

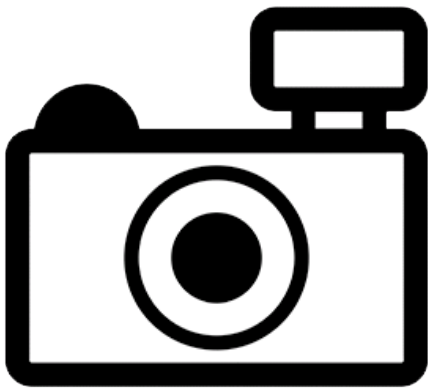
***Pethia macrogramma* (a fish, no common name)**

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, December 2013

Revised, July 2018

Web Version, 8/7/2019



No Photo Available

1 Native Range and Status in the United States

Native Range

From Singh (2015):

“Kullander (2008) described *Puntius macrogramma* from the streams near Myitkyina, Kachin State, Myanmar.”

Status in the United States

This species has not been reported as introduced or established in the United States. There is no indication that this species is in trade in the United States.

Means of Introductions in the United States

This species has not been reported as introduced or established in the United States.

Remarks

Both the valid scientific name *Pethia macrogramma* and the synonym *Puntius macrogramma* were used to search for information on this species.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From GBIF Secretariat (2018):

“Kingdom Animalia

Phylum Chordata

Class Actinopterygii

Order Cypriniformes

Family Cyprinidae

Genus *Pethia* Pethiyagoda, Meegaskumbura & Maduwage, 2012

Species *Pethia macrogramma* (Kullander, 2008)”

From Eschmeyer et al. (2018):

“Current status: Valid as *Pethia macrogramma* (Kullander 2008). Cyprinidae: Smiliogastrinae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 5.1 cm SL male/unsexed; [Kullander 2008]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic.”

Climate/Range

From Froese and Pauly (2018):

“Tropical”

Distribution Outside the United States

Native

From Singh (2015):

“Kullander (2008) described *Puntius macrogramma* from the streams near Myitkyina, Kachin State, Myanmar.”

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 Froese and Pauly (2018):

“Dorsal soft rays (total): 11-12; Anal soft rays: 8. Belongs to the *Puntius conchoni* group, distinguished by the combination of the following characters: barbels absent, lateral line complete or almost complete, a minute humeral mark present on and below lateral line scale 3, and transverse scale count $1\frac{1}{2}/1\frac{1}{4}\frac{1}{2}$ (vs. $1\frac{1}{2}/1\frac{3}{4}\frac{1}{2}$ or $1\frac{1}{2}/1\frac{1}{4}\frac{1}{2}$ in other species of *Puntius conchoni* group). This is similar to *Puntius stoliczkanus*, but humeral mark much smaller [Kullander 2008].”

Biology

From Singh (2015):

“It is known only from five locations near Myitkyina, in Myanmar, where its total extent of occurrence is approximately 6,000 km². No further information is available on its population structure, threats to habitats and level of exploitation. More research is needed to find out the exact distribution, population, and threats.”

“*Pethia macrogramma* inhabits mountain streams of Myanmar.”

From Froese and Pauly (2018):

“A ripe female specimen measuring 4.96 cm SL has eggs in single ovary, with egg size up to 0.6 mm in diameter [Kullander 2008].”

Human Uses

From Singh (2015):

“It is a potential ornamental species.”

Diseases

No information available. No OIE-reportable diseases (OIE 2019) have been documented for this species.

Threat to Humans

From Froese and Pauly (2018):

“Harmless”

3 Impacts of Introductions

This species has not been reported as introduced or established outside of its native range.

4 Global Distribution



Figure 1. Map showing the location of Myitkyina, Kachin State, in northern Myanmar. *P. macrogramma* is only known from streams near Myitnkyina (Kullander 2008, as cited by Singh 2015). Map made with Google Earth Pro 7.3.1.4507 (Google LLC, Mountain View, California). No georeferenced distribution information was available for this species (GBIF Secretariat 2018).

5 Distribution Within the United States

This species has not been reported as introduced or established in the United States.

6 Climate Matching

Summary of Climate Matching Analysis

The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous United States. was 0.0, which indicates a low overall climate match. (Scores between 0.000 and 0.005, inclusive, are classified as low.) The climate match was uniformly very low across the entire contiguous United States. There was a small area of slightly higher climate match in southern Florida. All States had low climate scores.

