Report 284

May 13, 1935

EFFECTIVENESS OF VARIOUS KINDS OF BAIT IN CATCHING FISH ON FIFE LAKE,

SUMMER OF 1934

The report (No. 274) on creel census on Fife Lake indicated, among other things, the effectiveness of different methods of fishing, but it did not show the effectiveness of the various kinds of bait. A relative study has been made of the baits used by the fishermen; the results of that study are here presented.

In this discussion only those fishermen were considered who had limited their use of bait to a single kind, i.e. who used only worms, only minnows, only plugs, or one of the other kinds of bait.

Table I shows, for each kind of bait used: (1) the number of fishermen using the bait, (2) the percentage of fishermen taking no fish, (3) the hours per fishing day, (4) the total number of fish taken, (5) the number of fish per hour and, (6) the average size of all fish taken.

Table I indicates that:

1. Most of the bait used was natural bait.

2. In almost every respect minnows and worms were similarly effective except that worms took fish of a slightly smaller size.

3. Artificial flies were used to a very limited extent but when used were quite effective, probably because they were used by experts.

4. Plugs on the average caught the largest fish but also the fewest per hour.

5. Roughly, the number of fish taken per hour by different types of baits is inversely proportional to the average size of fish taken. Also, the larger the average size of the fish, the less was the chance of getting any fish at all.

These statements apply also to the method of fishing as indicated by the data

in Report No. 274. Such a relationship is to be expected sinde a method or

bait which would take fish of a large size at a rapid rate would soon be used

almost entirely.

Table I. General data on effectiveness of various kinds of
bait used, Fife Lake, summer of 1934.

Bait used	No. of fish- ermen	% getting no fish	Hrs. per fishing day	No. of fish taken	Fish per hr.	Ave. size of all fish(inches)
ARTIFICIAL:						
Spinner	102	33	2.3	197	.9	12.5
Plug	75	39	2.4	86	.5	14.5
Artificial fly	10	50	2.1	23	2.3	8.2
NATURAL:						
Minnows	857	17	2.7	4336	1.9	8.4
Worms	832	17	2.5	3936	1.9	7.8
Grasshoppers	27	33	3.1	140	1.7	9.3

Table II shows for each kind of bait, the number, average size, and catch

per hour of each species of fish taken on that bait.

The graphs included in this report show, for eight species, the relative

effectiveness of each of the four chief baits used. The numbers at the top of

each column indicate the average size of fish taken on that particular kind of

bait.

Table II, and the graphs, indicate:

1. That for most species plugs took the largest fish.

2. That large-mouth bass and small-mouth bass responded differently to the

baits; the small-mouth took natural bait much more readily than did the large-mouth.

3. That artificial bait was best for three of the four species which are

largest in size (large-mouth, walleyes and northern pike) and approximately equal

to natural bait in catching small-mouth bass.

