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BAITS PERFORMANCE ON THE IDERIBO AND IKARA ARTISANAL TRAPS AT THE LOWER TAYLOR CREEK AREA, BAYELSA STATE, NIGERIA

BY

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Abstract
Ideribo and Ikara artisanal fishing traps were studied in the Lower Taylor Creek, Bayelsa State from January to December 2018. The study aimed at observing the most preferred bait, catch composition, most dominant fish species caught and the overall efficiency of the traps. Four sampling stations were established based on the fishing activities of the fishers. A Completely Randomized Design was adopted with four traps in each location resulting to 32 traps. Thirty-two traps were set baited with groundnut cake (GNC), life-fish (LFH), fresh palm fruit (FPF) and a control set of traps without bait (NBT). Traps were set and retrieved after 48 hours and catches were sorted, counted and identified into their respective families and species levels using standard identification keys. A total of 620 fishes were caught during the study by all the traps combined. The most dominant fish species caught by Ideribo trap baited with Groundnut cake was Bagrus bayad (22), followed by without bait Distichodus rostratus (4). The dominant fish species in Ikara traps baited with GNC was Heterobranchus bidorsalis (27) and least was without bait Synodontis clarias (2) and Mormyrus rume (2). The Ikara trap caught the highest (335) species of fish and Ideribo trap caught the least number of species (285). There was significant difference (P<0.05) between number of fish caught by Ikara and Ideribo traps. The species Bagrus bayad was the most abundant species in the entire catch irrespective of trap type during the study period in Lower Taylor Creek Area.

Keyword: Efficiency, Ideribo and Ikara, Lower Taylor Creek.
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Introduction

Traps

Traps are small or large structures that allows fish to enter voluntarily but make it hard for them to escape due to the presence of chambers and non-return valves (Cekic *et al*., 2005, Davies and Kwen, 2012). They are made in many forms and shapes with various materials such as palm fronds, bamboo, netting, cane, wood and metals and are set with or without baits in rivers, lagoons, creeks etc. Kingdom and Kwen (2009) noted that the major fishing gear employed by artisanal fishers in the Lower Taylor Creek area are traps which accounts for 60% of the total fishing gear in use. This is often achieved by putting chambers or non-return valves in the trap that can be closed once the fish enters, having a funnel shape that makes it difficult for the fish to escape (Gray *et al.*, 2007, Davies and Kwen, 2012).

Ideribo trap

Ideribo trap is a traditional trap being used in the Lower Taylor Creek area by indigenous fishers (Kingdom and Kwen, 2009, Kwen *et al*., 2013). The Ideribo trap is constructed with of liane canes (*Calamus spp*.), with two funnel-shaped non-return valves with two chambers. The trap is usually set along the littoral zone of rivers or creeks baited or not baited. The trap captures a variety of fish species such as *Clarias, Chrysichtys, Bagrus, Clarotes, Heterobranchus, Synodontis, Malapterurus, Distichodus rostratus, Heterobranchus* etc *(*Kwen *et al*., 2013).

Ikara trap

The Ikara trap is another indigenous trap being used by fishers in the Lower Taylor Creek area and its environs as noted by various researchers Kingdom and Kwen, 2009, Davies and Kwen, 2012, Kwen *et al*., 2013. The trap is constructed with strips of raffia palm bamboo, liane canes (*Calamus spp*.), with one funnel-shaped non-return valve. Ikara traps vary in size from about 60cm length (these are made from thin strips of raffia palm) to extremely strong traps measuring 1.5 metres square and made of lianas or cane of 10mm diameter. Ikara traps are used either together with a variety of fish screens, fences and bunds; or they are set after been baited or not baited near grassy river banks during the period of rising water level. They are used to catch all types of fish species such as *Heterobranchus longifilis, Heterobranchus bidorsalis, Bagrus bayad, Distichodus rostratus, Synodontis clarias* and *Mormyrus deliciousus* (Amhed and Tagago, 2016).

Baits

Baits are natural or artificial substances used to entices fish by fishers to influence the catch of fishing gear. Bait is an important factor that decides both quality and quantity of fish species that are caught by traps (Adimula (2003). Adjarho and Ajao (2007) reported that different types of fishing baits used mostly in Nigeria by artisanal fishers include rotten meat, dead fish, life fish, palm nuts or corn. Kwen *et al.* (2012) also noted other baits usually used in the Southern region of Nigeria are worms, baked garri mixed with palm oil, termites, soap, fresh palm fruits and groundnut cake. The effectiveness of fishing bait may be species-specific and changes with the season and availability of natural prey species in the fishing grounds (Balik *et al*., 2002, Kwen *et al*., 2012).

General objective of the study

The general objective of the study is to examine the performance of baits on the Ideribo and Ikara traps in the Lower Taylor Creek Area, Bayelsa state, Nigeria.

Specific objectives of the study

The specific objectives of the study are to:

1) Determine the total number of fish caught in each trap by the different baits.
2) Determine the most dominant fish species caught by the traps.
3) Examine the length and weight distribution of fish caught by each of the trap.

