Tanganyika Lates (*Lates angustifrons*)
Ecological Risk Screening Summary

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U.S. Fish & Wildlife Service, February 2011
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Photo: J. Benoit. Licensed under Wikimedia Commons. Available: https://en.m.wikipedia.org/wiki/File:Lates_angustifrons_(juvénile).jpg. (Accessed June 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

"Africa: widely distributed in Lake Tanganyika [Burundi, Tanzania, Democratic Republic of the Congo, Zambia] [Poll 1953; Coulter 1976] and present in the Malagarazi River delta [Tanzania] [De Vos et al. 2001]."

From Ntakimazi (2006):

"Endemic to Lake Tanganyika [Burundi, Tanzania, Democratic Republic of the Congo, Zambia] and also enters the deltas of its major rivers including the Rusizi [Burundi] and Malagarasi [Tanzania]."

Status in the United States

From Fuller (2019):

"Tanganyika Perch were imported to Texas in 1975 for research and had been stocked in Coleto Creek Reservoir in 1981 (Howells 1992a, 1992b) and in Smithers Reservoir in 1985 (Howells and Garrett 1992; Howells 1992a, 1992b) when the research ended."

"It is believed that both stockings failed, since there have been no recent recoveries (Howells 1992a, 1992b)."

According to Froese and Pauly (2019) *Lates angustifrons* was recorded in the United States from 1975 to 1999 but it failed to become established and is not currently found anywhere in the United States.

Means of Introductions in the United States

From Fuller (2019):

"Intentional stocking [in the 1980s] by the Texas Parks and Wildlife Department for sport fishing."

Remarks

Lates angustifrons has been intentionally stocked within the United States by States fishery managers to achieve fishery management objectives. State fish and wildlife management agencies are responsible for balancing multiple fish and wildlife management objectives. The potential for a species to become invasive is now one important consideration when balancing multiple management objectives and advancing sound, science-based management of fish and wildlife and their habitat in the public interest.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

"**Current Status:** Valid as *Lates angustifrons* (Boulenger 1906)."

From ITIS (2019):

Kingdom Animalia
  Subkingdom Bilateria

Infrakingdom Deuterostomia
　Phylum Chordata
　　Subphylum Vertebrata
　　　Infraphylum Gnathostomata
　　　　Superclass Actinopterygii
　　　　　Class Teleostei
　　　　　　Superorder Acanthopterygii
　　　　　　　Order Perciformes
　　　　　　　　Suborder Percoidei
　　　　　　　　　Family Centropomidae
　　　　　　　　　　Subfamily Latinae
　　　　　　　　　　　Genus *Lates*
　　　　　　　　　　　　Species *Lates angustifrons* Boulenger, 1906

Size, Weight, and Age Range

From Froese and Pauly (2019):

"Maturity: L_m 56.5 […]
Max length : 200 cm SL male/unsexed; [Eccles 1992]; max. published weight: 100.0 kg [Stone 2007]"

Environment

From Froese and Pauly (2019):

"Freshwater; demersal; pH range: 7.5 - 8.2; dH range: 20 - 40. […] 22°C - 28°C [Baensch and Riehl 1995] [assumed to be the recommended aquarium temperature];"

Climate/Range

From Froese and Pauly (2019):

"Tropical; […] 3°S - 9°S"

Distribution Outside the United States

Native
From Froese and Pauly (2019):

"Africa: widely distributed in Lake Tanganyika [Burundi, Tanzania, Democratic Republic of the Congo, Zambia] [Poll 1953; Coulter 1976] and present in the Malagarazi River delta [Tanzania] [De Vos et al. 2001]."

From Ntakimazi (2006):

"Endemic to Lake Tanganyika [Burundi, Tanzania, Democratic Republic of the Congo, Zambia] and also enters the deltas of its major rivers including the Rusizi [Burundi] and Malagarasi [Tanzania]."

Introduced

No introductions outside of the United States were found.

Means of Introduction Outside the United States

No introductions outside of the United States were found.

Short Description

From Froese and Pauly (2019):

"Spacing between dorsal fins more than between last spines of first dorsal fin. Caudal fin rounded in adults, rounded and spotted in juveniles. Eyes small, less than interorbital width [sic]."

From Kondo and Abe (1995):

"[…] dark cross bands on the body may be advantageous as camouflage in the short grass bed."

From Coulter (1976):

"The general morphology of *L. angustifrons* implies benthic habits, though features related to this way of life are less developed than in *L. rnariue*. Its dorsal profile is less rounded, and the fin spines and eye are relatively smaller. Body musculature is heavier than in *L. mariae*, and the caudal peduncle shorter and stouter. More variation was noted than in the other two species, particularly in spine lengths, eye size and the number of scales on the longitudinal line. Colour variation was striking in specimens taken on rocky bottoms nearshore, the pigmentation varying from melanic to bright golden."

