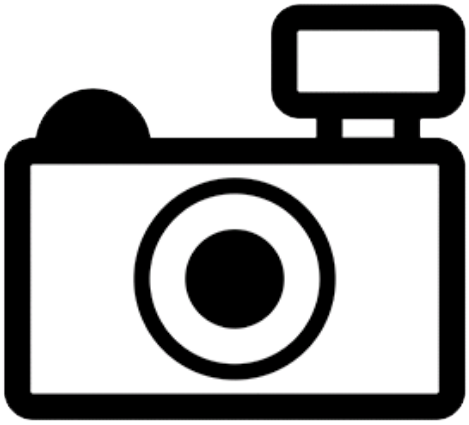
Top-mouth Carp (*Cyprinus ilishaestomus*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, October 2012
Revised, December 2018
Web Version, 8/7/2019



1 Native Range and Status in the United States

Native Range

From Zhao (2011):

"The species is an endemic fish to China and distributed only in Qilu Lake, Yunnan province. It has not been seen since the late 1970s when an individual specimen was collected (W. Zhou pers. comm)."

Status in the United States

No records of *Cyprinus ilishaestomus* in the wild or in trade in the United States were found.

Means of Introductions in the United States

No records of *Cyprinus ilishaestomus* in the wild in the United States were found.

Remarks

From Zhao (2011):

"The species has not [been] recorded since the late 1970s in scientific surveys. In 1983 and 1984, the lake was surveyed, and the species was not found (X. Wei pers. comm. 2011). Local fishers report that the species has not been recorded for many years (prior to 1983). Given the lack of scientific and fishery records, the species is considered to be Critically Endangered (Possibly Extinct)."

A previous version of this ERSS was published in 2012.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From: Fricke et al. (2018):

"**Current status:** Valid as *Cyprinus ilishaestomus* Chen & Huang 1977."

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 *Cyprinus*
Species *Cyprinus ilishaestomus*"

Size, Weight, and Age Range

From Froese and Pauly (2018):

"Max length : 30.0 cm NG male/unsexed; [Wang 1998]; common length : 17.0 cm NG male/unsexed; [Wang 1998]"

Environment

From Froese and Pauly (2018):

"Freshwater; benthopelagic."

Climate/Range

From Froese and Pauly (2018):

"Subtropical"

Distribution Outside the United States

Native

From Zhao (2011):

"The species is an endemic fish to China and distributed only in Qilu Lake, Yunnan province. It has not been seen since the late 1970s when an individual specimen was collected (W. Zhou pers. comm)."

Introduced

No records of *Cyprinus ilishaestomus* introductions were found.

Means of Introduction Outside the United States

No records of *Cyprinus ilishaestomus* introductions were found.

Short Description

From Froese and Pauly (2018):

"Body yellowish green on top of body , gradually pale downwards and silvery white on abdomen. Snout long and front of nostrils markedly convex; lower jaw slightly more protruded than upper one."

Froese and Pauly (2018) also report 36–39 scales in the lateral line.

From Hu and Liu (2009):

"Body typically carp-like, mouth is superior, no barbels, body covered with large scales, eyes are large."

Biology

From Froese and Pauly (2018):

"Adults dwell mainly in deep water with aquatic plants. Feed mainly on shrimps, small fishes and some aquatic plants [Wang 1998]."

From Zhao (2011):

"Agricultural development of the littoral zone has resulted in the sharp fall of the water level of the lake due to water extraction, this has led to a decline in the aquatic plants in the lake depriving the species of their spawning grounds."

Human Uses

From Zhao (2011):

"Originally a locally important economic fish, its number sharply dropped since the 1970s and is now almost extinct."

Diseases

No information on diseases of *Cyprinus ilishaestomus* was found. **No records of OIE-reportable diseases (OIE 2019) were found for *C. ilishaestomus*.**

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

No records of *Cyprinus ilishaestomus* introductions were found; therefore, there is no information on impacts of introduction.

4 Global Distribution

Figure 1. Location of Lake Qilu in Yunnan Province, China. Zhao (2011) reports *Cyprinus ilishaestomus* as endemic to this lake.

5 Distribution Within the United States

No records of *Cyprinus ilishaestomus* in the wild in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Cyprinus ilishaestomus* was low for most of the contiguous United States. There were areas of medium match in southern Florida, southern and western Texas, and southern Arizona. There were no areas of high match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States had low individual Climate 6 scores.

