J. Mountain Res. P-ISSN: 0974-3030, E-ISSN: 2582-5011 DOI: https://doi.org/10.51220/jmr.v19-i1.54
Vol. 19(1), (2024), 547-560

A Study On The Fish Faunal Diversity Of Corbett Tiger Reserve, Uttarakhand, India

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Received: 05.04.2024; Revised: 22.06.2024; Accepted:

Abstract: Present study is done for the oldest legally defined protected area Corbett Tiger Reserve, Uttarakhand, India. The main objective of this paper is to know the status, distribution of fishes in rivers and water reserve of Corbett Tiger Reserve. By this an idea could be drawn, for further research and policy planning. Extensive Ichthyofaunal survey of various water resources of Corbett Tiger Reserve, Uttarakhand, India was carried out for the period of more than 08 years (2014-2022). In the present paper a total number of 64 species of fish belonging to 28 genera, 13 families and 6 orders have been reported. Besides these 4 species are in the category of Endangered.

Keywords: Corbett tiger reserve • Uttarakhand • conservation and management • distribution • fish diversity • Kalagarh water reserve

Introduction

Popularly known as 'Land of Roar, Trumpet and Song', Corbett Tiger Reserve is the oldest legally defined protected area of India **(Fig.1).** This unique wildlife forest area was delineated as the first national park of the country in 1936 through a special legislation and was also among the first protected areas to be included in 'Project Tiger' in 1972

Fig.1 Google Earth image and location of Corbett National Park

Today the forests of Corbett in Uttarakhand State offer a unique assemblage of several floral and faunal species. More commonly known for its healthy Tiger (*Panthera tigris tigris*) and Elephant (*Elephus maximus*) population. Corbett Tiger Reserve is also home of several other threatened faunal species which includes Hog Deer (*Axis porcinus*), Common leopard (*Panthera pardus*), Gharials (*Gavialis gangeticus*),

Smooth Coated Otters (*Lutrogale perspicilliata*), Sloth Bear (*Melursus ursinus*), Himalayan Black Bear (*Ursus thibetanus laniger*) etc., along with several species of rare and endangered birds, both migratory as well as resident, such as the critically endangered vultures (*Gyps sp*).

Though the faunal species of the area are fairly well studied, one group which has got limited scientific attention is that of fishes. Husain (1975) and Uniyal, D.P. (2008) did make an attempt where 36 species of fishes were identified to be present in various water bodies of the Corbett Tiger Reserve, it is widely considered that more studies on this group of fauna are required. The Corbett Tiger reserve being located in "Bhabhar" tract of Himalayan foothills has several rivers, rivulets, water channels crisscrossing its landscape, along with a magnificent man-made lake which came in to existence after to the construction of Kalagarh dam on River Ramganga in 1970s, covering approximately 80 sq. km area today. This reservior along with other water channels is daming with aquatic faunal biodiversity which find refuse here and thrives under the strong protection regime of the Tiger Reserve. As per the provisions of Indian 'Wildlife Protection Act, 1972', hunting (that includes fishing), of any species of wild animal in the Corbett Tiger Reserve is prohibited and is a punishable offence.

Considering the scarcity of information, present study attempts to fill this gap of information about the freshwater fish diversity and their distribution in various waterbodies of the Corbett Tiger Reserve. The credit for pioneering the taxonomical classification of Indian freshwater fishes goes to Francis Hamilton (Formerly Known as Butchanan), who in 1822 produced his pioneering and excellently illustrated work, "*An account of the fish found in the river Ganges and its branches*". Another classic work "*The fishes of India being Natural History of fishes known to inhabit the seas and fresh water of India, Burma and Ceylon*" by Francis Day (1878) further contributed to the science of ichthyology in India.

In recent times, several studies by renowned scientists added to the knowledge of fish fauna of Uttarakhand hills. Some of these important works include Chandhary and Khandelwal (1910), Hora (1937), Hora and Mukerji (1936), Das (1960), Husain (1976), Menon (1949, 1954, 1963, 1974), Pant (1970), Lal and Chatterjee (1962), Badola and Pant (1973), Badola (1975), Badola and Singh (1977a, 1977b), Badola and Singh (1981), Singh and Dobriyal (1982, 1987), Dobriyal and Singh (1988), Khanna and Badola (1990), Singh (1964), Singh et. al. (1987), Badola et.al. (2005), Badola (2009).

