

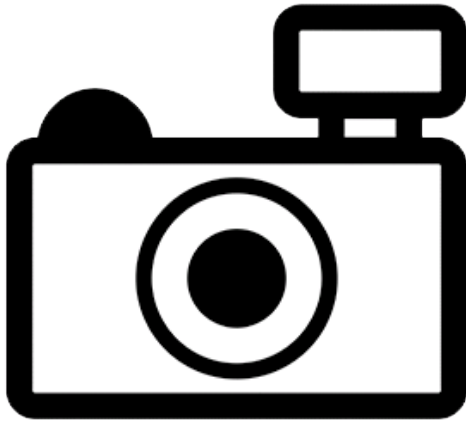
***Pygocentrus palometa* (a piranha, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, May 2014

Revised, December 2017

Web Version, 11/4/2019



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“South America: Orinoco River basin in Venezuela.”

From Jégu (2003):

“Type locality: Río Apuré, Río Guarico, Lower Río Orinoco, Venezuela. No types mentioned.”

Status in the United States

This species has not been reported as introduced in the United States. A search of the literature and online aquarium retailers suggested that this species is not in trade in the United States.

Possession or importation of fish of the family Characidae (synonym: Serrasalminidae), or fish known as “piranha” in general, is banned or regulated in many States. Every effort has been made to list all applicable State laws and regulations pertaining to this species, but this list may not be comprehensive.

From Alabama Department of Conservation and Natural Resources (2019):

“No person, firm, corporation, partnership, or association shall possess, sell, offer for sale, import, bring, release or cause to be brought or imported into the State of Alabama any of the following live fish or animals: [...] Any Piranha or any fish of the genera *Serrasalmus*, *Pristobrycon*, *Pygocentrus*, *Catorprion*, or *Pygopristus*; [...]”

From Arkansas Game and Fish Commission (2019):

“It is unlawful to import, transport, or possess any species commonly known as [...] piranha [...].”

“EXCEPTION: These species may be possessed for display and educational purposes by written permit approved by the Commission.”

From California Department of Fish and Wildlife (2019):

“All species of piranha are on California’s list of restricted animals and cannot be imported, transported, or possessed without a permit.”

From Colorado Parks and Wildlife (2019):

“**Scientific Name:** *Serrasalmus spp.*, *Pygocentrus spp.* [...]”

Status: [Family is] Present in Colorado, DOW [Division of Wildlife] Prohibited Aquatic Species”

From Connecticut Secretary of State (2019):

“The importation or possession of piranha of the subfamily: Serrasalminae, genera *Serrasalmus*, *Serrasalmo*, *Pygocentrus*, *Teddyella*, *Rooseveltiella* and *Pygopristus* [...] is prohibited except that the Commissioner may at his discretion issue permits for the importation and possession, when it is in the public interest, for public display purposes, of specimens of piranha and walking catfish.”

From Georgia Department of Natural Resources (2019):

“The animals listed below are examples of the exotic species regulated under Georgia Law. [...] The exotic species listed below, except where otherwise noted, may not be held as pets in Georgia. [...] Piranha; all species”

From Hawaii Department of Agriculture (2019):

“For example, the following are prohibited from entry or possession by private individuals in the State. [...] *Piranhas*”

From Illinois Department of Natural Resources (2015):

“For the purposes of Section 20-90 of the Fish and Aquatic Life Code [515 ILCS 5/20-90], the Aquatic Life Approved Species List is established. The following aquatic life categories will be considered approved for aquaculture, transportation, stocking, importation and/or possession in the State of Illinois.”

Pygocentrus palometa does not appear on the Aquatic Life Approved Species List for Illinois.

From Kentucky General Assembly (2019):

“The live aquatic organisms established in subsections (1) through (7) of this section shall not be imported, bought, sold, or possessed in aquaria:

(1) Subfamily Serrasalminae - piranha, piraya, pirae, or tiger characins; [...]

From Louisiana State Legislature (2019):

“No person shall have in possession or sell in this state [Louisiana] a piranha or Rio Grande Cichlid; except that, piranha may be possessed and displayed at the Aquarium of the Americas, Audubon Institute, New Orleans, as authorized by a special permit issued by the department, under conditions the department deems necessary to prevent their introduction into waters of the state.”

From Maine Department of Inland Fisheries and Wildlife (2019):

“Unrestricted List [...] (no permit needed): Maine law allows the Department to maintain a list of species of fish and wildlife, including tropical fish and invertebrates, which do not require an importation, exhibition, or possession permit, and may be traded by commercial pet shops.”

