

# ***Thalassophryne amazonica* (a toadfish, no common name)**

## **Ecological Risk Screening Summary**

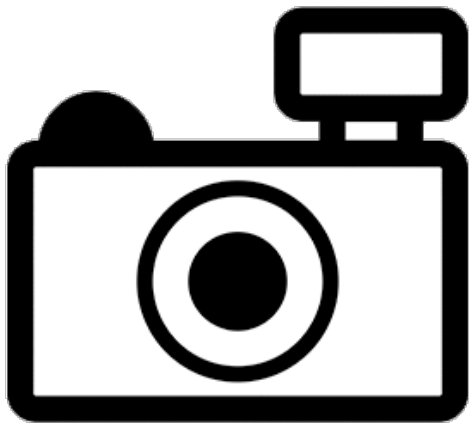
U.S. Fish & Wildlife Service, August 2012

Revised, December 2018, January 2019

Web Version, 9/22/2021

Organism Type: Fish

Overall Risk Assessment Category: Uncertain



No Photo Available

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2018):

“South America: confined to the Amazon River and its tributaries [Brazil, Ecuador, and Peru].”

From Collette (1966):

“*Range.* - Confined to the Amazon River and its tributaries [...]. Described by Steindachner (1876) from the mouth of Rio Negro, and from Tabatinga and Xingu. Here recorded from Rio Itaya near Iquitos, Peru and from Rio Conambo and Rio Corrientes in Pastaza Province, Ecuador.”

GBIF Secretariat (2018) lists *Thalassophryne amazonica* as present in Columbia and Brazil.

## Status in the United States

No records of *Thalassophryne amazonica* in the wild or in trade in the United States were found.

## Means of Introductions in the United States

No records of *Thalassophryne amazonica* in the wild in the United States were found.

## Remarks

No additional remarks.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2018), *Thalassophryne amazonica* Steindachner, 1876 is the current valid and original name of this species.

From ITIS (2018):

Kingdom Animalia  
Subkingdom Bilateria  
Infrakingdom Deuterostomia  
Phylum Chordata  
Subphylum Vertebrata  
Infraphylum Gnathostomata  
Superclass Actinopterygii  
Class Teleostei  
Superorder Paracanthopterygii  
Order Batrachoidiformes  
Family Batrachoididae  
Subfamily Thalassophryninae  
Genus *Thalassophryne*  
Species *Thalassophryne amazonica* Steindachner, 1876

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 9.3 cm SL male/unsexed; [Collette 2003]”

### Environment

From Froese and Pauly (2018):

“Freshwater; demersal.”

## Climate

From Froese and Pauly (2018):

“Tropical”

## Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: confined to the Amazon River and its tributaries [Brazil, Ecuador, and Peru].”

From Collette (1966):

“*Range.* - Confined to the Amazon River and its tributaries [...]. Described by Steindachner (1876) from the mouth of Rio Negro, and from Tabatinga and Xingu. Here recorded from Rio Itaya near Iquitos, Peru and from Rio Conambo and Rio Corrientes in Pastaza Province, Ecuador.”

GBIF Secretariat (2018) lists *Thalassophryne amazonica* as present in Columbia and Brazil.

Introduced

No records of introductions of *Thalassophryne amazonica* were found.

## Means of Introduction Outside the United States

No records of introductions of *Thalassophryne amazonica* outside its native range were found.

## Short Description

From Meek and Hall (1885):

“Pectoral fins longer, reaching past third or fourth anal ray; head  $1\frac{1}{3}$  times as long as wide; opercular spine about  $\frac{1}{3}$  length of head; caudal  $\frac{2}{3}$  of length of head; mouth very oblique. Color brownish, marbled with darker; two distinct bands on head; dorsal and anal with brown spots arranged in distinct rows; six dark bands on sides of body, the first at spinous dorsal, the others along the base of soft dorsal. (Steindachner.)”

