Red Canarese Barb (*Hypselobarbus thomassi*)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, March 2013
Revised, April 2019
Web Version, 1/16/2020

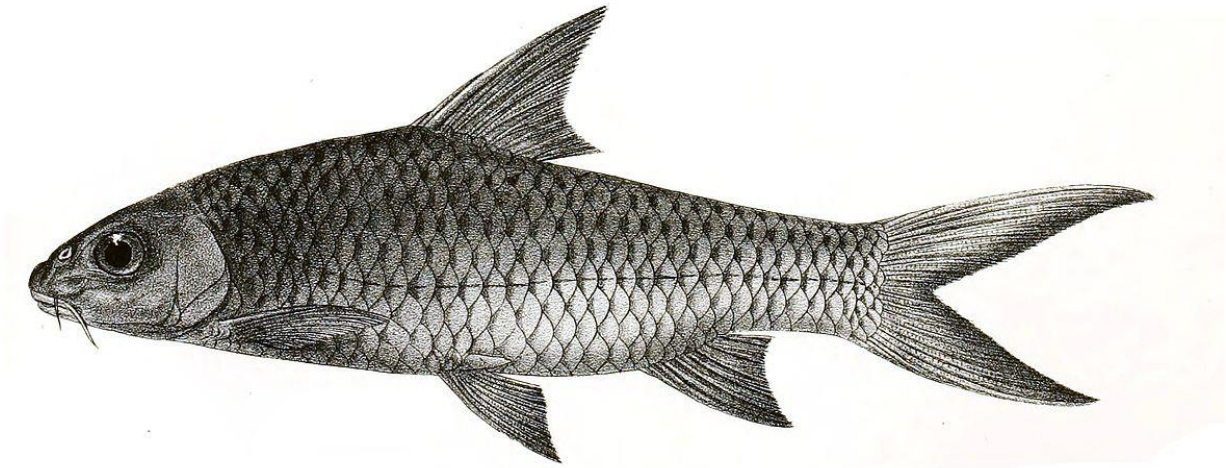

Image: R. Mintern. Image is in the Public Domain, original publication was in 1878. Available: https://es.wikipedia.org/wiki/Archivo:Barbus_thomassi_Mintern_137.jpg. (April 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

"Asia: Karnataka and Kerala in India."

From Marcus Knight et al. (2013):

"*Hypselobarbus thomassi* has been reported from several drainages north and south of Palghat Gap in the Western Ghats. However, only in Netravathi and Kabini rivers (part of the Cauvery catchment in Karnataka and Kerala) north of the Palghat Gap, are the reports of this species confirmed while the southern Western Ghats populations are considered a different taxon (Devi & Ali 2011b)."

Status in the United States

Hypselobarbus thomassi has not been reported in the wild in the United States.

Means of Introductions in the United States

Hypselobarbus thomassi has not been reported in the wild or in trade in the United States.

Remarks

Literature searches were conducted using *Hypselobarbus thomassi* and the synonym *Barbus thomassi*.

From Ali et al. (2013):

"Currently, *H. thomassi* has been listed as 'Critically Endangered' (Devi & Ali 2011) in the IUCN Red List of Threatened Species based on limited distribution information available during the assessment."

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

"**Current status:** Valid as *Hypselobarbus thomassi* (Day 1874)."

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 *Hypselobarbus*
Species *Hypselobarbus thomassi* (Day, 1874)"

Size, Weight, and Age Range

From Froese and Pauly (2019):

"Max length : 100.0 cm TL male/unsexed; [Talwar and Jhingran 1991]"

Environment
From Froese and Pauly (2019):

"Freshwater; benthopelagic; potamodromous [Riede 2004]."

Climate/Range
From Froese and Pauly (2019):

"Tropical"

Distribution Outside the United States
Native
From Froese and Pauly (2019):

"Asia: Karnataka and Kerala in India."

From Marcus Knight et al. (2013):

"*Hypselobarbus thomassi* has been reported from several drainages north and south of Palghat Gap in the Western Ghats. However, only in Netravathi and Kabini rivers (part of the Cauvery catchment in Karnataka and Kerala) north of the Palghat Gap, are the reports of this species confirmed while the southern Western Ghats populations are considered a different taxon (Devi & Ali 2011b)."

