

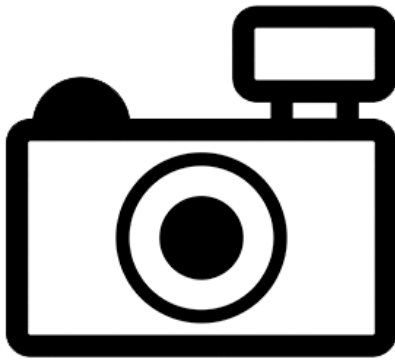
***Procambarus cubensis* (a crayfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, April 2014

Revised, December 2017

Web Version, 5/29/2018



No Photo Available

1 Native Range, and Status in the United States

Native Range

From Pedraza Lara (2010):

“This species is known to occur in scattered localities throughout Cuba except in the southwestern mountains (Hobbs 1989). This species has a distribution of approximately 15,000km².”

“This species is reasonably common within suitable habitat in Pinar del Rio [province in western Cuba] (C. Pedraza Lara pers. comm. 2009), and generally thought to be widespread and abundant (M. López-Mejía, F. Alvarez. and C. Pedraza-Lara pers. comm. 2009).”

Status in the United States

This species has not been reported in the United States.

According to Faulkes (2015), *P. cubensis* is not present in the pet trade in the United States.

Means of Introductions in the United States

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

Remarks

From Crandall and De Grave (2017):

“Some genera, such as *Procambarus* [...], are clearly still not monophyletic groups [...]. We nevertheless refrain from making further taxonomic changes until we achieve a more comprehensive sampling of species within such groups.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Protostomia
Superphylum Ecdysozoa
Phylum Arthropoda
Subphylum Crustacea
Class Malacostraca
Subclass Eumalacostraca
Superorder Eucarida
Order Decapoda
Suborder Pleocyemata
Infraorder Astacidea
Superfamily Astacoidea
Family Cambaridae
Subfamily Cambarinae
Genus *Procambarus*
Subgenus *Procambarus* (*Austrocambarus*)
Species *Procambarus cubensis* (Erichson, 1846)”

“Current Standing: valid”

Size, Weight, and Age Range

From Pedraza Lara (2010):

“This species grows to 5-7cm.”

Environment

From Pedraza Lara (2010):

“Freshwater.”

Distribution Outside the United States

Native

From Pedraza Lara (2010):

“This species is known to occur in scattered localities throughout Cuba except in the southwestern mountains (Hobbs 1989). This species has a distribution of approximately 15,000km².”

“This species is reasonably common within suitable habitat in Pinar del Rio [province in western Cuba] (C. Pedraza Lara pers. comm. 2009), and generally thought to be widespread and abundant (M. López-Mejía, F. Alvarez. and C. Pedraza-Lara pers. comm. 2009).”

Introduced

According to Faulkes (2015), *Procambarus cubensis* is found in the pet trade in Germany (Churcholl 2013) and in the Czech Republic (Patoka et al. 2014; Patoka et al. 2015).

According to Patoka et al. (2014), *P. cubensis* is available for wholesale trade in the Czech Republic. Its wholesale availability is reported as “very rare.”

Means of Introduction Outside the United States

No introductions of this species into natural habitats have been reported.

Short Description

No information reported for this species.

Biology

From Pedraza Lara (2010):

“This species is known to occur in lotic and lentic habitats, mountain streams (Hobbs 1989) as well as lowland streams and lakes (M. López-Mejía, F. Alvarez. and C. Pedraza-Lara pers. comm. 2009).”

Human Uses

According to Faulkes (2015), *P. cubensis* is present in the pet trade in Germany and the Czech Republic, but not in the United States, Brazil, Ireland, the United Kingdom, the Netherlands, Greece, Slovakia, Turkey, or Singapore.

According to Patoka et al. (2014), the wholesale availability of *P. cubensis* in the Czech Republic is reported as “very rare.”

