

***Rubricatochromis lifalili* (a fish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, March 2022
Revised, March 2022, January 2023
Web Version, 4/10/2023

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



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https://commons.wikimedia.org/wiki/File:Cichlidae_-_Hemichromis_lifalili.JPG (March 2022).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2022):

“Africa: Congo River basin except in the Shaba (Katanga) region and the Kasai [Loiselle 1979], in Central African Republic, Republic of Congo and Democratic Republic of the Congo.”

Status in the United States

Rubricatochromis lifalili has not been reported as introduced or established in the United States.

This species is in the aquarium trade in the United States, for example:

From Arizona Aquatic Gardens (2022):

“JEWEL CICHLID - AFRICAN FIRE JEWEL CICHLID
[...] \$15.99”

From Trins Tropical Fish (2022):

“Red Jewel Cichlid
\$8.00”

Means of Introductions in the United States

No records of *Rubricatochromis lifalili* in the wild in the United States were found.

Remarks

This species has a wide variety of common names in the aquarium trade including Jewel Cichlid, African Fire Cichlid, and Blood-Red Cichlid. Information searches for this report used the species scientific name, *Rubricatochromis lifalili* and the synonym, *Hemichromis lifalili*. There is no common name recognized by the American Fisheries Society.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2023), the current valid name for this species is *Rubricatochromis lifalili* (Loiselle 1979).

From ITIS (2022):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Hemichromis*

Species *Hemichromis lifalili* Loisel, 1979

Size, Weight, and Age Range

From Froese and Pauly (2022):

“Max length : 8.2 cm SL male/unsexed; [Daget and Teugels 1991]”

Environment

From Froese and Pauly (2022):

“Freshwater; benthopelagic; pH range: 6.5 - 7.5; dH range: 2 – 12. [...] 22°C - 24°C [Riehl and Baensch 1991; assumed to be recommended aquarium temperature]”

“Absent from rapids and swampy habitats [Daget and Teugels 1991]. Primarily found in forested habitats, but also in more savannah-like areas with gallery forests; [...]”

Climate

From Froese and Pauly (2022):

“Tropical; [...]; 5°N – 4°S”

Distribution Outside the United States

Native

From Froese and Pauly (2022)

“Africa: Congo River basin except in the Shaba (Katanga) region and the Kasai [...], in Central African Republic, Republic of Congo and Democratic Republic of the Congo.”

Introduced

Rubricatichromis lifalili has not been reported as introduced or established outside of its native range.

Means of Introduction Outside the United States

Rubricatichromis lifalili has not been reported as introduced or established outside of its native range.

Short Description

From Tropical Fresh Water Fish (2022):

“An elongated cichlid whose body coloration is bright blood-red. The body is spotted with iridescent dots that range in color from yellow to turquoise. The eye has a stripe through it and there is a black spot on the gill cover. A dark spot also marks the mid-section of the fish. A [*sic*] fins are red and covered with many turquoise markings. The dorsal and caudal fins are marked

with a red and turquoise edge. These colors describe the coloration in spawning colors. At other times the fish is lighter in red and has an olive back.”

Biology

From Froese and Pauly (2022):

“[...] open substratum spawner with well-defined pair-bonding [Lamboj 2004].”

Human Uses

From Moelants (2010):

“This species is harvested for human consumption.”

Rubricatochromis lifalili is common in the aquarium trade and can be found for sale in a wide range of online shops, for example:

From Arizona Aquatic Gardens (2022):

“JEWEL CICHLID - AFRICAN FIRE JEWEL CICHLID
[...] \$15.99”

From Trins Tropical Fish (2022):

“Red Jewel Cichlid
\$8.00”

Diseases

No OIE-reportable diseases (OIE 2022) were found to be associated with *Rubricatochromis lifalili*.

No information on diseases was found.

Threat to Humans

From Froese and Pauly (2022):

“Harmless”

3 Impacts of Introductions

No records of introductions were found for *Rubricatochromis lifalili*; therefore, there is no information on impacts of introduction.

4 History of Invasiveness

The history of invasiveness is classified as No Known Nonnative Population. *Rubricatochromis lifalili* has not been reported as introduced in the wild outside of its native range. Therefore, no impacts of introduction are available. This species has been reported as being found in the aquarium trade in the United States and can be purchased from online vendors. No information regarding the volume or duration of trade was found.