Water System of Corbett Tiger Reserve

The Corbett Tiger Reserve is part of the Shivalik mountains in the Bhabar-Terai area of Kumaon and Pauri-Garhwal region of the Indian Himalayas. Four major rivers (Ramganga, Mandal, Sonanadi and Palain); many seasonal and perennial water channels (popularly known as 'Soat'), Though most of them appear dry and lifeless, they are very important for the park ecology, several large and small ponds make the hydrological landscape of tiger reserve. Among major rivers, Ramganga flows almost in the middle of the protected area and is the 'lifeline of Corbett', while another major river of the region, Kosi, makes the eastern boundary of the park **(Fig-2).** The river Kosi runs proximate to the park and is also a significant water resource for nearby areas. The entire Tiger Reserve area is part of either of the two watersheds. The biggest river of the park, Ramganga meet the holy Ganga River near Kannoj (U.P.).

Material and Methods

This study was done to document the fish diversity of Corbett Tiger Reserve spread over the years 2014-2022, and is a compilation of the information gathered by the authors by

repeatedly visiting these rivers and rivulets during various field visits, conducting opportunistic surveys and carefully recording the observations. No fish was physically captured or restrained during the survey. The methods used were purely ocular observations of the fishes and comparing it with standard books for identification. In cases of non clarity about the identification of the fishes by mere observation, photographs/video for post survey study were also taken. All these evidences were then carefully considered by experts and by using standard text to reach to a final identification.

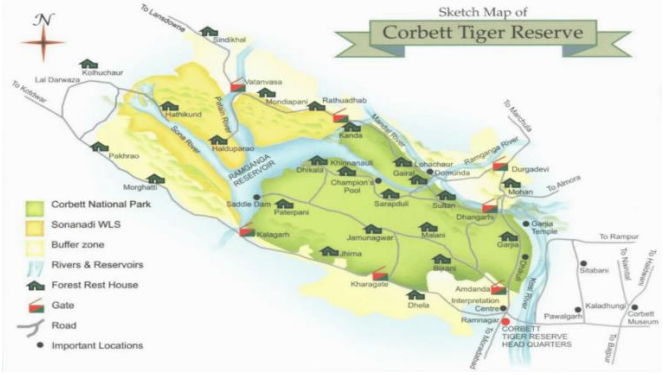

Fig 2: Map of Corbett Tiger Reserve Showing Water bodies.
Source-https://corbettgov.org/assets/images/image12-53-1692x1107.webp

Study area

The water channels studied during the present study are as under:

1. **Ramganga River:** Ramganga river is the largest and most prominent river of Corbett Tiger Reserve. Ramganga River originates from Dudhatoli hills of Chamoli district of Garhwal Himalaya. The river flows through Chamoli district, enters Almora district and then enters areas of Nainital and Pauri districts, finally entering at Kalagarh. The Ramganga river system is also fed by several of its important tributaries namely Mandal, Palain and Sonanadi rivers of Pauri district.
2. **Mandal River:** Mandal river originates from Tarkeshwar and Kaulagarh hills of Pauri district and passes through Dhamdhar, Maidavan, Banja Devi, Kartiya and finally drains into Ramganga river inside the Tiger Reserve at a place called Domunda, meaning ‘two heads.
3. **Palain River:** The Palain river originates from Sendhikhal hills of Majrola of Pauri Garhwal and passes through Dugadda, Batanbasa, Kharsoor and finally meet with Ramganga at a place known as Boksar.
4. **Sonanadi River:** Sona nadi river originates from Dogadda hills of Pauri District and passes through Hathikund and finally drains into Ramganga river near Kalagarh.
5. **Kosi River:** Kosi River originates from Almora district and passes through Ranikhet and Ramnagar town. Finally, Kosi River passes through Sultanpur-patti of Udham Singh Nagar district and flows to Uttar Pradesh. Its catchment lies partially in Corbett Tiger Reserve. From Mohan through Dhikuli till Ramnagar, the Kosi forms the eastern boundary of Corbett National Park. Even though the Kosi does not enter the Park boundary, supports the flora and fauna of Tiger Reserve.
6. **Paterpani Sot:** Part of Ramgamga catchment, this rivulet passes near Paterpani Forest Guest House and ultimately drains into Ramganga, it is a perennial rivulet, though water flow gets greatly reduced during non-rainy seasons.

