

# ***Barbodes manguaoensis* (a fish, no common name)**

## **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, January 2014  
Revised, August 2018  
Web Version, 6/25/2019

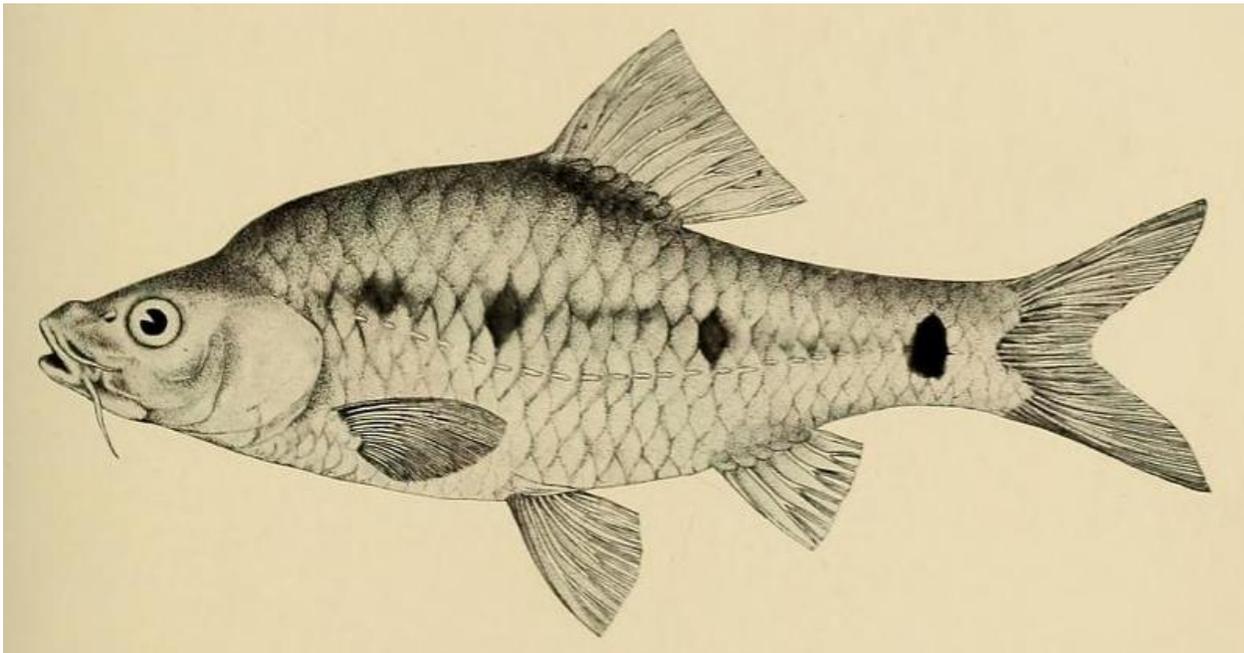


Image: A. L. Day. Public domain. Available: <http://www.biodiversitylibrary.org/page/36117374>. (August 2018).

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

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### **Native Range**

From Froese and Pauly (2018):

“Asia: endemic to Lake Manguao, northern Palawan, Philippines.”

### **Status in the United States**

This species has not been reported as introduced or established in the United States. There is no indication that this species is in trade in the United States.

## Means of Introductions in the United States

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

## Remarks

The current accepted name for this species is *Barbodes manguaoensis*. The synonym *Puntius manguaoensis* is also commonly used, so both names were used when conducting information searches in preparation of this report.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

“Kingdom Animalia  
Subkingdom Bilateria  
Infrakingdom Deuterostomia  
Phylum Chordata  
Subphylum Vertebrata  
Infraphylum Gnathostomata  
Superclass Actinopterygii  
Class Teleostei  
Superorder Ostariophysi  
Order Cypriniformes  
Superfamily Cyprinoidea  
Family Cyprinidae  
Genus *Puntius*  
Species *Puntius manguaoensis* (Day, 1914)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Barbodes manguaoensis* (Day 1914). Cyprinidae: Smiliogastrinae.”

