International Journal of Fauna and Biological Studies
Available online at www.faunajournal.com

E-ISSN 2347-2677
P-ISSN 2394-0522
https://www.faunajournal.com
IJFBS 2024; 11(1): 37-39
Received: 08-12-2023
Accepted: 17-01-2024

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Conservation status of anamniotes reported from Khanwari pond of district Kaushambi (U.P.), India

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DOI: https://doi.org/10.22271/23940522.2024.v11.i1a.1008

Abstract
Khanwari pond was studied to find out the conservation status of the fishes and amphibians naturally occurring in it. The survey was conducted from January 2020 to December 2021. During exploration, a total of 27 species of fishes belonging to 19 genera, 15 families and 8 orders and 3 species of amphibians belonging to 3 genera, 3 families and one order were identified. As per latest version of IUCN Red List, out of 27 species of fishes identified, 2 species come under NT (Near threatened), 18 under LC (Least concern) and 7 species are NE (Not evaluated) so far. All the three amphibian species reported belong to LC category No fish and amphibian species identified here comes under EN (Endangered) category.

Keywords: Anthropogenic activities, fishes, amphibians, family, IUCN red list, conservation

Introduction
Fishes are studied under Ichthyology while amphibians under Batrachology brances of Life Science. Fishes (Chondrichthyes and Osteichthyes) are exclusively aquatic animals (Verma and Prakash, 2020) [23]. Amphibians constitute a class of vertebrates that live on land but breed in water. The class Amphibia comprises of three orders: Apoda (Gymnophiona), Urodela (Caudata) and Anura (Salientia). Fishes and amphibians collectively constitute the anamniotes or so called lower vertebrates (Ashok, 2017) [1].
Prakash and Verma (2017a; 2017b) [13, 14] and Verma and Prakash (2017a; 2017b) [19, 20] studied the Khanwari pond for distribution and conservation of fishes. Kumar (2020a; 2020b) [10, 11] studied the conservation status of Amniotes and Anamniotes of Balapur pond of Prayagraj but as such the pond studied here is not systematically explored. The present study is undertaken from January 2020 to December 2021 to find out the conservation status of Anamniotes (Fishes and amphibians) recorded from Khanwari pond of Kaushambi, Uttar Pradesh, India.

Study Area
The pond under exploration is situated in Khanwari village, which is located in block and tahsil of Sirathu of Kaushambi district of Uttar Pradesh (image). The pond is more than 75 km away from Allahabad, 10 km from Manjhanpur (headquarter of district Kaushambi) and 270 km from Lucknow by road. Its nearest railway station is Sirathu at a distance of 15 km and nearest airport Bamrauli (Prayagraj) is at a distance of 60 km. It is situated between the latitude $25^0$32'32.58"N- $81^0$18'09.66"E and $25^0$32'31.01"N- $81^0$18'18.19"E.

MaterialS and method
Khanwari pond was surveyed and studied in detail for fishes, amphibians and other vertebrates once for a month along the period of one year from January 2020 to December 2021. The fishes and amphibians were caught and collected for present survey from Khanwari pond by hand-nets, gill nets, cast nets, hooks, drag nets with the help of local people and animal catchers.
Fishes were identified using the standard keys of Day (1989) [4], Jhingran (1991) [9], Srivastava (1998) [18], and Jayaram (1999) [8] while amphibians by Dutta (2017) [6] and Dinesh *et al.* (2017) [5]. Study was aided by literature of Wheeler (1998) [28] and Daniel (2002) [3]. People of local communities of adjoining areas also helped the author in many ways for collection and identification.

Results and Discussion

During exploration, a total of 27 species of fishes belonging to 19 genera, 15 families and 8orders (Prakash and Verma, 2017a) [13] and 3 species of amphibians belonging to 3 genera, 3 families and one order were identified from the Khanwari pond. The collected and identified fish and amphibian species including their zoological names, family, order and conservation status are shown in table 1 and 2.