Materials and Methods

The Study Area

The study was carried out at the Lower Taylor Creek Area between Okolobiri and Polaku communities situated in Yenagoa Local Government Area of Bayelsa State, Nigeria. The area is a lotic non-tidal fresh water environment and lies between Latitudes 5^0 01' and 5^0 02'North and Longitudes 6^0 17' and 6^0 18' East (Figure 1). Within the area, several creeks and flood channels exist which interconnect the fresh water swamp forest to the Nun River and Taylor Creek at various points and form a mass of water body during the annual flood months. These creeks and swamps with their associated floodplain lakes and fishing ponds constitute the main fishing ground. In fact, Okoso Creek is the most prominent creek connected to the Taylor Creek which empties into the Nun River at Polaku community. The Taylor Creek is subjected to mild tidal influence in the dry season. The water flows swiftly in one direction during the flood season but gently in the low water period (Kingdom and Ogbulagha, 2013). The creek system serves the residents of Polaku, Koroama, Obunagha and Okolobiri communities in different forms ranging from domestic to commercial cassava tuber fermentation, washing of clothes, source of drinking water, fishing, bathing, waste disposal and sand mining. Lower Taylor Creek runs through vegetation that has palm trees, silk cotton and mahogany trees which stand in the flood free farmlands close to the creek (Kingdom and Hart, 2012). The creek is economically important and rich in biodiversity. Presently, oil exploration and exploitation activities and other rural developmental programs are going on in the area.

Selection of Stations

The stations used for the study were selected based on the fishing activities on-going in the stations. The stations are labelled ST 1 (Station 1), ST 2 (Station 2) ST 3 (Station 3) and ST 4 (Station 4). The stations are 1– 2 kilometers apart and are the major fishing sites along the Lower Taylor Creek Area.

Experimental Design

The design for the experiment was a Complete Randomized Design (CRD) with bait-type and trap-type as factors of comparism. Thirty-two traps comprising four each of the Ideribo and Ikara traps were used at each station. The traps were baited with life-fish (LFH) such as *Chrysichthys nigrodigitatus*, groundnut cake (GNC), fresh palm fruit (FPF) and without bait (NBT) as control separately.

Field Sampling procedure

Sampling was carried out from January – December 2018 covering both the dry and wet seasons. The Ideribo and Ikara traps were set and retrieved once a month at four stations labelled ST1, ST2, ST3 and ST4 along the bank of Lower Taylor Creek. Traps were set in the morning between 6:30am and 7:30am and hauled after 2 days in the morning between 8:00am and 9:00am maintaining a soaking time of 48 hours after

setting. On the whole thirty-two traps were used for the study and each station having eight traps. The traps were arranged into four groups and with three set of baits the groundnut cake, life-fish (*Chrysichthys nigrodigitatus*), fresh palm fruit separately and the fourth group had no bait hence serves as control. Fish caught after hauling were sorted, counted and identified into families and species using fish identification keys by Idodo-Umeh (2003) and Olaosebikan and Raji (2013). Thereafter, the total length and weight were obtained using a measuring board having a calibrated metric ruler for length (cm) while the total weight (g) was obtained using a sensitive weighing balance Model UTP 313.

Data analysis

The data collected on fish number, weight and length of fish species were subjected to Descriptive Statistical Analysis and Analysis of Variance (ANOVA) using the Statistical Package for the Social Sciences (SPSS, 1999). Mean values were separated using Duncan Multiple Range Test (if there is any significant difference) (Ahmed *et al*., 2005). The Relative Species Diversity Index (RSDI) for each trap was calculated using the modified version of the formula described by Adimula (2003) and Ahmed *et al.* (2005). That is:

RSDI= Number of species caught by each bait type (Ahmed *et al.,* 2005)
Total number of species caught by all baits

Determination of fish species relative abundance: The Relative abundance of the fish species was estimated using the formula:

RA=SA/TA × 100% (Ahmed *et al.*, 2005)

Where:

RA = Relative abundance of each species (%)
SA = Species abundance
TA = Total Abundance of all species

The abundance of the fish species was categorized according to the criteria of Ahmed et al. (2005):

≥10% = Dominant
1-9% = Subdominant
<1% (but caught more than once) = Occasional
<1% (and caught only once) = rare

All fish species collected were counted to determine species abundance. The abundance score of the species was estimated by calculating the relative abundance (%) of each species.

RESULTS

Total number of fish caught

The number of fish caught by the Ideribo and Ikara traps are shown in Table 1. A total of 620 fishes were caught during the study by all the traps combined. The Ikara trap contributed 54.03% to the total catch whereas 45.97% was contributed by the Ideribo trap (Table 4.1). In terms of stations, 38.06% of the total caught was in station 1, followed by Station 2 (30.16%), Station 3 (20.00%) and 11.77% in station 4 (ST4).

Table 1: Total number of fish caught by two traps from various stations during the study

	ST1		ST2		ST3		ST4			
Trap	**No. of fish caught**	**%**	**No. of fish caught**	**%**	**No. of fish caught**	**%**	**No. of fish caught**	**%**	**Total fish caught**	**%**
Ideribo	**112**	**47.46**	**77**	**41.17**	**56**	**45.16**	**40**	**54.79**	**285**	**45.97**
Ikara	**124**	**52.54**	**110**	**58.82**	**68**	**54.83**	**33**	**45.21**	**335**	**54.03**

Source: Field survey, 2018.

