

***Ixinandria steinbachi* (a catfish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2017

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Photo: Christian A. Cramer, in Rodriguez et al. (2008). Licensed under Creative Commons (CC BY-NC).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2017):

“South America: Upper río Juramento basin, río Salado drainage in Salta (Argentina), upper río Bermejo in northwestern Argentina and southern Bolivia, and upper río Pilcomayo in southern Bolivia.”

Status in the United States

No reported presence of *Ixinandria steinbachi* in the United States.

Means of Introductions in the United States

Ixinandria steinbachi has not been reported as introduced in the United States.

Remarks

From Rodriguez et al. (2008):

“We conclude that the populations are not significantly distinct and do not deserve separate species recognition, and we place *I. montebelloi* in the synonymy of *I. steinbachi*.”

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2017):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysii
Order Siluriformes
Family Loricariidae
Subfamily Loricariinae
Genus *Ixinandria*
Species *Ixinandria steinbachi* (Regan, 1906)”

“Taxonomic Status: Valid”

Size, Weight, and Age Range

From Froese and Pauly (2017):

“Max length: 11.3 cm SL male/unsexed; [Rodriguez et al. 2008]”

Environment

From Froese and Pauly (2017):

“Freshwater; demersal.”

From Rodriguez et al. (2008):

“*Ixinandria steinbachi* was caught in fast flowing waters between 15 and 65 cm depth, especially in places with filamentous algae [...]”

From Covain and Fisch-Muller (2007):

“This rheophilic species lives in fast flowing and very oxygenated waters.”

Climate/Range

From Froese and Pauly (2017):

“Subtropical [...]”

From Rodriguez et al. (2008):

“*Ixinandria steinbachi* was caught [...] in mountainous areas at altitudes ranging from around 200 to 2900 meters a.s.l. [*sic*] The minimum [*sic*] altitude where it was recorded is 210 m a.s.l. [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2017):

“South America: Upper río Juramento basin, río Salado drainage in Salta (Argentina), upper río Bermejo in northwestern Argentina and southern Bolivia, and upper río Pilcomayo in southern Bolivia.”

Introduced

No introductions reported.

Means of Introduction Outside the United States

No introductions reported.

Short Description

From Rodriguez et al. (2008):

“Head and body strongly depressed. Trunk and caudal peduncle becoming more compressed caudally. Dorsal profile of body convex from snout to end of supraoccipital, straight or slightly convex from supraoccipital to dorsal-fin spine, straight from dorsal fin to one or two plates before caudal fin. Upper edge of orbit not raised. Scarcely developed triangular postorbital notch. Outline of head rounded in dorsal view. Head strongly flattened in mature males. Paired anterior postrostral and cheek plates scarcely developed ventrally. Odontodes curved, conical, and pointed, densely covering head, trunk, and fin rays, making fish somewhat hispid. Body odontodes scarcely distributed and grouped centrally in plates (Fig. 6). Thick skin sometimes covering plates partially, hiding plate limits and covering odontodes. Snout tip with big globular protuberance of naked skin. This roundish naked area not reaching most anterior pore of infra-orbital ramus of sensory canal. Gill opening small. Mouth big and roundish. Lower lip margin with short digitiform papillae. Upper lip well developed, folded inwards with row of globular papillae. Big globular papillae arranged in regular rows on surface of lips. Numerous small globular papillae on mouth roof, bigger posteriorly. Maxillary barbel very small, mostly coalesced with lower lip.”

Biology

From Rodriguez et al. (2008):

“This species lives in fast flowing and highly oxygenated waters, with stony bottom, usually hiding under the stones during the day.”

From Covain and Fisch-Muller (2007):

“Its color pattern reflects mimicry with stoned bottoms. Fertilized eggs have been found on the hidden surface of a stone, suggesting that *I. steinbachi* could be a cavity spawner.”

Human Uses

No information available.

Diseases

No information available.

Threat to Humans

From Froese and Pauly (2017):

“Harmless”

3 Impacts of Introductions

No introductions of this species have been reported.

