

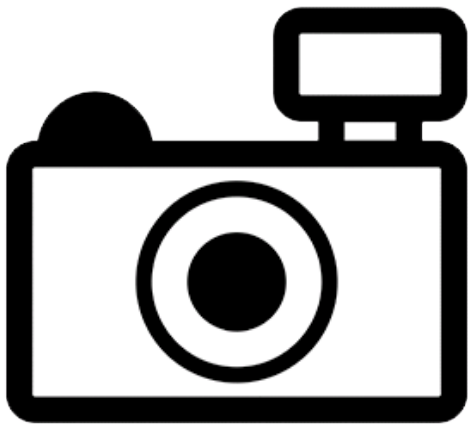
Small Scale Mud Carp (*Cirrhinus microlepis*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, October 2012

Revised, February 2019

Web Version, 7/11/2019



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“Asia: Chao Phraya and Mekong basins in Thailand, Laos, Cambodia and Viet Nam.”

Status in the United States

No records of any wild populations or trade of *Cirrhinus microlepis* in the United States found.

Means of Introductions in the United States

No records of any wild populations of *Cirrhinus microlepis* in the United States found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current status:** Valid as *Cirrhinus microlepis* Sauvage 1878.”

From ITIS (2019):

“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 *Cirrhinus*
Species *Cirrhinus microlepis* Sauvage, 1878”

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Max length : 65.0 cm SL male/unsexed; [Baird et al. 1999]; max. published weight: 5.0 kg [Roberts and Warren 1994].”

Environment

From Froese and Pauly (2019):

“Freshwater; benthopelagic; potamodromous [Riede 2004]”

Climate/Range

From Froese and Pauly (2019):

“Tropical; 19°N - 9°N, 101°E - 108°E”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Asia: Chao Phraya and Mekong basins in Thailand, Laos, Cambodia and Viet Nam.”

Introduced

No records of introduction of *Cirrhinus microlepis* were found.

Means of Introduction Outside the United States

No records of introduction of *Cirrhinus microlepis* were found.

Short Description

From Froese and Pauly (2019):

“Dorsal spines (total): 0; Dorsal soft rays (total): 15-16; Vertebrae: 40. Distinguished from other species of the genus in the area by its count of lateral line scales: 53-60 [Kottelat 1998]. A large species with very small scales, no barbels, and distinctive coloration. Juveniles silvery with red caudal fin, larger fish with head and body violaceous, rosy, or bluish and caudal fin dusky [Roberts 1997]”

Biology

From Froese and Pauly (2019):

“Inhabits large rivers and lowland floodplains [Rainboth 1996]. Occurs in riffle and deep slow reaches [Singhanouvong et al. 1996]. Moves out into the flooded forest where it feeds on leafy plant matter, phytoplankton and insects [Rainboth 1996]. Migration pattern is markedly different above and below the Khone Falls in the Mekong basin. Below the falls, it makes an upstream migration from Phnom Penh to the Khone Falls between November and February, consisting mainly of sub-adults of sizes 10 to 50 cm. From April to July, it migrates in the opposite direction, from Khone Falls and downstream, constituting mainly of sub-adults up to about 50 cm [Sokheng et al. 1999]. Above the Khone Falls, from Klong Kaem District, Ubolratchatani in Thailand, fish migrates upstream in February; at Khemmaratch further upstream in Ubolratchatani, it moves upstream in March-April; and at Mukdahan, it goes upstream in May. However, it migrates downstream at Klong Kaem in June-July [Sokheng et al. 1999]. Only downstream migrations are reported in the Mekong Delta in Viet Nam, constituting mainly of juveniles (2-20 cm), with the smallest fish mainly in June-July and fish between 10 and 20 mainly from September to November [Sokheng et al. 1999]. From Xayabouri in Laos to Chiang Saen in Thailand, upstream migrations take place from March to August. This appears to be two distinct migrations: one of sub-adults measuring 15-50 cm during March-April and another one of larger fishes of sizes 40 to 90 cm during June-July [Sokheng et al. 1999]. Not known to persist in impoundments. Individuals caught with dais or traps are often immediately kept alive in fish cages for future sale. Marketed fresh and sometimes dried and salted [Rainboth 1996]. Known to reach up to 15 kg in Thailand (Jean-Francois, pers. comm. 11/02).”

