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## Ichthyo faunal diversity in the kalinga dal reservoir at foot hills of Mahendragiri, Mandasa Mandal, Andhra Pradesh State: India

**Rama Rao K**

### Abstract

Kalinga Dal reservoir fish faunal diversity was studied two consequent years from February-2016 to January-2018. Samples were collected bimonthly with help of local fishermen by using fishing craft and gear. A total of 57 species of fishes belonging to seven orders such as Cypriniformes dominated with 47.37% followed by Perciformes 21.05%, Siluriformes 17.54%, Channiformes 7.02%, Anguilliformes 3.51%, Cyprinodontiformes and Osteoglossiformes each contributed with 1.75%. The number and percentage composition of population status were calculated to 31.58% common, 24.56% moderate, 22.81% abundant and 20.34% rare species were identified in the Kalinga Dal reservoir. According to IUCN (2017-3) 82.47% species of fish were least concerned (LC), 7.02% near threatened, 5.26% not evaluate (NE), 1.75% data deficient (DD), endangered (ED) and vulnerable (VU).

**Keywords:** Pisces diversity, generic composition, Species composition, population status, IUCN

### Introduction

Mahendragiri is the origin point of two important rivers of South Odisha and North Andhra Pradesh and the hills are situated in the Ganjam district of Orissa between 18° 58' N latitude and 84° 24' E longitude. The hills are roughly 25 km away from Bay of Bengal. The highest summit is 1500 m (4973 ft) above mean sea level. As per Gamble (1892) <sup>[1]</sup>, Mahendragiri is the amalgamation of biodiversity with species from North and South India. Mahendratanya the chief river of the hill rises in the peak and flows down into two streams-one South wards into the Paralakhemundi division joining the river Vansadhara and the other through Mandasa, entering Bay of Bengal near Barua in Andhra Pradesh. In August 1992 the Kalinga Dal Dam was constructed for minor irrigation and it is nearly 11-12 kilometres from Mandasa (Fig 1). The annual rain fall is 1551.6 mm. spread over an area of over 2,000 sq km bordering Andhra Pradesh, this majestic micro-environmental terrain is dotted with over 25 small and big hills among which Singaraj (1516 meters), Mahendragiri (1601 meters) and Devagiri (1392 meters) are the highest peaks in the region forming a golden triangle symbolizing the area's immense ecological asset. Mahendragiri hill and its surrounding areas are recognized as a biodiversity hotspot due to numerous medicinal plants and other species that are present here <sup>[2]</sup>. A haven for medicinal plants, Mahendragiri Hills, which is part of the Eastern Ghats, is home to over 600 flowering plants, 947 species of angiosperms and 73 species of cryptogams were recorded during fast. The vertebrate fauna includes 110 species of birds, 36 species of mammals, 22 species of reptiles including Golden geckos and 80 species of butterflies, 9 species of snakes and 2 species of frogs. The faunal diversity of the region is huge and particularly known for being a herpetofaunal hotspot. The Ministry of Environment and Forests, GoI had proposed the State Government of Odhisa in 1986 to declare the Mahendragiri hill as a Biodiversity hotspot area. The hills are made up of gneisses, charanockites and khondalites (Pratyush Mohapatra *et al.* 2008) <sup>[2]</sup>.

Indian region fishes are about 2500 species; freshwater fishes 930 species and remaining 1570 marine were reported by K. C Jayaram <sup>[3]</sup>. The undivided state of Andhra Pradesh is known to contain 158 species under 68 genera, 27 families and 10 orders of freshwater fishes <sup>[4, 5]</sup>. During the last 23 years, several localized checklists and compilations confined to smaller regions such as a district, a protected area of a river or reservoir system of Telangana have been published. The checklist of 165 species includes several new species and those resurrected from synonyms <sup>[6]</sup>.