Introduced
Hypselobarbus thomassi has not been reported as introduced anywhere outside of their native range.

Means of Introduction Outside the United States
Hypselobarbus thomassi has not been reported as introduced anywhere outside of their native range.

Short Description
From Arunachalam and Chinnaraja (2016):

"**Description:** Body moderately deep, and its depth is 27.68-30.06 %SL, dorsal fin origin anterior to pelvic fin insertion vertically by 1.5 scale rows; pre-dorsal length 46.88-49.82 %SL; pre-pelvic length 48.03-53.53 %SL. Pre-anal length 71.41-74.56 %SL, and pre-pectoral length 22.52-25.23 %SL, pelvic fin insertion to anal origin 17.79-21.28 %SL. Nape slightly convex behind a concavity posterior to occiput. Caudal peduncle is moderately deep, depth at narrowest region 10.83-12.79 % SL; caudal peduncle length is 10.30-15.04 %SL.

Head long 23.90-26.00 % SL, with long cranium of 19.92-22.18 %SL, head depth at nostril 33.81-43.28, at pupil 53.20-61.77 and at occiput 74.70-78.19 %HL respectively. Preopercle

straight and 72.44-78.63 %HL, interorbital concave, interorbital distance 29.05-39.15 %HL. Eyes large, 28.74-35.25 %HL. Snout long, length 36.97-43.01 %HL; mouth subterminal. Upper jaw length 24.64-31.71 %HL; gape width 22.31-27.03 %HL; lower jaw keratinous but not sharp. Two pairs of barbels; hided rostral barbel, 2 times shorter than orbit width.

Dorsal-fin rays iv-9(10), anal-fin rays iii-5(10), pelvic-fin rays ii-9(10), and pectoral-fin rays i-14(6) or 15(4), dorsal fin moderately high, 25.70-27.92 %SL, and length of dorsal spine 22.67-25.75 %SL. Anal fin when depressed extending beyond caudal fin base, its length 15.42-20.38 %SL. Distal margin of anal fin is convex, first, second and the third unbranched rays not equal in length. Length of anal fin base 6.92-8.07 %SL. Pelvic fin long, 16.56-18.92 %SL, pectoral fin long, 18.04-20.11 %SL, and moderately falcate, extending to 3.5 scale rows anterior to pelvic fin origin. Caudal fin deeply forked 31.96-38.10 %SL, upper and lower lobes are 3 times longer than middle rays.

Scales small, lateral-line scale rows 33(4), 34(4) or 35(2), pre-dorsal scale rows 11(10), upper transverse scale rows 5.5(10), lateral line to pelvic scale rows 3.5(10), lower transverse scale rows 4.5(10), circumpeduncular scale rows 13(5) or 14(5), circumferential scale rows 22(1), 23(4) or 24(5), transverse breast scale rows 8(4), 9(5) or 10(1) and preanal scale rows 27(3) or 28(7).”

Biology

From Froese and Pauly (2019):

“Inhabits large streams and rivers below the ghats [Menon 1999].”

From Ali et al. (2013):

“*Hypselobarbus thomassi* inhabits pool-riffle, run and glide habitats in fast to moderately flowing streams shaded with a fine amount of riparian vegetation. It favours clear, well oxygenated water flowing gently over substrates that are extensively encountered in these microhabitats such as boulders, bedrocks and sand. The adults of the species always dwell in moderately deep pools, whilst the juveniles are seen in the shallow areas associated with the pool-riffle and run habitats.”

Human Uses

From Froese and Pauly (2019):

“Fisheries: minor commercial”

From Rema Devi and Ali (2011):

“No information on use or trade. However like all large barbs within the genus *Hypselobarbus*, this species is also a potential food fish.”

Diseases

No information on diseases was found. **No OIE-reportable diseases (OIE 2020) were found to be associated with *Hypselobarbus thomassi*.**

Threat to Humans

From Froese and Pauly (2019):

"Harmless"

3 Impacts of Introductions

Hypselobarbus thomassi has not been reported as introduced anywhere outside of their native range.

