U.S. Fish & Wildlife Service

Oxyeleotris marmorata (a fish, no common name)
Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, May 2011
Revised, July 2019
Web Version, 5/1/2020

Organism Type: Fish
Overall Risk Assessment Category: Uncertain

Photo: W. A. Djatmiko. Licensed under Creative Commons Attribution-Share Alike 3.0 Unported. Available: https://commons.wikimedia.org/wiki/File:Oxyel_marmor_080425_7661_tdp.jpg. (July 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

"Asia: Mekong and Chao Phraya basins, Malay Peninsula, Indochina, Philippines and Indonesia. Record from Fiji needs confirmation."

Froese and Pauly (2019) lists *Oxyeleotris marmorata* as native to Brunei Darsm, Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, and Vietnam.

Status in the United States

No records of *Oxyeleotris marmorata* in the wild or in trade were found in the United States.

Means of Introductions in the United States

No records of *Oxyeleotris marmorata* were found in the United States.

Remarks

No additional remarks.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

Fricke et al. (2019):

"Current status: Valid as *Oxyeleotris marmorata* (Bleeker 1852)."

From ITIS (2019):

Kingdom Animalia
  Subkingdom Bilateria
    Infrakingdom Deuterostomia
      Phylum Chordata
        Subphylum Vertebrata
          Infraphylum Gnathostomata
            Superclass Actinopterygii
              Class Teleostei
                Superorder Acanthopterygii
                Order Perciformes
                Suborder Gobioidei
                Family Eleotridae
                Genus *Oxyeleotris*
                Species *Oxyeleotris marmorata* (Bleeker, 1852)

Size, Weight, and Age Range

From Froese and Pauly (2019):

"Max length : 65.0 cm SL male/unsexed; [Kottelat 2001]; common length : 30.0 cm TL male/unsexed; [Rainboth 1996]"

Environment

From Froese and Pauly (2019):

"Freshwater; brackish; demersal; pH range: 6.5 - 7.5; dH range: 10 - 15; potamodromous [Riede 2004]; depth range 10 - ? m. […]; 22°C - 28°C [Riehl and Baensch 1996; assumed to be recommended aquarium temperature]; […]"

Climate/Range

From Froese and Pauly (2019):

"Tropical; […]; 23°N - 9°S"

Distribution Outside the United States

Native

From Froese and Pauly (2019):

"Asia: Mekong and Chao Phraya basins, Malay Peninsula, Indochina, Philippines and Indonesia. Record from Fiji needs confirmation."

Froese and Pauly (2019) lists *Oxyeleotris marmorata* as native to Brunei Darsm, Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, and Vietnam.

Introduced

Froese and Pauly (2019) lists *Oxyeleotris marmorata* as introduced and established in Singapore and introduced with population status unknown in Taiwan and China.

Means of Introduction Outside the United States

Froese and Pauly (2019) lists *Oxyeleotris marmorata* as being introduced from aquaculture and ornamental.

Short Description

From Froese and Pauly (2019):

"Dorsal spines (total): 7; Dorsal soft rays (total): 9; Anal spines: 1; Anal soft rays: 8. With 60-65 predorsal scales; without ocellus on caudal peduncle [Kottelat 2001]."

Biology

From Froese and Pauly (2019):

"Found in rivers, swamps, reservoirs and canals. Enters flooded forest [Roberts 1993]. Feeds on small fishes, shrimps, aquatic insects, mollusks and crabs [Ukkatawewat 2050 [sic]]. […] Maybe the largest species of the goby-like fishes."

"Distinct pairing [Breder and Rosen 1966]."

Human Uses

From Froese and Pauly (2019):

"Considered a delicacy over much of eastern Asia. Exported fishes command a high price [Rainboth 1996]."

“Fisheries: commercial; aquaculture: commercial; aquarium: commercial”

From Allen (2011):

“Found in commercial and subsistence fisheries. Cultivated in aquaculture, and found in the aquarium trade. Considered a delicacy over much of eastern Asia. Exported fishes command a high price (Rainboth 1996). Frequently found in the aquarium trade.”