Catch composition of fish caught based on bait type

Table 2 shows the catch composition of fish caught with the different baits by the Ideribo traps used in this study. The Ideribo traps baited with groundnut cake recorded the highest number (211) of fish caught, followed by fresh palm fruit (36), life-fish (24), and control (NBT) the least number (14) of fish. The most dominant fish species caught by the Ideribo trap baited with Groundnut cake (GNC) were *Bagrus bayad* (22), *Distichodus rostratus* (20), *Heterobranchus longifilis* (19) and *Heterobranchus bidorsalis* (15), *Mormyrus* rume (14) and Synodontis sorex (12). Traps baited with life-fish were *Macrobrachium*

vollenhovenii (3), *Synodontis clarias* (2), *Hydrocynus brevis (2), Distichodus rostratus* (2) and *Bagrus bayad* (2). Traps baited with fresh palm fruits were *Distichodus rostratus* (3) and *Mormyrus rume* (3) while the dominant species by traps without bait were *Distichodus rostratus* (4) and *Mormyrus rume* (3) (Table 2). The catch composition of fish caught with the various baits by the Ikara traps is presented in Table 2. The results showed that Ikara traps baited with GNC recorded the largest number of fish (251) caught and the smallest number of fish (19) was recorded with traps without baits. The most dominant fish species in the Ikara traps baited with GNC were *Heterobranchus bidorsalis* (27), *Bagrus bayad* (19), *Distichodus rostratus* (17), *Mormyrus rume* (16) and *Malapterurus electricus* (16). Traps baited with life-fish were *Mormyrus deliciousus* (5), *Distichodus rostratus* (2), *Bagrus bayad* (2), *Distichodus rostratus* (2) and *Macrobrachium vollenhovenii* (3). Traps baited with fresh palm fruits were *Mormyrus rume* (5), *Mormyrus deliciousus* (3), *Distichodus rostratus* (3) and *Bagrus bayad* (3). Traps without bait were *Synodontis clarias* (2) and *Mormyrus rume* (2) (Table 2). There was significant difference ($P<0.05$) between the number of fish caught with groundnut cake bait (2.72 ± 0.10) and other baits fresh palm fruit (1.98 ± 0.20), life-fish (1.89 ± 0.16) and without bait (1.75 ± 0.14) used during the study.

Table 2: Catch composition of fish species based on bait type during the study

	Ideribo Trap					**Ikara Trap**				
Species Identified	**LFH**	**GNC**	**FPF**	**NBT**	**Total**	**LFH**	**GNC**	**FPF**	**NBT**	**Total**
Heterotis niloticus	**0**	**4**	**2**	**0**	**6**	**0**	**2**	**1**	**1**	**4**
Synodontis clarias	**2**	**9**	**1**	**0**	**12**	**1**	**5**	**0**	**2**	**8**
Synodontis membranaceous	**1**	**10**	**2**	**1**	**14**	**0**	**10**	**2**	**0**	**12**
Synodontis sorex	**2**	**12**	**1**	**0**	**15**	**0**	**12**	**2**	**1**	**15**
Synodontis ocellifer	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**3**
Synodontis nigrita	**0**	**1**	**0**	**0**	**1**	**0**	**5**	**0**	**0**	**5**
Synodontis schall	**0**	**0**	**1**	**1**	**2**	**1**	**4**	**1**	**0**	**6**
Synodontis melanopterus	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**0**	**1**	**4**
Brycinus nurse	**1**	**9**	**2**	**0**	**12**	**0**	**3**	**1**	**0**	**4**
Alestes baremose	**0**	**2**	**1**	**0**	**3**	**0**	**5**	**1**	**0**	**6**
Hydrocynus brevis	**2**	**5**	**2**	**1**	**10**	**0**	**5**	**1**	**1**	**7**
Hydrocynus forskalii	**1**	**1**	**0**	**0**	**2**	**1**	**2**	**2**	**1**	**6**
Alestes dentex	**0**	**2**	**0**	**0**	**2**	**0**	**7**	**0**	**0**	**7**
Alestes brevis	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**
Lates niloticus	**0**	**2**	**1**	**0**	**3**	**1**	**2**	**1**	**1**	**5**
Oreochromis niloticus	**0**	**4**	**0**	**0**	**4**	**0**	**4**	**1**	**0**	**5**
Tilapia zillli	**0**	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**
Hemichromis fasciatus	**0**	**2**	**0**	**0**	**2**	**0**	**2**	**0**	**0**	**2**
Macrobrachium felicinum	**0**	**1**	**0**	**0**	**1**	**1**	**2**	**1**	**1**	**5**
Macrobrachium vollenhovenii	**3**	**7**	**2**	**1**	**13**	**2**	**2**	**0**	**0**	**4**
Macrobrachium macrobrachion	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**1**	**0**	**4**
Mormyrus rume	**2**	**14**	**3**	**3**	**22**	**1**	**16**	**5**	**2**	**24**
Hyperopisus bebe	**1**	**2**	**1**	**0**	**4**	**0**	**3**	**2**	**0**	**5**
Mormyrus deliciousus	**2**	**9**	**2**	**0**	**13**	**5**	**13**	**3**	**1**	**22**
Marcusenius deboensis	**0**	**3**	**1**	**0**	**4**	**1**	**2**	**1**	**0**	**4**
Chrysichthys nigrodigitatus	**0**	**1**	**0**	**0**	**1**	**0**	**2**	**1**	**0**	**3**
Clarotes laticeps	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**1**
Gymnarchus niloticus	**0**	**2**	**0**	**0**	**2**	**0**	**2**	**1**	**0**	**3**
Distichodus rostratus	**1**	**20**	**3**	**4**	**28**	**2**	**17**	**3**	**1**	**23**
Distichodus engycephalus	**1**	**5**	**2**	**0**	**8**	**1**	**4**	**2**	**1**	**8**
Citharinus citharus	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**2**

