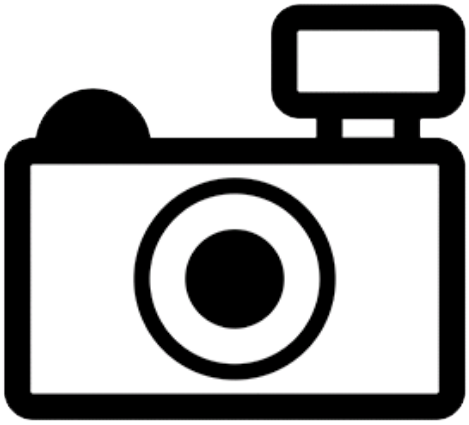
Cyprinus fuxianensis (a carp, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, October 2012
Revised, December 2018
Web Version, 8/6/2019



1 Native Range and Status in the United States

Native Range

From Devi and Boguskaya (2009):

"*C. fuxianensis* is endemic to Fuxian Lake (198 km²), Yunan Provence, China."

From Yang et al. (2011):

"The lake [Lake Xingyun, Yunnan Province, China] contains three *Cyprinus* taxa, *Cyprinus pellegrini* Tchang, 1933, *Cyprinus chilia* Wu et al. 1963, and *Cyprinus fuxianensis* Yang et al. 1977, […]. However, due to overharvesting *C. chilia* and *C. fuxianensis* have not been captured over the past several decades, indicating possible extinction."

Status in the United States

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

Means of Introductions in the United States

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

Remarks

From Devi and Boguskaya (2009):

"*C. fuxianensis* has been assessed as Critically Endangered, and is suspected Possibly Extinct as it has been estimated that the population has declined by over 80% in the past 21 years, as a result of habitat degradation, overfishing, and introduced species. During survey work in 1995 no specimens were caught (F. Fang, pers. comm.). *C. fuxianensis* has a restricted range (less than 200 km²) and is only found in one location."

"*Cyprinus carpio* was introduced into the lake in the 1980s to improve fishery catches, and has hybridised with and outcompeted *C. fuxanensis*."

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 fuxianensis* Yang et al. 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 fuxianensis*"

Size, Weight, and Age Range
From Froese and Pauly (2018):

"Max length : 22.2 cm SL male/unsexed; [Luo and Yue 2000]"

Environment
From Froese and Pauly (2018):

"Freshwater; benthopelagic."

Climate/Range
From Froese and Pauly (2018):

"Subtropical"

Distribution Outside the United States
Native
From Devi and Boguskaya (2009):

"*C. fuxianensis* is endemic to Fuxian Lake (198 km²), Yunan Provence, China."

From Yang et al. (2011):

"The lake [Lake Xingyun, Yunnan Province, China] contains three *Cyprinus* taxa, *Cyprinus pellegrini* Tchang, 1933, *Cyprinus chilia* Wu et al. 1963, and *Cyprinus fuxianensis* Yang et al. 1977, […]. However, due to overharvesting *C. chilia* and *C. fuxianensis* have not been captured over the past several decades, indicating possible extinction."

Introduced
No records of introduction were found for *Cyprinus fuxianensis*.

Means of Introduction Outside the United States
No records of introduction were found for *Cyprinus fuxianensis*.

Short Description
From Chen and Chang (2011):

"[…] low number of branched dorsal fin rays, 9–10 in *Cyprinus fuxianensis*, […]"

Biology
No information on the biology of *Cyprinus fuxianensis* was found.

Human Uses
From Yang et al. (2011):

"[…] and *Cyprinus fuxianensis* Yang et al. 1977, all economic important fish in the local area."

