Composition, Distribution, Relative Abundance and Biodiversity of Fish Species of Ikere-George, Oyo State Nigeria

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Abstract

The fish composition of the three landing sites of Ikere-gorge were studied over a period of six months (September 2023- February 2024). The catches were sorted into taxonomic groups (families and species) using standard fish identification keys. A total of twenty-three (23) fish species belonging from thirteen (13) families were obtained. The family Claroteidae was the dominant family with *Chrysichthys nigrodigitatus* being the most abundant fish species while family Malapteruridae was the least with only 0.01% of the total abundance. The family Cichlidae was the most represented and well distributed family with four different species; *Coptodon zilli, Sarotherodon galilaeus, Oreochromis niloticus and Hemichromis fasciatus.* Five fish species were abundant, eight were common and fairly common fish species respectively while only two species (*Parachanna obscura* nad *Malapterurus electricus*) were uncommon fish species based on relative abundance. Biodiversity indices of this study sites; species richness ranges from 1.65 to 2.65, species diversity ranges from 1.84 to 2.09 and species evenness falls between 0.59 and 0.68. The

result from this study shows that there is pressure on aquatic organisms in this community as fewer fish species were in abundant. Measures to regulate the fishing activities of this reservoir especially closed season that will allow younger fish to grow into adult and give room for mature breeders to reproduce should be put in place in order to maintain Maximum Sustainable Yield of this water body.

Introduction

The aquatic ecosystem which was estimated to be about 8.9% of the earth surface serves as an important source of fish due to its species richness and unique biodiversity (Cooke *et al*. 2016; Robinson et al 2019). The uniqueness in biodiversity make it possible for fish species to thrive and serves as important sources of employment (Abubakar 2012). According to FAO (2019) fisheries and aquaculture serves as some of food and income to about 820 million individuals globally. This sectors were reported to be the largest and fastest growing industry in the world (Manikandarajan *et al* 2019; Roy *et al* 2019). Inland fisheries including Nigeria has also been a driving force of economics of most countries in the world which contributes to the country GDP (Famoofo and Abdul 2020). They play a vital role in the livelihood of people in many parts of the developed and developing world including Nigeria (FAO 2019). Nigeria freshwater body is endowed with above 268 fish species from 35 families (Olaosebikan and Raji; 2021). According to Robinson *et al* (2019), the aquatic ecosystem is subject to and can be altered by different ecological stressors which include habitat destruction, alteration and uncontrolled exploitation (Yerima *et al*. 2017; Nazeef *et al*. 2017). The fresh water ecosystems are one of the most threatened habitat globally (Cooke *et al*. 2021 and Holland *et al*. 2012). This is due to human population, socio-economic development that leads to pressure on the freshwater globally (Holland *et al*. 2012).

Biodiversity as a concept of ecology which measurement is essential to ecosystem health because of wide variation in distribution, abundance and biodiversity levels (Daly *et al*. 2018; Omayio and Mzungu, 2019). Fish as most common and diverse organism (Guo *et al*. 2018; Negi *et al* 2013). Its composition, abundance and diversity show the richness and economic importance in an

aquatic ecosystem to national economy as they supply reliable animal protein to people and provide food security (Guo *et al* 2018; Dieker 2010).

Ikere-gorge; an inland water body in Nigeria, is open to fishing with various form of fishing gears which have impact on the composition, abundance and diversity of fish population of the gorge (Ajagbe *et al.* 2021). This fishing activities has caused fisheries resources of Ikere gorge to decline as in other Inland water bodies in Nigeria (Adaka *et al.* 2016). Guo *et al* 2018 reported that fish resources had decreased dramatically and endemic species are facing threats globally. This depletion can be viewed as either recruitment or growth overfishing (Ajagbe *et al* 2021). Recruitment overfishing is the excessive exploitation of parent or spawning stock to the extent that it endangers fish recruitment due to lack of enough parent stock to produce offspring. The growth overfishing occurs when too small or immature fish are exploited without allowing them to grow into maturity (Dieker 2010, Ordines *et al.* 2019). Fishing activities that may cause significant reduction in composition, abundance and diversity of fish population over time of Ikere-gorge needs to be studied as fisheries a renewable resource must be sustainable in order to ensure sustainability of livelihood of those that depends on it directly or indirectly. Therefore, this study was undertaken to investigate the composition, abundance and diversity of fish species of Ikere gorge for possible biological monitoring of the water body since the gorge is a source of livelihood for people of South-western states and beyond.