LF = Life Fish, GNC = Groundnut Cake, FPF = Fresh Palm Fruit, NBT = No Bait

Table 2: Cont'd. Catch composition of fish species based on bait type during the study

	Ideribo Trap					Ikara Trap				
Species Identified	**LFH**	**GNC**	**FPF**	**NBT**	**Total**	**LFH**	**GNC**	**FPF**	**NBT**	**Total fish caught**
Citharinus thomasi	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**2**	**1**	**9**
Heterobranchus bidorsalis	**1**	**15**	**2**	**0**	**18**	**1**	**27**	**1**	**0**	**29**
Heterobranchus longifilis	**0**	**19**	**3**	**2**	**24**	**0**	**7**	**1**	**0**	**8**
Clarias gariepinus	**1**	**9**	**1**	**0**	**11**	**1**	**14**	**1**	**1**	**17**
Labeo coubie	**0**	**2**	**0**	**0**	**2**	**0**	**4**	**0**	**0**	**4**
Labeo senegalensis	**1**	**4**	**0**	**0**	**5**	**0**	**0**	**0**	**0**	**0**
Bagrus filamentosus	**0**	**4**	**0**	**0**	**4**	**0**	**11**	**1**	**1**	**13**
Bagrus bayad	**1**	**22**	**3**	**1**	**27**	**2**	**19**	**3**	**2**	**26**
Bagrus docmac	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**3**
Malapterurus electricus	**1**	**7**	**0**	**0**	**8**	**0**	**16**	**1**	**0**	**17**
Total	**24**	**211**	**36**	**14**	**285**	**22**	**251**	**43**	**19**	**335**
RSDI	**0.59**	**5.15**	**0.88**	**0.34**		**0.54**	**6.12**	**1.05**	**0.46**	

Source: Field survey, 2018.

LF = Life Fish, GNC = Groundnut Cake, FPF = Fresh Palm Fruit, NBT = No Bait

Length distribution of fish caught by Ideribo Ikara traps

The length distribution of the fish species caught (Table 3) shows that the smallest (6.70cm) (*Macrobrachium felicinum*) and the biggest (71.0cm) (*Heterobranchus bidorsalis*) sizes were caught by the Ideribo trap. Comparing the sizes of other fish species caught by the Ideribo with those of Ikara trap also indicate that most of the biggest sizes were caught by the Ikara trap. The results of the analysis of variance showed that the mean length of all fish species caught in the Ideribo trap (26.97 ± 0.38 cm) was not significantly different ($P>0.05$) from those caught in the Ikara trap (28.14 ± 0.48 cm).

Weight distribution of fish caught by Ideribo and Ikara traps

The weight of distribution of fish caught by the traps (Table 4) revealed that large sizes of fishes were caught more by Ikara traps. The mean weight of fish caught by the traps showed that there was no significant difference ($P>0.05$) from the mean weight of fish caught by the Ideribo trap (270.36 ± 10.61g) and that of the Ikara trap (292.07 ± 13.65g).

Discussion

The high number (335) of fish recorded by Ikara trap in this study is contrary to the findings of Davies and Kwen (2012) who had reported that Ikara trap performed poorly when compared with Malian trap in the Upper Nun River. They attributed its poor performance to the type of baits used in the traps during the study. The families and species recorded in the study by all traps are similar to those recorded in Igbedi Creek by Otobotekere *et al.* (2009) in Bayelsa state, but similar to records obtained with Ikara traps in the Upper Nun

River in Southern Nigeria by Davies and Kwen (2012) and in the Lower Taylor Creek Area, Bayelsa State, Niger Delta by Kingdom and Ogbulagha (2013) using Malian traps. However, the number of fish species (72) caught in this study is higher than those recorded (45) by Davies and Kwen (2012) in the Upper Nun River and those recorded (11) by Kingdom and Ogbulagha (2013) in the Lower Taylor Creek Area, Bayelsa State, Nigeria. This difference could be attributed to location fished, types of baits used, fishing traps and duration of the study. In the Lower Taylor Creek, Kingdom and Ogbulagha (2013) recorded 11 species in 8 families, while Davies and Kwen, (2012) recorded 45 species in 18 families using Malian and Ikara traps. The high number (462) of catch recorded in traps baited with GNC implied that GNC may be a more efficient bait for catching fish in the fresh water environment. In fact, the flavour and the high protein content of the groundnut may be a factor for its better performance as a bait. The trap baited with GNC was dominated by Clariids and Mochokids, an observation reported by Agbelege *et al.* (2005) in their studies indicating that these traps are selective for mainly the catfishes. The dominance of *Bagrus*, *Distichodus rostratus*, *Mormyrus rume and Clariids* in the catch of the traps was also reported by Adjarho and Ajao (2007) and Ahmed and Tagago (2016).