However, even during the extremely dry seasons, water is found accumulated in small and large natural ponds with in the stream bed.

7. **Pheeka Sot:** Located on the southern side of the Tiger Reserve, it is a perennial rivulet of Jhirna and Laldhang area. Due to water availability in major part of the year it is rich in a number of fish species. Just like Paterpani sot, even in extremely dry conditions water is found in natural ponds in the stream bed.
8. **Dhara Sot:** Flows in the southern border of the tiger reserve. It is mainly seasonal and swells enormously during rainy season. Flows near to Dhara chauki.
9. **Bijrani Sot:** A perennial rivulet which drains the Bijrani block of forest on the eastern side of the Tiger Reserve. It passes through one of the best protected area of Corbett Tiger Reserve and hence is a good refuse to riverine fauna.
10. **Sanguri Sot:** Drains into Ramganga near Gairal forest complex.
11. **Sarpduli Sot:** Flows near Sarpduli Forest Guest house is a perennial water rivulet.
12. **Dhangari Gad:** It is a perennial water channel which flows out of the Corbett tiger reserve on the eastern border. Many other smaller water channels like Aamgadi Sot drains into it before it finally drains into Kosi River system.
13. **Kalagarh Water Reserve:** Came into existence in 1970's with the damming of Ramganga at Kalagarh. Today it is a large lake of stagnant water body.

Observations and Discussion

During the present study period, a total number of 64 species of fishes were identified and mentioned in various water bodies across Corbett Tiger Reserve. These species are listed as under (Table 1).

The survey revealed the occurrence of 64 (sixty-four) fish species belonging to 6 orders, 13 families and 27 genera over a period of study. Among the recorded species, Order Cypriniformes was the dominant group with 42 species followed Siluriformes with 15 species, Channiformes with 3 species, Mastacembeliformes with 2 species, Perciformes and Beloniformes with 1 species each. The survey revealed the occurrence of 64 (sixty-four) fish species belonging to 6 orders, 13 families and 27 genera over a period of study. Among the recorded species, Order Cypriniformes was the dominant group with 42 species followed Siluriformes with 15 species, Channiformes with 3 species, Mastacembeliformes with 2 species, Perciformes and Beloniformes with 1 species each. The present study showed in **Table:2** and **Fig:2** that the family Cyprinidae contributed the highest 30 (46.9%), followed by Sisoridae 09 (14.1%) and Noemachilinae 08 (12.5%), Cobitidae, Bagiridae, Channidae each 03 (4.7%), Mastacembelidae 02 (3.12), Psilorhynchidae, Amblycepidae, Claridae Heteropneustidae, Anabantidae, Belonidae each 01 (1.56%) species.

The data of Diversity Indices are presented in **Table 3** indicates the present status and distribution of fish species in the Study area and Relative abundance of these species was analyzed. The river wise distribution of fish represented a maximum of 64 species from Ramganga, followed by 63 species from Kosi River, 44 species from Palain, 47 species from Mandal, and 35 species from Sona River. Kalagarh Water Reserve have 33 fish species (**FIG: 3**). Conservation status of each fish was given based on the report on Conservation Assessment and Management Plan (CAMP-1998) for freshwater fishes of India, and their present status under IUCN Red-list was also documented **(Table 4).** Out of 64 species, 54 species are Least Concern, 04 are under Data Deficient, 02 species are Near Threatened, 02 are Vulnerable and, 02 are in Endangered category as per IUCN Red List category. According to CAMP (1998) conservation status, 26 species are under Least risk Near Threatened, 16 species are Not Evaluated, 16 species are Vulnerable, 04 species are Endangered, 01 species is Data Deficient and 01 species is at Lower Risk Least Concern.