Human Uses

From Froese and Pauly (2019):

“Fisheries: commercial”

From Baird (2011):

“Utilised in commercial and local fisheries; highly valued and popular food fish.”

Diseases

No information found for disease in *Cirrhinus microlepis*. **No OIE reportable diseases (OIE 2019) recorded for *Cirrhinus microlepis*.**

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

No records of introduction of *Cirrhinus microlepis* were found; therefore, there is no information on impacts of introduction.

4 Global Distribution



Figure 1. Known global distribution of *Cirrhinus microlepis*. Locations are in Thailand, Cambodia, and Vietnam. Map from GBIF Secretariat (2019).

The point located in the ocean was not included in the climate match because *Cirrhinus microlepis* is a freshwater fish and there is no evidence suggesting it is found in the ocean.

5 Distribution Within the United States

No records of *Cirrhinus microlepis* in the wild in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, indicating a low overall climate match (scores from 0.000 to 0.005, inclusive, are considered low). The vast majority of the contiguous United States had a low climate match, with small areas in southern Florida and southern Texas having medium matches. All States had a low individual Climate 6 score.

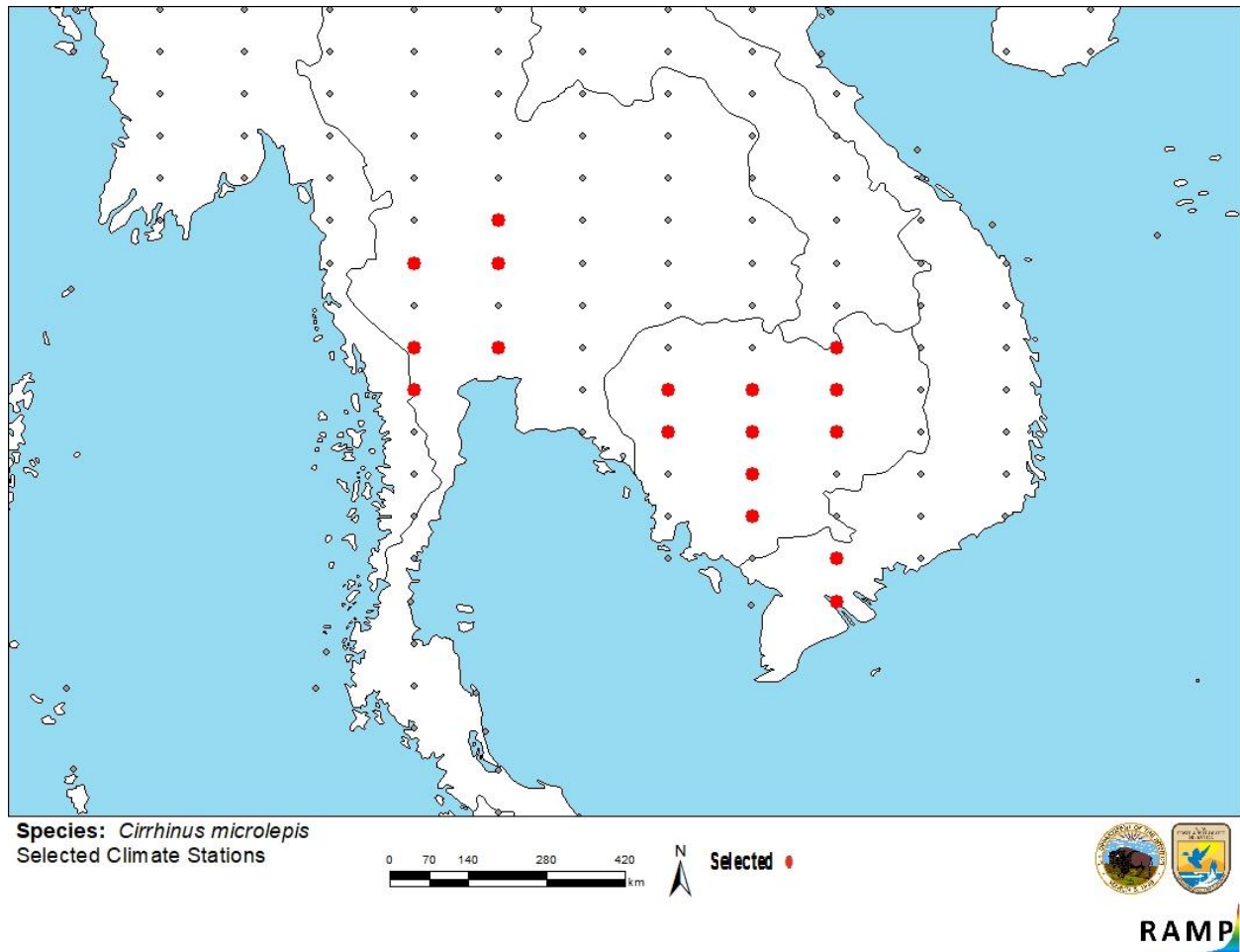


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southeastern Asia selected as source locations (red) and non-source locations (gray) for *Cirrhinus microlepis* climate matching. Source locations from GBIF Secretariat (2019).

