

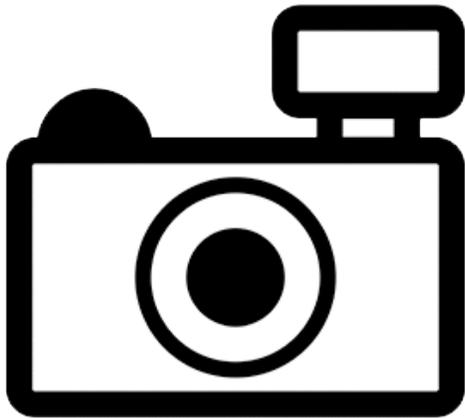
## ***Isthmoheros tuyrensis* (a fish, no common name)**

### **Ecological Risk Screening Summary**

U.S. Fish & Wildlife Service, August 2011

Revised, November 2018

Web Version, 1/16/2020



No Photo Available

## **1 Native Range and Status in the United States**

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### **Native Range**

From Froese and Pauly (2018):

“Central America: Pacific slope of Panama (Tuíra and Bayano River basins).”

### **Status in the United States**

No records of *Isthmoheros tuyrensis* in the wild or in trade in the United States were found.

### **Means of Introductions in the United States**

No records of *Isthmoheros tuyrensis* in the wild in the United States were found.

### **Remarks**

Searches were conducted using the valid name, *Isthmoheros tuyrensis*, and the synonym *Cichlasoma tuyrensis*.

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

According to Fricke et al. (2018), *Isthmoheros tuyrensis* (Meek and Hildebrand 1913) is the current valid name of this species. *Isthmoheros tuyrensis* was originally described as *Cichlasoma tuyrensis* Meek and Hildebrand 1913.

From Froese and Pauly (2018):

“Actinopterygii (ray-finned fishes) > Perciformes (Perch-likes) > Cichlidae (Cichlids) > Cichlinae”

### Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 23.5 cm SL male/unsexed; [Kullander 2003]”

### Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic; pH range: 7.0 - ?. [...] 25°C - 30°C [assumed to be recommended aquarium temperature] [Conkel 1993]”

### Climate/Range

From Froese and Pauly (2018):

“Tropical; [...]”

### Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Central America: Pacific slope of Panama (Tuíra and Bayano River basins).”

Introduced

No records of introductions of *Isthmoheros tuyrensis* were found.

### Means of Introduction Outside the United States

No records of introductions of *Isthmoheros tuyrensis* were found.

### Short Description

A short description of *Isthmoheros tuyrensis* was not found.

## Biology

From Froese and Pauly (2018):

“A detritivore-herbivore that occurs in slow-moving waters [Ian et al. 2016].”

## Human Uses

No information on human uses of *Isthmoheros tuyrensis* was found.

## Diseases

No information on diseases of *Isthmoheros tuyrensis* was found. **No records of OIE-reportable diseases (OIE 2020) were found for *I. tuyrensis*.**

## Threat to Humans

From Froese and Pauly (2018):

“Harmless”

