

***Labeo horie* (a carp, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, April 2012

Revised, April 2018

Web Version, 5/29/2018

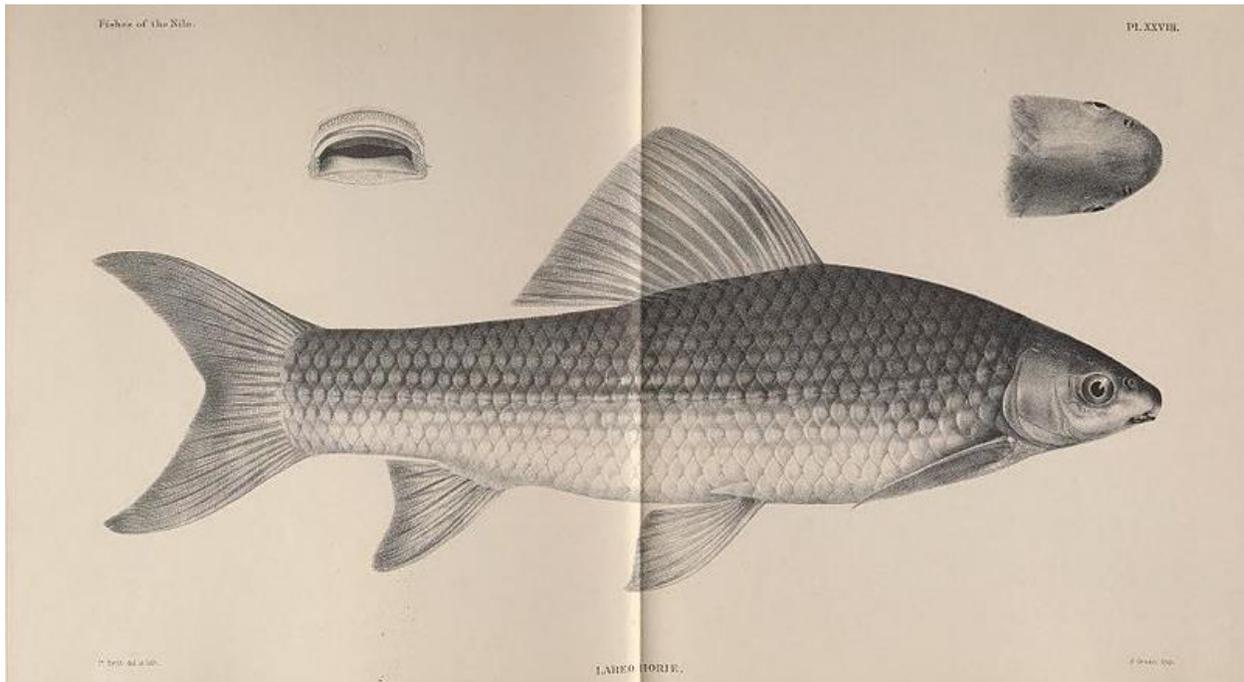


Image: G. A. Boulenger. Licensed under CC BY 2.0. Available: [https://commons.wikimedia.org/wiki/File:The_fishes_of_the_Nile_\(Pl._XXVIII\)_\(6815494626\).jpg](https://commons.wikimedia.org/wiki/File:The_fishes_of_the_Nile_(Pl._XXVIII)_(6815494626).jpg). (April 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Africa: within the drainage basin of the Nile River (Blue, White, Murchison; Lakes Albert, Kyoga and Rudolf) [Ethiopia, Kenya, Sudan, Uganda]. Not known from East Coast rivers, from the Congo basin or (reliably) from West Africa.”

Boulenger (1909) reports collection of several *L. horie* specimens in Egypt.