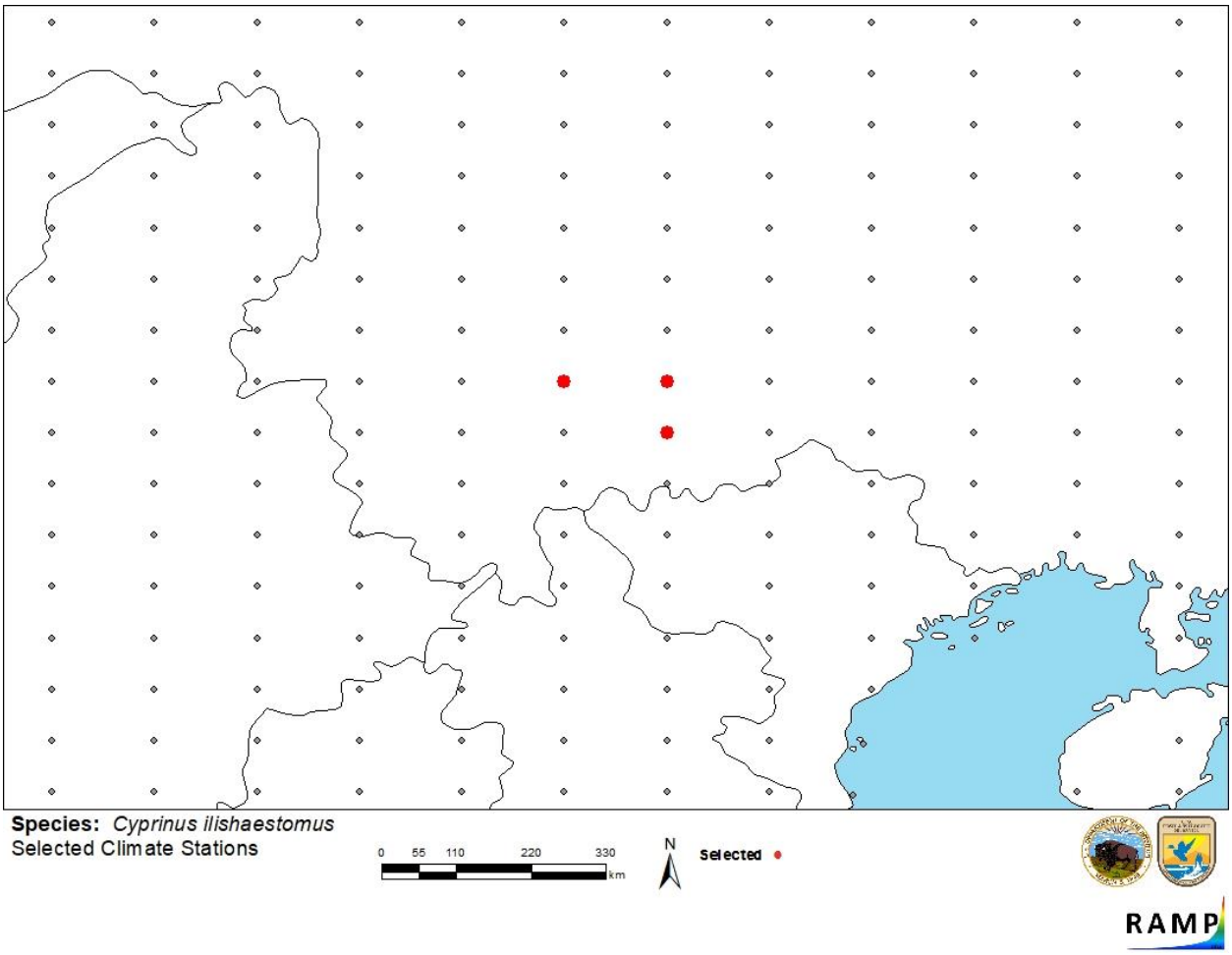


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southern China selected as source locations (red) and non-source locations (gray) for *Cyprinus ilishaestomus* climate matching. Source locations were chosen to represent Lake Qilu where *C. ilishaestomus* has been recorded (Zhao 2011).