Table 1. List of Fishes identified in Corbett Tiger Reserve, Uttarakhand, India

Phylum: Chodrata
Class: Actinopterygii
Order: Cypriniformes
Family: Cyprinidae
Sub-family: Cyprininae
1. *Tor tor* (Ham.)
2. *Tor putitora* (Ham.)
3. *Tor chelynoides* (Mc Clell.)
4. *Tor hexastichus* (Mc Clell.)
5. *Labeo dyocheilus* (Mc Clell.)
6. *Labeo dero* (Ham.)
7. *Labeo boga* (Ham.)
8. *Labeo bata* (Ham.)
9. *Labeo gonius* (Ham.)
10. *Labeo calbasu* (Ham.)
11. *Labeo rohita* (Ham.)
12. *Schizothorax richardsonii* (Gray.)
13. *Chagunius chagunio* (Ham.)
14. *Puntius ticto* (Ham.)
15. *Puntius sophore* (Ham.)
16. *Puntius gelius* (Ham.)
17. *Puntius chola* (Ham.)

Sub-family: Rasborine
18. *Barilius bendilisis* (Ham.)
19. *Barilius shacra* (Ham.)
20. *Barilius barna* (Ham.)
21. *Barilius barila* (Ham.)
22. *Barilius vagra* (Ham.)
23. *Raiamas bola* (Ham.)
24. *Danio Brachydanio rerio* (Ham.)
25. *Danio aequipinnatus* (Mc Clell.)
26. *Danio devario* (Ham.)
27. *Rasbora daniconius* (Ham.)

Sub-family: Garrinae
28. *Garra gotyla gotyla* (Gray.)
29. *Garra lamta* (Ham.)
30. *Crossocheilus latius latius* (Ham.)

Family: Psilorhynchidae
31. *Psilorhynchus balitora* (Ham.)

Family: Cobitidae
Sub-family: Cobitinae
32. *Leptocephalus guntea* (Ham.)

Sub family: Botiinae
33. *Botia dario* (Ham.)
34. *Botia geto* (Ham.)

Family: Noemachilinae
35. Noemacheilus botia (Ham.)
36. *Noemacheilus rupicola* (Mc Clell.)
37. *Noemacheilus beavani* (Gunther)
38. *Noemacheilus savona* (Ham.)
39. *Noemacheilus denisonii* (Jerdon)
40. *Noemacheilus zonatus* (Mc Clell.)
41. *Noemacheilus multifasciatus* (Day)
42. *Noemacheilus corica* (Ham.)

Order: Siluriformes
Family Bagiridae
43. *Mystus tengara* (Ham.)
44. *Mystus vittatus* (Ham.)
45. *Rita rita* (Ham.)

Family: Amblycepidae
46. *Amblyceps mangois* (Ham.)

Family: Sisoridae
47. *Bagarius bagarius* (Ham.)
48. *Euchiloglanis hodgarti* (Hora)
49. *Glyptothorax madraspatanus* (Day)
50. Glyptothorax pectinopterus (Mc Clell)
51. *Glyptothorax telchitta* (Ham.)
52. *Glyptothrax conirostris* (Steind.)
53. *Glypthorax cavia* (Ham.)
54. *Glyptothorax trilineatus* (Blyth)
55. *Glyptothorax brevipinnis* (Hora)

Family: Claridae
56. *Clarias batrachus* (Linn.)

Family: Heteropneustidae
57. *Heteropneustus fossilis* (Bloch)

Order: Channiformes
Family: Channidae
58. *Channa gachua* (Ham.)
59. *Channa striatus* (Bloch)
60. *Channa punctatus* (Bloch)

Order: Perciformes
Sub- order: Anabantoidei
Family: Anabantidae
61. *Colisa fasciatus* (Sch.)

Order: Mastacembeliformes
Family: Mastacembelidae
62. *Mastcembelus armatus* (Lacep)
63. *Mastacembelus puncalus* (Ham)

Order: Beloniformes
Family: Belonidae
64. *Xenentodon cancila* (Ham.)

