

Catch Composition of Fishes from Dal Lake, Kashmir

Shaheena Shafi, F. A. Bhat, M. Parveen*, and A. R. Yousuf

Centre of Research for Development, *P. G. Department of Zoology, University of Kashmir,
Srinagar – 190 006

ABSTRACT

The present paper reports on the catch composition of fishes of Dal Lake. Eight species contributed to the catch out of which *Cyprinus carpio* alone formed about 70%. Schizothoracine group formed about 14%. The species diversity in the catch showed significant variations in time and space. Fishing effort varied in different basins of the lake.

Keywords: Catch composition, fishes, Dal lake.

INTRODUCTION

Dal Lake (34.07°N latitude and 74.54°E longitude) is a multi-basined water body situated in northeast of Srinagar. It is a famous tourist spot and has great ecological and socio-economic significance. It was a valuable fishery resource of the region but due to anthropogenic pressures such as encroachment over open water area and entry of sewage and disturbances in the catchment area have affected its water quality and consequently its fishery potential adversely. Prior to the introduction of common carp in to the valley of Kashmir during mid – twentieth century schizothoracine group formed the main component of the commercial catches from the lake. Soon after its introduction in the region the carp established itself well in the new habitat and started dominating the commercial catches (Das & Subla, 1964). However, with the increase in the human interference in the aquatic ecosystems of the Valley not only the commercial catches have shown a gradual decline over the years but also the contribution of schizothoracines in the catches has gone down. Only a single report is available on the fishery of the Dal (CIFRI, 1977). It was therefore decided to have a detailed study on the fish and fisheries of the lake and in this context the present article discusses the fish catch composition of the lake.

MATERIAL AND METHODS

For studying the fish catch composition, fishing surveys were made in the four basins of the lake, viz., Hazratbal, Nigeen, Nishat and Gagribal, during 2004. The fishing was done by cast net with the help of local fishermen. The fishes caught were identified and measured for various morphometric parameters and brought to the laboratory for further investigations. Identification of

the fishes was done with the help of standard taxonomic works (Day, 1878; Talwar and Jhingran, 1991; Hora, 1936; Mukerji, 1936; Kullander *et al*, 1999).

RESULTS AND DISCUSSION

During the present study eight fish species were found in the catches made in the four basins. These included *Cyprinus carpio communis* (scale carp), *C. c. specularis* (mirror carp), *Carassius carassius* (gang gad), *Crossocheilus diplochilus* (Tetthur), *Schizothorax niger* (Ale gad), *S. esocinus* (Chhurroo), *S. curviformis* (sattar gad) and *Puntius conchoniis* (bloz). During 1969-71 the common carp was reported to constitute 63.7 to 66.7% in the total fish landings from the Dal (Anonymous 1980).

A perusal of the present data revealed that *C. carpio* formed the most dominant fish in the lake both by number and weight, contributing about 69.13% of the total catch by weight (Table 1). Of two varieties of this fish, which occur in the lake, *C. c. communis* contributed 59.2%, while the other (*C. c. specularis*) formed 9.11% to the total catch by weight. Sunder *et al* (1978) also found *C. carpio* to be the dominant contributor to the total catch from this water body. The other cyprinine species found in the catches during the present study included *C. carassius*, which contributed about 12.41% of the total catch, and *C. diplochilus*, which formed about 4.35% of the total catch. The trash fish *P. conchoniis*, although found in good numbers throughout the lake contributed only 0.52% by weight due to its small size. The three schizothoracine species found in the catches contributed together 14.6%, the main contributor being *S. niger* (10.37%).

The catch per unit effort has been taken as an index of the abundance of fish stocks (Russel, 1942). This index can be a direct measure of availability provided the fishing intensity does not vary greatly. Sunder *et al* (1978) have provided some data on the fishing effort in the Dal Lake. They reported the mean catch per man-hour as 369g. During the present study the fishing effort also varied from basin to basin (Table 2). The highest catch of 1015gm/man-hour was recorded in Nishat basin in October, while the lowest catch of 122gm per man-hour was recorded in Hazratbal basin in December. The mean values of the fishing effort varied from 198.33g/man-hour in Hazratbal basin to 604 g/man-hour in Nishat basin, with the overall mean catch / man - hour being 382g. CIFRI (1977) reported the fish catch per man hour in the range of 156-978g at Saidakadal and 117-797g at Hazratbal. The present study showed the catch per man hour at Hazratbal ranging from 122 to 335g. Thus, it can be inferred that catch per man hour has declined in the Hazratbal basin. However, on the whole there has not been much change in the fishing effort in the lake during the past three decades, although the relative abundance of the different fish species has changed.

Table 1: Contribution of different fish species in the total fish catch from the Dal Lake

S. No.	Name of fish	Total weight	% biomass	Total No.	% No.
1	<i>C. c. communis</i>	2412	59.02	18	24.66
2	<i>C. c. specularis</i>	372	9.11	10	13.69
3	<i>S. niger</i>	424	10.37	6	8.22
4	<i>C. carassius</i>	507	12.41	15	20.55
5	<i>C. diplochilus</i>	178	4.35	18	24.66
6	<i>S. esocinus</i>	91	2.23	1	1.37
7	<i>S. curvifrons</i>	82	2.01	1	1.37
8	<i>P. conchonius</i>	21	0.52	4	5.48
	Total	4087		73	

Table 2. Fishing effort (g / man-hour) in the different basins of Dal Lake, Kashmir

Month	Fishing effort /man-hour				Mean
	Hazaratbal	Nigeen	Nishat	Gagribal	
August	335	416	277	186	303.50
October	138	500	1015	106	439.75
December	122	624	520	341	401.75

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