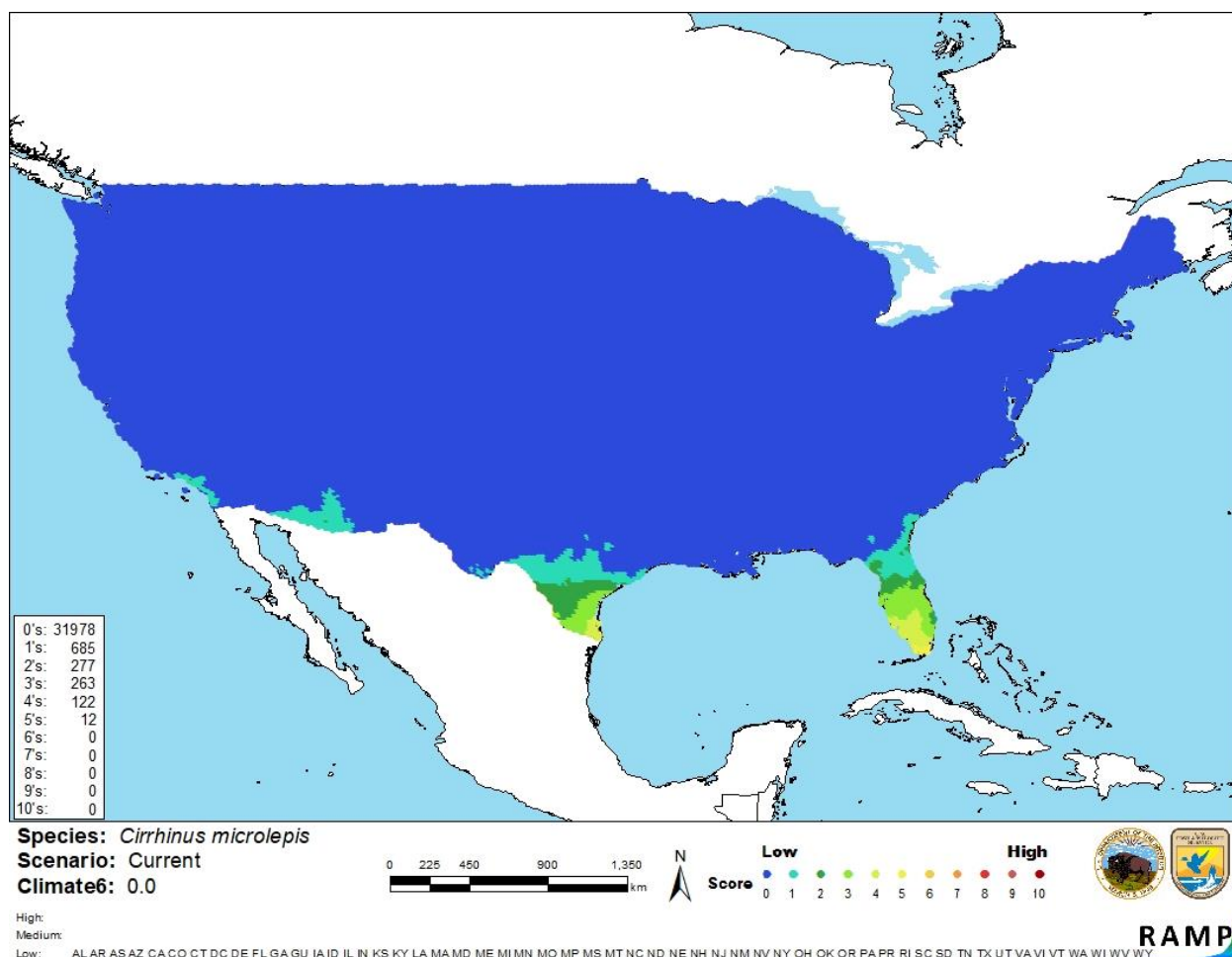


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Cirrhinus microlepis* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). 0 = Lowest match, 10 = Highest match.

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

7 Certainty of Assessment

Basic information is available on *Cirrhinus microlepis*. No records of introduction were found so there is no information on impacts of introduction to evaluate. The certainty of assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Cirrhinus microlepis is a freshwater cyprinid located in the Chao Phraya and Mekong River basins in Thailand, Laos, Cambodia and Viet Nam. *Cirrhinus microlepis* is a highly valued and popular food fish. This species has not been recorded as introduced or established anywhere in the world outside of its native range. History of invasiveness is uncertain. The climate match for the contiguous United States is low, with all States having a low individual Climate 6 score. The certainty of assessment is low. The overall risk assessment for *Cirrhinus microlepis* 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 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.

- Baird, I. 2011. *Cirrhinus microlepis*. The IUCN Red List of Threatened Species 2011: e.T180904A7654985. Available: <https://www.iucnredlist.org/species/180904/7654985>. (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 microlepis* Sauvage, 1878. FishBase. Available: <https://www.fishbase.de/summary/Cirrhinus-microlepis.html>. (February 2019).
