

Redside Cichlid (*Amphilophus istlanus*)

Ecological Risk Screening Summary

U.S. Fish and Wildlife Service, August 2011

Revised, October 2012, September 2018

Web Version, 12/14/2018

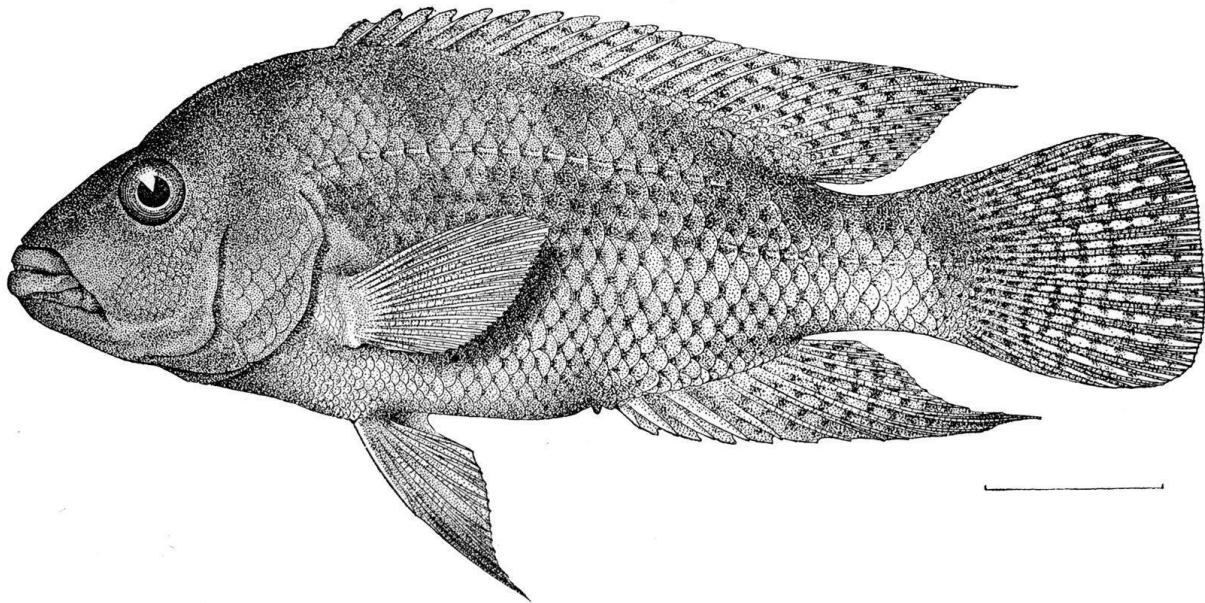


FIG. 21.—*Heros istlanus* Jordan & Snyder, new species. Type.

Image: Jordan and Snyder (1899). Public domain. Available:
<https://www.gbif.org/occurrence/607757700>. (September 2018).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2018):

“Central America: Pacific slope of Mexico.”

From Kullander (2003):

“Type locality: Rio Ixtla at Puente de Ixtla, Río Balsa basin, Morelos, Mexico.”

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 *Amphilophus istlanus*, the current valid name for this species, and the synonym *Cichlasoma istlanum* were used when researching in preparation of this report.

2 Biology and Ecology

Taxonomic Hierarchy and Taxonomic Standing

From ITIS (2018):

“Kingdom Animalia
Subkingdom Bilateria
Infrakingdom Deuterostomia
Phylum Chordata
Subphylum Vertebrata
Infraphylum Gnathostomata
Superclass Actinopterygii
Class Teleostei
Superorder Acanthopterygii
Order Perciformes
Suborder Labroidei
Family Cichlidae
Genus *Cichlasoma*
Species *Cichlasoma istlanum* (Jordan and Snyder, 1899)”

From Fricke et al. (2018):

“Current status: Valid as *Amphilophus istlanus* (Jordan & Snyder 1899). Cichlidae: Cichlinae.”

