

## ***Labeo sorex* (a carp, no common name)**

### **Ecological Risk Screening Summary**

U.S. Fish and Wildlife Service, February 2012

Revised, July 2018

Web Version, 7/31/2018



Photo: John Friel. Licensed under Creative Commons BY-NC-SA 2.0. Available: <https://www.flickr.com/photos/friel/337461790/in/photostream/>. (July 2018).

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

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### **Native Range**

From Froese and Pauly (2018):

“Africa: lower and middle Congo River [Tshibwabwa 1997] and Wagenia Falls [Moelants 2015] in Democratic Republic of the Congo; mainly found in rapids [Tshibwabwa 1997].”

From Moelants (2010):

“*Labeo sorex* has an apparently disjunct distribution and is known from the Lower Congo, and the central reaches (Kisangani) of the Congo River. Possibly, it also occurs in the rapids of the Central Congo area (Reid, Mc. G., pers. comm.) [Democratic Republic of the Congo].”

### **Status in the United States**

This species has not been reported as introduced or established in the United States. There is no indication that this species is in trade in the United States.

### **Means of Introduction into the United States**

This species has not been reported as introduced or established in the United States.

## **2 Biology and Ecology**

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### **Taxonomic Hierarchy and Taxonomic Standing**

From Froese and Pauly (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*  
Species *Labeo sorex* Nichols and Griscom, 1917”

“Current Standing: valid”

### **Size, Weight, and Age Range**

From Froese and Pauly (2018):

“Max length : 35.2 cm SL male/unsexed; [Lévêque and Daget 1984]”

### **Environment**

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

From Pwema Kiamfu et al. (2011):

“Three species: *Labeo sorex*, *L. nasus* and *L. macrostomus* prefer deep, rocky sites with fast current and high dissolved oxygen concentration. These species are thus considered as rheophilic.”

## **Climate/Range**

From Froese and Pauly (2018):

“Tropical; 5°N - 10°S”

## **Distribution Outside the United States**

### **Native**

From Froese and Pauly (2018):

“Africa: lower and middle Congo River [Tshibwabwa 1997] and Wagenia Falls [Moelants 2015] in Democratic Republic of the Congo; mainly found in rapids [Tshibwabwa 1997].”

From Moelants (2010):

“*Labeo sorex* has an apparently disjunct distribution and is known from the Lower Congo, and the central reaches (Kisangani) of the Congo River. Possibly, it also occurs in the rapids of the Central Congo area (Reid, Mc. G., pers. comm.) [Democratic Republic of the Congo].”

### **Introduced**

No introductions of this species have been reported.

## **Means of Introduction Outside the United States**

No introductions of this species have been reported.

## **Short Description**

From Froese and Pauly (2018):

“Dorsal soft rays (total): 9-10; Vertebrae: 34 - 36. Lips with transverse plicae on inner surface; snout very prominent, ending in a big fleshy upwards turned transverse appendix; eyes extremely small, generally in dorsal position. Can be distinguished from *L. nasus* by its smaller eyes and higher vertebral and scale counts [Tshibwabwa and Teugels 1995].”

From Roberts and Stewart (1976):

“*Labeo sorex*, *Bagrus caeruleus*, *Chrysichthys* sp., *Chiloglanis carnosus*, and *Synodontis acanthomias* all have eyes smaller than any or almost any other species in their respective genus. The reduction is particularly striking in *Labeo sorex*. Although the eyes of the rheophilic species

listed here are very small, they are always superficial in position, never partially or completely covered by skin and other tissues, and never entirely absent.”

“uniformly dusky grey or bluish grey”

## **Biology**

From Froese and Pauly (2018):

“Known only from the rapids of the Congo River where it appears most adapted. Among its adaptations are the reduce [*sic*] diameter of the eyes; the dorso-laterally flattened shape of the head, the very large lips which are apparently adapted for suction; the latero-ventral arrangement and form of the paired fins which is largely extended and compressed ; [*sic*] and the blue or bluish coloration [Tshibwabwa 1997].”

## **Human Uses**

From Moelants (2010):

“This species is harvested for human consumption.”

## **Diseases**

No information available. No OIE-reportable diseases have been reported for this species.