5 Global Distribution



Figure 1: Known global distribution of *Rubricatochromis lifalili*. Observations are reported from the Congo River basin (Central African Republic, Republic of Congo, and the Democratic Republic of Congo). Map from GBIF Secretariat (2022; under the synonym *Hemichromis lifalili*). The observation in Togo (farthest west) does not represent an established population and was not used in the climate match analysis.

6 Distribution Within the United States

No records of *Rubricatochromis lifalili* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

Most of the contiguous United States had locally low climate match scores. The only areas of high match were found in patches along the Gulf Coast and Florida's Atlantic Coast. The rest of the Gulf Coast and the southern Atlantic Coast had medium matches. The overall Climate 6 score (Sanders et al. 2021; 16 climate variables; Euclidean distance) for the contiguous United States was 0.017, Medium (scores between 0.005 and 0.103, exclusive, are classified as medium). Florida and Louisiana had high individual Climate 6 scores. The following States had medium individual Climate 6 scores: Alabama, Mississippi, North Carolina, and Texas. The rest of the States had low individual Climate 6 scores.

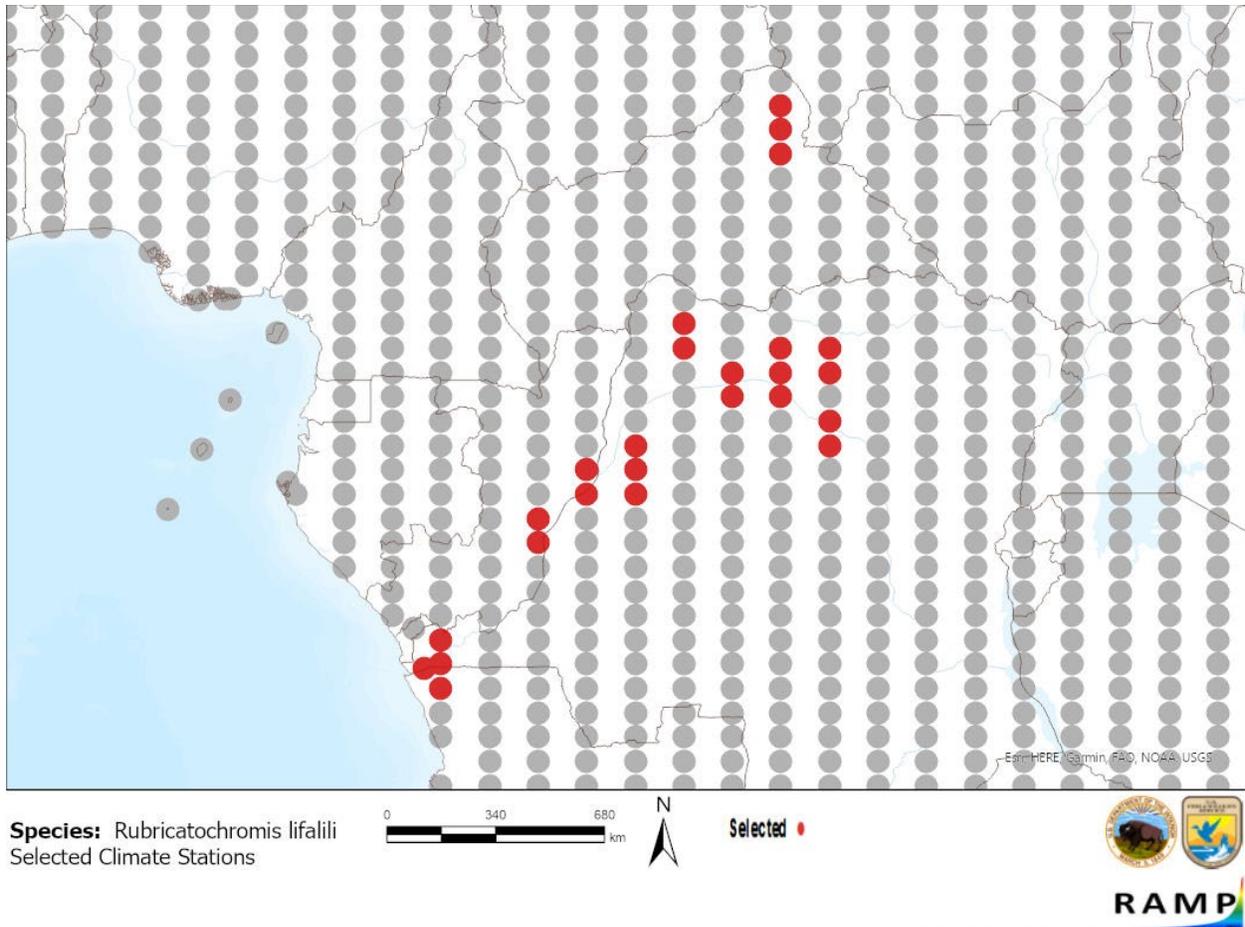


Figure 2. RAMP (Sanders et al. 2021) source map showing weather stations along the Congo River basin selected as source locations (red; Angola, Central African Republic, Republic of Congo, Democratic Republic of Congo) and non-source locations (gray) for *Rubricatochromis lifalili* climate matching. Source locations from GBIF Secretariat (2022). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

