

***Peckoltia simulata* (a catfish, no common name)**

Ecological Risk Screening Summary

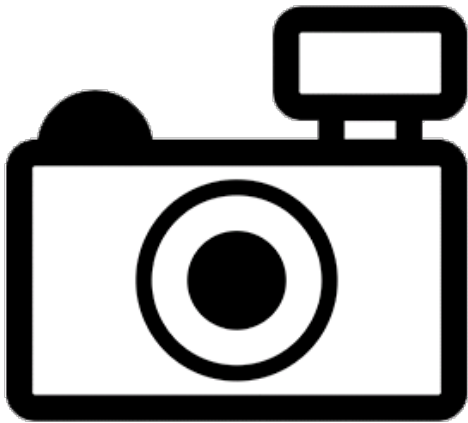
U.S. Fish & Wildlife Service, February 2013

Revised, August 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: Oyapock River in French Guiana.”

Status in the United States

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

Peckoltia simulata 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 *Peckoltia simulata* in the wild in the United States were found.

Remarks

Peckoltia simulata was first described in 2012 (Fisch-Muller et al. 2012).

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

According to Eschmeyer et al. (2018), *Peckoltia simulata* Fisch-Muller and Covain 2012 is the original and current valid name of this species.

From Bailly (2017):

“Biota > Animalia (Kingdom) > Chordata (Phylum) > Vertebrata (Subphylum) > Gnathostomata (Superclass) > [...] Actinopterygii (Class) > Siluriformes (Order) > Loricariidae (Family) > Hypostominae (Subfamily) > *Peckoltia* (Genus) > *Peckoltia simulata* (Species)”

Size, Weight, and Age Range

From Fisch-Muller et al. (2012):

“Fairly medium sized species (largest specimen examined 83.4 mm SL, no breeding male).”

Environment

From Fisch-Muller et al. (2012):

“Water parameters were: temperature 25.0-25.7°C, pH 6.1-6.2, and conductivity 13-14 $\mu\text{S}\cdot\text{cm}^{-1}$.”

Climate

From Froese and Pauly (2018):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“South America: Oyapock River in French Guiana.”

Introduced

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

Means of Introduction Outside the United States

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

Short Description

From Fisch-Muller et al. (2012):

“*Peckoltia simulata* is characterized by its specific barcode sequences [...], distinguishing it from Guianese species, and by a spotted pattern of colouration of body including posterior part, distinguishing it from all congeners except *Peckoltia oligospila*, *P. bachi*, *P. sabaji*, *P. otali* and *P. capitulata*. It is distinguished from the latter by teeth shape, with both lobes similar, long (unless if worn), lateral lobe being only very slightly smaller than medial lobe (versus distinctly smaller). Longer hypertrophied cheek odontodes, longest one passing posterior end of cleithrum (versus not reaching) additionally separate *P. simulata* from spotted species. In addition to several measurements, it is further separated from *P. bachi* and *P. otali* by rounded spotting (versus mottling), from *P. sabaji* by smaller spots on caudal peduncle, and from *P. capitulata* by presence of spots on head (versus absence). It can be further distinguished from *P. oligospila* by having a smaller body depth (19.8- 20.4% SL versus 21.1-23.4), narrower body (29.5-30.7% SL versus 30.9-32.8) and shorter orbital diameter (5.9-7.0% SL versus 6.9-8.1).”

“Body moderately stout. Dorsal profile gently convex from snout tip to supraoccipital process, then straight to dorsal-fin origin, sloped ventrally to procurent caudal-fin rays, and rising straight to caudal fin. Ventral profile flat to caudal fin.”

“Snout slightly pointed, low median ridge in front of nostrils, slight rounded ridge from antero-lateral corner of nostril to end of dorsal margin of orbit supraoccipital with distinctly elevated crest. Eye moderately large. Dorsal margin straight flattened from base of first branched dorsal-fin ray to base of adipose fin between light ridges formed with lateral plates of dorsal series. First lateral plates of mid-ventral series forming slight lateral ridge. Caudal peduncle roughly ovoid in cross section, slightly flattened ventrally, and more compressed posteriorly.”

“Lips covered with short, wide papillae. Buccal papilla small. Lower lip wide, far from reaching pectoral girdle, upper lip much narrower. Maxillary barbel reaching posteriorly half the distance to gill opening or slightly more. Teeth bicuspid, both lobes very similar, lateral lobe only slightly smaller than medial lobe.”

“Head and body plated. Tip of snout naked. Two rows of plates and curved nuchal plate between pointed tip of supraoccipital process and dorsal fin. Five series of lateral plates extending to caudal fin. Abdominal region largely naked. Patches of platelets restricted to regions close to pectoral girdle, pectoral-fin base, and between pelvic fins posteriorly to anal pore. Some large specimens more largely plated. First anal-fin pterygiophore exposed to form a small platelike structure.”