- GBIF Secretariat. 2019. GBIF backbone taxonomy: *Cirrhinus microlepis* Sauvage, 1878. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5206472>. (February 2019).
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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).

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.

Baird, I. G., V. Inthaphaisy, P. Kisouvannalath, B. Phylavanh, and B. Mounsouphom. 1999. The fishes of southern Lao. Lao Community Fisheries and Dolphin Protection Project. Ministry of Agriculture and Forestry, Lao PDR.

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Riede, K. 2004. Global register of migratory species - from global to regional scales. Federal Agency for Nature Conservation, Final Report, R&D-Projekt 808 05 081, Bonn.

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Singhanouvong, D., C. Soulignavong, K. Vonghachak, B. Saadsy, and T. J. Warren. 1996. The main dry-season fish migrations of the Mekong mainstream at Hat Village, Muang Khong District, Hee Village, Muang Mouan District and Hatsalao Village, Paxse. Indigenous Fishery Development Project, Fisheries Ecology Technical Report 3, Lao PDR.

Sokheng, C., C. K. Chhea, S. Viravong, K. Bouakhamvongsa, U. Suntornratana, N. Yoorong, N. T. Tung, T. Q. Bao, A. F. Poulsen, and J. V. Jørgensen. 1999. Fish migrations and spawning habits in the Mekong mainstream: a survey using local knowledge (basin-wide). Assessment of Mekong fisheries: Fish Migrations and Spawning and the Impact of Water Management Project, AMFP Report 2/99, Vientiane, Lao PDR.