Materials and methods

Study Area

Ikere gorge is located between longitude 8° 10' and 8° 20'N and latitude 3° 40' and 3° 50'E (fig. 1). It is a 565 million cubic metres (mcm) multipurpose dam located at Ikere village about 28 km, North East of Iseyin, Oyo State. Ikere-gorge took its source from Sepeteri about 40km to Ikere through Asamu and Alagbon. Ogun river forms the major tributary of Ikare gorge while River Amaka, River Oowe and River Owu are its minor tributaries. Ikere gorge consists of twelve fishing villages which accommodates different people with their culture from different parts of Nigeria and neighbouring countries like Mali, Togo and Republic of Benin. The livelihood of the people around majorly depends on

Ikere gorge. Three landing sites, Asamu, Spillway and Irewole were selected for this study based on the fishing activities of Ikere gorge for period of six months.
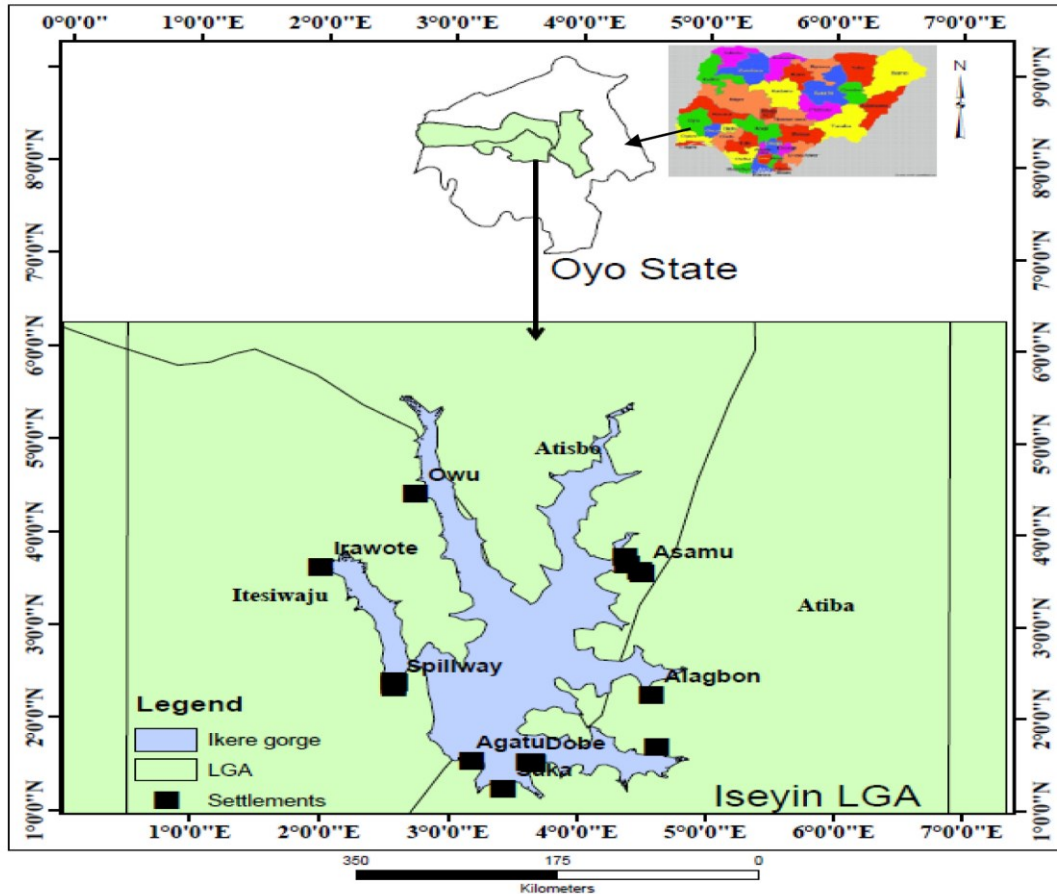
Fig. 1.: Map of Ikere-gorge dam (showing some fishing villages), Iseyin, Oyo State, Nigeria

Fish samples collection and identification
Fish samples were examined randomly from fisherman catch in each selected landing sites. The catches were sorted and identified into taxonomic groups; families and species using standard fish identification guide by Olaosebikan and Raji (2021); Reed (1967)

