

## **PRELIMINARY OBSERVATIONS ON THE POPULATION STRUCTURE OF *MASTACEMBELUS ARMATUS* (LACEPEDE) IN RIVER NAYAR, GARHWAL HIMALAY, UTTARAKHAND**

**MOHD RASHID AND A. K. DOBRIYAL**

Department of Zoology, HNB Garhwal University  
(A Central University), Pauri Campus, Garhwal, Uttarakhand- 246001

**Received: 11.12-14**

**Revised: 24.12.2014**

**Accepted: 28 .12. 2014**

### **ABSTRACT**

*Mastacembelus armatus* (Lacepede) is an eel like fish locally called Gair is inhabited in the river Nayar of Garhwal Himalaya. The paper deals with population structure analysis of the fish from river Nayar during January to December, 2014 in district Pauri Garhwal, Uttarakhand. Sex ratio from a sample size of 59 specimens was analysed month wise and also season wise to see whether the population structure is natural or not. The significance was tested by Chi-square test. It was observed that there was significant difference in sex ratio almost throughout the year ( $\chi^2= 4.898$ ; Table value-  $\chi^2_{05} = 0.46$ ) which is an important reason of its low population. Steps towards conservation of species are required, which we intend to do in near future.

**KEYWORDS:** *Mastacembelus armatus*, Population structure, River Nayar

### **REFERENCES**

- Badola, S.P. and Singh H.R. (1980). Food and feeding habits of fishes of the genera *Tor*, *Puntius* and *Barilius*. *Proc Indian. natn. Sci. Acad.* B 46(1): 58-62.
- Bahuguna, P. (2008). Fish biology of *Puntius conchonius* (Ham. Buch) From Garhwal, Central Himalaya. D. Phil. Thesis, HNB Garhwal University Srinagar Garhwal.
- Bahuguna, P.K., Joshi, H.K. and Dobriyal, A.K. (2007). Fecundity and sex ratio in *Puntius conchonius* (Pisces: Cyprinidae) from Garhwal Himalaya. *Environment Conservation J.* (1-2): 37-43.
- Bahuguna, P., Kumar, R. and Joshi, H.K. (2010). Studies on the reproduction capacity and Sex ratio in a hill-stream loach fish *Noemacheilus denisoni* Day from river Mandal of Garhwal Himalaya, Uttarakhand. *Uttar Pradesh J. Zool.* vol (30): (Accepted in Press)
- Day, F. (1889) . The fauna of British India including Ceylone and Burma. Dawson and Sons Ltd., London.
- Dobriyal, A.K. (2011). Conservation biology of cobitid fish *Lepidocephalus guntea* (Hamilton-Buchanan): Population structure. *J. Mountain Res.* 6: 29-34

- Dobriyal, A. K. and Singh, H. R. 1987: The reproductive biology of a hillstream minor carp *Barilius bendelisis* (Ham.) from Garhwal Himalaya, India. *Vest. cs. Spolec. Zool.* 51:1-10.
- Dobriyal, A. K. and Singh, H. R. 1989: Ecology of rhithrofauna in the torrential waters of Garhwal Himalaya : Fecundity and sex ratio of *Glyptothorax pectinopterus* (Pisces). *Vest. cs. Spolec. Zool.* 53 : 17 - 25.
- Dobriyal, A.K. and Singh, H.R. 1990. Ecological studies on the age and growth of *Barilius bendelisis* (Ham.) from India. *Arch. Hydrobiol.* 118 : 93 –103.
- Dobriyal, A. K. and Singh, H. R. 1993: Reproductive biology of a Hillstream catfish *Glyptothorax madraspatanum* (Day) from Garhwal Himalaya, India. *Aquaculture and Fisheries Management*: 24 : 699- 706.
- Dobriyal, A.K., Kumar, N., Bahuguna, A.K. and Singh, H.R (2000): Breeding ecology of some coldwater minor carps from Garhwal Himalayas. *Cold water aquaculture and fisheries*. (Eds H. R. Singh and W.S. Lakra), Narendra Publishing House, Delhi. 177-186.
- Dobriyal, A.K., Negi, K.S., Joshi, H.K. and Bisht, K.L. (2004). Breeding capacity of *Crossocheilus latius latius* (Pisces: Cyprinidae) in the river Mandakini of Garhwal, uttaranchal. *Flora and Fauna* Vol 10 : 151-153.
- Jameela Beevi, K.S. and Ramachandran, A. (2005). Sex ratio in *Puntius vittatus* Day in the fresh water bodies of Ernakulam District, Kerala. *Zoos Print Journal* 20(9): 1989-90.
- Kumar, K., Bisht, K.L., Dobriyal, A.K., Joshi, H.K., Bahuguna, P.K., Goswami, S., Balodi, V.P. and Thapliyal, A. (2006). Fecundity and sex ratio in a rare hill-stream fish *Botia dayi* Hora from Garhwal Himalaya, Uttranchal. *Uttar Pradesh J. Zool.* 26 (3): 271-276
- Nautiyal, P. (1982). Some aspects of bioecology of *Tor putitora* in relation to hydrobiology of some Garhwal hillstreams. D.Phil. Thesis. HNB Garhwal University, Srinagar Garhwal.
- Nikolsky, G.V. (1980). Theory of fish population dynamics. Bishen Singh and Mahendar Pal Singh, India and Ottokoeltz Science Publishers (West Germany), pp. 317
- Panwar, B.A. and Mani, U.H. (2006): Sex ratio of *Macrones bleekeri* (Blecker) from Sadatpur Lake, Ahmednager, District Maharashtra. *J. Aqua. Biol.* 21(2): 182-185 (2006).
- Ram Krishan, A. K. Dobriyal, K.L. Bisht, R. Kumar and P. Bahuguna. (2011). Population ecology of the Indian torrent catfish, *Amblyceps mangois* (Hamilton- Buchanan) from Garhwal, Uttarakhand, India. *Environmental Conservation Journal*. 11:
- Rautela, K.K. 1999. Ecological studies on the spawning biology of some coldwater fishes from the Khoh stream. D. Phil. Thesis, HNB Garhwal University, Srinagar Garhwal.
- Singh, H.R., Badola, S.P. and Dobriyal, A.K. (1987) : Geographical distributional list of ichthyofauna of the Garhwal Himalay with some new records. *J. Bombay nat. Hist Soc.* 84 : 126-132.
- Sobhana, B. and Nair, N.B. (1976) Observation on the maturation and spawning of *Puntius sarana subnasutus* (Valenciennes). *Indian J. Fish.* 21(2): 357-359.
- Talwar, P.K. and Jhingran, A. G. (1991): Inland fishes of India and adjacent countries. Oxford & IBH Publ. Co. Pvt. Ltd., New Delhi. Pp. 250-295.
- Welch, P.S. (1948). *Limnological Methods*. Mc Graw- Hill Book Co. NY, Toronto, London.