From Cheah et al. (1994):

“It is cultured in ponds and former mining pools either in monoculture or in polyculture with tilapias. Cage culture in lakes and rivers has also been successful. Production statistics for the various countries are difficult to obtain but this excellent food fish commands a retail price of at least US$$14/kg in some countries, such as in Malaysia and Singapore.”

Diseases

No OIE-reportable diseases (OIE 2020) were found to be associated with *Oxyeleotris marmorata.*

Froese and Pauly (2019) lists Lernaea infestation and Edwardsiellosis as diseases of *Oxyeleotris marmorata.*

Poelen et al. (2014) lists *Pseudodactylogyroides marmoratae* as a parasite of *Oxyeleotris marmorata* and lists *Oxyeleotris marmorata* as a host of an infectious pancreatic necrosis virus.

From Cheah et al. (1994):

“Up until 1978, there was little information on the diseases of the marble goby. Experimental cage culture at Universiti Pertanian Malaysia was disrupted by mass mortalities (Ang 1978). The fish were infested with protozoan parasites: *Trichodina sp.* and *Henneguya shaharini* sp. nov. (Shariff 1982). Cysts were found on the gill filaments. […]

Marble gobies grown in cages at the Nan river, Nakornsawan province, Thailand, carried four groups of ectoparasites: protozoa, trematodes, arthropods and fungi, with bacterial infections mostly caused by *Aeromonas hydrophila* (Supamataya 1984).

A sand goby virus (SGV) has been isolated from the ulcers on the skin and in the kidney and spleen of marble gobies in Thailand (Hedrick et al. 1986). This was a new aquatic birnavirus.”

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

No records of impacts of introductions were found for *Oxyeleotris marmorata.*

4 History of Invasiveness

Introductions were found for *Oxyeleotris marmorata* in Singapore where it is established, and introduced with populations unknown in Taiwan and China. The fish is used in aquaculture and the aquarium trade, but not available in the United States. No data on impacts of introductions exists. The history of invasiveness for this fish is "Data Deficient".

5 Global Distribution

Figure 1. Known global distribution of *Oxyeleotris marmorata*. Locations in Brunei Darsm, Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Singapore, Taiwan, Thailand, and Vietnam. Map from GBIF Secretariat (2019). The observations in China and Taiwan were not used to select source points for the climate match as there was no evidence found that those introductions resulted in established populations. The observation in the Cook Islands (point to the east of Australia) was not used to select source points was no mention of this location found in the literature.

6 Distribution Within the United States

No records of *Oxyeleotris marmorata* were found in the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for *Oxyeleotris marmorata* was low for the majority of the contiguous United States with small patches of medium match in southern Texas and Florida. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.001, low (scores less than 0.005 are considered low). The majority of the States had low individual climate scores except for Texas which had a medium score.