4 Global Distribution

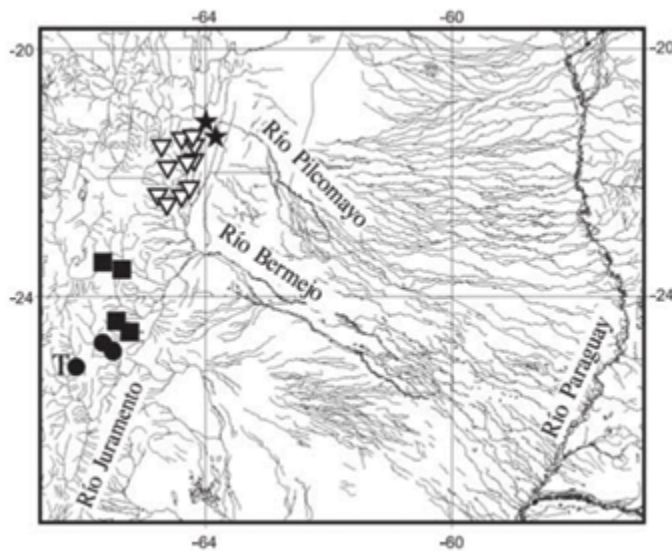


Figure 1. Known global distribution of *Ixinandria steinbachi* in northern Argentina and southern Bolivia. Map from Rodriguez et al. (2008). Licensed under Creative Commons (CC BY-NC). Caption from Rodriguez et al. (2008): “Distribution of *Ixinandria steinbachi*. Dot, río Juramento basin; Square, southern upper río Bermejo basin; and Star, río Pilcomayo. Each symbol can represent more than one lote or locality. (T=Type locality).”

5 Distribution Within the United States

No reported distribution within the U.S.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match (Sanders et al. 2014; 16 climate variables; Euclidean distance) was medium in peninsular Florida, coastal California, and scattered areas of the Rocky Mountain region. The climate match was low across the rest of the contiguous U.S., reflected in a Climate 6 proportion of 0.001 overall, a score that is classified as low match. The range for Climate 6 proportions indicating a low climate match is 0.000 to 0.005, inclusive.



Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations in South America selected as source locations (red; Bolivia, Argentina) and non-source locations (gray) for *Ixinandria steinbachi* climate matching. Source locations from Rodriguez et al. (2008).