“Head and body plates covered by odontodes of relatively uniform size and distribution. Odontodes on lateral series of plates not arranged in distinct longitudinal rows and not forming keels on sides. Odontodes on plates of posterodorsal part of body and on adipose fin slightly enlarged. Odontodes on tip of pectoral-fin spine generally enlarged, longest in males. Opercle supporting few odontodes. Posterodorsal margin of opercle covered with one or two plates. Hypertrophied cheek odontodes straight with tips curved, reaching first plate of mid-ventral lateral series. Cheek plates evertible to approximately 90° from head.”

“Dorsal-fin origin slightly anterior to pelvic-fin origin; when adpressed, dorsal-fin tip reaching preadipose plate. Dorsal-fin spine locking mechanism functional. Adipose fin preceded by single median unpaired plate, short and raised. Adipose spine straight or slightly curved. Pectoral-spine tip reaching past middle of pelvic spine. Anal fin with weak spine slightly shorter than first branched ray. Caudal fin forked, ventral lobe longer than dorsal lobe. Fin-ray formulae: dorsal II,7; pectoral I,6; pelvic i,5; anal i,4; caudal i,14, i.”

“Base colour brownish orange-coloured in life [...], tan in alcohol, lighter on lower part of caudal peduncle and ventrally, abdomen whitish [...]. Faint dorsal saddles. Dark rounded spots on head, body and fins. Spots small to medium-sized (smaller or equal to pupil) on head, larger (less than eye) posteriorly. Spots rather irregularly distributed on head as well as on body, where they often superimpose. Similar spots on ventral surface, rarer on naked areas. Spots more contrasted, rounded and spaced on fins.”

Biology

From Fisch-Muller et al. (2012):

“*Peckoltia simulata* was collected in two small forest creek tributaries of the Oyapock River in the vicinity of Camopi [...], with cast net and dip net on sandy and gravelled bottom with rocks, woods and leaves [...]. One specimen was hidden in a hollow piece of wood oriented against the current. The new species was collected with representatives of *Ancistrus cf. leucostictus*, *A. aff. temminckii*, *Guyanancistrus longispinis*, *Farlowella reticulata*, *Rineloricaria stewarti*, and *Otocinclus mariae*.”

Human Uses

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

Diseases

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

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

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

4 History of Invasiveness

No records of introductions of *Peckoltia simulata* were found, therefore the history of invasiveness is classified as “no known nonnative population.”

5 Global Distribution

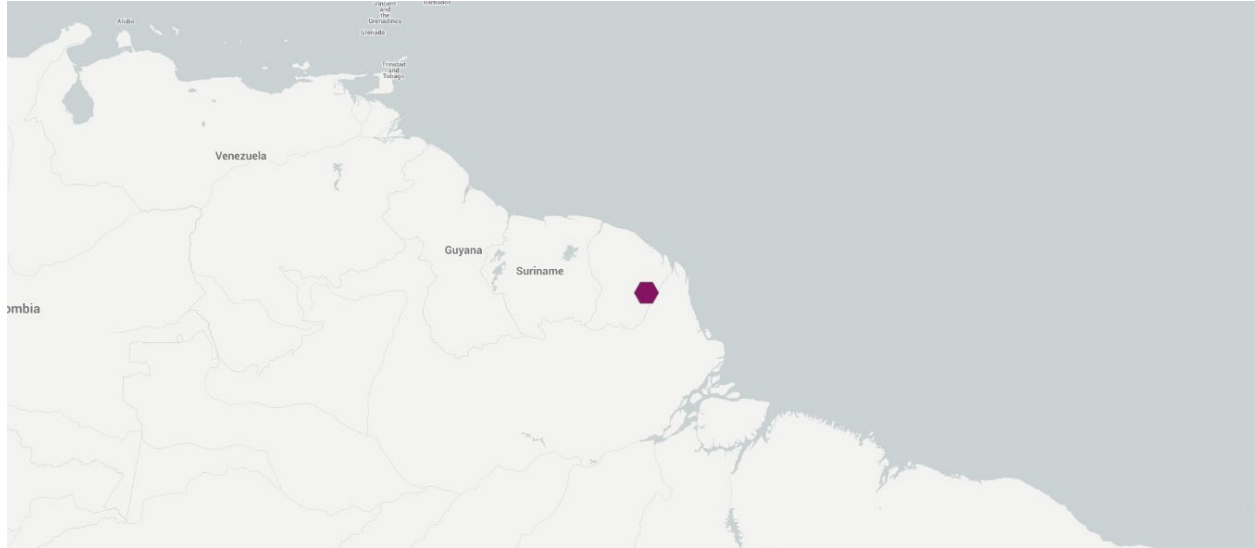


Figure 1. Known global distribution of *Peckoltia simulata*. Location is in French Guiana. Map from GBIF Secretariat (2018).