Biology

From Froese and Pauly (2019):

"Juveniles live in a specific inshore habitat until they reach 18 cm [Coulter 1976] also found near and in slow flowing affluents [Poll 1953]. Adults found from the littoral to near the limit of the oxygenated zone [Coulter 1976]. Solitary, lurking predator, probably favoring rocky bottoms and unspecialized in its fish diet; highly susceptible to intensive fishing [Coulter 1976]. Feeds largely on benthic cichlids [Poll 1953; Eccles 1992], but also takes sardines [Eccles 1992]. Threatened due to over harvesting [Stone 2007]."

From Ntakimazi (2006):

"With an age at maturity estimated to range from 4.5–14 years, the 20-year time span approximates three generations."

"Adults inhabit the bentho-pelagic and littoral zones of the lake whereas juveniles are only found in the littoral zone, marginal macrophyte beds and river deltas. Piscivorous."

Human Uses

From Froese and Pauly (2019):

"Fisheries: commercial; gamefish: yes"

Diseases

No diseases were recorded for *Lates angustifrons*. **No OIE reportable diseases (OIE 2019) were recorded for *Lates angustifrons*.**

Threat to Humans

From Froese and Pauly (2019):

"Harmless"

3 Impacts of Introductions

No records of a nonnative population of *Lates angustifrons* were found; therefore, there is no information on impacts of introductions.

4 Global Distribution

Figure 1. Known global distribution of *Lates angustifrons*. Map from GBIF Secretariat (2019). The points located in the United States do not represent an established population and therefore were not used in the climate match.

5 Distribution Within the United States

Figure 2. Known distribution of *Lates angustifrons* in the United States. Map from Fuller (2019). The points located in Texas are not representative of an established population of *Lates angustifrons* and therefore were not used in the climate match.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Lates angustifrons* was low for the vast majority of the United States. The only areas of medium match were in southern Florida and the Gulf Coast of Texas. There were no areas that had a 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 had low individual Climate 6 scores.
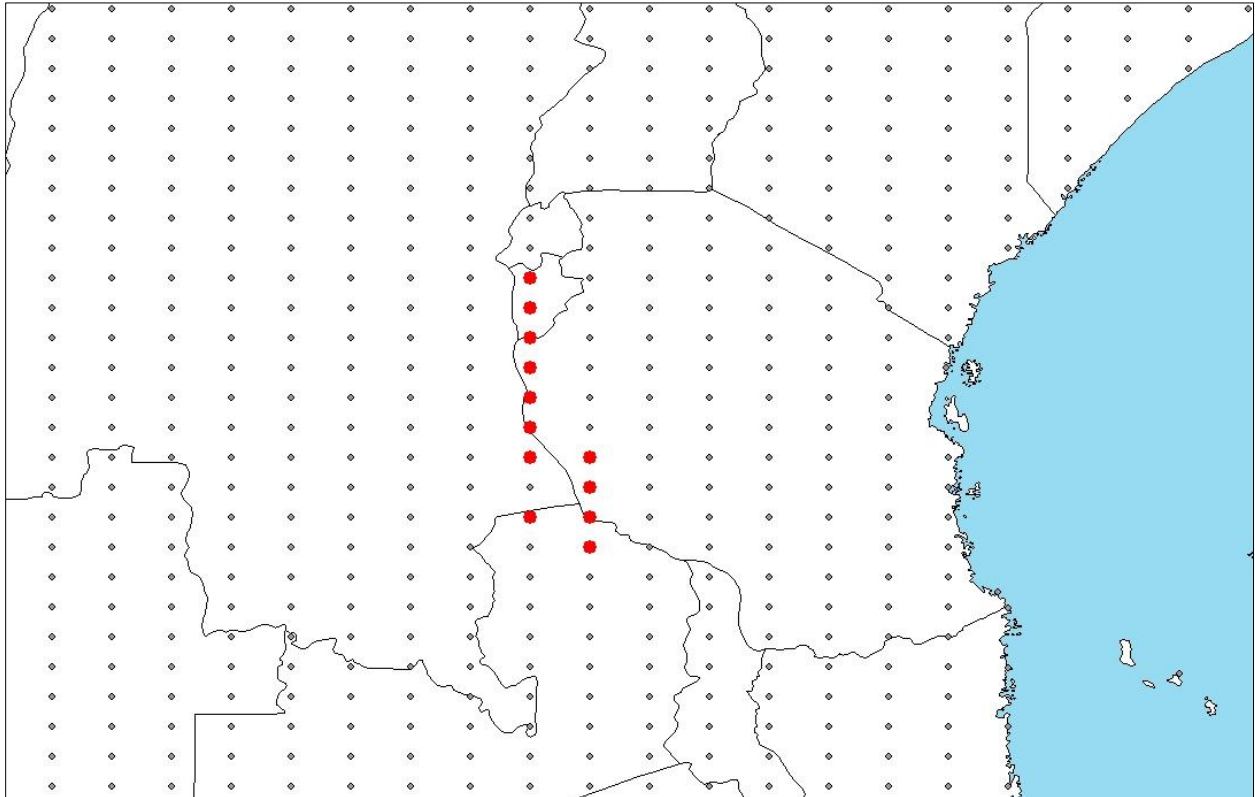