## **Threat to Humans**

From Froese and Pauly (2018):

“Harmless”

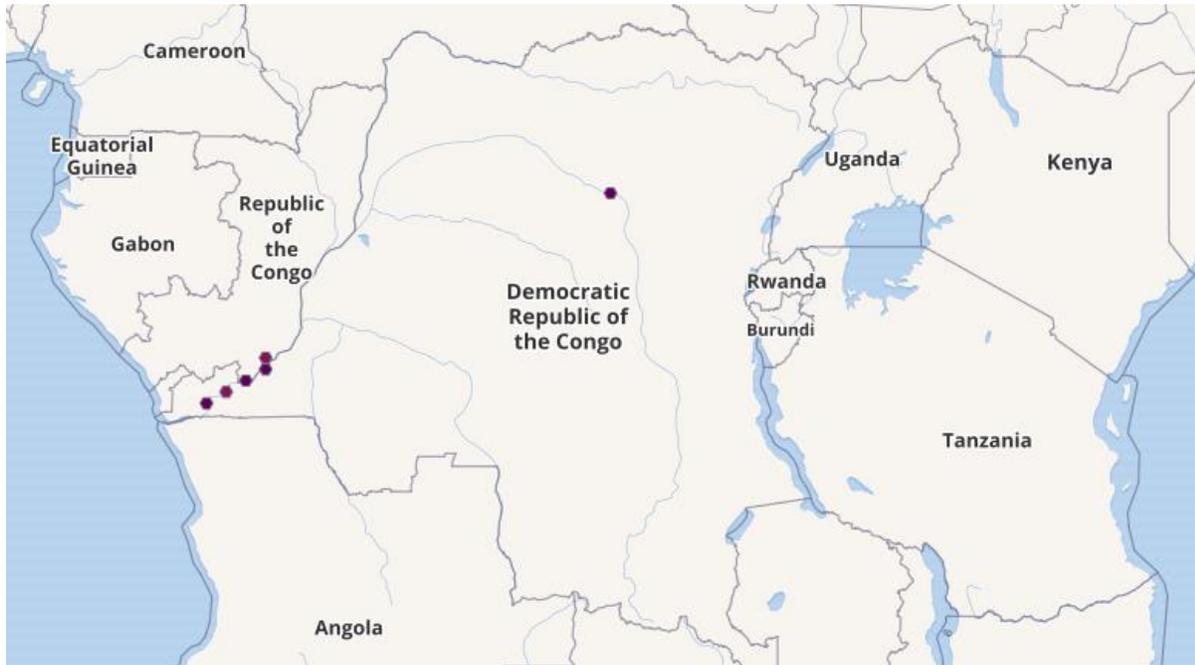
## **3 Impacts of Introductions**

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No information available. No introductions of this species have been reported.

## 4 Global Distribution

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**Figure 1.** Known global distribution of *Labeo sorex*, reported from the Democratic Republic of the Congo. Map from GBIF Secretariat (2017).

## 5 Distribution within the United States

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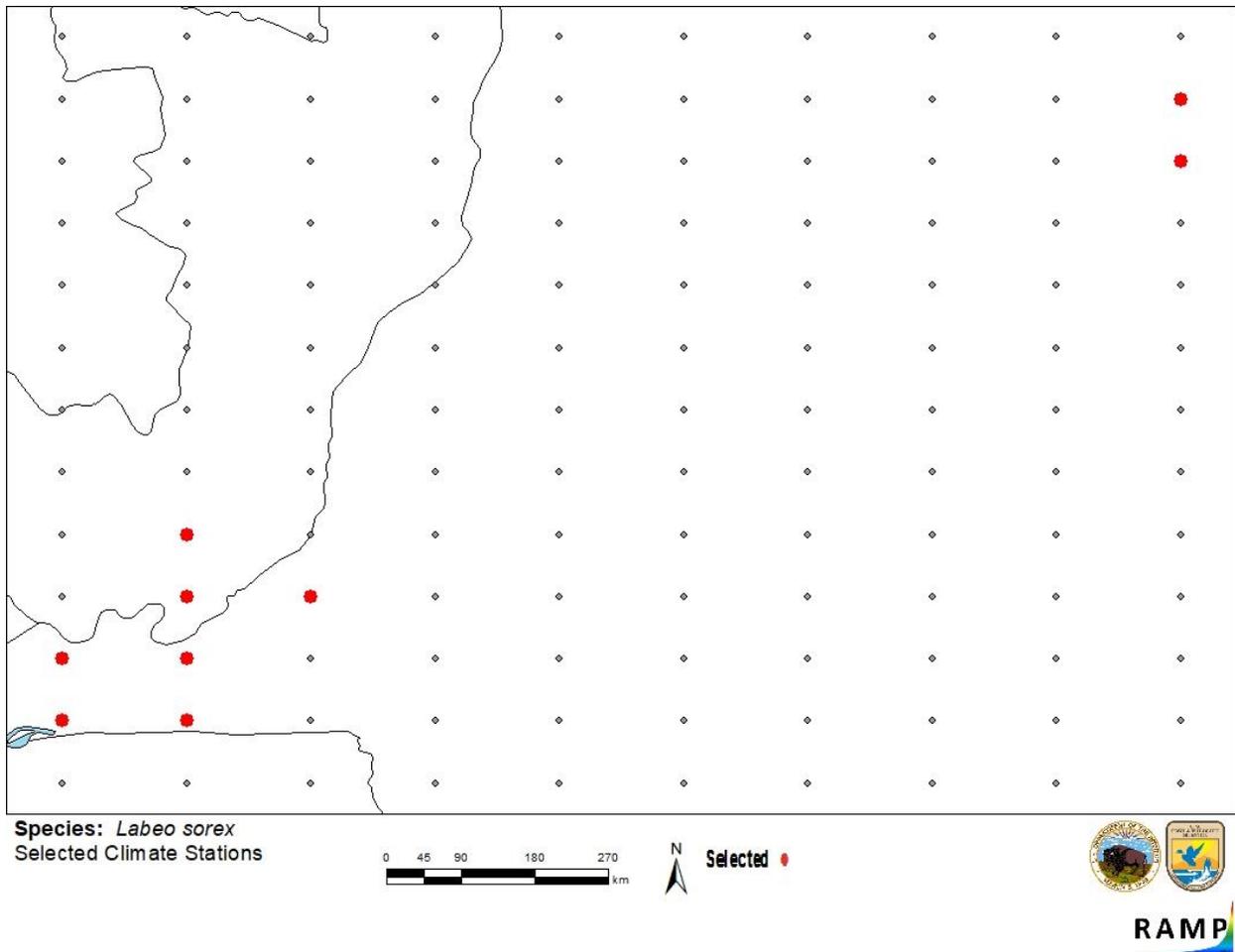
This species has not been reported as introduced or established in the United States.

