

***Pangasius mekongensis* (a catfish, no common name)**

Ecological Risk Screening Summary

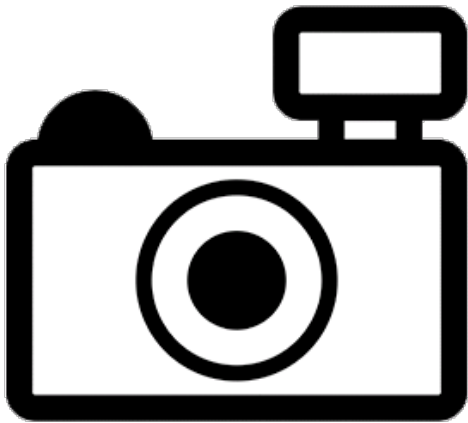
U.S. Fish & Wildlife Service, April 2012

Revised, August 2018

Web Version, 2/9/2021

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Asia: Mekong River, Viet Nam.”

From Poulsen et al. (2004):

“World Distribution: Southeast Asia, including Indochina, Malaysia, western Indonesia and Borneo.

Mekong Distribution: occurs throughout the lower Mekong basin, but is relatively rare. It is most common from Nakhon Phanom in the North to Kandal Province (Cambodia) in the south. In Lao PDR and Thailand its presence is limited to a few months every year.”

Status in the United States

No records of *Pangasius mekongensis* in the wild or in trade in the United States were found.

Pangasius mekongensis falls within Group I of New Mexico's Department of Game and Fish Director's Species Importation List (New Mexico Department of Game and Fish 2010). Group I species "are designated semi-domesticated animals and do not require an importation permit." With the added restriction of "Not to be used as bait fish."

Means of Introductions in the United States

No records of *Pangasius mekongensis* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Pangasius mekongensis* (Gustiano, Teugels, and Pouyaud 2002) is the current valid name and the original name for this species.

From ITIS (2018):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysi
Order Siluriformes
Family Pangasiidae
Genus *Pangasius*
Species *Pangasius mekongensis* Gustiano, Teugels and Pouyaud, 2003

Size, Weight, and Age Range

From Poulsen et al. (2004):

"Size: up to 90 cm."

Environment

From Froese and Pauly (2018):

“Freshwater; brackish; benthopelagic.”

Climate

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Asia: Mekong River, Viet Nam.”

From Poulsen et al. (2004):

“World Distribution: Southeast Asia, including Indochina, Malaysia, western Indonesia and Borneo.

Mekong Distribution: occurs throughout the lower Mekong basin, but is relatively rare. It is most common from Nakhon Phanom in the North to Kandal Province (Cambodia) in the south. In Lao PDR and Thailand its presence is limited to a few months every year.”

Introduced

No records of introductions of *Pangasius mekongensis* were found.

Means of Introduction Outside the United States

No records of introductions of *Pangasius mekongensis* were found.

Short Description

No information on a short description of *Pangasius mekongensis* was found.

Biology

From Poulsen et al. (2004):

“Feeding: omnivorous – mainly insects, worms, submerged plants and seeds.”

“Critical habitats Spawning habitats: spawning occurs in the Mekong mainstream. No information is available on exact spawning location and behaviour. Larvae of the species can be caught in the drift in the Mekong and Bassac rivers in Viet Nam. These larvae are believed to originate from spawning grounds far upstream, i.e. beyond the Khone Falls.

Feeding habitats: juveniles and sub-adults use flooded areas as nursery and feeding habitats and mainly feed on plant material. The juveniles are mainly seen in the lower reaches of the river, in the tidal zone of the Mekong delta [...]. Large individuals stay in the main river channels, where they feed on a range of food items.

Refuge habitats, *Pangasius mekongensis* spend the dry season in deep pool refuges in the Mekong mainstream [...].”

“After spawning in the Mekong mainstream, the hatched larvae drift with the water-flow to their downstream nursery feeding ground. These are mainly associated with flooded vegetation during the flood season.

