

Golden Panchax (*Pachypanchax playfairii*)

Ecological Risk Screening Summary

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

Organism Type: Fish
Overall Risk Assessment Category: Uncertain



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<https://www.inaturalist.org/taxa/341073-Pachypanchax-playfairii>. (April 2019).

1 Native Range and Status in the United States

Native Range

From Froese and Pauly (2019):

“Africa: endemic of Seychelles [islands in the Indian Ocean off the east coast of Africa].”

“Known from small fresh- and brackishwater streams on the islands of Mahé, Praslin, and Silhouette [Wildekamp et al. 1986].”

Status in the United States

Pachypanchax playfairii has not been reported in the wild or in trade in the United States.

Means of Introductions in the United States

Pachypanchax playfairii has not been reported in the wild 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 *Pachypanchax playfairii* (Günther 1866).”

From ITIS (2019):

Kingdom Animalia

Subkingdom Bilateria

Infrakingdom Deuterostomia

Phylum Chordata

Subphylum Vertebrata

Infraphylum Gnathostomata

Superclass Actinopterygii

Class Teleostei

Superorder Acanthopterygii

Order Cyprinodontiformes

Suborder Aplocheiloidei

Family Aplocheilidae

Subfamily Aplocheilinae

Genus *Pachypanchax*

Species *Pachypanchax playfairii* (Günther 1866)

Size, Weight, and Age Range

From Froese and Pauly (2019):

“Max length : 10.0 cm SL male/unsexed; [Eccles 1992]”

Environment

From Froese and Pauly (2019):

“Freshwater; brackish; demersal; pH range: 6.0 - 8.0; dH range: 5 - 19; non-migratory. [...] 22°C - 24°C [Riehl and Baensch 1991; assumed to be recommended aquarium temperature]”

Climate

From Froese and Pauly (2019):

“Tropical”

Distribution Outside the United States

Native

From Froese and Pauly (2019):

“Africa: endemic of Seychelles [islands in the Indian Ocean off the east coast of Africa].”

“Known from small fresh- and brackishwater streams on the islands of Mahé, Praslin, and Silhouette [Wildekamp et al. 1986].”

Introduced

According to FAO (2019), *P. playfairii* has been introduced to Tanzania and is probably established.

From Froese and Pauly (2019):

“Found in ponds of the Marahubi palace, Zanzibar [Tanzania].”

From Loiselle (2006):

“The Zanzibari population of *Pachypanchax playfairii* represents a recent translocation and (Parenti [1981] notwithstanding) there are no confirmed records of this species from the East African mainland (Seegers, 1980).”

Means of Introduction Outside the United States

No information was found on the means of introduction of *Pachypanchax playfairii*.

Short Description

From Loiselle (2006):

“However, *P. playfairii* shares diagnostic skeletal characters: a heavily scaled, rounded caudal fin; and lack of a reflective pineal spot with all save one of the presently known Malagasy aplocheilids.”

“*Pachypanchax* Myers, 1933 may thus be diagnosed as follows: Maxillary relatively immobile, bound at its posterior end to the preorbital by a fold of skin. Premaxillary ascending processes flat and broad, tapered posteriorly and not overlapping in the midline. A single pair of tubular nares present. Reflective pineal spot absent. Frontal squamation typically of the E-type, with prominent H scales. In very large specimens, a shallow pit may be present in the center of some scales along the midlateral line, but there is no evidence of any connection to an underlying neuromast. Scales and fin rays lacking papillae. Haemal arches unexpanded, no pleural ribs on haermal spines. Hypural plates fused to form a hypural fan in adults, joint lines visible in juveniles. Caudal fin rounded or rounded-truncate, the middle rays never extended. Basal third to three quarters of caudal fin heavily scaled, the scales in straight rows, one scale wide, each series covering the interspace between two caudal rays. Caudal fin lacking a median lobe. Filamentous extensions of the dorsal and anal fins of males variably present. Dark gular bar variably present. Pigmentation pattern does not include cross bars on body. Basal dorsal-fin spot absent in males, variably present in females. Type species: *Pachypanchax playfairii* (Gunther 1866).”

