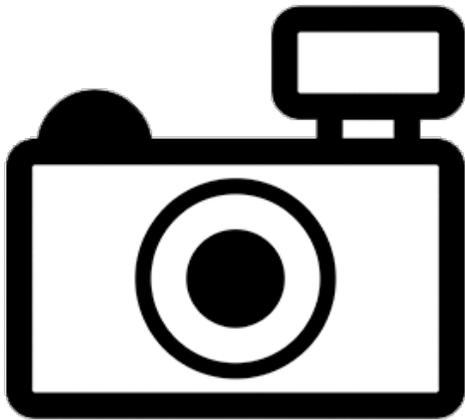


Peckoltia vermiculata (a catfish, no common name)

Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, February 2013
Revised, September 2018
Web Version, 1/4/2021

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“South America: Middle and lower Amazon River basin [Brazil].”

From Armbruster (2008):

“Locality only given as Pará, Brazil.”

Status in the United States

No records of *Peckoltia vermiculata* in the wild or in trade in the United States were found.

Peckoltia vermiculata falls within Group I of New Mexico’s Department of Game and Fish Director’s Species Importation List (New Mexico Department of Game and Fish 2010). Group I species “are designated semi-domesticated animals and do not require an importation permit.”

Means of Introductions in the United States

No records of *Pangasius vermiculata* in the wild in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Peckoltia vermiculata* (Steindachner 1908) is the current valid name of this species. *Peckoltia vermiculata* was originally described as *Ancistrus vittatus vermiculatus* Steindachner 1908.

From ITIS (2018):

Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Ostariophysii
Order Siluriformes
Family Loricariidae
Subfamily Hypostominae
Genus *Peckoltia*
Species *Peckoltia vermiculata* (Steindachner, 1908)

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 13.0 cm SL male/unsexed; [Fisch-Muller 2003]”

Environment

From Froese and Pauly (2018):

“Freshwater; demersal.”

Climate

From Froese and Pauly (2018):

“Tropical; 23°C - 27°C [assumed to be recommended aquarium temperature range] [Baensch and Riehl 1995]”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: Middle and lower Amazon River basin [Brazil].”

From Armbruster (2008):

“Locality only given as Pará, Brazil.”

Introduced

No records of introductions of *Peckoltia vermiculata* were found.

Means of Introduction Outside the United States

No records of introductions of *Peckoltia vermiculata* were found.

Short Description

From Armbruster (2008):

“*Peckoltia vermiculata* can be identified from all other *Peckoltia* by having vermiculate lines radiating from a central point on the parieto-supraoccipital. Other *Peckoltia* with dark vermiculations on the head are *P. braueri*, *P. caenosa*, *P. cavatica*, and *P. lineola*, none of which have the vermiculations radiating from a central point. *Peckoltia vermiculata* can be further separated from *P. braueri* by lacking vermiculations on the compound pterotic; from *P. cavatica* by having markings across the bones and plates of the head (vs. just outlining the bones and plates); from *P. caenosa* by lacking markings on the abdomen (vs. having vermiculations), and by having dark bands at least on the caudal fin (vs. small white spots); and from *P. lineola* by having the vermiculations narrower than the pupil (vs. wider than the pupil) and by lacking spots on the abdomen (vs. spots combining to form longitudinal lines).”

“Body stout, fairly wide. Head gently sloped to parieto-supraoccipital. Parieto-supraoccipital with tall, rounded crest. Parieto-supraoccipital crest barely raised above nuchal region. Nuchal region rises slightly to nuchal plate. Dorsal profile sloped ventrally to dorsal procurrent caudal-fin spines, then rising rapidly to caudal fin. Ventral profile flat to ventral procurrent caudal-fin spines and then sloping ventrally to caudal fin. Supraorbital ridge rounded, contiguous, but slightly offset medially from rounded ridge proceeding from anterior margin of orbit to anterolateral corner of anterior nare. Head contours smooth. Eye medium sized.”

“Keels absent. Mid-ventral plates bent at their midline above pectoral fin to form ridge. Dorsal plates bent dorsally below dorsal fin to form ridges that converge at preadipose plate, dorsal surface flat between ridges. Five rows of plates on caudal peduncle. Abdomen covered in small plates except for small naked areas posterior to lower lip and at insertions of paired fins. First anal-fin pterygiophore exposed to form a platelike structure. A pair of lateral plates converging at midline between anus and exposed first anal-fin pterygiophore. 25– 26 [...] plates in the median series.”

“Frontal, infraorbitals, nasal, compound pterotic, sphenotic, and parieto-supraoccipital, supporting odontodes; opercle supporting odontodes in juveniles but not in adults, posterodorsal corner of opercle covered by one or two plates in adults. Odontodes on lateral plates not enlarged to form keels. Hypertrophied cheek odontodes 28–35, longest almost reaching first mid-ventral plate in adults. Cheek plates evertible to approximately 90° from head. Odontodes on tip of pectoral-fin spine slightly hypertrophied.”