When water recedes at the end of the flood season, the young fish move back to the river and start upstream migrations to their dry season refuge habitats [...]. The fish may return to the flooded feeding habitats for two or more seasons. When they reach sexual maturity, the arrival of the monsoon season triggers the fish to migrate upstream to their spawning habitats, where they subsequently spawn, thereby initiating a new cycle.”

Human Uses

From Poulsen et al. (2004):

“This is a rare species and of little general significance in fisheries. However, it is caught regularly in Viet Nam and Cambodia.”

Diseases

No records of OIE-reportable diseases (OIE 2021) were found for *Pangasius mekongensis*.

Pariselle et al. (2002) lists *Thaparocleidus phuongi phuongi* as a parasite of *P. mekongensis*.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of introductions of *Pangasius mekongensis* were found; therefore, there is no information on impacts of introductions.

4 History of Invasiveness

No records of introductions of *Pangasius mekongensis* were found; therefore, the history of invasiveness is no known nonnative population.

5 Global Distribution

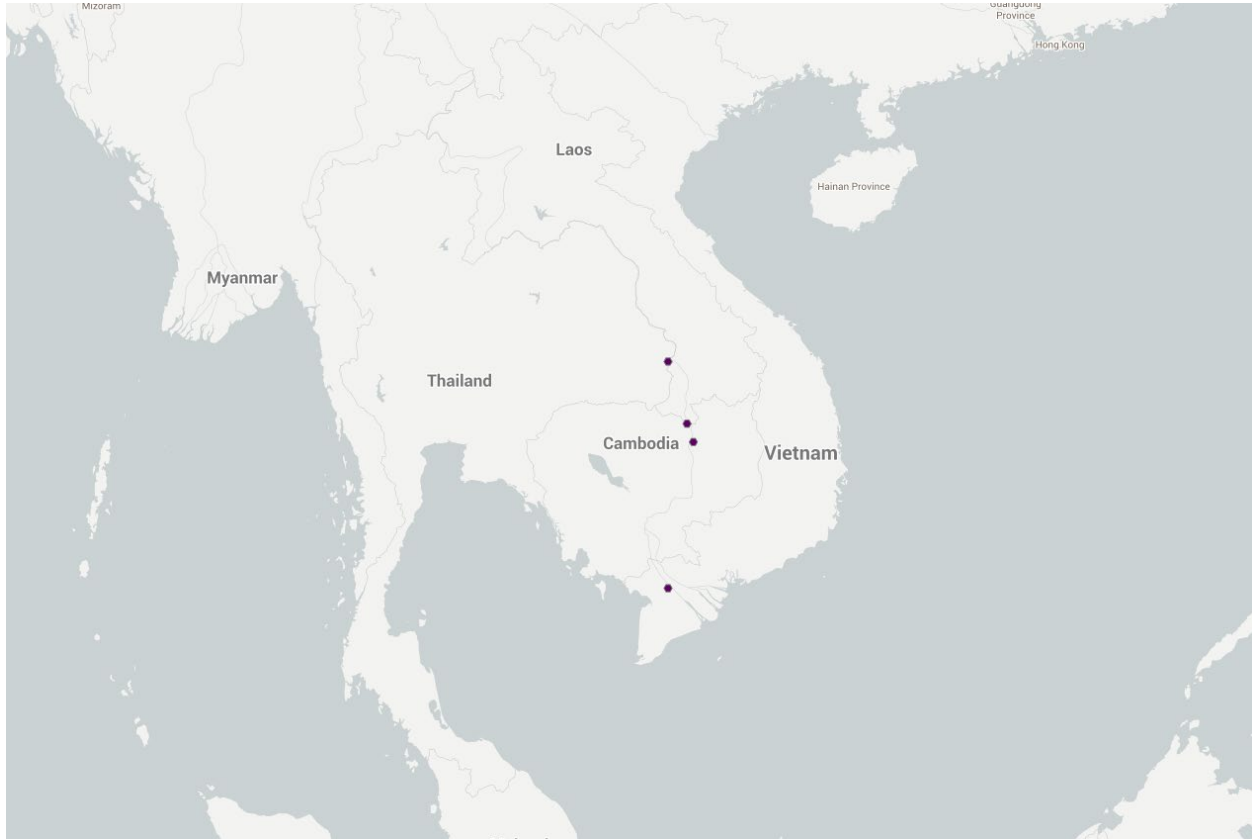


Figure 1. Known global distribution of *Pangasius mekongensis*. Map from GBIF Secretariat (2018).

6 Distribution Within the United States

No records of *Pangasius mekongensis* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Pangasius mekongensis* was generally low across the entire contiguous United States. There was one area of medium match at the southern tip of Florida and no areas of high match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had a low individual climate score.



Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southern Asia selected as source locations (red; Thailand, Laos, Cambodia) and non-source locations (gray) for *Pangasius mekongensis* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

