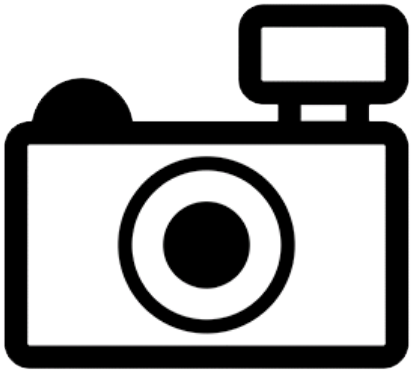
Cherax murido (a crayfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, September 2011
Revised, September 2012, December 2017
Web Version, 5/17/2017



No Photo Available

1 Native Range and Status in the United States

Native Range

From Crandall and De Grave (2017):

" 'Paniai Lake' [Papua Province, Indonesia]"

Status in the United States

This species has not been reported as introduced or established in the United States. No evidence was found of trade of *C. murido* in the United States.

The Florida Fish and Wildlife Conservation Commission has listed the crayfish *Cherax murido* 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 quadricarninatus* [*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: 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 murido (Species)"

"Status: accepted"

Size, Weight, and Age Range

No information available.

Environment

From Holthuis (1958):

"In some places the shores of the [Wissel] lakes [of which Paniai Lake is one of three], of calcareous rocks, are very steep. The water is quite deep close inshore. In other localities, especially near the mouths of the rivers, the shores are low and swampy, and the depth increases very gradually from the shore. Large parts of Paniai Lake are quite deep, around 30 m. Greatest depth is 50 m."

Climate/Range

From Holthuis (1958):

"The altitude of Paniai Lake is 1742 m […]"

Distribution Outside the United States

Native

From Crandall and De Grave (2017):

" 'Paniai Lake' [Papua Province, Indonesia]"

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 Lukhaup and Herbert (2008):

"Rostral teeth […] 4-6"

"Chelae […] 3 x longer than broad"

"Carapace […] covered in tubercles"

"large, globular eyes"

Biology
From Holthuis (1958):

"There may be a migration which at times results in the absence of crayfish from shallow waters, but this is still one of the points about which we know little."

Human Uses
From Holthuis (1958):

"[…] crayfish are an important source of food in the Wissel Lakes area. With the pigs that are raised there, crayfish form practically the only source of protein for the native population."

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

No georeferenced occurrences of *C. murido* were found.

Figure 1. The island of New Guinea, with a purple star indicating the approximate location of Paniai Lake, the only place where *C. murido* is known to be established (Crandall and De Grave 2017). Public domain map.

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) for *Cherax murido* is low for all of the contiguous United States, reflected in a Climate6 score for the contiguous U.S. of 0.000. The range of Climate6 scores classified as low match is 0.000-0.005. Climate6 score for *Cherax murido* was 0.000.