Composition Abundance and Diversity
Fish species sampled were sorted and counted individually for species composition and percentage Relative Abundance using Odulate *et al.* 2013 method. Biological indices, Margalef's index (D), Shannon-Weinner index (H)

and Evenness index (E) were used to calculate taxa richness, diversity and Evenness. Margalef's index (D) is the measure of species richness according to Margalef (1967) and expressed:

Diversity index (D) $= \frac{S-1}{lnN}$

Where S= Number of species

N = Total number of organism

Shannon-Weiner index (H) expressed as

$H = \frac{NlogN - \sum f1logf1}{N}$ Shannon and Weiner (1949)

Evenness index (E) is a measure of equally or evenly distribution of species in the community and expressed as:

Evenness index (E) $= \frac{H}{logS}$

Where H is Shannon – Weiner index

S is no of Species in sample

RESULTS
Table 1: Fish species identified from Ikere-gorge Iseyin, Oyo State Nigeria

FAMILY	FISH SPECIES	ENGLISH NAME	LOCAL NAME
Claroteidae	*Chrysichthys nigrodigitatus*	Wide head catfish	
	C. filamentous		
Cichlidae	*Coptodon zilli*	Reb belly Tilapia	Karwa/Gargaza
	Sarotherodon galilaeus	Mango Tilapia	Karwa/Gargaza
	Oreochromis niloticus	Nile Tilapia	Karwa/Gargaza
	Hemichromis fasciatus	Banded jewelfish	Kulkula/Akoko
Alestidae	*Brycinus brevis*		Kaya, Egbagi
	Hydrocynus forskalis	Tiger fish	Zawai/Kabe
Latidae	*Lates niloticus*	Nile perch	Ikirika, Bangur, Kima
Mormyridae	*Mormyrus nime*	Trunk fish	Milligi, Ogboro
	M. macrophthalmus	Trunk fish	Milligi, Ogboro
Mochokidae	*Synodontis schall*	Squeaker	Kurungu, Kondol
	S. membranacea	Squeaker	Kurungu
Schilbeidae	*Schibe mystus*	African butter catfish	Nalanga Manja
Hepsetidae	*Hepsetus odoe*	Afriican pike	Zangudunmi osau
Cyprinidae	*Labeo coubie*	African carp	Dumi kobiya
Channidae	*Parachana obscura*	Snake head	Tufi motkomo
	P. Africana	Snake head	
Clariidae	*Clarias gariepinus*	African mud catfish	Ejengi, Kemudu,
	Heterobranchus longifilis		Kairo
Gymnarchidae	*Gymnarchus niloticus*		Dan-Eshi, Sarki
Malapteruridae	*Malapterurus electricus*	Electric catfish	Oma mijinya
Bagridae	*Bagrus docmak*	Semutundu	

Table 2: Composition of fish species in Ikere-gorge Iseyin, Oyo State Nigeria

COMPOSITION	S1	%	S2	%	S3	%	TOTAL	%
Claroteidae								
Chrysichthys nigrodigitatus	7952	48.58	2753	40.73	893	32.16	11598	44.77
C. filamentous	1057	6.46	747	11.05	257	9.26	2061	9.96
Cichlidae								
Coptodon zilli	2800	17.11	997	14.75	480	17.29	4277	16.51
Sarotherodon galilaeus	439	2.68	182	2.69	70	2.52	691	2.67
Oreochromis niloticus	567	3.46	289	4.28	101	3.64	957	3.69
Hemichromis fasciatus	295	1.80	91	1.35	65	2.34	451	1. 74
Alestidae	191	1.17	54	0.80	21	0.76	266	1.03
Brycinus brevis	99	0.61	20	0.30	9	0.32	128	0.49
Hydrocynus forskalis								
Latidae								
Lates niloticus	930	5.68	389	5.75		-	1319	5.09
Mormyridae								
Mormyrus rume	230	1.41	100	1.48	135	4.86	465	1.80
M. macrophthalmus	150	0.98	71	1.05	40	1.44	271	1.05
Mochokidae								
Synodontis schall	190	1.16	62	0.92	35	1.26	287	1.11
S. membranacea	70	0.43	18	0.27	20	0.72	108	0.42
Schilbeidae								
Schibe mystus	984	6.01	860	12.72	501	18.04	2345	9.05
Hepsetidae								
Hepsetus odoe	100	0.61		-	3	0.11	103	0.40
Cyprinidae								
Labeo coubie	35	0.21		-	18	0.65	53	0.21
Channidae								
Parachana obscura	6	0.04		-	5	0.18	11	0.04
Parachana Africana	20	0.12		-	9	0.32	29	0.11
Clariidae								
Clarias gariepimis	180	1.10	97	1.43	82	2.95	359	1.39
Heterobranchus longifilis	15	0.09	10	0.15	13	0.47	38	0.15
Gymnarchidae								
Gymnarcus niloticus	13	0.08	5	0.07	11	0.40	29	0.11
Malapteruridae	2	0.01	-	-	1	0.04	3	0.01
Malapterurus electricus								
Bagridae	33	0.20	15	0.22	8	0.29	56	0.22
Bagrus docmak								
TOTAL	16,368	63.18	6,760	26.10	2,777	10.72	25,905	