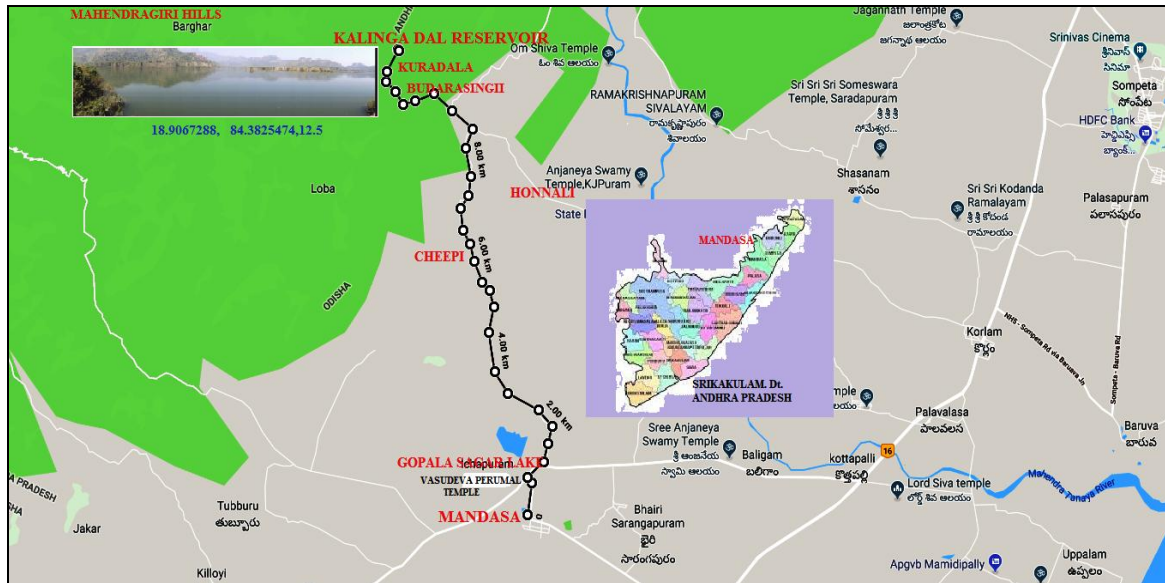
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The present study deals with a detailed documentation of the diversity of fish fauna resources in the Kalinga Dal reservoir,

Eastern Ghats of the northern part of Andhra Pradesh, India (Fig 2, 3 and 4).



**Fig 1:** Kalinga Dal reservoir route from Mandasa (11-2 kms), Srikakulam Dt.



**Fig 2:** Kalinga Dal reservoir



**Fig 3:** Kalinga Dal reservoir right canal gate



Fig 4: Foundation stone

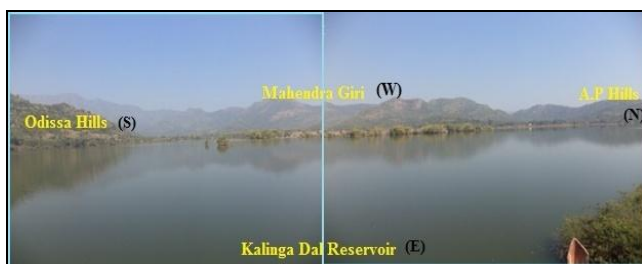


Fig 5: Kalinga Dal reservoir situated in between two state hill boarders

### Materials and Methods

Fish samples were collected from different corners of Kalinga Dal reservoir surrounding areas mainly by fishermen, fish collectors, local fish markets and fish sellers. Different types of nets (Drag nets, Push nets, Cast nets Stationary gill nets) and Bamboo baskets (Traps) were used for collection of fishes reported by Rama Rao. K [7]. The photographs of the collected fishes were taken at fresh condition immediately and preserve in 10% formalin without any post-mortem stages and recorded vernacular name Hamilton-Buchanan, F [8], Mishrs, K. S [9], Munro ISR [10]. The fishes collected and fixed were labelled giving serial numbers, date of collection, exact locality from where collected. Identification was done based on keys for fishes of the Indian subcontinent reported by Day. F [11, 12] Jairam, K. C, [3-13, 14], Talwar, PK and Jhingran, A [15] and classification was carried out on lines of Day. F [12-16], Nelson [17]. Identification of the species was done mainly on the morphometric and meristematic characters.

