

# Long-finned Cambeva (*Trichogenes longipinnis*)

## Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2016

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Photo: De Pinna et al. (2010). Used under CC BY 4.0 from Neotropical Ichthyology.

## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2016):

“South America: coastal streams between Rio de Janeiro and São Paulo States, Southeastern Brazil.”

### Status in the United States

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

The parasitic catfish, *Trichogenes longipinnis*, is a prohibited nonnative species in Florida. According to the FFWCC (2017), “prohibited nonnative species are considered to be dangerous to the ecology and/or the health and welfare of the people of Florida. These species are not allowed to be personally possessed or used for commercial activities.”

### Means of Introduction into the United States

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

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2016):

“Kingdom Animalia  
Subkingdom Bilateria  
Infrakingdom Deuterostomia  
Phylum Chordata  
Subphylum Vertebrata  
Infraphylum Gnathostomata  
Superclass Osteichthyes  
Class Actinopterygii  
Subclass Neopterygii  
Infraclass Teleostei  
Superorder Ostariophysi  
Order Siluriformes  
Family Trichomycteridae  
Subfamily Trichogeninae  
Genus *Trichogenes*  
Species *Trichogenes longipinnis* Britski and Ortega, 1983”

“Current Standing: valid”

### Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 14.0 cm SL male/unsexed; [Sazima 2004]; 10.6 cm SL (female)”

### Environment

From Froese and Pauly (2016):

“Freshwater; demersal.”

“[...] 20°C - 24°C [Baensch and Riehl 1997; assumed to be recommended aquarium water temperature range]”

“Found in streams in the Atlantic forest; backwaters with no flow to 0.44 meter per second water flow. Dwells mostly in pools beneath small waterfalls in steep hill streams flowing over rocky and sandy substrates. [Sazima 2004]”

From Zamudio et al. (2009):

“It [...] is not found in more gently sloping terrain or lowland reaches of the streams it inhabits [...]”

## **Climate/Range**

From Froese and Pauly (2016):

“Tropical; [...]”

From Zamudio et al. (2009):

“It occurs from 149–656 m a.s.l. [above sea level] [...]”

## **Distribution Outside the United States**

### **Native**

From Froese and Pauly (2016):

“South America: coastal streams between Rio de Janeiro and São Paulo States, Southeastern 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 de Pinna et al. (2010):

“[...] the eye is comparatively small, the head is depressed, the snout is relatively long and the mouth is subterminal, with the lower jaw horizontal and included in the upper one, and the profile of the head is gently sloped [...]”

From Sazima (2004):

“The spotted colour pattern differs consistently between stream populations, an indication of genetic differentiation.”

## **Biology**

From Froese and Pauly (2016):

“Density varies from 3 to 25 individuals per square meter. At densities of 18 to 25 individuals per square meter, fish aggregates in loose groups of up to 30 individuals; largest ones tend to be solitary and territorial. Nektonic, active both during daytime and at night; juveniles and small adults of up to 9 cm TL are more active at daytime, whereas larger ones are active mostly at night. Uses visual, tactile, and chemo-sensory orientation to feed on bottom-dwelling aquatic and terrestrial arthropods in the water column or on the surface. Diet includes immature aquatic

insects, crustaceans, adult terrestrial winged insects whole or fragmented, as well as carrion. Forages mostly by scanning the bottom, the barbels touching the substrate, but visual oriented drift feeding is also employed by individuals up to 5 cm TL. While foraging may bury into sand or plant debris and sifts through opercular openings and mouth. Reproduces at the onset of rainy season (austral summer). Mature oocytes about 0.2 cm diameter; pterigyolarvae range 1-1.5 cm TL. Spotted color pattern differs consistently between stream populations, an indication of genetic differentiation [Sazima 2004].”

## **Human Uses**

From Froese and Pauly (2016):

“Fisheries: subsistence fisheries”

## **Diseases**

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

## **Threat to Humans**

From Froese and Pauly (2016):

“Harmless”

