Point, NT [Northern Territory, Australia]”

From Eprilurahman (2014):

“Melville Island, Northern Territory”

Status in the United States

This species has not been reported as introduced or established in the United States. No evidence was found that this species is in trade in the United States.

The Florida Fish and Wildlife Conservation Commission has listed the crayfish *Cherax nucifraga* 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” (FFWCC 2017).

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 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.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Crandall (2016):

“Classification: 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 nucifraga* (Species)”

“Status accepted”

Size, Weight, and Age Range

No information available.

Environment

From Fetzner (2017):

“[...] freshwater. Low lying, floodplain country very close to the sea.”

Climate/Range

From Lamontagne et al. (2005):

“The climate of the [Daly River] region [near Channel Point, Northern Territory, Australia] is dominated by a distinct monsoonal wet season occurring from October until April (i.e. the austral summer) and a winter dry season (Faulkes, 1998).”

Distribution Outside the United States

Native

From Fetzner (2017):

“Type Locality

Palm Springs, near Channel Point, NT [Northern Territory, Australia]”

From Eprilurahman (2014):

“Melville Island, Northern Territory”

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 (1991):

“The species most closely resembles *C. barretti* Clark, and has affinities with the ‘quadricarinatus’ species-group, an uncalcified patch on the propodus of the first chelipeds in large males.”

Biology

From Fetzner (2017):

“Burrowing [...]”

From Crandall (2001):

“[...] taken from barramundi (*Lates calcarifer*) stomach.”

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 (FFWCC 2017) and the Washington Department of Fish and Wildlife (2017) have listed this species as a prohibited species.

4 Global Distribution



Figure 1. Map of Australia showing known global distribution of *Cherax nucifraga*. Map from GBIF Secretariat (2017). The occurrences shown are both marked as “geodetic datum invalid” in GBIF Secretariat (2017), but they are used in the climate matching analysis because the locations specifically agree with verbal descriptions of range provided by Fetzner (2017) and Eprilurahman (2014).

5 Distribution within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was low throughout the contiguous U.S., with the only non-zero matches being found in southern Florida and southern Texas. Climate6 score indicated that the contiguous U.S. has a low climate match

overall. The range of scores indicating a low climate match is 0.000-0.005; Climate6 score for *Cherax nucifraga* was 0.000.