Pygocentrus palometa does not appear on the Maine Department of Inland Fisheries and Wildlife’s Unrestricted List.

From Commonwealth of Massachusetts (2019):

“All aquarium trade fish may be kept without a permit except species categorically non-exempt pursuant to 321 CMR 9.01(3), and except that the following species are prohibited without a permit:[...]

(b) Piranha (*Pygocentrus* spp. and *Serrasalmus* spp.)”

From Mississippi Secretary of State (2019):

“All species of the following animals and plants have been determined to be detrimental to the State’s native resources and further sales or distribution are prohibited in Mississippi. No person shall import, sell, possess, transport, release or cause to be released into the waters of the state any of the following aquatic species or hybrids thereof. However, species listed as prohibited may be allowed under a permitting process where environmental impact has been assessed.”

“[The list includes all piranhas and all species of] Subfamily Serrasalminae”

From Nevada Administrative Code (2019):

“Except as otherwise provided in this section and NAC [Nevada Administrative Code] 504.486, the importation, transportation or possession of the following species of live wildlife or hybrids thereof, including viable embryos or gametes, is prohibited: [...]

All species in the genera *Serrasalmus*, *Serrasalmo*, *Pygocentrus*, *Teddyella*, *Rooseveltiella* and *Pygopristis*”

From New Mexico Department of Game and Fish (2010):

“Species importation list group IV may be for live non-domesticated animals that are considered dangerous, invasive, undesirable, state or federal listed threatened, endangered, a furbearer or any other species of concern as identified by the director. The importation of these species are prohibited for the general public but may be allowed for, scientific study, department approved restoration and recovery plans, zoological display, temporary events/entertainment, use as service animal or by a qualified expert.”

All piranha and pacu (Family Characidae) are listed in Group IV of the Director’s Species Importation List for New Mexico.

From Consolidated Laws of New York (2019):

“No person shall import, export, own, possess, acquire or dispose of live piranha fish (*Serrasalmus*, *Rooseveltiella* or *Pyrocentrus* [*sic*]) [...] within the state without a license or permit issued at the discretion of the department for scientific, biological or exhibition purposes.”

From North Carolina Office of Administrative Hearings (2019):

“It shall be unlawful to transport, purchase, possess, sell, or stock in the public or private waters of North Carolina any live individuals of [...] piranha; [...]”

From South Carolina Code of Laws (2019):

“A person may not possess, sell, offer for sale, import, bring, cause to be brought or imported into this State, or release in this State the following species at any stage of its life cycle: [...] piranha (all members of *Serrasalmus*, *Rooseveltiella*, and *Pygocentrus* genera); [...]”

From Texas Parks and Wildlife (2019):

“The organisms listed here are legally classified as exotic, harmful, or potentially harmful. No person may possess or place them into water of this state except as authorized by the department.”

“Piranhas, Family Characidae

All species of genera *Catoprion*, *Pristobrycon*, *Pygocentrus*, *Pygopristis*, and *Serrasalmus*”

From Virginia Department of Game and Inland Fisheries (2019):

“A special permit is required, and may be is- sued [sic] by the Department, if consistent with the Department’s fish and wildlife management program, to import, possess, or sell the following non-native (exotic) amphibians, fish, mollusks, aquatic invertebrates, and reptiles: [...] piranhas [...]”

Means of Introduction into the United States

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

Remarks

The Catalog of Fishes (Eschmeyer et al. 2017) and ITIS (2017) recognize *Pygocentrus palometa* as a valid species, but taxonomic uncertainty exists.

From Jégu (2003):

“Doubtful species because too brief description, no specimen mentioned and no drawn representation.”

From Fink (1993):

“*Pygocentrus palometa*, from the Rio Orinoco drainage, described by Valenciennes in Cuvier and Valenciennes (1850) as a *Pygocentrus*. Determined by Gery (1976) to be in the genus *Myletes*.”

No further information was found regarding a reclassification to the genus *Myletes*.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Osteichthyes
Class Actinopterygii
Subclass Neopterygii

Infraclass Teleostei
Superorder Ostariophysi
Order Characiformes
Family Characidae
Genus *Pygocentrus*
Species *Pygocentrus palometa* Valenciennes in Cuvier and
Valenciennes, 1850”

“Taxonomic Status: valid”

Size, Weight, and Age Range

No information available.

Environment

From Froese and Pauly (2017):

“Freshwater; pelagic.”