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 14.0 cm TL male/unsexed; [Herre 1924]”

### Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

## **Climate/Range**

From Froese and Pauly (2018):

“Tropical”

## **Distribution Outside the United States**

Native

From Froese and Pauly (2018):

“Asia: endemic to Lake Manguao, northern Palawan, Philippines.”

Introduced

This species has not been reported as introduced or established outside of its native range.

## **Means of Introduction Outside the United States**

This species has not been reported as introduced or established outside of its native range.

## **Short Description**

From Fowler (1941):

“Depth  $2\frac{3}{4}$  to  $3\frac{3}{5}$ ; head  $3\frac{1}{4}$  to 4. Snout broad; eye  $3\frac{1}{2}$  to  $4\frac{1}{7}$  in head,  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in snout,  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in interorbital; mouth very oblique, lower jaw included; rostral barbel equals or very slightly exceeds eye, maxillary  $\frac{1}{10}$  to  $\frac{2}{7}$  longer than rostral or eye; interorbital 2 to  $3\frac{1}{5}$  in head. Pharyngeal teeth 2, 3, 5, 3—3, 5, 3, 2.”

“D. IV, 8, fourth spine very broad, strong, moderately serrate, about  $1\frac{3}{4}$  in head; A. III, 8; caudal badly damaged; pectoral I, 15, length  $1\frac{1}{2}$  to  $1\frac{3}{5}$  in head; ventral  $1\frac{2}{3}$  to  $1\frac{4}{5}$ , rays I, 8.”

“Faded, yellowish brown, darker above. Four black spots on side; largest and most distinct on lateral line on side of caudal peduncle and before caudal base ; remaining 3 above lateral line, 1 above anal origin, 1 above ventral origin and elongated above front part of pectoral, all connected by indistinct broad black band.”

## **Biology**

From Matillano (2002):

“Habitat: Littoral zone of the lake, areas close to the island and in the inflows draining into the lake.”

## **Human Uses**

From Matillano (2002):

“Not a target species for fishery but consumed locally if present as by-catch; used also as animal feed.”

## Diseases

No information available. No OIE-reportable diseases (OIE 2019) have been documented for this species.

## Threat to Humans

From Froese and Pauly (2018):

“Harmless”

## 3 Impacts of Introductions

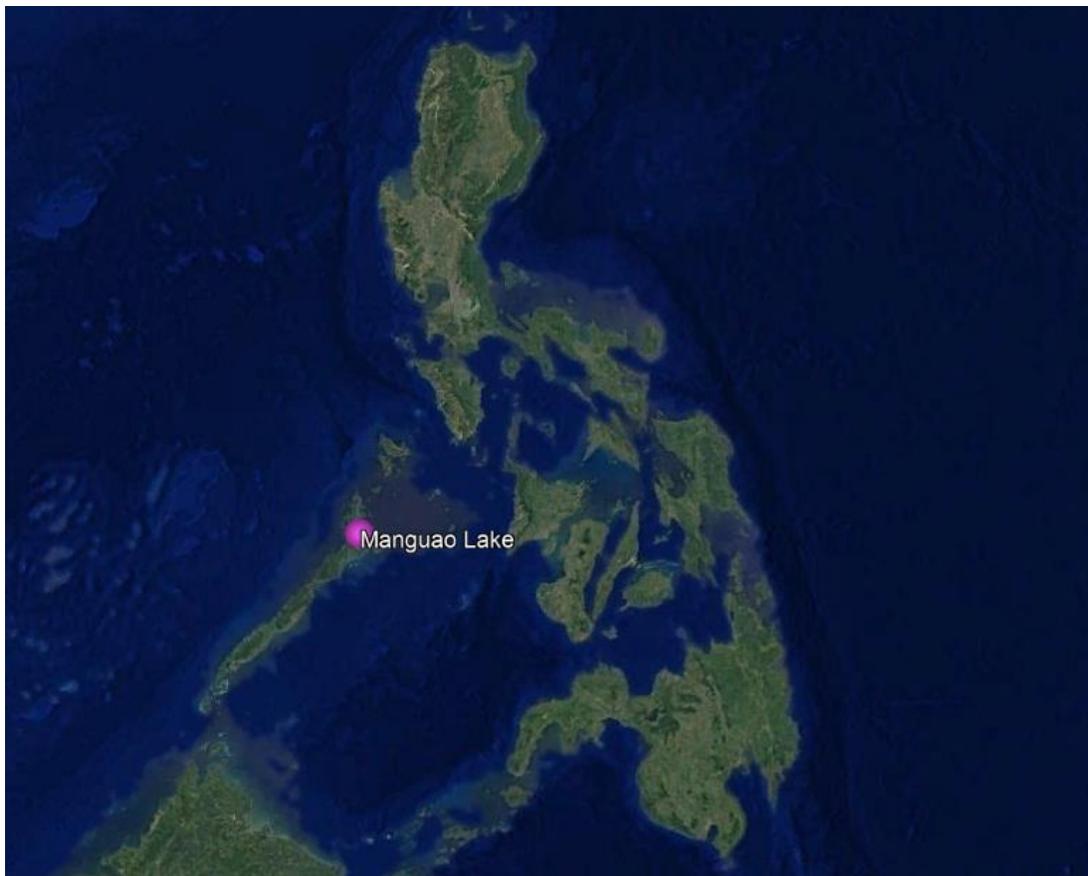
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This species has not been reported as introduced or established outside of its native range.

