National Report – Haiti

Fishing for American eel, Anguilla rostrata

Prepared for:

International Oceanographic Commission - United Nations Educational, Scientific and Cultural Organisation (IOC-UNESCO)

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Report on conservation and trade of the American eel *Anguilla rostrata* in Haiti

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Introduction.

The American eel *Anguilla rostrata* is one of 16 species from the family *Anguillidae*. The majority of species belonging to this family are catadromous, which means they have a life cycle that involves both the estuarine /freshwater environment and the ocean. On the other hand, it should be noted that this way of life is more optional than obligatory for *Anguilla rostrata*, because some individuals move back and forth between habitats throughout their life cycles (*Lamson et al., 2006; Thibault et al., 2007*).

The American eel has a very widespread geographical distribution. It stretches from the Sargasso Sea, to the east coast of North America and the Gulf of Mexico. American eels are also found in the northern Caribbean, e.g. Cuba, Dominican Republic, Jamaica. Despite this large geographic distribution, the global population of the species has declined drastically over the past decades. It is now listed on the IUCN Red List as an endangered species. A result of changing ocean conditions, water pollution, loss of habitat and overfishing (*Hiromi 2020*). The last three threats cited are very common in Haiti.

In addition, many international meetings have already been held to alert the concerned countries about the decline of the species and to encourage them to take precautionary measures. Many countries have already carried out research to guide their decisions on the protection of the species. In Haiti, the aforementioned threats are pronounced, and this paper will discuss what mitigation measures have already been taken to preserve the species there.

Fishing in Haiti:

Haiti is one of the Caribbean countries which has great access to the sea (1,535 km of coastline), which offers an opportunity for more than 52,000 families to rely on fishing for their main source of income (*MARNDR 2010*). These families do not have the necessary skills and equipment to practice high seas fishing, which results in fishing effort being concentrated in nearshore waters at levels which are not sustainable. The socio-economic status of the fishing sector is thus negatively affected as is the country's export capacity in this sector, which is estimated at 16,000 tonnes- - of this, 800 tonnes are exported (*MARNDR 2010*), resulting in a large deficit for the poorest country of the western hemisphere.

Fishing for American eel in Haiti:

Eel fishing has become a real expanding market in the country since 2013. The American eel is caught in the juvenile stage (Glass eel) in Haiti exclusively for export to locations in Asia (e.g., Hong Kong). The fishing season is set between September to April and is practically done from dusk until dawn. It does not requisition too many expensive materials; it is carried out with handcrafted baskets whose skeleton is made with bamboo or iron and covered with a piece of mosquito net.

Best known American eel fishing areas in Haiti:

- **North:** Cap-Haitien**, (**Bas-Limbé, Port Margot, Borgne, Limonade, Camp Louise, Labadee).
- **North-East:** Caracol
- **Artibonite:** Saint-Marc
- **South : Les Cayes (**Saint-Jean**)**
- **South-East:** Jacmel, Anse-à-Pitre
- **Grade-Anse:** Jérémie, commune des Roseaux.
- **Nippes:** Kawouk, Petite-Riviere de Nippes.

Régulation of eel fishing:

There are currently no eel fishermen's associations at either local or national level. There is no requirement to have a permit and there is no established catch limit (total allowable catch ,TAC). All exporters need an export permit, to be part of the association of exporters and to remain within the quota limit of 6,400 kilograms per exporter (*MARNDR 2019*).

Cost of storage

Once collected, the transparent glass eels are stored in bags of portable water, mixed with oxygen, at this stage they do not need to be fed. However, storage comes at a cost, which is difficult to accurately estimate. However, every fisherman needs at least a 25-pound oxygen tank which costs ~ $ 30US and 18.5 liter water (treated by reverse osmosis) which costs ~ $ 1.5US.

Marketing:
Resellers buy the glass eels from the fishermen at a cost ranging from US $ 1-5 / gram knowing that a fisherman can collect ~ 50g-1kg / day (*Pierre 2018*). The sales price to the resellers is not known. The Ministry of Agriculture, Natural Resources and Rural Development (MARNDR) sets an export fee of 1,500 Gourdes / kilo (~ $ 30US) to exporters who for their part resell the kilo at ~ $ 700 US on the international market. (*MARNDR 2019*).

