

Reba Carp (*Cirrhinus reba*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, October 2012
Revised, February 2019
Web Version, 7/11/2019



Photo: Sajina and Sudheesan. Licensed under CC BY-SA 3.0 Unported. Available: https://commons.wikimedia.org/wiki/File:Cirrhinus_reba.jpg. (February 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“Asia: Pakistan, India, Nepal, Bangladesh, and Myanmar.”

Status in the United States

No wild populations of *Cirrhinus reba* have been reported in the United States. No records of trade in the United States were found for this species.

Means of Introductions in the United States

No wild populations of *Cirrhinus reba* have been reported in the United States.

Remarks

A previous version of this ERSS was published in 2012.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current status:** Valid as *Cirrhinus reba* (Hamilton 1822).”

From Bailly (2019):

“Animalia (Kingdom) > Chordata (Phylum) > Vertebrata (Subphylum) > Gnathostomata (Superclass) > [...] Actinopterygii (Class) > Cypriniformes (Order) > Cyprinidae (Family) > Labeoninae (Subfamily) > *Cirrhinus* (Genus) > *Cirrhinus reba* (Species)”

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Maturity: L_m 13.5 [...] Max length : 30.0 cm TL male/unsexed; [Menon 1999]”

Environment

From Froese and Pauly (2019):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2019):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Asia: Pakistan, India, Nepal, Bangladesh, and Myanmar.”

Introduced

No wild populations of *Cirrhinus reba* have been reported outside of its native range.

Means of Introduction Outside the United States

No wild populations of *Cirrhinus reba* have been reported outside of its native range.

Short Description

From Narejo (2006):

“*Cirrhinus reba* (Hamilton) is locally known as Suhnee or Sunee and is easily recognised by its scales, darkest at their upper and lower edges forming bluish longitudinal lines above and for two or three rows below the lateral line.”

Biology

From Froese and Pauly (2019):

“Adults inhabit large streams and rivers [Menon 1999]. Also found in tanks, canals, ponds, beels and inundated fields [Talwar and Jhingran 1991; Hossain et al. 2013]. Primarily feed on plankton and detritus, but may also take in mud, vegetables, crustaceans and insect larvae [Talwar and Jhingran 1991; Hossain et al. 2013]”

From Hossain et al. (2015):

“Spawning season extends from June to August. Fecundity varied from 20722 (150 mm TL) to 211200 (290 mm TL) in ponds [...]”

Human Uses

From Hossain et al. (2015):

“*C. reba* [...] is a commercially important freshwater fish which is commonly known as Reba carp. This is an important target species for small and large-scale fishers of Bangladesh [...]”

Diseases

No OIE reportable diseases (OIE 2019) were recorded for *Cirrhinus reba*.

According to Poelen et al. (2014) *Cirrhinus reba* is a host to *Gyrodactylus elegans*, *Dactylogyrus anchoracanthus*, *Dactylogyrus cirrhini*, *Haplorchis yokogawai*, *Centrocestus formosanus*, *Haplorchis taichui*, *Opisthorchis noverca*, *Transversotrema patialense*, and *Dactylogyrus*.

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

No wild populations of *Cirrhinus reba* have been reported outside of its native range; therefore, there is no information on impacts of introductions.

4 Global Distribution



Figure 1. Known global distribution of *Cirrhinus reba*. Map from GBIF Secretariat (2019).

The point located in Viet Nam (Figure 1) is from an observation at a fish market, there is no evidence in the literature suggesting *Cirrhinus reba* is found in the wild in that location and therefore was not used to select source locations in the climate match.

Cirrhinus reba is also reported as present in Nepal and Myanmar (Froese and Pauly 2019) but no georeferenced observations were found for those countries.

5 Distribution Within the United States

No wild populations of *Cirrhinus reba* have been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Cirrhinus reba* was low for most of the contiguous United States. There were some patches of medium match along the southern border from Texas to California and in southern Florida, along with some areas of high match in Arizona. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.008, indicating a medium overall climate match (scores greater than 0.005, but less than 0.103 are considered medium). All states had a low individual Climate 6 score except for California, which had a medium score, and Arizona, which had a high score.