The biggest size (63.0cm) of fish caught in this study varied from those reported by Ahmed *et al*. (2005) in Lake Kainji (28.0cm), Kwen (2012) in Upper Nun River (61.5cm) and Binyotubo (2016) in his study of the Upper Nun River (80.0cm). This variation of the sizes of fish caught could be attributed to the fishing location, trap type used and sampling season (Alfred-Ockiya, 2000).

Conclusion

The Results of this study showed that;

1. The Lower Taylor Creek area offers a diversity of fish species for fishers which include *Clarias gariepinus*, *Mormyrus rume*, *Distichodus rostratus*, *Bagrus bayad*, *Heterobranchus longifilis*, *Bagrus filamentosus*, *Chrysichthys nigrodigitatus*, *Clarotes laticeps*, *Heterobranchus bidorsalis*, *Hepsetus odoe*, *Hydrocynus brevis*, *Hydrocynus forskalii*, *Malapterurus electricus*, *Mormyrops deliciosus*, *Synodontis clarias* and *Synodontis sorex*
2. The most abundant family caught by the Ideribo trap was Clariidae and least abundant was Claroteidae whereas Mormyridae was the most abundant family caught by the Ikara trap and Gymnarchidae was the least abundant family.
3. The Ideribo and Ikara trap fishery is multi-species but specific to Clariids.
4. Groundnut cake as bait is more effective than fresh palm fruit and life fish baits as baits in Ideribo and Ikara traps for capturing Clariids, Mormyrids, Mochokids and Bagrids in the Lower Taylor Creek.
5. The most dominant fish species caught by the Ideribo traps were *Bagrus bayad* (22), *Distichodus rostratus* (20), *Heterobranchus longifilis* (19), *Heterobranchus bidorsalis* (15), *Mormyrus* rume (14) and Synodontis sorex (12) whereas in Ikara traps *Heterobranchus bidorsalis* (27), *Bagrus bayad* (19), *Distichodus rostratus* (17), *Mormyrus rume* (16) and *Malapterurus electricus* (16) were dominant

Recommendations

Based on the results the following recommendations are suggested to enhance drum trap fisheries:

1. Groundnut cake bait is a more preferable bait than the life-fish and fresh palm fruit baits in the Ideribo and Ikara trap fisheries in the Lower Taylor Creek Area
2. The use of Ideribo and Ikara traps as fishing gear are recommended for capturing Clariids such as *Heterobranchus bidorsalis* in the Lower Taylor Creek Area.
3. Further studies should be carried out in order to look at different soaking time in relation to catch on the traps.

References

Adimula, A.B. (2003). Comparison of catch efficiency and selectivity of entangling nets: Gillnets and Trammel nets in Lake Kainji, Nigeria. *M.Tech. Thesis* submitted to the Department of Fisheries and Wildlife, Federal University of Technology Akure, Ondo State, 101p.

Adjarho, A. I. and Ajao, A. H. (2007). Effect of baits on the efficiency of Malian traps in Lake Kainji. In: P.A. Araoye, I.A. Adikwu and R.O.K. Banke (Eds.). *Proceedings of the 22nd Annual Conference of the Fisheries Society of Nigeria* (FISON).12th–16th November, Kebbi State, Nigeria. Pp. 303 - 307.

Agbelege, O.O. and Ipinjolu, J.K. (2005). An assessment of the exploitation and management techniques of the Fishery Resources in the Nigeria portion of Lake Chad. *Journal of Arid Zone Fisheries*, 1:89-98.

Ahmed, Y. B and Tagago, T. A. (2016). Effect of mesh sizes on catch efficiency of modified Buzun Gura traps in Lake Kainji. In S.G Solomon (Ed.). *Proceedings of the 29th Annual Conference of the Fisheries Society of Nigeria*, Makurdi, Benue State. Pp. 6 – 13.

Ahmed, Y.B., Ipinjolu, J.K. and Hassan, W.A. (2005). Catch composition of gillnets and baited longlines in the Southern basin of Lake Kainji, Nigeria. In: E.J. Ansa, P.E. Anyanwu, B.W. Ayonoadu, E.S.

Erondu and S.N. Deekae (Eds.). *Proceedings of the 20th Annual Conference of the Fisheries Society of Nigeria (FISON)*, 14th – 18th November, Port Harcourt. Pp. 350 – 360.

Alfred-Ockiya, J. F. (2000). The length-weight relationship of snake Head Channa channa from the freshwater swamps of Niger Delta, Nigeria. *Journal of Aquatic Science* 15: 12-14.

Balik, I., Cubuk, H. and Uysal, R. (2002). Effect of bait on efficiency of fyke-nets for catching crayfish *Astacus leptodactylus*. *Turkish Journal of Fisheries and Aquatic Sciences*, Pp. 1-4.

Binyotubo, T. E. (2016). Design characteristics and efficiency of gill nets in the Upper Nun River, Bayelsa State, Nigeria. *M.Sc. Thesis* Submitted to the Department of Fisheries and Aquatic Studies/Animal Science, Faculty of Agriculture, Niger Delta University, Wilberforce Island, Bayelsa State. 67p.

Cekic, M., T. Dal, N. Basusta and Gokce, M.A. (2005). Comparison of two different types of basket trap on fish catches in Iskenderun Bay. *Turkey Journal of Veterinary Animal Science* 29:743-749.