Climate/Range

From Froese and Pauly (2017):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“South America: Orinoco River basin in Venezuela.”

Introduced

This species has not been reported as introduced.

Means of Introduction Outside the United States

This species has not been reported as introduced.

Short Description

From Günther (1864):

“Mouth extremely small; eyes very large; dorsal fin falciform, opposed to the ventrals; pectorals and ventrals very small.”

Biology

No information available.

Human Uses

No information available.

Diseases

No information available. No OIE reportable diseases (OIE 2019) have been documented in this species.

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

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

The importation, possession, or trade of the piranha *Pristobrycon palometa* is prohibited or restricted in the following states: Alabama (Alabama Department of Conservation and Natural Resources 2019), Arkansas (Arkansas Game and Fish Commission 2019), California (California Department of Fish and Wildlife 2019), Colorado (Colorado Parks and Wildlife 2019), Connecticut (Connecticut Secretary of State 2019), Georgia (Georgia Department of Natural Resources 2019), Hawaii (Hawaii Department of Agriculture 2019), Illinois (Illinois Department of Natural Resources 2015), Kentucky (Kentucky General Assembly 2019), Louisiana (Louisiana State Legislature 2019), Maine (Maine Department of Inland Fisheries and Wildlife 2019), Massachusetts (Commonwealth of Massachusetts 2019), Mississippi (Mississippi Secretary of State 2019), Nevada (Nevada Administrative Code 2019), New Mexico (New Mexico Department of Game and Fish 2010), New York (Consolidated Laws of New York 2019), North Carolina (North Carolina Office of Administrative Hearings 2019), South Carolina (South Carolina Code of Laws 2019), Texas (Texas Parks and Wildlife 2019), and Virginia (Virginia Department of Game and Inland Fisheries 2019).

4 Global Distribution

No georeferenced occurrences were found (GBIF Secretariat 2019).



Figure 1. Map of Venezuela showing the Apuré, Guárico, and lower Orinoco rivers (circled in yellow, from left to right), reported as the type locality for *Pygocentrus palometa* (Jégu 2003). Map by Sémhur, NordNordWest, and Shadowxfox. Licensed under CC BY-SA 3.0. Available: <https://commons.wikimedia.org/w/index.php?curid=27451838>. (December 2017).

5 Distribution Within the United States

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

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean distance) was low for the contiguous United States overall, with a Climate 6 score of 0.000. (Scores between 0.000 and 0.005, inclusive, are classified as low.) The climate match was medium in southern Florida, far southeastern Louisiana, and in southern coastal Texas, but low at all other locations within the contiguous United States. No georeferenced occurrences of *P. palometa* were available to use as source points for the climate match. A description of the type location was used to select source points.