Table 3: Relative abundance of fish species in Ikere-gorge Iseyin, Oyo State Nigeria

Family	Species	S1	S2	S3	Total	Relative Abundance
Claroteidae	*Chrysichthys nigrodigitatus*	7952	2753	893	11598	44.77[A]
	C. filamentous	1057	747	257	2061	9.96[A]
Cichlidae	*Coptodon zilli*	2800	997	480	4277	16.51[A]
	Sarotherodon galilaeus	439	182	70	691	2.67[C]
	Oreochromis niloticus	567	289	101	957	3.69[C]
	Hemichromis fasciatus	295	91	65	451	1.74[C]
Alestidae	*Brycinus brevis*	191	54	21	266	1.03[C]
	Hydrocynus forskalis	99	20	9	128	0.49[FC]
Latidae	*Lates niloticus*	930	389	-	1319	5.09[A]
Mormyridae	*Mormyrus nume*	230	100	135	465	1.80[C]
	M. macrophthalmus	150	71	40	271	1.05[C]
Mochokidae	*Synodintis schall*	190	62	35	287	1.11[C]
	S. membranacea	70	18	20	108	0.42[FC]
Schilbeidae	*Schilbe mystus*	984	860	501	2345	9.05[A]
Hepsetidae	*Hepsetus odoe*	100	-	3	103	0.40[FC]
Cyprinidae	*Labeo coubie*	35	-	18	53	0.21[FC]
Channidae	*Parachanna obscuri*	6 20	-	5 9	11	0.04[U]
	P. Africana		-		29	0.11[FC]
Clariidae	*Clarias gariepimis*	180 15	97	82	359	1.39[C]
	Heterobranchus longifilis		10	13	38	0.15[FC]
Gymnarchidae	*Gymnarchus niloticus*	13	5	11	29	0.11[FC]
Malapteruridae	*Malapterurus electricus*	2	-	1	3	0.01[U]
Bagridae	*Bagrus docmak*	33	15	8	36	0.22[FC]
Total Relative abundance		16,368	6.760	2,777	25,905	
% Total Relative abundance		63.18	26.10	10.72		

NOTE: A- Abundant, C- Common, FC- Fairly Common, UC- Uncommon R- Rare

Table 4: Diversity indices of fish species in the three study sites of Ikere-gorge Iseyin, Oyo State Nigeria

INDICES	S1	S2	S3
No. of taxa	23	18	23
No. of individuals	16368	6760	2777
No. of families	14	10	13
Numeric vol. of fish sampled	16368	6760	2777
Margalef's index (D) of species richness	2.27	1.93	2.65
Shannon-Weiner's index (H)	1.84	1.92	2.09
Evenness index (E)	0.59	0.66	0.68

Fish species identification

A total of twenty-three (23) fish species belonging to fourteen (14) families ware identified from three sampling/fish landing sites (Spillway, Asamu and Irawole)

of Ikere gorge, Oyo State Nigeria over a six months' period (September 2023 – February. 2024) as presented in Table 1. The family Cichlidae has the highest species representation with four (4) fish species (*Coptodon zilli; Sarotherodon galilaeus, Oreochromis niloticus and Hemichromis fasciatus*). The family *Claroteidae, Alestiche*, Momnyridae, Mochokidae, Channidae and Clariide was ranked with two fish species each while *Lates niloticus, Schilbe mystus Hepsetus odoe, Labeo coubie, Gymnarchus niloticus, Malapterurus electricus and Bagrus docmak* singly represented the families, Latidae, Schilbidae, Hepstidae, Cyprinidae, Gymnarchidae. Malapteruridae and Bagridae respectively as shown in Tasle 1.