Davies, O. A. and Kwen, K. (2012). Fish assemblages of selected Traditional Fishing traps (Malian and Ikara) in the Upper Nun River, Niger Delta, Nigeria. *FS Journal of Basic and Applied Sciences*, Vol. 1. No 2:8-11.

Idodo-Umeh, G. (2003). Freshwater Fishes of Nigeria: Taxonomy, Ecological Notes, Diet and Utilization. Benin City: Idodo-Umeh Publishers. 229 p.

Kingdom, T. and Hart, A. I. (2013). Relative efficiency and selectively of Ingo Traps in the Lower Taylor Creek, Niger Delta, Nigeria, *International Journal of Agriculture.* Photon, 124:211-216.

Kingdom, T. and Kwen, K. (2009). Survey of fishing gear and methods in the Lower Taylor Creek Area, Bayelsa State Nigeria. *World Journal of Fish and Marine Sciences*, 1(4): 313-319.

Kingdom, T. and Ogbulagha, A. I. (2013). Catch composition of Ideribo and Ikara traps (Gura) in Lower Taylor Creek Area, Bayelsa State, Niger Delta. In: P. E. Ndimele (Ed.). *Proceedings of the 28th Annual Conference of the Fisheries Society of Nigeria (FISON).* Abuja, 25th- 29th November. Pp.292-294.

Kwen, K. (2012). Efficiency of two traditional fishing traps in the Upper Nun River, Niger Delta, Nigeria. *M.Sc. Thesis* Submitted to the Department of Fisheries and Aquatic Environment. Faculty of Agriculture, Rivers State University of Science and Technology, Nkpolu-Oroworukwo, Port Harcourt. 107p.

Kwen, K., Adukwu, G. and Ogunshakin, R. Y. (2013). Fishing Trials of Metal Drum Trap in the Upper Nun River, Bayelsa State, Nigeria. In: P. E. Ndimele (Ed.). *Proceedings of the 28th Annual Conference of the Fisheries Society of Nigeria (FISON)* Abuja, 25th-29th November. Pp. 256-259.

Kwen, K., Davies, O. A. and Binyotubo, T. E. (2013). Survey of Fishing Gear and Status of Fishers in Igbedi Creek, Niger Delta, Nigeria. *International Journal of Scientific Research in Knowledge (IJSRK)*, 1(11). Pp. 493- 501.

Olaosebikan, B.D. and Raji, A. (2013). Guide to Nigeria Freshwater Fishes. FCFFT Publication 2nd edition. Decency Printers Ilorin Nigeria. 124p.

SPSS (1999). Statistical Package for Social Science SPSS for windows. Release 10.01 standard version pp. 65- 68.

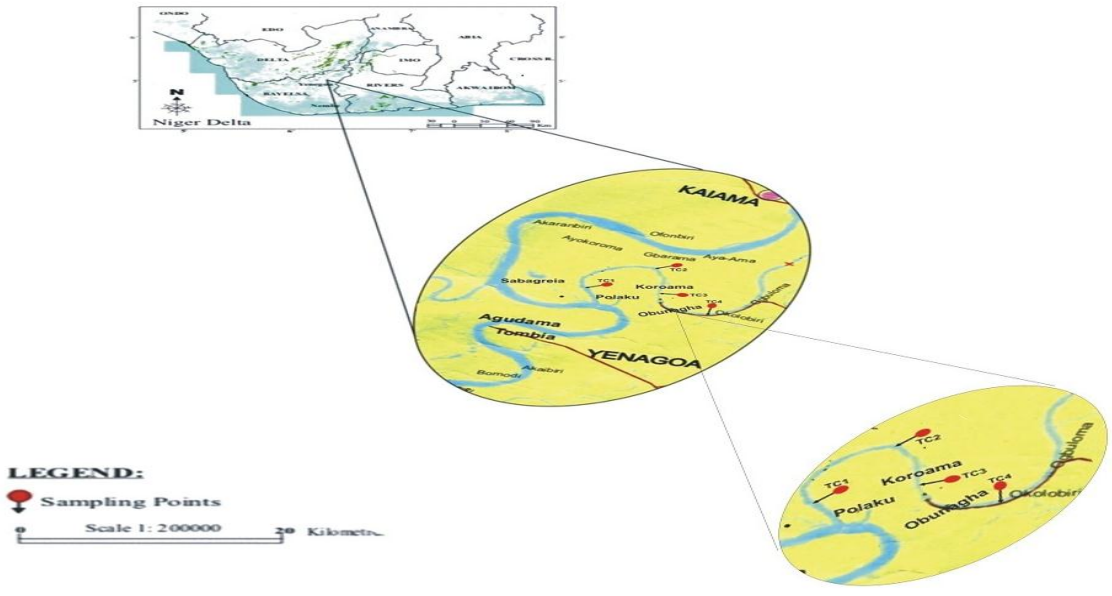

Figure 1: Map of Niger Delta Showing Bayelsa and Lower Taylor Creek, the Study Area