From Kharkeevich and Gorgiladze (2000):

“The work [in Russia] was carried out on the Cuban crayfish *Procamabrus cubensis* convenient for keeping them under laboratory conditions owing to their small size, 5-7 cm.”

Diseases

No information available. No OIE reportable diseases have been documented for this species.

Threat to Humans

No information reported for this species.

3 Impacts of Introductions

No introductions of this species into natural habitats have been reported.

According to Patoka et al. (2014), *P. cubensis* has a potential invasiveness (FI-ISK score) of 7 and a risk category (FI-ISK Category) of Medium. The abbreviation “FI-ISK” stands for the Freshwater Invertebrate Invasiveness Scoring Kit.

4 Global Distribution



Figure 1. Map of known global distribution of *Procambarus cubensis*, reported from Cuba. The most southern point, located in marine waters, is not known to represent an established population and therefore was not included in the climate matching analysis. 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 (Sanders et al. 2014; 16 climate variables; Euclidean distance) was high for the southeastern coast of Florida and medium for the rest of Florida, along the Atlantic coast north to southern South Carolina, and most of the Gulf Coast of Texas. The rest of the United States matched low. Climate 6 score indicated an overall medium climate match for the contiguous United States. The range for a medium climate match is between 0.005 and 0.103; Climate 6 score for *Procambarus cubensis* was 0.011.