Size, Weight, and Age Range

From Froese and Pauly (2018):

“Max length : 30.0 cm TL male/unsexed; [Kullander 2003]”

Environment

From Froese and Pauly (2018):

“Freshwater; benthopelagic; pH range: 8.0 - ? ; dH range: 3 – 5. [...] 24°C - 28°C [Conkel 1993; unknown if referring to water or air temperature]”

Climate/Range

From Froese and Pauly (2018):

“Tropical; [...]”

Distribution Outside the United States

Native

From Froese and Pauly (2018):

“Central America: Pacific slope of Mexico.”

From Kullander (2003):

“Type locality: Rio Ixtla at Puente de Ixtla, Río Balsa basin, Morelos, Mexico.”

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 Jordan and Evermann (1900):

“Head $2\frac{2}{5}$; depth $2\frac{2}{3}$; depth of caudal peduncle 7; eye $4\frac{1}{2}$ in head; snout $2\frac{1}{4}$; interorbital space $3\frac{1}{2}$; longest dorsal spine $2\frac{2}{5}$, ray (without filament) $1\frac{2}{5}$; longest anal spine $2\frac{3}{5}$, ray (without filament) $1\frac{1}{3}$; length of pectoral $1\frac{1}{2}$; ventrals $1\frac{1}{3}$; caudal $1\frac{1}{5}$; D. XVI, 10; A. V, 7; P. 14; scales 28-18. Body elongate, compressed, deepest above insertion of ventrals; dorsal outline rising rapidly to origin of dorsal, falling gradually to base of last spine, from which the descent to the caudal peduncle is more abrupt; ventral outline evenly rounded; interorbital space convex; eye large, orbit circular, equally distant from tip of snout and posterior edge of opercle; mouth horizontal, lower jaw projecting; lips thick, the lower without frenum, folding over the upper at their union; premaxillary protractile; maxillary small, nearly vertical in position, and almost hidden by the large preorbital; teeth on both jaws, in 2 series, the outer a single row of 24 canines, largest in front, growing smaller posteriorly, the inner series villiform; all of the teeth with brown-colored tips; gill-membranes free from isthmus ; branchiostegals 5 ; gill-rakers on first arch 9, short, blunt, far apart. Body covered with large scales; cheek, opercle, inter-opercle, subopercle, and occipital portion of head with small scales; ventral part of head, preorbital area, snout, and

anterior part of inter-orbital space naked; one row of scales extending on bases of dorsal and anal fins; scales of body weakly-ctenoid ; scales of head smooth; lateral line interrupted on the nineteenth transverse row of scales, beginning again 3 scales lower down and 2 scales in advance of where it left off and extending to base of caudal; first dorsal spine short and slender, others gradually longer and heavier, posterior spine longest; each spine with a rather stiff distal, ray-like attachment, the anterior edge of which projects above the membrane of fin; tips of fourth and fifth rays of dorsal uniting to form a thread-like filament about as long as the diameter of orbit; dorsal, when depressed, extending on caudal one-third its length ; first anal spine shortest, others growing gradually longer and heavier, the last $2\frac{1}{2}$ times as long as the first; spines with distal attachments similar to those of dorsal, third and fourth rays longest, united at their tips, forming a slender filament ; tip of anal extending a little farther posteriorly than that of dorsal ; caudal rounded ; tip of pectoral rounded ; ventrals located slightly posterior to base of pectoral, extending to vent, outer ray longest, ending in a filament. Color dark, an oblong brownish-black spot at base of each scale on side of body, the spots growing less distinct above the pectoral ; membranes of dorsal, anal, and caudal with small spots, these more distinct and regularly arranged on soft parts of dorsal and anal; pectoral and ventrals without spots.”

“Young individuals have a brownish-black spot at base of caudal and on side of body at tip of pectoral; a less distinct spot at upper edge of gill-opening and also below posterior end of base of dorsal. The darker of these spots are sometimes faintly indicated on the larger individuals.”

From Lyons (2001):

“Large males are particularly attractive, with a green head and nuchal hump, an orange ventral surface, and light blue spots on the flanks.”

Biology

From Froese and Pauly (2018):

“Males develop massive nuchal humps during breeding season.”

