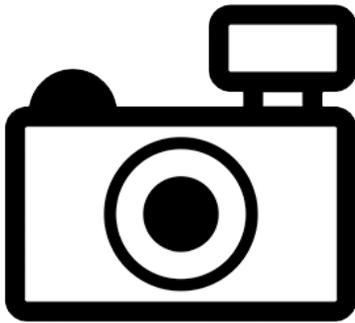


# ***Cherax boschmai* (a crayfish, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish & Wildlife Service, September 2011  
Revised, September 2012 and October 2017  
Web Version, 12/13/2017



No Photo Available

## **1 Native Range and Status in the United States**

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### **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.

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 [...]

[List of prohibited species includes:]

Crayfish – Genus *Cherax* [...]

*Cherax boschmai*”

## 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

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### Taxonomic Hierarchy and Taxonomic Standing

From GBIF Secretariat (2017):

“Kingdom	Animalia
Phylum	Arthropoda
Class	Malacostraca
Order	Decapoda
Family	Parastacidae
Genus	<i>Cherax</i> Erichson, 1846
Species	<i>Cherax boschmai</i> Holthuis, 1949”

“SPECIES | ACCEPTED”

### Size, Weight, and Age Range

No information available.

### Environment

From Yogi et al. (2008):

“Lake Paniai [type locality of *C. boschmai*], area 154 km<sup>2</sup>, recently shows an near oligotrophic condition, its maximum water depth is 44 m [...] Field measurements in Lake Paniai in 2006 at various sample points shows a slight increase in water conductivity from 158 on the surface to 170 microSiemens at the bottom.”

## **Climate/Range**

From Yogi et al. (2008):

“Lake Paniai [type locality of *C. boschmai*], is a pristine ancient lake located at 1,752 meters above sea level near the backbone of Central Papua Island mountain range, at 3°45’S and 136°40’E.”

“At the airport observation station near Lake Paniai the rainfall shows a range, measurements in 2006 was 2040 mm annually, March to June was the wettest month. Air temperature was 15.8° to 18.5°C with an average of 17.2°C [Anonymous 2001-2002].”

## **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 [...] 5-7”

“Chelae [...] more slender [compared to other *Cherax* from New Guinea]; fingers c. 1.5 x longer than palm”

“Carapace [...] covered with small tubercles”

“small eyes; scaphocerite broad”

## **Biology**

No information available.

## **Human Uses**

No information available.

## Diseases

From Jones and Lester (1992):

“*Diceratocephala boschmai* Baer, 1953 was first reported from the crayfish: *Cherax boschmai*, *C. communis*, *C. pallidus*, *C. lorentzi*, and *C. longipes* in Irian Jaya. It is an unusual temnocephalan in that it has an almost complete covering of cilia, has two tentacles rather than the characteristic 5, 6, or 8, has 1 pair of testes instead of two, and lacks a distinctive posterior attachment organ. In Australia it occurs on crayfish of commercial significance.”

No OIE-reportable diseases have been documented for this species.

## Threat to Humans

No information available.

## 3 Impacts of Introductions

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No introductions of this species have been reported, so no information is available on impacts of introductions.

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 [...]