### Results and Discussions

The present study revealed that the occurrence of fifty seven fish species belong to seven orders, 18 families and 34 genera were reported including four are exotic species are available in Kalinga Dal reservoir. (\* indicates exotic fish species). List of Kalinga Dal reservoir fish including their order, family, genus, species, common name, vernacular name and IUCN status were reported in the present investigation Table 1. The listed species are

*Anguilla bengalensis*, *Anguilla bicolor*, *Channa marulius*, *Channa orientalis*, *Channa punctatus*, *Channa striatus*, *Aplocheilichthys panchax*, *Lepidocephalichthys berdmorei*, *Lepidocephalichthys guntea*, *Schistura cirica*, *Amblypharyngodon microlepis*, *Amblypharyngodon mola*,

*Catla catla*, *Cirrhinus mrigala*, *Cirrhinus reba*, *\*Ctenopharyngodon idella*, *\*Cyprinus carpio*, *Danio devario*, *Garra gotyla gotyla*, *Labeo ariza*, *Labeo bata*, *Labeo calbasu*, *Labeo fimbriatus*, *Labeo porcellus*, *Labeo rohita*, *Osteobrama cotio*, *Puntius chola*, *Puntius ticto*, *Puntius sarana*, *Puntius sophore*, *Rasbora daniconius*, *Rasbora elanga*, *Salmostoma bacaila*, *Salmostoma phulo*, *Notopterus notopterus*, *Ambassis ranga*, *Chanda nama*, *Anabas testudineus*, *Trichogaster fasciatus*, *Badis badis*, *\*Oreochromis mossambicus*, *\*Oreochromis variables*, *Glossogobius giuris*, *Gobiopsis macrostoma*, *Mastacembelus armatus*, *Mastacembelus pancalus*, *Nandus nandus*, *Mystus bleeker*, *Mystus cavasius*, *Mystus tengra*, *Mystus vittatus*, *Clarias batrachus*, *Heteropneustes fossilis*, *Eutropneustes vacha*, *Ompok bimaculatus*, *Ompok pabda*, *Wallago attu*.

In the present investigation the number and percentage composition of families, genera and species under different orders are shown in Table 2 and Fig 6. Recorded families out of 18, Perciformes contributed 07 (38.89%), families followed by Siluriformes 05 (27.78%), Cypriniformes 02 (11.11%), Anguilliformes, Channiformes, Cyprinodontiformes and Osteoglossiformes each with 01 (05.56%). Recorded genera out of 34, Cypriniformes contributed 14 (41.18%) species followed by Perciformes 10 (29.41%), Siluriformes 06 (17.65%), Anguilliformes, Channiformes, Cyprinodontiformes and Osteoglossiformes each with 02 (2.94%). Order cypriniformes was dominant with 27 species which contributed to 47.37% of the total 57 species followed by Perciformes with 12 (21.05%), Siluriformes 10 (17.54%), Channiformes 04 (7.02%), Anguilliformes 02 (3.51%) and Cyprinodontiformes, Osteoglossiformes each with 01 (01.75%).

In the similar study revealed that a total of 39 species of fishes belonging to 7 orders, 15 families and 25 genera were reported in the Sunamudi Gedda a tributary of Mahendratana, Eastren Ghats [18]. Rama Rao [19, 20, 21] reported 53 ornamental and 58 larvivorous fish species belonging to 8 orders, 19 families and 34 genera in Lower Manair Dam. Sugunan and Yadava, [22] mentioned 40 fish species from Hirakud reservoir of Orissa forming the commercial fishery. Biju Kumar [23] was studied exotic fishes and Freshwater fish diversity in 2000. Uchchariya *et al.* [24] reported the genera and families to different orders are concerned, order Cypriniformes consists of 11 genera (47.83%) under 2 families (16.67%), Siluriformes of 6 genera (26.09%) under 4 families (33.33%), Perciformes of 3 genera (13.04%) under 3 families (25.0%), Osteoglossiformes, Synbranchiformes and Beloniformes of single genus (4.35%) under single family each (8.33%).