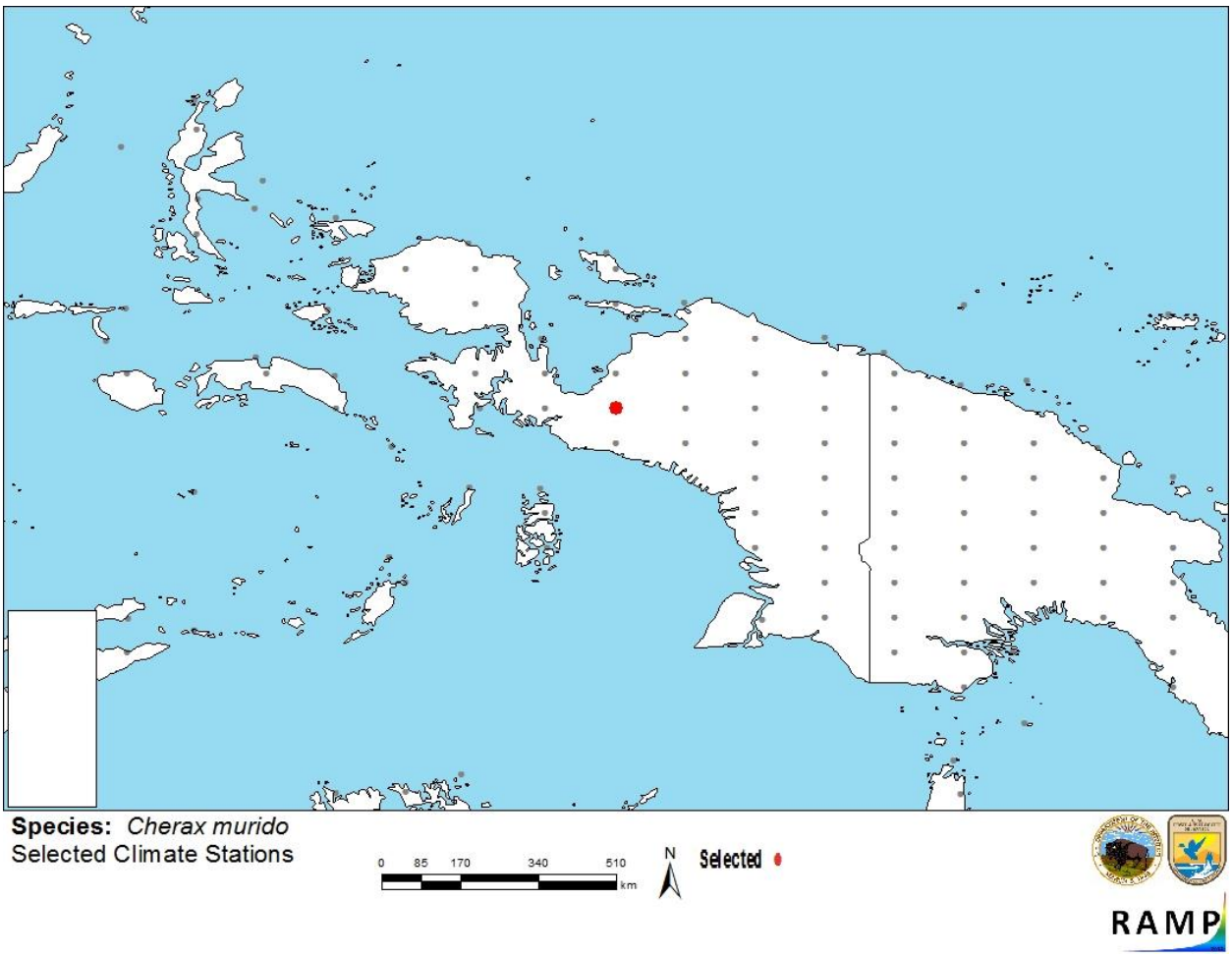


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in eastern Indonesia selected as source locations (red) and non-source locations (gray) for *Cherax murido* climate matching. Source location is type locality reported in Crandall and De Grave (2017).

