

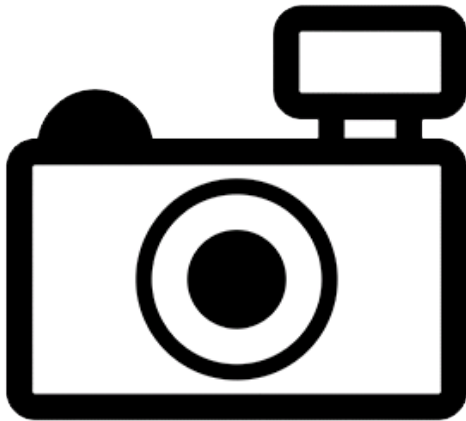
***Barbodes manalak* (a fish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, November 2013

Revised, July 2018

Web Version, 8/20/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Asia: endemic to Lake Lanao, Mindanao, 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

From World Conservation Monitoring Centre (1996):

“Harrison and Stiassny (1999) consider this species to be possibly extinct. The matter has been referred to the relevant Specialist Group for a decision.”

A previous version of this ERSS was drafted under the name *Puntius manalak*, which was the previously accepted name of this species. The currently accepted name is *Barbodes manalak*. Both names were used when researching in preparation of this report.

2 Biology and Ecology

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 Ostariophysii
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Puntius*
Species *Puntius manalak* (Herre, 1924)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Barbodes manalak* Herre 1924. Cyprinidae: Smiliogastrinae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 31.5 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 Lanao, Mindanao, 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 $2 \frac{9}{10}$ to $3 \frac{1}{3}$; head $2 \frac{9}{10}$ to $3 \frac{1}{3}$. Snout 3 to $3 \frac{3}{5}$ in head, wide, without prominent protruberances [*sic*]; eye 5 to 6, $1 \frac{2}{5}$ to 2 in snout, $1 \frac{4}{5}$ to 2 in interorbital; mouth wide, oblique, subterminal; lower jaw strong, broad, rounded, prominent, more or less projecting; upper lip moderately protractile; rostral and maxillary barbels short, length from $\frac{1}{2}$ to 1 eye diameter; interorbital broad, gently curved from side to side or flat. Pharyngeal teeth 2, 3, 5 - 5, 3, 2, all more or less hooked at tips, with age sometimes worn as truncate cylinders.”

“Scales 24 to 26 in lateral line; 6 above, 4 below, 11 predorsal, 13 around caudal peduncle. Lateral line conspicuous, gently curved toward belly in forward half.”

“D. IV, 8, fourth spine smooth or nearly so and comparatively slender, $1 \frac{4}{5}$ to 2 in head; A. III, 5, truncate, height equals or $\frac{1}{4}$ less dorsal height; caudal $\frac{2}{3}$ to $\frac{9}{10}$ of head, deeply forked, lobes pointed; pectoral I, 15, length $1 \frac{2}{5}$ to $1 \frac{1}{2}$; ventral I, 7 or 8, length 2 to $2 \frac{1}{10}$.”

“Dorsal surface dark green, changing to pale or whitish on sides and overcast with brassy or golden, especially on belly. Top of head and snout blackish, with pearly epidermal spots and also on sub-orbital and opercle.”

Biology

From Carlquist (1974):

“[...] the largest species of Cyprinidae in the entire Philippines.”

Human Uses

From Froese and Pauly (2018):

“Fisheries: highly commercial”

From World Conservation Monitoring Centre (1996):

“This species is fished using gill nets. Although it is large, it is not especially prized for food (Herre 1924). Reported to still be part of the lake fisheries in 1963-64 (Escudero et al. 1980).”

Diseases

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

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

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

4 Global Distribution



Figure 1. Known global distribution of *Barbodes manalak*, reported from the Philippines. Map from GBIF Secretariat (2018).

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 *Barbodes manalak* in the contiguous United States was 0.0, which is a low climate match. A Climate 6 score of less than or equal to 0.005 indicates a low match. The climate match was low across the entire contiguous United States.

