

Taiwanese Fire-bellied Gudgeon (*Micropercops swinhonis*)

Ecological Risk Screening Summary

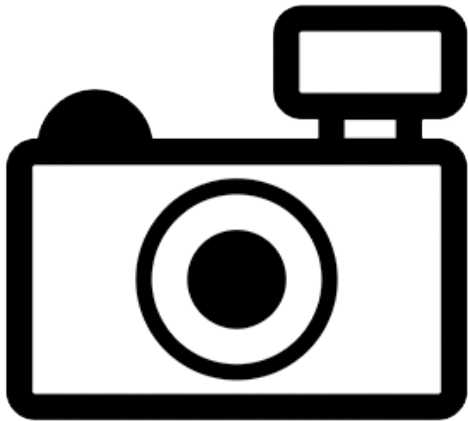
U.S. Fish & Wildlife Service, May 2011

Revised, April 2019

Web Version, 5/1/2020

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 (2019):

“Asia: China, Japan, Democratic People's Republic of Korea, and Republic of Korea.”

Status in the United States

There are no records of *Micropercops swinhonis* in the wild or in trade in the United States.

Means of Introductions in the United States

There are no records of wild or established populations of *Micropercops swinhonis* in the United States.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current status:** Valid as *Micropercops swinhonis* (Günther 1873).”

From ITIS (2019):

Kingdom Animalia

Subkingdom Bilateria

Infrakingdom Deuterostomia

Phylum Chordata

Subphylum Vertebrata

Infraphylum Gnathostomata

Superclass Actinopterygii

Class Teleostei

Superorder Acanthopterygii

Order Perciformes

Suborder Gobioidi

Family Odontobutidae

Genus *Micropercops*

Species *Micropercops swinhonis* (Günther, 1873)

Size, Weight, and Age Range

There is no information available on the size, weight, and age range of *Micropercops swinhonis*.

Environment

From Froese and Pauly (2019):

“Freshwater; brackish; demersal.”

Climate

From Froese and Pauly (2019):

“Subtropical”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Asia: China, Japan, Democratic People's Republic of Korea, and Republic of Korea.”

Introduced

According to the FAO (2019) *Micropercops swinhonis* has been introduced into Uzbekistan, the Russian Federation, and the former area of the USSR.

Means of Introduction Outside the United States

According to FAO (2019) the means of introduction into Uzbekistan, the Russian Federation, and the former area of the USSR is accidental with establishment through natural reproduction.

Short Description

A short description of *Micropercops swinhonis* was not found.

Biology

From Iwata et al. (2001):

“*M. swinhonis* lives a moderately benthic life, and spawns small eggs (Kim and Kim, 1996) [...]”

Human Uses

There is no information available on the human uses of *Micropercops swinhonis*.

Diseases

No records of OIE-reportable diseases (OIE 2019) were found for *Micropercops swinhonis*.

According to Poelen et al. (2014) *Micropercops swinhonis* is a host to *Micracanthorhynchina motomurai*, *Pallisentis celatus*, the Chinese river fluke (*Clonorchis sinensis*), and *Camallanus cotti*.

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

No information available.

4 History of Invasiveness

Micropercops swinhonis has been recorded as introduced and established in Uzbekistan, the Russian Federation, and the former area of the USSR; however, no information was available in regard to impacts of introductions. There is no information on human uses of this species. Therefore, the history of invasiveness of *M. swinhonis* is Data Deficient.

5 Global Distribution



Figure 1. Known global distribution of *Micropercops swinhonis*. Observations are reported from China. Map from GBIF Secretariat (2019).

The native range for *Micropercops swinhonis* also includes Japan and the Korean Peninsula (Froese and Pauly 2019) but no georeferenced observations were available in those locations. There are reports of established populations located in Uzbekistan, the Russian Federation, and the former area of the USSR but exact, georeferenced locations were not available and therefore could not be included in the climate match.

