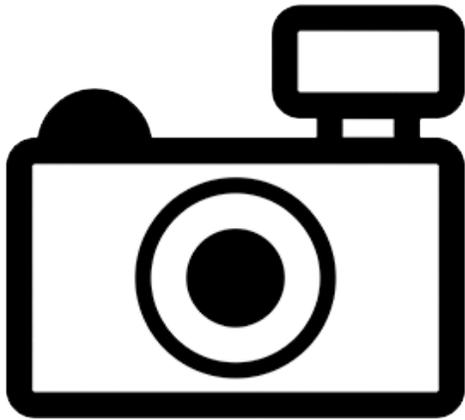


Pygmy Rainbowfish (*Melanotaenia pygmaea*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, Web Version – 1/29/2018



No Photo Available

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2016):

“Oceania: known only from two small tributaries of the Prince Regent River, West Kimberley district, northwestern Australia.”

Status in the United States

No records of *Melanotaenia pygmaea* in the United States were found.

Means of Introductions in the United States

No records of *Melanotaenia pygmaea* in the United States were found.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2016):

“Taxonomic Status:

Current Standing: valid”

“Kingdom Animalia

Subkingdom Bilateria

Infrakingdom Deuterostomia

Phylum Chordata

Subphylum Vertebrata

Infraphylum Gnathostomata

Superclass Osteichthyes

Class Actinopterygii

Subclass Neopterygii

Infraclass Teleostei

Superorder Acanthopterygii

Order Atheriniformes

Suborder Atherinoidei

Family Melanotaeniidae

Genus *Melanotaenia*

Species *Melanotaenia pygmaea* Allen, 1978”

From Eschmeyer et al. (2017):

“*pygmaea*, *Melanotaenia* Allen [G. R.] 1978:99, Fig. [Tropical Fish Hobbyist v. 26 (no. 10) [...]] Cascade Creek, West Kimberley, 15°38'S, 125°18'E, Western Australia. Holotype: WAM P.25034-003. Paratypes: AMNH 51618 [ex WAM P.25040-001] (3); AMS I.19990-001 (2); RMNH 27662 (2); USNM 217956 (2); WAM P.25034-001 (30, 3 c&s), P.25040-001 (17, now 10); ZMA 115746 (2). Type catalog: Nijssen et al. 1982:75 [...], Hutchins & Smith 1991:13 [...], Moore et al. 2008:14 [...]. •Valid as *Melanotaenia pygmaea* Allen 1978 -- (Allen & Cross 1982:56 [...], Paxton et al. 1989:351 [...], Unmack 2001:1061 [...], Hutchins 2001:25 [...], Allen et al. 2002:155 [...], Allen et al. 2006:692 [...], Allen et al. 2015:103 [...]). **Current status:** Valid as *Melanotaenia pygmaea* Allen 1978. Melanotaeniidae.”

Size, Weight, and Age Range

From Froese and Pauly (2016):

“Max length : 5.5 cm SL male/unsexed; [Allen et al. 2002]; 3.5 cm SL (female); common length: 4.0 cm SL male/unsexed; [Allen et al. 2002]”

Environment

From Froese and Pauly (2016):

“Freshwater; benthopelagic; depth range 0 - 1 m.”

Climate/Range

From Froese and Pauly (2016):

“Tropical; 14°S - 16°S”

Distribution Outside the United States

Native

From Froese and Pauly (2016):

“Oceania: known only from two small tributaries of the Prince Regent River, West Kimberley district, northwestern Australia.”

Introduced

No records of *Melanotaenia pygmaea* introductions were found.

Means of Introduction Outside the United States

No records of *Melanotaenia pygmaea* introductions were found.

Short Description

From Gomon and Bray (2011):

“A small metallic sky-blue rainbowfish with a blackish mid-lateral stripe, and pale yellow fins. Males are larger than females, and are more brightly coloured, with a reddish head and whitish fins. Females lack the reddish head and have smaller and more rounded fins.”

“Meristic features: Dorsal fin V-VII + I, 8-11; Anal fin I, 14-18; Pectoral fin 12-14.

Body relatively elongate and compressed; males with a distinctive humped profile; greatest body depth (specimens > 25 mm SL): males 30.2-35.7, females 24.2-30.4; head length 35.6-36.6; snout length 5.9-8.0; eye diameter 9.1-9.7; jaw teeth conical, vomer with a solid band of well-developed teeth; teeth present on palatines; lateral line absent.

Scales cycloid to slightly crenulate with well-developed radii; large, horizontal scale rows 8 or 9; vertical scale rows 31 to 33.

Two separate dorsal fins, anal fin long-based, caudal fin moderately forked.”

Biology

From Froese and Pauly (2016):

“Seen in schools containing up to 50 or more individuals [Allen et al. 2002]. Both sexes can become sexually mature at 2.3 cm SL [Merrick and Schmida 1984]”

“Life cycle and mating behavior: Distinct pairing [Breder and Rosen 1966].”

