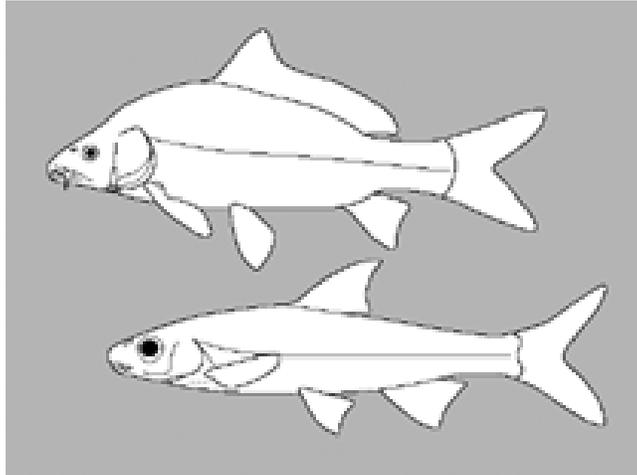


# *Cyprinus fuxianensis*

## Ecological Risk Screening Summary

Web Version – 10/01/2012



No image available for this species; drawing shows typical fish in this Family (Froese and Pauly 2011).

### 1 Native Range, and Status in the United States

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#### Native Range

From Devi and Boguskaya (2009): “*C. fuxianensis* is endemic to Fuxian Lake (198 km<sup>2</sup>), Yunan Province, China.”

#### Status in the United States

No known nonindigenous occurrences.

#### Means of Introductions to the United States

No known means of introductions.

#### 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 km<sup>2</sup>) and is only found in one location.”

“Fuxian Lake is heavily impacted by overfishing and pollution from domestic and industrial sources, which became major threats in the 1980s. Tourism is one of the major industries around the lake.”

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

From Yang et al. (2011):

“*Cyprinus fuxianensis* has not been captured in Lake Xingyun, located in central Yunnan Province, over the past several decades, indicating possible extinction.”

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2011):

Kingdom Animalia  
  Phylum Chordata  
    Subphylum Vertebrata  
      Superclass Osteichthyes  
        Class Actinopterygii  
          Subclass Neopterygii  
            Infraclass Teleostei  
              Superorder Ostariophysi  
                Order Cypriniformes  
                  Superfamily Cyprinoidea  
                    Family Cyprinidae  
                      Genus *Cyprinus*  
                        Species *Cyprinus fuxianensis*

Taxonomic Standing: valid

### Size, Weight, Age

From Froese and Pauly (2011): “Max length: 22.2 cm SL male/unsexed; (Luo and Yue 2000)”

### Environment

From Froese and Pauly (2011): “Freshwater; benthopelagic”

### Climate/Range

From Froese and Pauly (2011): “Subtropical”

### Distribution

From Devi and Boguskaya (2009): “*C. fuxianensis* is endemic to Fuxian Lake (198 km<sup>2</sup>), Yunan Province, China.”

## Human uses

None reported.

## Diseases

None reported.

## Threat to humans

From Froese and Pauly (2011): “Harmless”

## 3 Impacts of Introductions

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No known impacts of introductions

## 4 Global Distribution

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**Figure 1 (above).** *C. fuxianensis* is endemic to Fuxian Lake in Yunnan, China. Map from Google Earth (2011).

## 5 Distribution within the United States

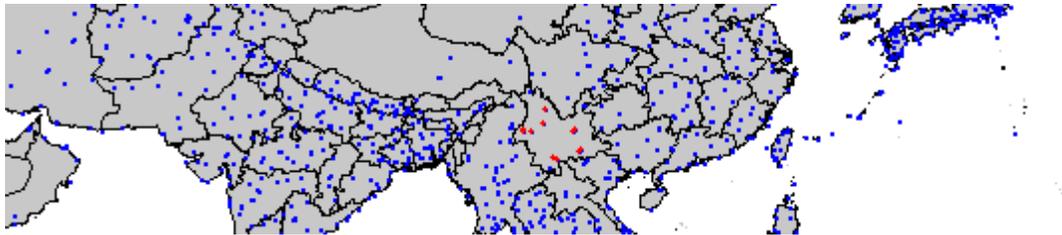
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No distribution within the United States