From Collette (1966):

“*Diagnosis.* [...]. *T. amazonica* differs from all the other species of Thalassophryninae in lacking a prominent lateral line on the head and body [...]. There are only a few scattered pores on the head and body. Both *T. amazonica* and *Daector dowi* have the dorsal and anal fins connected with the caudal fin, but the three fins are completely confluent in *T. amazonica* and only slightly connected in *D. dowi* [...]. In most counts, *T. amazonica* is similar to most of the Atlantic marine species: second dorsal rays 19-21; anal 18-19; pectoral 14-15; caudal vertebrae 20-21. *T. amazonica* has a smaller eye (26-40 thousandths of standard length) than any species of

*Thalassophryne* except *T. punctata*. It has a greater interorbital distance (65-88 thousandths of standard length) than *T. punctata* but less than *T. montevidensis*.”

## Biology

From Britz and Toledo-Piza (2012):

“It is clear from the water parameters reported to us that *Thalassophryne amazonica* prefers acidic waters with low conductivity and a higher temperature. The fish were found on a muddy or sandy bottom, in which they can supposedly bury themselves easily.”

From Froese and Pauly (2018):

“Both opercular and dorsal glands are venomous [Smith and Wheeler 2006].”

## Human Uses

From Britz and Toledo-Piza (2012):

“There is no information available on the biology of *T. amazonica*, although this species has been exported now and then as an aquarium fish since the 1990s.”

## Diseases

No information on diseases of *Thalassophryne amazonica* was found. **No records of OIE-reportable diseases (OIE 2021) were found for *T. amazonica*.**

## Threat to Humans

From Froese and Pauly (2018):

“Venomous [Collette 1966]”

## 3 Impacts of Introductions

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No records of introductions of *Thalassophryne amazonica* were found, so no corresponding information on impacts could be found.

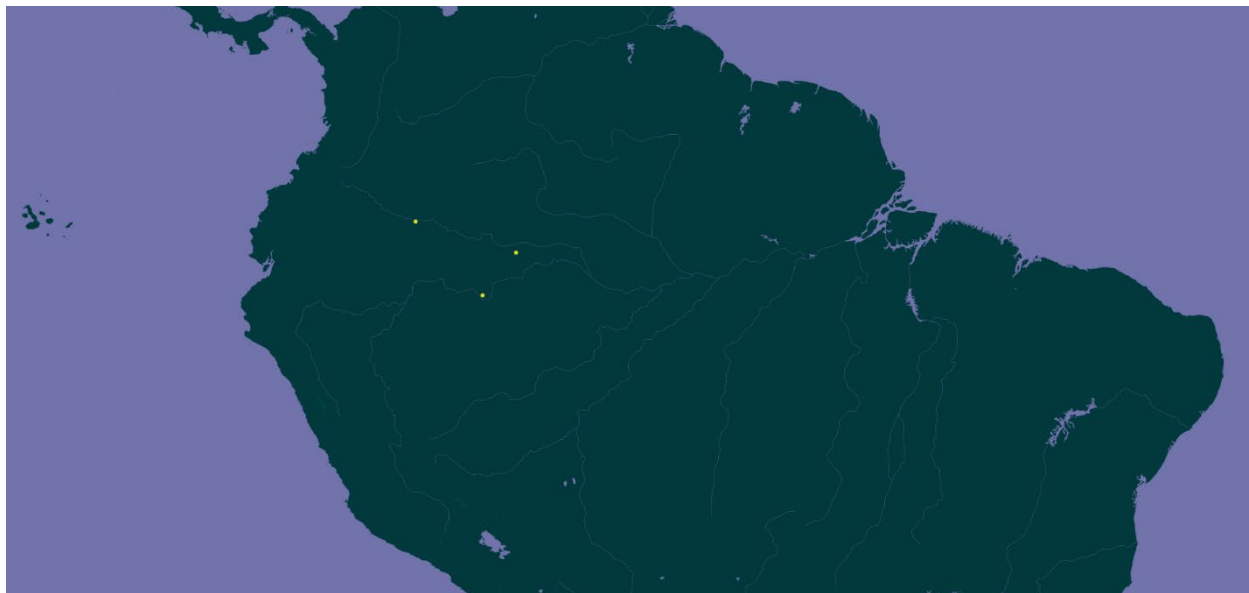
## 4 History of Invasiveness

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No records of introductions of *Thalassophryne amazonica* were found, so the history of invasiveness is classified as No Known Nonnative Population.

