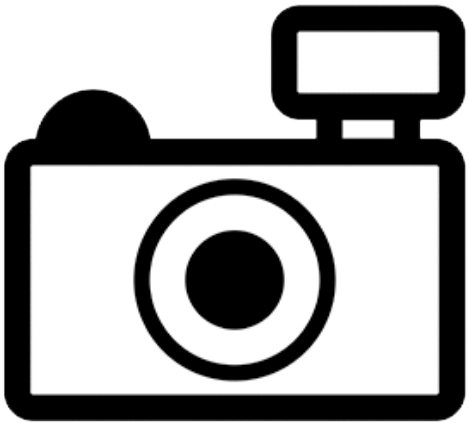
Labeo batesii (a carp, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, May 2012
Revised, May 2018, June 2018
Web Version, 7/13/18



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

"Africa: Lower Guinea [coastal drainages from Cameroon south to Republic of the Congo] endemic, known from many rivers of this ichthyogeographical region: Kribi, Mungo, Thsela, Shiloango, Bongola, Ntem, Bitande, Ohumbe, Okano, Mouanda, Kelle, Ogowe, Messok-Messok, Mekay, Lolo and Mvi [De Weirdt et al. 2007]. Not known from the Congo River basin or from the Chad and Niger-Benue basins [Reid 1985]"

From Boulenger (1916):

"South Cameroon."

Status in the United States
No records of *Labeo batesii* occurrences in the United States were found. No information on trade of *L. batesii* in the United States was found.

Means of Introductions in the United States
No records of *Labeo batesii* occurrences in the United States were found.

Remarks
No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing
According to Eschmeyer et al. (2018), *Labeo batesii* (Boulenger, 1911) is the valid name for this species; it is also the original name.

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 *Labeo* Cuvier, 1816
Species *Labeo batesii* Boulenger, 1911"

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

"Max length : 24.7 cm SL male/unsexed; [De Weirdt et al. 2007]"

From Boulenger (1916):

"Total length 190 millim."

Environment
From Froese and Pauly (2018):

"Freshwater; benthopelagic."

Climate/Range
From Froese and Pauly (2018):

"Tropical; 10°N - 15°S"

Distribution Outside the United States
Native
From Froese and Pauly (2018):

"Africa: Lower Guinea [coastal drainages from Cameroon south to Republic of the Congo] endemic, known from many rivers of this ichthyogeographical region: Kribi, Mungo, Thsela, Shiloango, Bongola, Ntem, Bitande, Ohumbe, Okano, Mouanda, Kelle, Ogowe, Messok-Messok, Mekay, Lolo and Mvi [De Weirdt et al. 2007]. Not known from the Congo River basin or from the Chad and Niger-Benue basins [Reid 1985]"

From Boulenger (1916):

"South Cameroon."

Introduced
No records of *Labeo batesii* introductions were found.

Means of Introduction Outside the United States
No records of *Labeo batesii* introductions were found.

Short Description
From Froese and Pauly (2018):

"Dorsal soft rays (total): 10-11; Vertebrae: 31 - 33. Diagnosis: snout rounded with deep transverse furrow; scale formula: 37-39 (38 commonly observed); 4.5-6.5 (5.5 commonly observed, exceptionally 4.5); 3.5-4.5 (4.0 commonly observed); 16-20 (16 commonly observed); dorsal fin with 10-11 (10 commonly observed) branched rays; upper edge of dorsal fin always concave; 32-33 (32 commonly observed, exceptionally 31) vertebrae; ventral fin origin located under the 4th branched dorsal ray; genital opening close to anal fin origin; rarely a longitudinal band, but if present unflared [De Weirdt et al. 2007]."