6 Distribution Within the United States

There are no records of wild or established populations of *Micropercops swinhonis* in the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Micropercops swinhonis* was a mix of low and medium for a majority of the contiguous United States. The climate match for the West Coast and the northeast was mostly low, while the rest of the contiguous United States was a mix of low and medium. There were some patches of high match near Texas and on the East Coast near South Carolina. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.019, medium. (Scores between 0.005 and 0.103, exclusive, are classified as medium.) All States had an low individual climate scores except Arizona, Florida, Georgia, and Texas, which had medium climate scores, and Oklahoma and South Carolina, which had high climate scores. The lack of georeferenced observations from Japan, the Korean Peninsula, or any of the established nonnative populations may result in an underestimation of the climate match.

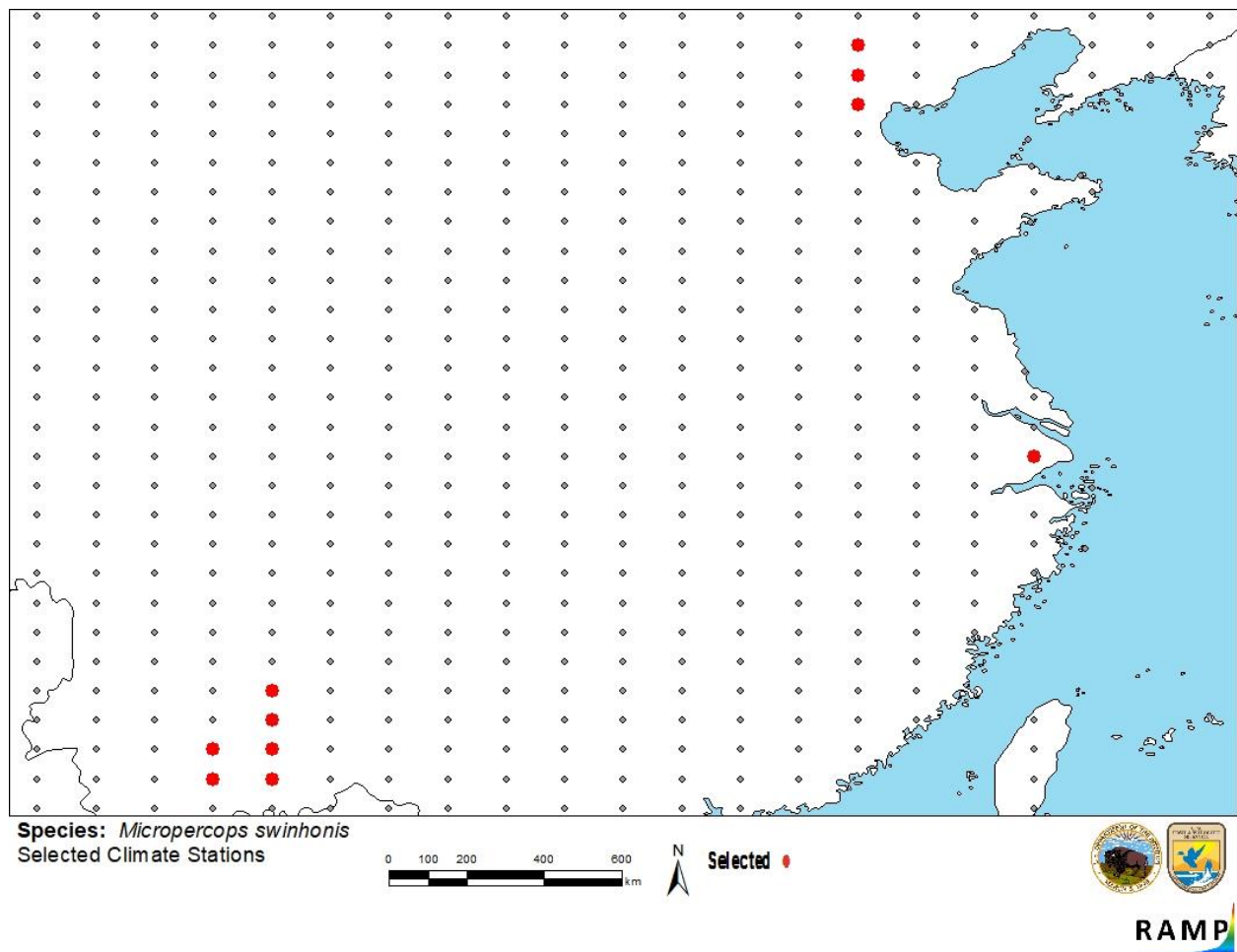


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in eastern China selected as source locations (red; China) and non-source locations (gray) for *Micropercops swinhonis* climate matching. Source locations from GBIF Secretariat (2019). Selected source locations are within 100 km of one or more species occurrences, and do not necessarily represent the locations of occurrences themselves.