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 Introductions in the United States

This species has not been reported as introduced or established in the U.S.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysii
Order Cypriniformes
Superfamily Cyprinoidea
Family Cyprinidae
Genus *Labeo* Cuvier, 1816
Species *Labeo horie* Heckel, 1847”

From Eschmeyer et al. (2018):

“Current status: Valid as *Labeo horie* Heckel 1847. Cyprinidae: Labeoninae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 57.0 cm TL male/unsexed; [Lévêque and Daget 1984]”

From Dadebo et al. (2003):

“The size at maturity (L_{m50}) of males was 52 cm while the L_{m50} of females was 62 cm. The smallest ripe male in the catch was 46.7 cm and weighed 890 g while the smallest ripe female caught was 49.5 cm and weighed 1145 g.”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic; potamodromous [Riede 2004].”

Climate/Range

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Africa: within the drainage basin of the Nile River (Blue, White, Murchison; Lakes Albert, Kyoga and Rudolf) [Ethiopia, Kenya, Sudan, Uganda]. Not known from East Coast rivers, from the Congo basin or (reliably) from West Africa.”

Boulenger (1909) reports collection of several *L. horie* specimens in Egypt.

Introduced

This species has not been reported as introduced or established outside of its native range.

Means of Introduction Outside the United States

This species has not been reported as introduced or established outside of its native range.

Short Description

From Boulenger (1909):

“Body strongly compressed, its depth $3\frac{1}{3}$ to 4 times in total length. Head 5 to $5\frac{2}{3}$ times in total length in adult, 4 to 5 times in young, its width $\frac{2}{3}$ to $\frac{4}{5}$ its length; snout broadly rounded, about $\frac{1}{3}$ length of head; eye nearly perfectly lateral, 5 to $5\frac{2}{3}$ times in length of head in adult, 3 to 4 times in young; interorbital width $\frac{1}{2}$ to $\frac{3}{5}$ length of head; width of mouth, with lips, $2\frac{1}{2}$ to 3 times in length of head; both lips with several rows of papillae, those of outer row long and conical and forming a strong fringe on upper lip; edge of rostral flap entire; a minute barbel hidden under folds of skin; tubercles on snout, or their pore-like scars, very small or absent. Dorsal III 12-14 (usually 13), equally distant from anterior border or centre of eye and from caudal, its upper edge straight or slightly convex, anterior branched rays longest, always longer, and often much longer, than head. Anal III 5, often reaching root of caudal. Pectoral nearly as long as or a little longer than head, not reaching ventral, the first ray of which falls below 4th or 5th branched ray of dorsal. Caudal deeply emarginated, crescentic when fully spread out. Caudal peduncle not or but slightly longer than deep. Scales 40-44 $\frac{7-7\frac{1}{2}}{6\frac{1}{2}-8\frac{1}{2}}$, 4-5 between lateral line and root of ventral, 16-18 (rarely

20) round caudal peduncle. Greyish, olive, greenish brown, or steel-blue above, pale golden or silvery beneath; ill-defined, dark longitudinal lines sometimes present, running between the series of scales; young with a more or less distinct, always ill-defined, round dark spot on the side, involving the series of scales bearing the lateral line, above the pectoral fin.”

Biology

From Dadebo et al. (2003):

“During the breeding season *L. horie* exhibits a spawning run, where large numbers of fish migrate to the shallower areas of Lake Chamo. During this migration they occasionally jump out of the water in a coordinated manner making rhythmic splashes. The early rains in February probably trigger the breeding activity of this fish [...]. Kenimur (1971) observed spawning migrations of *L. congoro* into the inflowing streams of Lake Kariba. Hopson (1982) reported a similar spawning migration of *L. horie* from Lake Turkana into Omo River and some ephemeral streams. [...] In Lake Chamo spawning migrations of *L. horie* to the shallower areas of littoral regions were observed but migrations of fish upstream the inflowing rivers to any significant distance was not observed during the present study.”

“*L. horie* in Lake Chamo conforms to the pattern of breeding in tropical species (Hails & Abdullah, 1982; Tadesse, 1997; Dadebo, 2000) with peak breeding occurring at the times of peak rainfall, although a few fish in breeding condition can be found at all times [...]. The main pulse of breeding activity occurred during the months of February to May, coinciding with the major rainy season of the area. The second but less pronounced breeding activity occurred in August and September. It seems probable that fish which did not reproduce during the February to May breeding season, spawn during the August to September season. Since the breeding activity followed the rainfall pattern, the onset of reproductive activity may vary with rainfall pattern from season to season.”