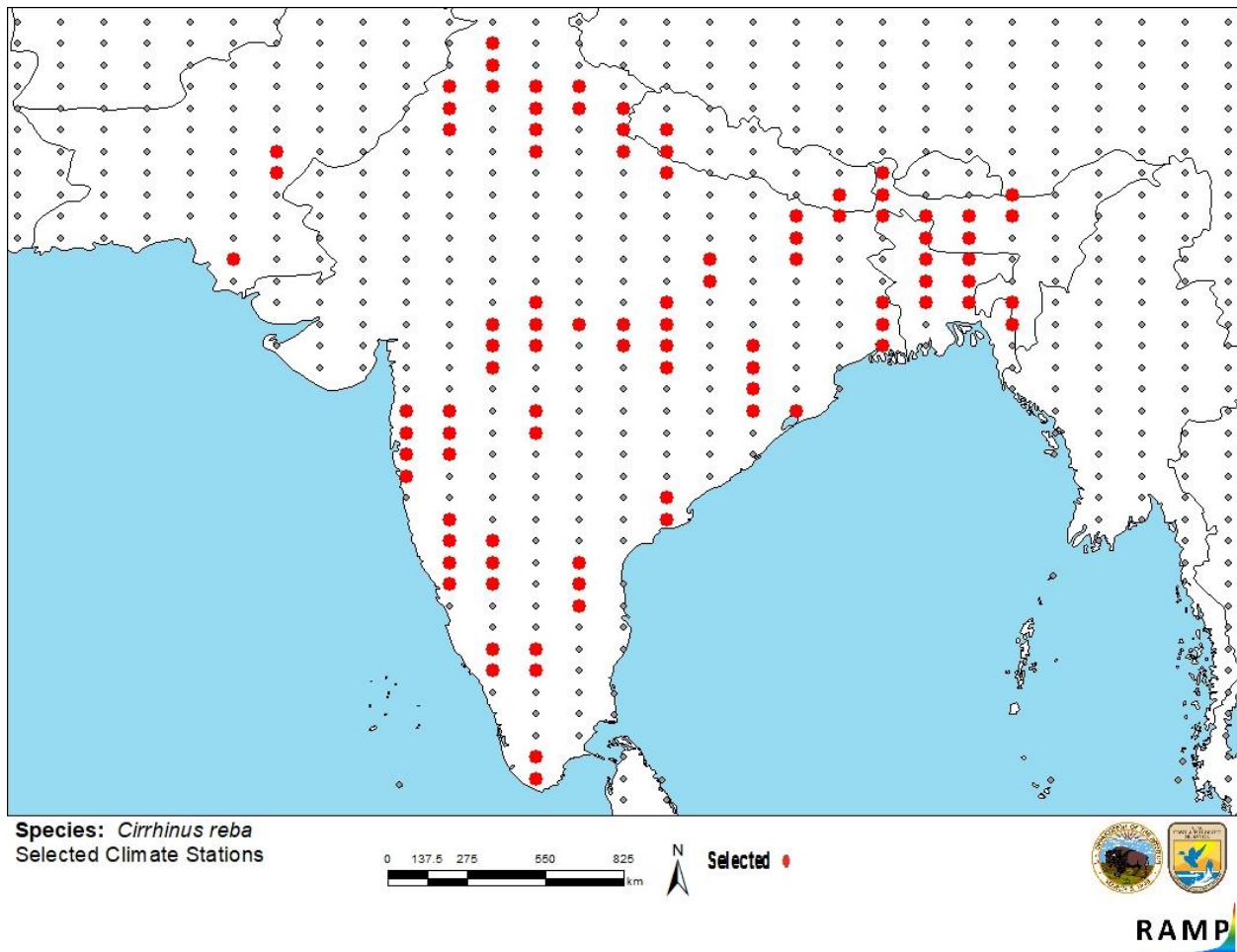


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southern Asia selected as source locations (red; Pakistan, India, Nepal, Bangladesh) and non-source locations (gray) for *Cirrhinus reba* climate matching. Locations are in Pakistan, India, Nepal, and Bangladesh. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