Human Uses

From Froese and Pauly (2018):

“Fisheries: commercial”

Diseases

From Froese and Pauly (2018):

“Yellow Grub, Parasitic infestations (protozoa, worms, etc.)
Bothriocephalus Infestation 2, Parasitic infestations (protozoa, worms, etc.)
Goezia Disease 2, Parasitic infestations (protozoa, worms, etc.)
Floridosentis Infection, Parasitic infestations (protozoa, worms, etc.)
Laurotravassoxyuris Infestation, Parasitic infestations (protozoa, worms, etc.)”

Poelen et al. (2014) list the following as parasites of *Amphilophus istlanus* (as *Cichlasoma istlanum*): *Thynnascaris habena*, *Neoechinorhynchus golvani*, *Floridosentis mugilis*, *Parvitaenia macropeos*, *Spirocamallanus pereirai*, *Goezia nonipapillata*, *Atractis bravoae*, *Culuwiya cichlidorum*, *Clinostomum complanatum*, *Diplostomum compactum*, *Posthodiplostomum minimum*, *Rhabdochona kidderi*, *Bothriocephalus acheilognathi*, *Diplostomum spathaceum*, and *Contracaecum multipapillatum* (Benesh et al. 2017, Strona et al. 2013).

No OIE-reportable diseases have been documented in 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. Known global distribution of *Amphilophus istlanus*, reported from Mexico. Map from GBIF Secretariat (2018). Points not on the Pacific slope were excluded from climate matching.

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 is a low climate match. A Climate 6 score of 0.005 or below indicates a low climate match. The climate score was low in every state in the contiguous United States except for Florida, where the climate score was medium. In general, the areas along the southern border from Texas to California, the California coast, and southern peninsular Florida had a medium-low to medium climate match, while the climate match was low elsewhere.