Image 1: Location of study area in Kaushambi district

Table 1: Different fish species with conservation status

S. No.	Zoological name of fish	Family	Order	Conservation status
1.	*Catla catla*	Cyprinidae	Cypriniformes	NE
2.	*Labeo rohita*	Cyprinidae	Cypriniformes	LC
3.	*Labeo calbasu*	Cyprinidae	Cypriniformes	LC
4.	*Cirrhinus mrigala*	Cyprinidae	Cypriniformes	LC
5.	*Puntius (Pethia) ticto*	Cyprinidae	Cypriniformes	LC
6.	*Puntius chola*	Cyprinidae	Cypriniformes	LC
7.	Mystus seenghala	Bagridae	Siluriformes	NE
8.	*Mystus cavasious*	Bagridae	Siluriformes	LC
9.	*Mystus vittatus*	Bagridae	Siluriformes	LC
10.	*Mystus (Sperata) aor*	Bagridae	Siluriformes	LC
11.	*Wallago attu*	Siluridae	Siluriformes	NT
12.	*Ompak pabda*	Siluridae	Siluriformes	NE
13.	*Clarias batrachus*	Clariidae	Siluriformes	LC
14.	*Clarias gareipinous*	Clariidae	Siluriformes	NE
15.	*Heteropneustes fossilis*	Saccobranchidae	Siluriformes	LC
16.	*Ailia coila*	Schilbeidae	Siluriformes	NT
17.	*Channa punctatus*	Ophiocephalidae	Ophiocephaliformes	NE
18.	*Channa marulius*	Ophiocephalidae	Ophiocephaliformes	LC
19.	*Glossogobius giuris*	Gobiidae	Perciformes	LC
20.	*Anabas testudenius*	Anabantidae	Perciformes	NE
21.	*Colisa fasciatus*	Osphronemidae	Perciformes	NE
22.	*Notopterus notopterus*	Notopteridae	Osteoglossiformes	LC
23.	*Notopterus chitala*	Notopteridae	Osteoglossiformes	LC
24. .	*Gudusia chapra*	Clupeidae	Clupeiformes	LC
25.	*Setipinna phasa*	Engraulidae	Clupeiformes	LC
26.	*Xenentodon cancila*	Belonidae	Beloniformes	LC
27.	*Mastacembelus armatus*	Mastacembeleidae	Synbranchiformes	LC

Table 2: Amphibians and their conservation status

S. No.	Common Name	Zoological name	Family /Order	Conservation status
1.	Indian bullfrog / Garden frog	*Hoplobatrachus* tigerinus / *Rana tigrina*	Dicroglossidae / Anura	LC
2.	Common Indian toad / Asian Common toad	*Duttaphrynus melanostictus* / *Bufo melanostictus*	Bufonidae / Anura	LC
3.	Indian tree frog	*Polypedates maculates/ Hyla maculata*	Rhacophoridae / Anura	LC

On the basis of rate of decline, population size, area of geographic distribution and degree of population, distribution fragmentation etc., International Union for Conservation of Nature (IUCN, 2023) [7] Red List classified the species into nine groups including EW (Extinct in the wild), CR (Critically endangered), EN (Endangered), VU (Vulnerable), NT (near threatened), LC (least concern), DD (Data deficient) and NE (not evaluated). As per latest version of IUCN Red List, out of 27 species of fishes identified, 2 species come under NT, 18 under LC and 7 species are NE. All the three amphibian species reported belong to LC category. No fish and amphibian species identified here comes under EN category.

Author found that this pond although having some pollutants but rich in oxygen, organic humus, planktons and nutrients. However, anthropogenic activities badly influence the entire biota (Prakash and Verma, 2022) [15]. Rich biodiversity and ecological balance are required for the survival of entire biota including humans (Verma, 2017; Ashok, 2018) [27, 2] but these are affected by pollution, pesticides and microplastics (Verma and Prakash, 2022; Singh *et al*., 2023; Rani *et al*., 2024) [25, 17, 16]. The water of this pond is useful for agricultural purposes and the ichthyo-fauna have no any special threats like shortage of food, oxygen, nutrients etc.

During exploration, author saw the Sarus crane in the study area. This is the state bird of Uttar Pradesh and well known for marital fidelity and eternal symbol of love (Prakash and Verma, 2016; Verma and Prakash, 2017c) [12, 21]. Population of this bird is continuously increasing year by year in and around Alwara Lake of Dist. Kaushambi (Verma and Prakash, 2017d; 2021; 2023) [22, 24, 26]. The climatic and ecological condition of the pond is normal and suitable for fishes but less suitable for amphibians. Normally, local people used to capture the fishes for food proposes but avoid overexploiting. The surrounding villagers take care of the pond up to some extent.

