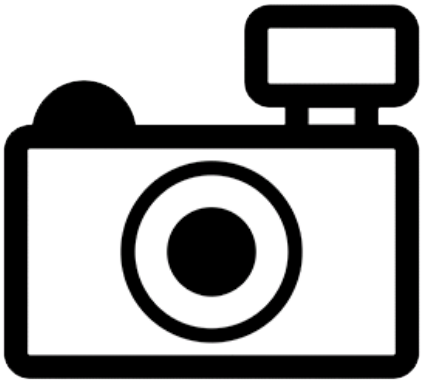
Cherax misolicus (a crayfish, no common name)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, October 2011
Revised, September 2012, December 2017
Web Version, 5/20/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Lukhaup et al. (2017):

"[…] endemic to Misool Island, one of four major islands in the Raja Ampat Islands in West Papua, Indonesia."

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 has listed the crayfish *Cherax misolicus* 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*."

No evidence of active trade in this species was found for the U.S., but one aquarium blogger mentioned possessing the species:

From Indiviglio (2011):

"I've been keeping Asian Zebra Crayfishes, *Cherax misolicus*, for the past few years, and find them to be among the most spectacular invertebrates I've run across."

Means of Introduction into the United States
This species has not been reported as introduced or established in the United States.

Remarks
Multiple names for this species may be used in the aquarium trade, including Asian Zebra Crayfish (Indiviglio 2011) and Orange Lobster (PT.JUPITER INDONESIA 2017).

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 misolicus* (Species)
Status accepted"

Size, Weight, and Age Range
No information available.

Environment
No information available.

Climate/Range
From Holthuis (1982):

"[…] found at low altitudes (below 100 m) […]"

Distribution Outside the United States

Native

From Lukhaup et al. (2017):

"[…] endemic to Misool Island, one of four major islands in the Raja Ampat Islands in West Papua, 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 et al. (2017):

"*Cherax misolicus* has two rostral teeth on each margin of the rostrum […] The rostrum of *Cherax misolicus* is rather straight, triangular shaped […]"

"[…] at middle part behind cervical groove on lateral sides of carapace […] *C. misolicus* has 6-7 small tubercles present […]"

"*Cherax misolicus* has light blue chelae, the body is olive green with orange bluish legs and a dark blue pleon with orange on the lateral pleon."

Biology

From Lukhaup et al. (2017):

"[…] endemic in creeks and rivers of Misool Island."

Human Uses

From Tappin (2007):

"A number of *Cherax* species are being collected in New Guinea (mostly from West Papua) for the aquarium trade […]"

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. misolicus* were found (GBIF Secretariat 2017).

Figure 1. Map of eastern Indonesia. Misool Island, where *C. misolicus* is endemic (Lukhaup et al. 2017), is shown in dark grey. Map by M. Minderhoud. Public domain. Available: https://commons.wikimedia.org/w/index.php?curid=951603. (December 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 matching analysis (Sanders et al. 2014; 16 climate variables; Euclidean Distance) for *Cherax misolicus* showed low matches for all of the contiguous United States. Climate6 score also indicated that the contiguous U.S. has a low climate match. The range of scores classified as a low climate match is 0.000-0.005; Climate6 score for *C. misolicus* was 0.000.