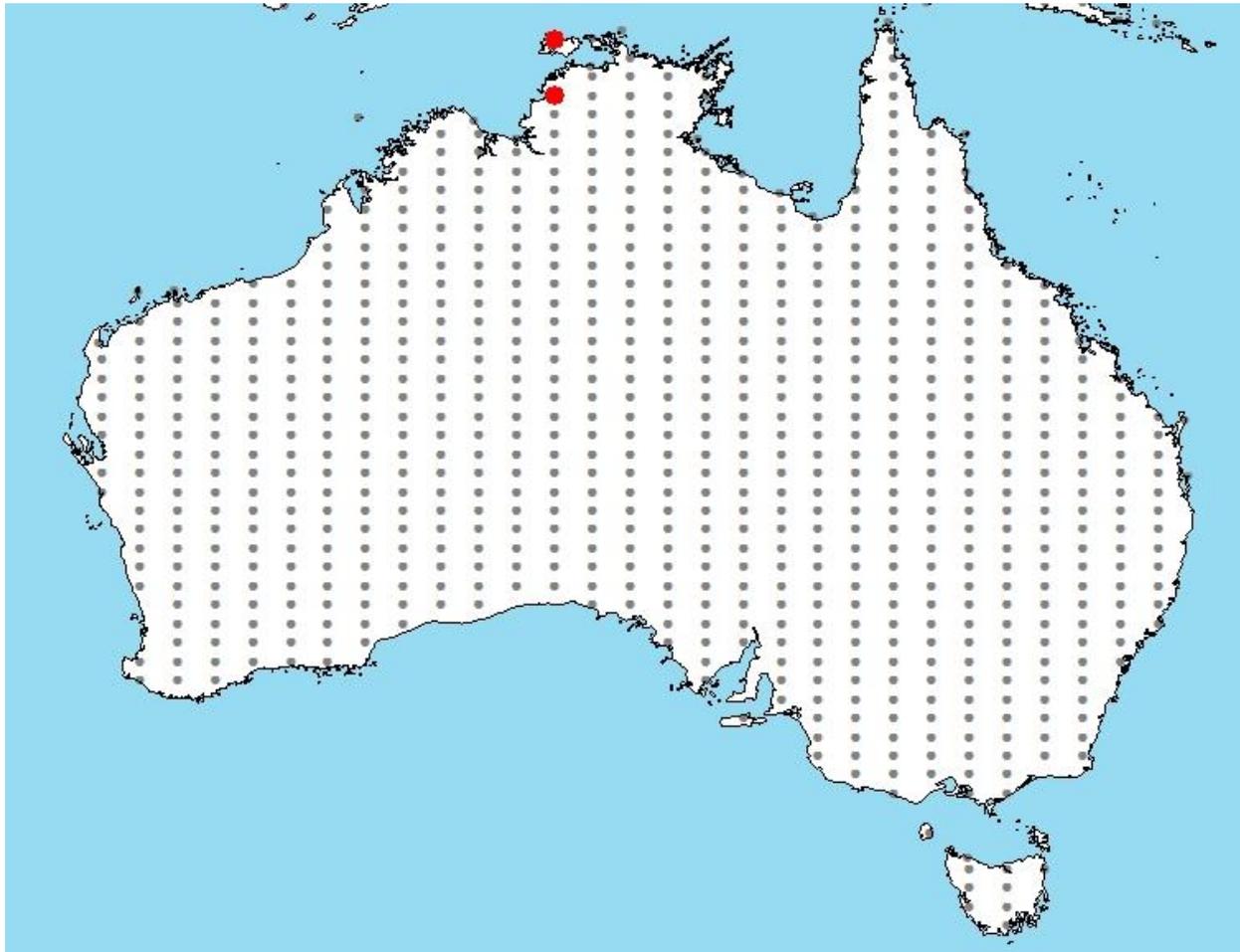


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Cherax nucifraga* climate matching. Source locations from GBIF Secretariat (2017).