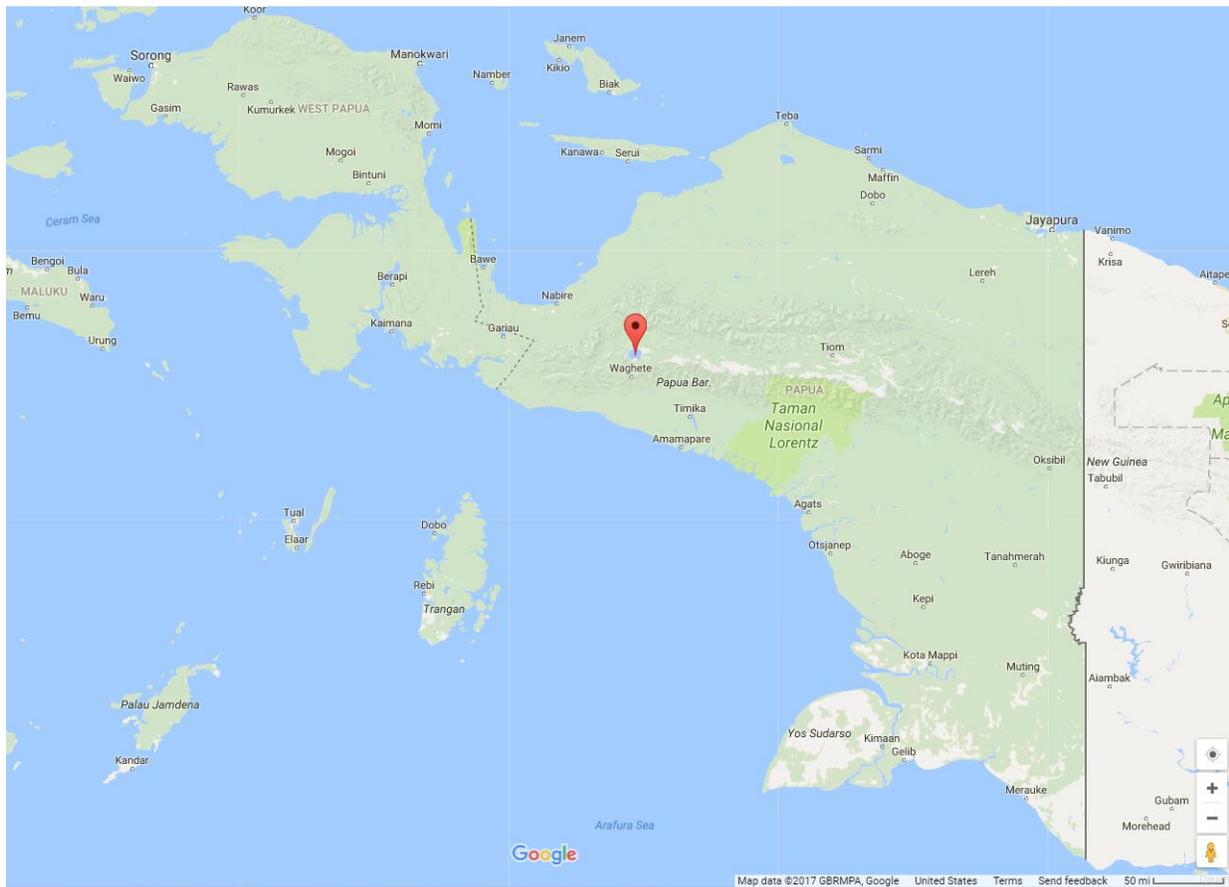
[List of prohibited species includes:]

Crayfish – Genus *Cherax* [...]

*Cherax boschmai*”

## 4 Global Distribution

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**Figure 1.** Location of Paniai Lake in Papua Province, Indonesia. The lake is indicated with the red pin; it is the type locality and the only known location where *C. boschmai* is established. Map from Great Barrier Marine Park Authority and Google. Available: <https://www.google.com/maps/place/Danau+Paniai/@-4.592927,134.2840909,7z/data=!4m5!3m4!1s0x68221884715c6a27:0x3ab182ea3071e7af!8m2!3d-3.902222!4d136.3177778>. (October 2017).