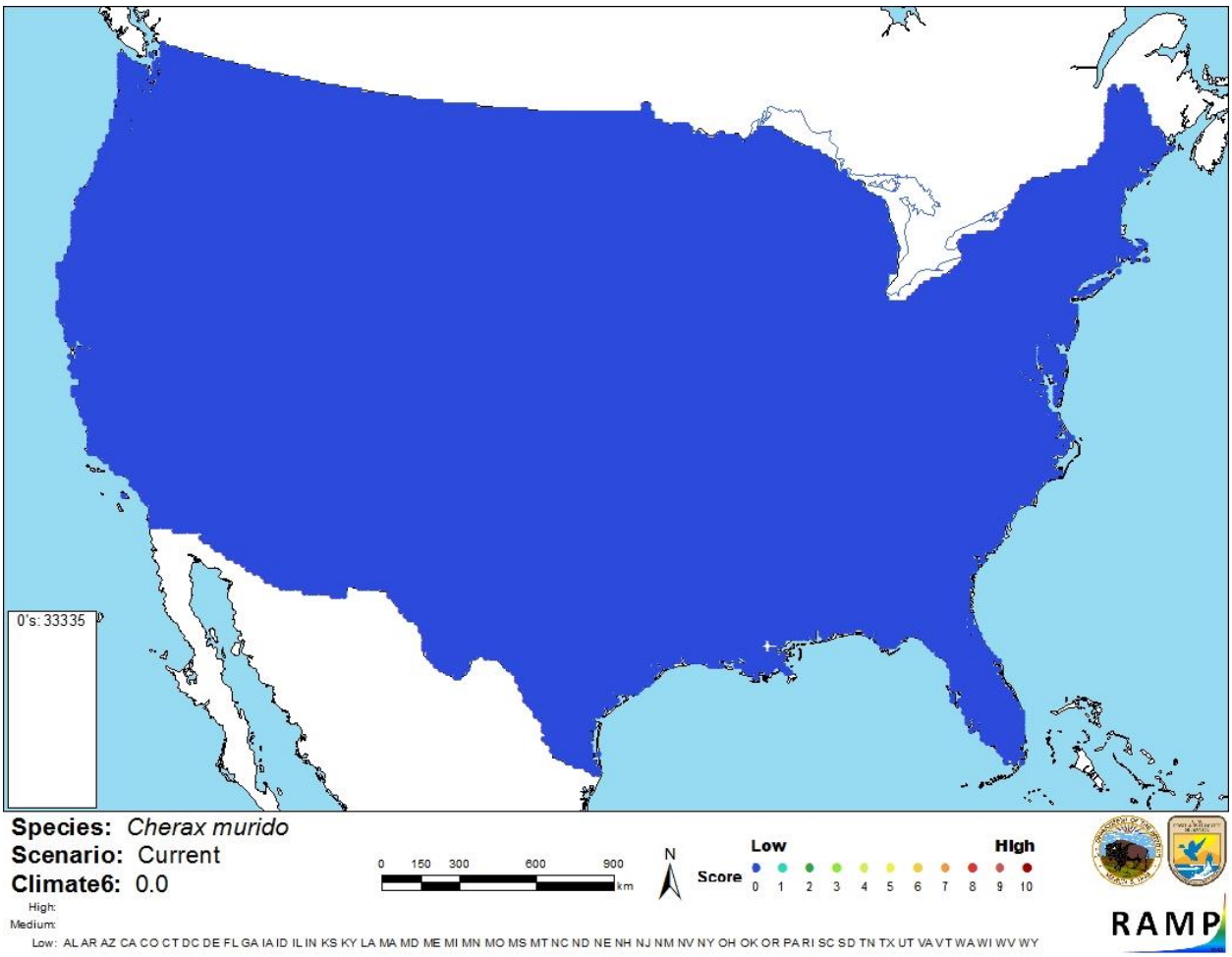


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax murido* in the contiguous United States based on source location reported by Crandall and De Grave (2017). 0=Lowest match, 10=Highest match.

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 murido*. Without a history of introduction, impacts of introduction of *C. murido* remain unknown. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax murido is a crayfish species only recorded from a single lake in West Papua, Indonesia. It has an overall low climate match to the contiguous U.S. and there is no recorded history of introduction outside its native range. Florida and Washington prohibit the possession or trade of *C. murido.* The overall risk assessment is uncertain because of the significant lack of information about the species, including its potential to cause harm if introduced to a new location.

Assessment Elements

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

9 References

Crandall, K. A. 2016. *Cherax murido* Holthuis, 1949. World Register of Marine Species. Available: http://www.marinespecies.org/traits/aphia.php?p=taxdetails&id=885561. (December 2017).

Crandall, K. A., and S. De Grave. 2017. An updated classification of the freshwater crayfishes (Decapoda: Astacidea) of the world, with a complete species list. Journal of Crustacean Biology 37(5):615-653.

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).

Holthuis, L. B. 1958. Freshwater crayfish in Netherlands New Guinea mountains. South Pacific Commission, Noumea, New Caledonia. SPC Quarterly Bulletin 8(2):36-39.

Lukhaup, C., and B. Herbert. 2008. A new species of crayfish (Crustacea: Decapoda: Parastacidae) from the Fly River Drainage, Western Province, Papua New Guinea. Memoirs of the Queensland Museum 52:213–219.

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

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).