## 4 Global Distribution

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No georeferenced occurrences were available from GBIF Secretariat (2019).



**Figure 1.** Map of the known global distribution of *Barbodes manguaoensis* showing the only known occurrence of this species in Lake Manguao in the Philippines, as reported by Froese and Pauly (2018). Map made with Google Earth Pro 7.3.1.4507 (Google LLC, Mountain View, California).

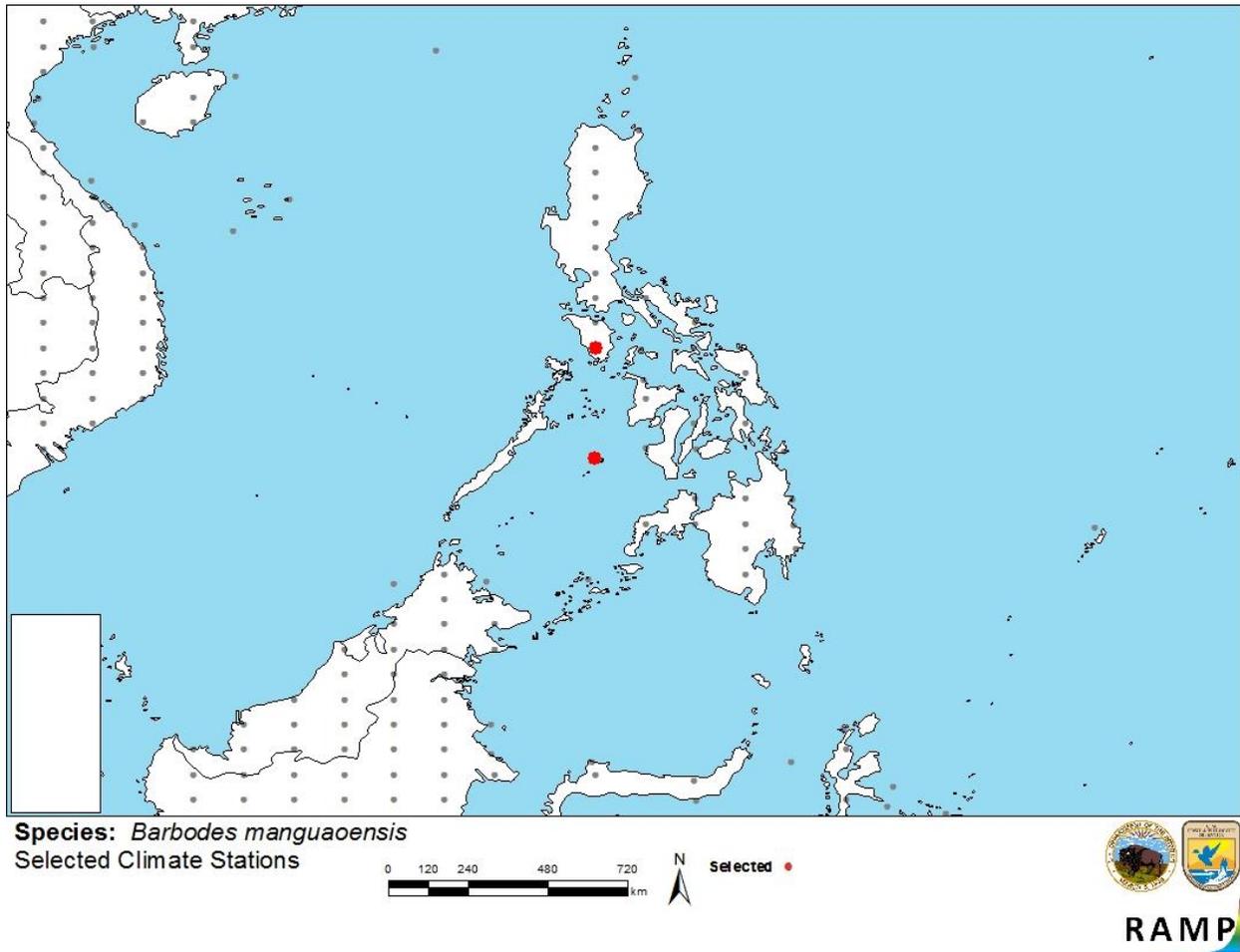
## 5 Distribution Within the United States