Human Uses

From Dadebo et al. (2003):

“*Labeo horie* Heckel is increasingly becoming commercially important in Lake Chamo but its reproductive biology in the lake is not well enough [*sic*] to guide its management.”

From Golubtsov and Habteselassie (2010):

“During the last twenty years intensive development of fisheries in Chamo and Abaya lakes has driven local populations of commercial fishes (e.g. *Mormyrus caschive*, *Labeo horie* and *L. niloticus*) to the verge of extinction.”

Diseases

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

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

This species has not been reported as introduced or established outside of its native range.

4 Global Distribution



Figure 1. Known global distribution of *Labeo horie*, reported from the Nile River drainage, Africa. Map from GBIF Secretariat (2018).

5 Distribution Within the United States

This species has not been reported as introduced or established in the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States was 0.026, which is a medium climate match. The climate match was high in Arizona and California, medium in Nevada, and low in all other states. The Southwest

was the area of highest climate match in the contiguous U.S. The rest of the Southern U.S., including Texas, Florida, and the Gulf Coast states, had a medium to medium-low climate match.

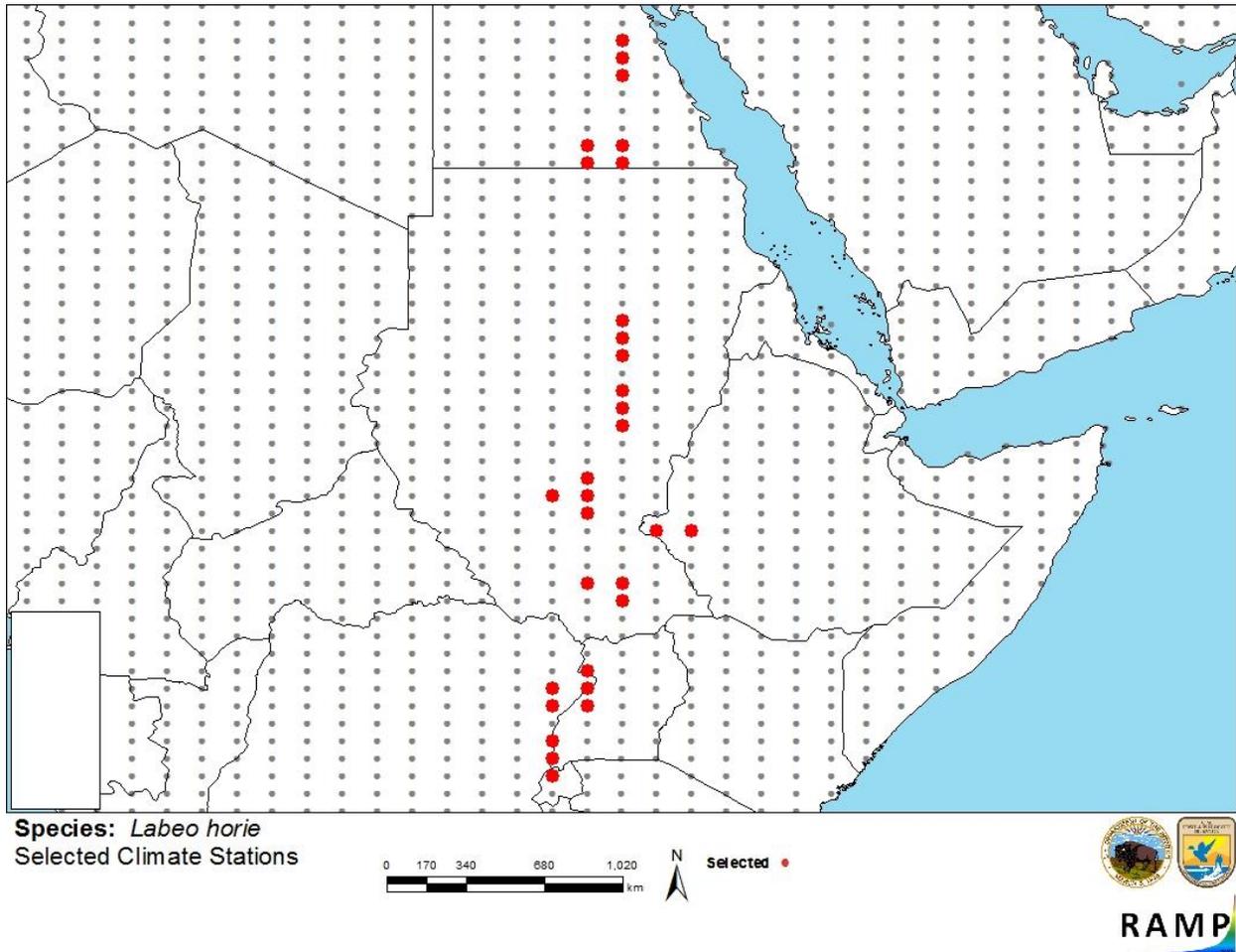


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in northeastern Africa selected as source locations (red; Nile River basin) and non-source locations (gray) for *Labeo horie* climate matching. Source locations from GBIF Secretariat (2018).