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

Threat to Humans
From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

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

4 Global Distribution

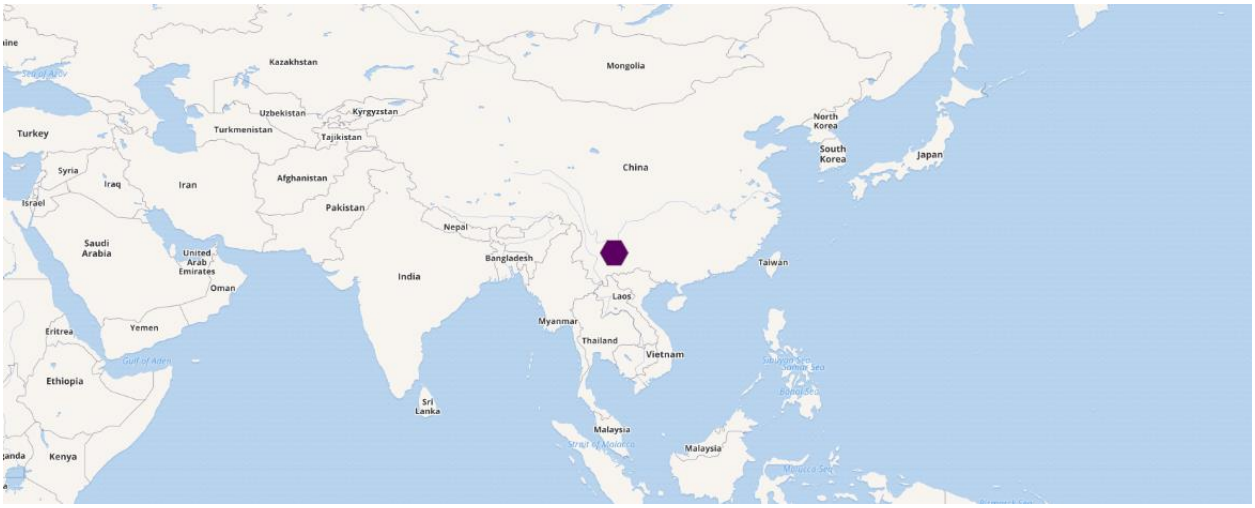


Figure 1. Known global distribution of *Cyprinus fuxianensis*. Location is in southern China. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Cyprinus fuxianensis* was low across most of the contiguous United States. There were small areas of medium match 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.