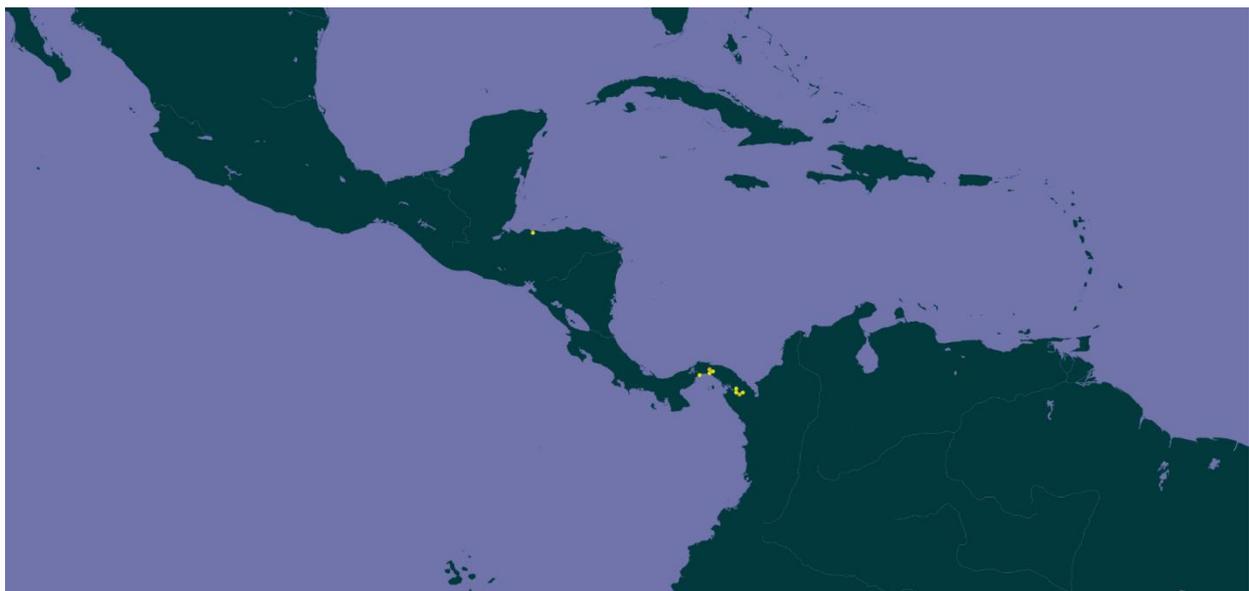
## 3 Impacts of Introductions

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No records of introductions of *Isthmoheros tuyrensis* were found; therefore there is no information on impacts of introductions.

## 4 Global Distribution

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**Figure 1.