Figure 3. RAMP (Sanders et al. 2018) source map showing weather stations in Africa selected as source locations (red; Burundi, Tanzania, Democratic Republic of the Congo, Zambia) and non-source locations (gray) for *Lates angustifrons* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.
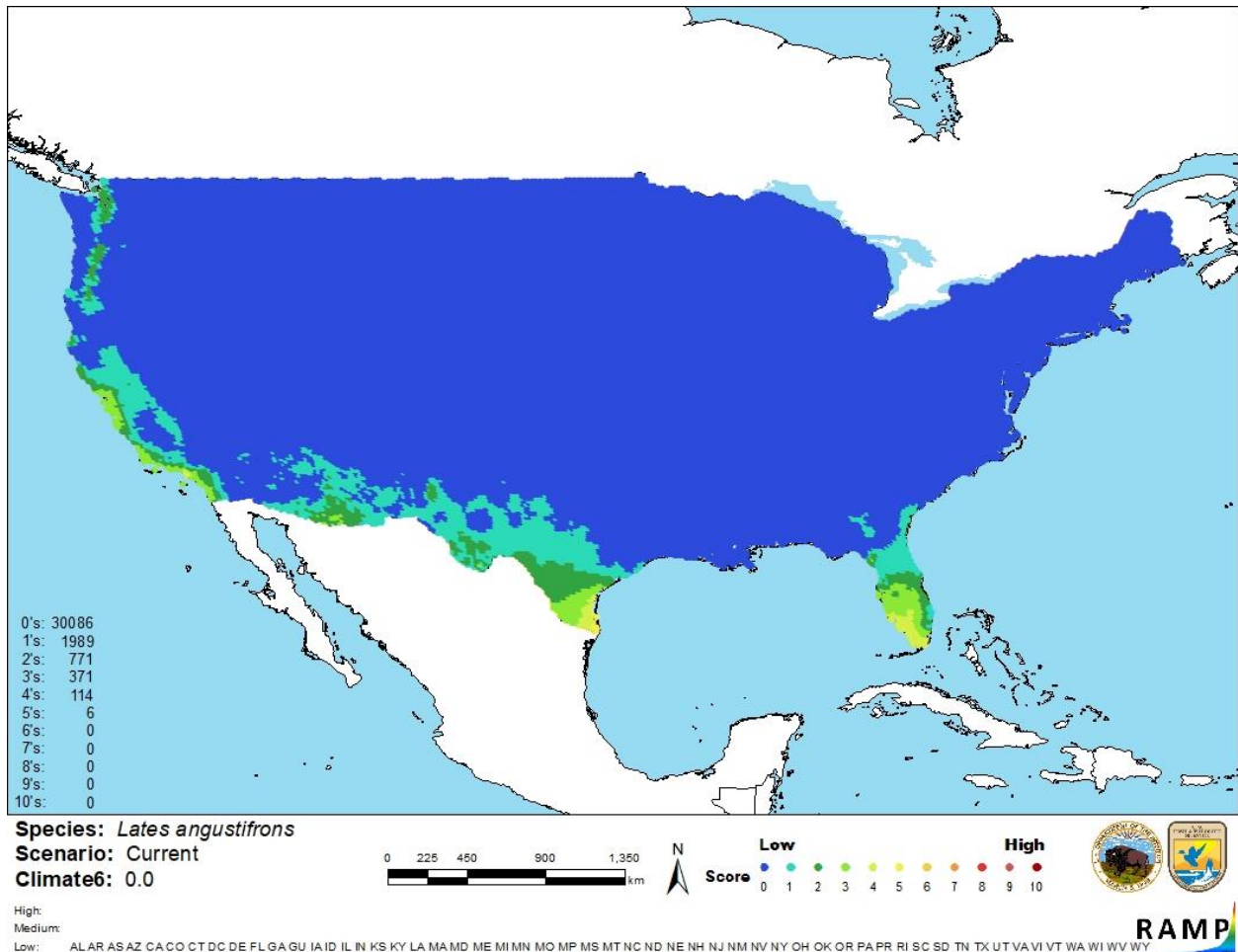
Figure 4. Map of RAMP (Sanders et al. 2018) climate matches for *Lates angustifrons* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0 = Lowest match, 10 = Highest match.

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

7 Certainty of Assessment

The certainty of assessment for *Lates angustifrons* is low. There is some information available for this species but more is needed for a thorough assessment. Introductions were reported in Texas in the latter 1900s but the impacts of those introductions were not assessed and those populations did not establish.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The Tanganyika Lates (*Lates angustifrons*) is a freshwater perch species endemic to Lake Tanganyika in Africa. The history of invasiveness for this fish is uncertain. It has been reported in Texas, but those populations are not considered established and have not been recorded since the 1990s. The climate match for the contiguous United States was low with all States having low individual climate scores. The certainty of assessment is low, the overall risk assessment category for *Lates angustifrons* 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.

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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.

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