4 Global Distribution

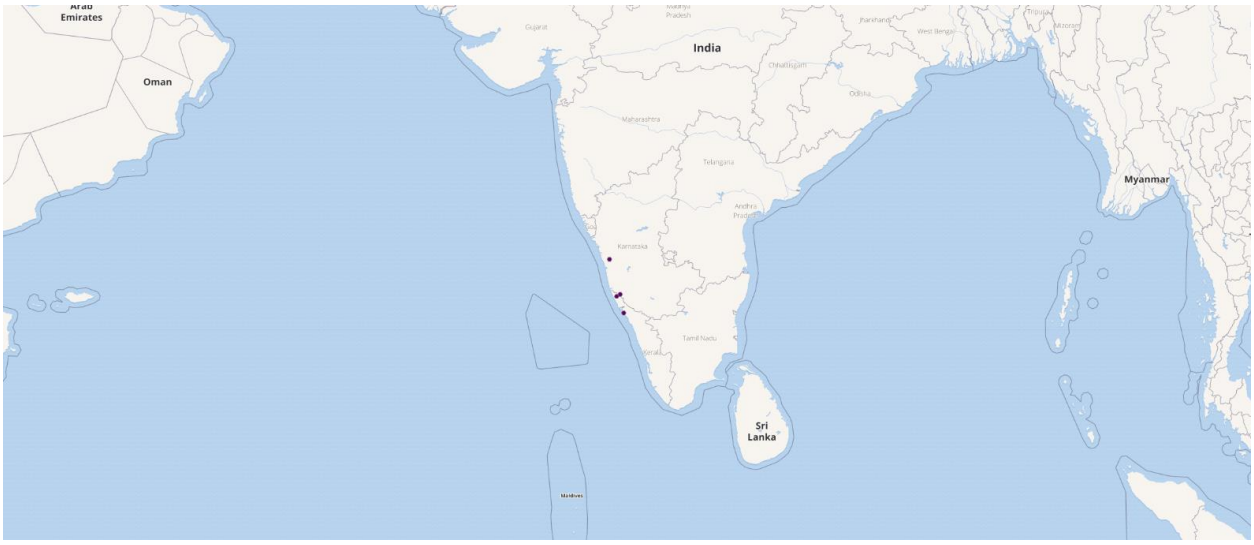

Figure 1. Known global distribution of *Hypselobarbus thomassi*. Locations are in India. Map from GBIF Secretariat (2019).

5 Distribution Within the United States

Hypselobarbus thomassi has not been reported anywhere within the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for the contiguous United States was consistently low across all states. There were no parts of the country with medium or high climate match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, low (scores between 0.000 and 0.005, inclusive, are classified as low). All States received low individual Climate 6 scores.

