

NOTE

Analysis of Fish Catch Statistics of Damal Beel of Central Brahmaputra Valley, Assam

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Abstract

Annual fish landings of Damal beel of central Brahmaputra Valley, Assam was recorded during 2004 to 2006. A good amount of fish may be expected after flood water enters the beel. The bulk of catch concentrates during post-monsoon months which may be attributed to a community fishing method called the jeng fishing. Fish landings in the beel showed annual fluctuations with a maximum catch of 3.82 tonnes during the period of assessment.

Key words : Fish catch statistics, Damal beel.

Assam is bestowed with enormous water resources covering as much as 3.60 lakh hectares (Table 1) of water spread area constituting about one twelfth of country's inland water resources. Covering an area of one lakh hectare, the beels constitute approximately 93% of fish prone water areas excluding lotic habitats (1). Out of 1,392 enlisted beels in the state, the large beels in the range of 200 hectares above numbering 16 beels cover an area of 7,259 hectares approximately. These water bodies are highly productive and conversion of 0.328 to 1.21% of primary productivity as fish has been recorded. If this vast and varied water resource is managed and exploited properly, it can produce fish to a maximum extent. It has been stated that these water bodies are capable of producing seventy thousand tonnes of fish annually (2). The annual average yield of beel is quite high and reaches to the tune of 160 kg/ha (3) compared to 5—75 kg/ha in open water tanks and reservoirs (4—6). The main sources of water input into beel ecosystem are overspill from water channels and surface flow. Water gain or exchange of water in beels of Assam usually takes place during south-west monsoon when the flood plains are flooded. In some of the beels fish from catchment areas enter annually thereby increasing in situ fish production. Fishery resources in beels are exposed to regular capture and stock is supplemented through fish recruits from year to year. Of late culture based fisheries have adopted in some closed

beels of the state. Choudhary (7) has stated in detail on abundance of fish species and their seasonal fluctuation in Dhir beel covering an area of 668 hectares. Fish catch of Thekera beel of Morigaon district has also been assessed (8). In the present study it was envisaged to assess fish catch statistics of a beel of central Brahmaputra valley.

Damal beel in Morigaon district of central Brahmaputra Valley was selected for the study. Covering an area of 21 hectares, the beel does not maintain a direct connection with the nearest river Kalong. However, during rainy season water from catchment area enters the beel through a channel. Of late this beel has been used for stocking major and minor carps. Month-wise fish catch for a period of three years from 2004 to 2006 been recorded and their contribution to total annual landings was computed.

Table 1. Water resources in Assam. Source : Directorate of Fisheries, Assam, India.

	Category of water resources	Water area (ha)
1	Riverine fisheries	20, 500
2	Beel fisheries/oxbow lakes	1,00,815
3	Swamps/low lying area	26,421
4	Reservoir fisheries	1713
5	Ponds	25,837
	Total	3,59,786 hectares

Table 2. Monthly distribution of catch (kg) in Damal beel of central Brahmaputra Valley.

Month	2004		2005		2006		Total (months)	
	Total	%	Total	%	Total	%	Total	%
Jan	675	17.66	442	18.70	390	14.02	1507	16.80
Feb	620	16.22	368	15.57	465	16.72	1453	16.20
Mar	345	9.02	245	10.36	200	7.19	790	8.81
Apr	288	7.53	198	8.37	196	7.04	682	7.60
May	—	—	—	—	—	—	—	—
Jun	—	—	—	—	—	—	—	—
Jul	—	—	—	—	—	—	—	—
Aug	210	5.49	100	4.23	105	3.77	415	4.62
Sep	265	6.93	125	5.28	250	8.98	640	7.13
Oct	414	10.83	235	9.94	320	11.50	969	10.80
Nov	480	12.55	330	13.96	386	13.87	1196	13.33
Dec	525	13.73	320	13.54	469	16.86	1314	14.65
Total	3822		2363		2781		8966	

Recorded monthly fish catch data of Damal beel and their percentage contribution to total landings from January 2004 to December 2006 are presented in Table 2. Fluctuation of catch has been recorded during the period of observation. The highest catch recorded was 3.82 tonnes in 2004 followed by 2.36 and 2.78 tonnes during 2005 and 2006 respectively. The highest catch during 2004 may be attributed to high flood for which autostocking took place. Along with flood water, a good amount of fish entered the beel reflecting higher catch in that year. However, during 2005 and 2006 low catch was recorded. The reason may be due to less water entrance from catchment areas for which more fish could not enter into the main beel. Sharma et al. (9) reported seasonal fluctuation of fish catch in Thekera beel of Morigaon district, Assam.

The exiting fishery rule of Assam prohibits fishing from May till July to facilitate breeding; as such no catch was recorded during these months. From August, the landings gradually increased reaching its maximum in January/February and later it shows a decline. Similar trend was recorded in all the years of study. During the year the bulk of catch was concentrated from November to February. Nearly 61% of total catch has been recorded during these months. High catch from November to February is due to a traditional fishing method called jeng or katol fishing—a major fishing operation practiced in most of the beels of Assam during post monsoon months (9).

This method being seasonal, fishermen use a variety of traditional gears like ber jal, ghat jal, fansi jal and traps that contribute a sizable amount of fish catch. Moreover, effective fishing could be done after recession of water level reflecting higher catch in post-monsoon months.

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