

# Bagre (*Rhamdia quelen*)

## Ecological Risk Screening Summary

U.S. Fish & Wildlife Service, February 2011  
Revised, July 2019  
Web Version, 3/19/2021

Organism Type: Fish  
Overall Risk Assessment Category: Uncertain



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<https://www.flickr.com/photos/cdtimm/3312472232/in/photostream>. (July 2019).

## 1 Native Range and Status in the United States

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### Native Range

From Froese and Pauly (2021):

“Central and South America: Mexico to central Argentina.”

Froese and Pauly (2021) list *Rhamdia quelen* as native to Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Trinidad and Tobago, Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela.

### Status in the United States

From Froese and Pauly (2021):

“A single specimen, tentatively identified as this species, was taken in Florida from a water body west of Miami, Dade County in June 1995 (museum specimen).”

“probably not established, no data”

From Nico et al. (2019):

“**Status:** Failed in Florida: a single individual was the only specimen ever reported.

**Remarks:** The Florida specimen was tentatively identified as *R. quelen* based on information from Silfvergrip (1996).”

No records of *Rhamdia quelen* in trade in the United States were found. However, the means of introduction provided in Nico et al. (2019), below, suggest that there may be some ornamental trade of this species.

## Means of Introductions in the United States

From Nico et al. (2019):

“**Means of Introduction:** Probable aquarium release.”

## Remarks

From Koerber and Reis (2019):

“*Rhamdia* is a genus with 27 valid species, with a poorly defined type species, *Pimelodus sebae* Cuvier, 1829, and no suitable set of characters to differentiate species.

The taxonomic situation of *Rhamdia* was further complicated by the fact that Silfvergrip (1996), in the only taxonomic revision of the genus to date, synonymized 47 nominal species into *Rhamdia quelen* (Quoy & Gaimard, 1824). This action established a very broad geographic distribution for the species, from Yukatan in southern Mexico to central Argentina. The diagnosis of *R. quelen* proposed by Silfvergrip (1996), however, is too general to be useful and embraces several different morphotypes, suggesting that a large proportion of the genus diversity is masked under that single name.”

## 2 Biology and Ecology

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### Taxonomic Hierarchy and Taxonomic Standing

From Fricke et al. (2019):

“**Current Status:** Valid as *Rhamdia quelen* (Quoy & Gaimard 1824).”

From ITIS (2019):

Kingdom Animalia  
Subkingdom Bilateria  
Infrakingdom Deuterostomia  
Phylum Chordata

Subphylum Vertebrata  
Infraphylum Gnathostomata  
Superclass Actinopterygii  
Class Teleostei  
Superorder Ostariophysi  
Order Siluriformes  
Family Heptapteridae  
Genus *Rhamdia*  
Species *Rhamdia quelen* (Quoy and Gaimard, 1824)

## Size, Weight, and Age Range

From Froese and Pauly (2021):

“Max length : 47.4 cm TL male/unsexed; [Zaniboni Filho et al. 2004]; max. published weight: 4.0 kg [IGFA 2001]”

## Environment

From Froese and Pauly (2021):

“Freshwater; benthopelagic; pH range: ? - 7.0; depth range 0 - 3 m [Le Bail et al. 2000]. [...] 22°C - 28°C [Baensch and Riehl 1985] [assumed to be the recommended aquarium temperature]”

## Climate

From Froese and Pauly (2021):

“Tropical;”

## Distribution Outside the United States

Native

From Froese and Pauly (2021):

“Central and South America: Mexico to central Argentina.”

Froese and Pauly (2021) list *Rhamdia quelen* as native to Belize, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Trinidad and Tobago, Argentina, Bolivia, Brazil, Colombia, Ecuador, French Guiana, Guyana, Paraguay, Peru, Suriname, Uruguay, and Venezuela.

## Introduced

According to Froese and Pauly (2021), *Rhamdia quelen* has been introduced into Panama from Uruguay but it did not become established.

From Froese and Pauly (2021):

“This species does not exist any more [sic] in Panama.”