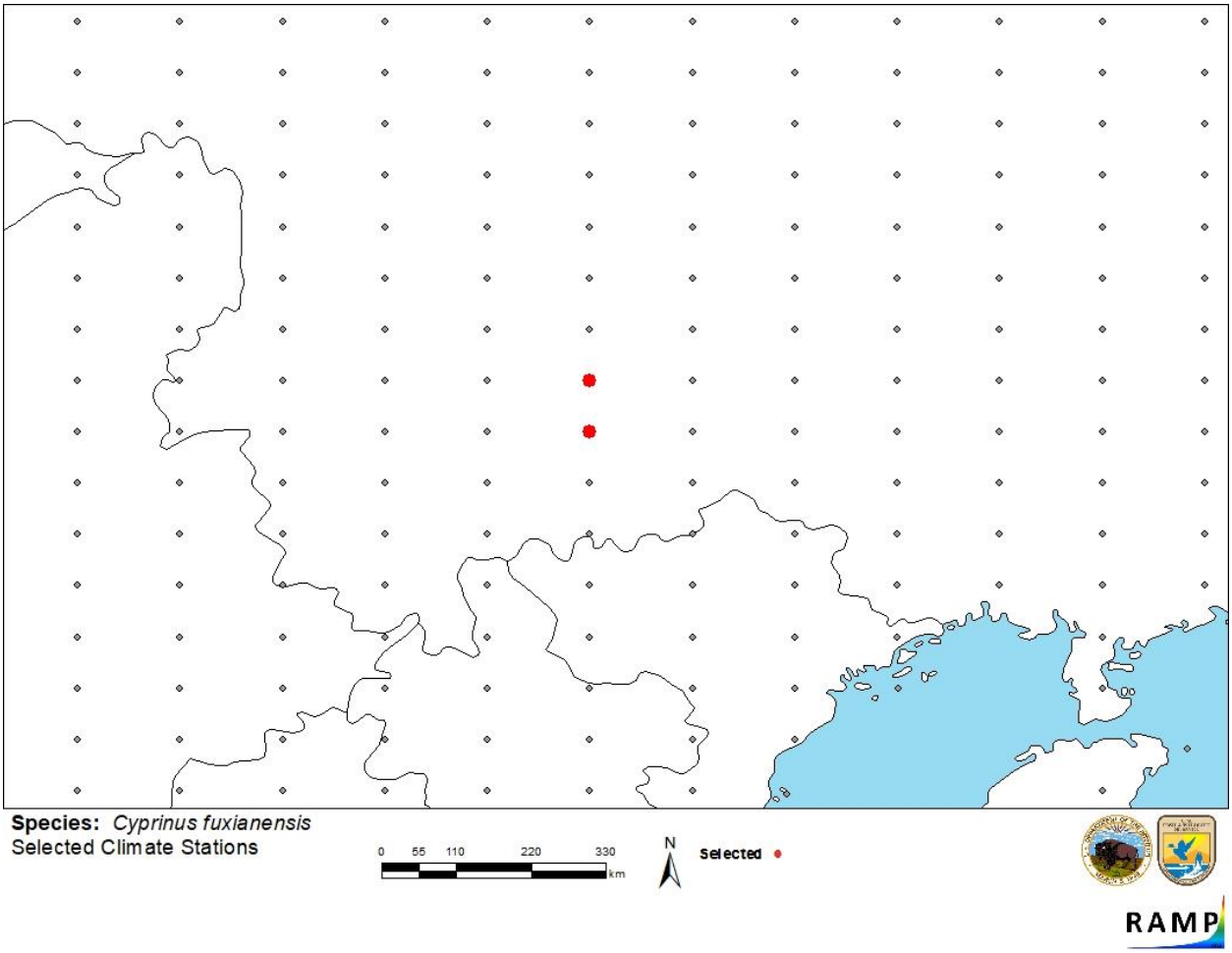


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southern China selected as source locations (red) and non-source locations (gray) for *Cyprinus fuxianensis* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one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