From Myers (1933):

“Maxillary near its end closely bound down to the preorbital region by skin, and only slightly movable. Lip-riectus fitting up into a right-angled notch before eye. Proximal area of caudal fin, more than half-way to margin, closely and finely scaled; the caudal scales are in straight even rows, one scale in width, diminishing in size and diverging from each other as they proceed outward; each series covers the interspace between two of the caudal rays. Haemal arches not expanded for the extension of the coelom and air-bladder into the caudal region. Dorsal fin set far back.”

Biology

From Froese and Pauly (2019):

“Occurs in small fresh and brackish water streams. [...]. Also inhabit ponds. Feeds on worms, crustaceans, insects and fish [Mills and Vevers 1989]. Not a seasonal killifish.”

“Lays 50-200 eggs.”

Human Uses

From Froese and Pauly (2019):

“Aquarium: commercial”

Diseases

No records of OIE-reportable diseases (OIE 2019) were found for *Pachypanchax playfairii*.
No information on diseases was found.

Threat to Humans

From Froese and Pauly (2019):

“Harmless”

3 Impacts of Introductions

Pachypanchax playfairii has been introduced to Tanzania where it has probably become established. No impacts of introduction have been reported.

4 History of Invasiveness

Pachypanchax playfairii has been introduced to Tanzania, but establishment is not definitive. Therefore, the history of invasiveness is no known nonnative population.

5 Global Distribution

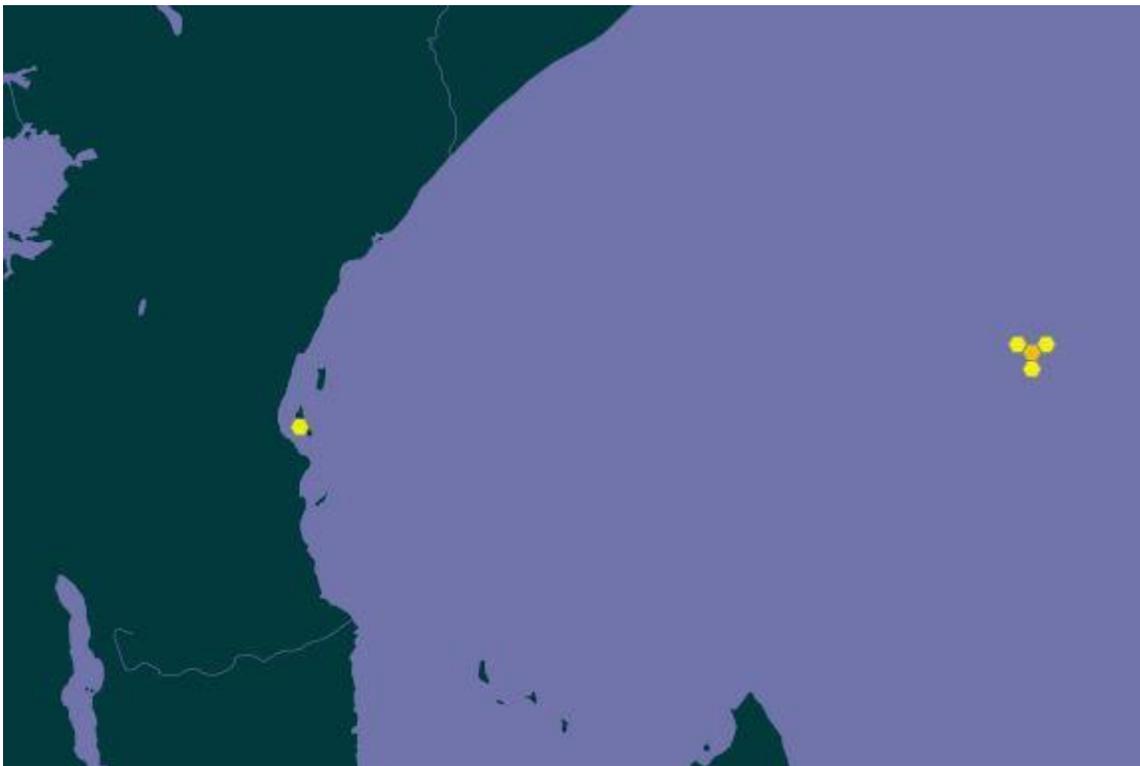


Figure 1. Known global distribution of *Pachypanchax playfairii*. Map from GBIF Secretariat (2019). Locations in Tanzania (coast of Africa) and Seychelles (islands off the coast).