Fish Species Composition and Relative abundance

Composition and Relative abundance of fish species. encountered from station 1 to 3 is represented in Table 2 and 3. A total of 25,905 fauna belonging to fourteen (14) families and twenty-three (23) fish species were recorded from the reservoir (Table 1 and 2). The highest composition of 16, 368 populations was recorded from Station 1(Spillway) while the least was recorded in station 3 (Irawole). Station I has the highest species composition of 16.388 with relative abundance 63.18% while the least was recorded from Station 3 with 2,777 and relative abundance of 10.72% as shown in Table 3. The family Claroteidae species *Chrysichthys nigrodigitatus* has the highest fish species composition of 11,598 and Relative abundance of 44.77% while the least composition of 3 with relative abundance of 0.01% was recorded from the family Malapteruridae; species *Malapterurus electricus*. The family Cichlidae comprises of four (4) species *Coptodon zilli, Sarotherodon galilaeus, Oreochromis niloticus* and *Hemichromis fasciatus* which cut across the three sampling stations having a well distributed species throughout the stations. *C. zilli* has the highest relative abundance of 16.51% among the family while the least was recorded in species *Hemichromis fasciatus* 1.74%. The families Hepsetidae, Channidae and Malepteruridae has no species representation in Station 2 (Asamu) while the family Latidae with single species *Lates niloticus* has no representation in Station 3 (Irawole) as shown in Table 2 and 3 respectively. *Chrysichthys nigrodigatatus* (44.77%) has the highest contribution by abundance to the total fish catch, followed by *Coptodon zulli* (16.5%), *Schilbe mystus* (9.05%), *Chrysichthys filamentous* (7.96%) and *Lates niloticus* (5.09%). Sixteen fish species contributed less than 5% (01-0.49%) while

only two fish species (Parachana obscura and Malapterurus electricus) contributed less than 0.1% relative abundance; 0.04 and 0.01% respectively. Based on percentage relative abundance, the fish species of Ikere gorge under this study can be categorized into five groups; Abundant, dominant, common, fairly common and rare fish species. Five fish species were categorized as abundant species having percentage relative abundance of above 5%, and represented 83% of the total fish abundance of the reservoir. Eight fish species were categorized as common fish species; each with percentage relative abundance between 1 and 5% and contributed 15% of the population. The fairly common fish species accounted for 2% of the population. while two species were categorized as uncommon fish species were the fish species that falls between 0.1 and 1% relative abundance which were eight h species, as they have less than 0.01% relative abundance and contributed less than 1% of the population. There were no rare fish species as none of these species has less than 0.01% relative abundance as shown in Table 2.

Biodiversity Indices of fish species of Ikere-gorge
The biological diversity indices of fish species were calculated using three indices; Margelef's Index (D), Shannon-Weiner Index (H), and Evenness Index (E) as shown in Table 4. Station 3 recorded the highest D-value of 2.65 while the least value was recorded in Station 2 (1.65), Shannon-Weiner index (H) recorded the lowest in Station 1(1.84) and the highest H- value was recorded in Station 3 (2.09). The Evenness index (E) ranges from 0.59 to 0,68 where the highest index was recorded in Station 3.

DISCUSSION
Fish species composition and abundance
This study reveals twenty-three (23) fish species that originated from thirteen (13) families from three landing sites in Ikere gorge, Iseyin, South-western Nigeria. Claroteidae, Cichlidae, Latidae snd Schilbidae were the dominant fish groups. The finding on fish species composition of this study area agreed with the reports of Adeosun *et al.,* 2011 and Ajagbe *et al.,* 2021, who recorded 34 species belonging to 13 families and 41 species belonging to 13 families respectively in Ikere gorge reservoir. This is also in line with Olapade *et al.,* (2020), Solomon *et al.,* 2017 and Nazeef *et al.,* 2021 that recorded 28, 27 and 28 fish species from New Calabar, Jigawa and Gombe states of Nigeria respectively.

It was observed that *Chrysichthys nigrodigitatus* of the family Claroteidae, a dominant fish species in this water body was absent in Dadin-Kowan reservoir, Gombe state as reported by Nazeef *et al.,* 2021. This may be due to environmental condition, the water body being a northern part of Nigeria which may not favour the survival or thriving of this fish species.