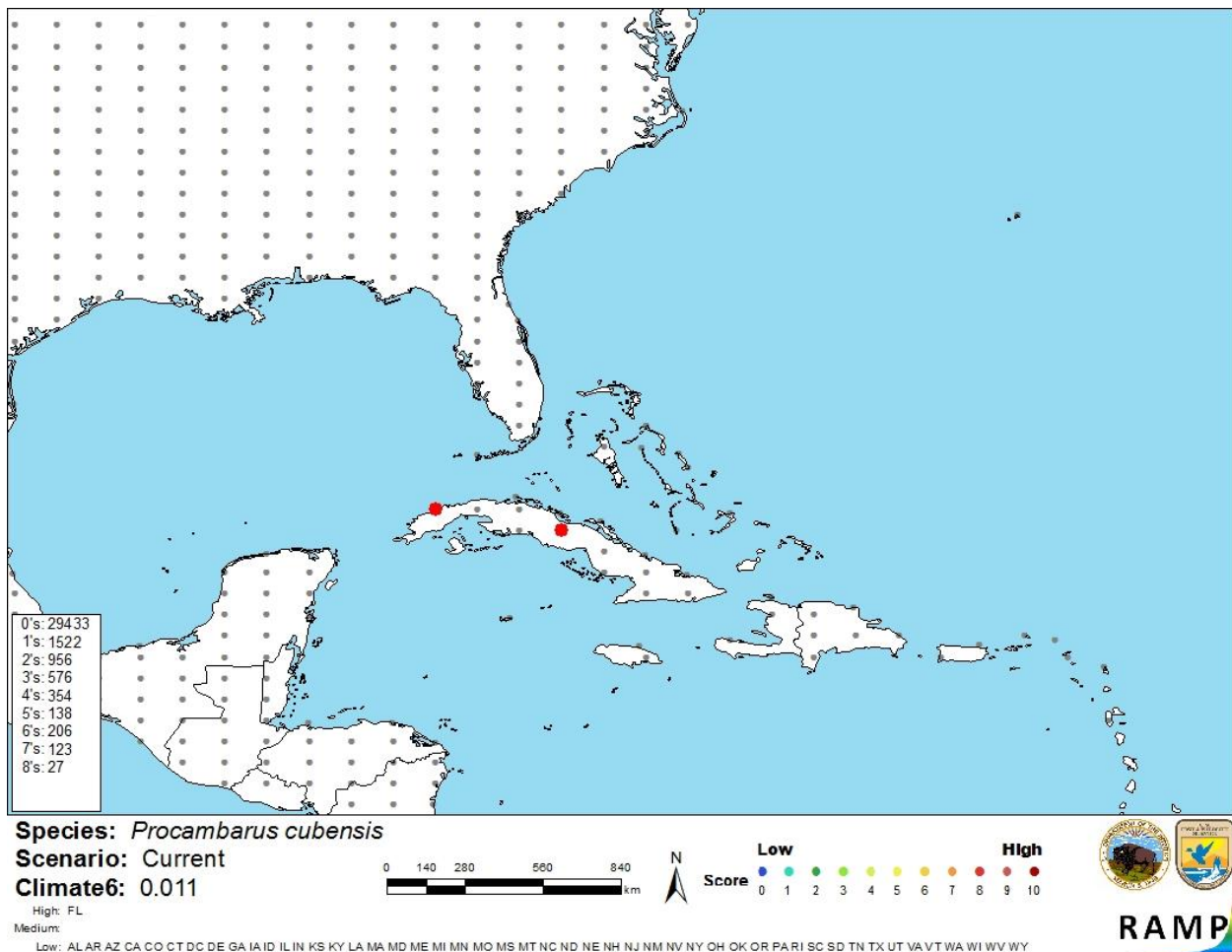


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Cuba) and non-source locations (gray) for *Procambarus cubensis* climate matching. Source locations from GBIF Secretariat (2017).