“Dorsal fin short, reaching preadipose plate fin when adpressed; dorsal-fin spine same length as proceeding rays making edge straight. Dorsal-fin spinelet V-shaped, dorsal-fin spine lock functional. Dorsal fin II,7. Adipose fin with one preadipose plate and fairly long spine. Caudal fin forked, lower lobe longer than upper, I,14,I with five dorsal procurrent caudal-fin rays and four to five [...] ventral procurrent-fin rays. Anal fin short with unbranched ray weak and approximately same length of first branched ray. Anal fin I,4, Pectoral-fin spine reaching just beyond pelvic fin when adpressed ventral to pelvic fin. Pectoral fin I,6. Pelvic fin reaching to posterior insertion of anal-fin when adpressed. Pelvic fin I,5.”

“Iris operculum present. Flap between anterior and posterior nares short. Lips wide, fairly thin. Upper lip with small, round papillae. Lower lip with small papillae anteriorly and posteriorly, becoming larger medially. Maxillary barbel short, maximally reaching base of evertible cheek plates. Buccal papilla small. Jaws narrow, dentaries forming acute angle, premaxillaries forming gentle arc less than 135°. Teeth with small, moderately wide cusps, lateral cusp approximately half length of medial cusp, stalk of tooth long; seven to 10 dentary teeth [...], nine premaxillary teeth.”

“Color of all specimens faded [due to preservation, color in life may be slightly different]. Base color light tan with slightly darker markings. Four dorsal saddles weakly evident on body, the first below the middle rays of the dorsal fin, the second below the posterior rays of the dorsal fin and slightly posterior, the third below the adipose fin and slightly anterior, and the fourth at the end of the caudal peduncle. The first two saddles might combine midbody. Anterior body plates may have been outlined with darker pigment. Head with short, dark lines radiating from central point on parietosupraoccipital, lines narrower than pupil diameter; snout with small spots or spots combining to form network of vermiculations; spots mostly separate below eye and on compound pterotic, dorsal process of cleithrum, and first column of lateral plates. Dorsal and pectoral fins dark, pelvic fins with faint bands, caudal with 3–5 bands. Abdomen without markings. Lower surface of caudal peduncle tan.”

Biology

No information on the biology of *Peckoltia vermiculata* was found.

Human Uses

No information on human uses of *Peckoltia vermiculata* was found.

Diseases

No information on diseases of *Peckoltia vermiculata* was found. **No records of OIE-reportable diseases (OIE 2021) were found for *P. vermiculata*.**

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

No records of introductions of *Peckoltia vermiculata* were found; therefore, there is no information on impacts of introductions.

4 History of Invasiveness

No records of introductions of *Peckoltia vermiculata* were found; therefore the history of introduction is classified as “no known nonnative population.”

5 Global Distribution



Figure 1. State of Pará, Brazil. *Peckoltia vermiculata* is reported from the middle and lower Amazon River in the State of Pará (Armbruster 2008; Froese and Pauly 2018). Map from Google (2018).

No georeferenced observations were available. Source points for the climate match were chosen based on range description given by Froese and Pauly (2018) and Armbruster (2008).

6 Distribution Within the United States

No records of *Peckoltia vermiculata* in the wild in the United States were found.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Peckoltia vermiculata* was low across the contiguous United States. There were no areas of high or medium match. The 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 classified as low). All States had a low individual climate score.