4. That worms, of the four kinds of bait most used, were most effective

Table II. Analysis of catch (by species) on various kinds of bait. Fife
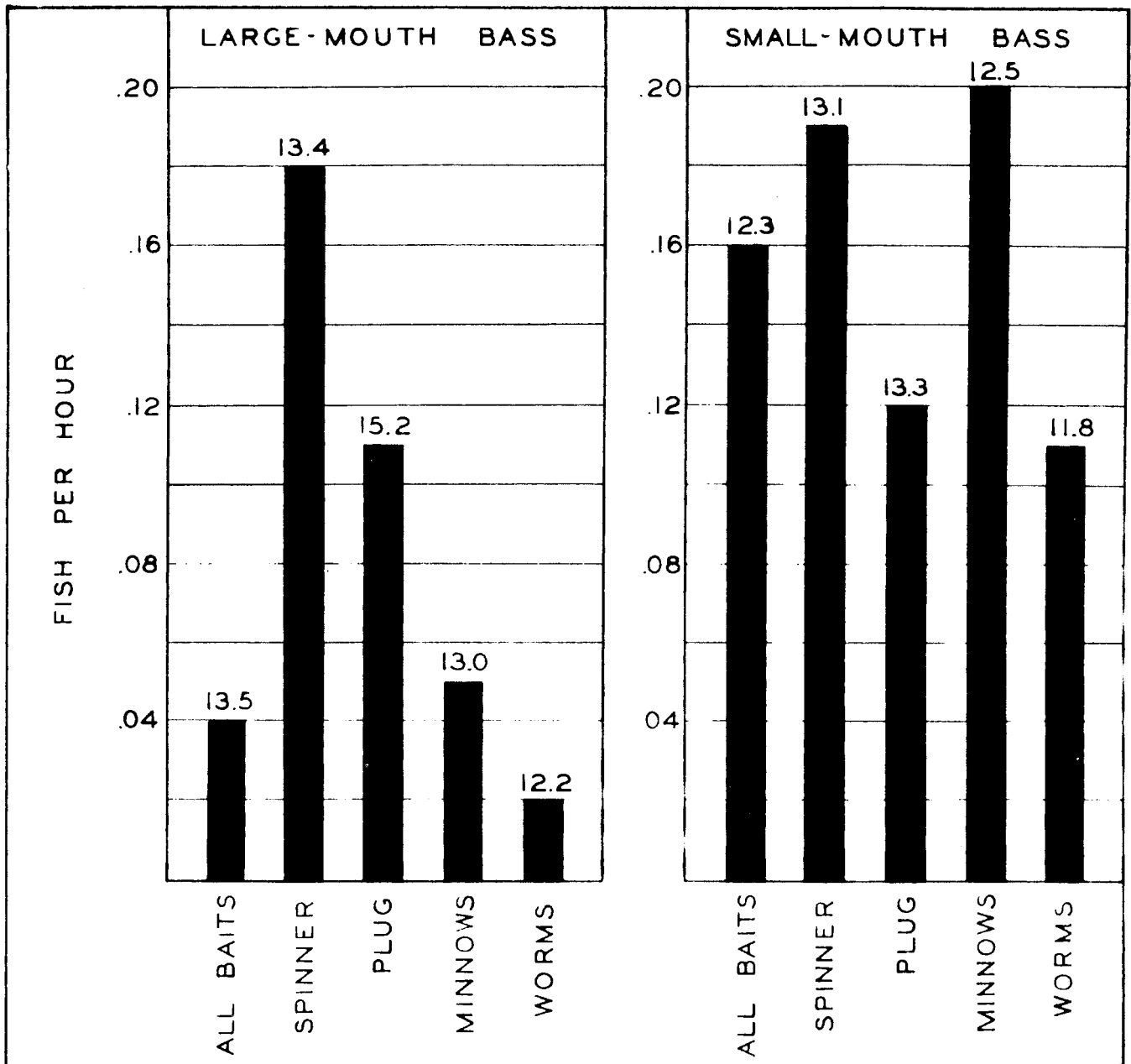Lake, summer of 1934.

	All species	Largemouth bass	Smallmouth bass	Rockbass	Bluegills	Sunfish	Perch	Walleyes	Northern pike	Bullheads
ARTIFICIAL BAIT										
Spinner:										
Number caught	197	41	44	35	20	10	12	27	8	-
Average size	12.5	13.4	13.1	9.0	7.6	7.7	9.8	19.1	20.1	-
Catch per hr.	.9	.18	.19	.15	.09	.04	.05	.12	.03	-
Plug:										
Number caught	86	20	22	6	2	-	14	18	4	-
Average size	14.5	15.2	13.3	8.3	10.0	-	7.8	21.7	20.0	-
Catch per hr.	.5	.11	.12	.03	.01	-	.08	.10	.02	-
Artificial Fly:										
Number caught	23	-	2	2	12	1	4	-	-	-
Average size	8.2	-	11.0	8.0	8.6	7.0	7.5	-	-	-
Catch per hr.	2.3	-	.19	.10	.57	.05	.19	-	-	-
NATURAL BAIT										
Minnows:										
Number caught	4336	110	459	724	603	336	1943	18	22	101
Average size	8.4	13.0	12.5	7.9	7.4	6.8	7.6	19.7	23.0	9.7
Catch per hr.	1.9	.05	.20	.31	.26	.14	.84	.01	.01	.04
Worms:										
Number caught	3936	47	234	901	926	572	1106	5	6	137
Average size	7.8	12.2	11.8	8.0	7.1	6.9	.54	trace	trace	.07
Catch per hr.	1.9	.02	.11	.44	.45	.28	7.2	20.8	18.8	11.4
Grasshoppers:										
Number caught	140	11	14	48	53	-	14	-	-	-
Average size	9.3	16.9	11.6	8.8	7.7	-	8.4	-	-	-
Catch per hr.	1.7	.13	.17	.58	.64	-	.17	-	-	-

