

Tridentopsis pearsoni (a catfish, no common name) Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016

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1 Native Range and Status in the United States

Native Range

From Eschmeyer et al. (2018):

“Upper Amazon River basin: Ecuador?, Bolivia and Colombia.”

LaMonte (1939) also reports *T. pearsoni* from Brazil.

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.

From Arizona Secretary of State (2006):

“Fish listed below are restricted live wildlife [in Arizona] as defined in R12-4-401. [...] South American parasitic catfish, all species of the family Trichomycteridae and Cetopsidae [...]”

From Dill and Cordone (1997):

“[...] At the present time, 22 families of bony and cartilaginous fishes are listed [as prohibited in California], e.g. all parasitic catfishes (family Trichomycteridae) [...]”

From FFWCC (2019):

“Nonnative Conditional species (formerly referred to as restricted species) and Prohibited species are considered to be dangerous to Florida’s native species and habitats or could pose threats to the health and welfare of the people of Florida. These species are not allowed to be personally possessed, but can be imported and possessed by permit for research or public exhibition; Conditional species may also be possessed by permit for commercial sales. Facilities where Conditional or Prohibited species are held must meet certain biosecurity criteria to prevent escape.”

Tridentopsis pearsoni is listed as a Prohibited species in Florida.

From Louisiana House of Representatives Database (2010):

“No person, firm, or corporation shall at any time possess, sell, or cause to be transported into this state [Louisiana] by any other person, firm, or corporation, without first obtaining the written permission of the secretary of the Department of Wildlife and Fisheries, any of the following species of fish: [...] all members of the families [...] *Trichomycteridae* (pencil catfishes) [...]”

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.
[The list includes all species of] Family Trichomycteridae”

From Legislative Council Bureau (2018):

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

From Utah DNR (2012):

“All species of fish listed in Subsections (2) through (30) are classified [in Utah] as prohibited for collection, importation and possession [...] Parasitic catfish (candiru, carnero) family Trichomycteridae (All species)”

Means of Introductions in the United States

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

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 Ostariophysi
Order Siluriformes
Family Trichomycteridae
Subfamily Tridentinae
Genus *Tridentopsis*
Species *Tridentopsis pearsoni* Myers, 1925”

From Eschmeyer et al. (2018):

“Current status: Valid as *Tridentopsis pearsoni* Myers 1925. Trichomycteridae: Tridentinae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 2.3 cm SL male/unsexed; [de Pinna and Wosiacki 2003]”

From Myers (1925):

“The holotype (Indiana University Cat. Fish. No. 17664), measures 23 mm. to caudal base, 28 mm. total length. It is the largest specimen. The 19 paratypes (I. U. C. F. No. 17277), range down to 22 mm. total length. All are adults, [...]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2016):

“Tropical, preferred?”

Distribution Outside the United States

Native

From Eschmeyer et al. (2018):

“Upper Amazon River basin: Ecuador?, Bolivia and Colombia.”

LaMonte (1939) also reports *T. pearsoni* from Brazil.

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 Myers (1925):

“Dorsal $7\frac{1}{2}$. Anal $17\frac{1}{2}$ to $19\frac{1}{2}$. Depth 4.5 to 5.1 (6 in a nearly dry specimen) in length to caudal base. Head 5.8 to 6.5. Eye 2.8 to 3.2 in head. Anal inserted just before vertical of dorsal origin, or, in gravid females, directly below the dorsal origin. Dorsal inserted twice as far from snout tip as from caudal base. Pelvic fins well developed, composed of five soft rays, inserted midway between snout tip and caudal base. Longest pectoral rays reaching a little more than half way from their base to the pelvics; the two first rays attenuated, twice (not "half again", as stated by Pearson), as long as the last ray. Caudal rather deeply emarginate, lobed, the upper lobe slightly longer.”

“Head depressed, flat, as broad as long; eye 2.2 in interorbital. Fontanel large, kite-shaped, apex forward, width more than .33 width of head, length less than twice width. Nares widely

separated, both longitudinally and across, a half orbit diameter between anterior and posterior. The anterior small, the flap produced into a nasal barbel nearly the length of the eye, the posterior larger with no barbel. Two maxillary barbels, the exterior one longer, reaching the edge of the opercular flap or the pectoral base.”