Table 3: Length (cm) distribution of fish caught in the artisanal fishing traps

Family	Species Identified	Trap Type			
		Ideribo Trap		Ikara Trap	
		Length range (cm)	Mean ± S.E	Length range (cm)	Mean ± S.E
Arapaimidae	*Heterotis niloticus*	16.6 - 44.0	36.31±1.17	20.0 - 61.0	33.78±1.33
Mochokidae	*Synodontis clarias*	12.7 -29.6	22.62±0.46	14.0 - 28.4	21.68±0.68
	Synodontis membranaceous	25.4 - 28.6	26.44 ±1.45	26.3 - 29.1	27.70±2.30
	Synodontis sorex	11.5 - 29.2	24.01±0.46	14.5 - 26.3	21.45±0.90
	Synodontis nigrita	14.1- 29.5	23.10 ±0.64	23.9 - 24.0	22.57±0.84
	Synodontis schall	15.0 -22.0	18.72 ±1.33	24.0 - 26.5	25.57±1.88
	Synodontis ocellifer	0	0	15.0 -22.0	18.72 ±1.33
	Synodontis melanopterus	0	0	24.0 - 26.5	23.17±1.88
Alestidae	*Brycinus nurse*	12.0 - 20.0	16.15 ±0.74	14.5 - 18.0	18.00±3.25
	Alestes baremose	14.5 - 18.0	17.14 ±1.99	14.5 - 17.5	15.54±1.55
	Hydrocynus brevis	26.5 - 29.0	27.36 ±1.70	22.0 - 29.1	27.65±1.99
	Hydrocynus forskalii	24.5 - 28.0	25.36 ±1.65	25.0 - 33.2	29.35±2.69
	Alestes dentex	11.0 - 21.0	16.18 ±0.76	17.5 - 26.0	20.00±4.31
	Alestes brevis	0	0	26.5 - 29.0	27.36 ±1.70
Latidae	*Lates niloticus*	41.9 - 42.0	41.97 ±3.2	47.0 - 47.2	47.10±2.30
Cichlidae	*Oreochromis niloticus*	11.2 - 18.0	13.63 ±1.23	13.3 -15.5	14.10±1.88
	Tilapia zilli	15.0 - 20.0	17.46 ±1.23	0	0
	Hemichromis fasciatus	11.5 - 16.6	13.73 ±0.98	10.7 - 14.8	12.35±2.30
Paleomonidae	*Macrobrachium felicinum*	6.70 – 8.2.0	5.15±0.41	7.0 -7.5	6.80±1.25
	Macrobrachium vollenhovenii	7.5.0 – 9.1.8	8.83±1.62	7.8 - 9.8	7.20±1.62
	Macrobrachium macrobrachion	0	0	6.8 - 9.1	7.10±1.59

Table 3: Cont'd. Length (cm) distribution of fish caught in the artisanal fishing traps

Family	Species Identified	Trap Type			
		Ideribo Trap		Ikara Trap	
		Length range (cm)	Mean ± S.E	Length range (cm)	Mean ± S.E
Mormyridae	*Mormyrus rume*	14.4 - 15.0	14.68 ±1.62	15.5 - 17.9	16.70±1.88
	Hyperopisus bebe	21.0 - 21.4	21.29±1.70	19.0 - 20.2	19.60±2.30
	Mormyrus deliciousus	15.5 - 17.9	16.43 ±1.62	14.9 - 14.9	14.00±3.25
	Marcusenius deboensis	11.0 - 14.8	13.15±1.41	15.0 - 20.0	16.83±1.62
Citharinidae	*Citharinus citharus*	0	0	39.5 - 42.0	40.75 ±2.30
	Citharinus thomasi	0	0	38.7 - 42.5	40.42±1.33
Claroteidae	*Chrysichthys nigrodigitatus*	40.0 - 74.5	54.08 ±0.66	61.0 - 61.5	51.50±1.33
	Clarotes laticeps	0	0	16.5 - 61.6	38.59 ±0.77
Gymnarchidae	*Gymnarchus niloticus*	39.9 – 42.1	41.08±1.33	40.0 - 42.5	41.39±1.15
Distichodontidae	*Distichodus rostratus*	38.9 -40.5	39.80 ±1.62	39.9 - 42.1	41.08±1.33
	Distichodus engycephalus	39.5 - 42.6	40.86 ±0.98	30.0 - 42.3	41.30±1.62
Clariidae	*Heterobranchus bidorsalis*	44.0 - 71.0	54.08 ±0.66	61.0 - 70.3	51.50±1.33
	Heterobranchus longifilis	40.0 - 61.5	50.58±1.10	56.0 - 60.2	49.30±1.31
	Clarias gariepinus	16.5 - 61.6	38.59 ±0.77	22.0 - 61.0	46.08±0.91
Cyprinidae	*Labeo coubie*	19.1- 19.1	19.10±3.25	19.0 - 19.0	21.23±1.88
	Labeo senegalensis	18.1- 19.1	18.10±3.21	0	0
Bagridae	*Bagrus filamentosus*	20.5 - 25.3	24.20±7.62	13.2 - 29.7	23.95±2.30
	Bagrus bayad	30.0 - 49.2	35.55 ±1.62	26.0 - 43.0	32.03±1.23
	Bagrus docmac	0	0	15.3 - 34.7	22.81±2.20
Malapteruridae	*Malapterurus electricus*	16.0 - 41.0	28.33 ±1.70	24.0 - 44.1	38.59±1.99