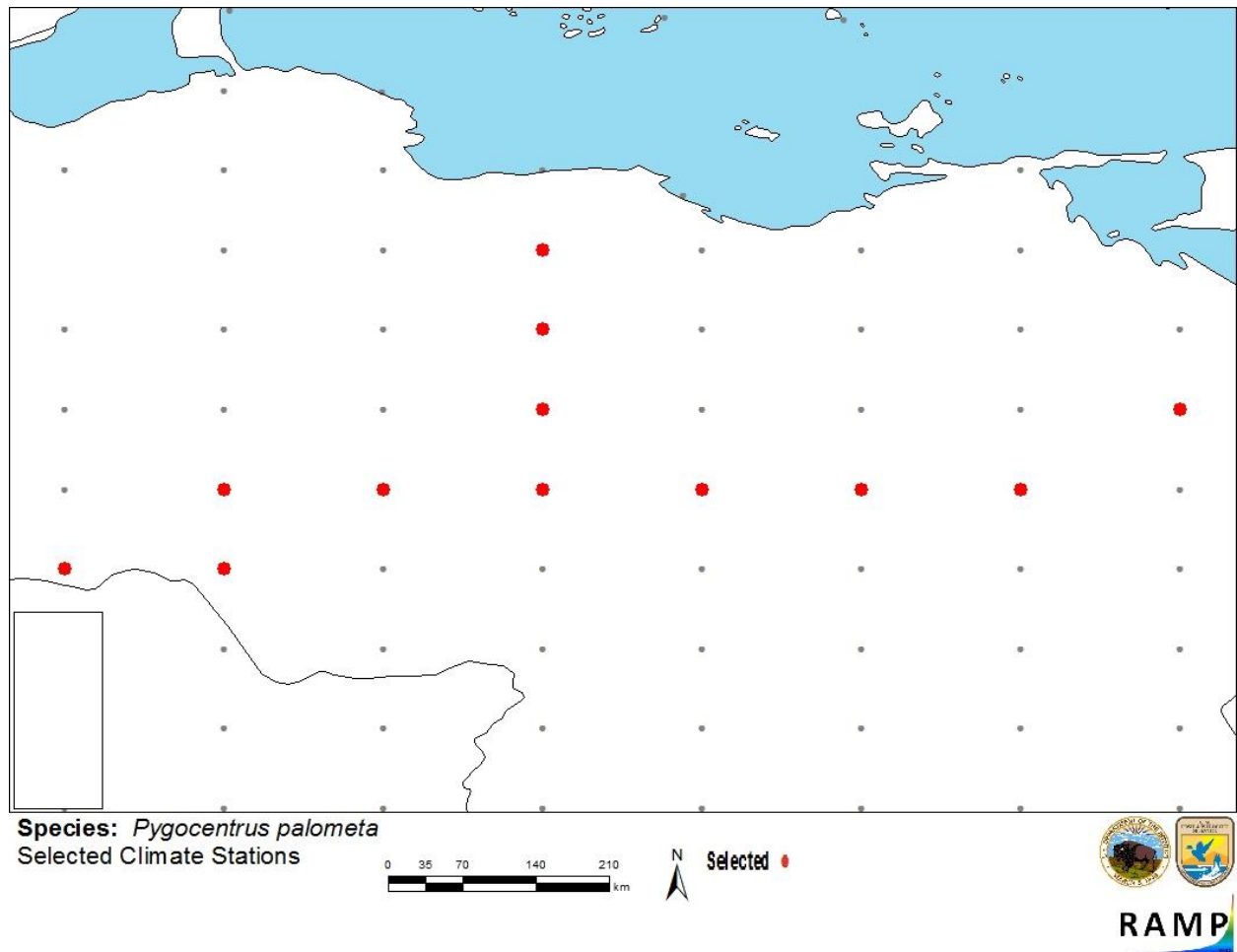


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in Venezuela selected as source locations (red) and non-source locations (gray) for *P. palometa* climate matching. Source locations are approximations of the type locality of *P. palometa* as described by Jégu (2003).