“Occurs in fast flowing streams interrupted by frequent cascades or rapids. Usually inhabits the deeper pools, often at the base of waterfalls with very clear water and a primarily solid rock bottom with little or no vegetative cover [Allen 1989; Allen et al. 2002]. Inhabits pools and rivulets on sandstone terraces [Allen et al. 2002].”

From Gomon and Bray (2011):

“Feed on small aquatic and terrestrial insects and microcrustaceans.”

Human Uses

From Froese and Pauly (2016):

“A popular aquarium species that thrives in captivity [Allen et al. 2002].”

Diseases

No information on disease of *Melanotaenia pygmaea* was found.

Threat to Humans

From Froese and Pauly (2016):

“Harmless”

3 Impacts of Introductions

No records of *Melanotaenia pygmaea* introductions were found.

4 Global Distribution



Figure 1. Known global distribution of *Melanotaenia pygmaea*. Map from GBIF Secretariat (2016).

5 Distribution Within the United States

No records of *Melanotaenia pygmaea* in the United States were found.

6 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Melanotaenia pygmaea* was low across the contiguous United States. The Climate 6 score (Sanders et al. 2014; 16 climate variables; Euclidean distance) for the contiguous U.S. was 0.000, low, and no states had an individually high climate match.

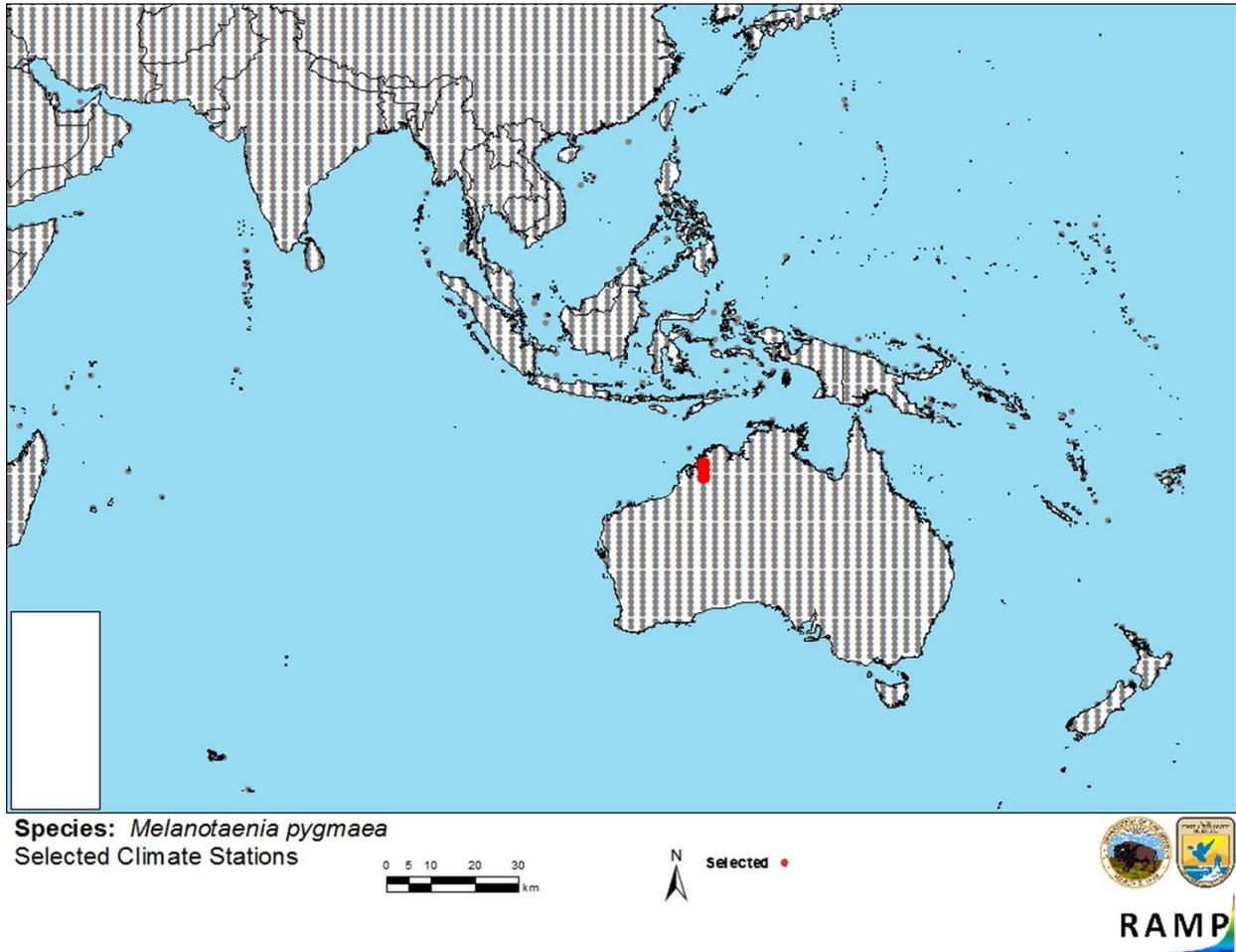


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red) and non-source locations (grey) for *Melanotaenia pygmaea* climate matching. Source locations from GBIF Secretariat (2016).