From Boulenger (1916):

"Body strongly compressed, its depth $3\frac{2}{3}$ times in total length. Head 4 times in total length, its width $\frac{2}{3}$ its length ; snout rounded, a little broader than long ; eye supero-lateral, in second half of head, $4\frac{1}{2}$ times in length of head, slightly over twice in interorbital width ; width of mouth, with lips, $\frac{1}{2}$ length of head ; upper lip entire, lower feebly fringed, both with transverse plicae on inner surface ; rostral flap denticulate ; a small barbell, hidden in folds of skin ; snout covered with scars of nuptial tubercles. Dorsal III 10, equally distant from nostrils and from caudal, border very feebly notched, longest ray as long as head. Anal II 5, reaching root of caudal. Pectoral as long as head, not reaching ventral, the first ray of which falls below the seventh of dorsal. Caudal deeply notched. Caudal peduncle as long as deep. Scales 37 $\frac{5\frac{1}{2}}{6\frac{1}{2}}$, 4 between lateral line and ventral, 16 round caudal peduncle. Olive above, whitish beneath ; fins dark. [*sic*]"

Biology

From Froese and Pauly (2018):

"Young specimens (up to 2.5 cm SL) are recorded from the Benito River in Cameroon [Reid 1985]. Most of the individuals examined were collected from areas with rapidly flowing water [Tshibwabwa 1997]. Maximum TL recorded: 19.0 cm [Lévêque and Daget 1984]."

From Welcomme and Petr (2004):

"In Cameroon, a special type of reproductive event, known as the "dok" takes place during the long rains in October-November. Doks involving *Labeo batesii* and *Distichodus* spp. have been documented in the Upper Cross and the Ntem, respectively. They typically last no more than a few hours or days."

Human Uses

From Welcomme and Petr (2004):

"According to du Feu (2001), who interviewed fishers on the Upper Cross River in Cameroon, the village is alerted to the imminence of the spawning event by the upstream movement of fish. Two hours after the fish have passed, the water turns white with milt, at which time the villagers set nets to block the return of spawned out adults on their return downstream. Men do the fishing with cast nets or even clubs, while women clean and smoke the catch. Eggs are normally not taken to ensure the continuation of the runs for future generations."

Diseases

No information on parasites and diseases associated with *Labeo batesii* was found.

Threat to Humans

From Froese and Pauly (2018):

"Harmless"

3 Impacts of Introductions

No records of *Labeo batesii* introductions were found.

