

Three-lined Catfish (*Glyptothorax trilineatus*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, July 2017

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Photo: Information Center, Chinese Academy of Fishery Sciences. Licensed under Creative Commons BY-NC. Available: http://eol.org/data_objects/20871530. (August 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“Asia: India, Myanmar, Nepal, Thailand and Laos. Reported from China [Chu and Mo 1999].”

Status in the United States

This species has not been reported in the United States. No evidence was found of trade in *G. trilineatus* in the United States.

Means of Introductions in the United States

Glyptothorax trilineatus has not been reported as introduced in the United States.

Remarks

Proper identification has been brought up as an issue along with a taxonomical synonym and brings into question range wide distribution.

From Vishwanath and Linthoingambi (2007):

“Hitherto reports of *G. trilineatus* from India are due to misidentifications”

From Eschmeyer et al. (2018):

“*trilineatoides*, *Glyptothorax*[...] Synonym of *Glyptothorax trilineatus* Blyth 1860.”

From Devi and Boguskaya (2009):

“Common Name(s): English – Three-lined Catfish”

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 Ostariophysi
Order Siluriformes
Family Sisoridae
Genus *Glyptothorax*
Species *Glyptothorax trilineatus* Blyth, 1860”

“Current Standing: valid”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length : 30.0 cm TL male/unsexed; [Menon 1999]”

Environment

From Froese and Pauly (2017):

“Freshwater; benthopelagic; pH range: 6.0 - 7.2; dH range: ? - 10. [...] 10°C - 20°C [Baensch and Riehl 1991; assumed to represent recommended aquarium water temperatures]”

Climate/Range

From Froese and Pauly (2017):

“High altitude [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“Asia: India, Myanmar, Nepal, Thailand and Laos. Reported from China [Chu and Mo 1999].”

Introduced

No introductions of this species have been reported.

Means of Introduction Outside the United States

This species has not been reported as introduced outside the United States

Short Description

From Froese and Pauly (2017):

“Dorsal spines (total): 1; Dorsal soft rays (total): 6; Anal soft rays: 13. A white mid-dorsal stripe extending from occiput to base of caudal fin, a narrow whitish axial line on sides from shoulder to base of caudal peduncle [Taki 1974]”

Biology

From Froese and Pauly (2017):

“Inhabits pool and riffle areas of streams [Shrestha 1990]. Found in rapid-running mountain streams [Taki 1978]. Occurs in the basin-wide tributary of the lower Mekong [Pantulu 1986].”

From Shrestha and Edds (2012):

“Hill streams and sluggish streams (Rahman 1989) [...]”

From Devi and Boguskaya (2009):

“*G. trilineatus* is a benthopelagic fish which is found in pool and riffle areas of rapid-running mountain streams.”

From PlanetCatfish (2007):

“Sisorid catfishes of the genus *Glyptothorax* Blyth are benthic inhabitants of torrential waters of rivers and streams in montane and submontane parts of tropical Asia. The members of the genus are adapted to attach themselves to rocks and boulders against strong currents by means of a

thoracic adhesive apparatus comprising grooves and folded pleats of skin parallel or oblique to the longitudinal axis of the body.”

Human Uses

From Devi and Boguskaya (2009):

“*G. trilineatus* is a commercially important species, but the extent of its fisheries is not known. It is also an ornamental aquarium fish”

Diseases

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

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

No information available.

4 Global Distribution



Figure 1. Known global distribution of *Glyptothorax trilineatus*, reported from India, Nepal, China, and Thailand. Southernmost locations in India and Thailand were not included in climate matching analysis. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) indicated a low climate match for the contiguous U.S. Scores between 0.000 and 0.005 are classified as low match. Climate 6 score for *Glyptothorax trilineatus* was 0.0, the lowest match. The Great Lakes, eastern Rockies, and southernmost reaches of Florida and Texas encompassed areas of the continental U.S. with slightly higher climate match scores are found.