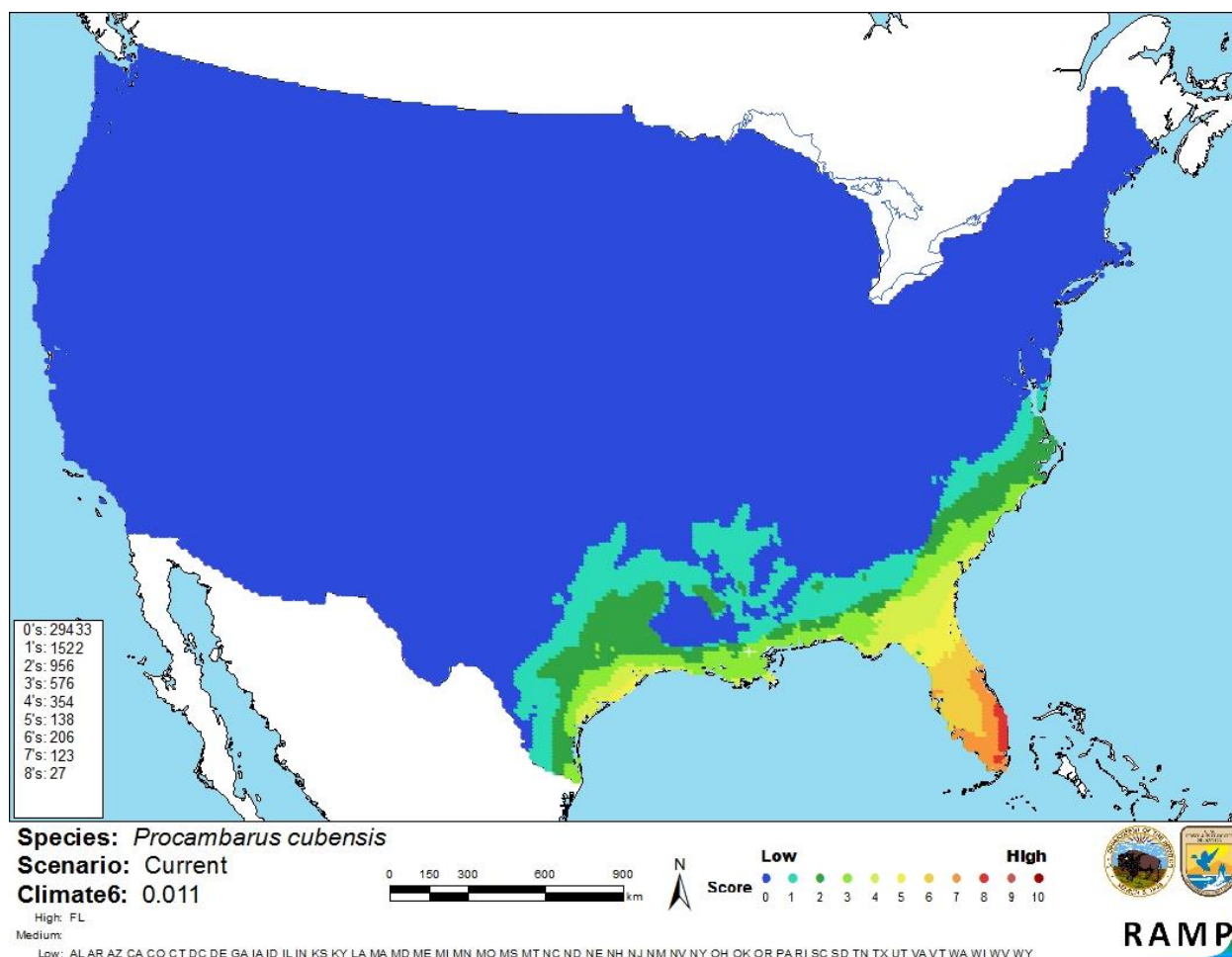


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Procambarus cubensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0=Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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

Information on the biology and distribution of *P. cubensis* is not widely available. There are no reports of *P. cubensis* in natural habitats outside its native range. The only scientific information available on the impacts of introductions comes from a risk assessment rather than a study documenting realized impacts. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

P. cubensis is a freshwater crayfish native to Cuba. *P. cubensis* is known to occur in lotic and lentic habitats, mountain streams, lowland streams, and lakes. *P. cubensis* is available in the pet trade in Germany and the Czech Republic. It is reported as rarely available on the market for wholesale trade in the Czech Republic. *P. cubensis* has not been reported in nature outside its range. Data on impacts of introductions are lacking. Absence of this information makes the certainty of this assessment low. Climate match with the contiguous United States is medium, with the highest match in Florida. Overall risk posed by this species is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3):** Uncertain
- **Climate Match (Sec.6):** Medium
- **Certainty of Assessment (Sec. 7):** 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., 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.
- Faulkes, Z. 2015. The global trade in crayfish as pets. *Crustacean Research* 44:75-92.
- GBIF Secretariat. 2017. GBIF backbone taxonomy: *Procambarus cubensis* (Erichson, 1846). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2227139>. (December 2017).
- ITIS (Integrated Taxonomic Information System). 2017. *Procambarus cubensis* (Erichson, 1846). Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=650333#null. (December 2017).
- Kharkeevich, T. A., and G. I. Gorgiladze. 2000. Morphofunctional study of the statocyst of the Cuban crayfish *Procambarus cubensis*. *Journal of Evolutionary Biochemistry and Physiology* 36:71-77.
- Patoka, J., L. Kalous, and O. Kopecky. 2014. Risk assessment of the crayfish pet trade based on data from the Czech Republic. *Biological Invasions* 16:2489-2494.

Pedraza Lara, C. 2010. *Procambarus cubensis*. The IUCN Red List of Threatened Species 2010: e.T153752A4540939. Available: <http://dx.doi.org/10.2305/IUCN.UK.2010-3.RLTS.T153752A4540939.en>. (December 2017).

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

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.

Chucholl, C. 2013. Invaders for sale: trade and determinants of introduction of ornamental freshwater crayfish. *Biological Invasions* 15:125-141.

Erichson, W. F. 1846. Uebersicht der arten der gattung *Astacus*. *Archiv für Naturgeschichte* 12: 86-103.

Hobbs, H. H., Jr. 1989. An illustrated checklist of the American crayfishes (Decapoda: Astacidae, Cambaridae, and Parastacidae). *Smithsonian Contributions to Zoology* 480:1-236.

Patoka, J., L. Kalous, and O. Kopecký. 2015. Imports of ornamental crayfish: the first decade from the Czech Republic's perspective. *Knowledge and Management of Aquatic Ecosystems* 416:04.