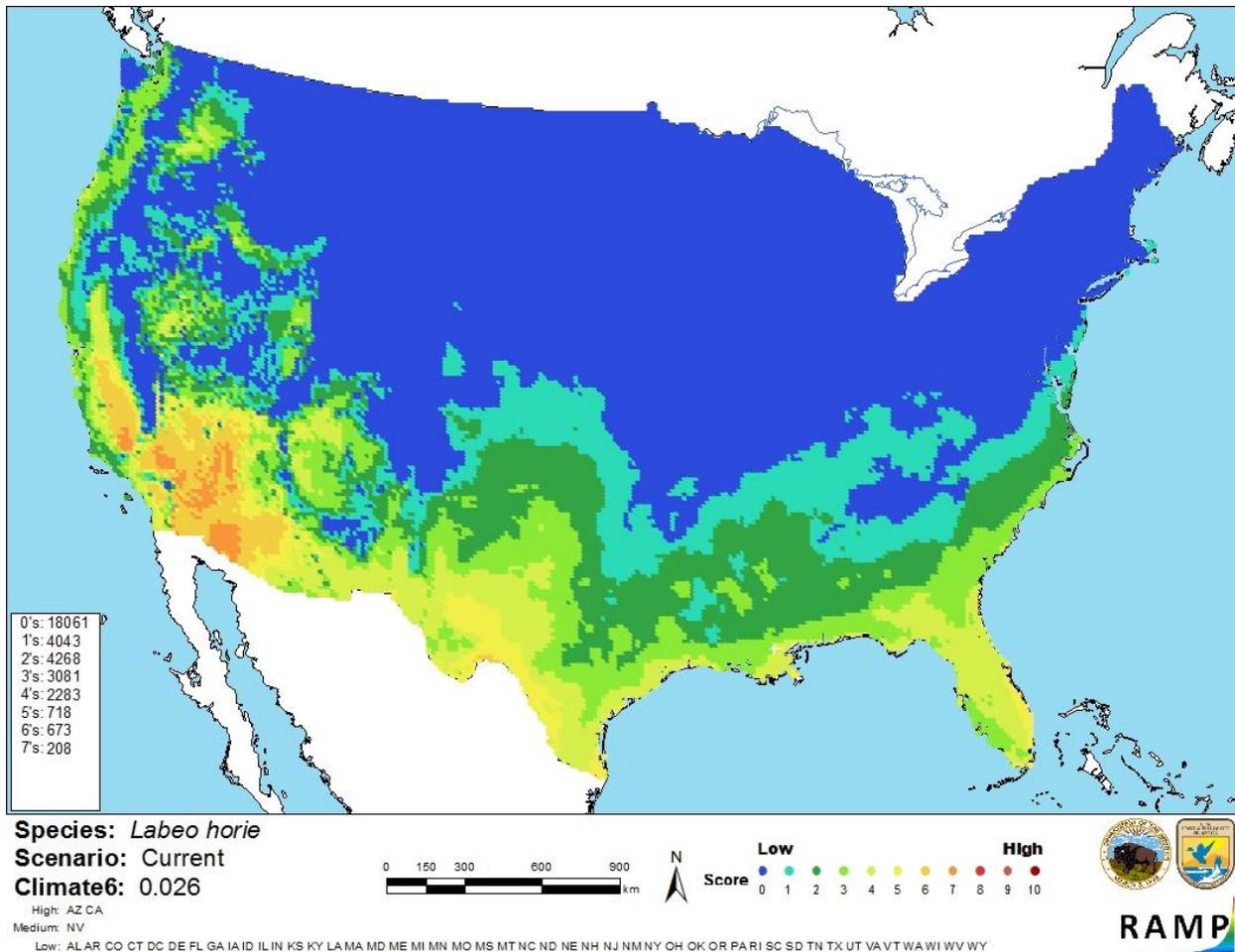


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Labeo horie* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0= Lowest match, 10=Highest match.

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

There is adequate information available about *Labeo horie*. Despite this, there have been no documented introductions of this species outside of its native range. Because no introductions of this species have been documented, there is no information from which to base a risk assessment, so the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Labeo horie is a freshwater cyprinid fish native to the Nile River drainage in Africa. *L. horie* is commercially fished. This species has never been documented as introduced or established outside of its native range. *L. horie* has a medium climate match with the contiguous U.S., with the area of highest match located in the Southwest. Further information is needed to adequately assess the risk this species poses, so the certainty of this 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**
- **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. 1909. Catalogue of the fresh-water fishes of Africa in the British Museum (Natural History). Taylor and Francis, London.

Dadebo, E., G. Ahlgren, and I. Ahlgren. 2003. Aspects of reproductive biology of *Labeo horie* Heckel (Pisces: Cyprinidae) in Lake Chamo, Ethiopia. African Journal of Ecology 41(1):31-38.

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>. (April 2018).