“From above, the head, with the bony framework of the pectoral system, which protrudes though covered with skin, is much wider than the rest of the body, which grows progressively more compressed posteriorly. The dorsum is practically straight to the dorsal fin, whence it slopes down to the caudal. The venter is rather deep, deepening to about the pelvic insertion, rounding toward the anus, and abruptly extending up at the anal base in a curve to the peduncle, which is not wide.”

“Branchiostegals 6. Gillrakers none. Opercle with a bunch of 10 strong, recurved spines. Preopercle with a bunch of 8 slightly weaker, recurved spines. Maxillary teeth in 3 slightly irregular, posteriorly directed rows, rather long and recurved-conical in shape.”

“Top of head and dorsum heavily dotted with dark brown chromatophores, especially before dorsal. A dark lateral streak of chromatophores from head to middle of caudal base. A heavy, wide band of dark chromatophores from pectoral to anus. This coloration is considerably faded in most of the specimens, but is evident to some extent in all.”

Biology

From Datovo and Bockmann (2010):

“The stegophilines *Pareiodon* and *Pseudostegophilus* and the Tridentinae are presumably nektonic (FAB, pers. obs.; cf. Roberts, 1972; Ferraris, 1991), although members of the latter subfamily are also said to hide in sand bottoms (Burgess, 1989).”

“The feeding habits of the Tridentinae in nature are as yet unknown. However, the teeth of the Tridentinae and Stegophilinae have a very peculiar morphology and arrangement on the jaws which suggests that these subfamilies share a similar mode of feeding. Furthermore, as noticed by Weitzman (*apud* Baskin, 1973: 146), specimens of tridentine appear to chase characids in aquarium settings. A similar behavior also was recently registered for *Tridentopsis* in both aquarium (FAB, pers. obs.) and field observations (Stewart *apud* Adriaens et al., 2010: 352). This behavior may be indicative of lepidophagy and/or mucophagy, suggesting that the semi-parasitic feeding habits may be a synapomorphy for the whole Vandelliinae group (Clade K).”

Human Uses

No information available.

Diseases

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

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

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

The importation, possession, or trade of the parasitic catfish *T. pearsoni* is prohibited or restricted in the following states: Arizona (Arizona Secretary of State 2006), California (Dill and Cordone 1997), Florida (FFWCC 2019), Louisiana (Louisiana House of Representatives Database 2010), Mississippi (Mississippi Secretary of State 2019), Nevada (Legislative Council Bureau 2018), and Utah (Utah DNR 2012).

4 Global Distribution



Figure 1. Known global distribution of *Tridentopsis pearsoni*. Map from GBIF Secretariat (2018). Two points in Paraguay and Argentina were excluded from the extent of this map and from climate match analysis because they are inconsistent with the documented range of this species. A point in Brazil near the Amazon River mouth was also excluded from climate match analysis because it is outside the documented range of *T. pearsoni*. No georeferenced locations were available for the portion of the range in Colombia.

5 Distribution Within the United States

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

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 0.004, which is a low climate match. (Scores between 0.000 and 0.005, inclusive, are classified as low.) The only state with a high climate score was Florida; all other states had a low score. Southern peninsular Florida had a high climate match, the rest of peninsular Florida, the southwestern tip of the Florida panhandle, and the southern tip of Louisiana had a medium climate match. There was an area of slightly higher, but still low, climate match along the Gulf Coast and the Southern Atlantic Coast. The rest of the contiguous United States had a very low climate match.

