

Freshwater fish diversity in the Caribbean : a review

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- Guadeloupe
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Freshwater

- Freshwater constitutes 0.01% of the earth's water and extends over 0.8% of the earth's surface.
- Approximately 10% of all known species live in freshwater.
- Regarding fish species, freshwater contains more than 10,000 fish species.
- **Threats**
 - Over-exploitation; water pollution; habitat degradation; climate change and species invasion.

Freshwater (con't)

- The Caribbean supports important freshwater fish assemblages and is home to several endemic species. Freshwater fish are valued and prominently featured for their natural and cultural heritage values.
- The Caribbean freshwater ecosystem is complex and it is not well understood. At the same time, these island nations are vulnerable to invasive species.
- In this sense, additional researches are necessary.

Methods

As my plan was to have a general view of freshwater fish in the Caribbean and to see what kind of research they do yet and how I could contribute, as methods I have :

- Conducted a literature search;
- Collated data from the online database Fishbase;
- Disseminated an email survey to professionals working on freshwater habitats throughout the Caribbean.

Freshwater fish diversity in the Caribbean

➤ 188 species of freshwater fish (66 endemic species) (Phillip, 2017)

16 orders

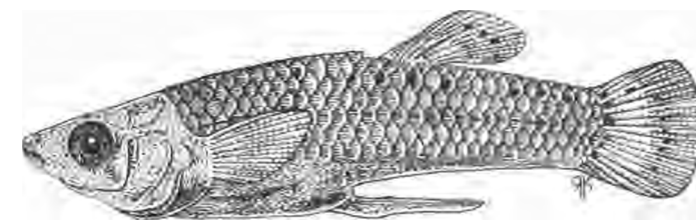
38 families

96 genera



Conservation status of freshwater fish in the Caribbean

IUCN ranking	Native and endemic (135 species)	Introduced (53 species)	Total (188 species)
Critically endangered	1	0	1
Endangered	1	0	1
Vulnerable	2	2	4
Near threatened	0	2	2
Least concern	20	21	41
Data deficient	3	2	4
Not evaluated	108	27	135



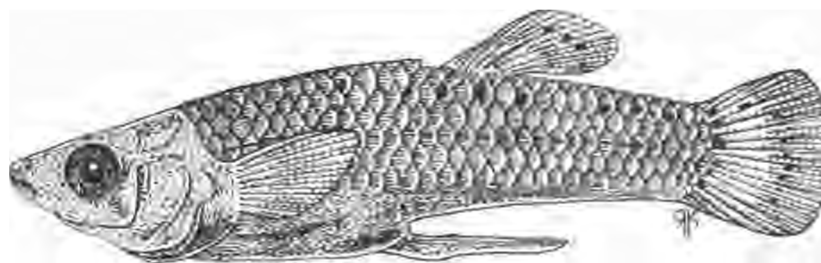
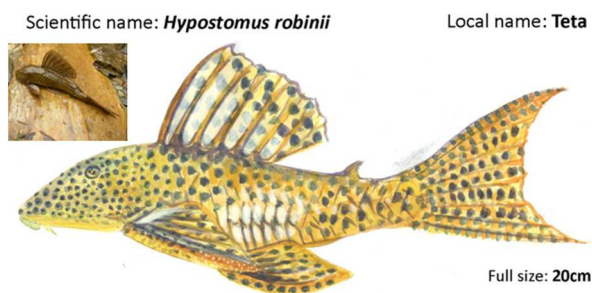
dominicensis (EN),
Republic and Haiti
1983

Gaps in terms of research on freshwater fish in the Caribbean

- Large differences among countries in terms of research effort and knowledge of freshwater assemblages in the Caribbean. According to some studies, it is because of a limited funding to promote more research and a lack of qualified professionals in the field.
- As I'm from Haiti and I'm studying in Trinidad and Caribaea Initiative would like to fund my research, I was focused more in these both countries.
- A comparison of the two countries suggests there is a big gap in terms of research effort.

Haiti and Trinidad and Tobago in terms of fish diversity

A total of 39 and 66 recorded species of freshwater fish respectively (excluding estuarine species) in Haiti and Trinidad and Tobago



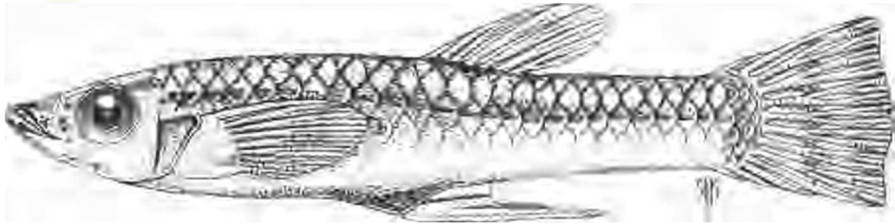
Hypostomus robinii

Gambusia dominicensis, Haiti

Achirus novoae, Trinidad.

Haiti and Trinidad and Tobago in terms of endemic fish diversity

Haiti----→11 and Trinidad and Tobago -----→3



Gambusia beebei, Haiti



Ancistrus maracasae, Trinidad

Haiti and Trinidad and Tobago in terms of fish diversity research

- Many more studies have been completed in Trinidad and Tobago, including:
 - comprehensive biodiversity surveys
 - many investigations into the biology and ecology of individual species

- Meanwhile, Haiti appears to be data deficient, aside from an estimation of fish species richness conducted in 1980, and a study on the diversity of freshwater species in an ecological inventory of the National Park of Three Bays in the north in 2016.
- In addition, in Haiti the online database Fishbase serves as a reference for all documents related to freshwater fish.



Plan to bridge the gap



In order to begin to bridge this gap, we plan to carry out a comparative field research on freshwater fish species in Haiti and Trinidad;

➤ We will compare the diversity and capacity of well-studied stream sites in Trinidad with sites in Haiti, using the same methodologies (seining and electrofishing), to expand our understanding of Haitian freshwater fauna.

➤ And in the future, I would like to conduct research on the biology and ecology of freshwater fish species endemic in Haiti.



Acknowledgement

Caribaea Initiative for deciding to fund my research;

Dr Amy Deacon who has and will continue to supervise my research;

Dr. Phillip before passing away who was accepted to be my supervisor;

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References

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Thank you!



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