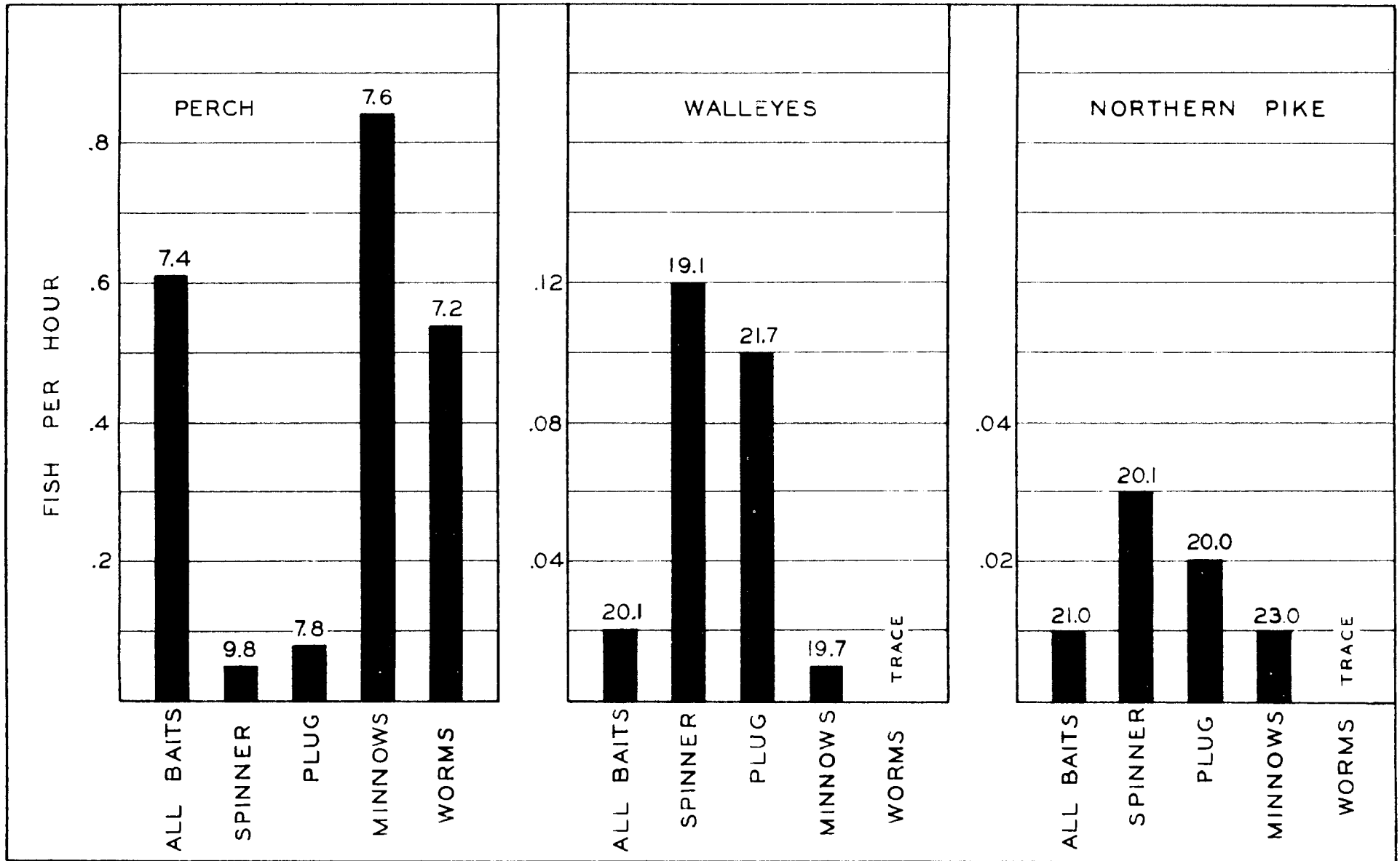in taking bluegills, sunfish and rock bass.

