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Catch composition of Malian trap (*gura*) in Lower Taylor Creek Area, Bayelsa State, Niger Delta

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Abstract

The Catch composition of *Gura* Trap was studied in the Lower Taylor Creek, Bayelsa State, Nigeria. Twenty seven traps with 1, 2 and 3 valves were exposed to 48 hours at a time, for 5 weeks between May and June 2012. A total of 11 species of fish belonging to 8 families were recorded in this study. The family Cichlidae had the highest number with 67.6% of the total catch. The result further showed that *Tilapia guineensis* was the most abundant species (41.9%) in terms of number, while *Protopterus annectens* was most abundant (67.16%) in weight. This study needs to be further expanded to cover all seasons, so as to know the traps true species selectivity throughout the year.

Keywords: *Gura* trap, species selectivity, Lower Taylor Creek

Introduction

Traps are fishing gear in which the fish are retained or enter voluntarily and will be hampered from escaping. They are designed in such a manner that the entrance became a non-return device, allowing the fish to enter the trap but making it impossible to leave the catching chamber. Traps are baited or not. Other types are provided with large guiding panels made from netting to lead the fish into the catching chamber. Different materials are used for building a trap; wood, split bamboo, netting wire are some examples (Reed et al., 1967).

Traps are the most used fishing gear in the Lower Taylor Creek area (Kingdom and Kwen, 2009). Kingdom and Kwen (2009) reported different fishing traps of various designs in the area: these include trigger traps (e.g. *igogo*, *eteu*, *ideribo*) and the non-return valve traps (e.g. *gura*, *ingo*, *ikara*) that were used at the bank of the creek. The *Gura* trap or Malian trap was introduced to Nigerian fishermen by the Malian immigrant fishermen around 1980s (Ipinjolu et al., 2004). The trap gained wide acceptance (adoption) in many freshwater part especially in the North Eastern zone of Nigeria. The trap catches fish indiscriminately, juvenile as well as adult fish. Fish caught in *gura* traps remain alive until they are retrieved unless preyed upon by carnivores. The traps are mostly used during the rising and receding floods. At the peak of the flood, it is usually difficult for the fishermen to operate them, though very few fishermen do (Agbelege et al., 2001). Malian traps catch all types of fish species but mostly *Clarias* and *Tilapias* (Agbelege et al., 2003).

Information on the use of *gura* trap is minimal in Nigeria and completely absent in the Taylor Creek, even though its use is very popular there. This study is therefore aimed at examining the species composition of the catches of *gura* traps in the Lower Taylor creek area, as a prelude towards determining its selectivity.

Materials and Methods

Study area: The study was carried out in Lower Taylor creek area (called Gbaraintoru by indigenes), Yenagoa Local Government Area of Bayelsa State. The Taylor Creek is situated between Latitude 5° 01' N; 6° 17' E and Longitude 5° 02' N, 6° 18' E (Figure 1). Several creeks and flood channels interconnect fresh water swamp forests, linking the Nun River and Taylor Creek at various points and form a mass of water body during the high flood. These creeks and swamps with their associated floodplain lakes and fishing ponds constitute the main fishing systems. Okoso Creek is at present the most prominent creek connected to the Taylor creek which subsequently empties into the Nun River at its confluence at Polaku. The Taylor Creek is subjected to mild tidal influence in the dry season. Water flows swiftly in one direction during the flood season but gentle in the low water period.

Presently, oil exploration and exploitation activities and other rural developmental programs including road construction and land reclamation works are going on in the area.