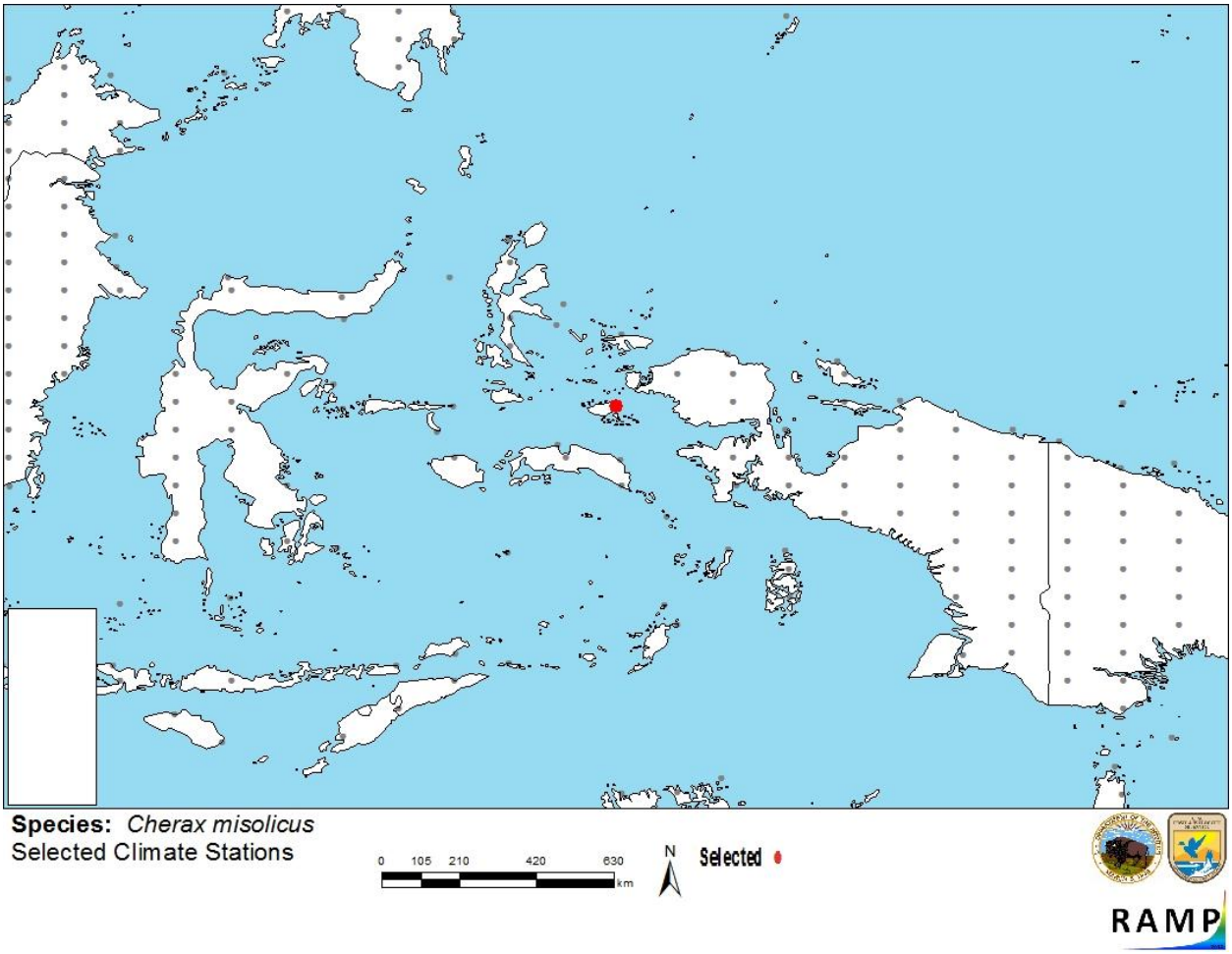


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in eastern Indonesia selected as source locations (red) and non-source locations (gray) for *Cherax misolicus* climate matching. Selected source location is the only available source location on Misool Island, where *C. misolicus* is endemic (Lukhaup et al. 2017).