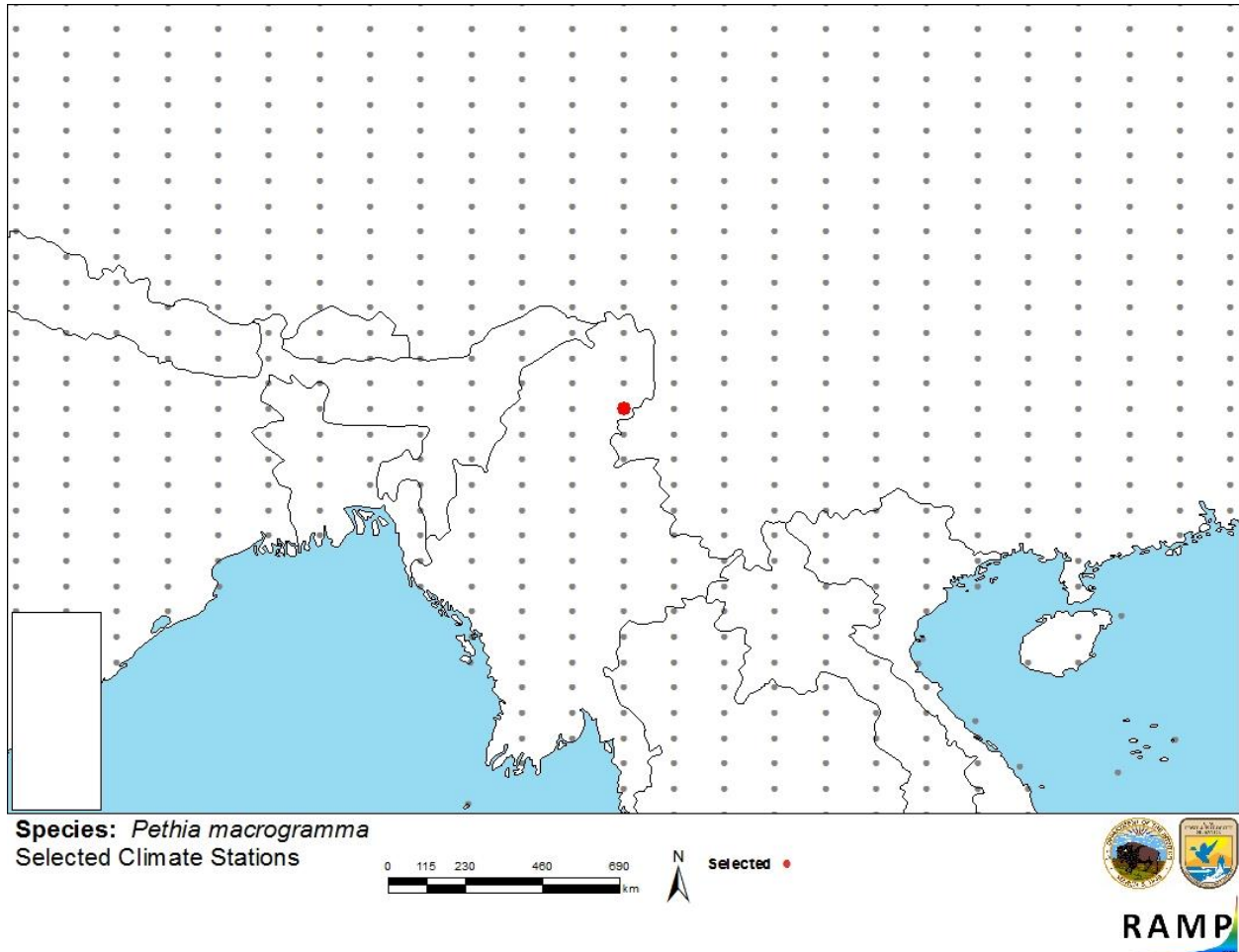


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Myanmar) and non-source locations (gray) for *Pethia macrogramma* climate matching. Source locations from Kullander (2008), as cited by Singh (2015).

