FISHING EXPERIMENTS WITH FRAME NETS IN HIRAKUD RESERVOIR, ORISSA

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Experiments conducted with frame nets of sizes 1.0 m, 1.25 m 1.5 m, 1.75 m and 2.0 m in Hirakud Reservoir showed that the net with 1.75 m frame gave the highest catches.

INTRODUCTION

Sulochanan *et al* (1968) while studying the relative efficiency of simple, vertical line and framed gill nets, have recorded that framed nets are more effective than the other two for the endemic population of Hirakud Reservoir. Size of frame used in these experimental nets were 1 metre square. It was also mentioned that trials with nets of 2 square metre frames gave encouraging results. Tyruin, as quoted by Andreev (1962) has recommended a frame size of 70 to 80 cm for bream, 80 cm for white fish and 90 cm for perch. The size of frame has apparently an effect on the resultant catches. Experiments were therefore conducted with nets having different frame sizes and the results are incorporated in this paper.

MATERIAL AND METHODS

Two identical units, each consisting of five nets A, B, C, D and E formed the the experimental gear. The nets differed from each other in the size of the frame, being 1 m, 1.25 m, 1.75 m and 2 m respectively in nets A, B, C, D and E. The general dimensions of the nets were kept constant as far as posible as shown in Table I.

TABLE I GENERAL DIMENSION OF THE EXPERIMENTAL NETS

Net	Length of head rope (m)	Fishing height (m)	Size of frame (m)
A	50.0	6.00	1.00
B	50.0	5.00	1.25
C	49.5	6.00	1.50
D	49.0	5.25	1.75
E	50.0	6.00	2.00

The experiments were conducted in river Mahanadi course of Hirakud Reservoir. During operation the nets were arranged in such a way as to give equal chance to all the nets. The fish captured were recorded separately for each net.

RESULTS

The catch per unit area (Kg-1000 sq m) of each net for each month and the average catch of nets are given in Table II. The analysis of variance of the total catch are presented in Table III.

TABLE II CATCH PER UNIT AREA (KG/1000 SQ M) OF THE EXPERIMENTAL NETS

Month	Net A	Net B	Net C	Net D	Net E	Average
July 1967	7.406	8.824	8.791	12.905	6.000	8.785
September ,,	1.555	1.333	0.000	11.985	0.000	2.974
October ,,	3.795	2.600	5.430	1.348	3.096	3.254
November ,,	3.230	3.655	3.000	5.736	5.700	4.264
December ,,	9.351	4.488	5.000	4.967	6.111	5.983
January 1968	0.000	3.400	2.450	11.939	8.524	5.262
February ,,	1.194	4.738	6.805	6.437	3.046	4.444
March ,,	0.000	3.150	0.958	4.324	0.000	1.686
April ,,	0.000	5.520	4.821	0.400	0.000	2.148
May ,,	6.486	4.000	3.054	7.674	3.646	4.972
June ,,	9.208	12.016	13.102	14.204	13.570	12.420
July ,,	11.500	7.900	3.340	8.015	5.586	7.268
November ,,	1.146	4.733	5.622	4.745	4.769	4.203
December ,,	4.600	3.257	3.000	10.828	0.143	4.365
January 1969	0.416	4.750	3.291	4.130	4.208	3.359
February ,,	2.333	0.000	2.500	3.304	1.166	1.860
March ,,	1.032	0.842	9.032	5.337	4.677	4.154
April ,,	5.135	2.535	3.654	9.773	6.840	5.587
May ,,	5.107	3.648	3.960	12.037	4.892	5.929
June ,,	10.933	18.770	11.160	25.091	9.746	15.140
July ,,	12.000	19.494	20.606	20.238	14.612	17.390
Average	4.591	5.697	5.694	8.829	5.063	5.974

TABLE III ANALYSIS OF VARIANCE

SOURCE	SS	DF	MS	F
Total	336.4630	1034		
Between days	128.4820	206	0.6237	2.53
Between nets	0.5395	4	1.1349	4.59
Error	203.4415	824	0.2469	

Discussion

From the catch per unit area (Table II) it is evident that the output of net D is more compared to other nets. The significance of variation was studied statistically by applying the analysis of variance technique. The catch per unit effort was converted to their corresponding logarithmic values (Table III).

From the analysis of variance (Table III) it follows that both the variation between days and between nets were significant ($P < 0.01$). It was found that the average logarithmic catch of nets A, E, C & B are less than the critical difference calculated indicating that they are not significantly different in their output, but the net D is catching significantly larger quantity of fish compared to nets A, E, C and B.

Summary

Frame nets with 1.75 m frame gave the highest output for the endemic fishes of Hirakud Reservoir.

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