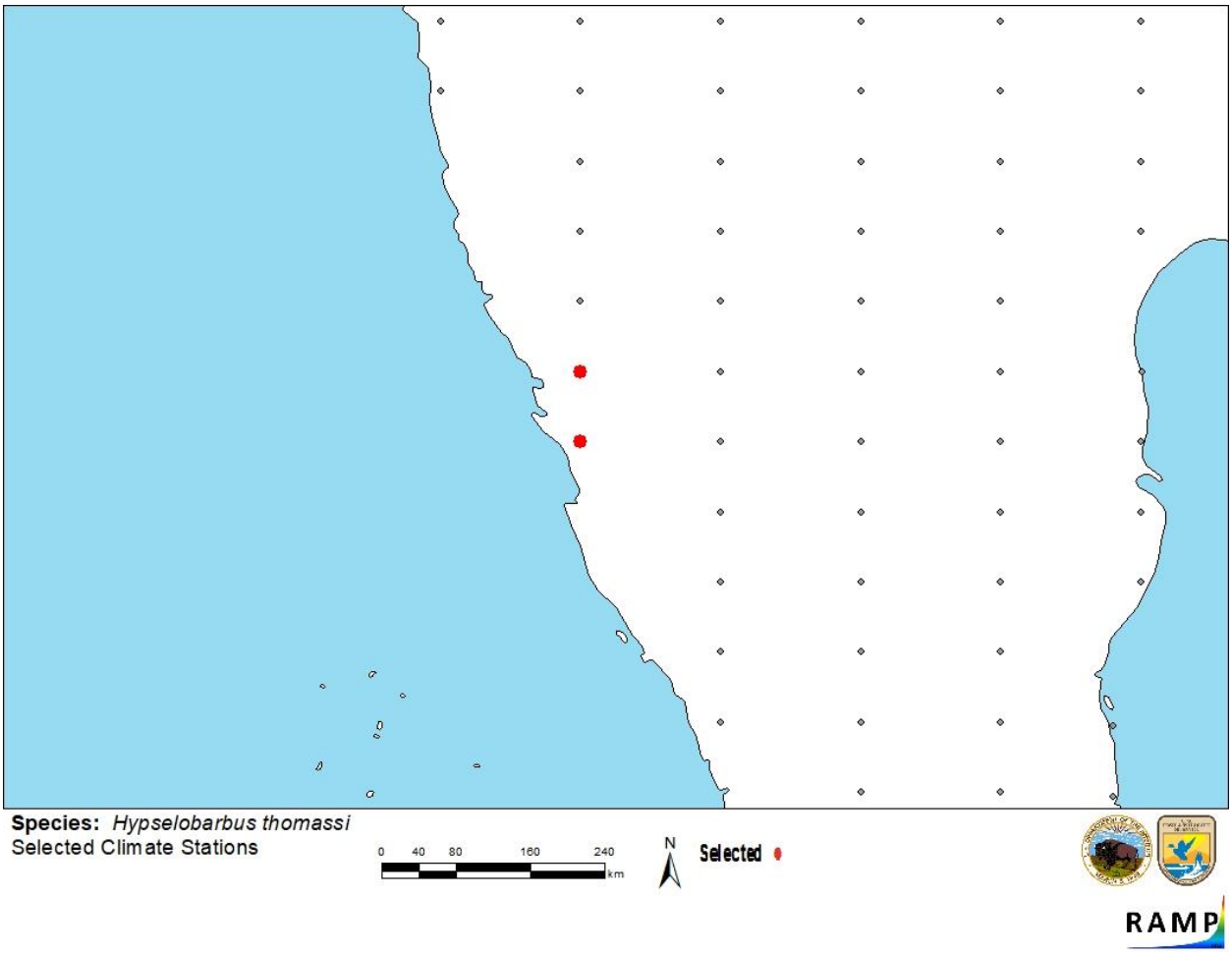

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in southern India selected as source locations (red; India) and non-source locations (gray) *Hypselobarbus thomassi* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of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