Table 4: Weight (g) distribution of fish caught in the artisanal fishing traps

Family	Species Identified	Trap Type			
		Ideribo Trap		Ikara Trap	
		Weight range (cm)	Mean ± S.E	Weight range (cm)	Mean ± S.E
Arapaimidae	*Heterotis niloticus*	35.0 - 60.0	60.38±70.24	49.0 - 60.0	54.50±81.11
Mochokidae	*Synodontis clarias*	21.7 - 180.0	107.11 ±16.06	100.0 - 180.0	123.60±39.73
	Synodontis membranaceous	120.0-130.0	112.60±51.30	120.0 - 150.0	135.00±81.11
	Synodontis sorex	16.5 -180.0	114.15±16.06	120.0 - 150.0	131.67±66.22
	Synodontis nigrita	31.6 - 150.0	78.05±46.83	32.0 - 32.0	32.00±114.70
	Synodontis schall	120.0 - 126.0	124.00±66.22	100.0 - 160.0	123.33±66.22
	Synodontis ocellifer	0	0	29.2 - 55.0	40.78±57.35
	Synodontis melanopterus	0	0	22.5 - 43.7	33.15±57.35
Alestidae	*Brycinus nurse*	10.0 - 80.0	43.43±26.09	30.00 - 70.00	55.71±43.35
	Alestes baremose	30.0 - 71.0	60.38±70.24	30.00 - 70.00	39.46±55.10
	Hydrocynus brevis	26.5 - 46.0	35.00±40.55	22.5 - 32.9	26.77±66.22
	Hydrocynus forskalii	740.0 - 750.0	746.67±114.70	35.0 - 60.0	60.38±70.24
	Alestes dentex	14.5 - 50.0	31.53±33.11	17.9 - 17.9	17.90±114.70
	Alestes brevis	0	0	120.0 - 300.0	169.09±59.90
Latidae	*Lates niloticus*	740.0 – 750.0	746.67±114.70	900.0 – 900.0	900.00±81.11
Cichlidae	*Oreochromis niloticus*	26.4 - 31.0	26.41±43.35	23.0 - 36.0	28.33±66.22
	Tilapia zilli	35.0 - 60.0	47.71±43.35	0	0
	Hemichromis fasciatus	16.4 - 46.9	26.64±34.58	16.3 - 18.3	26.8±81.11
Paleomonidae	*Macrobrachium felicinum*	10.4 - 13.9	14.11±15.50	11.3 - 15.3	15.1±13.2
	Macrobrachium vollenhovenii	11.4 - 16.3	15.46±17.51	12.23 - 16.9	16.8±17.11
	Macrobrachium macrobrachion	0	0	11.4 - 16.3	15.46±17.51
Mormyridae	*Mormyrus rume*	23.3 - 34.0	30.35 ±57.35	31.9 - 44.0	36.97±66.22
	Hyperopisus bebe	40.0 - 60.0	47.64±59.90	49.0 - 60.0	54.50±81.11
	Mormyrus deliciousus	35.0 - 44.5	37.63±57.35	36.0 - 49.5	38.62±59.37
	Marcusenius deboensis	33.0 - 33.0	33.00±114.70	30.0 - 30.0	30.00±114.70

Table 4: Cont'd. Weight (g) distribution of fish caught in the artisanal fishing traps

Family	Species Identified	Trap Type			
		Ideribo Trap		Ikara Trap	
		Weight range (cm)	Mean ± S.E	Weight range (cm)	Mean ± S.E
Citharinidae	*Citharinus citharus*	0	0	650.0 - 800.0	725.00±81.11
	Citharinus thomasi	0	0	640.0 - 640.0	640.00±114.70
Claroteidae	*Chrysichthys nigrodigitatus*	600.0 - 750.0	648.33±46.83	700.0 - 800.0	750.00±57.35
	Clarotes laticeps	0	0	80.0 - 80.0	80.00±114.70
Gymnarchidae	*Gymnarchus niloticus*	30.0 – 85.0	63.10±51.30	90.0 - 90.0	90.00±114.70
Distichodontidae	*Distichodus rostratus*	600.0 - 760.0	673.18±34.58	450.0 - 600.0	506.67 ± 66.22
	Distichodus engycephalus	450.0 - 700.0	591.00±36.27	647.0 - 700.0	681.75± 85 57.31
Clariidae	*Heterobranchus bidorsalis*	150.0 - 2000.0	100.40±220.79	450.0 - 2000.0	897.92± 40.55
	Heterobranchus longifilis	450.0 - 2,000.0	100.02±460.83	550.0 - 1000.0	674.47±28.98
	Clarias gariepinus	34.5 - 2000.0	594.31±26.55	100.0 - 1000.0	706.11±33.11
Cyprinidae	*Labeo coubie*	60.0 - 60.0	60.00±114.	62.0 - 64.0	62.67±66.22
	Labeo senegalensis	60.0 - 60.00	60.00±114.70	0	0
Bagridae	*Bagrus filamentosus*	23.0 - 160.0	102.76 ±22.50	110.0 - 120.0	112.50±57.35
	Bagrus bayad	600.00 - 850.00	665.00±57.35	790.00 - 800.00	797.27±59.90
	Bagrus docmac	0	0	24.0 -150.0	96.49±29.62
Malapteruridae	*Malapterurus electricus*	34.0 - 34.0	210.55±59.90	100.0 - 600.0	468.75±70.24