## **3 Impacts of Introductions**

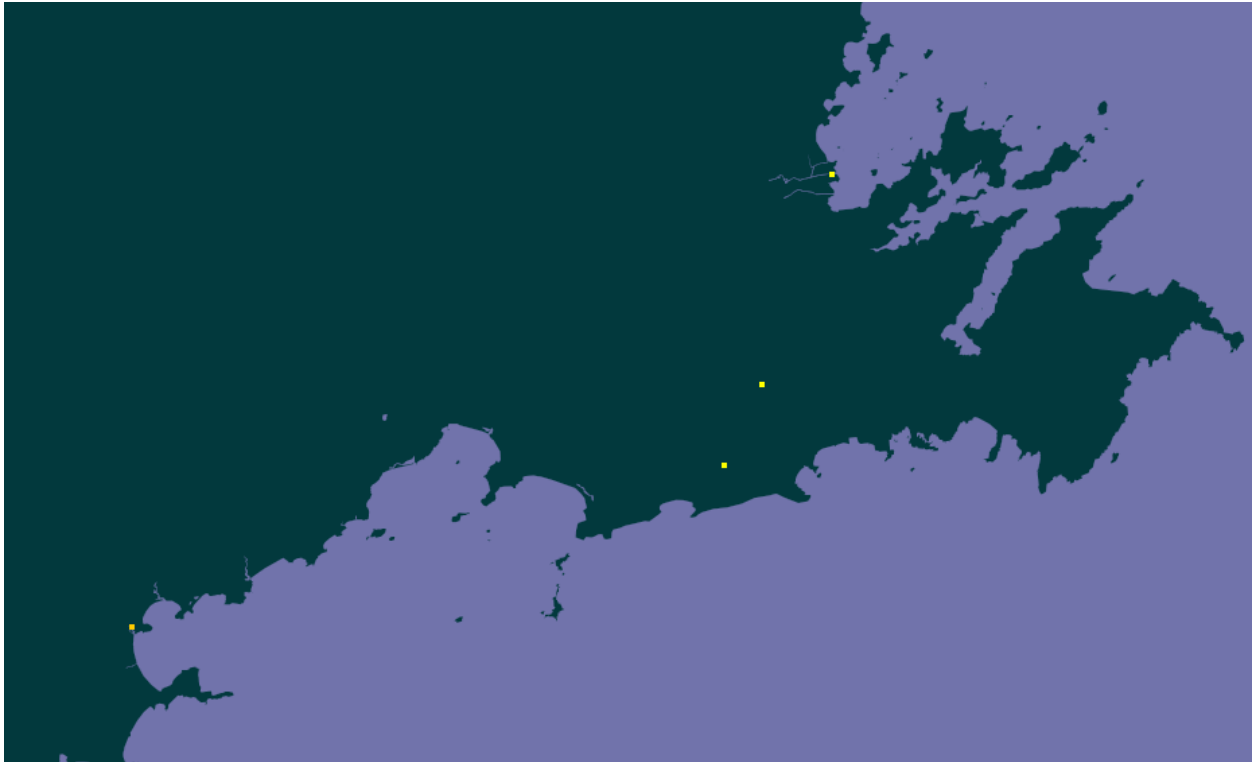
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## 4 Global Distribution

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**Figure 1.** Known global established locations of *Trichogenes longipinnis* in southeastern Brazil, near Rio de Janeiro and São Paulo. A point in northern Brazil was excluded due to it having incorrect location data. Map from GBIF (2016).