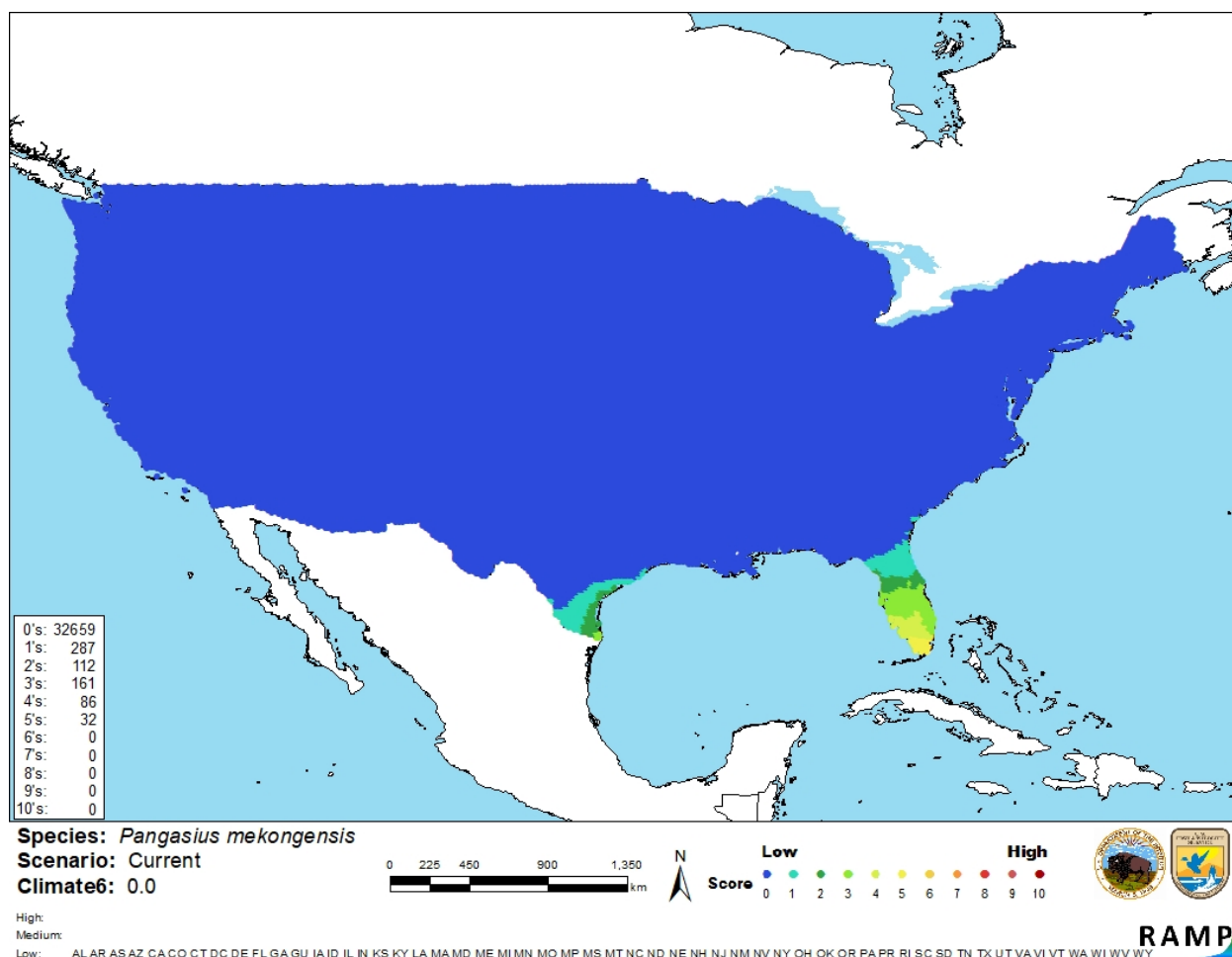


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Pangasius mekongensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

The certainty of assessment is low. There was some general information about the species available from peer-reviewed sources. There were no records of introductions found and, therefore, there is no information on impacts available to evaluate.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Pangasius mekongensis is a species of catfish native to the Mekong River basin in southeastern Asia. It has been reported from Thailand, Laos, Cambodia, and Vietnam. The species is present in the fisheries of Cambodia and Vietnam. The history of invasiveness is no known nonnative population. There were no records of introductions to the wild found. The overall climate match was low. There was one area of medium match in southern Florida. The certainty of assessment is low. The overall risk assessment is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information:** No additional information
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

- Eschmeyer WN, Fricke R, van der Laan R, editors. 2018. Catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (August 2018).
- Froese R, Pauly D, editors. 2018. *Pangasius mekongensis* Gustiano, Teugels and Pouyaud, 2003. FishBase. Available: <https://www.fishbase.de/summary/Pangasius-mekongensis.html> (August 2018).
- GBIF Secretariat. 2018. GBIF backbone taxonomy: *Pangasius mekongensis* (Gustiano, Teugels and Pouyaud, 2003). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/5202439> (August 2018).