## **Means of Introduction Outside the United States**

From Froese and Pauly (2019):

“aquaculture [no further information given]”

## **Short Description**

From Dignall (2021):

“It is distinguished from congeners in having the following unique combination of characters: pectoral fin spine with serrae on both sides, caudal fin lobes subequal or with either lobe slightly longer, posterior nostril velum open posterolaterally, gill raker 5-16, post-Weberian vertebrae 36-44, eye medium sized.”

From Snow (2021):

“The South American Catfish [*Rhamdia quelen*] has an elongated and easily recognizable “catfish-like” body with three pairs of barbels. They are dark gray dorsally, dusky on their sides, and white ventrally with golden tinges throughout. Their caudal and dorsal fins are dusky and their other fins are white with yellowish tinges. They vary in color based on location.”

## **Biology**

From Froese and Pauly (2021):

“Occurs in littoral creeks, over sandy bottoms covered with dead leaves [Boujard et al. 1997]. Inhabits also lakes and rivers, but seems to prefer rivers with a very slight current [Burgess 1989]. Prefers a muddy bottom covered with leaves and decaying wood, the latter providing for hiding places during the day [Le Bail et al. 2000]. Feeds on fish and insects [Boujard et al. 1997], benthic zooplankton and crustaceans [Le Bail et al. 2000]. Omnivorous [Zaniboni Filho et al. 2004]. Mainly nocturnal [Kenny 1995]. Possesses poisonous spiny rays. Its sex ratio is 2:1 in favor of females. The male's reproductive apparatus includes multi-lobed testicles and accessory organs for secretion and storage. Fertilization is external. Non-sticking demersal eggs (1.1 to 2.8 mm diameter) are laid down, hatching after about 48 hours at 22°C. Ten days later, the larvae weigh approximately 100 mg but growth is slow (0.5 to 1.15 g per day).”

## **Human Uses**

From Froese and Pauly (2021):

“Fisheries: minor commercial; aquaculture: commercial”

No records of *Rhamdia quelen* in trade in the United States were found. However, the means of introduction provided in Nico et al. (2019), see section 1, suggest that there may be some ornamental trade of this species.

## Diseases

**No records of OIE reportable diseases (OIE 2019) were found for *Rhamdia quelen*.**

According to Froese and Pauly (2021) *Rhamdia quelen* can have the following infestations and infections: *Rhabdochona* Infestation 5, *Paracapillaria* Infestation 2, *Pseudocapillaria* Infestation 2, *Hysterothylacium* Infection 7, *Hysterothylacium* Infection 9, *Procamallanus* Infection 25, *Procamallanus* Infection 28, *Philometroides* Infestation 2, *Proteocephalus* Infestation 1, *Proteocephalus* Infestation 2.

According to Poelen et al. (2014). *Rhamdia quelen* can have the following parasites and infections: *Atrophecaecum astorquii*, *Clinostomum intermediale*, *Scleroductus lyrocleithrum*, *Derogenes* sp., *Ergasilus thatcheri*, *Scleroductus* sp., *Neoechinorhynchus golvani*, *Arhythmorhynchus brevis*, *Bothriocephalus pearsei*, *Dendrouterina papillifera*, *Dendrouterina pilherodiae*, *Proteocephalus jandia*, *Proteocephalus* sp., *Lenhataenia megacephala*, *Proteocephalus brooksi*, *Pavanelliella scaphiocotylus*, *Ameloblastella chavarriai*, *Aphanoblastella* sp., *Kritskyia* sp., *Urocleidoides* sp., *Hysterothylacium cenotae*, *Hysterothylacium rhamdiae*, *Neophilometroides caudatus*, *Dujardinascaris cenotae*, *Cucullanus mexicanus*, *Cucullanus caballeri*, *Paracapillaria rhamdiae*, *Pseudocapillaria yucatanensis*, *Clinostomum marginatum*, *Hysteromorpha triloba*, *Tabascotrema verai*, *Oligogonotylus manteri*, *Proctocaecum* sp., *Perezitrema bychowskyi*, *Stunkardiella minima*, *Clinostomum detruncatum*, *Acanthostomum gnerii*, *Clinostomum complanatum*, *Genarchella parva*, *Diplostomum compactum*, *Genarchella isabellae*, *Phyllodistomum* sp., *Phyllodistomum rhamdiae*, *Genarchella overstreeti*, *Genarchella genarchella*, *Centrocestus formosanus*, *Crocodilicola pseudostoma*, *Uvulifer ambloplitis*, *Spirocamallanus neocaballeri*, *Spirocamallanus hilarii*, *Physocephalus sexalatus*, *Valipora minuta*, *Valipora mutabilis*, *Valipora campylancristrota*, *Caballerorhynchus lamothei*, *Rhabdochona kidder*, *Gnathostoma binucleatum*, *Serpinema trispinosum*, and *Contraecaecum* sp.