** Map of Central America showing locations where *Isthmoheros tuyrensis* has been reported. Locations are in Honduras and Panama. Map from GBIF Secretariat (2018). The location in Honduras was not used to select source points because there is no additional literature supporting Honduras as having established *Isthmoheros tuyrensis* populations.

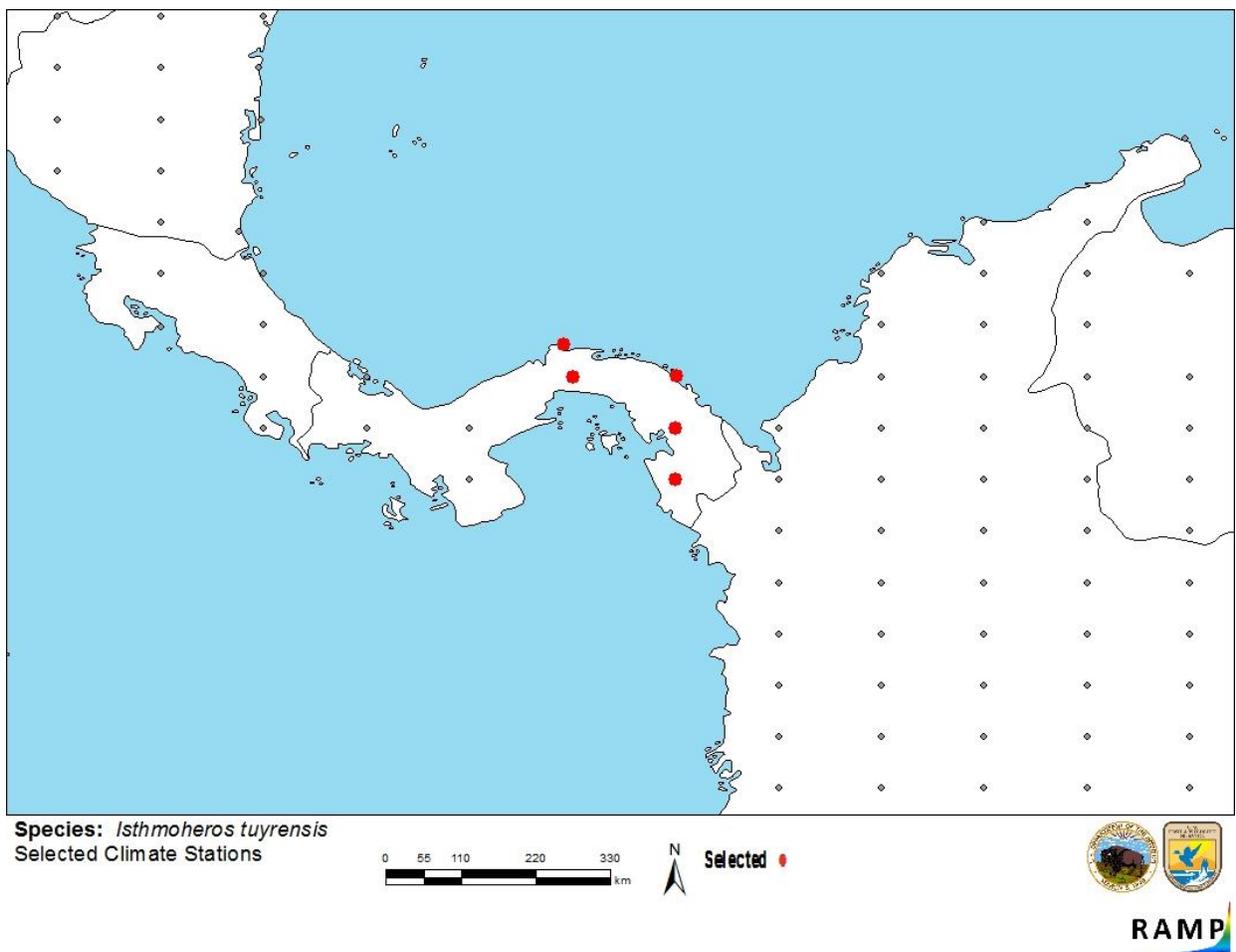
## 5 Distribution Within the United States