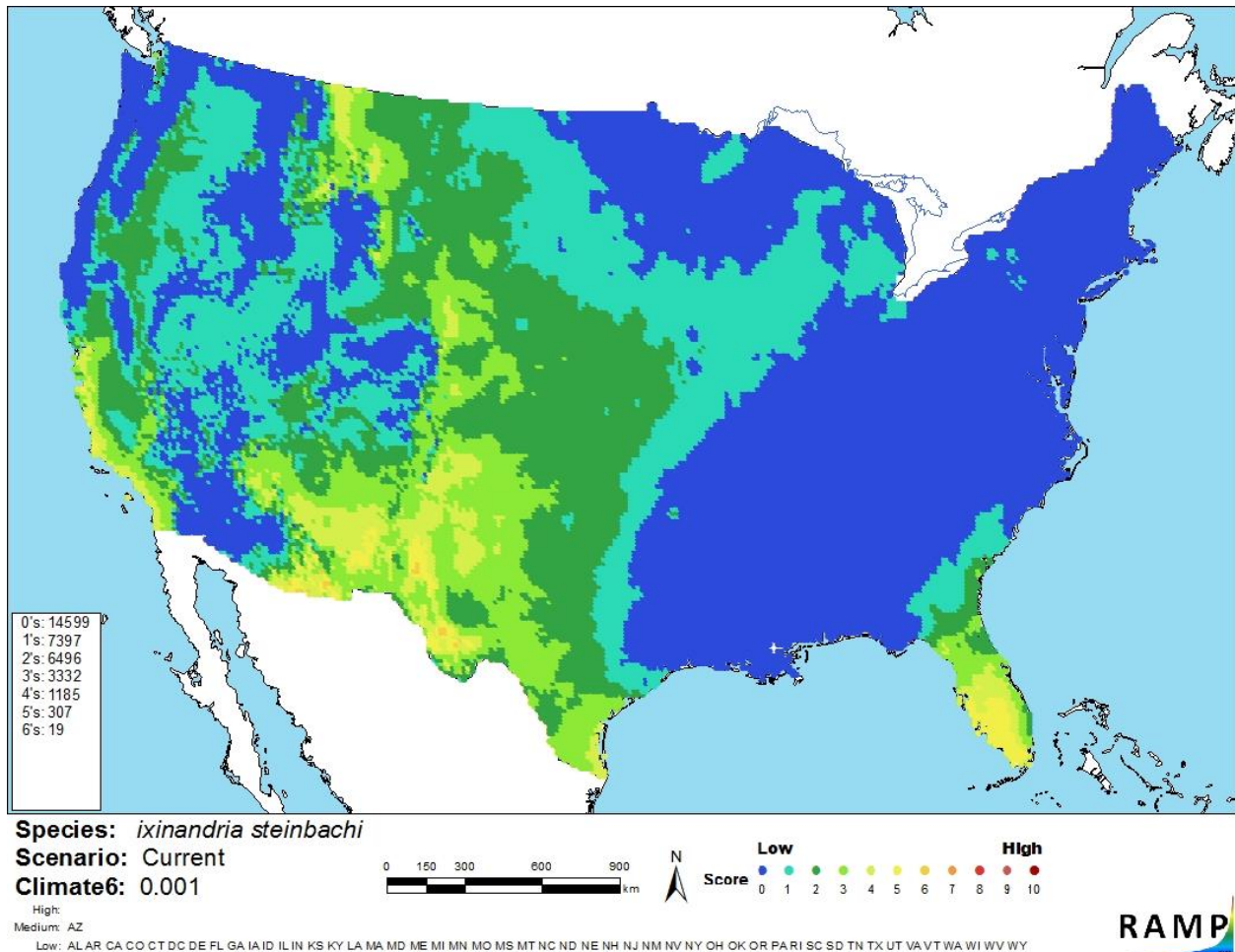


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Ixinandria steinbachi* in the contiguous United States based on source locations reported by GBIF (2017). 0= Lowest match, 10=Highest match. Counts of climate match scores are tabulated on the left.

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
≥ 0.103	High

7 Certainty of Assessment

The biology, ecology, and distribution of *Ixinandria steinbachi* are poorly understood. More information is required to adequately assess the risk of this species if brought into the United States. Therefore, certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Ixinandria steinbachi is a catfish native to northern Argentina and southern Bolivia. Currently, *Ixinandria steinbachi* is not exploited for human uses and no information is available regarding its potential to expand beyond its native range. *Ixinandria steinbachi* has a low climate match in the contiguous United States, and the biology and ecology of this species has yet to be discovered. Ultimately, without a history of invasiveness it's difficult to ascertain a conclusive risk assessment level. Therefore, the overall risk of 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.

- Covain, R., and S. Fisch-Muller. 2007. The genera of the Neotropical armored catfish subfamily Loricariinae (Siluriformes: Loricariidae): a practical key and synopsis. *Zootaxa* 1462:1-40.
- Froese, R., and D. Pauly, editors. 2017. *Ixinandria steinbachi* Regan. FishBase. Available: <http://www.fishbase.se/summary/Ixinandria-steinbachi.html>. (August 2017).
- ITIS (Integrated Taxonomic Information System). 2017. *Ixinandria steinbachi* Regan. Integrated Taxonomic Information System, Reston, Virginia. Available: <https://www.itis.gov/servlet/SingleRpt/SingleRpt#null>. (August 2017).
- Rodriguez, M. S., C. A. Cramer, S. L. Bonatto, and R. E. Reis. 2008. Taxonomy of *Ixinandria* Isbrücker & Nijssen (Loricariidae: Loricariinae) based on morphological and molecular data. *Neotropical Ichthyology* 6:367-378.
- Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. US Fish and Wildlife Service.