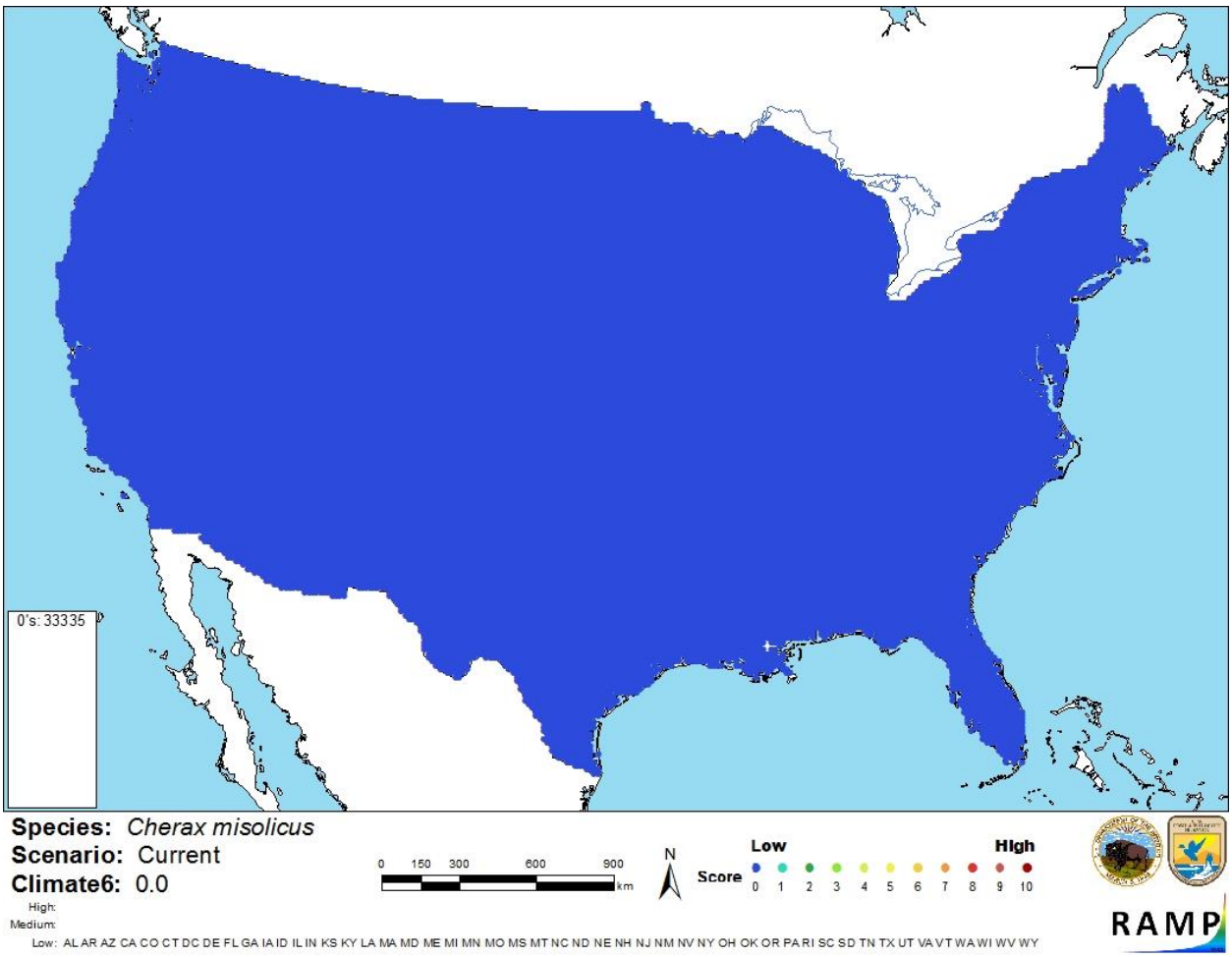


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Cherax misolicus* in the contiguous United States based on source locations reported by Lukhaup et al. (2017). 0=Lowest match, 10=Highest match.

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

Limited information was available on the biology, ecology, and distribution of *Cherax misolicus.* No georeferenced occurrences were found, limiting confidence in the climate matching analysis. Without a history of introduction, the impacts of introduction of *C. misolicus* are also unknown. Common names used for this species vary, complicating the tracking of trade in this species. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cherax misolicus is a crayfish species endemic to Misool Island, West Papua province, Indonesia. *C. misolicus* has not been reported as introduced outside its native range, so its impacts upon introduction to a new ecosystem are unknown at this time. Florida and Washington prohibit possession or trade of *C. misolicus.* It also has an overall low climate match score with no areas of medium or high match in the contiguous United States. The overall risk assessment is uncertain because of the uncertain potential for invasiveness and low climate match to the contiguous U.S., combined with the lack of data on the species itself.

Assessment Elements

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

9 References

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