6 Distribution Within the United States

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

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Peckoltia simulata* was low across the entire contiguous United States. There were no areas of medium or high 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.

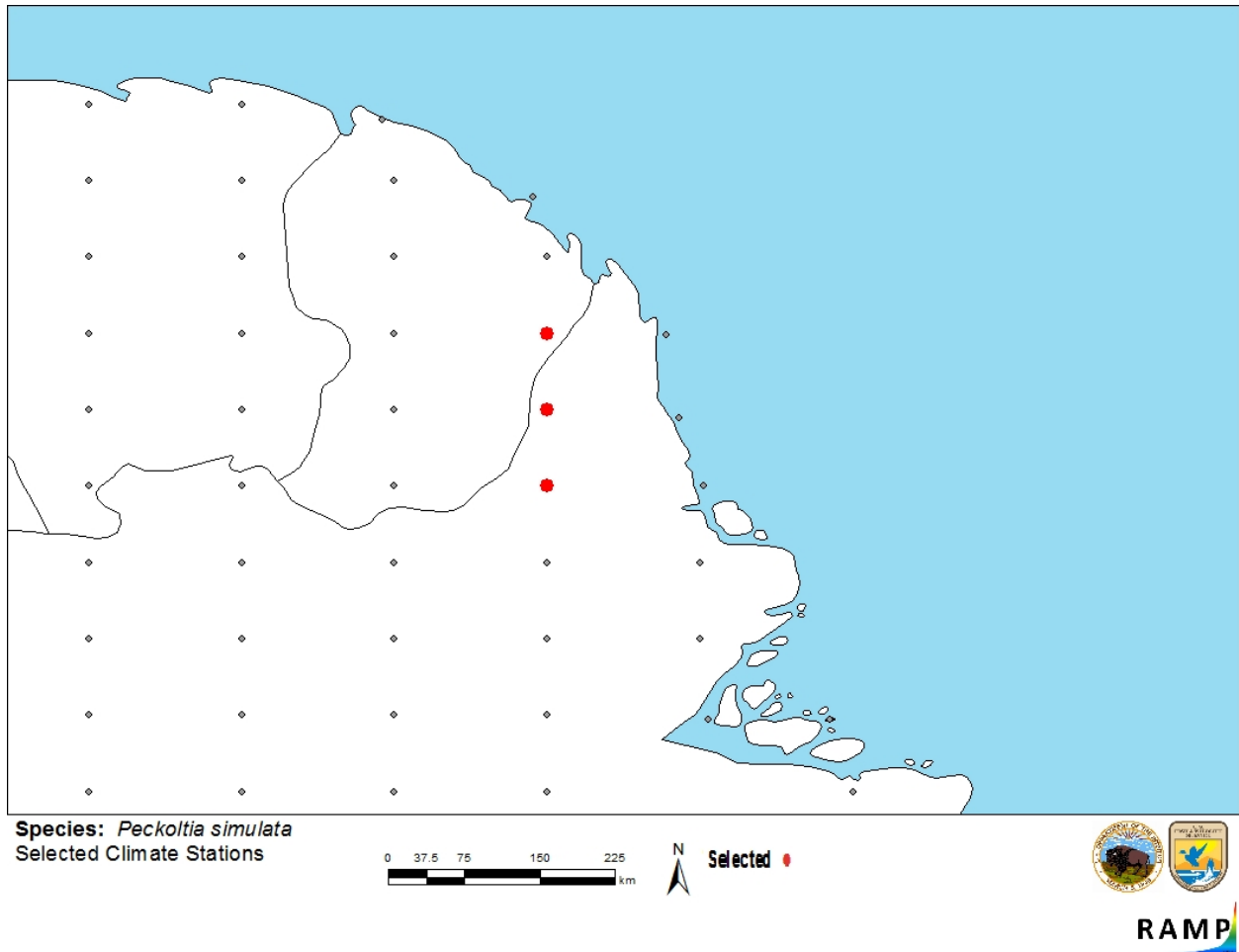


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in northeastern South America selected as source locations (red; French Guiana, Brazil) and non-source locations (gray) for *Peckoltia simulata* climate matching. Source locations from GBIF Secretariat (2018). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