## 5 Distribution Within the United States

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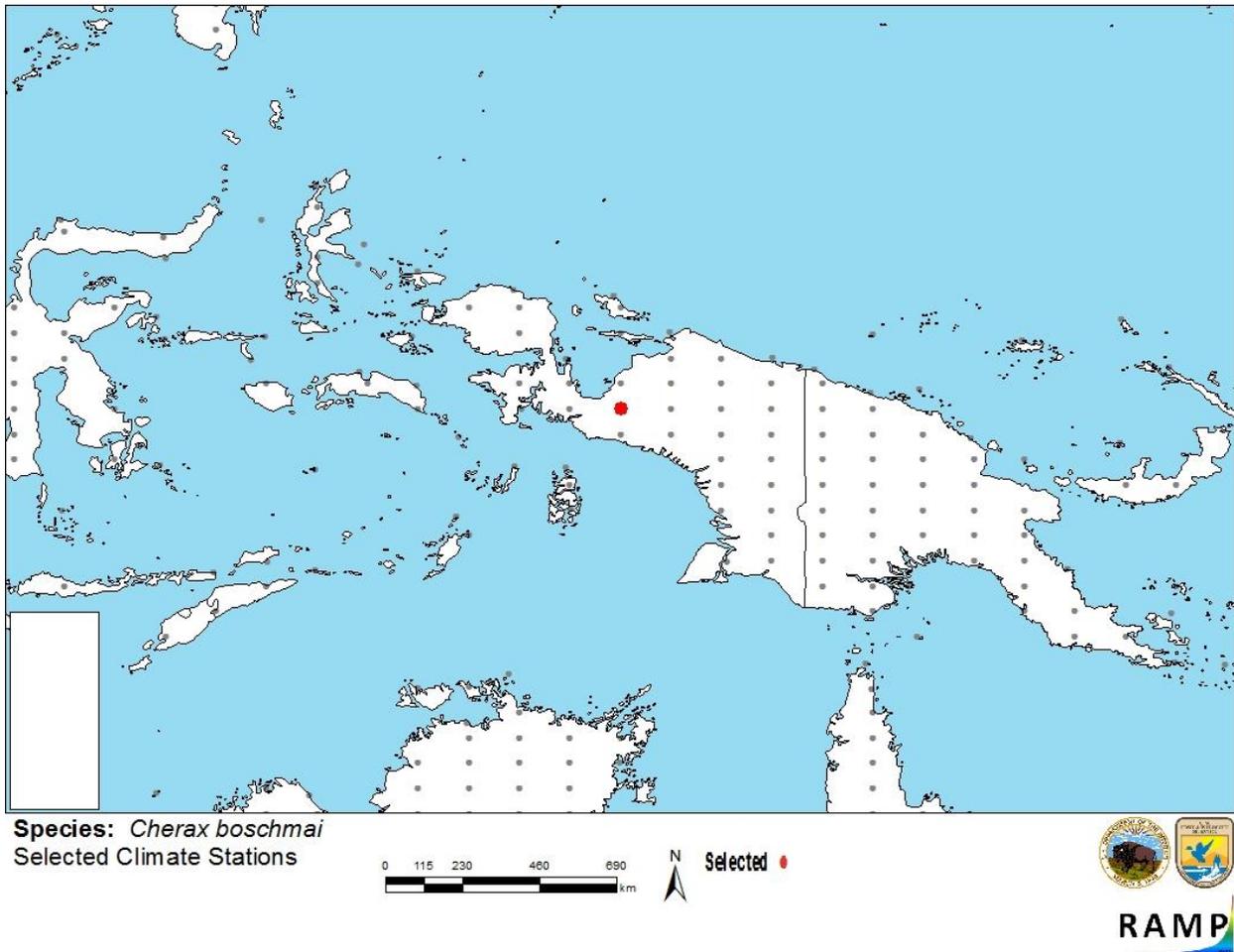
This species has not been reported as introduced or established in the United States.