According to Adeosun *et al.,* 2011 and Adeosun *et al.,* 2009, species <u>*Phago loricatus*</u> from the family Distichodentidae was reported present in Ikere gorge reservoir which was absent in this study and also reported absent by Ajagbe *et al.,* 2021. The fishermen in this study area also reported the absence of <u>*Phago loricatus*</u> in the water body for some period of time. According to C' leveque (2005), there are loss of species in fresh water body and this was also shown in Ajagbe *et al.,* 2021, who reported 41 fish species in Ikere gorge reservoir while some of it were absent in this study. This is in support of earlier report by Sala *et al.,* 2000., that reported the decline in biodiversity in fresh water. Nevertheless, this variation may be due to difference in length of sampling period, time, gear used and sampling design (Odulate, 2010).

The present study indicated that Claroteidae family dominated the total fish caught followed by Cichlidae, Latidae snd Schilbeidae family. This is in contrast with the report of Ajagbe *et al.,* 2021 and Adeosun *et al.,* 2011 who reported Cichlidae, Bagridae and Mormyridae as the most dominant fish species in their earlier findings in Ikere gorge reservoir. This may be due to time frame of the study that falls during the dry season (September 2024 - January 2025) which may hinder the catches of those fish species reported by other researchers but assist in catching and landing of Claroteidae during this period as they survive and thrive well when the water level is low due to presence of their adipose breathing organs. This result is in line with Ajagbe *et al.,* 2021 reporting the family Claroteidae species <u>*Chrysichthys nigrodigitatus*</u> as second most abundant fish species with population of 16, 436 in Ikere gorge reservoir. The family Cichlidae revealed to be the most well represented and family in this water body as it recorded four (4) fish species from this family.

This in agreement with the earlier findings of Ajagbe *et al.,* 2021, who reported for species of fish belonging to the family Cichlidae from Ikere gorge reservoir. The family Mormyridae was represented with only two species in this report which is contrary with the report of Ajagbe *et al.,* 2021, who reported 10 species of fish from the family Mormyridae from the same water body but observed decline in abundance of Mormyridae family in Ikere gorge. This observation

supports the findings of Cutler *et al.,* 2015, who reported reduction in the abundance of Mormyridae family in Ogoove basin and concluded that present situation does not do justice to diversity of this family in Ogoove basin.

The abundance of Latidae family represented by species *Lates niloticus,* an invasive species (Marshall et al., 2018 and Goudswaard *et al.,* 2008) in this study shows that it is replacing the Mormyridae family with respect to its abundance in catches in this study. This is in line with the report of Ajagbe *et al.,* 2021 that reported the contribution of Latidae in weight compared to Mormyridae in Ikere gorge which may be due to the use of Mormyridae as bait for *Lates. niloticus,* a predatory fish. The latter is becoming more abundant and attract the foreign market due to its ability to grow bigger and fleahy. *Coptodon zilli* was noted to be the most dominant fish species among the Cichlidae family in this study. This is in line with the report of Iber and Ojikutu (2018) who reported *C. zilli* as dominant in River Tete, Benue state. Ita (1993) reported dominance of *C. zilli* in Eleyele reservoir, and Taiwo *et al.,* 2018 reported dominance of *C. zilli* in an aging reservoir.

Ajagbe *et al.,* 2021, Adeosun *et al.,* 2011 and Banyigyi 2017 reported the dominance of *Sarotherodon galilaeus* in Ikere gorge and Doma reservoir respectively. Other species of Cichlidae were reported being dominant in different water bodies by Solomon *et al.,* 2017. *Oreochromis niloticus* being dominant by Solomon *et al.,* 2017 and Maigari *et al.,* 2018 in Lake Kalgwai, Jigawa state and Gubi reservoir, Bauchi state, Nigeria respectively. According to Smith *et al.,* 2009, there are 553 species of freshwater fishes, in West Africa out of which 266 species can be found in freshwater ecosystem of Nigeria (Olaosebikan and Raji, 2021, Olaosebikan and Bankole, 2004). This shows that freshwater fish species in Nigeria is on eof the richest in West Africa and more than 15% of these fin fish are found in Ikere gorge (Ajagbe *et al.,* 2021). This study revealed that *Chrysichthys nigrodigitatus, C. filamentous* and *Copotodon zilli* are dominant fish species in Ikere gorge reservoir. The family Channidae species *Parachana obscura* was represented with only 6 species while Marapteruridae family (*Malapterurus electricus*) was represented with 3 species forming less than 0.1% of relative abundance of the total population. This is in agreement with Nazeef *et al.,* 2021 recording few individuals of *M. electricus* in Dadin-Kowan reservoir, Gombe state, which also coincide with the report of Mo, 2019. These fish species contributed less than 0.1% to fish abundance of Ikere gorge in this reservoir. Measures should be put in place to preserve and conserve these species from