## 5 Global Distribution

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**Figure 1.** Known global distribution of *Thalassophryne amazonica*. Locations are in Brazil and Columbia. Map from GBIF Secretariat (2018).

## 6 Distribution Within the United States

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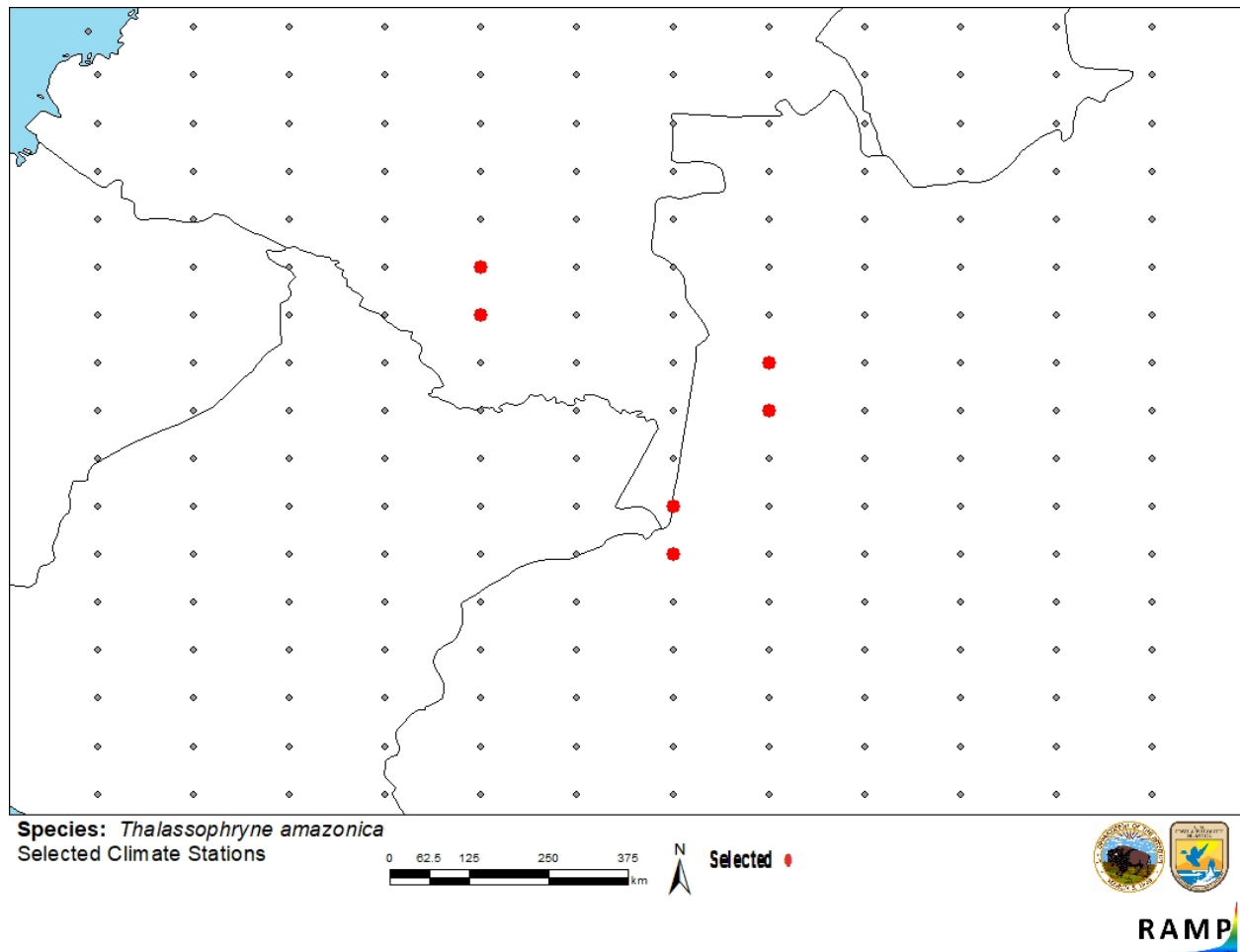
No records of *Thalassophryne amazonica* in the wild in the United States were found.