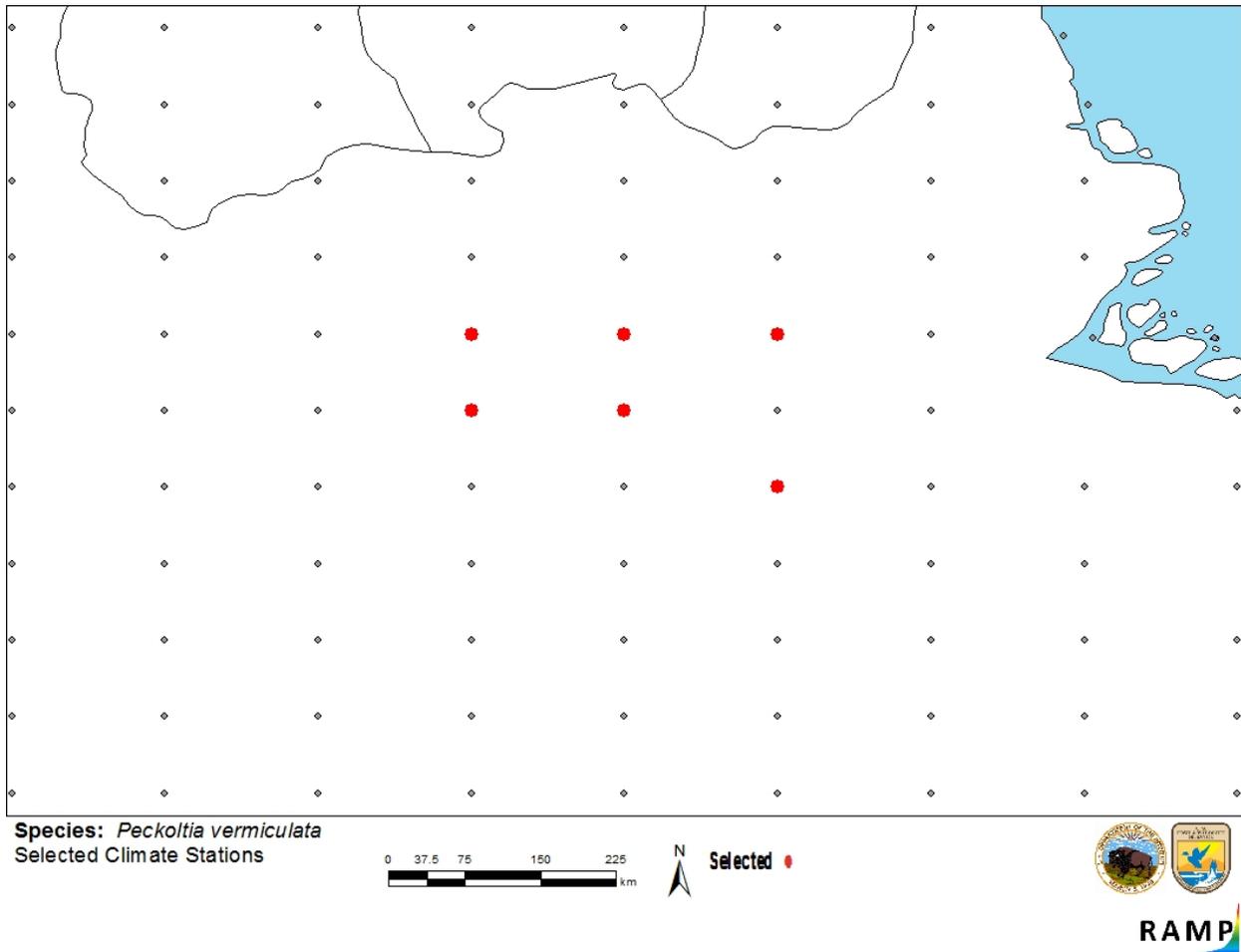


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Brazil selected as source locations (red) and non-source locations (gray) for *Peckoltia vermiculata* climate matching. No georeferenced observations were available to use in selecting source points. Source points for the climate match were chosen based on range description given by Froese and Pauly (2018) and Armbruster (2008).