Froese, R., and D. Pauly, editors. 2018. *Labeo horie* (Heckel, 1847). FishBase. Available: <http://www.fishbase.org/summary/11548>. (April 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Labeo horie* Heckel, 1847. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/5206030>. (April 2018).

Golubtsov, A. S., and R. Habteselassie. 2010. Fish faunas of the Chamo-Abaya and Chew Bahir basins in southern portion of the Ethiopian Rift Valley: origin and prospects for survival. Aquatic Ecosystem Health and Management 13(1):47-55.

ITIS (Integrated Taxonomic Information System). 2018. *Labeo horie* (Heckel, 1847). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=689299#null. (April 2018).

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. 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.

Dadebo, E. 2000. Reproductive biology and feeding habits of the catfish *Clarias gariepinus* Burchell (Pisces: Clariidae) in Lake Awassa, Ethiopia. Ethiopia Journal of Science 23:231-246.

Hails, A. J., and Z. Abdullah. 1982. Reproductive biology of the tropical fish *Trichogaster pectoralis* (Regan). Journal of Fish Biology 21:157-170.

Hopson, A. J. 1972. A study of the Nile perch *Lates niloticus* (L.) (Pisces: Centropomidae) in Lake Chad. Overseas Research Publication, London.

Kenimur, D. H. S. 1971. An investigation into the decline of the *Labeo congoro* stocks in the Sanyati Basin of Lake Kariba. L.K.F.R.I. Project Report 7, Harare, Zimbabwe.

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.

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

Tadesse, Z. 1997. Breeding season, fecundity, length-weight relationship and condition factor of *Oreochromis niloticus* L. (Pisces: Cichlidae) in Lake Tana, Ethiopia. SINET: Ethiopian Journal of Science 20:31-47.