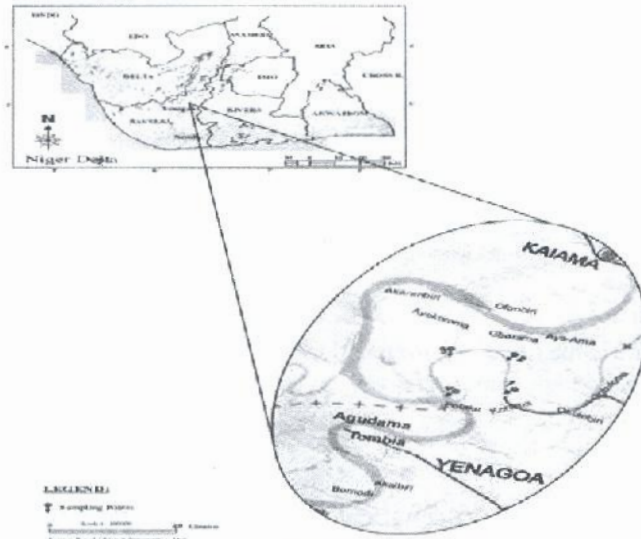


Fig. 1: Map of Niger Delta showing Bayelsa state and the Taylor Creek study area

Trap description and sample collection: The design, materials and operations of Malian traps, as well as their structure, have been described (Ipinjolu et al., 2004). The dimensions of the Malian traps used for this experiment were as follows; height 75cm, diameter at the base 45cm, entrance valves 10cm and net mesh size 25.3mm. The traps were fabricated with the assistance of an experienced local fisherman and some were bought. The *gura* trap had 3, 2 and 1 inlet valves and each measured 10cm diameter at the base while the top had loosed hanging nets that could be opened for baiting and removal of fish caught. Traps were inspected on every 12 hours, 24 hours and 48 hours respectively and catches were recorded. Fish caught were counted and species identified following the description of Reed et al. (1967), Olaosebikan and Raji (1998) and Idodo-Umeh (2003).

Results and Discussion

The various fish species caught by the *gura* trap are presented in table 1. A total of 11 species of fish belonging to 8 families was recorded in this study. A total of three shrimp and sixteen fish species from eleven families were observed in the catches of *ingo* traps in the Lower Taylor Creek (Kingdom and Hart, 2013). Ago et al. (2012) recorded 19 species of 10 families in the catch of *gura* trap in Kainji Lake. The family Cichlidae had the highest number with 67.6% of the total catch in this study. This was followed by Polypteridae with 15.1% and the lowest being Distichodontidae and Protopteridae with 1.1% each. However Ago et al. (2012) reported in increasing order, the dominance of Cichlidae, Cyprinidae and Clarotcidae in the catch of *gura* trap. In this study, Cichlidae was represented by four species. The other seven families were each represented by one species each. This shows a broad diversification of catch as it was reported by Agbelege et al. (2003) that *gura* trap catch all types of fish species but mostly *Clarias* and *Tilapia*.

The presence of certain species, such as *T. guineensis*, *T. marie*, *P. senegalus*, *H. hamaculatus*, *P. abbreviata* and *H. fasciatus* in all the three traps may probably suggest their more relative abundance than the other species at the time of the study. Therefore, the dominance of Cichlids in the catches of the three traps is most probably indicative of the season. Fishes caught in the traps are diverse in shape, ecological niches and behavioural characteristics (Holden and Reed, 1972). They are comprised of pelagic fishes such as *Alestes* and *Tilapia* and bottom dwellers *Protopterus annectens*; the fishes also have diverse feeding habits ranging from microphagous, larvae and insect feeders (*Alestes* and *Abreviata*), to omnivores *Protopterus* and *senegalus* (Reed et al., 1967; Holden and Reed 1972).

Table 1: Catch Composition of *Gura* trap in Lower Taylor Creek Area

Family	No.	%	Biomass (g)	%	Species	No.	%	Biomass (g)	%
Characidae	2	2.2	39.5	0.5	<i>Alestes nurse</i>	2	2.2	39.5	0.50
Eleotridae	2	2.2	52	0.65	<i>Bostricus africanus</i>	2	2.2	52	0.65
Distichodontidae	1	1.1	204	2.6	<i>Distichodus rostratus</i>	1	1.1	204	2.60
Cichlidae	63	67.6	1,141.4	14.3	<i>Hemichromis bimaculatus</i>	7	7.5	69	0.87
					<i>Hemichromis fasciatus</i>	6	6.5	75.4	0.95
					<i>Tilapia guineensis</i>	39	41.9	699.7	8.78

Family	No.	%	Biomass (g)	%	Species	No.	%	Biomass (g)	%
					<i>Tilapia marie</i>	11	11.8	297.3	3.73
Malapteruridae	3	3.2	432.8	7.8	<i>Malapterus electricus</i>	7	7.5	109.6	7.80
Nandidae	7	7.5	109.6	1.38	<i>Polycentrosis abbreviata</i>	14	15.1	109.6	1.38
Polypteridae	14	15.1	990.6	12.43	<i>Polypterus seneganus</i>	14	15.1	990.6	12.43
Protopteridae	1	1.1	5000	62.7	<i>Protopterus annectens</i>	1	1.1	5000	62.70
Total	93	100	7969.9	100		93	100	7969.9	100

Conclusion/Recommendation

Tilapia species were most abundant in the catch of gura trap during the study period. This study needs to be further expanded to cover all seasons, so as to know the traps true species selectivity throughout the year.

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