J. Mountain Res. P-ISSN: 0974-3030, E-ISSN: 2582-5011 DOI: https://doi.org/10.51220/jmr.v19-i1.54
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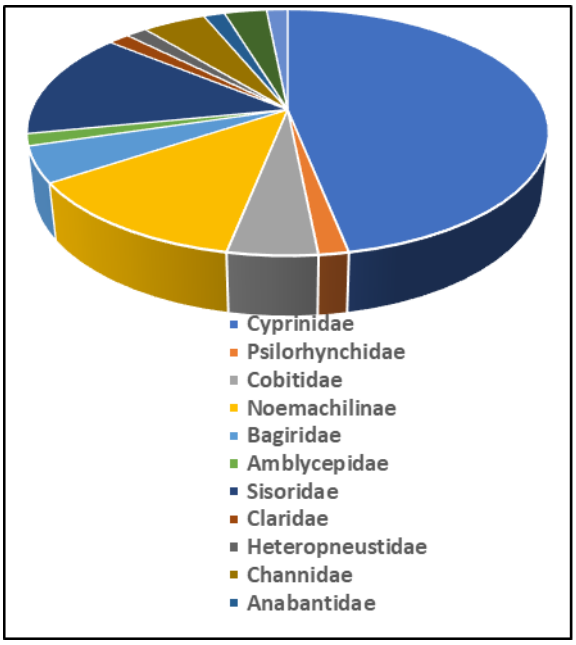
Table 2 & Figure 3. Fish Diversity (Family wise) in main Rivers and Reservoir of Corbett Tiger Reserve

Family	No of Fish
Cyprinidae	30
Psilorhynchidae	1
Cobitidae	3
Noemachilinae	8
Bagiridae	3
Amblycepidae	1
Sisoridae	9
Claridae	1
Heteropneustidae	1
Channidae	3
Anabantidae	1
Mastacembelidae	2
Belonidae	1



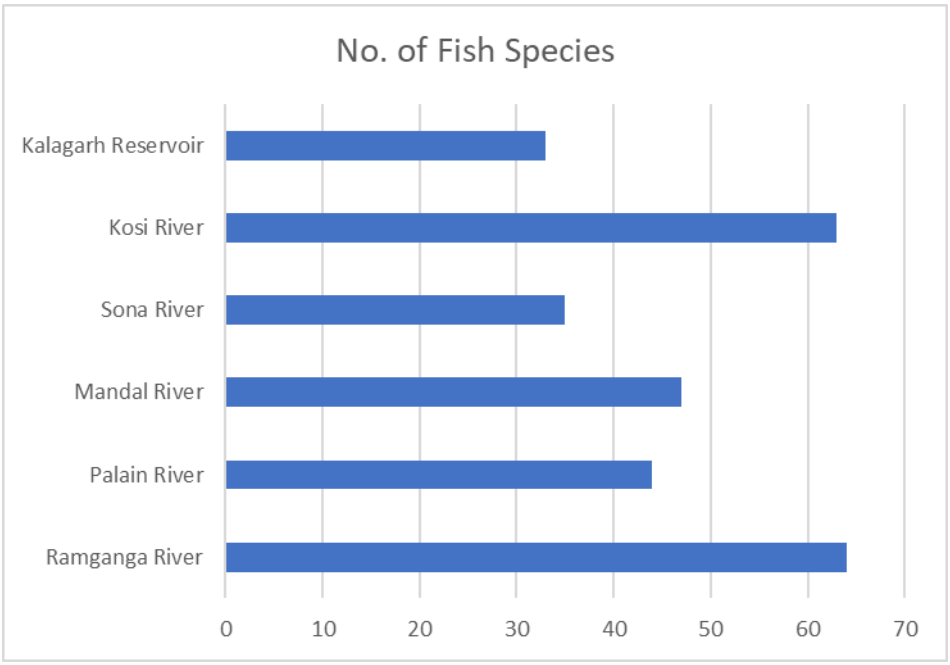


Fig 3. Number of fish species in Main Rivers and Reservoir of Corbett Tiger Reserve

Table 3. Distribution of the Fishes of Corbett Tiger Reserve in different Main River and Reservoir