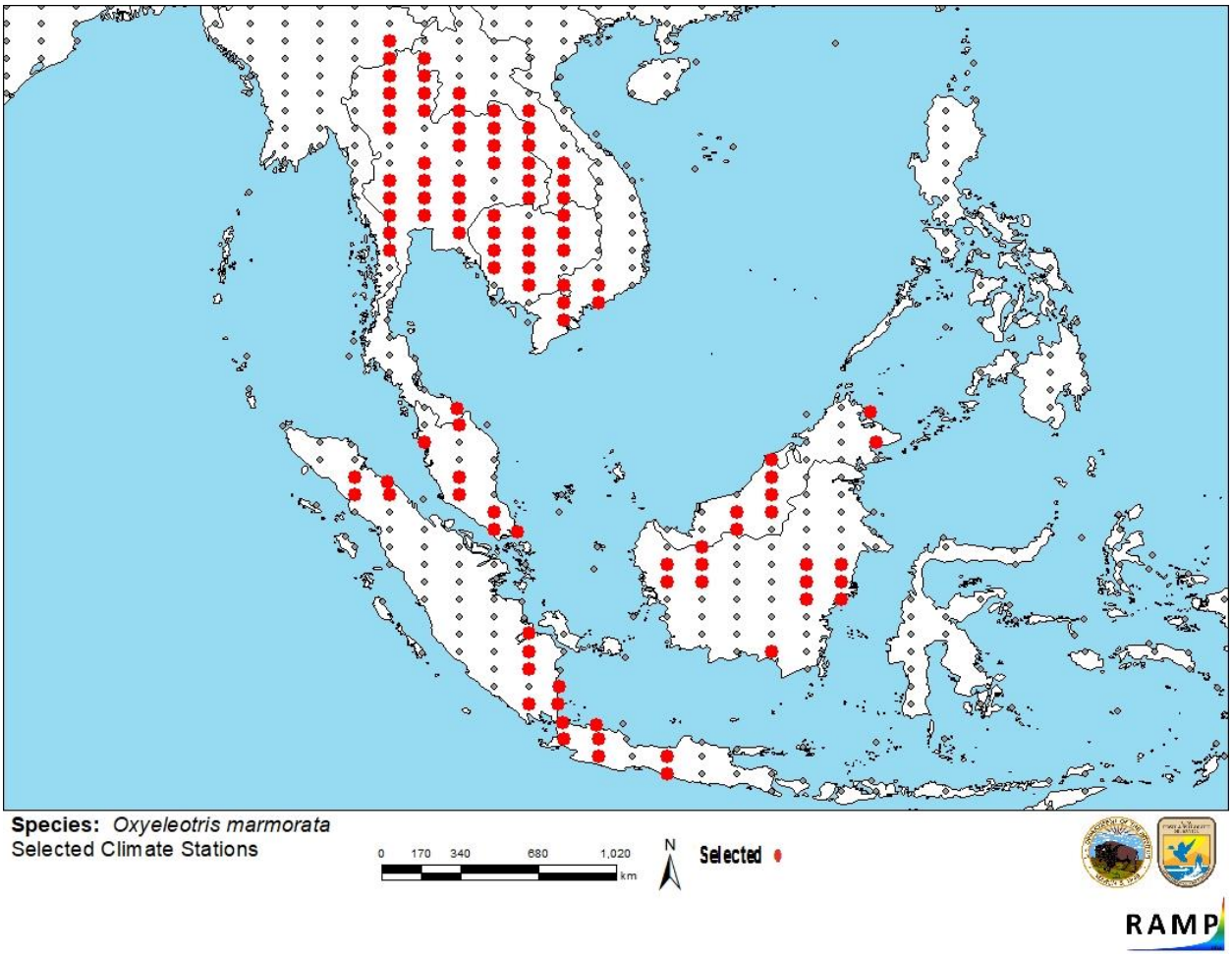

Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Asia selected as source locations (red; Brunei Darsm, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, and Vietnam) and non-source locations (gray) for *Oxyeleotris marmorata* climate matching. Source locations 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."