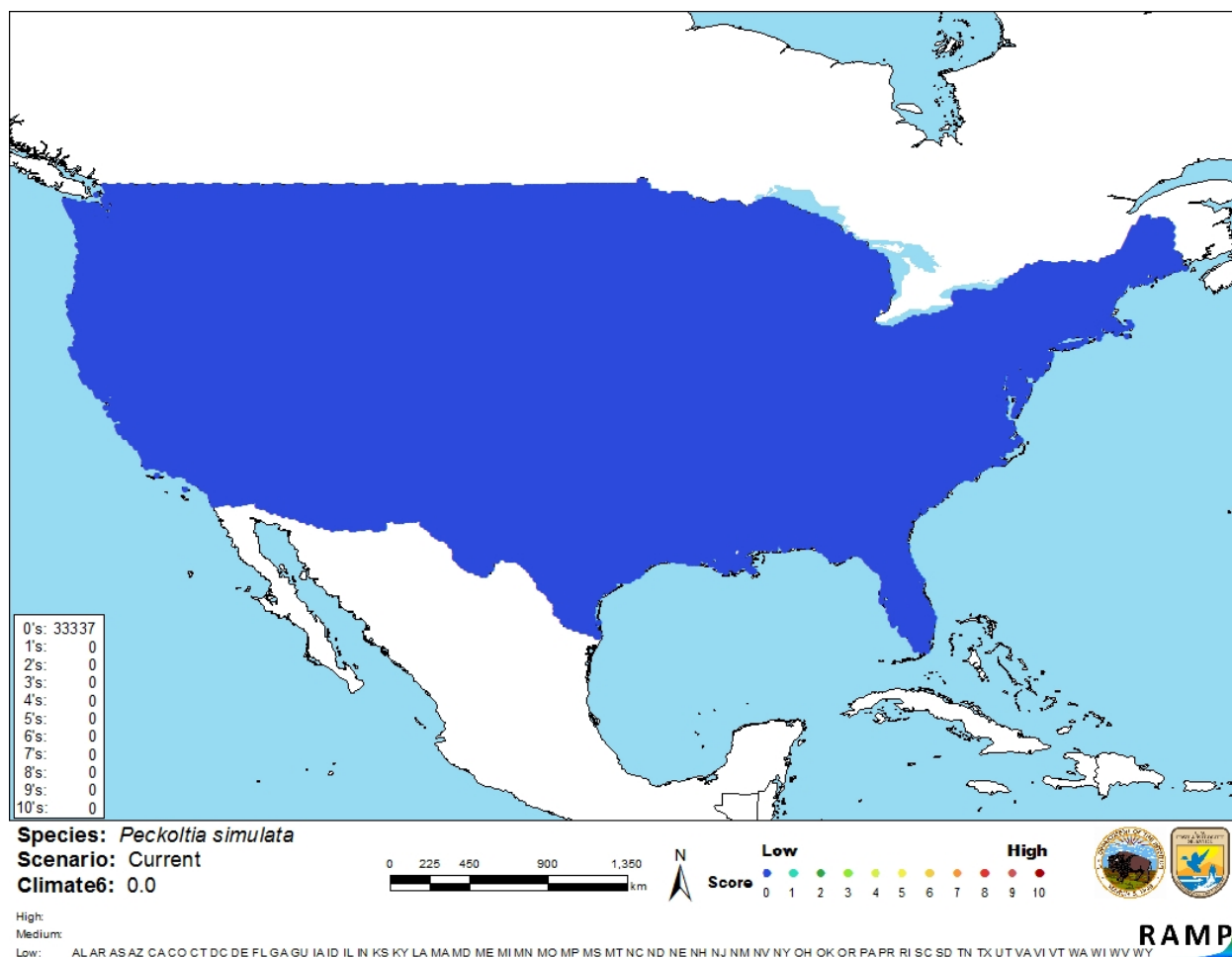


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Peckoltia simulata* in the contiguous United States based on source locations reported from GBIF Secretariat (2018). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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
≥ 0.103	High

8 Certainty of Assessment

The certainty of assessment is low. There was some general 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.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Peckoltia simulata is a species of catfish native to French Guiana. *P. simulata* was first described in 2012. It was found in small forested creeks. The history of invasiveness is classified as “no known nonnative population.” There were no records of introductions to the wild found, and this species is not found in trade. The climate match was low. 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 remarks.
- **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.

- Bailly N. 2017. *Peckoltia simulata*. World Register of Marine Species. Available: <http://www.marinespecies.org/aphia.php?p=taxdetails&id=1007646> (September 2018).
- 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).
- Fisch-Muller A, Montoya-Burgos JI, Le Bail P-Y, Covain R. 2012. Diversity of the Ancistrini (Siluriformes: Loricariidae) from the Guianas: the *Panaque* group, a molecular appraisal with descriptions of new species. *Cybium* 36:163–193.
- Froese R, Pauly D, editors. 2018. *Peckoltia simulata* Fisch-Muller & Covain, 2012. FishBase. Available: <https://www.fishbase.de/summary/Peckoltia-simulata.html> (September 2018).
- GBIF Secretariat. 2018. GBIF backbone taxonomy: *Peckoltia simulata* (Fisch-Muller & Covain, 2012). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/7192992> (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/Director-s-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.

No references in this section.