## 7 Climate Matching

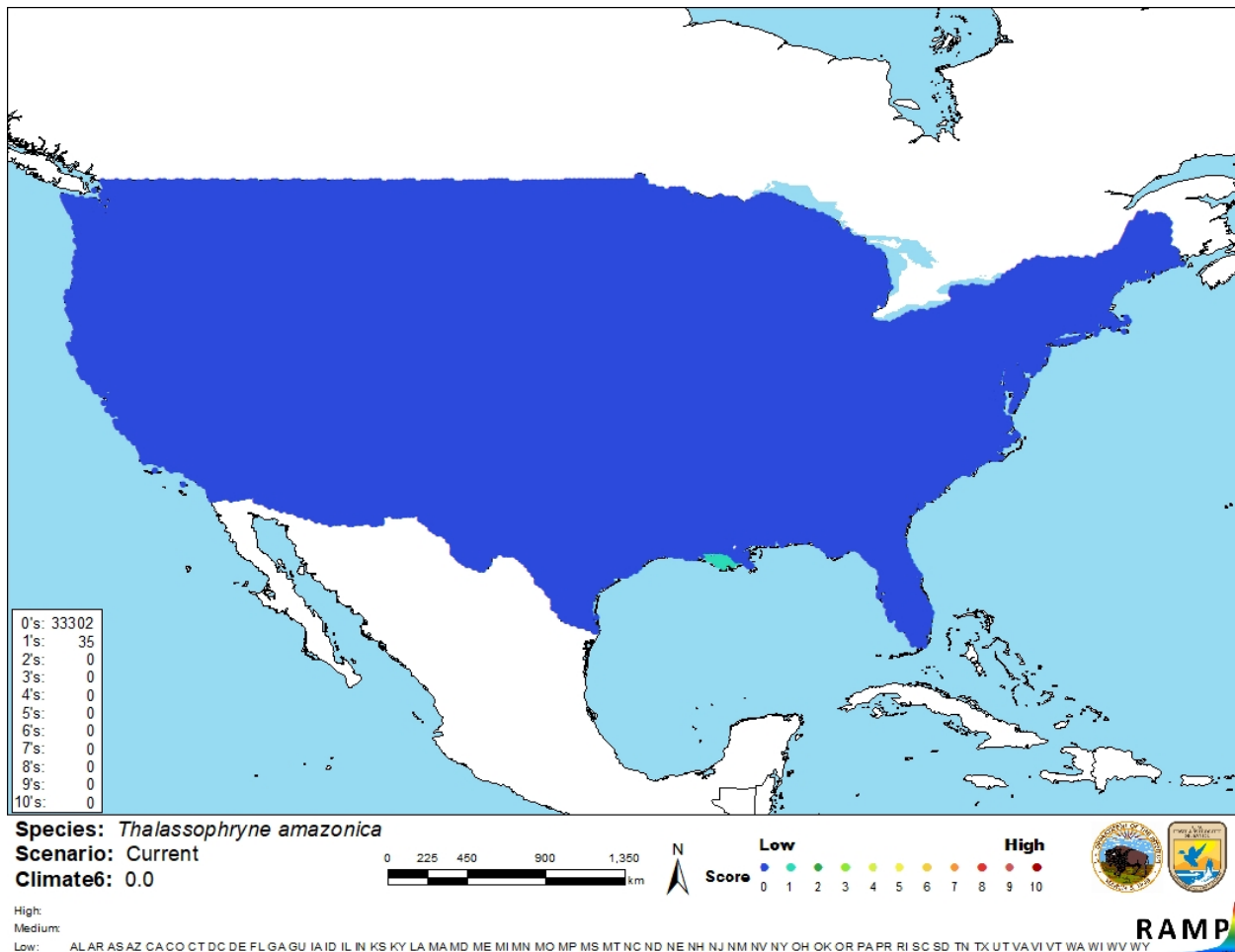
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### Summary of Climate Matching Analysis