No records of *Isthmoheros tuyrensis* in the wild in the United States were found.

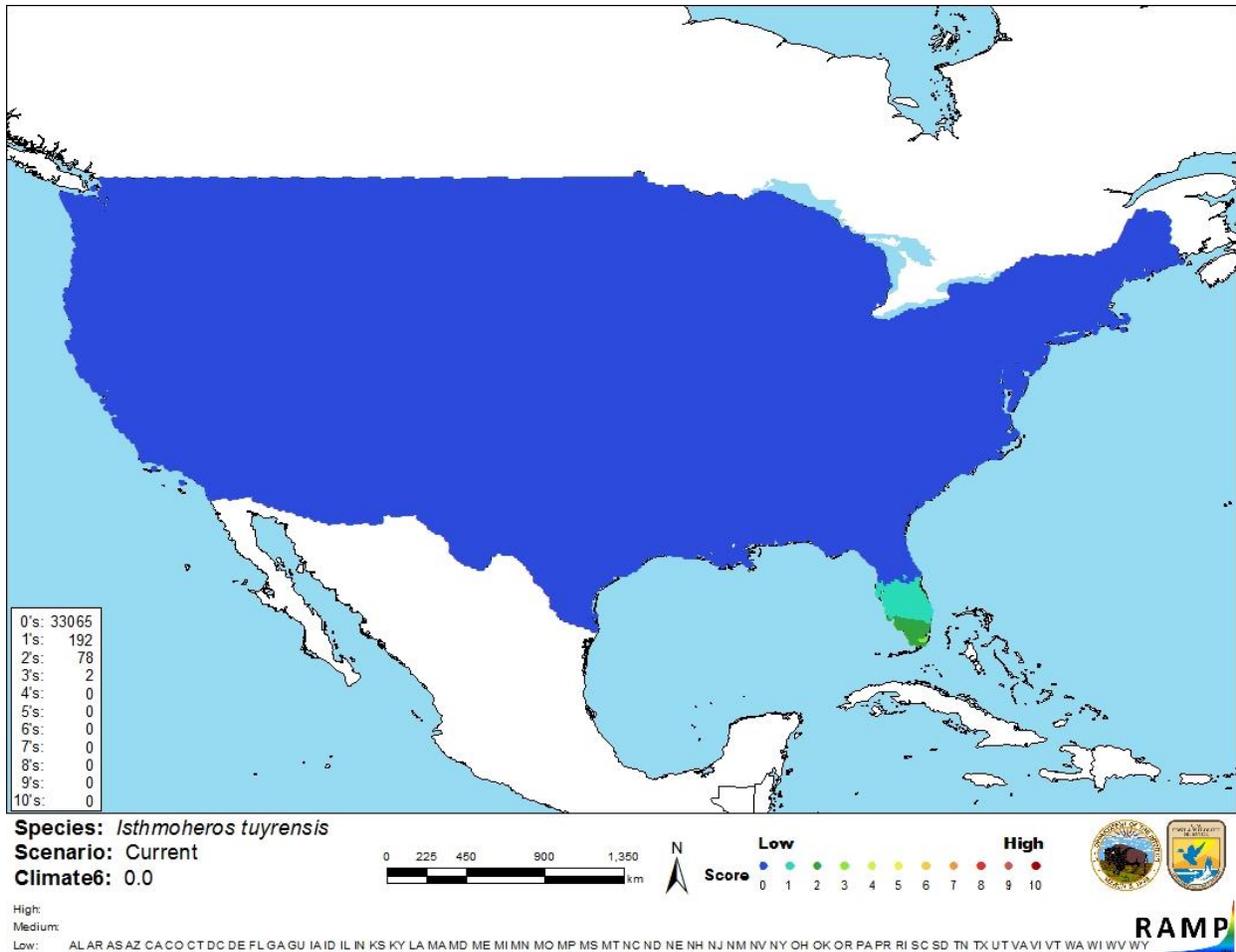
## 6 Climate Matching

### Summary of Climate Matching Analysis

The climate match for *Isthmoheros tuyrensis* was low for the entire contiguous United States. 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 low individual Climate 6 scores.



**Figure 2.** RAMP (Sanders et al. 2018) source map showing weather stations in Central America selected as source locations (red; Panama) and non-source locations (gray) for *Isthmoheros tuyrensis* 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 *Isthmoheros tuyrensis* 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 = 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
$\geq 0.103$	High

## 7 Certainty of Assessment

The certainty of assessment for *Isthmoheros tuyrensis* is low. There is minimal information available for this species. No information on introductions of *Isthmoheros tuyrensis* was found.

## 8 Risk Assessment

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### Summary of Risk to the Contiguous United States

*Isthmoheros tuyrensis* is a Neotropical cichlid fish native to Panama. The history of invasiveness is uncertain. It has not been reported as introduced or established anywhere in the world. This species is not found in trade. The climate match for the contiguous United States was low. The certainty of assessment is low. 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**
- **Remarks/Important additional information:** No additional information.
- **Overall Risk Assessment Category: Uncertain**

## 9 References

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**Note: The following references were accessed for this ERSS. References cited within quoted text but not accessed are included below in Section 10.**

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

Froese, R., and D. Pauly, editors. 2018. *Isthmoheros tuyrensis* Meek & Hildebrand, 1913. FishBase. Available: <https://www.fishbase.de/summary/Isthmoheros-tuyrensis.html>. (November 2018).

GBIF Secretariat. 2018. GBIF backbone taxonomy: *Isthmoheros tuyrensis* Meek & Hildebrand, 1913. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/9396413>. (November 2018).

OIE (World Organisation for Animal Health). 2020. 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 2020).

Sanders, S., C. Castiglione, and M. Hoff. 2018. Risk assessment mapping program: RAMP, version 3.1. U.S. Fish and Wildlife Service.

## 10 References Quoted But Not Accessed

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**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.**

Conkel, D. 1993. Cichlids of North and Central America. T.F.H. Publications.

Ian, O., L. Piálek, K. Dragová, and J. Novák. 2016. Diversity and evolution of the Middle American cichlid fishes (Teleostei: Cichlidae) with revised classification. *Vertebrate Zoology* 66(1):1–102.

Kullander, S. O. 2003. Cichlidae (cichlids). Pages 605–654 *in* R. E. Reis, S. O. Kullander and C. J. Ferraris, Jr., editors. Checklist of the freshwater fishes of South and Central America. EDIPUCRS, Porto Alegre, Brazil.

Meek, S. E., and S. F. Hildebrand. 1913. New species of fishes from Panama. *Field Museum of Natural History, Publications, Zoölogical Series* 10(8):77–91.