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

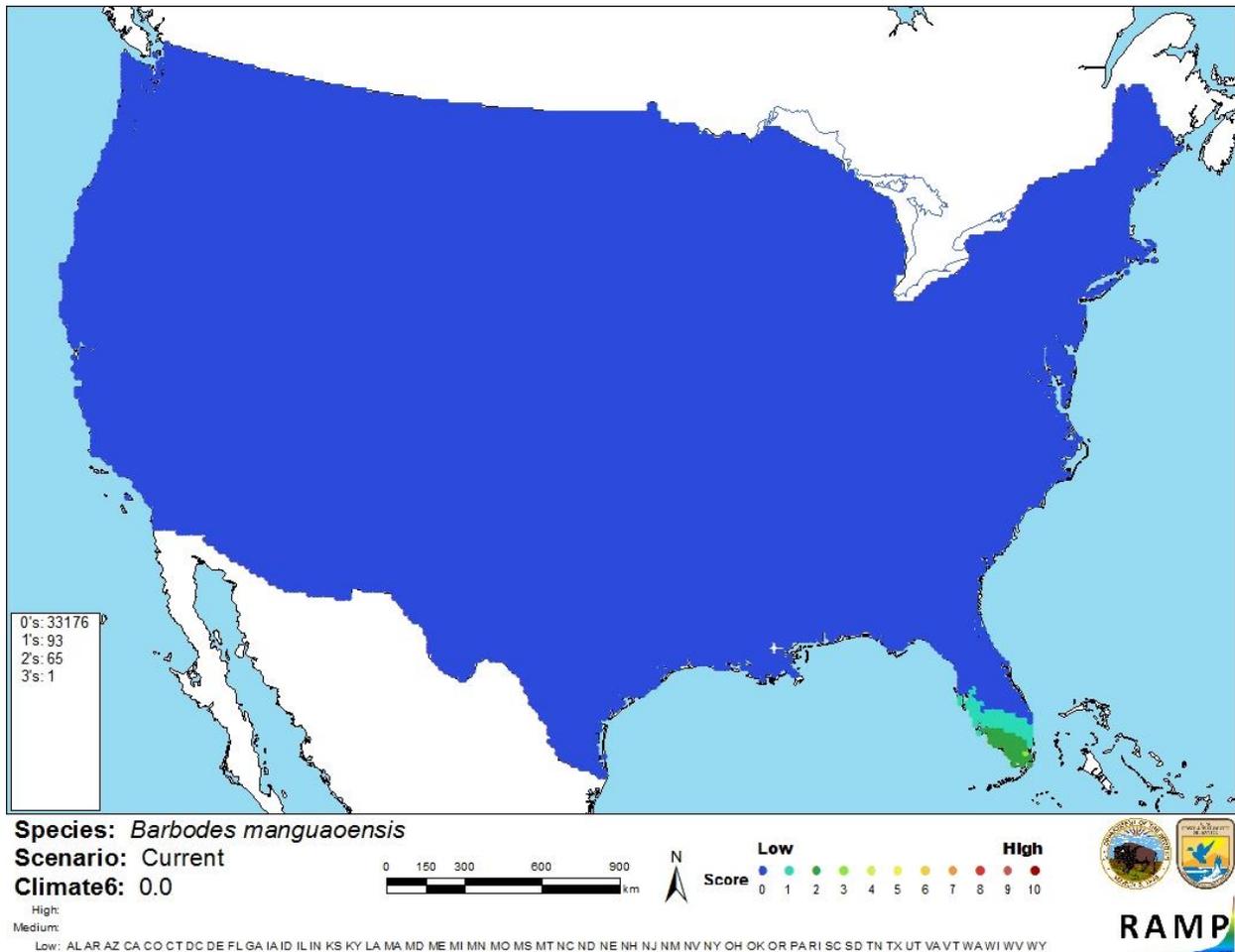
## 6 Climate Matching

### Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.0, indicating a low climate match. Scores between 0.000 and 0.005, inclusive, are classified as low. The climate match was very low across almost the entire contiguous United States. There was a small area of slightly higher, but still low, climate match in southern Florida. All states had a low climate score. The climate match was based on only one collection location. There were no climate stations located on the island where the collection was made so the nearest climate stations on other islands were used for the climate matching.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (gray) for *Barbodes manguaoensis* climate matching. Source locations from Froese and Pauly (2018). No climate stations were located on Palawan, but the closest climate stations to the island were selected.



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Barbodes manguaensis* in the contiguous United States based on source locations reported by Froese and Pauly (2018). 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
$\geq 0.103$	High

## 7 Certainty of Assessment

There is little information available about *Barbodes manguaensis*. It is only known from one location, and there little information available about the biology of this species. No introductions of this species outside of its native range have been documented. Because of a lack of information from which to base an assessment of risk, the certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Barbodes manguaoensis* is a small freshwater cyprinid fish endemic to Lake Manguao, Palawan, in the Philippines. It is consumed locally as a by-catch of commercial fishing, and sometimes used as animal feed. History of invasiveness is uncertain. *B. manguaoensis* has never been reported as introduced or established outside of its native range. This species has a low climate match with the contiguous United States. The climate match was developed using climate stations on nearby islands because no stations were available on its native island. Certainty of this assessment is low due to lack of information. The overall risk assessment category is uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): 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 10.