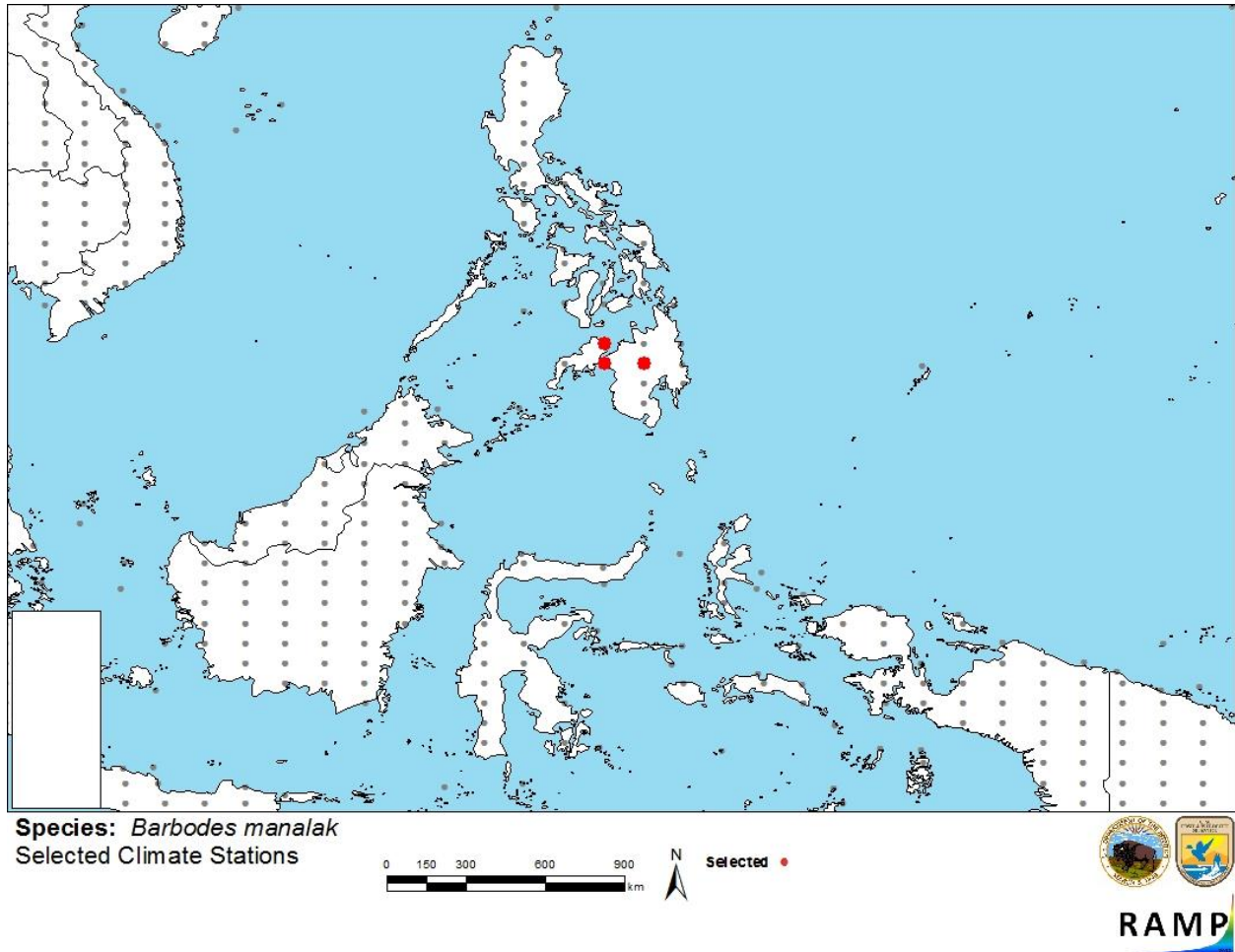


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Philippines) and non-source locations (gray) for *Barbodes manalak* climate matching. Source locations from GBIF Secretariat (2018).