In the present study the number and percent composition of genera and species under various families were represented in Table-3. Fig. 7. The generic composition of fishes belonging to different families shows that 12 genera under Cyprinidae contributed to highest with 35.29%, followed by two species each of Cobitidae, Ambassidae, Anabantidae, Gobiidae and Siluridae contributed to 05.88%. One species each to Anguillidae, Channidae, Aplocheiidae, Notopteridae, Badide, Cichlidae, Mastacembelidae, Nandidae, Bagridae, Clariidae, Heteropneustidae and Siluridae contributed to 02.94% each. The species composition of fishes belonging to different families has revealed that 24 species belong to family Cyprinidae that made up to 42.11%, 4 species to family Channidae and Bagridae contributed to 7.02%, 3 species each

to families Cobitidae and Siluridae contributed to 5.26%, two species to families Anguillidae, Ambassidae, Anabantidae, Cichlidae, Gobiidae, and Mastacembelidae contributed 3.51%. One species to families Aplocheiidae, Notopteridae, Badide, Nandidae, Clariidae, Heteropneustidae and Schilbeidae contributed 01.75% each of total fish species.

Sandeep *et al.* [25] reported during the study period different fish varieties can be observed in the Godavari River, India. Fishes belonging to nine orders and twenty one families were observed as 53 species of 37 different genera 21 families and 9 orders were recorded. In Rajahmundry Dam there found nine orders representing by 47 fish species, order Cypriniformes was dominant group with 16 species in the assemblage composition in which *Osteobrama vigorsii* were found most abundant. Ahirrao [26] recorded 32 fish species belonging to 25 genera and 8 families from Parbhani district of Maharashtra. Joshi [27] reported the ichthyofauna of Bori reservoir in Maharashtra. Rama Rao [18-28] observed the similar study of generic composition of fishes belonging to

different families in Lower Manair Dam and Sunamudgedda. *Badis badis* reported northern part of Yamuna, Ganga and Brhamputra river system, but during the study period *Badis* species reported in this reservoir located adjacent state of north Andhra Pradesh.

The number and Percentage composition of Population Status is 18 species were common which contributed to 31.58%, 14 species moderate which contributed to 24.56%, 13 species were abundant which contributed to 22.81% and 12 species rare which contributed to 20.34% in the total catch (Table. 4. Fig. 8). According to IUCN (2017-3) [18] forty seven species contributed to 82.47% are least concern (LC), four species contributed to 7.02% are near threaten (NT), three species contributed to 5.26% are not evaluated (NE), one species of fish contributed is endangered (EN), vulnerable (VU) and data deficient (DD) contributed to 1.75% (Table. 5, Fig. 9). The similar results were observed in various reservoirs [19, 20, 21, 25, 29] are near threaten (NT), not evaluated (NE), endangered (EN), vulnerable (VU) and data deficient (DD).

**Table 1:** List of fishes and their order, family, genus, species, common name, vernacular name, habitat, population status and IUCN status at Kalinga Dal reservoir