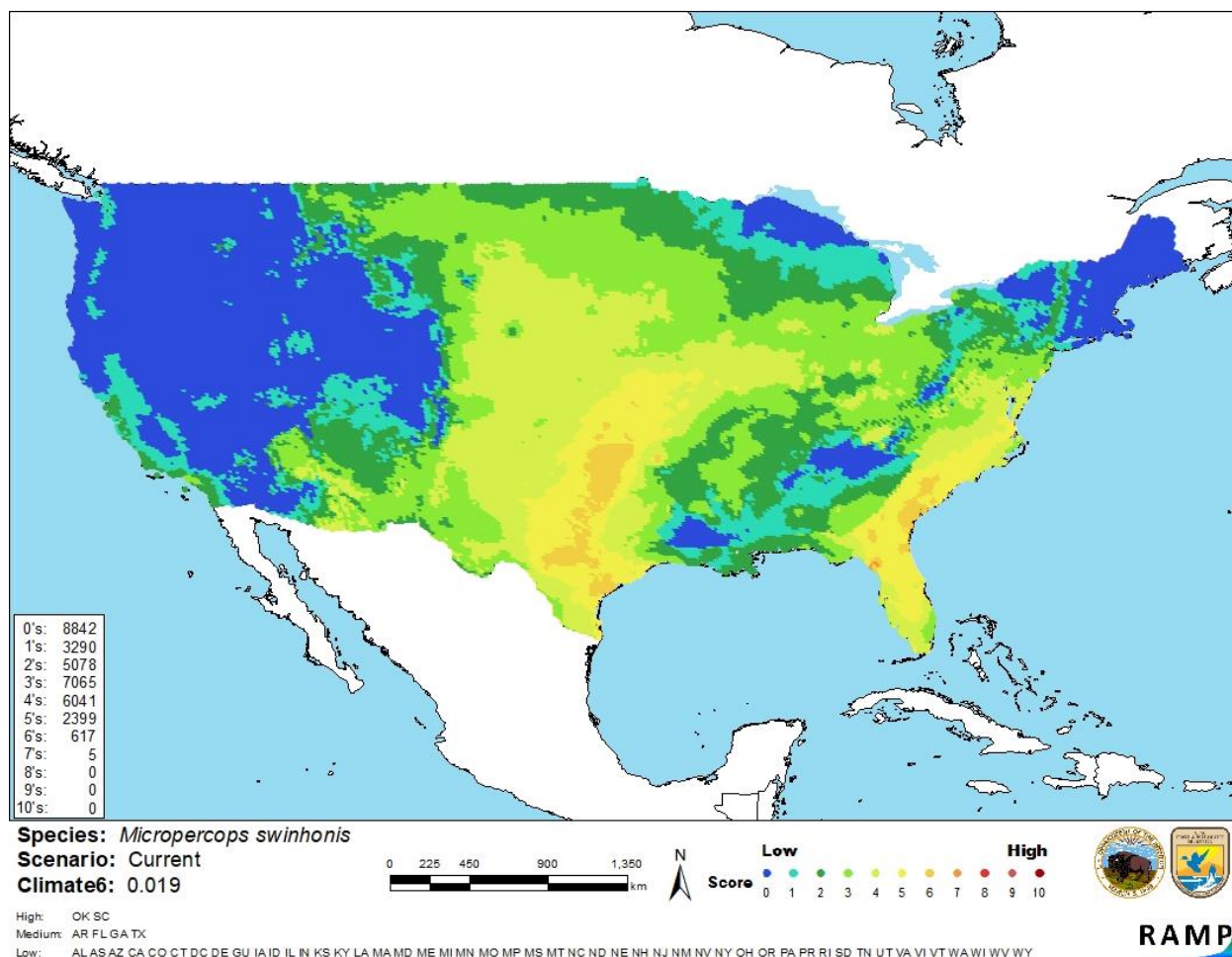


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Micropercops swinhonis* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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 for *Micropercops swinhonis* is low. There was almost no information available on the biology, description, and environment of *Micropercops swinhonis*, and little on the specific locations in some countries. *Micropercops swinhonis* has been reported

as introduced to Uzbekistan, the Russian Federation, and the former area of the USSR, but a direct location could not be determined and there was no information on the impacts of those introductions.

9 Risk Assessment

Summary of Risk to the Contiguous United States

The Taiwanese Fire-Bellied Gudgeon (*Micropercops swinhonis*) is a fish native to China, Japan, Democratic People's Republic of Korea, and Republic of Korea. There is very little information available about this species, but it is described as having a moderately benthic life and spawns small eggs. The history of invasiveness is Data Deficient. It has been reported as introduced to Uzbekistan, the Russian Federation, and the former area of the USSR but there are no records of impacts of these introductions. The climate match for the contiguous United States was medium with all States having low individual climate scores except Arizona, Florida, Georgia, and Texas, which had medium climate scores, and Oklahoma and South Carolina, which had high climate scores. The lack of available georeferenced observations for native locations other than China and the nonnative populations may decrease the accuracy of the climate match. The certainty of assessment is low. The overall risk assessment category for *Micropercops swinhonis* is Uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): Data Deficient**