## Threat to Humans

From Froese and Pauly (2021):

“Harmless”

While this species does possess poisonous spiny rays (Froese and Pauly 2021; Snow 2021) they are used for predation defense (Snow 2021) and no indication was found that there was danger to humans from these fish.

## 3 Impacts of Introductions

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Although *Rhamdia quelen* has been recorded as introduced in two locations, it had not become established in either location. No recorded impacts of introductions were found.

## 4 History of Invasiveness

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There has been one failed introduction of *Rhamdia quelen* in Panama for aquaculture purposes. There has been a second possible introduction in Florida that was assumed to be an aquarium release. Only one specimen was reported and the identification as *R. quelen* was tentative. The history of invasiveness is classified as No Known Nonnative Population.

## 5 Global Distribution

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**Figure 1.** Known global distribution of *Rhamdia quelen*. Map from GBIF Secretariat (2019). The point located in the Northwestern part of the United States was not used to select source points for the climate match because it was located in the ocean and there is no record of a wild population at that location. The point located in Florida was not used to select source points as there is no indication of an established population in Florida.

## 6 Distribution Within the United States



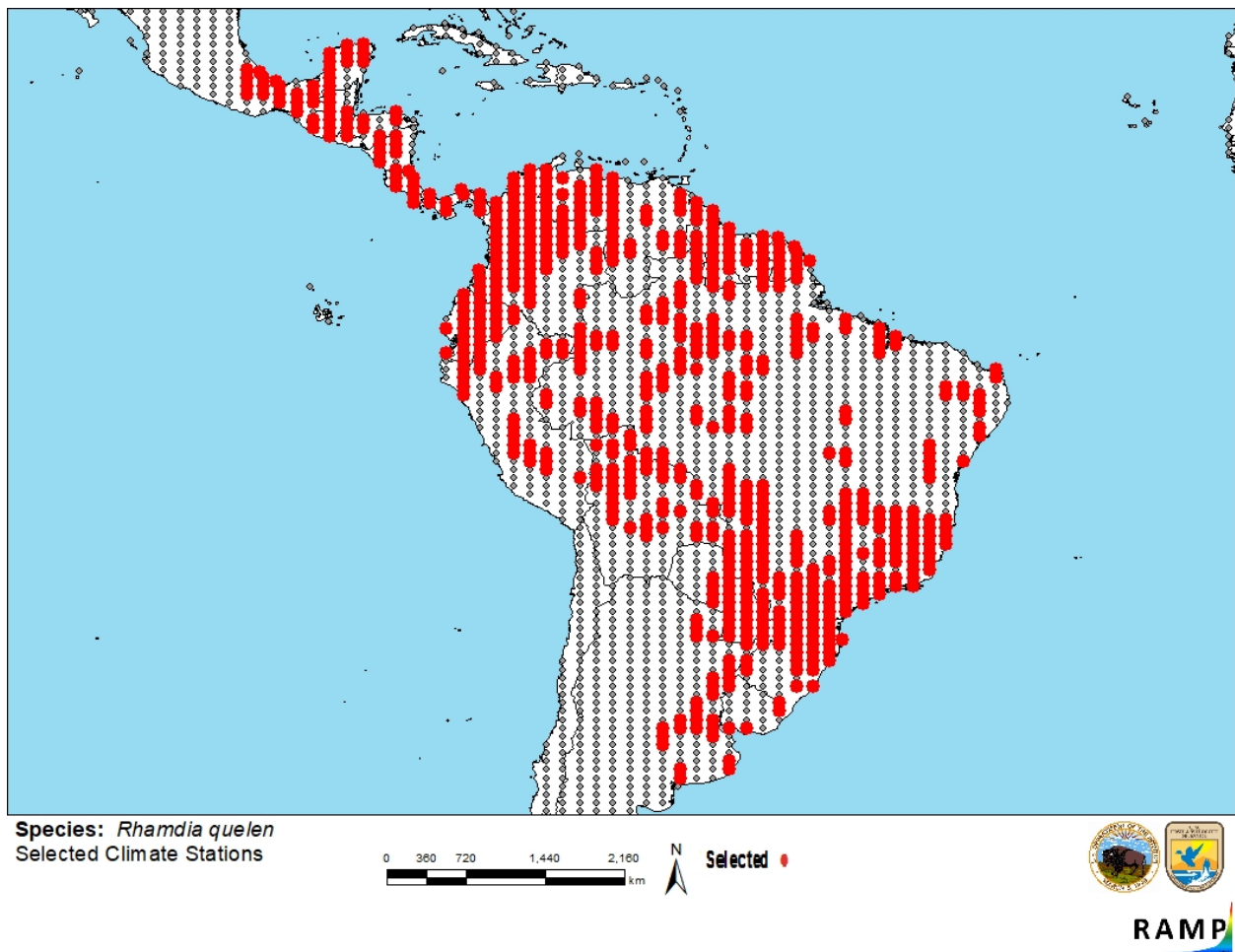
**Figure 2.** Known distribution of *Rhamdia quelen* in the United States. Map from BISON (2019). The points located in Florida and Washington were not used to select source points for the climate match as there is no evidence that there are established populations at those locations.