Order / Family	No.	Scientific Name	Common Name	Vernacular Name	Habitat	Population Status	IUCN Status (2017-3)
Anguilliformes/	I						
1. Anguillidae (2)	1	<i>Anguilla bengalensis</i>	Indian Long fin eel	Mogulumaarpu	Demersal, catadromous, small fishes, rustaceans, molluscans	M	LC
	2	<i>Anguilla bicolor</i>	Short fin eel	Mogulupaamu	Demersal, catadromous, small fishes, rustaceans, molluscans	R	LC
Channiformes/	II						
2. Channidae (4)	3	<i>Channa marulius</i>	Spotted snakehead	Macha savada	Benthopelagic; potamodromous	R	LC
	4	<i>Channa orientalis</i>	Walking snakehead	Malapankiri	Benthopelagic; potamodromous	C	NE
	5	<i>Channa punctatus</i>	Giant snakehead	Korramatta	Benthopelagic; potamodromous	C	LC
	6	<i>Channa striata</i>	Banded snakehead	Savada	Benthopelagic, potamodromous	C	LC
Cyprinodontiformes	III						
3. Aplocheiidae (1)	7	<i>Aplocheilus panchax</i>	Blue Panchax	Guddichepa	Benthopelagic, surface, feed on algae, aquatic insects	C	LC
Cypriniformes/	IV						
4. Cobitidae (3)	8	<i>Lepidocephalichthys berdmorei</i>	Leopard Loach	Seekubammidi	Demersale, potamodromous	M	EN
	9	<i>Lepidocephalichthys guntea</i>	Guntea Loach	Seekubammidi	Demersale, potamodromous	M	LC
	10	<i>Schistura corica</i>	Polka Dotted Loach	Seekubammidi	Benthopelagic feeds on Worms, crustaceans and insects	M	LC
5. Cyprinidae (24)	11	<i>Amblypharyngodon microlepis</i>	Indian carplet	Kaarachepa	Surface feeder & a useful larvivorous fish	A	LC
	12	<i>Amblypharyngodon mola</i>	Mola carplet	Kaarachepa	Surface feeder, Phyto and zooplankton	A	LC
	13	<i>Catla catla</i>	Catla	Botchea	Benthopelagic; potamodromous Surface layer and zooplankton	C	LC
	14	<i>Cirrhinus mrigala</i>	Mrigal	Reyya chepa	Bottom dweller & detritus eater	C	LC
	15	<i>Cirrhinus reba</i>	Reba carp	Reyya chepa	Benthopelagic, feed on vegetables, crustaceans and insect larvae	R	LC
	16*	<i>Ctenopharyngodon idella</i>	grass carp	Gaddichepa	Demersale, potamodromous. All substratum's, feed on vegetables, crustaceans and insect larvae	M	LC
	17*	<i>Cyprinus carpio</i>	Common carp	Banraruteega	Benthopelagic, Bottom dweller feed on plankton and detritus	M	VU
	18	<i>Danio devario</i>	Devario danio,	Ranguchepa	Benthopelagic feeds on	C	LC