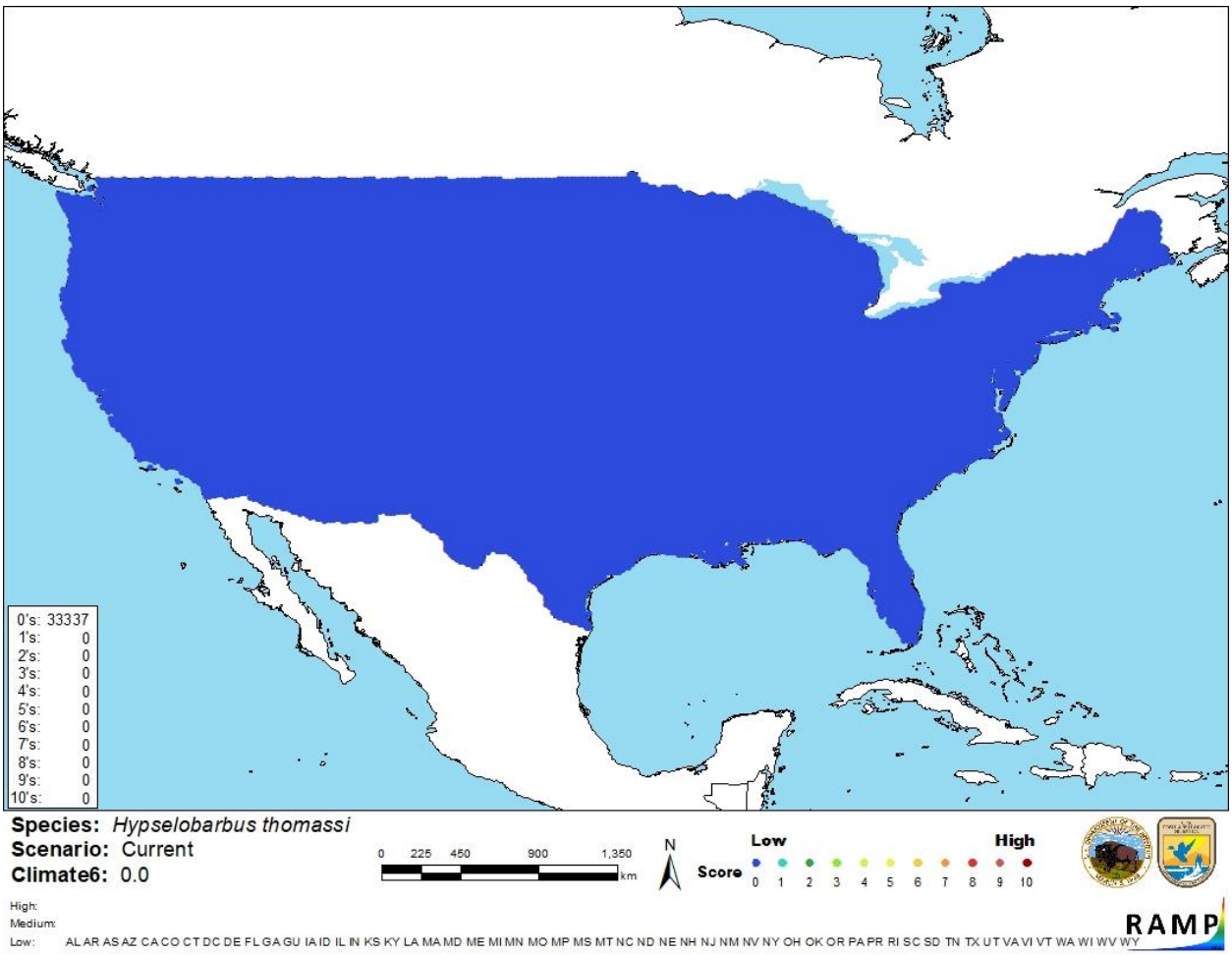

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Hypselobarbus thomassi* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0 = Lowest match, 10 = Highest match.

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

Limited information is available for *Hypselobarbus thomassi* and it has not been introduced anywhere outside of its native range. The certainty of assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Hypselobarbus thomassi is a critically endangered fish native to India. *H. thomassi* has not been introduced anywhere outside of its native range nor is it found in trade. The history of invasiveness is uncertain. The climate match for the contiguous United States is low, with no areas of medium or high match and all states receiving low individual climate scores. The certainty of assessment is low. The overall risk assessment category for *Hypselobarbus thomassi* 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.

Ali, A., S. Phillip, N. Dahanukar, C. R. Renjithkumar, A. Bijukumar, and R. Raghavan. 2013. Distribution, threats and conservation status of *Hypselobarbus thomassi* (Day, 1874), a poorly known cyprinid fish of the Western Ghats freshwater ecoregion. Journal of Threatened Taxa 5(17):5202–5213.

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

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Marcus Knight, J. D., A. Rai, and R. K. P. D'souza. 2013. Re-description of *Hypselobarbus lithopidos* (Teleostei: Cyprinidae), based on its rediscovery from the Western Ghats, India, with notes on *H. thomassi.* Journal of Threatened Taxa 5(13):4734–4742.

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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.

Day, F. 1874. On some new or little-known fishes of India. Proceedings of the Zoological Society of London 1873(3):704–710.

Devi, K. R., and A. Ali. 2011b. *Hypselobarbus thomassi*. *In* IUCN 2013. IUCN Red List of Threatened Species, version 2013.1.

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