# 7 Climate Matching

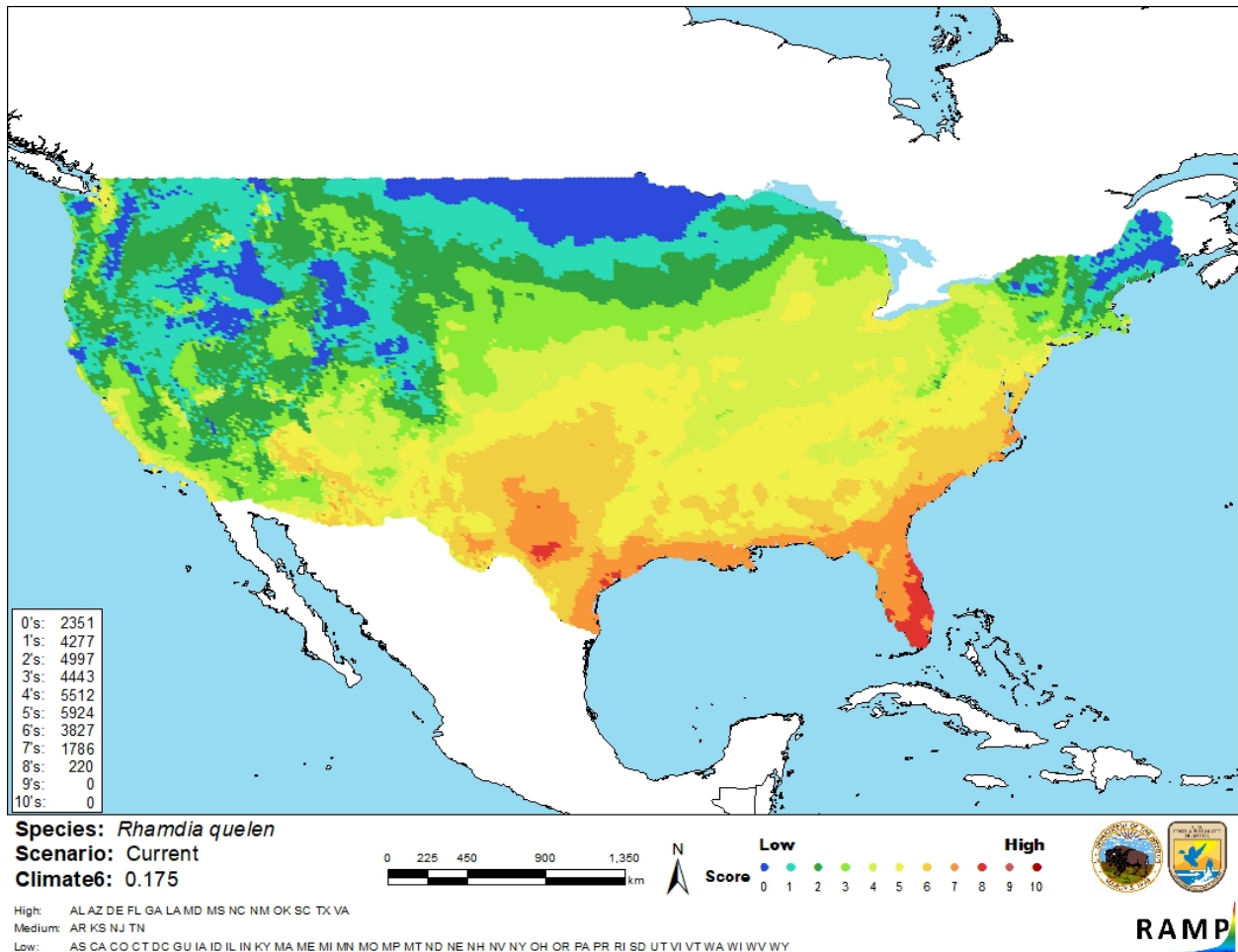
## Summary of Climate Matching Analysis

The climate match for the contiguous United States was mostly high in the south and mid-Atlantic areas. There were also small areas of high match in the southwest and southern coastal California. The Northeast and Northwest had a mostly low match along with the upper Midwest, Rocky Mountains, and Great Plains. Everywhere else had a medium match. The Climate 6 score (Sanders et al. 2018; 16 climate variables; Euclidean distance) for the contiguous United States was 0.175, high (scores of 0.103 or greater are classified as high). Alabama, Arizona, Delaware, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, New Mexico, Oklahoma, South Carolina, Texas, and Virginia had high individual climate 6 scores. Arkansas, Kansas, New Jersey, and Tennessee had medium individual scores, and all other States had low individual scores.



**Figure 3.** RAMP (Sanders et al. 2018) source map showing weather stations in Central and South America selected as source locations (red) and non-source locations (gray) for *Rhamdia quelen* 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 4.** Map of RAMP (Sanders et al. 2018) climate matches for *Rhamdia quelen* 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
$\geq 0.103$	High

## 8 Certainty of Assessment

Some information is available for *Rhamdia quelen*. There may be taxonomic issues that increase uncertainty as to if the information, including the range used in the climate match, pertains to this species or multiple, closely related species. Records of introduction were found but there was no information regarding any impacts or lack of impacts from those introductions. Due to the lack

of information regarding history of invasiveness and taxonomic issues, the certainty of assessment is low.

## 9 Risk Assessment

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### Summary of Risk to the Contiguous United States

The Bagre (*Rhamdia quelen*) is a freshwater catfish native to Central and South America. This species is used in aquaculture and is in trade in the ornamental industry. This genus of catfish is currently undergoing major taxonomic review and possible revision. The history of invasiveness is No Known Nonnative Population. It has been reported as introduced in Panama and possibly in Florida, but it failed to become established. There is very little information available on its trade history. The climate match for the contiguous United States was high. Generally the climate match was high in southern and southeastern areas and low in northeastern and western areas. The certainty of assessment is low because there is insufficient information on history of invasiveness and the potential taxonomic confusion. The overall risk assessment category is Uncertain.

