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ICHTHYOFAUNAL DIVERSITY IN KRISHNA RIVER IN SATARA DISTRICT, MAHARASHTRA, INDIA

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Abstract:
River Krishna is an important river in India as it travels through three states Maharashtra, Karnataka and Andhra Pradesh of India. Krishna river originates at Mahabaleshwar, District Satara (Maharashtra). The river has importance due to use of water for drinking, agriculture and irrigation purpose. In addition it is also rich in the fish fauna. Ichthyofaunal diversity in Krishna River in Satara district was studied during the period of two years from October 2012 to September 2014. Fishes were collected from different sites of river in Satara district with the help of local fisherman. Totally 73 fish species were observed during the present study. Out of these species five endangered, seven near threatened, forty seven least concern, three vulnerable and nine not evaluated one are data deficient.
Keywords:- Krishna river, Ichthyofauna

Introduction:

Krishna River is the main river of Satara district approx. 172 kms. of river course falls inside the district. The geographical location of Satara district is North latitudes 17.5 to 18.11 and East longitude 73.33 to 74.54. The total geographical area of the Krishna basin in Maharashtra is 69,425 km^2 (Satish, 2012) and that of Satara district is 10,816 km^2.

Fish fauna of this river was studied in Satara district at Wai by Kharat *et al.* (2012) and observed 51 fish species. Freshwater fish diversity was studied by different scientists such as Sakhare V.B. (2001) in Jawalgaon reservoir, Sreekantha and Ramchandra (2005) in Linganamakki reservoir Sharavathi river, Goswami and Mankodi (2010) in reservoir Nayari II Rajkot district, Solanki *et al.* (2011) in Sanjay Sagar reservoir, Jadhav *et al.* (2011) in Koyana river, Patil *et al.* (2011) in Dhom dam, Jitesh *et al.* (2011) in Isapur reservoir, Mahor (2011) in freshwater reservoir, Tighra, Rankhamb (2011) in Godavari river at Mudgal in district Parbhani, Thirumala (2011) in Bhadra reservoir of Karnataka, Tawseef *et al.* (2012) in Halali reservoir, Nath and Deka (2012) in Chandubi tectonic lake of Assam, Kadam *et al.* (2012) in Bori river, Nagma and Khan (2013) in district Bijnor in Western Utter Pradesh and Rao *et al* (2013) in river Champavati.

Material and Methods:

The Fish species were collected with the help of local fishermen during the period of two year from October 2012 to September 2014. The fishes were identified with the help of Standard keys (Misra, 1962; Day, 1887; Jayram, 2010; and Talwar and Jhingran, 1991).

Results and Discussion:

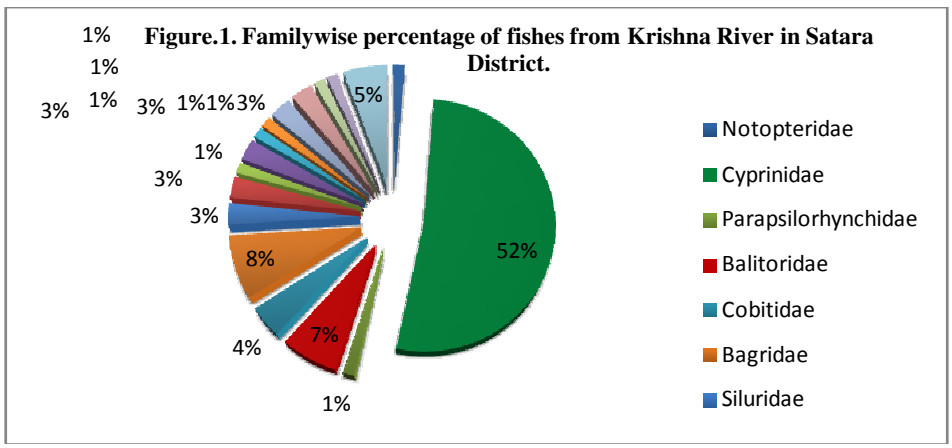

Table. 1- Fish Species collected from Krishna River in Satara District.