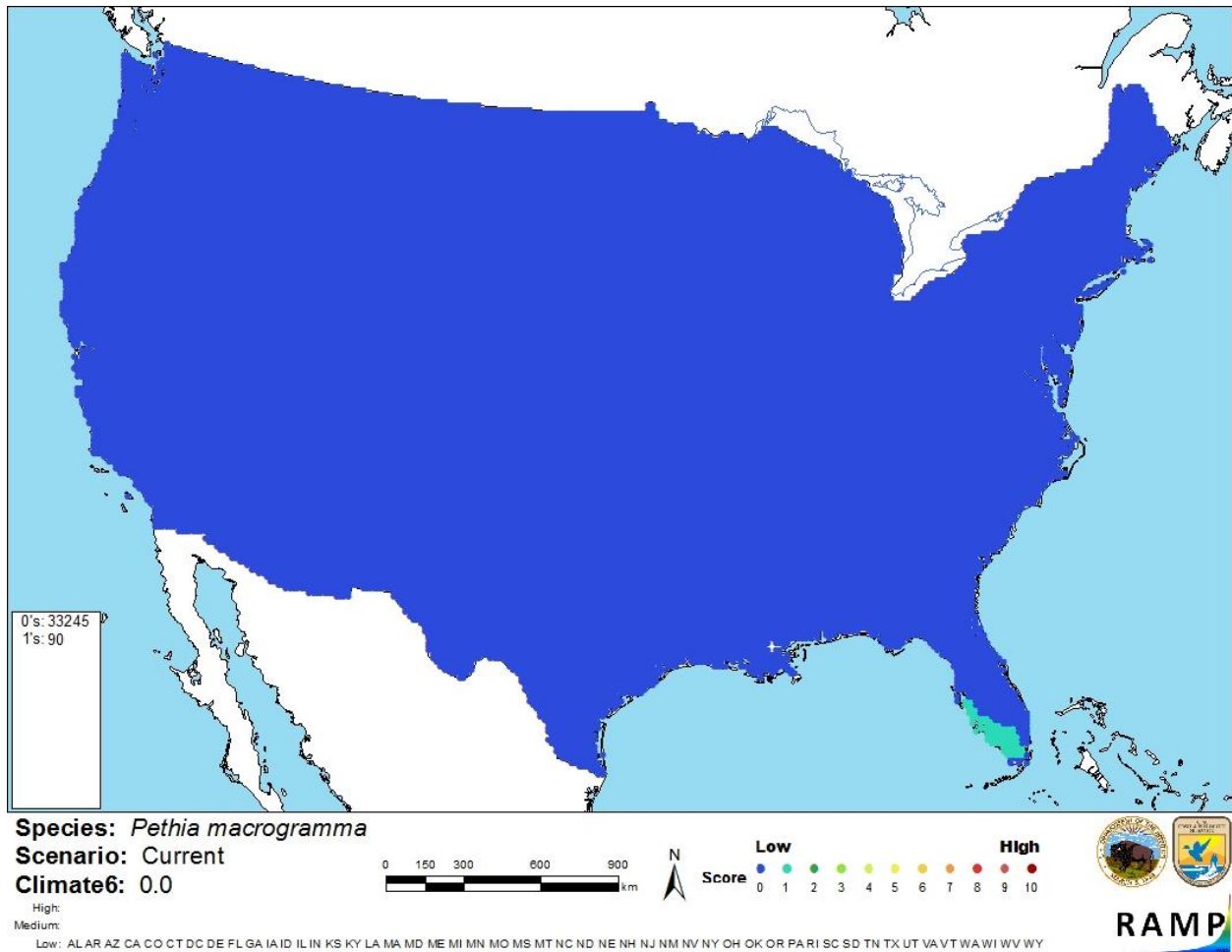


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Pethia macrogramma* in the contiguous United States based on source locations reported by Kullander (2008), as cited by Singh (2015). 0= Lowest match, 10=Highest match.

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
$0.000 \leq X < 0.005$	Low
$0.005 < X < 0.103$	Medium
≥ 0.103	High

7 Certainty of Assessment

There is very little information available about *Pethia macrogramma*. It is only known from a limited area where it was first described, and it has never been reported as introduced or established outside of its native range. No georeferenced occurrences were available for the climate matching analysis, so source locations had to be estimated based on a verbal description of the established range. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Pethia macrogramma is a small freshwater fish only known from near Myitkyina, Kachin State, in northern Myanmar. While it has potential for use as an ornamental species, there are no reports of its use. It has never been reported as introduced or established outside of its limited native range. History of invasiveness is uncertain. *P. macrogramma* has a low climate match with the contiguous United States. No georeferenced occurrences were available for the climate matching analysis, so source locations had to be estimated based on a verbal description of the established range. Because little is known about this species, further information is needed to adequately assess the risk it poses to the contiguous United States. Certainty of this assessment is low, and the overall risk assessment category 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.

Eschmeyer, W. N., R. Fricke, and R. van der Laan, editors. 2018. Catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp>. (July 2018).

Froese, R., and D. Pauly, editors. 2018. *Pethia macrogramma* (Kullander, 2008). FishBase. Available: <https://www.fishbase.de/summary/Pethia-macrogramma.html>. (July 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Pethia macrogramma*, Kullander, 2008. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/7689439>. (July 2018).

OIE (World Organisation for Animal Health). 2019. OIE-listed diseases, infections and infestations in force in 2019. World Organisation for Animal Health, Paris. Available: www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/. (August 2019).

Sanders, S., C. Castiglione, and M. H. Hoff. 2014. Risk Assessment Mapping Program: RAMP. U.S. Fish and Wildlife Service.

Singh, L. 2015. *Pethia macrogramma*. The IUCN Red List of Threatened Species 2015: e.T168594A70099763. Available: <http://www.iucnredlist.org/details/168594/0>. (July 2018).

10 References Quoted But Not Accessed

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.

Kullander, S. O. 2008. Five new species of *Puntius* from Myanmar (Teleostei: Cyprinidae). *Ichthyological Exploration of Freshwaters* 19(1):59-84.