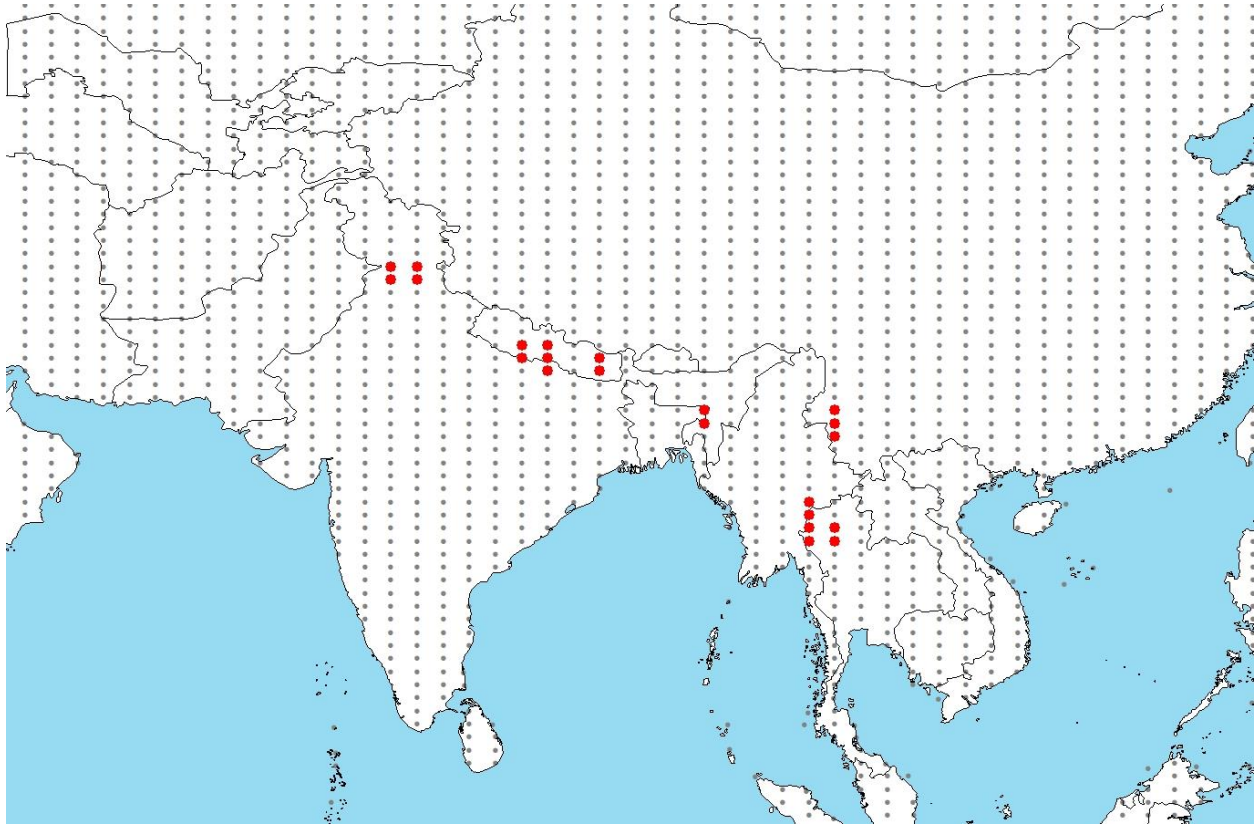


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations as source locations (red; India, Nepal, Bangladesh, China, Myanmar, Thailand) and non-source locations (gray) for *Glyptothorax trilineatus* climate matching. Source locations from GBIF Secretariat (2018).