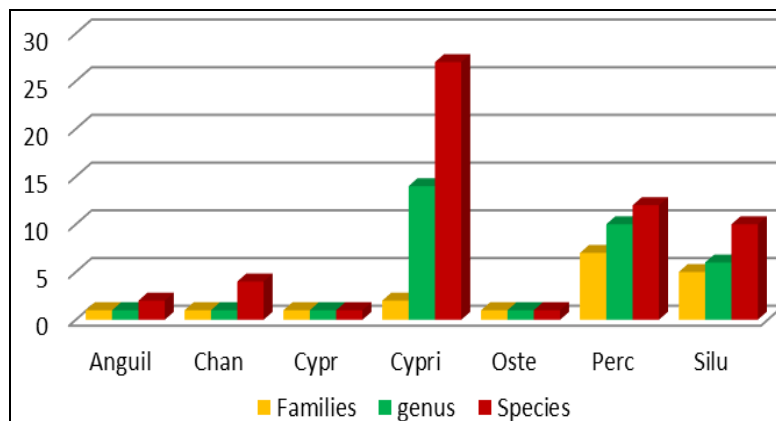
			Dind Danio		Worms, crustaceans and insects		
	19	<i>Garra gotyla gotyla</i>	Goytala, Sucker head	Antu chepa	Benthopelagic, algae, plants and detritus	R	LC
	20	<i>Labeo ariza</i>	Reba carp	Bonta	Benthopelagic, Feeds on diatoms, algae, insects and detritus	C	LC
	21	<i>Labeo bata</i>	Bata labeo	Bonta	Bottom dwellers, Crustaceous and insect larvae at early stages	R	LC
	22	<i>Labeo calbasu</i>	Black rohu	Kakibonda	Demersal, potamodromous, Bottom dweller & Scavenger	C	LC
	23	<i>Labeo fimbriatus</i>	Gangetic latia	Bonta	Benthopelagic, Feeds on diatoms, algae, insects and detritus	R	LC
	24	<i>Labeo porcellus</i>	Bombay Labeo	Bonta	Benthopelagic, Feeds on diatoms, algae, aquatic plants, insects and detritus	R	LC
	25	<i>Labeo rohita</i>	Rohit	Reyya chepa	Benthopelagic, potamodromous, Middle layer/ plant matters	C	LC
	26	<i>Osteobrama cotio</i>	Cotio	Kagitamchepa	Benthopelagic & Larvicide	R	LC
	27	<i>Puntius chola</i>	Swamp barb	Pittapariga	Benthopelagic, feed on crustaceans, insects and plant matter	A	LC
	28	<i>Puntius ticto</i>	Ticto barb	Pittapariga	Benthopelagic, potamodromous, feed on diatom, algae, Crustaceans, rotifer, insects	A	LC
	29	<i>Puntius sarana</i>	Olive barb	Pittapariga	Benthopelagic, potamodromous, surface habitat & Omnivorous	A	LC
	30	<i>Puntius sophore</i>	Spot-fin swamp barb	Pittapariga	Benthopelagic, feed on Surface phytoplankton and zooplankton	A	LC
	31	<i>Rasbora daniconius</i>	Slender rasbora	Naamalu chepa	Benthopelagic, feed on algae, aquatic insects	M	LC
	32	<i>Rasbora elanga</i>	Bengala barb	Naamalu chepa	Demersal, feeds on Aquatic insects, algae and protozoans	M	LC
	33	<i>Salmostoma bacaila</i>	Large razorbelly minnow	Yeduraka	Benthopelagic, potamodromous & useful larvivorious fish	A	LC
	34	<i>Salmostoma phulo</i>	Fine scale razor belly minnow	Yeduraka	Benthopelagic & useful larvivorious fish	C	LC
Osteoglossiformes/	V						
6. Notopteridae (1)	35	<i>Notopterus notopterus</i>	Grey feather back	Yellenki	Demersal, potamodromous, insects, fish crustaceans roots of aquatic plants	C	LC
Perciformes/	VI						
7. Ambassidae (2)	36	<i>Ambassis ranga</i>	Indian glassy fish	Kaarachepa	Demersal, potamodromous, all substratum's of water, checks mosquito breeding, Carnivorous	C	LC
	37	<i>Chanda nama</i>	Elongate glass perchlet	Kaarachepa	Benthopelagic, potamodromous, all substratum's of water, checks mosquito breeding	C	LC
8. Anabantidae (2)	38	<i>Anabas testudineus</i>	Climbing perch	Goraka	Demersal, potamodromous, feed on macrophytic, shrimps and fish fry	M	DD
	39	<i>Trichogaster fasciatus</i>	Banded gaurami	Goraka	Benthopelagic, carnivorous	M	LC
9. Badidae (1)	40	<i>Badis badis</i>	Dwarf Chameleon fish	Mala pitta pariga	Benthopelagic, Feeds on worms, crustaceans and insects	C	LC
10. Cichlidae (2)	41*	<i>Oreochromis mossambicus</i>	Mozambique tilapia	China guraka	Benthopelagic, amphidromous Surface dweller, omnivorous	C	NT
	42*	<i>Oreochromis niloticus</i>	Nile tilapia	Pedda guraka	Benthopelagic, potamodromous, surface dweller, omnivorous	R	NE
11. Gobiidae (2)	43	<i>Glossogobius giuris</i>	Tank/Bar-eyed goby	Uske donthi	Benthopelagic, amphidromous, Omnivorous	A	LC
	44	<i>Gobiopsis macrostoma</i>			Demersal; amphidromous	R	NE