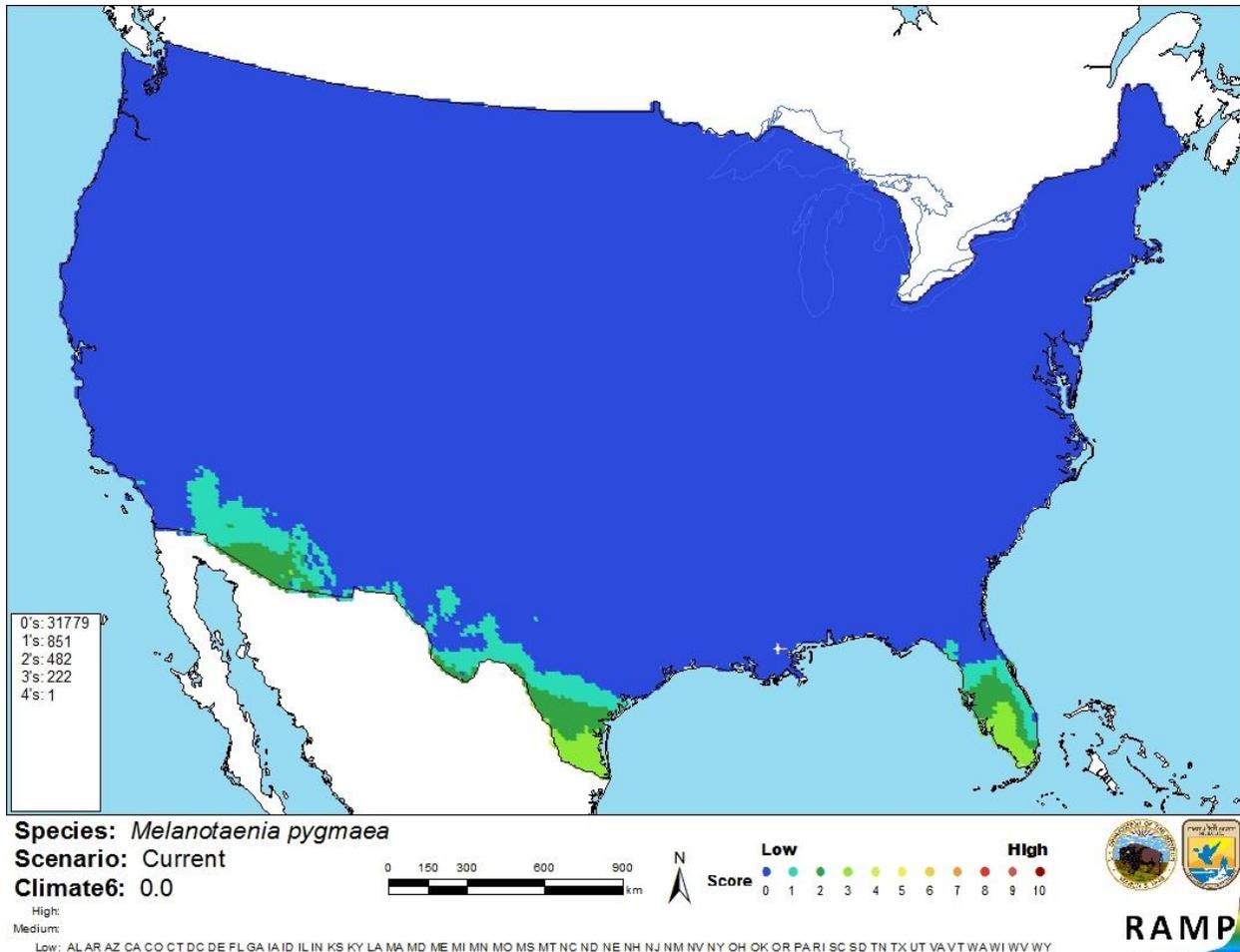


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Melanotaenia pygmaea* in the contiguous United States based on source locations reported by GBIF Secretariat (2016). 0 = Lowest match, 10 = Highest match.

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

The certainty of assessment for *Melanotaenia pygmaea* is medium. There was adequate ecological and biological information available. This species has a very limited distribution and no records of introductions were found.

8 Risk Assessment

Summary of Risk to the Contiguous United States

The history of invasiveness for *Melanotaenia pygmaea* is uncertain. No records of introduction were found. The climate match is low. The climate match results indicate that there would be little to no suitable climate that would support the establishment of a population in the case of an introduction of *M. pygmaea*. The certainty of assessment is medium. 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): Medium**
- **Remarks/Important additional information** No additional remarks.
- **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.

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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.

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