6 Distribution Within the United States

Pachypanchax playfairii has not been reported in the United States.

7 Climate Matching

Summary of Climate Matching Analysis

The climate match for the contiguous United States is generally low for *P. playfairii*. Only two small areas of medium match were found in southern Texas and peninsular Florida. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.000, a low score (scores less than 0.005 are considered low). All States received low individual climate scores with the exception of Florida, which received a medium score.

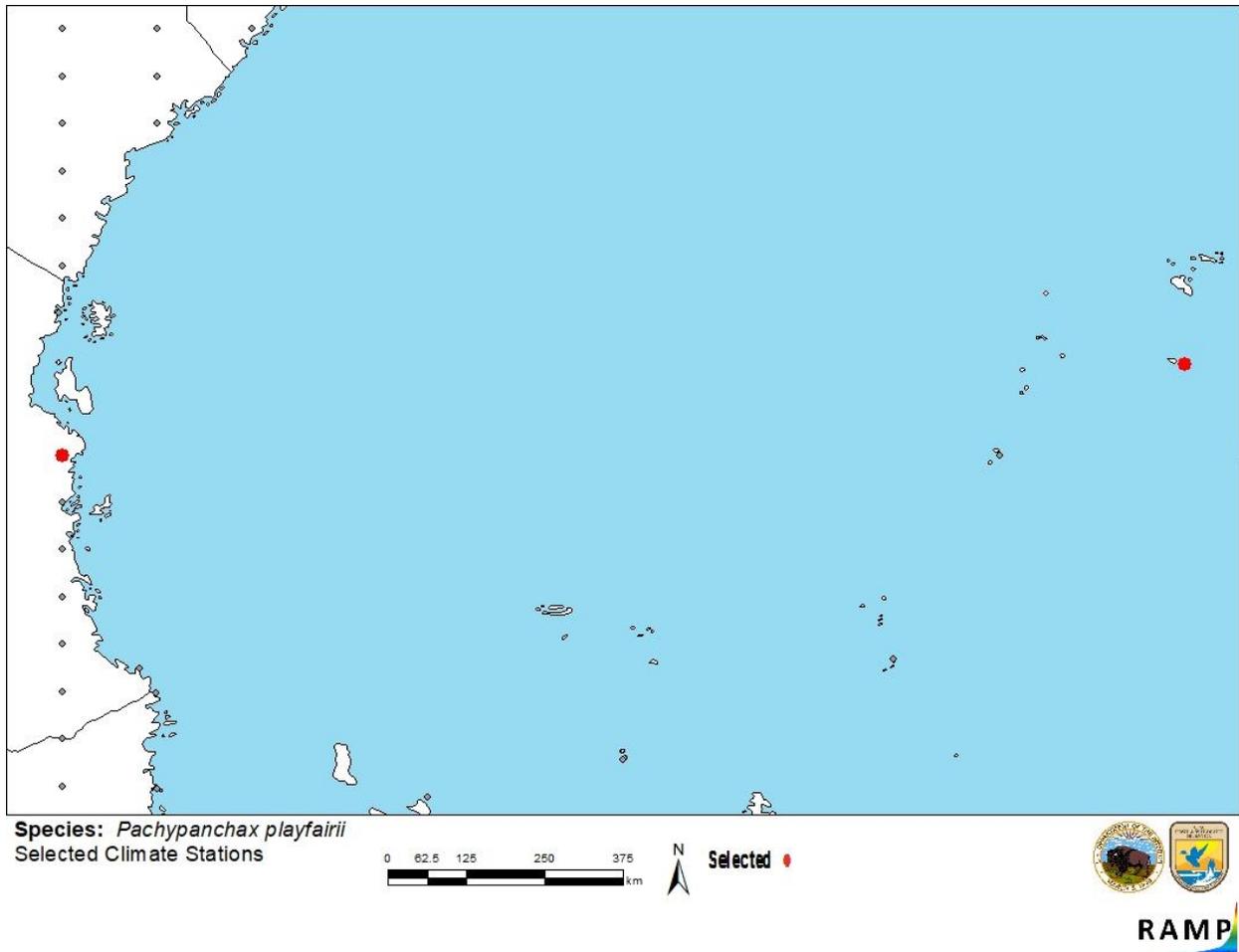


Figure 2. RAMP (Sanders et al. 2018) source map showing weather stations in Tanzania (coast of Africa) and Seychelles (islands off the coast) selected as source locations (red) and non-source locations (gray) for *Pachypanchax playfairii* climate matching. Source locations from GBIF Secretariat (2019). Source locations were selected to be within 100 km of known observations of the species and do not represent actual observation locations (Sanders et al. 2018). Location in Seychelles is approximately 118 km away from reported locality.