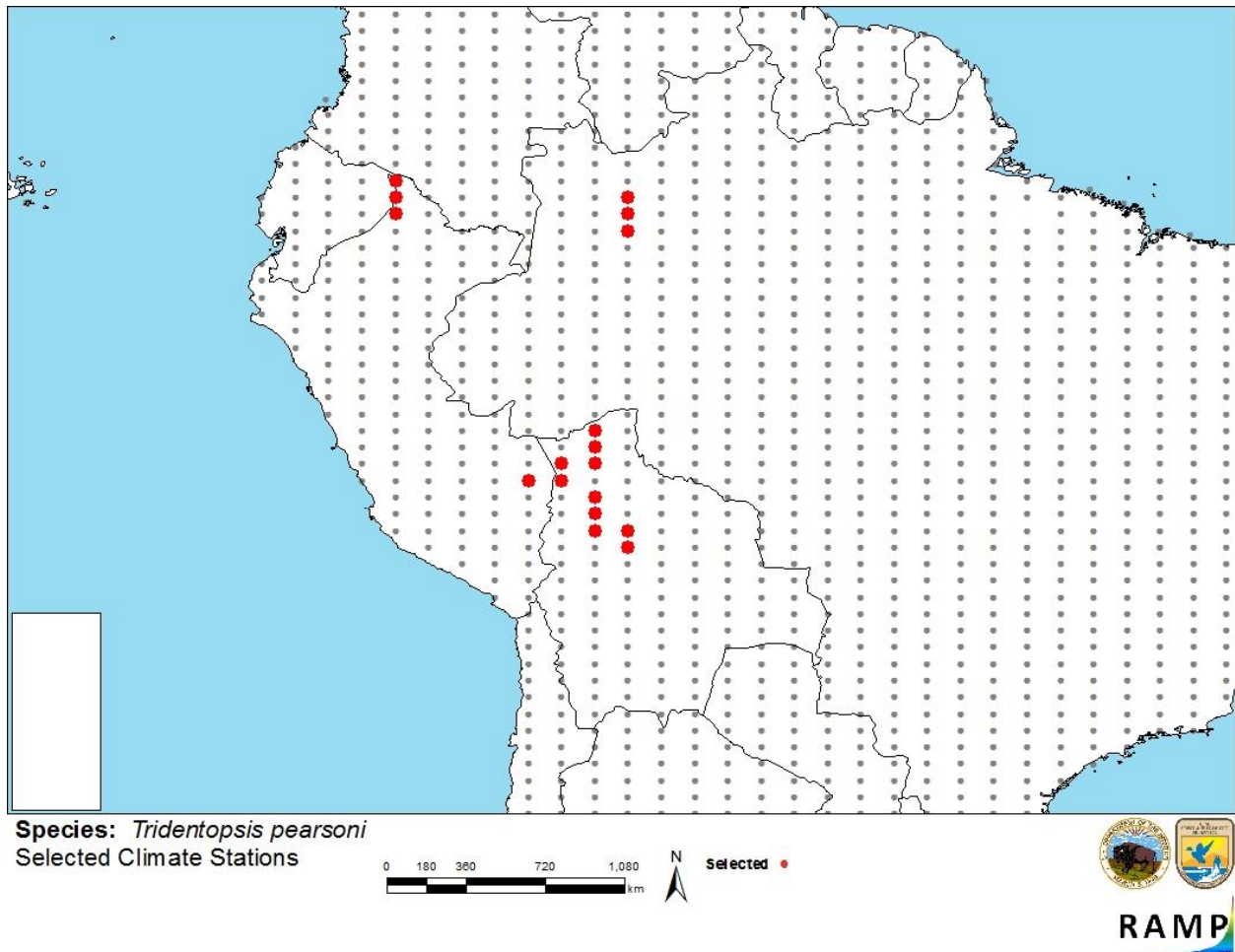


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Brazil, Ecuador, Peru, Bolivia) and non-source locations (gray) for *Tridentopsis pearsoni* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