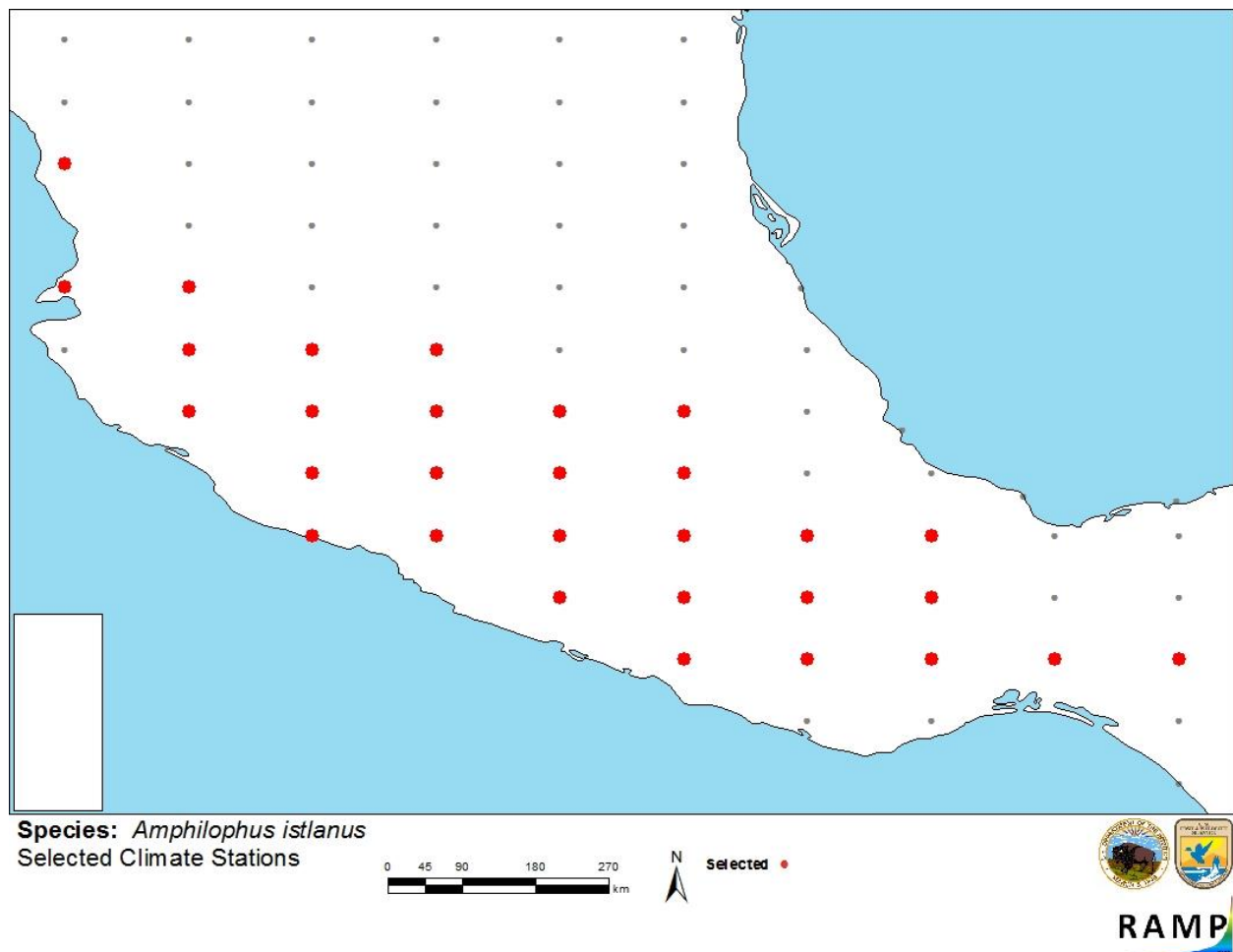


Figure 2. RAMP (Sanders et al. 2014) source map showing weather stations selected as source locations (red; Mexico) and non-source locations (gray) for *Amphilophus istlanus* climate matching. Source locations from GBIF Secretariat (2018).