The climate match for *Thalassophryne amazonica* was low for the entire contiguous United States. There were no patches of medium or high match throughout the contiguous United States. The overall 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 considered low). All States had a low individual Climate 6 score.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations in South America selected as source locations (red; Brazil and Columbia) and non-source locations (gray) for *Thalassophryne amazonica* 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. 2018) climate matches for *Thalassophryne amazonica* in the contiguous United States based on source locations reported from GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = 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
$\geq 0.103$	High

## 8 Certainty of Assessment

The certainty of assessment for *Thalassophryne amazonica* is low. There is minimal information available for this species. No information on introductions *Thalassophryne amazonica* was found.

## 9 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Thalassophryne amazonica* is a South American venomous toadfish native to Columbia and Brazil. The history of invasiveness is No Known Nonnative Population. It has not been reported as introduced or established anywhere in the world. The climate match for the contiguous United States was low. There were no areas of high or medium match. The certainty of assessment is low. The overall risk assessment category is uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 3): No Known Nonnative Population**
- **Overall Climate Match (Sec. 6): Low**
- **Certainty of Assessment (Sec. 7): Low**
- **Remarks/Important additional information:** No additional information.
- **Overall Risk Assessment Category: Uncertain**

## 10 Literature Cited

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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 11.**

Britz R, Toledo-Piza M. 2012. Egg surface structure of the freshwater toadfish *Thalassophryne amazonica* (Teleostei: Batrachoididae) with information on its distribution and natural habitat. *Neotropical Ichthyology* 10:593–599.

Collette BB. 1966. A review of the venomous toadfishes, subfamily Thalassophryninae. *Copeia* 1966:846–864.

Fricke R, Eschmeyer WN, van der Laan R, editors. 2018. Catalog of fishes: genera, species, references. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (December 2018).

Froese R, Pauly D, editors. 2018. *Thalassophryne amazonica* Steindachner, 1876. FishBase. Available: <https://www.fishbase.de/summary/Thalassophryne-amazonica.html> (December 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Thalassophryne amazonica* (Steindachner, 1876). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2350895> (December 2018).



[ITIS] Integrated Taxonomic Information System. 2018. *Thalassophryne amazonica* (Steindachner, 1876). Reston, Virginia: Integrated Taxonomic Information System. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=690685#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=690685#null) (December 2018).

Meek SE, Hall EA. 1885. A review of the American genera and species of Batrachidae. Proceedings of the Academy of Natural Sciences of Philadelphia 37:52–62.

[OIE] World Organisation for Animal Health. 2021. Animal diseases. Available: <https://www.oie.int/en/what-we-do/animal-health-and-welfare/animal-diseases/> (September 2021).

Sanders S, Castiglione C, Hoff M. 2018. Risk Assessment Mapping Program: RAMP. Version 3.1. U.S. Fish and Wildlife Service.

## 11 Literature Cited in Quoted Material

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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.**

Collette BB. 2003. Family Batrachoididae (toadfishes). Pages 509–510 in Reis RE, Kullander SO, Ferraris CJ Jr, editors. Checklist of the freshwater fishes of South and Central America. Porto Alegre, Brazil.

Smith WL, Wheeler WC. 2006. Venom evolution widespread in fishes: a phylogenetic rode map for the bioprospecting of piscine venoms. Journal of Heredity 97:206–217.

Steindachner F. 1876. Ichthyologische Beiträge (V). Sitzungsberichte der Kaiserlichen Akademie der Wissenschaften. Mathematisch-Naturwissenschaftliche Classe 74:49–240.