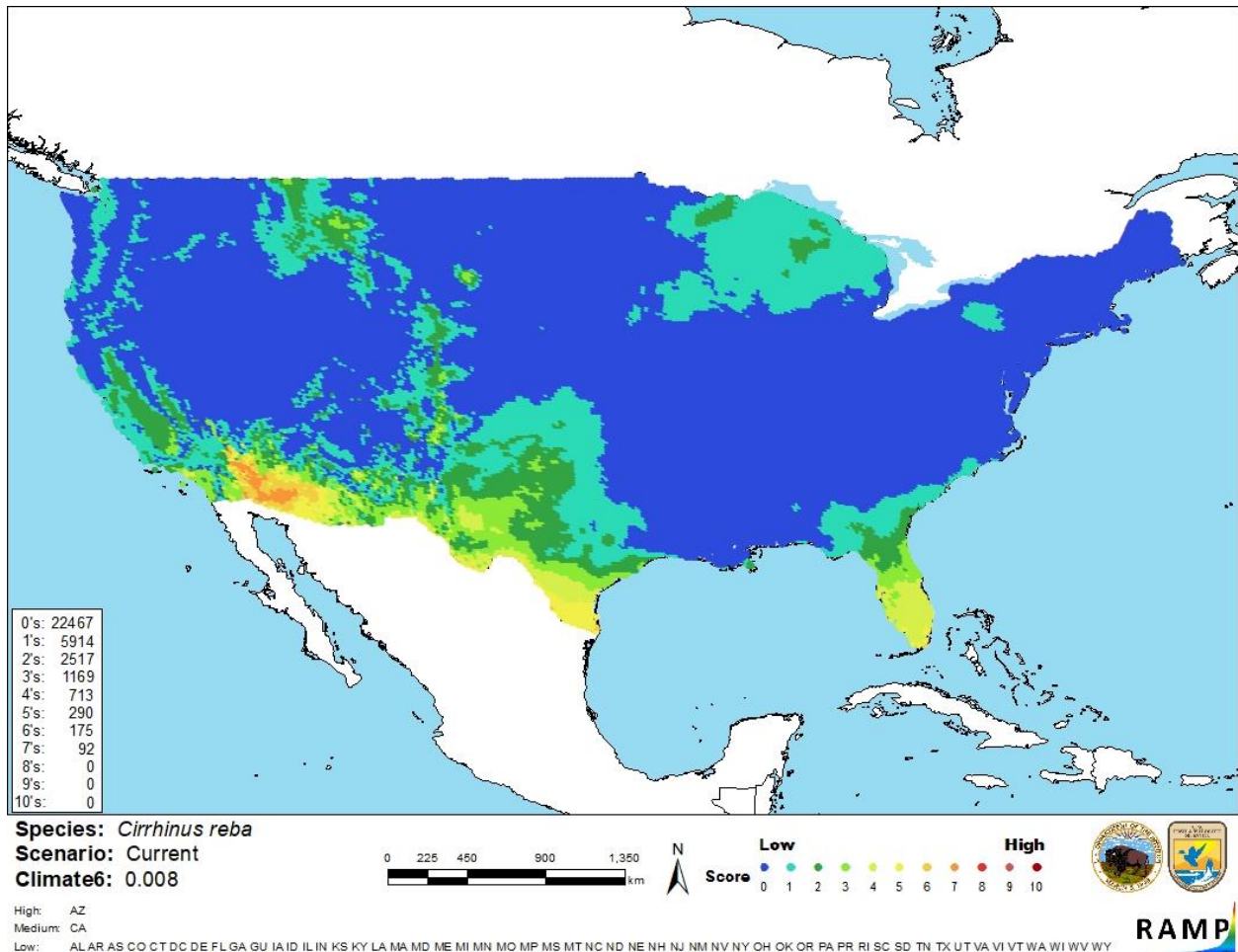


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Cirrhinus reba* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). 0 = Lowest match, 10 = Highest match.

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

7 Certainty of Assessment

The certainty of assessment for *Cirrhinus reba* is low. There was some information on the biology and environment of *Cirrhinus reba* but it was limited. *Cirrhinus reba* has not been recorded as introduced outside of its native range, so impacts of introduction cannot be determined.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cirrhinus reba is an Asian cyprinid that is native to Pakistan, India, Nepal, Bangladesh, and Myanmar. Adults inhabit freshwater rivers, large streams, beels, inundated fields, tanks, canals and ponds. They are a popular food item in the areas where they are native. The history of invasiveness is uncertain, *C. reba* has never been reported outside of its native range. The overall climate match for the contiguous United States was medium; all States had low individual Climate 6 scores except California, which had a medium score, and Arizona, which had a high score. 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): Medium**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information: No additional remarks.**
- **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.

Bailly, N. 2017. *Cirrhinus reba*. In World Register of Marine Species. Available: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=1026594>. (February 2019).

Fricke, R., W. N. Eschmeyer, and R. van der Laan, editors. 2019. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (February 2019).

Froese, R., and D. Pauly, editors. 2019. *Cirrhinus reba* (Hamilton 1807). FishBase. Available: <https://www.fishbase.de/summary/Cirrhinus-reba.html>. (February 2019).

GBIF Secretariat. 2019. GBIF backbone taxonomy: *Cirrhinus reba* (Hamilton 1807). Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5205962>. (February 2019).

Hossain, M. Y., R. Islam, M. A. Hossain, M. A. Hossen, M. M. Rahman, and J. Ohtomi. 2015. Threatened fishes of the world: *Cirrhinus reba* (Hamilton 1822) (Cypriniformes: Cyprinidae). Croatian Journal of Fisheries 73:40–42.

Narejo, N. T. 2006. Length-weight relationship and relative condition factor of a carp, *Cirrhinus reba* (Hamilton) from Manchar Lake, Distt. Dadu, Sindh, Pakistan. Pakistan Journal of Zoology 38:11–14.

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/>. (February 2019).

Poelen, J. H., J. D. Simons, and C. J. Mungall. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. *Ecological Informatics* 24:148–159.

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

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.

Hossain, M. Y., M. M. Khatun, S. Jasmine, M. Mosaddequr Rahman, S. Jahan, M. A. S. Jewel, and J. Ohtomi. 2013. Life-history traits of the threatened freshwater fish *Cirrhinus reba* (Hamilton, 1822) (Cypriniformes: Cyprinidae) in the Ganges River, northwestern Bangladesh. *Sains Malaysiana* 42(9):1219–1229.

Menon, A. G. K. 1999. Check list - fresh water fishes of India. Records of the Zoological Survey of India, Miscellaneous Publication, Occasional Paper.

Talwar, P. K., and A. G. Jhingran. 1991. Inland fishes of India and adjacent countries, volume 1. A.A. Balkema, Rotterdam, the Netherlands.