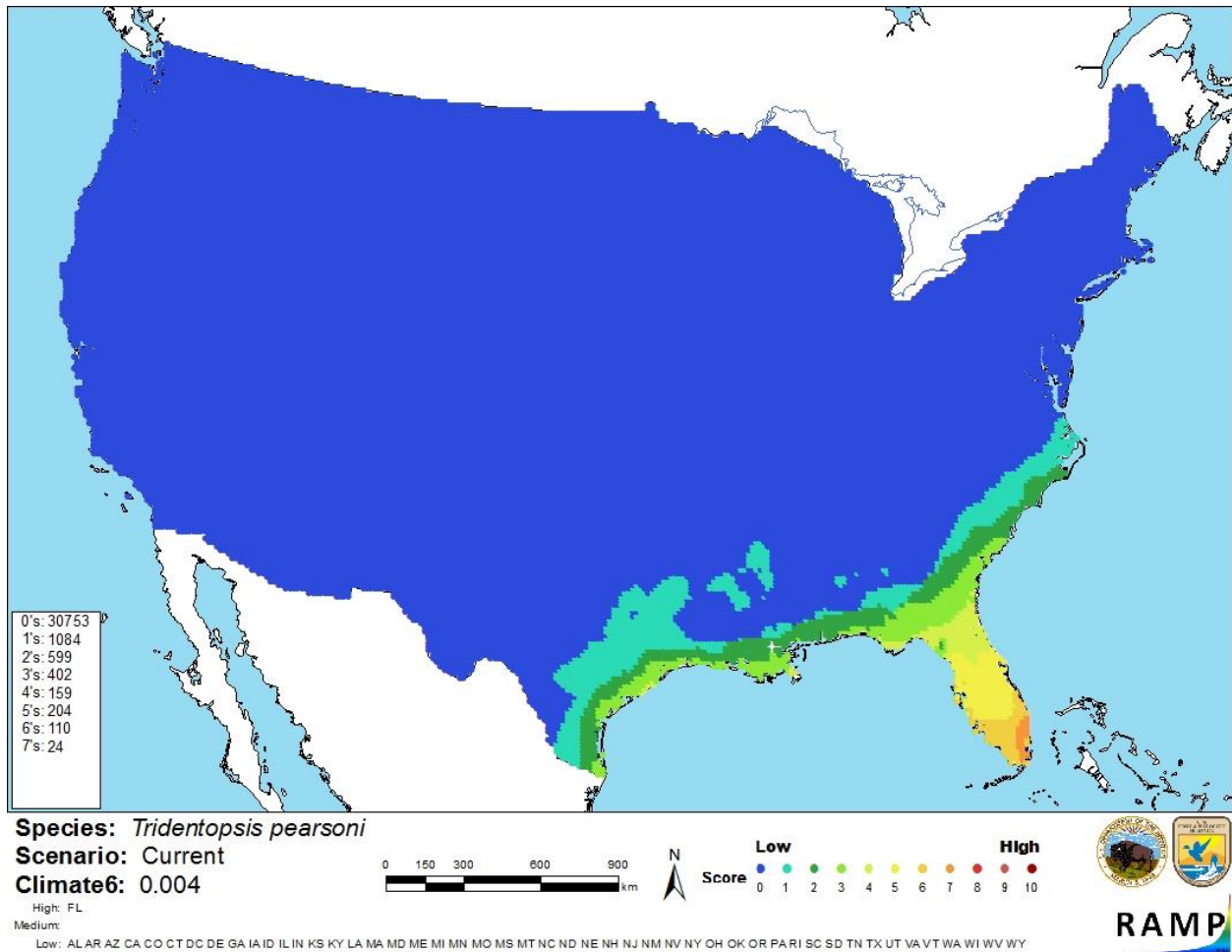


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Tridentopsis pearsoni* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0=Lowest match, 10=Highest match.

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

7 Certainty of Assessment

There is very little information available about the species *Tridentopsis pearsoni*. *T. pearsoni* is not known to have been introduced outside of its native range, so no history of invasiveness exists from which to adequately assess the risk this species poses. With such little information available, the certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Tridentopsis pearsoni is a species of parasitic catfish native to the Upper Amazon River basin (Bolivia, Brazil, Colombia, and Ecuador). There is little information on the biology of the fish. There have been no reports of the species outside of its native range. Several U.S. States prohibit or restrict the possession, transport, or trade of this species along with other members of the family Trichomycteridae. History of invasiveness is uncertain. Climate match to the contiguous United States is low. However, Florida has a medium to high climate match moving from north to south and the southernmost tip of Louisiana has a medium match. Certainty of assessment is low due to lack of information. The overall risk assessment category for this species 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.

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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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