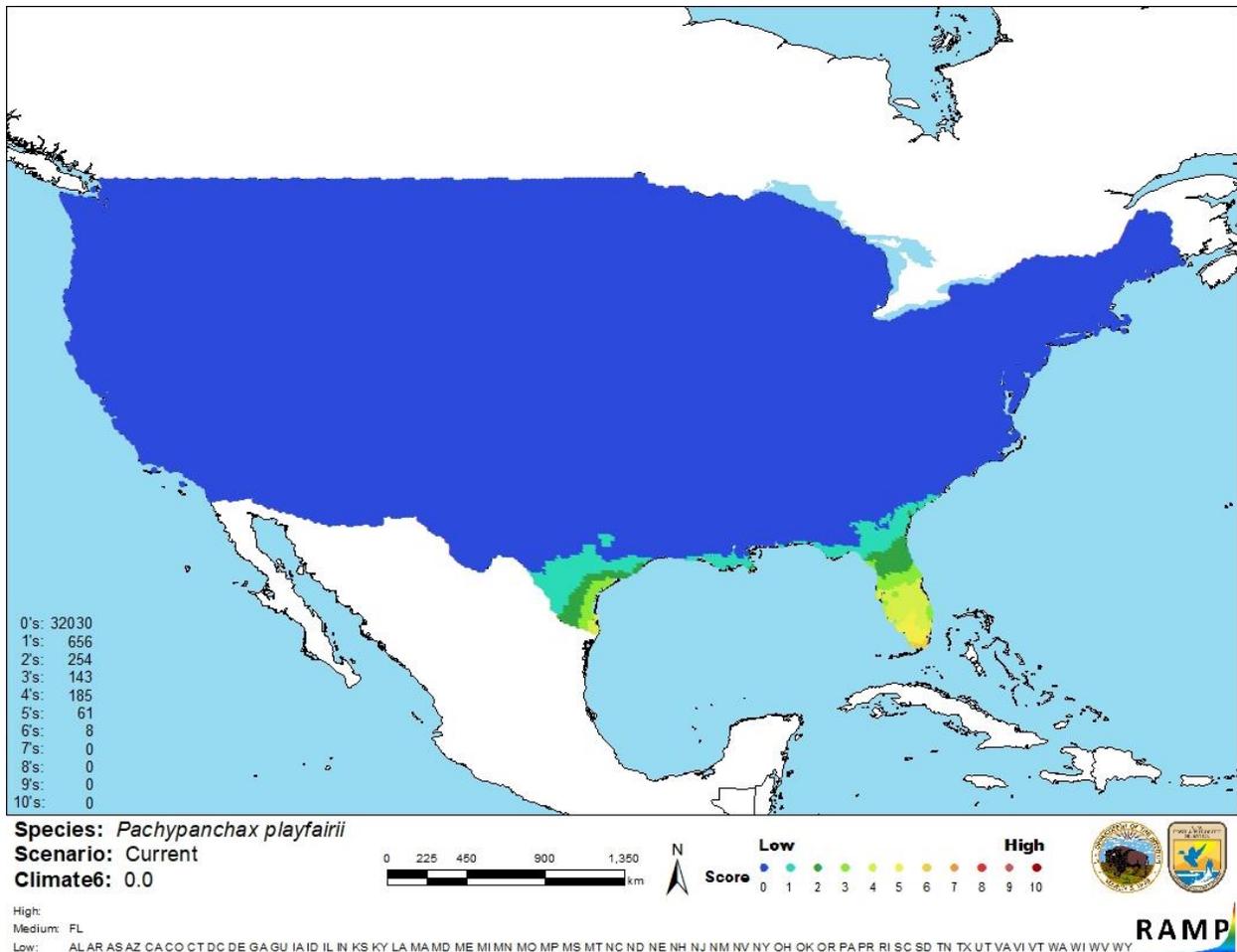


Figure 3. Map of RAMP (Sanders et al. 2018) climate matches for *Pachypanchax playfairii* in the contiguous United States based on source locations reported by GBIF Secretariat (2019). Counts of climate match scores are tabulated on the left. 0/Blue = Lowest match, 10/Red = Highest match.

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

Certainty of assessment is low. There is some biological information available about *Pachypanchax playfairii* but little is known about introductions and their impacts. No specific information on trade was available.

9 Risk Assessment

Summary of Risk to the Contiguous United States

Golden Panchax (*Pachypanchax playfairii*) is a killifish native to Seychelles in the Indian Ocean. *P. playfairii* is found in fresh and brackish waters. This species has been introduced and is probably established in Zanzibar, Tanzania, but this is not confirmed. Therefore, the history of invasiveness is no known nonnative population. No impacts of introduction have been reported, creating an uncertain history of invasiveness. The climate match for the contiguous United States was 0.000, a very low score. All States received low individual climate scores with the exception of Florida, which received a medium climate score. The certainty of assessment is low. The overall risk assessment category for *Pachypanchax playfairii* is uncertain.

Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): Low**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional information**
- **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. California Academy of Science. Available: <http://researcharchive.calacademy.org/research/ichthyology/catalog/fishcatmain.asp> (April 2019).
- Froese R, Pauly D, editors. 2019. *Pachypanchax playfairii* (Günther, 1866). FishBase. Available: <http://www.fishbase.org/summary/Pachypanchax-playfairii.html> (April 2019).