**

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (August 2018).

Fowler, H. W. 1941. Contributions to the biology of the Philippine archipelago and adjacent regions. The fishes of the groups Elasmobranchii, Holocephali, Isospondyli, and Ostarophysii obtained by the United States Bureau of Fisheries steamer "Albatross" in 1907 to 1910, chiefly in the Philippine islands and adjacent seas. Bulletin of the United States National Museum 100(13).

Froese, R., and D. Pauly, editors. 2018. *Barbodes manguaoensis* (Day, 1914). FishBase. Available: <https://www.fishbase.de/summary/Barbodes-manguaoensis.html>. (August 2018).

GBIF Secretariat. 2019. GBIF backbone taxonomy: *Barbodes manguaoensis* (Day, 1914). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2364218>. (June 2019).

ITIS (Integrated Taxonomic Information System). 2018. *Puntius manguaoensis* (Day, 1914). Integrated Taxonomic Information System, Reston, Virginia. Available:

[https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=689822#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689822#null). (August 2018).

Matillano, J. D. 2002. The ichthyofauna of Lake Manguao, Taytay, Palawan, Philippines. *Annals of Tropical Research* 24(2):23-45.

OIE (World Organisation for Animal Health). 2019. OIE-listed diseases, infections and infestations in force in 2019. World Organisation for Animal Health, Paris. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/>.

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**

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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.**

Herre, A. W. C. T. 1924. Distribution of the true freshwater fishes in the Philippines. I. The Philippine Cyprinidae. *Philippine Journal of Science* 24(3):249-307.