### Assessment Elements

- **History of Invasiveness (Sec. 4): No Known Nonnative Population**
- **Overall Climate Match Category (Sec. 7): High**
- **Certainty of Assessment (Sec. 8): Low**
- **Remarks/Important additional information: No additional remarks**
- **Overall Risk Assessment Category: Uncertain**

## 10 Literature Cited

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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 11.**

BISON. 2019. Biodiversity Information Serving Our Nation. U.S. Geological Survey. Available: <https://bison.usgs.gov> (July 2019).

Dignall JG. 2011. *Rhamdia quelen* – Heptapteridae. PlanetCatfish.com: the aquarium catfish website. Available: [https://www.planetcatfish.com/common/species.php?species\\_id=872](https://www.planetcatfish.com/common/species.php?species_id=872) (March 2021).

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> (June 2019).

Froese R, Pauly D, editors. 2021. *Rhamdia quelen* (Quoy and Gaimard, 1824). FishBase. Available: <https://www.fishbase.de/summary/Rhamdia-quelen.html> (March 2021).

- GBIF Secretariat. 2019. GBIF backbone taxonomy: *Rhamdia quelen* (Quoy and Gaimard, 1824). Copenhagen: Global Biodiversity Information Facility. Available: <https://www.gbif.org/species/2343735> (July 2019).
- [ITIS] Integrated Taxonomic Information System. 2019. *Rhamdia quelen* (Quoy and Gaimard, 1824). Reston, Virginia: Integrated Taxonomic Information System. Available: [https://www.itis.gov/servlet/SingleRpt/SingleRpt?search\\_topic=TSN&search\\_value=640029#null](https://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=640029#null) (June 2019).
- Koerber S, Reis RE. 2019 The current situations of *Rhamdia* Bleeker, 1858 (Siluriformes: Heptapteridae) – gather available information, define a zero point, and start all over again. *Historia Natural* 9(2):51–74.
- Nico L, Nielson M, Loftus B. 2019. *Rhamdia quelen* (Quoy and Gaimard, 1824). Gainesville, Florida: U.S. Geological Survey, Nonindigenous Aquatic Species Database. Available: <https://nas.er.usgs.gov/queries/FactSheet.aspx?SpeciesID=839> (July 2019).
- [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.
- Snow JT. 2021. South American catfish, *Rhamdia quelen*. Available: <https://mexican-fish.com/south-american-catfish/> (March 2021).

## 11 Literature Cited in Quoted Material

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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.**

- Baensch HA, Riehl R. 1985. *Aquarien atlas*. Band 2. Melle, Germany: Mergus, Verlag für Natur- und Heimtierkunde GmbH.
- Boujard T, Pascal M, Meunier FJ, Le Bail P-Y. 1997. *Poissons de Guyane*. Guide écologique de l'Approuague et de la réserve des Nouragues. Paris: Institut National de la Recherche Agronomique.
- Burgess WE. 1989. *An atlas of freshwater and marine catfishes. A preliminary survey of the Siluriformes*. Neptune City, New Jersey: T. F. H. Publications.
- IGFA. 2001. *Database of IGFA angling records until 2001*. Fort Lauderdale, Florida: IGFA.

Kenny JS. 1995. Views from the bridge: a memoir on the freshwater fishes of Trinidad. Maracas St. Joseph, Trinidad and Tobago: Julian S. Kenny.

Le Bail P-Y, Keith P, Planquette P. 2000. Atlas des poissons d'eau douce de Guyane. Tome 2, Fascicule II: Siluriformes. Collection Patrimoines Naturels 43(II). Paris: Publications scientifiques du Muséum national d'Histoire naturelle.

Silfvergrip AMC. 1996. A systematic revision of the neotropical catfish genus *Rhamdia* (Teleostei, Pimelodidae). Stockholm: Swedish Museum of Natural History.

Zaniboni Filho E, Meurer S, Shibatta OA, de Oliverira Nuñez AP. 2004. Catálogo ilustrado de peixes do alto Rio Uruguai. Florianópolis: Editora da UFSC: Tractebel Energia.