Order /Family/ Species		**IUCN red list status**
Order- Osteoglossiformes		
Family- Notopteridae	1. *Notopterus notopterus*	LC
Order- Cypriniformes		
Family- Cyprinidae	2. *Hypophthalmichthys molitrix*	NT
	3. *Salmophasia boopis*	LC
	4. *Salmophasia novacula*	LC
	5. *Salmophasia clupeiodes*	NE
	6. *Barilius barna*	LC
	7. *Barilius bendelisis*	LC
	8. *Danio malabaricus*	LC
	9. *Devario aequipinnatus*	LC
	10. *Rasbora daniconius*	LC
	11. *Ctenopharyngodon idellus*	NE
	12. *Cyprinus carpio*	VU A2ce
	13. *Tor tor*	NT
	14. *Tor khudree*	EN A2acde
	15. *Osteobrama vigorsii*	LC
	16. *Osteobrama cotia*	NE
	17. *Rohtee ogilbii*	LC
	18. *Puntius amphibius*	DD
	19. *Puntius jerdoni*	LC
	20. *Puntius sahyadriensis*	LC
	21. *Puntius sarana subnusutus*	NE
	22. *Puntius sarana*	LC
	23. *Puntius sophore*	LC
	24. *Puntius ticto*	LC
	25. *Gonoproktopterus curmuca*	EN A2acd
	26. *Gonoproktopterus kolus*	VU A2acd
	27. *Cirrhinus fulungee*	LC
	28. *Cirrhinus mrigala*	LC
	29. *Cirrhinus reba*	LC
	30. *Catla catla*	NE
	31. *Labeo rohita*	LC
	32. *Labeo calbasu*	LC
	33. *Labeo boggut*	LC
	34. *Labeo boga*	LC
	35. *Schismatorhynchos nukta*	EN A2acd+3cd
	36. *Crossocheilus latius*	LC
	37. *Garra bicornuta*	NT
	38. *Garra mullya*	LC
	39. *Garra gotyla*	LC
Family- Parapsilorhynchidae	40. *Parapsilorhynchus discophorus*	VU B1ab(iii)
Family- Balitoridae	41. *Acanthocobitis mooreh*	NE
	42. *Nemachilichthys rueppelli*	LC
	43. *Noemacheilus anguilla*	NE
	44. *Schistura denisoni*	LC
	45. *Indoreonectes evezardi*	LC
Family- Cobitidae	46. *Botia striata*	EN B2ab(iii)
	47. *Lepidocephalichthys thermalis*	LC
	48. *Lepidocephalichthys guntea*	LC
Order - Siluriformes		
Family- Bagridae	49. *Rita rita*	LC
	50. *Sperata seenghala*	LC
	51. *Mystus bleekeri*	LC
	52. *Mystus cavasius*	LC
	53. *Mystus malabaricus*	NT
	54. *Mystus seengtee*	LC
Family- Siluridae	55. *Ompok bimaculatus*	NT
	56. *Wallago attu*	NT
Family- Schilbidae	57. *Silonia childreni*	EN A2ade+3de+4ade

	58. Neotropius khavalchor	DD
Family- Sisoridae	*59. Glyptothorax lonah*	LC
Family- Clariidae	*60. Clarias batrachus*	LC
	61. Heteropneustes fossilis	LC
Order- Mugiliformes		
Family- Mugilidae	*62. Rhinomugil corsula*	LC
Order- Cyprinodontiformes		
Family- Poecilidae	*63. Gambusia affinis*	LC
Order - Synbranchiformes		
Family- Mastacembelidae	*64. Macrognathus pancalus*	LC
	65. Mastacembelus armatus	LC
Order- Perciformes		
Family- Ambassidae	*66. Pseudoambasis ranga*	NE
	67. Chanda nama	LC
Family- Cichlidae	*68. Oreochromis mossambicus*	NT
Family- Gobiidae	*69. Glossogobius giuris*	LC
Family- Channidae	*70. Channa gachua*	LC
	71. Channa marulius	LC
	72. Channa punctata	LC
	73. Channa striatus	NE

IUCN: EN - Endangered, NT - Near Threatened, VU- Vulnerable, LC - Least Concern, DD - Data Deficient, NE - Not Evaluated.