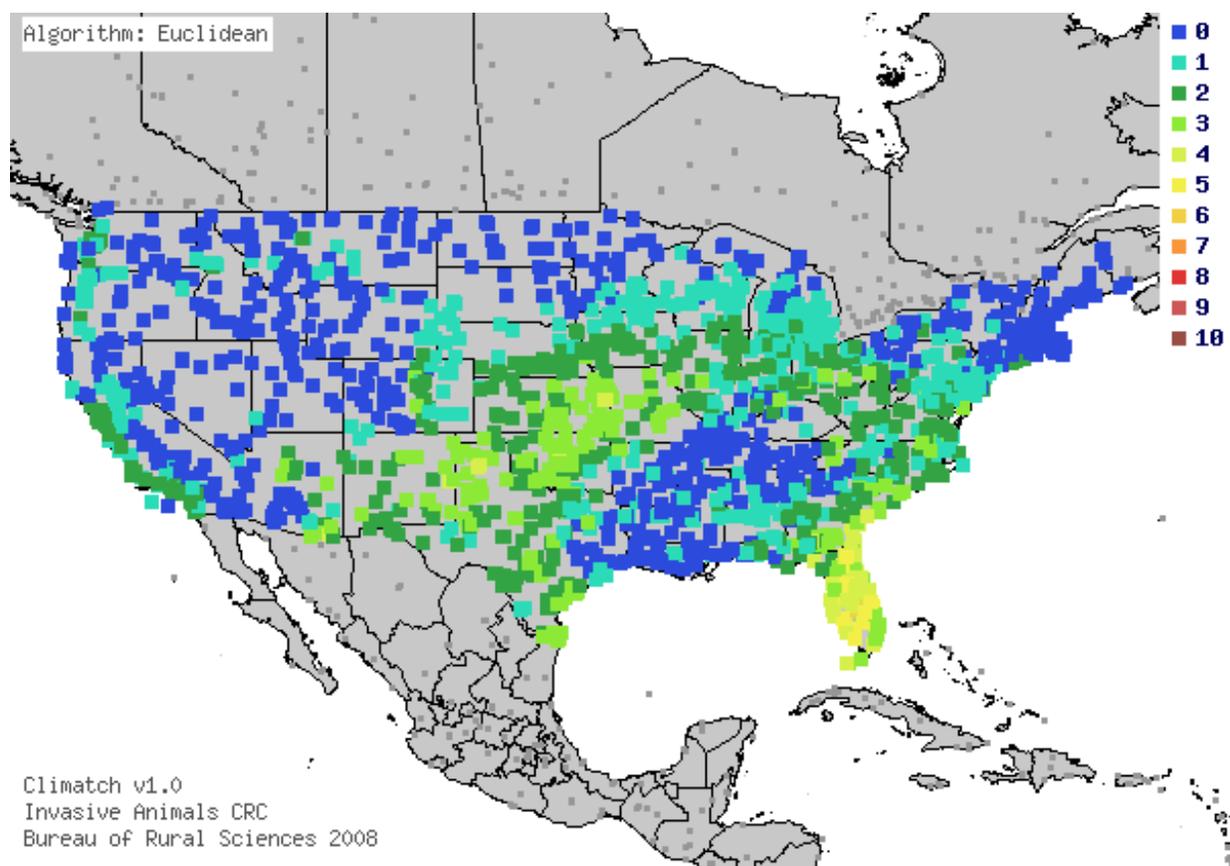
## 6 CLIMATCH

### Summary of Climate Matching Analysis

The climate match (Australian Bureau of Rural Sciences 2011; 16 climate variables; Euclidean Distance) was medium in Florida and low throughout the United States. Climate 6 match indicated that the Continental U.S. has a low climate match. The range for a low climate match is 0.0 – 0.005; the climate match of *Cyprinus fuxianensis* is 0.001.