The number of eels exported by Haiti since 2013:
There is no publicly available national database on the export of seafood or an official report published by the relevant ministries from which we can draw and provide reliable and recent information on the export of eels. The table below provides the data taken from the presentation of the representative of MARNDR at the Workshop of Range States of the American Eel, in Santo Domingo in April 2018.

Number (in kilograms) of eels exported by Haiti per year (*Badio 2018*).

Year	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	Total (Kgs)
2013-2014	1,300	2040	4,100	1,800	2,020	830	130	12,220
2014-2015	860	1,920	3,700	1,115	1080	610	315	9,600
2015-2016	1020	2011	2540	810	600	740	479	8,100
2016-2017	960	1980	1960	730	400	80	190	6,300

State of the national eel stock
It has been stated that Haiti has an export capacity of 800 metric tons of American eel according to the memorandum of August 29th, 2019 from MARNDR signed by Minister **Jobert C. Angrand** on the regulation of fishing and the export of the American eel – no additional information was provided that could justify the export numbers, and it is possible that the data for this memorandum was fabricated.

Conclusion and recommendations:
Eel fishing improves the economic conditions for many fishing families who were discouraged with traditional fishing. It is also a sector that supplies the public treasury through export fees. On the other hand, there is a risk of losing this economic resource, possibly over the next few decades, especially if the Haitian state continues to take threat mitigation measures without relying on reliable data from scientific research. We recommend the use of reliable data by the Haitian state, in particular the MARNDR, which is the institution empowered to reduce the overexploitation of the species. The data they provide in their documents may be manipulated. For instance, MARNDR sets the quota at 6,400 kilograms per exporter in 2019 and reduces the number of exporters to 9 in 2018 (*Badio 2018*). Assuming that all the exporters manage to export 6,400kg each for the year of 2019, then this will raise the total export to 57,600 kg – however, export records indicate Haiti exported only 36,220 kg for 4 years (2013 to 2017). Consequently, the memorandum of August 29th, 2019 of the MARNDR opens the way to accelerate the overfishing of the eel instead of reducing it.

In order for the Haitian State to be better involved in the conservation of the species, we recommend that the MARNDR carry out ecological assessments aimed mainly at estimating the state of the national eel stock. Secondly, to identify eel fishermen and regulate their operations as well as encourage them to reduce pollution in fishing areas. Finally, the authorities concerned must be involved in actively participating in the conservation of the species with other stakeholders at the international level.

Bibliography

1. Atlantic States Marine Fisheries Commission, May 2012**,** *American Eel Benchmark Stock Assessment***.**
2. Hiromi Shiraishi, 2020. *Reviewing the trade in glass eels Anguilla spp*. TRAFFIC Bulletin vol. 32
3. Lamson, H. M., Shiao, J-C., Iizuka, Y., Tzeng, W-N., and Cairns, D. K. 2006. *Movement patterns of American eels (Anguilla rostrata) between* salt- and freshwater in a coastal watershed, based on otolith microchemistry. Marine Biology, 149: 1567–1576
4. Thibault, I., Dodson, J. J., Caron, F., Tzeng,W-N., Iizuka, Y., and Shiao, J -C. 2007. *Facultative catadromy in American eels: testing the conditional strategy hypothesis.* Marine Ecology Progress Series, 344: 219–229.
5. Badio J. Robert 2018. *Workshop of Range States of the American Eel*, Santo Domingo.
   H. Dony PIERRE, 2018. *La filière de l'anguille, la nouvelle poule aux oeufs d'or* .
6. **https://ayibopost.com/la-peche-aux-anguilles-rapporte-de-largent-mais-tue-des-jeunes-a-jeremie/**
7. **https://lenouvelliste.com/article/205845/de-nouvelles-mesures-pour-regulariser-lexploitation-et-lexportation-des-anguilles**
8. **https://lenouvelliste.com/article/220991/la-peche-au-zangui-anguilles-une-manne-maritime-pour-les-habitants-de-kawouk**
9. **https://koukouyayiti.wordpress.com/2018/12/17/la-filiere-de-languille-la-nouvelle-poule-aux-oeufs-dor/**
10. **https://agriculture.gouv.ht/view/01/?La-Peche-en-Haiti#.YNv9qPlKhPZ**