4 Global Distribution

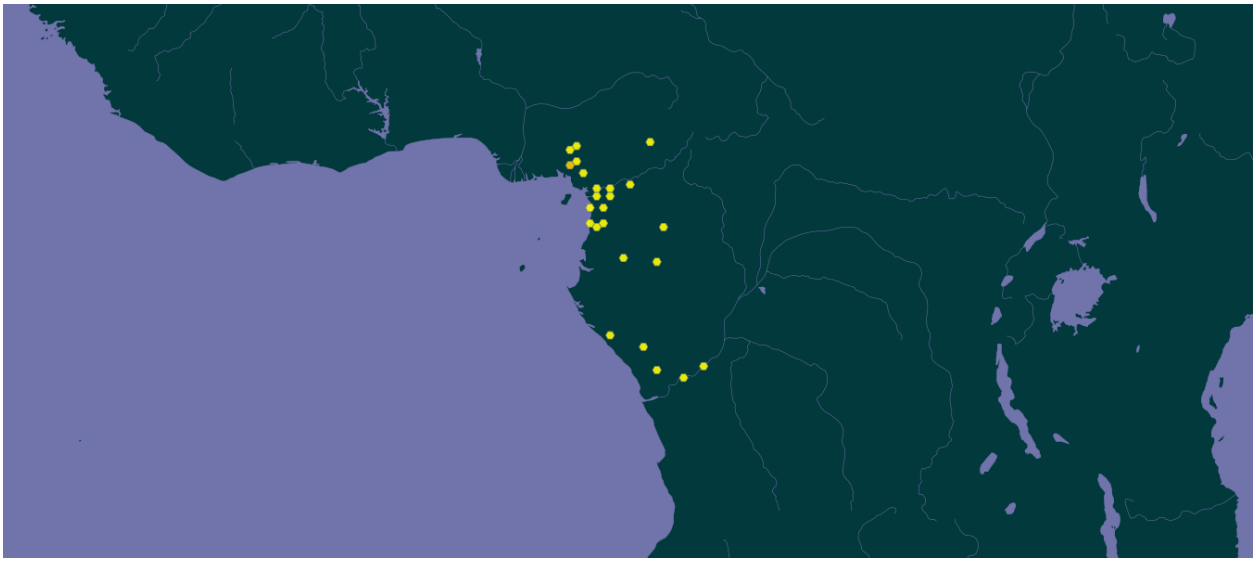


Figure 1. Known global distribution of *Labeo batesii*. Locations are in Cameroon, Gabon, Republic of the Congo, and Democratic Republic of the Congo. Map from GBIF Secretariat (2018).

Locations in the Congo River basin (Democratic Republic of the Congo) were not used as source points for the climate match as they are outside the described native range of the species.

5 Distribution Within the United States

This species has not been reported in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Labeo batesii* was low for most of the contiguous United States with majority of Florida with medium to high match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.003, low. The range for a low climate match is from 0.0 to 0.005, inclusive. Florida was the only state with an individual high climate match.