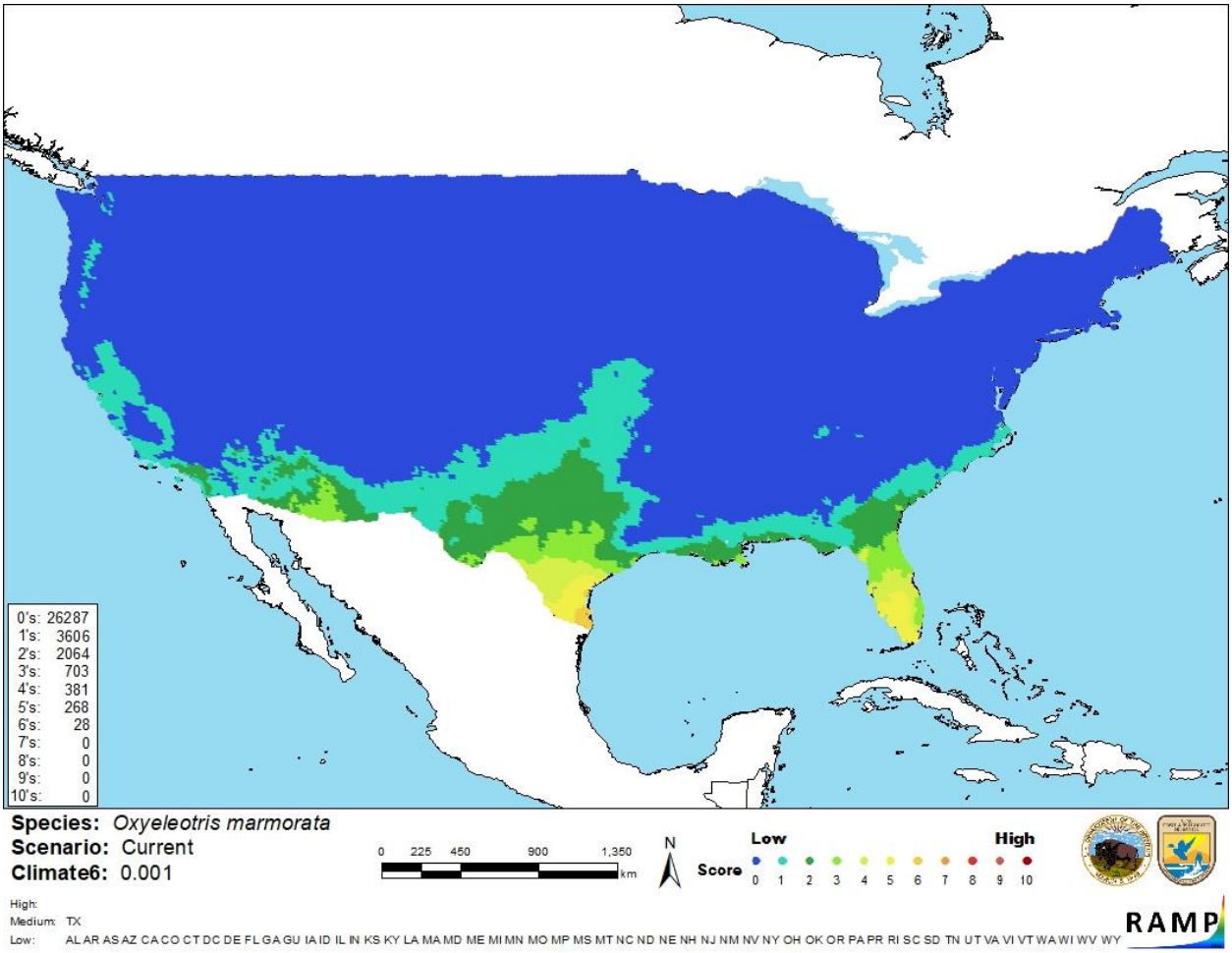

Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Oxyeleotris marmorata* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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≤X≤0.005	Low
0.005<X<0.103	Medium
≥0.103	High

8 Certainty of Assessment

The certainty of assessment for *Oxyeleotris marmorata* is low. There is minimal information available for this species. Information on introductions was found for *Oxyeleotris marmorata*; however, no information was found on the impacts of introductions.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Oxyeleotris marmorata is a large goby native to southeastern Asia and is considered commercially valuable in such countries as Malaysia and Singapore. This freshwater fish is commercially raised for human consumption and aquarium trade. *Oxyeleotris marmorata* has been introduced outside of its native range. However, no information has been found on impacts from the introductions. Therefore, the history of invasiveness for *O. marmorata* is data deficient. The climate match for the contiguous United States was low, with majority of States having low climate matches and Texas having an individually medium climate match. The certainty of assessment is low. The overall risk assessment category for *Oxyeleotris marmorata* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): Data Deficient**
- **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.

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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.

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Kottelat M. 2001. Fishes of Laos. Sri Lanka: WHT Publications, Colombo 5.

Rainboth WJ. 1996. Fishes of the Cambodian Mekong. FAO species identification field guide for fishery purposes. Rome: FAO.

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