Sreekantha and Ramchandra (2005) recorded 43 species in Linganamakki reservoir Sharavathi river, Solanki *et al.* (2011) observed sixteen species in Sanjay Sagar reservoir, Jadhav *et al.* (2011) recorded fifty eight species in Koyana river, Patil *et al.* (2011) observed twenty four fish species in Dhom dam, Supugade *et al.* (2011) observed 22 fish species in Yewati reservoir, Patra *et al.* (2011) were observed 55 species in Karala river, Mahor (2011) were reported 33 fish species in freshwater reservoir, Tighra, Rankhamb (2011) observed 26 species in Godavari river at Mudgal in district Parbhani, Thirumala (2011) were reported 33 fish species in Bhadra reservoir of Karnataka, Tawseef *et al.* (2012) were observed 29 fish species in Halali reservoir, Nath and Deka (2012) were reported 63 species in Chandubi tectonic lake of Assam, Kadam *et al.* (2012) were observed 18 species in Bori river, Bhoite and Deshpande (2012) were recorded 43 fish species in Venna river, Nagma and Khan (2013) were observed 36 fish species in district Bijnor in Western Utter Pradesh, Vyas and Vishwakarma (2013) were recorded 27 species in Jammer river. Kumar and Khanna (2014) 6 species observed at selected sites of upper stretches of river beas Himachal Pradesh and Humbe *et al.* (2014) were reported 32 species in Sina Kolegoan Dam.

In the Present study 73 fish species were observed belonging to seven orders and seventeen families. The order Cypriniformes dominant with 47 species followed by order Siluriformes with 13 species, Perciformes with 8 species, Synbranchiformes with 2 species while Osteoglossiformes, Mugiliformes and Cyprinodontiformes with single species each. On the basis of percentage composition the family Cyprinidae contributing with 52% of total species followed by Bagridae 8%, Balitoridae 7%, Channidae 5%, Cobitidae 4%,Siluridae, Schilbidae, Mastacembelidae, and Ambassidae 3% and Notopteridae, Parapsilorhynchidae, Sisoridae, Mugilidae, Poecilidae, Cichlidae and Gobiidae 1%.

As per to IUCN red list five species are endangered, seven near threatened, three vulnerable, forty seven least concern and two data deficient (Table No.1) species are observed.

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Plate No. 1 – Some of the Fish species in Krishna River