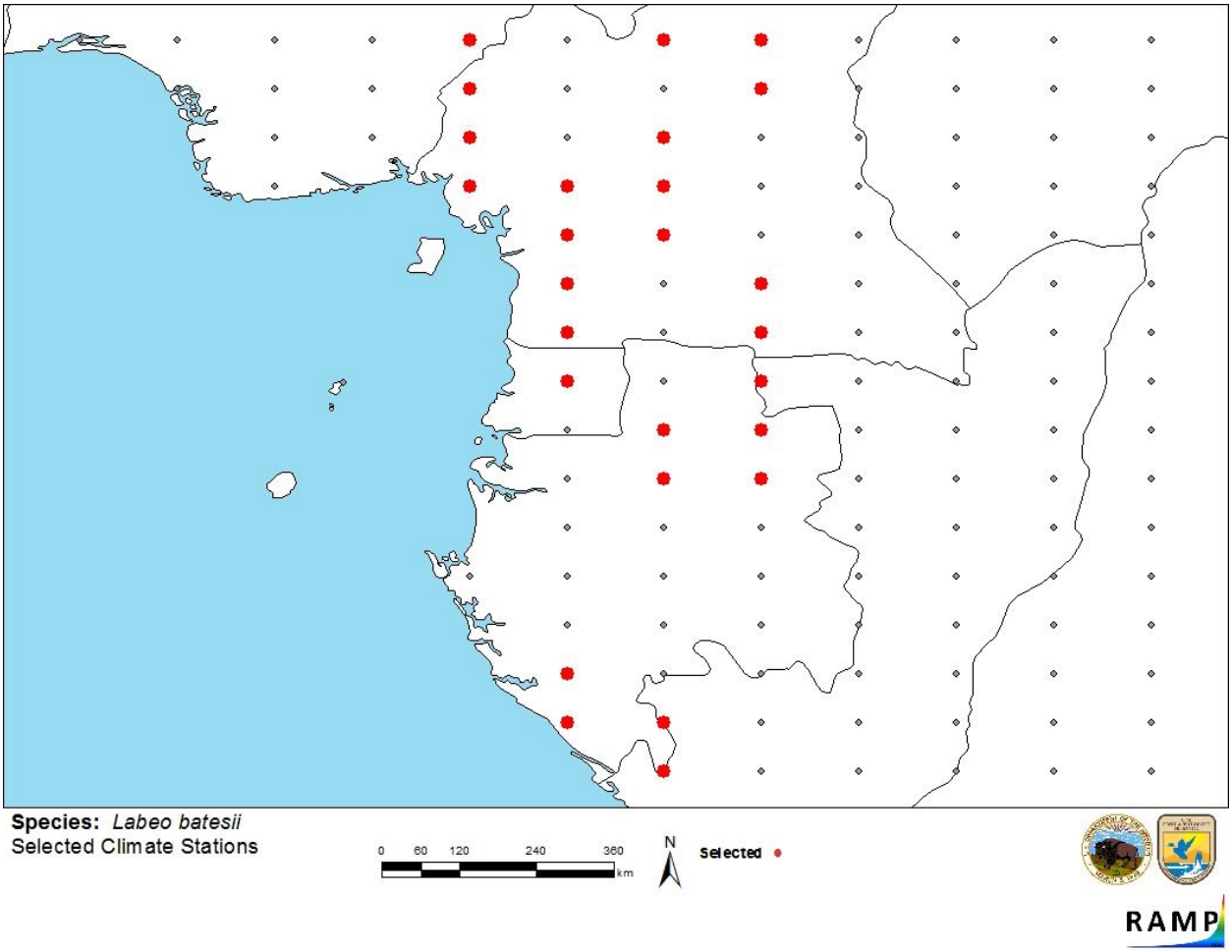


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Africa selected as source locations (red; Nigeria, Cameroon, Equatorial Guinea, Gabon, Republic of the Congo) and non-source locations (gray) for *Labeo batesii* climate matching. Source locations from GBIF Secretariat (2018).