## 5 Distribution Within the United States

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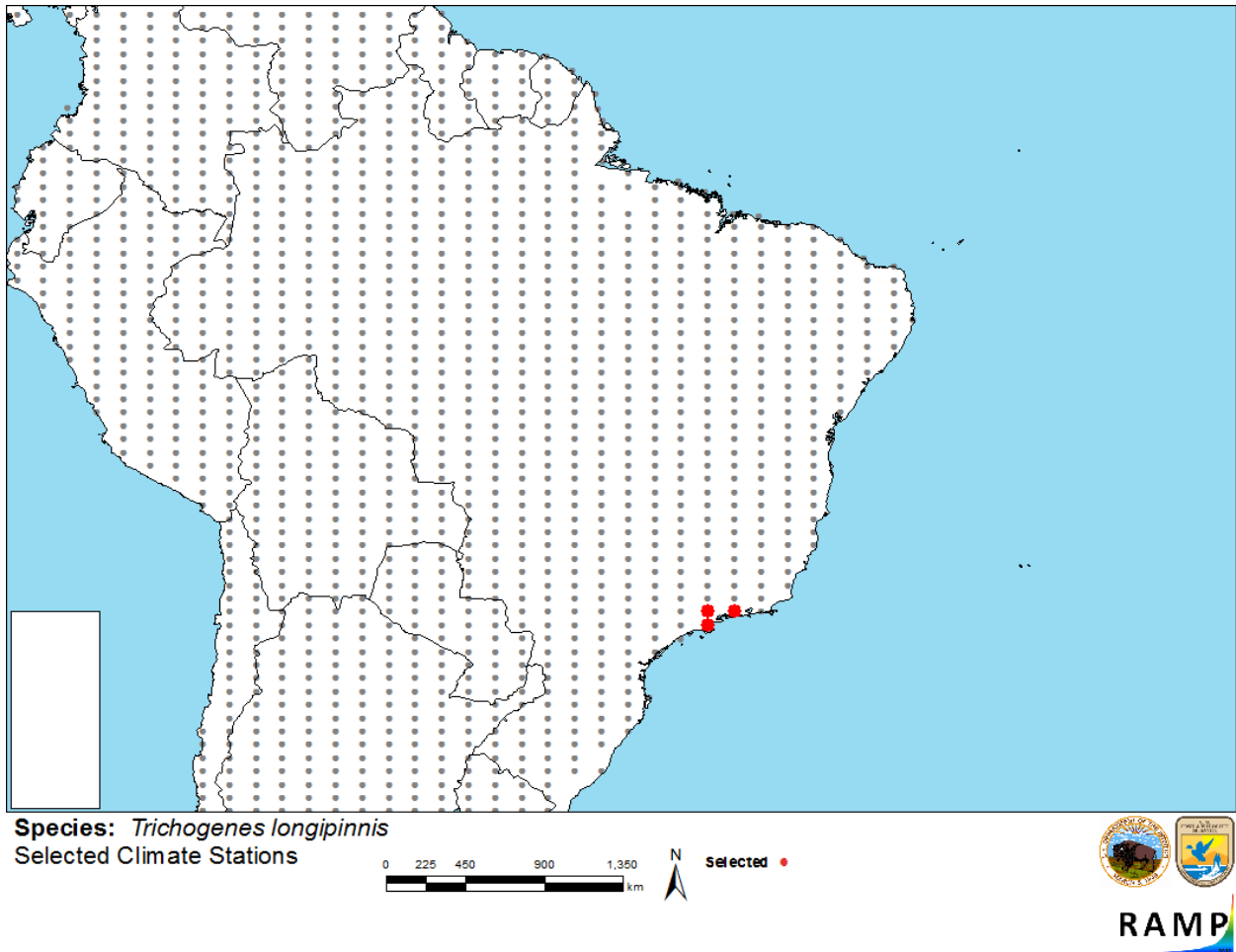
This species has not been reported as introduced or established in the U.S.

## 6 Climate Matching

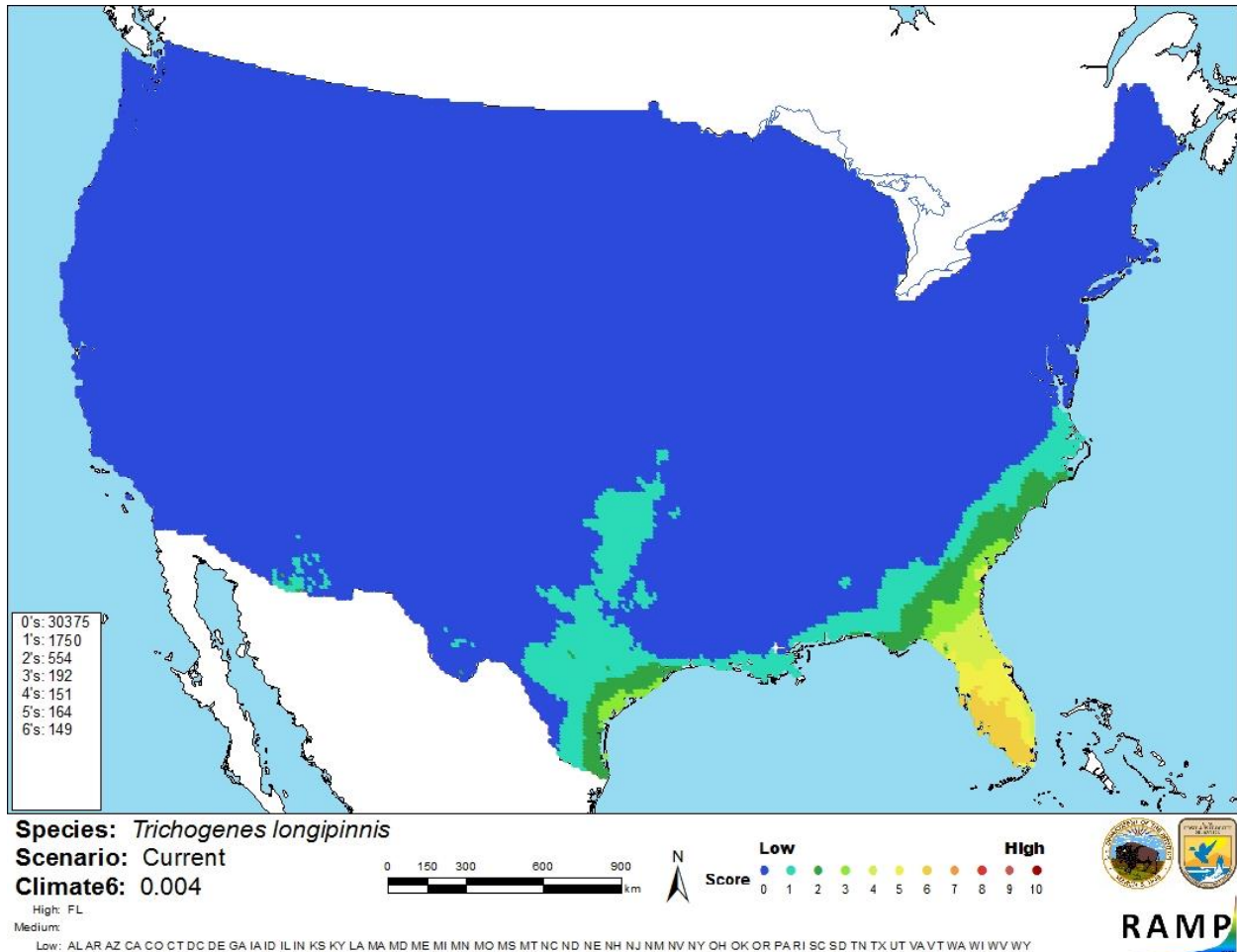
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### Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean Distance) was medium in peninsular Florida and low elsewhere in the contiguous U.S. Climate 6 proportion indicated that the contiguous U.S. has a low climate match. Proportions 0.005 or less indicate a low climate match; the Climate 6 proportion of *Trichogenes longipinnis* was 0.004.