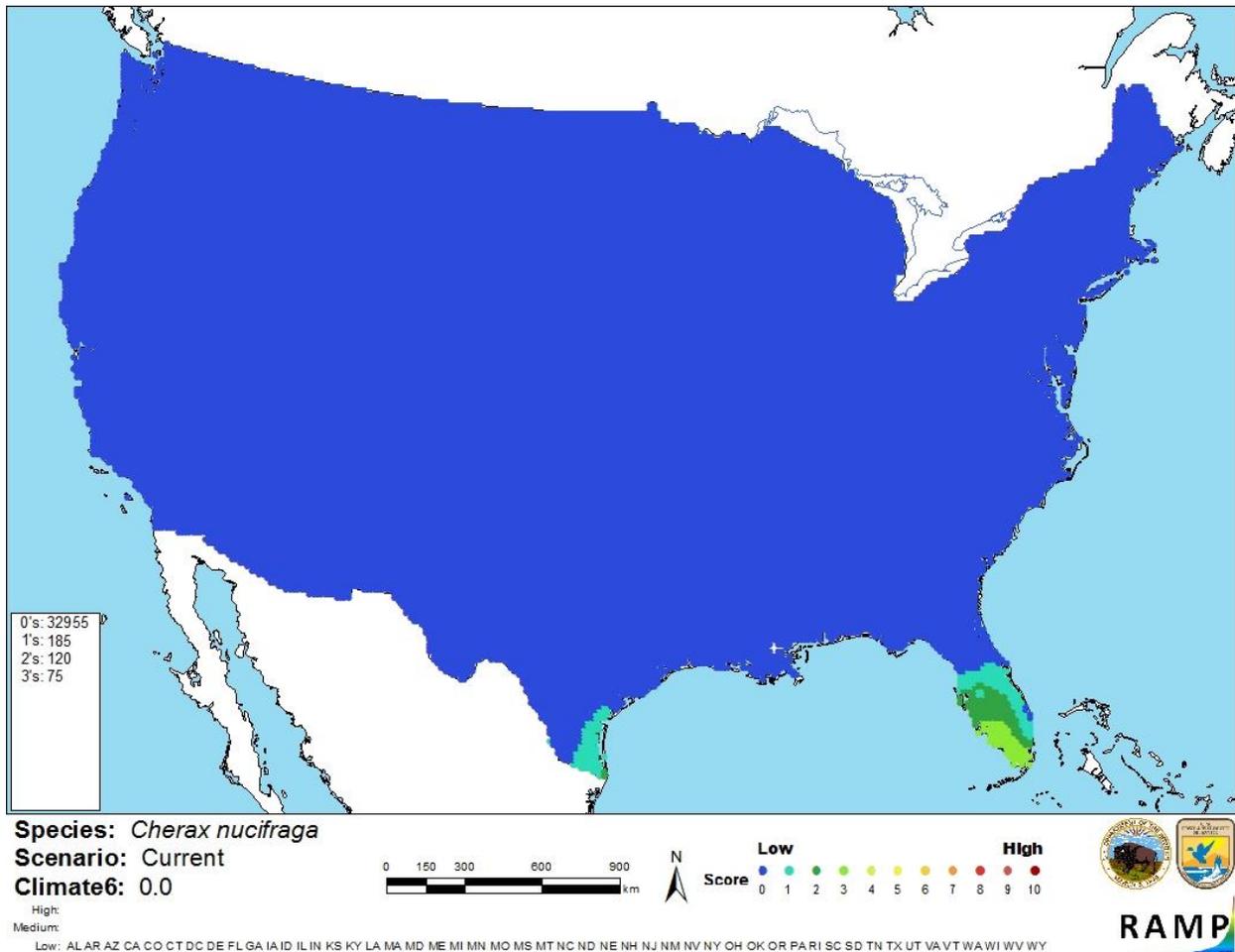


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax nucifraga* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match.

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

7 Certainty of Assessment

Very limited information is available on the biology, ecology, and distribution of *Cherax nucifraga*. There was uncertainty associated with the quality of georeferenced occurrences reported by GBIF Secretariat (2017). No introductions of *C. nucifraga* 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 nucifraga is a crayfish native to the far northern Northern Territory, Australia. The climate match indicates low risk to the contiguous U.S., but it is based on a limited number of source locations. No introductions of this species have been reported, so the impacts of introductions remain unknown. Florida and Washington prohibit possession or trade of *C. nucifraga*. Overall risk assessment of *Cherax nucifraga* to the contiguous United States is uncertain due to lack of information on invasiveness potential and species distribution.

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.

- Crandall, K. A. 2001. *Cherax nucifraga* Short 1991, version 01 January 2001. The Tree of Life Web Project. Available: <http://tolweb.org/Cherax+nucifraga/7782>. (December 2017).
- Crandall, K. A. 2016. *Cherax nucifraga* Short, 1991. World Register of Marine Species. Available: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=885563>. (December 2017).
- Eprilurahman, R. 2014. Molecular taxonomy and evolution of freshwater crayfish of the genus *Cherax* (Decapoda: Parastacidae) from northern Australia and New Guinea. Master's thesis. Charles Darwin University, Northern Territory, Australia.
- Fetzner, J. 2017. *Cherax nucifraga* Short, 1991. The crayfish and lobster taxonomy browser. Carnegie Museum of Natural History, Pittsburgh, Pennsylvania. Available: <http://iz.carnegiemnh.org/crayfish/NewAstacidea/species.asp?g=Cherax&s=nucifraga&ssp=>. (December 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/>. (December 2017).
- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cherax nucifraga* Short, 1991. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/4648621>. (December 2017).

Lamontagne, S., P. G. Cook, A. O'Grady, and D. Eamus. 2005. Groundwater use by vegetation in a tropical savanna riparian zone (Daly River, Australia). *Journal of Hydrology* 310:280-293.

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

Short, J. W. 1991. *Cherax nucifraga*, a new species of freshwater crayfish (Crustacea: Decapoda: Parastacidae) from the Northern Territory, Australia. *The Beagle: Records of the Museums and Art Galleries of the Northern Territory* 8:115-119.

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

Faulkes, J. J. 1998. Daly River catchment: I an assessment of the physical and ecological condition of the Daly River and its major tributaries. Northern Territory Dept. Lands, Planning and Environment. Technical report TR99/10.