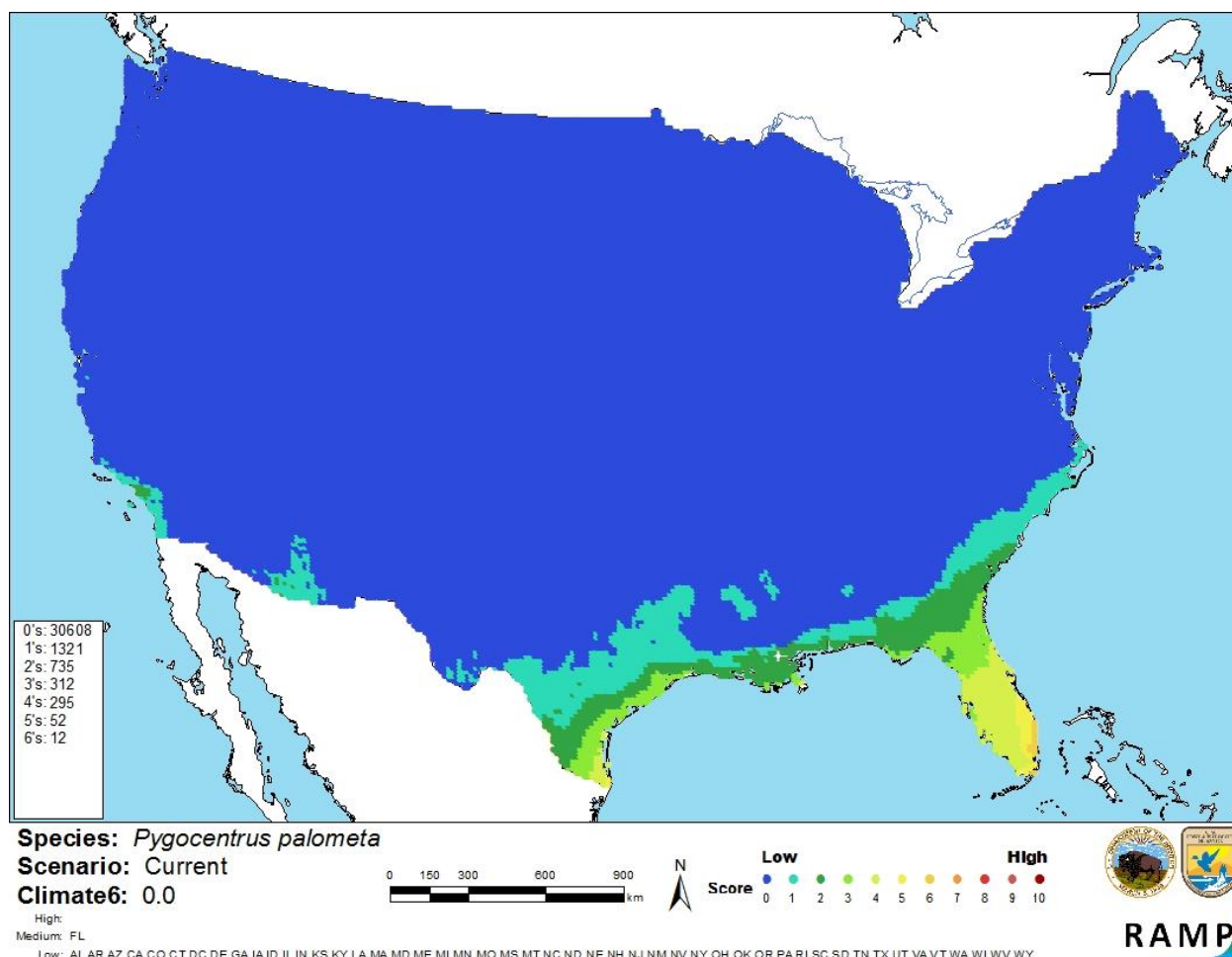


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *P. palometa* in the contiguous United States based on approximations of the type locality of *P. palometa* as described by Jégu (2003). 0=Lowest match, 10=Highest match.

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

Information on the biology and distribution of this species is not readily available. No collection sites were available. Source locations for the climate match were estimated based on the verbal description of the range. There is disagreement in the literature whether this species is a valid species and whether it should be in the genus *Pygocentrus* or *Myletes*. Given the very limited amount of existing information on *P. palometa* and existing taxonomic uncertainty, the certainty of assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Pygocentrus palometa is a species of piranha native to the Orinoco River basin in Venezuela. Little information is available about this species. It has not been introduced outside its native range, so the history of invasiveness is uncertain. *P. palometa* has a low climate match to the contiguous United States. However, the climate match is based on a description of the type locality, rather than reported occurrences, which were not available. Certainty of assessment is low due to a lack of information and taxonomic uncertainty. Given all factors, the overall risk assessment for *P. palometa* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 3): Uncertain**
- **Climate Match (Sec. 6): Low**
- **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.

Alabama Department of Conservation and Natural Resources. 2019. Restrictions on possession, sale, importation and/or release of certain animals and fish. Alabama Department of Conservation and Natural Resources Administrative Code, Chapter 220-2-.26.

Arkansas Game and Fish Commission. 2019. Certain exotic species prohibited. Arkansas Game and Fish Commission Code of Regulations 26.13.

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- Jégu, M. 2003. Serrasalminae (pacus and piranhas). Pages 182-196 in R. E. Reis, S. O. Kullander, and C. J. Ferraris, Jr., editors. Checklist of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.
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- Maine Department of Inland Fisheries and Wildlife. 2019. Fish and wildlife in captivity. Maine Department of Inland Fisheries and Wildlife, Augusta, Maine. Available: <https://www.maine.gov/ifw/fish-wildlife/captivity.html>. (August 2019).
- Mississippi Secretary of State. 2019. Guidelines for aquaculture activities. Mississippi Administrative Code, Title 2, Part 1, Subpart 4, Chapter 11. Regulatory and Enforcement Division, Office of the Mississippi Secretary of State, Jackson, Mississippi.
- Nevada Administrative Code. 2019. Restrictions on importation, transportation and possession of certain species. Title 53, Section 110.
- New Mexico Department of Game and Fish. 2010. Director's species importation list. New Mexico Department of Game and Fish, Santa Fe, New Mexico. Available: http://www.wildlife.state.nm.us/download/enforcement/importation/information/Directors-Species-Importation-List-08_03_2010.pdf. (August 2019).
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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.

Cuvier, G., and A. Valenciennes. 1850. Histoire naturelle des poissons. Tome vingt-deuxième. Suite du livre vingt-deuxième. Suite de la famille des Salmonoïdes. Table générale de l'Histoire Naturelle des Poissons. P. Bertrand and V.^e Levrault, Paris and Strasbourg, France.