Notopterus notopterus

Hypophthalmichthys molitrix

Danio malabaricus

Devario aequipinnatus

Osteobrama cotia

Labeo calbasu

Schismatorhynchos nukta

Botia striata

Glyptothorax lonah

Rita rita

Hypophthalmichthys molitrix

Heteropneustes fossilis

References:-

1. **Ashok Kumar and D.R. Khanna,** Ichthyofaunal diversity in Upper stretches of river beas, Himachal Pradesh, India (2014), International J. of Researches in Bioscience, Agriculture and Technology, Vol. II, Issue -2, pp 269-275.
2. **Atul humbe, Swati Jadhav and Sunita Borde (2014):** Diversity of Ichthyofauna from Sinakolegoan Dam Osmanabad District, Maharashtra, Weekly Science Research Journal, Vol. 1,Issue 40, pp 1-5.
3. **Day F.S. (1878):** The fishes of India, William and sons Ltd., Londan.
4. **Goswami A.P. and Mankodi P.C.(2010):** Diversity of fishes from freshwater reservoir Nyri II of Rajkot dist. Gujrat, Electronic J. of Environmental Sciences Vol.3, pp 23-26.
5. **IUCN (2015):** IUCN Red List of Threatened Species. Version 2014.3 <www.iucnredlist.org>.
6. **Jayram K.C. (2010):** The Freshwater fishes of Indian region, Narendra Publishing House, New Delhi- 110006 (India) 2nd Edition.
7. **Jadhav B.V., Kharat S.S., Raut Rupesh N., Mandar Paingankar and Neelesh Dahanukar (2011):** Freshwater fish fauna of Koyna river nortern western ghats India, J. of Threatened Taxa 3(1), pp 1449-1455.
8. **J. Chandrashekhra Rao, G. Simhachalam and CH Sebastian Raju (2013)** A study on Ichthyofaunal Diversity, Conservation Status and Anthropogenic stress of River Champavathi, Vizianagaram District (AP) India, Asian J. Exp. Bio. Sci. Vol. 4 (3). Pp 418-425.
9. **Jitesh V.K., Ananthan P.S. and Landage A.:**Fish diversity and productivity of Isapur Reservoir,Maharashtra State, IJBAR,04 (12) pp 865-868.
10. **Kadam M.N., P. K. Mudbe, H. K. Jadhav and S. B. Patil (2012):** fish diversity of Bori river Dist. Osmanabad (M.S.) India. JSI Vol. 2(2).
11. **Kharat S.S., Mandar Paingankar and neelesh Dahanukar(2012):** Freshwater fish fauna of Krishna river at Wai, nortern western Ghats, India, J. of Threatened Taxa, 4(6) pp 2644-2652.
12. **Mahor R.K. (2011):** A survey of fish and fisheries of the freshwater reservoir Tighra, Gwalior, Madhyaprades, International Referred Res. J. Vol. II Issue 25 pp 49-50.
13. **Misra K.S. (1962):** An aid to the classification of the commercial fishes of India and Pakistan.
14. **Nagma and M. Afzal Khan (2013):** Studies on freshwater fish fauna of District Bijnor in Western Utter Pradesh,India,International J. Life Sci. Biotechnology and Pharma research, Vol. 2 No.3., pp 410-417.
15. **Nath B. (2012):** A study on fish diversity, conservation status and Anthropogenic stress of Chandubai Tectonic Lake, Assam, India ISSN 2277-8330, J.Bio.Innov1(6). Pp 148-155.
16. **Patil R.G., Supugade V.B. and Patil S.S. (2011):** Ichthyofauna of Dhom Da: Dist.Satara (Maharashtra) JSI special issu Vol.(2), pp 133-134.
17. **Rankhambe S.V. (2011):** Ichthyofaunal diversity of Godavary river at Mudgal Tq. Pathri Dist. Parbhani, Recent Research in Sci. and Tech. 3 (12), pp 11-13.
18. **Sakhare V.B. (2001):** Ichthyofauna of Jawalgaon reservoir in Solapur district of Maharashtra, J.Aqua.Biol. Vol.16, Nos. 1 and 2, pp 31-33.
19. **Satish S. (2012):** Changing paradigms of river valley settlements Krishna river valley, Inter. J.of Social Science and Interdisciplinary Res. Vol.1 Issue 7, ISSN 2277 3630, pp 145-154.
20. **Solanki Pradeep, Singh Shiv, Sharma I.V. and Mathur R. (2011):** Fish Fauna of Sanjay Sagar reservoir of district Guna (MP), Biological forum- An International J.3(1) pp 44-45.
21. **Sreekantha and T.V. Ramchandra (2005):** fish diversity in Linganamakki Reservoir, Sharavathi river, Eco. Env. and Cons.11 (3-4) pp 337-348.
22. **Supugade V.B., Patil R.G., Yadav P.P. and Jadhav B.V. (2007):** Diversity of Ichthyofauna, Taxonomy and Fishery from Yewati reservoir, Satara (M.S.), Proceedings of National workshop on recent trends in Biotechnology, pp 100-103.
23. **Talwar,P.K., Jhingran A (1991) :** Inland Fishes of India and adjacent countries-Oxford –IBH Publishing, Co. Pvt. Ltd., N. Delhi Vol.1 and II, pp 115-116.
24. **Tawseef Yousuf Muzahib Ibrahim, Hameem Majid,Javid Ahmad and Vipin Vyas (2012):** Ichthyofaunal diversity of halali reservoir, Vidisha, Madhya Pradesh. International Journal of Scientific and

Research Publications, Vol. 2, Issue 12, pp 1-7.

25. **Thirumula, S., Kiran, B.R. and Kantaraj, G.S. (2011):** Fish diversity in relation to physicochemical characteristics of Bhadra reservoir of Karnataka, India, Advances in Applied Science Research, 2(5), pp 34-47.

26. **Trivedy R.K and Goel P.K. (1986):** Chemical and Biological Methods for water Pollution Studies, Karad, India.

27. **Vipin Vyas and Kripal Singh Vishwakarma (2013):** Study on Ichthyofaunal diversity of Jammer river: A tributary of Narmada river, International J. of Theoretical and Applied Science, 5 (2) pp 84-89.