12. Mastacembelidae (2)	45	<i>Mastacembelus armatus</i>	Zig zag spiny eel	Pedda bammidi	Demersal, potamodromous, Bottom, crustaceans	A	LC
	46	<i>Mastacembelus pancalus</i>	Barred spiny eel	Chinna bammidi	Benthopelagic, insect larvae	A	LC
13. Nandidae (1)	47	<i>Nandus nandus</i>	Mud perch	Nallagoraka	Benthopelagic feed on aquatic insects and fishes	R	LC
Siluriformes/	VII						
14. Bagridae (4)	48	<i>Mystus bleekeri</i>	Day's mystus	Guddi jella	Demersal, potamodromous, feed on crustacean, algae	A	LC
	49	<i>Mystus cavasius</i>	Gangetic mystus	Pedda Jella	Demersal, amphidromous, feed on Crustacean, Algae	M	LC
	50	<i>Mystus tengara</i>	Tengara mystus	Chima Jella	Demersal, predatory	A	LC
	51	<i>Mystus vittatus</i>	Striped dwarf catfish	Jella	Demersal, feed on Crustacean, Algae	A	LC
15. Claridae (1)	52	<i>Clarias batrachus</i>	Batchwa vacha	Marpoov	Demersal, potamodromous Omnivorous	C	LC
16. Heteropneustidae (1)	53	<i>Heteropneustes fossilis</i>	Stinging catfish	Inglilam	Demersal, Omnivorous	M	LC
17. Schibeidae (1)	54	<i>Eutropiichthys vacha</i>	Air breathing catfishes/ Magur	eduraaku	Pelagic, potamodromous surface feeder, carnivorous	M	LC
18. Siluridae (3)	55	<i>Ompok bimaculatus</i>	Butter Catfish	Budadavva	Demersal, potamodromous	M	NT
	56	<i>Ompok pabda</i>	Pabda catfish	Budadavva	Demersal, potamodromous	R	NT
	57	<i>Wallago attu</i>	Boal	Waaluga	Demersal, potamodromous	C	NT

A=Abundant (76-100%); C=Common (51-75%); M=Moderate (26-50%); R=Rare (1-25%) of the total catch. EN-Endangered; VU-Vulnerable; LRnt-Lower risk near threatened; LRLc-Lower risk least concern; LC-Least concern; DD-Data Deficient; NE-Not evaluated, NT: Near threaten. Exotic fishes No: 4

**Table 2:** Number and percent composition of families, genera and species of fishes under various orders

S. No	Orders	% of families in an order	% of genera in an order	% of species in an order
1	Anguilliformes	5.56	2.94	3.51
2	Channiformes	5.56	2.94	7.02
3	Cyprinodontiformes	5.56	2.94	1.75
4	Cypriniformies	11.11	41.18	47.37
5	Osteoglossiformes	5.56	2.94	1.75
6	Perciformes	38.89	29.41	21.05
7	Siluriformes	27.78	17.65	17.54



**Fig 6:** number and percent composition of families, genera and species of fishes under various orders

**Table 3:** Number and percentage composition of genera and species under various families

S. No	Families	% of genera in a family	% of species in a family
1	Anguillidae	2.94	3.51
2	Channidae	2.94	7.02
3	Aplocheiidae	2.94	1.75
4	Cobitidae	5.88	5.26
5	Cyprinidae	35.29	42.11
6	Notopteridae	2.94	1.75
7	Ambassidae	5.88	3.51
8	Anabantidae	5.88	3.51
9	Badide	2.94	1.75
10	Cichlidae	2.94	3.51
11	Gobiidae	5.88	3.51

12	Mastacembelidae	2.94	3.51
13	Nandidae	2.94	1.75
14	Bagridae	2.94	7.02
15	Claridae	2.94	1.75
16	Heteropneustidae	2.94	1.75
17	Schilbeidae	2.94	1.75
18	Siluridae	5.88	5.26