## 6 Climate Matching

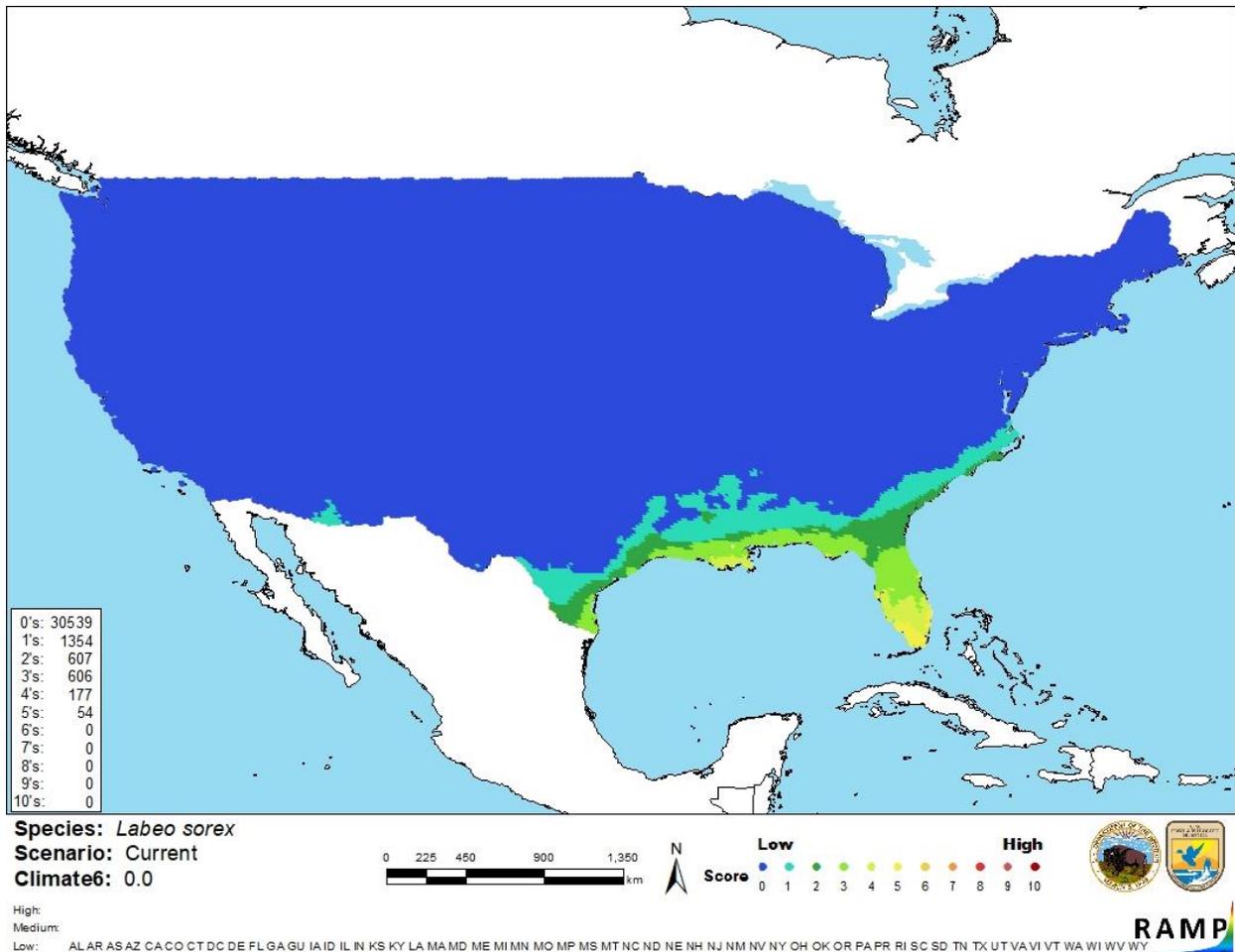
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### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2018; 16 climate variables; Euclidean Distance) for *Labeo sorex* was low throughout the contiguous United States except for medium matches in southern coastal Florida and southern coastal Louisiana. Climate 6 score indicated that the contiguous United States has a low climate match overall. Scores of 0.005 and below are classified as low match; Climate 6 score for *L. sorex* was 0.000.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations in the Congo River basin, Africa, selected as source locations (red; Democratic Republic of the Congo, Republic of the Congo) and non-source locations (gray) for *L. sorex* climate matching. Source locations from GBIF Secretariat (2017). Selected weather stations are located within 100 km of a species occurrence and do not represent the exact locations of species occurrences.



