

Giant Barb (*Catlocarpio siamensis*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, April 2014
Revised, February 2018
Web Version, 9/7/2018



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1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“Asia: Maeklong [Vidthayanon et al. 1997], Mekong and Chao Phraya basins.”

From Hogan (2011):

“Cambodia; Lao People's Democratic Republic; Thailand; Viet Nam”

“The Giant Carp is recorded from larger rivers and floodplain areas in the MaeKlong, Mekong and Chao Phraya basins in Thailand, Cambodia, Lao PDR and Viet Nam. Wild populations of the species no longer occur in the Chao Phraya River (Humphrey and Bain 1990, Roberts and Warren 1994).”

Status in the United States

This species has not been reported in the United States.

Means of Introductions in the United States

This species has not been reported in the United States.

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 Osteichthyes
Class Actinopterygii
Subclass Neopterygii
Infraclass Teleostei
Superorder Ostariophysi
Order Cypriniformes
Superfamily Cyprinoidea
Family *Cyprinidae*
Genus *Catlocarpio*
Species *Catlocarpio siamensis*”

“Taxonomic Status: valid”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 300 cm TL male/unsexed; [Baird et al. 1999]; max. published weight: 300.0 kg [Roberts and Warren 1994]”

Environment

From Froese and Pauly (2017):

“Freshwater; benthopelagic; potamodromous [Riede 2004].”

Climate/Range

From Froese and Pauly (2017):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“Asia: Maeklong [Vidthayanon et al. 1997], Mekong and Chao Phraya basins.”

From Hogan (2011):

“Cambodia; Lao People's Democratic Republic; Thailand; Viet Nam”

“The Giant Carp is recorded from larger rivers and floodplain areas in the Maeklong, Mekong and Chao Phraya basins in Thailand, Cambodia, Lao PDR and Viet Nam. Wild populations of the species no longer occur in the Chao Phraya River (Humphrey and Bain 1990, Roberts and Warren 1994).”

Introduced

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

Means of Introduction Outside the United States

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

Short Description

From Froese and Pauly (2017):

“Dorsal spines (total): 0. Head very large, about 2.5 times in SL; no barbels; no dorsal spine; 90-110 long gill rakers on first gill arch [Kottelat 2001].”

Biology

From Froese and Pauly (2017):

“Found in large rivers and seasonally in canals and floodplains [Rainboth 1996]. Adults prefer big pools in the Mekong at least part of the year while juveniles are mostly seen in swamps and small tributaries, from where they are sometimes collected and stocked in ponds [Sokheng et al. 1999]. The young can acclimatize to live in ponds, canals and swamps. A migratory species [Hill

and Hill 1994]. Enters flooded forest [Roberts 1993]. Young individuals occur in October in the lower Mekong basin [Taki 1978]. Feeds on algae, phytoplankton and fruits of inundated terrestrial plants [Rainboth 1996] and detritus [Vidthayanon 2005]. Its numbers have declined seriously. Individual fishes rarely survive to reach reproductive maturity.”

From Hogan (2011):

“Inhabits floodplain and main river habitats where it feeds on algae, phytoplankton, plant matter, and small fish. Young fish are common in floodplain habitats while adults seem to prefer deep pools of the main river, especially during the dry season. In Cambodia, adult fish migrate out of the Tonle Sap Lake and into the Mekong River at the end of the dry season (Hogan *et al.* 2001, Hogan *et al.* 2004).”

“Very little is known about the natural spawning behaviour of this species. Spawning reportedly occurs in July and August, possibly in areas adjacent to deep pools in the main river. Fecundity depends on the size of the fish; a 61 kg female can produce over 10 million eggs. In captivity, fish mature after seven years at a weight of about 9 kg (Mattson *et al.* 2002). The species can reach up to 300 kg (300 cm) in size, but few large individuals are now caught. Feeds on algae, phytoplankton and fruits of inundated terrestrial plants and detritus.”

Human Uses

From Froese and Pauly (2017):

“Fisheries: commercial; aquaculture: commercial”

From Hogan (2011):

“Utilised in commercial fisheries and in aquaculture. Small specimens found occasionally in the aquarium trade.”

Diseases

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

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

There are no reported introductions of this species. Data on the impacts from introductions are lacking.