References

1. Ashok KV. A Handbook of Zoology. Muzaffarnagar: Shri Balaji Publications. 2017;5:1-648.
2. Ashok KV. Ecological Balance: An Indispensable Need for Human Survival. J Exp Zool India. 2018;21(1):407-409.
3. Daniel JC. The Book of Indian Reptiles and Amphibians. Bombay Natural History Society; c2002. p. 248.
4. Day F. The fauna of British India including Ceylon and Burma. Fishes. London: Taylor and Francis; c1989.
5. Dinesh KP, Radhakrishnan C, Channakeshavamurthy BH, Deepak P, Kulkarni NU. Checklist of Amphibia of India, updated till April 2017. [Internet]. Available from: http://mhadeiresearchcenter.org/resources. Accessed January 15, 2024.
6. Dutta SK. Amphibians of India and Sri Lanka (checklist and bibliography). Bhubaneswar: Odyssey Publishing House; 1997. p. xiii+342.
7. IUCN. The IUCN Red List of Threatened Species. Version 2023-1. [Internet]. Available from: https://www.iucnredlist.org. Accessed January 15, 2024.
8. Jayaram KC. The freshwater fishes of the Indian region. Delhi: Narendra Publishing House; c1999.
9. Jhingran VG. Fish and Fisheries of India. Delhi: Hindustan Publishing Corporation; c1991.
10. Kumar AV. Conservation Status of Amniotes found in and around Balapur Pond of District Prayagraj (Uttar Pradesh), India. Int. J Biol. Res. 2020;8(1):01-05.
11. Kumar AV. Conservation Status of Anamniotes reported from Balapur Pond of District Prayagraj (U.P.). Uttar Pradesh J Zool. 2020;41(6):42-46.
12. Prakash S, Verma AK. Marital fidelity and congregation of Indian sarus crane, Grus antigone in and around Alwara lake of district Kaushambi (Uttar Pradesh), India. Int. J Biol. Res. 2016;4(1):10-13.
13. Prakash S, Verma AK. IUCN Conservation Status of Fishes of Khanwari Pond of District Kaushambi (U.P.). Proc. Zoolog. Soc. India. 2017;16(1):81-84.
14. Prakash S, Verma AK. Relative abundance and Conservation value of teleost fishes in Khanwari Pond of District Kaushambi (U.P.). J Zool Stud. 2017;4(2):01-05.
15. Prakash S, Verma AK. Anthropogenic activities and Biodiversity threats. Int J Biol Innov. 2022;4(1):94-103.
16. Rani K, Singh S, Sudhakar P, Arya S. Role of pesticides in biodiversity loss. Int J Biosci Biochem. 2024;6(1):01-03.
17. Singh R, Verma AK, Prakash S. The web of life: Role of pollution in biodiversity decline. Int. J Fauna Biol. Stud. 2023;10(3):49-52.
18. Srivastava G. Fishes of U.P. and Bihar. Varanasi: Vishwavidalaya Prakashan Chowk; c1998.
19. Verma AK, Prakash S. Dominancy of cat fishes in Khanwari pond of district Kaushambi (U.P.). Life Sci. Bull. 2017;14(1):85-87.
20. Verma AK, Prakash S. Fish Biodiversity of Khanwari Pond of District Kaushambi (U.P.), India. J Zool. Stud. 2017;4(1):37-40.
21. Verma AK, Prakash S. Sarus Crane: An Eternal Symbol of Marital Fidelity. Int. J Zool. Investig. 2017;3(1):11-14.
22. Verma AK, Prakash S. Continuous Increase in Population of Indian Sarus Crane, Grus Antigone in and around Alwara lake of district Kaushambi (U.P.). Nat J Life Sci. 2017;14(2):143-146.
23. Verma AK, Prakash S. Status of Animal Phyla in different Kingdom Systems of Biological Classification. Int J Biol Innov. 2020;2(2):149-154.
24. Verma AK, Prakash S. Nesting Behaviour and Current threats to the Indian Sarus Crane around Alwara Lake of District Kaushambi (U.P.), India. Int. J Biol. Innov. 2021;3(1):127-133.
25. Verma AK, Prakash S. Microplastics as an emerging threat to the fresh water fishes: A review. Int. J Biol. Innov. 2022;4(2):368-374.
26. Verma AK, Prakash S. Increase in Sarus Crane Grus antigone (Linnaeus 1758) population in and Around Alwara Lake of District Kaushambi, India. Indian J Ecol. 2023;50(3):860-863.
27. Verma AK. Necessity of Ecological Balance for Widespread Biodiversity. Indian J Biol. 2017;4(2):158-160.
28. Wheeler A. Dates of publication of J.E. Gray's Illustrations of Indian Zoology (1830–1835). Arch Nat Hist. 1998;25(3):345-354.