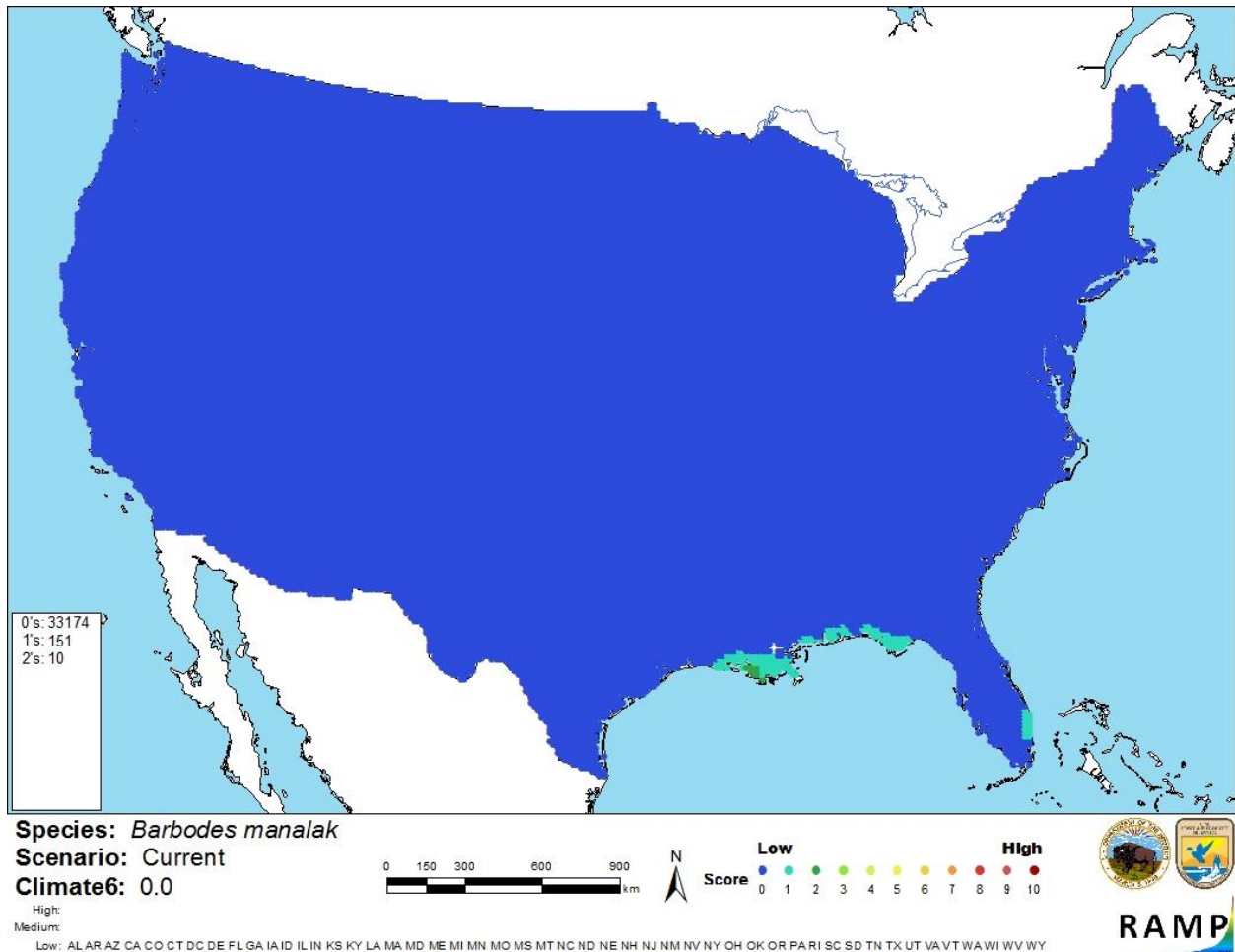


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Barbodes manalak* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0=Lowest match, 10=Highest match.

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
≥ 0.103	High

7 Certainty of Assessment

Limited information is available about *Barbodes manalak*. No introductions of this species have been reported, so impacts of introduction are unknown. The status of this species is uncertain: it may be extinct. Further information is needed to adequately assess the risk *B. manalak* poses to the contiguous United States; therefore, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Barbodes manalak is a cyprinid fish endemic to Lake Lanao, Mindanao, Philippines. It was previously harvested as a food fish, although now it is considered possibly extinct. *B. manalak* has a low climate match with the contiguous United States. No introductions of this species have been reported, so impacts of introduction are unknown. Very little information is available about this species, and the current status of its population is unknown, so the certainty of this assessment is low. 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**
- **Remarks/Important additional information: Possibly extinct**
- **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.

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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>. (July 2018).

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GBIF Secretariat. 2018. GBIF backbone taxonomy: *Barbodes manalak*, Herre, 1924. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2364055>. (July 2018, August 2018).

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World Conservation Monitoring Centre. 1996. *Barbodes manalak*. The IUCN Red List of Threatened Species 1996: e.T18904A8682771. Available: <http://www.iucnredlist.org/details/summary/18904/0>. (July 2018).

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.

Escudero, P. T., O. M. Gripaldo, and N. M. Sahay. 1980. Biological studies of the *Glossogobius giurus* (Hamilton & Buchanan) and the *Puntius sirang* (Herre) in Lake Lanao. *Journal of Fisheries Aquaculture* 1(1):1-154.

Harrison, I. J. and M. L. J. Stiassny. 1999. The quiet crisis. A preliminary listing of the freshwater fishes of the world that are Extinct or "Missing in Action". Pages 271-331 in R. D. E. MacPhee, editor. *Extinctions in near time*. Kluwer Academic/Plenum Publishers, New York.

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.