4 Global Distribution

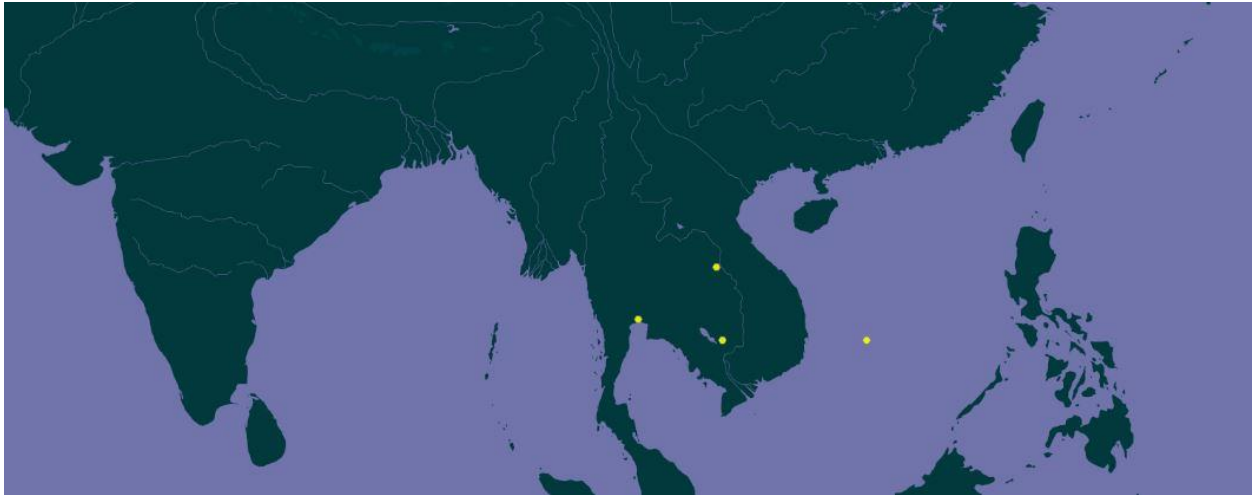


Figure 1. Map of known global distribution of *Catlocarpio siamensis*, reported from Southeast Asia. Location in the South China Sea is not known to represent an established population and therefore was excluded from the climate matching analysis. Map from GBIF Secretariat (2017).

5 Distribution Within the United States

This species has not been reported as established or introduced 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 medium for the southwestern peninsular Florida and low for the rest of the United States. Climate 6 match indicated that the contiguous U.S. has a low climate match. The range for a low climate match is 0.0 – 0.005; climate match of *Catlocarpio siamensis* is 0.00.

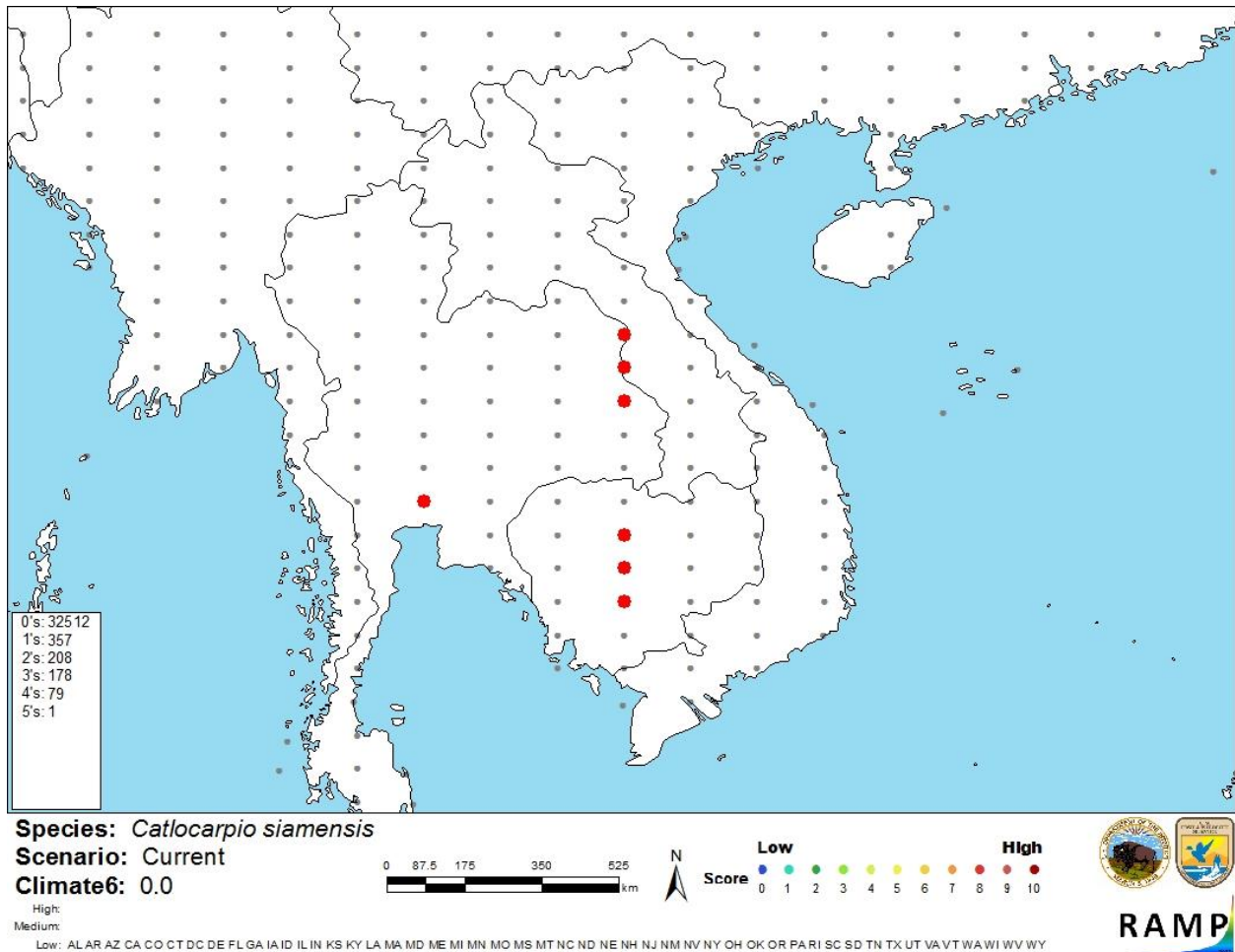


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Southeast Asia selected as source locations (red; Thailand, Laos, Cambodia) and non-source locations (gray) for *Catlocarpio siamensis* climate matching. Source locations from GBIF Secretariat (2017).