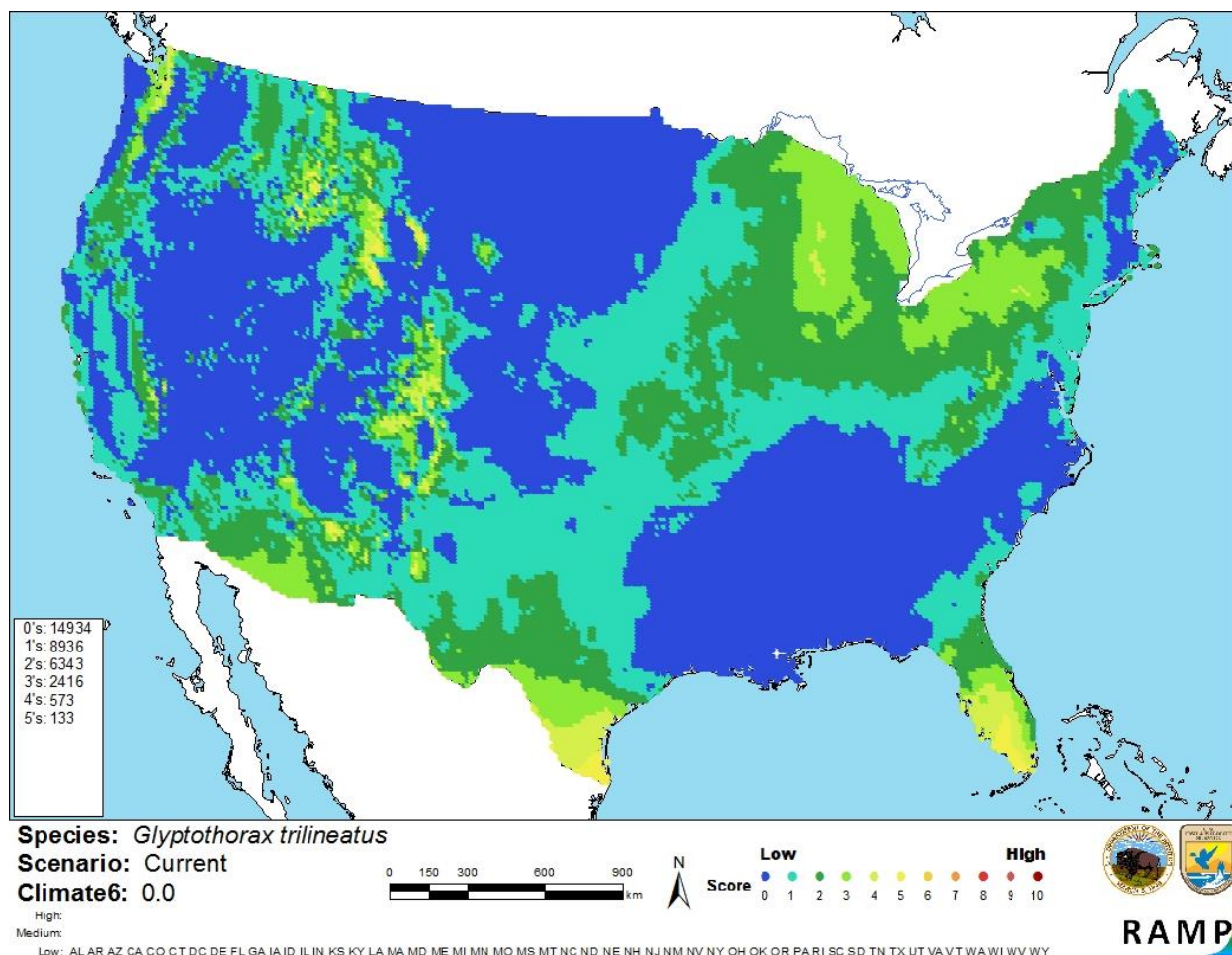


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Glyptothorax trilineatus* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0= Lowest match, 10= Highest match. Counts of climate match scores are tabulated on the left.

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

This species is currently limited to its native range in South and Southeast Asia, and no introductions have been documented. Information on this species is available but some disagreement arises for proper identification and thus, its true range and status is in question. Based on available data, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Three-lined Catfish (*Glyptothorax trilineatus*) is a species of catfish native to South and Southeast Asia. *G. trilineatus* has a low climate match in the contiguous United States, with a slightly higher score near the Gulf Coast of Florida and Texas. Information about this species is available but proper identification has been questioned and discernment between species and others within this genus renders assessing overall risk assessment of this species problematic. Therefore, the potential impacts of *Glyptothorax trilineatus* in the contiguous U.S. are unknown. The overall risk of 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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Taki, Y. 1978. An analytical study of the fish fauna of the Mekong basin as a biological production system in nature. Research Institute of Evolutionary Biology Special Publications no. 1, Tokyo, Japan.