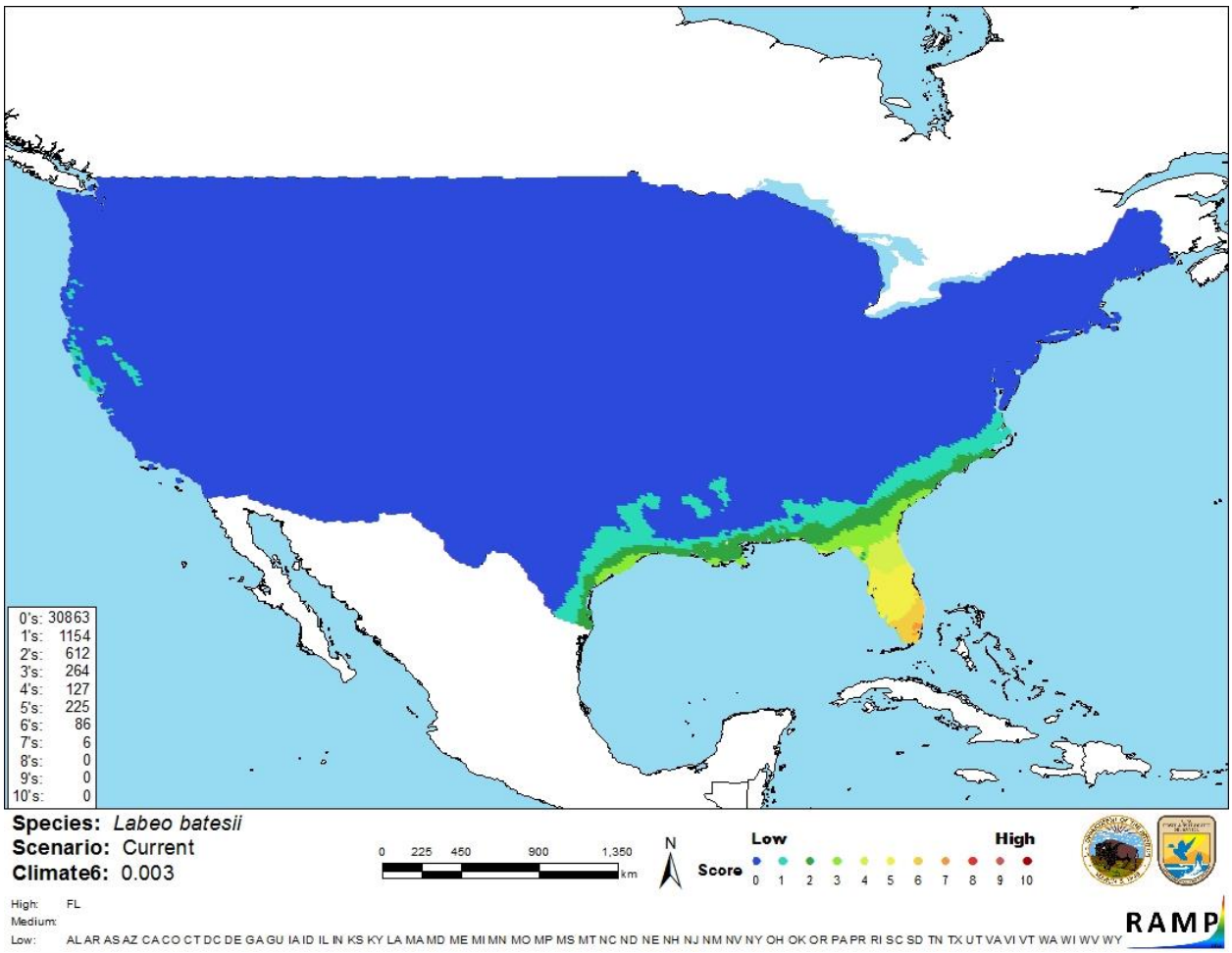


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Labeo batesii* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0 = Lowest match, 10 = Highest match.

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 this assessment is low. There is minimal information for *Labeo batesii* and a lack of peer-reviewed literature. No introductions have been reported for *L. batesii*, so impacts of introduction are unknown.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo batesii is a freshwater fish native to Africa. This species is used as a food fish. There is little information available for *L. batesii*. The history of invasiveness is uncertain. It has not been reported as introduced or established anywhere in the world. The climate match analysis resulted in low match for the contiguous United States. 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:** 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.

Boulenger, G. A. 1916. Catalogue of the fresh-water fishes of Africa in the British museum. Taylor and Francis, London.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp. (May 2018).

Froese, R., and D. Pauly, editors. 2018. *Labeo batesii* Boulenger, 1911. FishBase. Available: https://www.fishbase.de/summary/Labeo-batesii.html. (May 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Labeo batesii* Boulenger, 1911. Global Biodiversity Information Facility, Copenhagen. Available: https://www.gbif.org/species/5206069. (May 2018).

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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.

Welcomme, R. L., and T. Petr. 2004. Proceedings of the second international symposium on the management of large rivers for fisheries. Sustaining Livelihoods and Biodiversity in the New Millennium 1:1–358.

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.

Boulenger, G. A. 1911. Descriptions of three new freshwater fishes discovered by Mr. G. L. Bates in South Cameroon. Annals and Magazine of Natural History 8(45):372–373.

De Weirdt, D., A. Getahun, S. Tshibwabwa, and G. G. Teugels. 2007. Cyprinidae. Pages 467–572 *in* The fresh and brackish water fishes of Lower Guinea, West-Central Africa.

Du Feu, T. A. 2001. Fish and fisheries in the southern zone of the Takamanda Forest Reserve, Southwest Cameroon. Consultant's report to the Cameroonian-German project: Protection of Forests around Akwaya PROFA, GTZ, Yaoundé, Cameroon.

Lévêque, C., and J. Daget. 1984. Cyprinidae. Pages 217–342 *in* J. Daget, J. P. Gosse, and D. F. E. Thys van den Audenaerde, editors. Check-list of the freshwater fishes of Africa (CLOFFA). ORSTOM, Paris and MRAC, Tervuren, Belgium.

Reid, G. M. 1985. A revision of African species of *Labeo* (Pisces: Cyprinidae) and a re-definition of the genus. J. Cramer, Braunschweig. Theses Zoologicae 6:1–322.

Tshibwabwa, S. M. 1997. Systématique des espèces africaines du genre *Labeo* (Teleostei, Cyprinidae) dans les régions ichtyogéographiques de Basse-Guinée et du Congo. I. Presses Universitaires de Namur, Namur, Belgique.