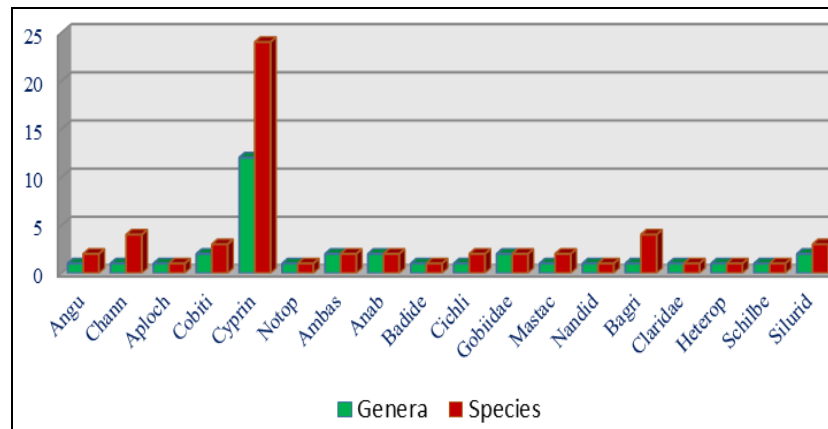


Fig 7: number and percentage composition of genera and species under various families

Table 4: Number and Percentage composition of Population Status in the total catch.

Population Status	Abundant (76-100%)	C=Common (51-75%)	M=Moderate (26-50%)	R=Rare (1-5%)
Number of species	13	18	14	12
%Composition	22.81	31.58	24.56	20.34

Table 5: Percentage occurrence of fish species under the conservation status IUCN (2017-3)

Category	EN	VU	NT	LC	DD	NE	
IUCN (2017-3)	No. of species	01	01	04	47	01	03
	% contribution	1.75	1.75	7.02	82.47	1.75	5.26

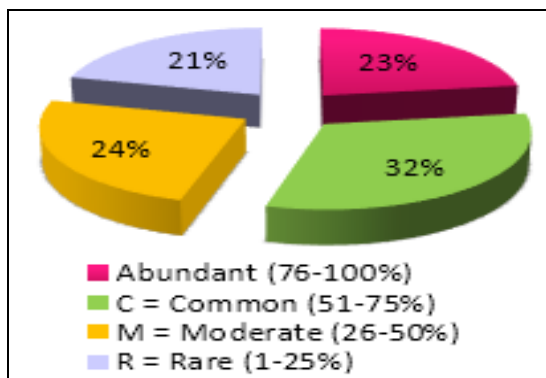


Fig 8: Population Status

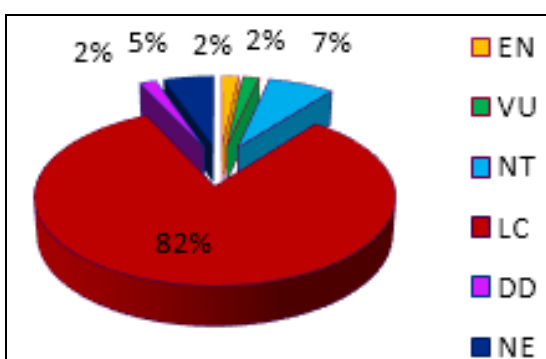


Fig 9: IUCN status 2017-3

**Conclusion**

In conclusion, it can be stated that Kalinga Dal reservoir harbours 57 species including four exotic fishes to the reservoir. Of the fish species belonging to 7 orders, 18 families and 34 genera were recorded. Order Cypriniformes was found to be a major order with 27 species (47.37%). Out of 57 species of fishes, one species of fish are under endangered, one species of fish under vulnerable, 4 near threatened and one species were reported to be data deficient. The plenty of water resources is available at the time of monsoon periods at Mandasa mandal near Mahendratanya foot hills. There are no major reservoir sources to store the excess water in this region to conserve the fish fauna. Kalinga Dal reservoir water is spreading only limited area so that it is limited to minor irrigation. The recorded annual rain fall is 1551.6 mm. spread over an area of over 2,000 sq km bordering Andhra Pradesh, this majestic micro-environmental terrain is dotted with over 25 small and big hills. Mahendragiri is the amalgamation of hotspot with species from both north and south India. There are full of water facility is available in this region, but there are no major reservoirs to store excess water. So it is dire need to establish a major reservoir to store excess water so that it can help to conservation of fauna, flora and agriculture. The part of present work has provided a latest database of Ichthyofaunal diversity of Mahendratanya foot hills of Kalinga Dal reservoir.

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