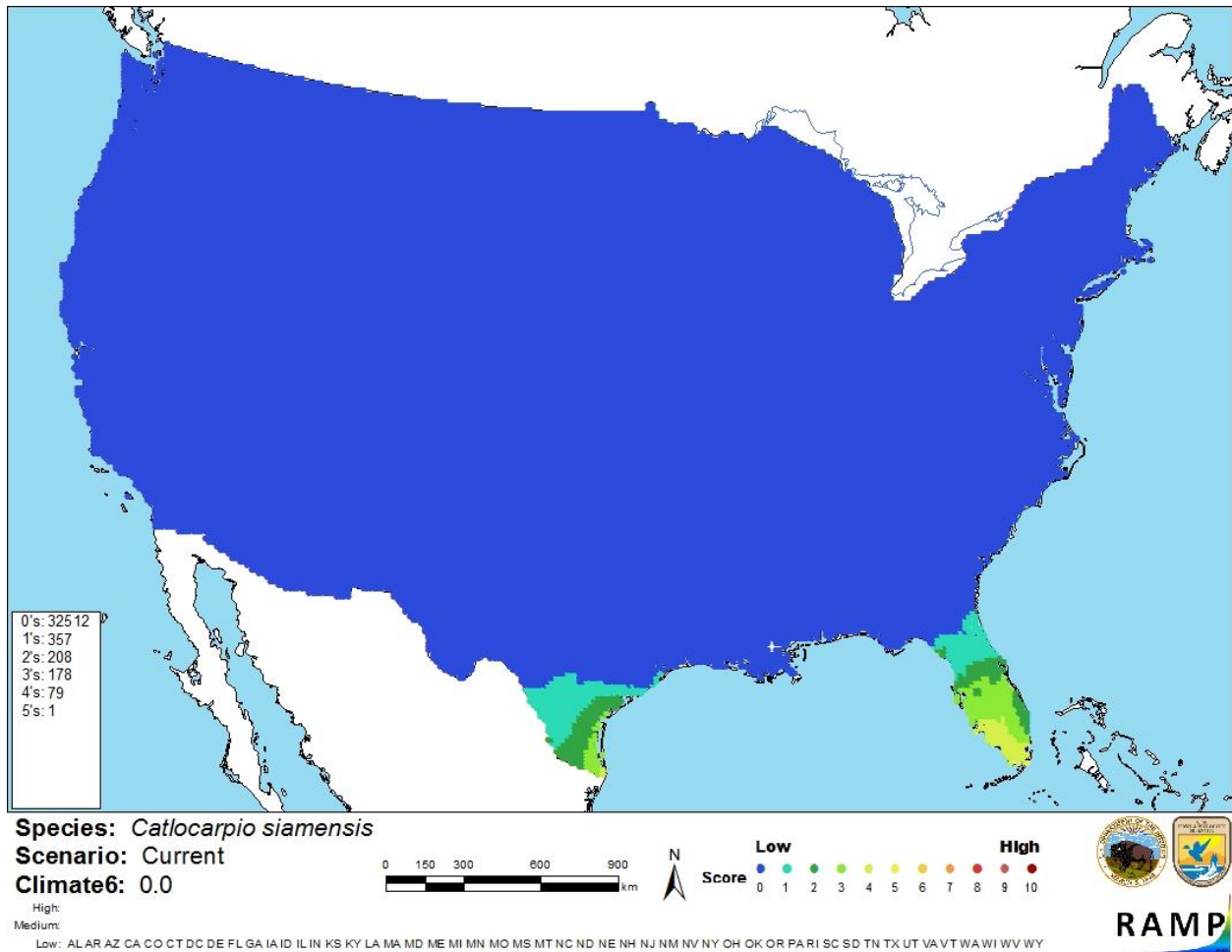


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Catlocarpio siamensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 0= Lowest match, 10= Highest match. Counts of climate match scores are tabulated on the left.

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
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

Information on the biology and distribution of *C. siamensis* is available; however, no introductions for this species have been reported. Scientific study is needed to understand the impacts the species could have in introduced areas; absence of introductions and research on impacts makes the certainty of assessment low.

8 Risk Assessment

Summary of Risk to the Continental United States

Giant Barb (*Catlocarpio siamensis*) is a freshwater riverine species native to Mae klong, Mekong and Chao Phraya river basins in Asia. No introductions of this species have been reported. More research is needed to understand the impacts from introductions for this species; absence of this research makes the certainty of this assessment low. Climate match with the United States is low. Overall risk posed by this species 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

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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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.

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