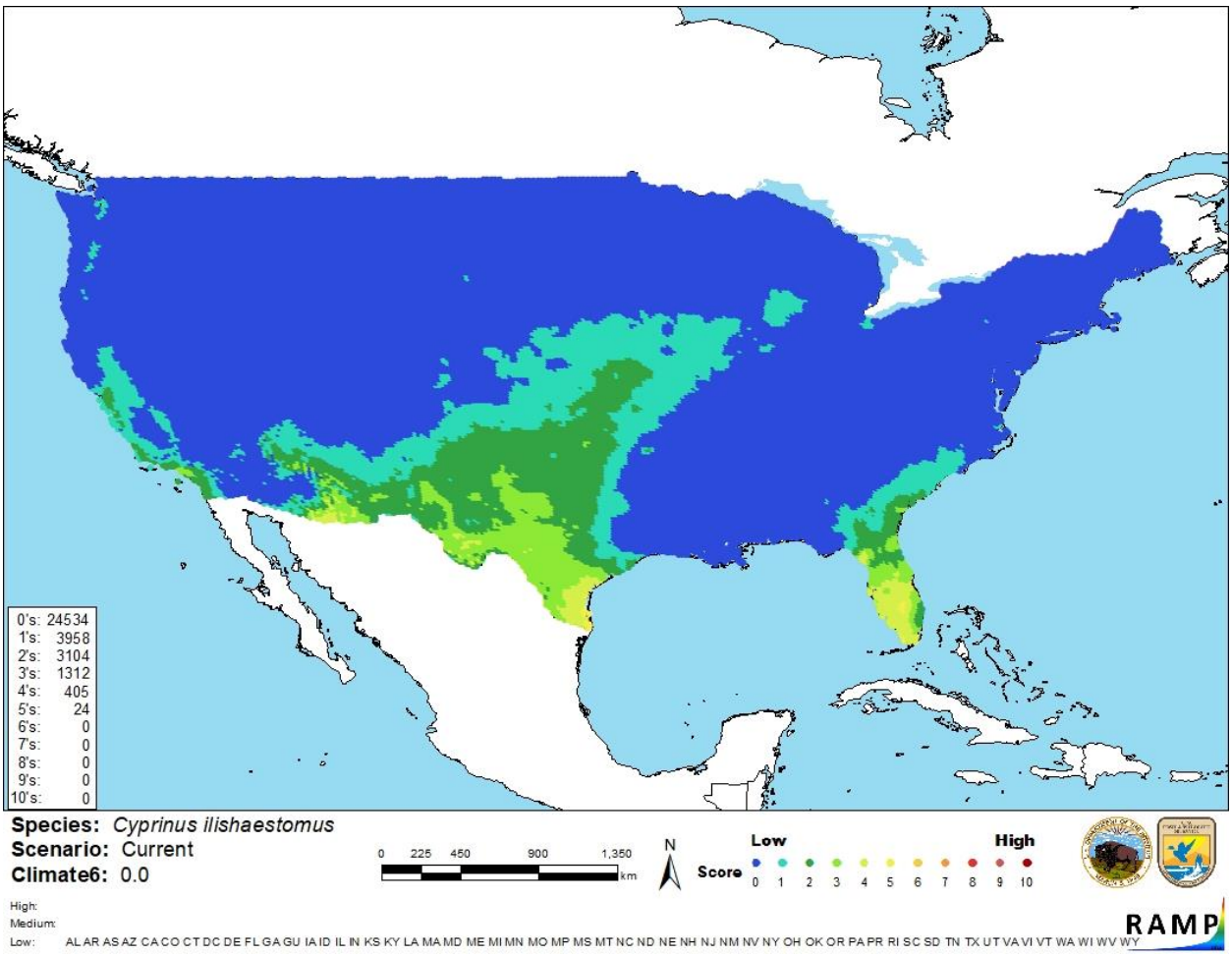


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Cyprinus ilishaestomus* in the contiguous United States based on source locations reported by Zhao (2011). Counts of climate match scores are tabulated on the left. 0 = Lowest match, 10 = Highest match.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

7 Certainty of Assessment

The certainty of assessment for *Cyprinus ilishaestomus* is low. There is some information available, including from peer-reviewed sources, on the biology and ecology of the species. No records of introduction were found. There are no georeferenced distribution records; the climate match was conducted based on a text description of the range.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Top-mouth Carp (*Cyprinus ilishaestomus*) is a species of carp native to Lake Qilu in southern China. It has been used commercially in the past by local communities. A specimen hasn't been caught in a scientific survey since the 1970s. The history of invasiveness is uncertain. No records of introduction were found, and this species is not found in trade. The climate match was low. There were small areas of medium match in southern Florida, Texas, and Arizona. The certainty of assessment was 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:** No additional information.
- **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.

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

Froese, R., and D. Pauly, editors. 2018. *Cyprinus ilishaestomus* Chen and Huang, 1977. FishBase. Available: https://www.fishbase.de/summary/Cyprinus-ilishaestomus.html. (November 2018).

Hu, G. F., and X. J. Liu. 2008. Threatened fishes of the world: *Cyprinus ilishaestomus* (Chen & Hwang 1977) (cyprinidae). Environmental Biology of Fishes 84(3):259.

ITIS (Integrated Taxonomic Information System). 2018. *Cyprinus ilishaestomus* Chen and Huang, 1977. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=688957#null. (November 2018).

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

Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. U.S. Fish and Wildlife Service.

Zhao, H. 2011. *Cyprinus ilishaestomus*. The IUCN Red List of Threatened Species 2011: e.T166099A6174016. Available: http://www.iucnredlist.org/details/full/166099/0. (November 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.

Shiming, L., C. Kunzheng, Z. Huihong, C. Ke, G. Lian, F. Jinghua, Z. Xueying, T. Xiaoli, Z. Jia'en, Y. Yanqong, L. Huashou, and H. Hongzhi. 2011. Freshwater ecosystem services and biodiversity values of the Beijiang River, China. Pages 4–122 *in* Report on highland aquatic ecosystem services and biodiversity values, including livelihoods, trade, policy and conservation oriented inputs to two global online databases. Highland Aquatic Resources Conservation and Sustainable Development Project. European Community's Seventh Framework Programme, Project 213015, Deliverable 3.1, Work Package 3, South China Agricultural University, Guangzhou.

Wang, S. 1998. China red data book of endangered animals. Pisces. National Environmental Protection Agency, Endangered Species Scientific Commission. Science Press, Beijing.