- **Overall Climate Match Category (Sec. 7): Medium**
- **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.

[FAO] Fisheries and Agriculture Organization of the United Nations. 2019. Database on introductions of aquatic species. Rome: FAO. Available: <http://www.fao.org/fishery/introsp/search/en> (April 2019).

Fricke R, Eschmeyer WN, Van der Laan R, editors. 2019. Eschmeyer's catalog of fishes: genera, species, references. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (April 2019).

Froese R, Pauly D, editors. 2019. *Micropercops swinhonis* (Günther, 1873). FishBase. Available: <https://www.fishbase.de/summary/Micropercops-swinhonis.html> (April 2019).

GBIF Secretariat. 2019. GBIF backbone taxonomy: *Micropercops swinhonis* (Günther, 1873). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2390027> (April 2019).

[ITIS] Integrated Taxonomic Information System. 2019. *Micropercops swinhonis* (Günther, 1873). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=637642#null (April 2019).

Iwata A, Sakai H, Shibukawa K, Jeon SR. 2001. Development characteristics of a freshwater goby, *Micropercops swinhonis*, from Korea. Zoological Science 18(1):91–97.

[OIE] World Organisation for Animal Health. 2019. OIE-listed diseases, infections and infestations in force in 2019. Available: <http://www.oie.int/animal-health-in-the-world/oie-listed-diseases-2019/> (June 2019).

Poelen JH, Simons JD, Mungall CJ. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. Ecological Informatics 24:148–159.

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.

Kim IS, Kim BJ. 1997. Population ecology of the goby, *Micropercops swinhonis* in Puan-gun, Ch'ollabuk-do, Korea. Korean Journal of Limnology 30:47–54.