S.No.	Name of Fish Species	Relative Abundance	Name of Rivers etc.					
			Ramganga River	Palain River	Mandal River	Sona River	Kosi River	Kalagarh Reservoir
1.	*Tor tor (Ham)*	Very common	++	+	+	+	++	++
2.	*Tor putitora (Ham.)*	Very common	++	+	+	+	++	++
3.	*Tor chelynoides (Mc Clell.)*	Common	+	+	+	+	+	-
4.	*Tor hexastichus (Mc Clell.)*	Common	+	+	+	+	+	-
5.	*Labeo dyocheilus (Mc Clell.)*	Common	+	+	+	+	+	-
6.	*Labeo dero (Ham.)*	Common	+	+	+	+	+	+
7.	*Labeo boga (Ham.)*	Rare	+	-	-	-	+	+
8.	*Labeo bata (ttam.)*	Rare	+	-	-	-	+	+
9.	*Labeo gonius (Ham.)*	Rare	+	-	-	-	+	+
10.	*Labeo calbasu (Ham.)*	Rare	+	-	-	-	+	+
11.	*Labeo rohita (Ham.)*	Rare	+	-	-	-	+	+
12.	*Schizothorax richardsonii(Gray)*	very rare	+	-	+	-	-	-
13.	*Chagunius chagunio(Ham.)*	Common	+	-	+	-	+	+
14.	*Puntius ticto (Ham.)*	Very rare	+	++	++	+	++	++
15.	*Puntius sophore (Ham.)*	Very common	+	++	++	++	++	+
16.	*Puntius gelius(Ham.)*	Common	+	+	+	+	+	+
17.	*Puntius chola (Ham.)*	Moderate	+	-	-	+	+	+
18.	*Bairlius bendilisis (Ham.)*	Very common	++	++	++	+	++	-
19.	*Barilius shacra (Ham.)*	Very common	++	++	++	+	++	-
20.	*Barilius barna (Ham.)*	Very common	++	++	++	+	++	-
21.	*Barilius barila (Ham.)*	Very common	++	++	++	+	++	-
22.	*Barilius vagra (Ham.)*	Very common	++	++	++	+	++	-
23.	*Raiamas bola (Ham.)*	Common	+	+	+	+	+	+
24.	*Danio Brachydanio rerio (Ham.)*	Common	+	+	+	+	+	+
25.	*Danio auquipinnatus (Mc clell:)*	Common	+	+	+	+	+	+
26.	*Danio devario (Ham.)*	Very common	+	++	++	+	++	+
27.	*Rasbora daniconius (Ham.)*	Common	+	+	+	+	+	+
28.	*Garra gotyla gotyla (Gray)*	Very common	++	+	++	+	++	-
29.	*Garra lamta (Ham.)*	Very common	++	+	++	+	++	-
30.	*Crossocheileus latius latius (Ham.)*	Common	+	+	+	+	+	-
31.	*Psilorinchus balitora (Ham.)*	Common	+	+	+	-	+	-
32.	*Leptocephalus guntea (Ham.)*	Rare	+	-	-	-	+	-
33.	*Botia dario (Ham.)*	Common	+	+	+	+	+	-
34.	*Botia geto (Ham.)*	Common	+	+	+	_	+	-
35.	*Noemacheilus botia (Ham.)*	Common	+	+	++	+	+	-
36.	*Noemacheilus rupicola (Mc Clell.)*	Common	+	+	++	+	+	-
37.	*Noemacheilus beavani (Gunther)*	Common	+	+	++	+	+	-
38.	*Noemacheilus savana (Ham.)*	Common	+	+	++	+	+	-
39.	*Noemacheilus denisonii (Jerdon)*	Common	+	+	++	-	+	-
40.	*Noemacheilus zonatus (Mc Clell.)*	Common	+	+	++	-	+	-
41.	*Noemacheilus multifasciatus (Day)*	Common	+	+	++	+	+	-

42.	*Noemachiclus corica (Ham.)*	Common	+	+	+	+	+	-
43.	*Mystus tengara (Ham.)*	Rare	+	-	-	-	+	+
44.	*Mystus vittatus (Ham.)*	Rare	+	-	-	-	+	+
45.	*Rita rita (Ham.)*	Rare	+	-	-	-	+	+
46.	*Amblyceps mangois(Ham.)*	Common	+	+	+	-	+	+
47.	*Bagarius bagarius (Ham.)*	Rare	+	-	-	-	+	+
48.	*Euchiloglanis hodgarti (Hora)*	Moderate	+	+	+	-	+	+
49.	*Glyptothorax madraspatanum (Day)*	Moderate	+	+	+	-	+	-
50.	*Glyptothorax pectinopterus (Mc Clell)*	Common	+	+	+	+	+	-
51.	*Glyptothorax telchitta (Ham.)*	Common	+	+	+	+	+	-
52.	*Glyptothrax conirostris (steind.)*	Moderate	+	+	+	-	+	-
53.	*Glypthorax cavia (Ham.)*	Common	+	+	+	+	+	-
54.	*Glyptothorax trilineatus (Blyth)*	Moderate	+	+	+	-	+	-
55.	*Glyptothorax brevipinnis(Hora)*	Moderate	+	+	+	-	+	-
56.	*Clarias batrachus (Linn.)*	Moderate	+	-	-	-	+	+
57.	*Heteropneustes fossilis (Bloch)*	Rare	+	-	-	-	+	+
58.	*Channa gachua (Ham)*	Common	+	+	+	+	+	+
59.	*Channa striatus (Bloch)*	Rare	+	-	-	-	+	+
60.	*Channa punctatus (Bloch)*	Rare	+	-	-	-	+	+
61.	*Colisa fasciatus (Sch.)*	Rare	+	-	-	-	+	+
62.	*Mastacembelus armatus (Lacep.)*	Common	+	+	+	+	+	+
63.	*Mastacembelus pancalus (Ham.)*	Rare	+	-	-	-	+	+
64.	*Xenentodon cancila (Ham.)*	Moderate	+	-	+	-	+	+
TOTAL			**64**	**44**	**47**	**35**	**63**	**33**