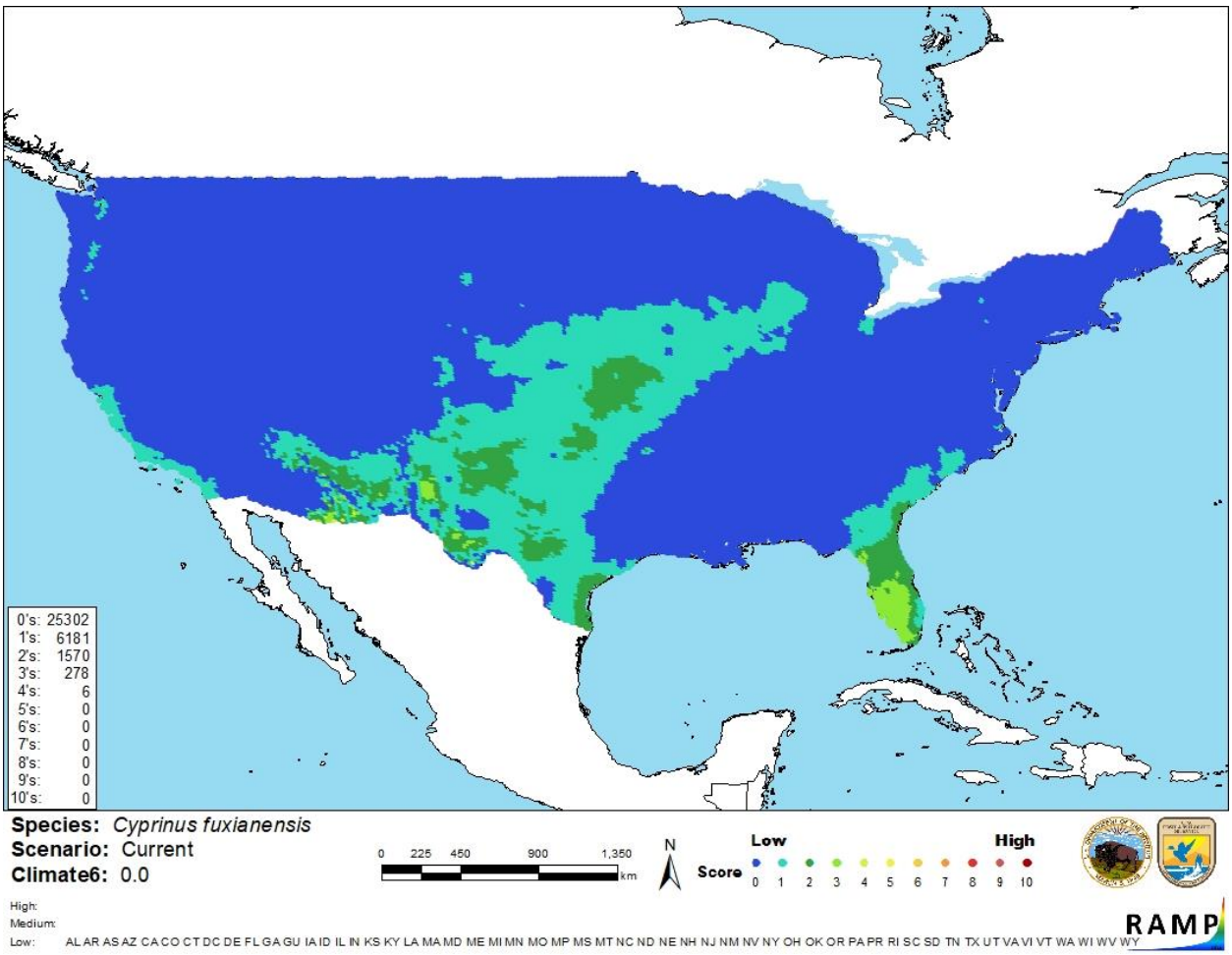


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Cyprinus fuxianensis* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0 = Lowest match, 10 = Highest match.

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 fuxianensis* is low. There is some information available regarding the species from databases and peer-reviewed literature but there are still information gaps. No records of introduction were found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cyprinus fuxianensis is a species of carp native, and possibly endemic, to Lake Fuxian in southern China. One source stated that is was also previously found in Lake Xingyun. This species has been used commercially by local communities in the past but it has declined and is no longer easily found. There is a possibility that the species has become extinct. The history of invasiveness is uncertain. There were no records of introduction found. The climate match is low. There were only a couple small areas of medium match in southern Arizona. The certainty of 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.

Chen, G. J., and M. Chang. 2011. A new early cyprinin from Oligocene of South China. Science China Earth Sciences 54(4):481–492.

Devi, R., and N. Boguskaya. 2009. *Cyprinus fuxianensis*. The IUCN Red List of Threatened Species 2009: e.T166157A6184730. Available: http://www.iucnredlist.org/details/full/166157/0. (November 2018).

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. 2011. *Cyprinus fuxianensis* Yang et al. 1977. FishBase. Available: https://www.fishbase.de/summary/Cyprinus-fuxianensis.html. (November 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Cyprinus fuxianensis* Yang and al., 1977. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/2367198. (November 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Cyprinus fuxianensis* Yang et al. in Chen and Huang, 1977. Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=688955#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.

Yang, B., X. Chen, and J. Yang. 2011. Non-native carp of the genus *Cyprinus* in Lake Xingyun, China, as revealed by morphology and mitochondrial DNA analysis. Biological Invasions 13:105–114.

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.

Luo, Y., and P. Yue. 2000. Cyprinidae: Cyprininae. Pages 391–433 *in* P. Yue, et al. [source material did not give full list of editors], editors. Fauna Sinica. Osteichthyes. Cypriniformes III. Science Press, Beijing.