extinction. This is in line with report of Udo (2012) reporting *Brienomyrus brachyistius* as contributing insignificantly to fish composition in Iba-oki stream, Ikpa river, Nigeria. Maigari *et al.,* 2018 reported *Raiamas senegalensis* as least abundant species with 0.01% abundance in Gubi reservoir, Bauchi state, Nigeria. It was revealed from this report that fish was less abundant in the dry season (Nov-Feb) than in the rainy season in Ikere gorge as it was reported by Ajagbe *et al.,* 2021 that there are more fishes between the period of March to October which covers the most part early raining season. This result was also in contrast with Soyinka and Kazeem 2008 who reported species richness and total abundance to be slightly increased in rainy season than in dry season in a tropical lagoon in South-West Nigeria. Nevertheless, this report was in agreement with Elijah *et al.,* 2019 that reported seasonal fish abundance was high in the dry season and low in the wet season in River Taraba in Bali town, Taraba state, Nigeria.

The three biodiversity indices used in Ikere gorge were Margalef's species richness (D), Shannon-Weiner's species diversity (H) and Eveness index (E) to measure the equally or evenly distribution of species in Ikere gorge. This syudy indicated a peak species richness of 2.65 which is lower than 3.28 and 4.0 reported by Nazeef *et al.,* 2021 and Ulfah *et al.,* 2019 species richness in Dadin-Kowan reservoir, Gombe and Krueng Raya water, Aceh Besar respectively. All these are in contrast with index score (D) of 9.73 reported by Oladipo *et al.,* 2021 reported from Jebba.

Shannon-Weiner species diversity index (H) in Ikere gorge was recorded a peak value of 2.09. This is in line with H value of 2.03 recorded by Ajagbe *et al.,* 2021 in this water body; 2.65 recorded by Nazeef *et al.,* 2021 in Dadin-Kowan and 2.62 recorded by Udo 2012 but lesser than 3.94 accounted by Oladipo *et al.,* 2021 from Jebba dam. The species diversity index recorded in Ikere gorge has shown to attain a moderate species diversity as it is greater than 1 and less than 3 value is said to be moderate according tUlfah *et al.,* 2019. Also, this result is higher than the Shannon-Weiner obtained by Odiko *et al.,* 2010 reported in River Ovia, Edo state, Nigeria. The highest Evenness index (E) of this study is documented as 0.68 which is in contrary with 0.84 and 0.83 reccorded by Nazeef *et al.,* 2021 and Ataguba *et al.,* 2014 from Dadin-Kowan and Gubi Dam respectively. The outcome of the Evenness index in this study shows that this community is not a stable one as the result is less than 0.75 according to Ulfah *et al.,* 2019 reported by Nazeef *et al.,* 2021.

The fish species had been observed to be influenced by joint impact of aquacultural activities such as water quality degradation, intensified intra and inter specific competition, invasive species and habitat defragmentation (Aryani *et al.,* 2021). According to Gownaris *et al.,* 2018; damming of river abstraction with water recession and sample size (Iqbah *et al.,* 2015) strengthened the flunctuations of fish species richness as recorded in Ikere gorge, Iseyin, South West Nigeria.

CONCLUSION

The result recorded in this research work shows variation in abundance and diversity. Ikere gorge shows a variation in abundance and diversity of fishes as recorded in this research work. It was revealed that this water body have a good ichthyofauna composition from twenty-three (23) fish species belonging to 13 families. The families Claroteidae and Cichlidae accounted for the most abundant families. However, the family Channidae and Malapteruridae are identifiesd as rare species in Ikere gorge as reported. Nevertheless, the biodiversity indices show a moderate species diversity with H value of 2.09 but urgent measures need to be taken to preserve and conserve the uncommon fish species from extinction and make Ikere gorge a stable community.

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