- [ITIS] Integrated Taxonomic Information System. 2018. *Pangasius mekongensis* (Gustiano, Teugels and Pouyaud, 2003). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=681707#null (August 2018).
- New Mexico Department of Game and Fish. 2010. Director's species importation list. Santa Fe, New Mexico: New Mexico Department of Game and Fish. Available: http://www.wildlife.state.nm.us/download/enforcement/importation/information/Directors-Species-Importation-List-08_03_2010.pdf (November 2020).

[OIE] World Organisation for Animal Health. 2021. OIE-listed diseases, infections and infestations in force in 2021. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2021/> (February 2021).

Pariselle A, Lim LHS, Lambert A. 2002. Monogeneans from Pangasiidae (Siluriformes) in Southeast Asia: IV. Five new species of *Thaparocleidus* Jain, 1952 (Ancylostoididae) from *Pangasius krempfi*, *P. kunyit*, *P. mekongensis* and *P. sabahensis*. Parasite 9:315–324.

Poulsen AF, Hortle KG, Valbo-Jorgensen J, Chan S, Chhuon CK, Viravong S, Bouakhamvongsa S, Suntornratana U, Yoorong N, Nguyen TT, Tran BQ. 2004. Distribution and ecology of some important riverine fish species of the Mekong River Basin. Phnom Penh, Cambodia: Mekong River Commission. MRC Technical Paper.

Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

11 Literature Cited in Quoted Material

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.

Gustiano R, Teugels GG, Pouyaud L. 2002. Revision of the *Pangasius kunyit* catfish complex, with description of two new species from South-East Asia (Siluriformes; Pangasiidae). Journal of Natural History 37(3):357–376.