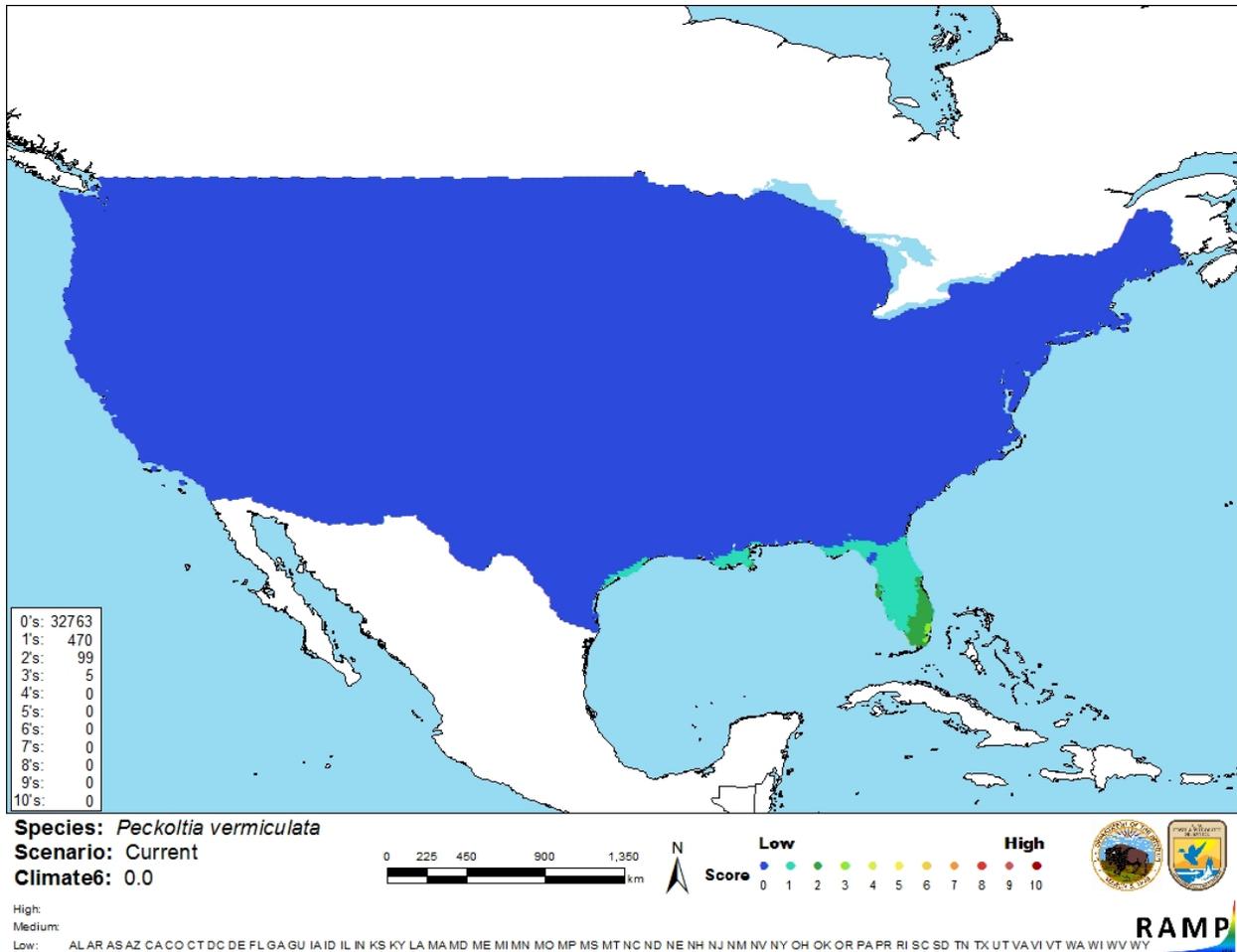


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Peckoltia vermiculata* in the contiguous United States based on source location description reported from Armbruster (2008) and Froese and Pauly (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = 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
≥ 0.103	High

8 Certainty of Assessment

The certainty of assessment is low. There was some information about the species available from peer-reviewed sources. There were no records of introductions found and therefore there is no information on impacts available to evaluate. The climate match is based on source points

chosen to represent the description of the native range of the species. There were no georeferenced observations available to use for selecting source points.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Peckoltia vermiculata is a species of armored catfish native to Brazil. The history of invasiveness is classified as “no known nonnative population.” There were no records of introductions to the wild found and therefore there is no information on impacts of introduction. The climate match was low. There were no areas of high or medium match in the contiguous United States. The climate match is based on a text description of the species’ range and not georeferenced observations as none were available. The certainty of assessment is low. The overall risk assessment is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional information**
- **Overall Risk Assessment Category: Uncertain**

10 Literature Cited

Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 11.

Armbruster JW. 2008. The genus *Peckoltia* with the description of two new species and a reanalysis of the phylogeny of the genera of the Hypostominae (Siluriformes: Loricariidae). *Zootaxa* 1822:1–76.

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> (September 2018).

Froese R, Pauly D, editors. 2018. *Peckoltia vermiculata* (Steindachner, 1908). FishBase. Available: <https://www.fishbase.de/summary/Peckoltia-vermiculata.html> (September 2018).

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[ITIS] Integrated Taxonomic Information System. 2018. *Peckoltia vermiculata* (Steindachner, 1908). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=680321#null (September 2018).

New Mexico Department of Game and Fish. 2010. Director's species importation list. Santa Fe, New Mexico: New Mexico Department of Game and Fish. Available: http://www.wildlife.state.nm.us/download/enforcement/importation/information/Directors-Species-Importation-List-08_03_2010.pdf (November 2020).

[OIE] World Organisation for Animal Health. 2021. OIE-listed diseases, infections and infestations in force in 2020. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2020/> (January 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

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.

Fisch-Muller S. 2003. Loricariidae-Ancistrinae (armored catfishes). Pages 373-400 in Reis Re, Kullander SO, Ferraris CJ Jr, editors. Checklist of the freshwater fishes of South and Central America. Porto Alegre, Brazil: EDIPUCRS.

Steindachner F. 1908. Über zwei neue Siluroiden und zwei *Curimatus*-Arten, sowie über eine Varietät von *Ancistrus vittalus* aus dem Amazonasgebiete innerhalb Brasiliens. Anzeiger der Kaiserlichen Akademie der Wissenschaften, Wien, Mathematisch-Naturwissenschaftliche Klasse 45:163–168. (In German.)