Symbol: (+) Presence, (++) Abundance, (-) Absence

Table 4. Conservation status of Fish species of Corbett Tiger Reserve According to IUCN and CAMP (1998)

Status: Least Concern (LC); Vulnerable (VU); Near Threatened (NT); Data deficient (DD); Not Evaluated (NE)

S.N.	Name of Fish Species	IUCN Red List)	CAMP (1998)
1.	*Tor tor (Ham)*	DD	EN
2.	*Tor putitora (Ham.)*	EN	EN
3.	*Tor chelynoides (Mc Clell.)*	VU	NE
4.	*Tor hexastichus (Mc Clell.)*	NT	VU
5.	*Labeo dyocheilus (Mc Clell.)*	LC	VU
6.	*Labeo dero (Ham.)*	LC	VU
7.	*Labeo boga (Ham.)*	LC	NT
8.	*Labeo bata (ttam.)*	LC	NT

9.	*Labeo gonius (Ham.)*	LC	NT
10.	*Labeo calbasu (Ham.)*	LC	NT
11.	*Labeo rohita (Ham.)*	LC	NT
12.	*Schizothorax richardsonii(Gray)*	VU	VU
13.	*Chagunius chagunio(Ham .)*	LC	NE
14.	*Puntius ticto (Ham.)*	LC	NT
15.	*Puntius sophore (Ham.)*	LC	NT
16.	*Puntius gelius(Ham.)*	LC	NE
17.	*Puntius chola (Ham.)*	LC	VU
18.	*Bairlius bendilisis (Ham.)*	LC	NT
19.	*Barilius shacra (Ham.)*	LC	NT
20.	*Barilius barna (Ham.)*	LC	NT
21.	*Barilius barila (Ham.)*	LC	VU
22.	*Barilius vagra (Ham.)*	LC	VU
23.	*Raiamas bola (Ham.)*	LC	VU
24.	*Danio Brachydanio rerio (Ham.)*	LC	NT
25.	*Danio auquipinnatus (Mc clell:)*	LC	NT
26.	*Danio devario (Ham.)*	LC	NT
27.	*Rasbora daniconius (Ham.)*	LC	NT
28.	*Garra gotyla gotyla (Gray)*	LC	VU
29.	*Garra lamta (Ham.)*	LC	NE
30.	*Crossocheileus latius latius (Ham.)*	LC	DD
31.	*Psilorinchus balitora (Ham.)*	LC	NE
32.	*Lepidocephalus guntia (Ham.)*	LC	NE
33.	*Botia dario (Ham.)*	LC	NE
34.	*Botia geto (Ham.)*	LC	NT
35.	*Noemacheilus botia (Ham.)*	LC	NT
36.	*Noemacheilus rupicola (Mc Clell.)*	LC	NT
37.	*Noemacheilus beavani (Gunther)*	LC	NE
38.	*Noemacheilus savana (Ham.)*	LC	NE
39.	*Noemacheilus denisonii (Day)*	LC	NE
40.	*Noemacheilus zonatus (Mc Clell.)*	DD	NE