**Figure 2 (above).** CLIMATCH (Australian Bureau of Rural Sciences 2011) source map showing weather stations selected as source locations (red) and non-source locations (blue) for *Cyprinus fuxianensis* climate matching. Source location from Chen and Chang (2011).



**Figure 3 (above).** Map of CLIMATCH (Australian Bureau of Rural Sciences 2011) climate matches for *Cyprinus fuxianensis* in the continental United States based on source location reported by Chen and Chang (2011). 0= Lowest match, 10=Highest match.

**Table 1 (below).** CLIMATCH (Australian Bureau of Rural Sciences 2011) climate match scores.

CLIMATCH Score	0	1	2	3	4	5	6	7	8	9	10
Count	701	483	476	218	58	20	2	0	0	0	0
Climate 6 Proportion = 0.001 (L)											

## 7 Certainty of Assessment

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Peer-reviewed literature on the biology, ecology, and distribution associated with *Cyprinus fuxianensis* as well as information on its potential invasiveness is limited. More information and research on this species will be needed to strengthen the certainty of this assessment. The risk level is therefore uncertain, and the certainty of this risk is low.

## 8 Risk Assessment

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### Summary of Risk to the Continental United States

The overall risk assessment category for *Cyprinus fuxianensis* is uncertain. This is due to a low climate match, no history of invasiveness, and this species not being introduced outside its native range. This species is highly restricted and critically endangered if not extinct.

### Assessment Elements

- **History of Invasiveness (Sec. 3):** Low
- **Climate Match (Sec. 6):** Low
- **Certainty of Assessment (Sec. 7):** Low
- **Overall Risk Assessment Category:** Uncertain

## 9 References

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

- Australian Bureau of Rural Sciences. 2011. CLIMATCH. Available: <http://adl.brs.gov.au:8080/Climatch> (Accessed September 2011).
- Chen, G.J., and M. Chang. 2011. A new early cyprinid from Oligocene of South China. *SCIENCE CHINA Earth Sciences*. 54(4): 481-492.
- Devi, R. and N. Boguskaya. 2009. *Cyprinus fuxianensis*. In: IUCN 2012. IUCN Red List of Threatened Species. Version 2012.1. Available: <http://www.iucnredlist.org/details/full/166157/0> (Accessed September 28, 2012).
- Froese, R. and D. Pauly (Eds). 2011. *Cyprinus fuxianensis*. FishBase. Available: <http://www.fishbase.org/Summary/speciesSummary.php?ID=60443&genusname=Cyprinus&speciesname=fuxianensis&AT=cyprinus+fuxianensis&lang=English> (Accessed September 2011).
- Google Earth. 2011. Google Earth Version 6.0.3.2197, Google Inc. (Software). Available: <http://www.google.com/intl/en/earth/index.html> (Accessed August 2011).
- ITIS. 2011. *Cyprinus fuxianensis*. Integrated Taxonomic Information System. Available: [http://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=688955](http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=688955) (Accessed September 2011).
- Yang, Bo., Xiaoyong Chen, and Junxing Yang. 2011. Non-native carp of the genus *Cyprinus* in Lake Xingyun, China, as revealed by morphology and mitochondrial DNA analysis. *Biol Invasions*. 13:105–114.

## 10 References Quoted But Not Accessed

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**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.**

- Fang, F. 2007. [*Personal communication - Source material did not give full citation for this reference*]
- Luo, Y. and P. Yue. 2000. Cyprinidae: Cyprininae. p. 391-433. In P. Yue et al. (Eds). *Fauna Sinica. Osteichthyes. Cypriniformes III*. Science Press. Beijing. 1-661.