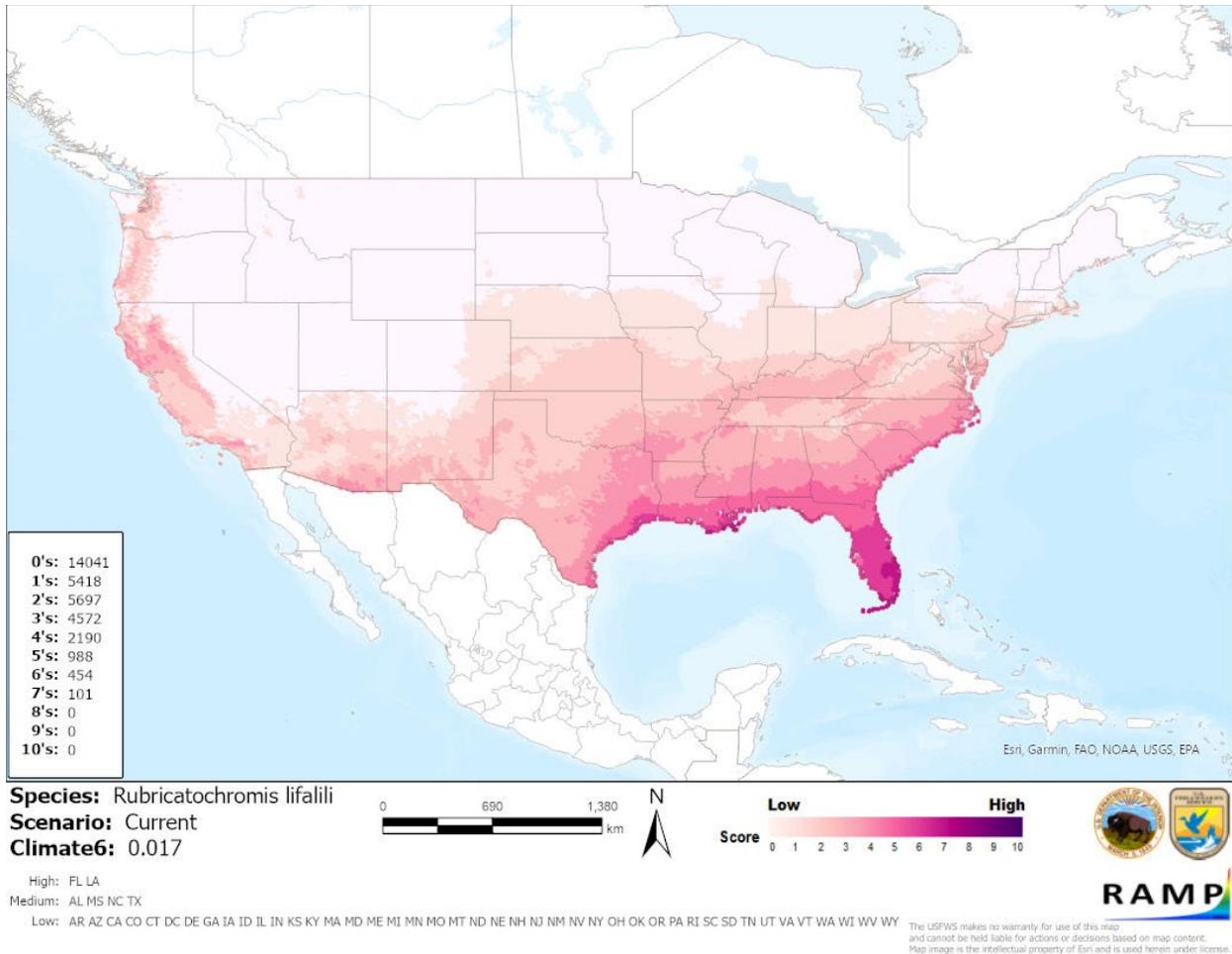


Figure 3. Map of RAMP (Sanders et al. 2021) climate matches for *Rubricatochromis lifalili* in the contiguous United States based on source locations reported by GBIF Secretariat (2022). Counts of climate match scores are tabulated on the left. 0/Pale Pink = Lowest match, 10/Dark Purple = Highest match.

The High, Medium, and Low Climate match Categories are based on the following table:

Climate 6: (Count of target points with climate scores 6-10)/ (Count of all target points)	Overall Climate Match Category
$0.000 \leq X \leq 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

8 Certainty of Assessment

There is limited information on the biology and life history of this species. *Rubricatochromis lifalili* has not been recorded as introduced outside of its native range and information regarding trade volume and duration was not found. Without information regarding history of invasiveness, the certainty of assessment is Low.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Rubricatochromis lifalili is a cichlid native to the Congo River basin in western Africa. This species can be found for sale throughout the aquarium trade in the United States and is readily available for sale online. *Rubricatochromis lifalili* has not been reported as introduced or established anywhere outside of its native distribution. Therefore, the history of invasiveness is classified as No Known Nonnative Population. The overall climate match for the contiguous United States is Medium. Most of the contiguous United States had a low match with areas of medium to high match found along the Gulf and southern Atlantic coasts. The certainty of assessment is Low due to a lack of information on the history of invasiveness. The overall risk assessment category for *Rubricatochromis lifalili* is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Medium**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional remarks**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Arizona Aquatic Gardens. 2022. Jewel cichlid – African fire jewel cichlid. Available: <https://azgardens.com/product/african-fire-jewel-cichlid/> (March 2022).