41.	*Noemacheilus multifasciatus (Day)*	LC	EN
42.	*Noemachiclus corica (Ham.)*	LC	NT
43.	*Mystus tengara (Ham.)*	LC	NE
44.	*Mystus vittatus (Ham.)*	LC	VU
45.	*Rita rita (Ham.)*	LC	NT
46.	*Amblyceps mangois(Ham.)*	LC	NT
47.	*Bagarius bagarius (Ham.)*	NT	VU
48.	*Euchiloglanis hodgarti (Hora)*	LC	VU
49.	*Glyptothorax madraspatanum (Day)*	EN	VU
50.	*Glyptothorax pectinopterus (Mc Clell)*	LC	NT
51.	*Glyptothorax telchitta (Ham.)*	LC	NT
52.	*Glyptothrax conirostris (steind.)*	DD	NE
53.	*Glypthorax cavia (Ham.)*	LC	EN
54.	*Glyptothorax trilineatus (Blyth)*	LC	NE
55.	*Glyptothorax brevipinnis(Hora)*	DD	VU
56.	*Clarias batrachus (Linn.)*	LC	VU
57.	*Heteropneustes fossilis (Bloch)*	LC	VU
58.	*Channa gachua (Ham)*	LC	NE
59.	*Channa striatus (Bloch)*	LC	LC
60.	*Channa punctatus (Bloch)*	LC	NT
61.	*Colisa fasciatus (Sch.)*	LC	NT
62.	*Mastacembelus armatus (Lacep.)*	LC	NE
63.	*Mastacembelus pancalus (Ham.)*	LC	NT
64.	*Xenentodon cancila (Ham.)*	LC	NT

The present documentation improves the list prepared earlier (Uniyal D.P., 2008) an adds 30 more species to the list. Further the present study also documents the fishes seen in the major rivers, and a reservior of Corbett Tiger Reserve and one (Kosi River) just outside of it. A list of fishes documented in major rivers was also prepared **(Table 1),** which can prove to be baseline for future studies.

The prime outcome of the study shows that Corbett Tiger Reserve harbors a very good diversity of freshwater fishes. Just like the tiger represents the health of a terrestrial ecosystem, the rich fish diversity indicates the well-being of the freshwater life. This fish diversity indicates that the water bodies of Corbett are still clean with fairly low amount of pollutants, it on the other hand also indicates the effectiveness of protection regime of the reserve and also tells us the reason for such good population of species predating in fishes such as Gharials, Otters, Crocodiles and birds like raptors feeding on fishes.

These water bodies harbor different varieties of herbivorous, omnivorous and carnivorous fish species. While the herbivorous fish species such as *Labeo* sp., *Garra sps* and *Crossocheilus sp*., controls the over growth of aquatic vegetation, Similarly the carnivorous *Glyptothorax sp*., *Bagarious sp*., *Rita sp*., *Mystus sp. Channa* sp., *Belone sp., and Noemacheilus* sp. control the aquatic predators. Omnivorus fishes such as *Tor sp., Puntius sp., Barilius sp.,* control the both aquatic weeds and aquatic predatory insects.
Some prominent fishes found in the tiger reserve are big freshwater catfish like Shark, *Bagarius bagarius* (Ham.) locally known as Goonch. The other prominent big fish of the hill the Mahaseer *Tor tor* (Ham.) and *Tor putitora* (Ham.) are also found here in good number.

Conclusion

Sixty-four species were found in five Rivers and one Reservoir of Tiger Reserve. Eleven species are Very Common, twenty-eight are Common, eight are Moderate, fifteen are Rare, two are Very Rare.

Our results show higher species richness and presence of greater numbers of threatened fish species within Corbett Tiger Reserve. Among the different rivers Ramganga had highest number of fish species (64). This could be due to the more strictly enforced legislative powers of terrestrial protected area.

Overall, the aquatic diversity of the waterbodies in the Tiger Reserve were found to be at a satisfactory level. When seen along with the number and distribution of other aquatic animals like certain reptilians such as Maggar *Crocodylus palustris* (Lesson), Ghariyal *Gavialis gangeticus* (Gmelin), Smooth Coated *Otters Lutrogala perspicillata* (Lutra), it indicates to a very good health of aquatic ecosystem with in the Tiger Reserve.

Acknowledgment

The authors are thankful to the management and the brave staff of Corbett Tiger Reserve who supported throughout the study period and often provided some valuable information.

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