**Figure 3.** Map of RAMP (Sanders et al. 2018) climate matches for *L. sorex* in the contiguous United States based on source locations reported by GBIF Secretariat (2017). 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
$\geq 0.103$	High

## 7 Certainty of Assessment

Limited information is available on the biology, ecology, and distribution of *Labeo sorex*. No introductions of this species have been reported, so no information on impacts of introduction is available. Without further information, certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Labeo sorex* is a species of carp native to the lower and middle Congo River basin in the Democratic Republic of the Congo. There are no records of introductions of *L. sorex* outside the native range. Therefore, any negative impacts of introduction remain unknown. Certainty of assessment is low. Climate match to the contiguous United States is low overall, with medium matches in southern Florida and southern Louisiana. With no introduction history and low climate match, overall risk posed by *L. sorex* is uncertain.

### Assessment Elements

- **History of Invasiveness: Uncertain**
- **Climate Match: Low**
- **Certainty of Assessment: 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.**

Froese, R. and D. Pauly, editors. 2018. *Labeo sorex* Nichols & Griscom, 1917. FishBase. Available: <http://www.fishbase.se/summary/Labeo-sorex.html>. (July 2018).

GBIF Secretariat. 2017. GBIF backbone taxonomy: *Labeo sorex* Nichols & Griscom, 1917. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5206102>. (July 2018).

ITIS (Integrated Taxonomic Information System). 2018. *Labeo sorex* Nichols and Griscom, 1917. Integrated Taxonomic Information System, Reston, Virginia. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=689344#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689344#null). (July 2018).

Moelants, T. 2010. *Labeo sorex*. The IUCN Red List of Threatened Species 2010: e.T181689A7706555. Available: <http://www.iucnredlist.org/details/full/181689/0>. (July 2018).

Pwema Kiamfu, V., N. Mbomba Bekeli, L.-M. Pigneur, Takoy Lomema, and J.-C. Micha. 2011. Environmental variables structuring *Labeo* species (Pisces, Cyprinidae) in Malebo Pool, Congo River. *International Journal of Biological and Chemical Sciences* 5(2):507-514.

Roberts, T. R., and D. J. Stewart. 1976. An ecological and systematic survey of fishes in the rapids of the lower Zaïre or Congo River. *Bulletin of the Museum of Comparative Zoology* 147(6):237-317.

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

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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.**

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), volume 1. ORSTOM, Paris, and MRAC, Tervuren, Belgium.

Moelants, T. 2015. Diversity and ecology of the ichthyofauna of the Middle and Upper Congo basin: a case-study in the region of the Wagenia falls (Democratic Republic of the Congo). KULeuven, Faculty of Science, Leuven, Belgium.

Tshibwabwa, S. M. 1997. Systématique des espèces africaines du genre *Labeo* (Teleostei, Cyprinidae) dans les régions ichthyogéographiques de Basse-Guinée et du Congo II. Doctoral thesis. Presses Universitaires de Namur, Namur, Belgium.

Tshibwabwa, S. M., and G. G. Teugels. 1995 Contribution to the systematic revision of the African cyprinid fish genus *Labeo*: species from the Lower Zaire river system. *Journal of Natural History* 29:1543-1579.