**Figure 2.** RAMP (Sanders et al. 2014) source map showing weather stations in South America selected as source locations (red; southeastern Brazil) and non-source locations (gray) for *Trichogenes longipinnis* climate matching. Source locations from GBIF (2016).



**Figure 3.** Map of RAMP (Sanders et al. 2014) climate matches for *Trichogenes longipinnis* in the contiguous United States based on source locations reported by GBIF (2016). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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
$\geq 0.103$	High

## 7 Certainty of Assessment

There is information available on the biology, habitat preference, and range of *T. longipinnis*. This species has no documented history of introduction, so impacts of introduction remain unknown. Certainty of this assessment is low.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Trichogenes longipinnis* is a catfish species native to coastal streams in southeast Brazil. This species has a low climate match with the United States and no documented history of introduction outside its native range. 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

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

- de Pinna, M. C. C., J. L. Helmer, H. A. Britski, and L. R. Nunes. 2010. A new species of *Trichogenes* from the rio Itapemirim drainage, southeastern Brazil, with comments on the monophyly of the genus (Siluriformes: Trichomycteridae). *Neotropical Ichthyology* 8(4):707-717.
- FFWCC (Florida Fish and Wildlife Conservation Commission). 2017. Prohibited species list. Florida Fish and Wildlife Conservation Commission, Tallahassee, Florida. Available: <http://myfwc.com/wildlifehabitats/nonnatives/regulations/prohibited/>. (March 2017).
- Froese, R., and D. Pauly, editors. 2016. *Trichogenes longipinnis* Britski & Ortega, 1983. FishBase. Available: <http://www.fishbase.org/summary/48757>. (December 2016).
- GBIF (Global Biodiversity Information Facility). 2016. GBIF backbone taxonomy: *Trichogenes longipinnis*, Britski & Ortega, 1983. Global Biodiversity Information Facility, Copenhagen. Available: <http://www.gbif.org/species/2342967>. (December 2016).
- ITIS (Integrated Taxonomic Information System). 2016. *Trichogenes longipinnis* Britski & Ortega, 1983. Integrated Taxonomic Information System, Reston, Virginia. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=682171#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=682171#null). (December 2016).
- Sanders, S., C. Castiglione, and M. Hoff. 2014. Risk Assessment Mapping Program: RAMP. US Fish and Wildlife Service.



Sazima, I. 2004. Natural history of *Trichogenes longipinnis*, a threatened trichomycterid catfish endemic to Atlantic forest streams in southeast Brazil. *Ichthyological Exploration of Freshwaters* 15(1):49-60.

Zamudio, K. R., J. M. Robertson, L. M. Chan, and I. Sazima. 2009. Population structure in the catfish *Trichogenes longipinnis*: drift offset by asymmetrical migration in a tiny geographic range. *Biological Journal of the Linnean Society* 97(2):259-274.

## **10 References Quoted But Not Accessed**

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**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.**

Baensch, H. A., and R. Riehl. 1997. *Aquarien atlas*, volume 5. Mergus Verlag, Melle, Germany.