5. That the most perch, per hour, were taken on minnows.
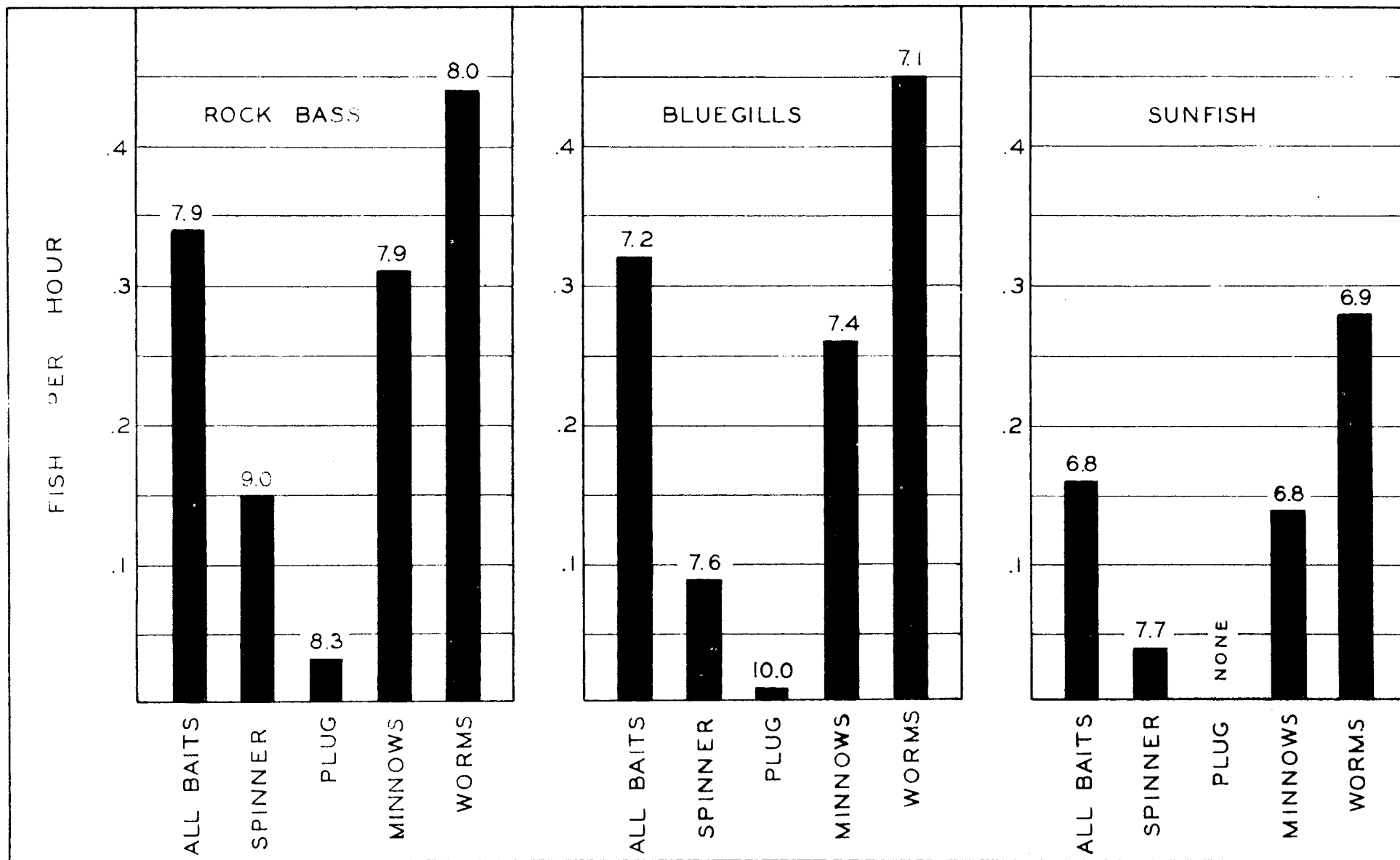
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CATCH, IN TERMS OF FISH PER HOUR, OF LARGE-MOUTH BASS AND SMALL-MOUTH BASS ON ALL BAITS AND ON EACH OF FOUR DIFFERENT KINDS OF BAIT. SUMMER OF 1934, FIFE LAKE. FIGURES AT THE TOP OF EACH COLUMN SHOW THE AVERAGE SIZE, IN INCHES, OF FISH CAUGHT.

CATCH, IN TERMS OF FISH PER HOUR, OF PERCH, WALLEYES, AND NORTHERN PIKE ON ALL BAITS AND ON EACH OF FOUR DIFFERENT KINDS OF BAIT. FIFE LAKE, SUMMER OF 1934. FIGURES AT THE TOP OF EACH COLUMN SHOW THE AVERAGE SIZE, IN INCHES, OF FISH CAUGHT.

CATCH, IN TERMS OF FISH PER HOUR, OF ROCK BASS, BLUEGILLS, AND SUNFISH ON ALL BAITS AND ON EACH OF FOUR DIFFERENT KINDS OF BAIT. FIFE LAKE, SUMMER OF 1934. FIGURES AT THE TOP OF EACH COLUMN SHOW THE AVERAGE SIZE IN INCHES OF FISH CAUGHT.