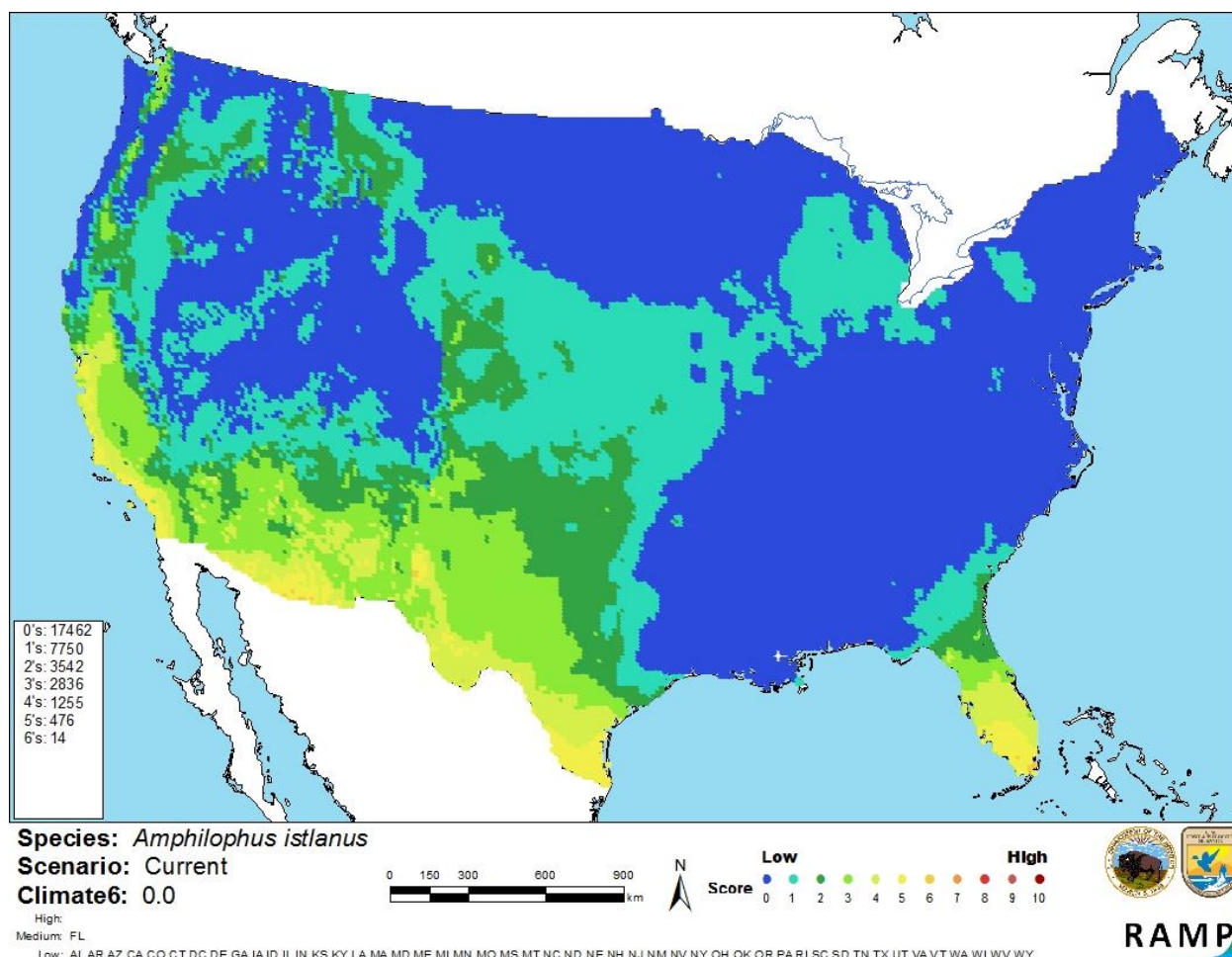


Figure 3. Map of RAMP (Sanders et al. 2014) climate matches for *Amphilophus istlanus* in the contiguous United States based on source locations reported by GBIF Secretariat (2018). 0=Lowest match, 10=Highest match.

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

7 Certainty of Assessment

There is limited information available about the biology of *Amphilophus istlanus*. Its range in Mexico has been adequately-documented, and it has not been reported as introduced or established outside of its native range, so there is no information available on negative impacts of introductions of this species. Further information is needed to adequately assess the risk this species poses to the contiguous United States. Certainty of this assessment is low.

8 Risk Assessment

Summary of Risk to the Contiguous United States

Amphilophus istlanus, the Redside Cichlid, is a fish species native to the Pacific slope of southern Mexico. It has never been reported as introduced or established outside of its native range. History of invasiveness is uncertain. *A. istlanus* has a low climate match with the contiguous United States. The climate score was medium in Florida and low elsewhere. Certainty of this assessment is low because of a lack of information from which to base an assessment of the invasive potential of *A. istlanus*. 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.

- 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>. (September 2018).
- Froese, R., and D. Pauly, editors. 2018. *Cichlasoma istlanum* (Jordan & Snyder, 1899). FishBase. Available: <https://www.fishbase.de/summary/Cichlasoma-istlanum.html>. (September 2018).
- GBIF Secretariat. 2018. GBIF backbone taxonomy: *Cichlasoma istlanum*, Jordan & Snyder, 1899. Global Biodiversity Information Facility, Copenhagen. Available: <https://www.gbif.org/species/2371853>. (September 2018).
- ITIS (Integrated Taxonomic Information System). 2018. *Cichlasoma istlanum* (Jordan & Snyder, 1899). Integrated Taxonomic Information System, Reston, Virginia. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=649455#null. (September 2018).
- Jordan, D. S., and B. W. Evermann. 1900. The fishes of North and Middle America: A descriptive catalogue of the species of fish-like vertebrates found in the waters of North America, north of the Isthmus of Panama. Part IV. Bulletin of the United States National Museum 47:3137-3313.

Lyons, J. 2001. Fishes from the land of Trucha de Tierra Caliente. *American Currents* 27(1):1-8.

Poelen, J. H., J. D. Simons, and C. J. Mungall. 2014. Global Biotic Interactions: an open infrastructure to share and analyze species-interaction datasets. *Ecological Informatics* 24:148-159.

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

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.

Conkel, D. 1993. *Cichlids of North and Central America*. T. F. H. Publications, Neptune City, New Jersey.

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.