Fricke R, Eschmeyer WN, van der Laan R, editors. 2023. Catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (January 2023).

Froese R, Pauly D, editors. 2022. *Hemichromis lifalili* Loisel, 1979. FishBase. Available: <https://www.fishbase.de/summary/Hemichromis-lifalili> (March 2022).

GBIF Secretariat. 2022. GBIF backbone taxonomy: *Hemichromis lifalili* Loisel, 1979. Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2371376> (March 2022).

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Moelants T. 2010. *Hemichromis lifalili*. The IUCN Red List of Threatened Species. Available: <https://www.iucnredlist.org/species/182413/7880621#habitat-ecology> (March 2022).

[OIE] World Organisation for Animal Health. 2022. OIE-listed diseases, infections, and infestations in force in 2022. Available: <https://www.oie.int/en/what-we-do/animal-health-and-welfare/animal-diseases/> (March 2022).

Sanders S, Castiglione C, Hoff M. 2021. Risk Assessment Mapping Program: RAMP. Version 4.0. U.S. Fish and Wildlife Service.

Trins Tropical Fish. 2022. Red jewel cichlid. Available: <https://trinsfish.com/red-lifalili-jewel-cichlid/> (March 2022).

Tropical Freshwater Fish. 2022. Lifalili jewel cichlid | *Hemichromis lifalili*. Available: https://tropicalfreshwaterfish.com/species/Hemichromis_lifalili.html (March 2022).

11 Literature Cited in Quoted Material

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.

Daget J, Teugels GG. 1991. *Hemichromis*. Pages 187–194 in Daget J, Gosse J-P, Teugels GG, Thys van den Audenaerde DFE, editors. Check-list of the freshwater fishes of Africa. Brussels, Paris. [Source material did not give full citation for this reference.]

Lamboj A. 2004. The cichlid fishes of western Africa. Bornheim, Germany: Birgit Schmettkamp Verlag.

Loiselle PV. 1979. A revision of the genus *Hemichromis* Peters 1858 (Teleostei: Cichlidae). I. The *Hemichromis fasciatus* species group. II. The *Hemichromis letourneauxi* species group. Afrique Centrale Serie 8, Sciences Zoologiques 228:1–124.

Riehl R, Baensch HA. 1991. Aquarien atlas. Band. 1. Melle, Germany: Mergus, Verlag für Naturund Heimtierkunde.