- GBIF Secretariat. 2019. GBIF backbone taxonomy: *Pachypanchax playfairii* (Günther, 1866). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2347797> (April 2019).
- [ITIS] Integrated Taxonomic Information System. 2019. *Pachypanchax playfairii* (Günther, 1866). Reston, Virginia: Integrated Taxonomic Information System. Available: https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=165844#null (April 2019).

Loiselle PV. 2006. A review of the Malagasy *Pachypanchax* (Teleostei: Cyprinodontiformes, Aplocheilidae), with descriptions of four new species. *Zootaxa* 1366:1–44.

Myers GS. 1933. *Pachypanchax*, a new genus of cyprinodont fishes from the Seychelles Islands and Madagascar. *American Museum Novitates*.

[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).

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.

Eccles DH. 1992. FAO species identification sheets for fishery purposes. Field guide to the freshwater fishes of Tanzania. Prepared and published with the support of the United Nations Development Programme, Project URT/87/016. Rome: FAO.

Mills D, Vevers G. 1989. *The Tetra encyclopedia of freshwater tropical aquarium fishes*. New Jersey: Tetra Press.

Parenti LR. 1981. A phylogenetic and biogeographic analysis of the cyprinodontiform fishes. *Bulletin of the American Museum of Natural History* 168:335–557.

Riehl R, Baensch HA. 1996. *Aquarien Atlas. Band 1*. 10th edition. Melle, Germany: Mergus Verlag GmbH.

Seegers L. 1980. Zum Vorkommen von *Pachypanchax playfairii* auf Zanzibar und in Ostafrika. *Deutsche Killifische Gemeinschaft Journal* 12:87–93.

Wildekamp RH, Romand R, Scheel JJ. 1986. Cyprinodontidae. Pages 165–276 in Daget J, Gosse JP, Thys van den Audenaerde DFE, editors. *Check-list of the freshwater fishes of Africa*. Brussels: ISNB; Tervuren, Belgium: MRAC; Paris: ORSTOM.