## 6 Climate Matching

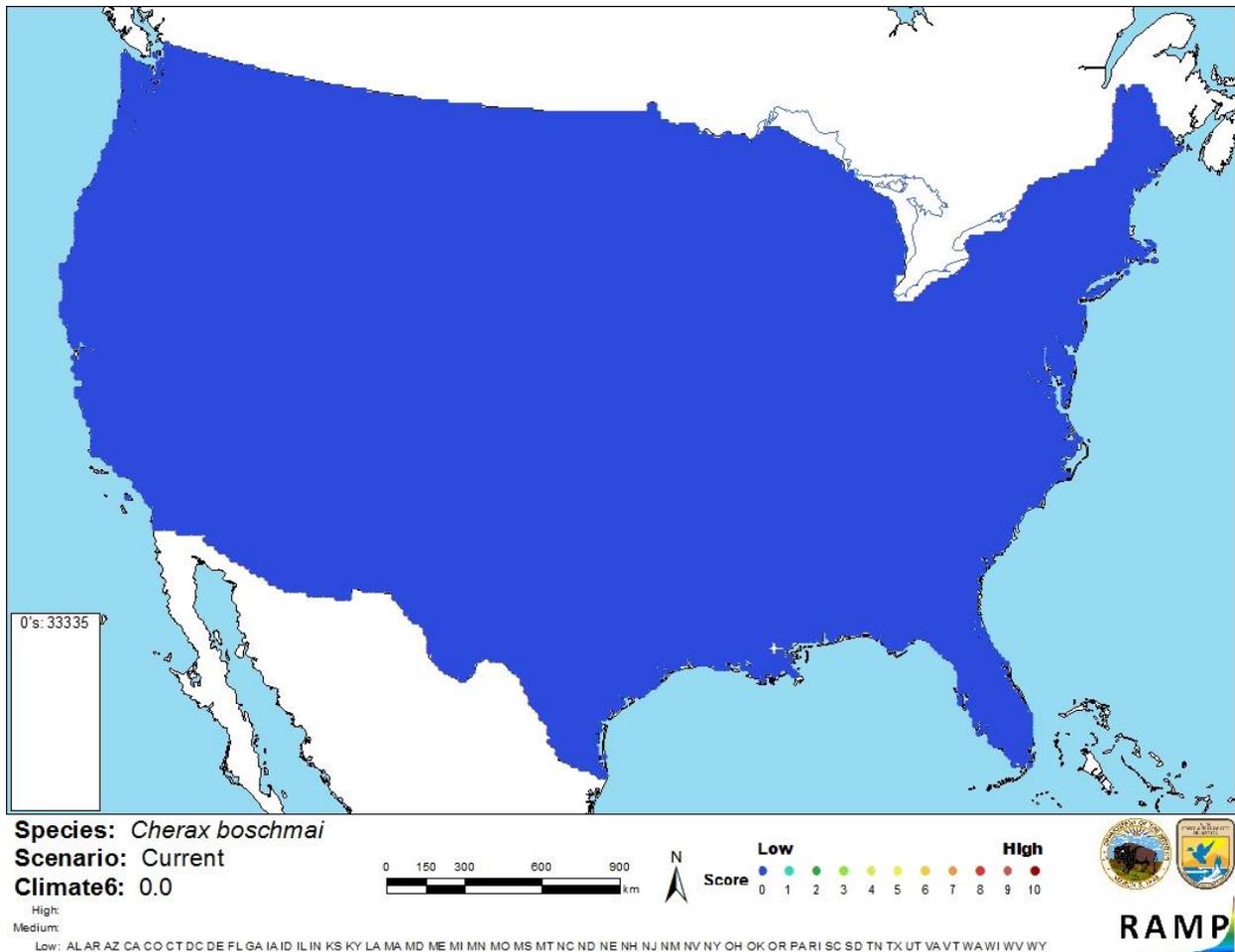
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### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) for *Cherax boschmai* is low for all of the contiguous United States. These results were reflected in a Climate 6 score of 0.000, which also indicates a low match. The range of scores indicating a low climate match is 0.000-0.005. The low climate match to the contiguous U.S. is likely reflects the singular source location near the equator.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Cherax boschmai* climate matching. Source location from Crandall and De Grave (2017).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Cherax boschmai* in the contiguous United States based on one 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
$0.000 < X < 0.005$	Low
$0.005 < X < 0.103$	Medium
$> 0.103$	High

## 7 Certainty of Assessment

Very little information is available on the biology and ecology of *Cherax boschmai*. No introductions of this species have been reported, so potential impacts of introductions remain unknown. Certainty of assessment is low due to the lack of information.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Cherax boschmai* is a New Guinea crayfish known only from a single lake in Papua Province, Indonesia. *C. boschmai* has an overall low climate match to the contiguous United States and no history of introduction outside its native range. Further information is needed to understand the potential impacts of an introduction of *C. boschmai* into the United States. The overall risk assessment category is “uncertain”.

### Assessment Elements

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

## 9 References

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 9.**

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/>. (September 2017).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Cherax boschmai* Holthuis, 1949. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/9026901>. (October 2017).

Jones, T. C., and R. J. G. Lester. 1992. The life history and biology of *Diceratocephala boschmai* (Platyhelminthes; Temnocephalida), an ectosymbiont on the redclaw crayfish *Cherax quadricarinatus*. *Hydrobiologia* 248:193-199.

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 and Wildlife Service.

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).

Yogi, N., E. Rantetasak, G. S. Haryani, and P. E. Hehanussa. 2008. A pristine high-elevated ancient lake complex, Lake Paniai, Papua, Indonesia. Pages 1229-1231 *in* Proceedings of Taal 2007: The 12<sup>th</sup> World Lake Conference. Available: [http://wldb.ilec.or.jp/data/ilec/WLC13\\_Papers/S17/s17-8.pdf](http://wldb.ilec.or.jp/data/ilec/WLC13_Papers/S17/s17-8.pdf). (October 2017).

## **10 References Quoted But Not Accessed**

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**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.**

Anonymous. 2001-2002. Kabupaten Paniai dalam angka. Biro Pusat Statistik, Statistics of District of Paniai, Papua. (In Indonesian.)