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INSTITUTE FOR FISHERIES RESEARCH  
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COOPERATING WITH THE  
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A STUDY OF THE LENGTHS AND WEIGHTS OF SOME SAMPLES OF FISH  
FROM CERTAIN REARING PONDS AND HATCHERIES

by

Walter R. Crowe

Early in the year of 1941, District Supervisors of Fisheries Operations were instructed by Mr. M. J. De Boer to preserve samples of fish raised at their various stations for inspection during the Fisheries Conference to be held in the winter of 1942. A small number of these samples were retained at the Higgins Lake Training School for exhibition purposes; the remainder were turned over to the Institute for Fisheries Research. Although the study of these samples reported here is not complete since it does not include those left at the School, it was considered worthwhile to make a comparison of the fish which were received. It should be pointed out, however, that the sizes of fish at the various stations may not be directly comparable since all stations were not stocked or sampled on the same dates and also the source of the fish varies. Nevertheless, certain interesting differences in the relative adaptability of various stations for certain species are apparent and may be worthy of consideration in future fish cultural activities.

Sixty-four samples of the fish were delivered to the Institute for examination and for disposition in the Museum collection or for class use at the University or Michigan State College. The samples consisted of 3 samples of smallmouth bass, 7 of largemouth bass, 10 of bluegills, 7 of rainbow trout, 11 of brown trout, and 26 samples of brook trout. Fish from 26 hatcheries and rearing ponds are represented in the collection.

The fish in the samples were counted and weighed. The minimum, maximum, and average lengths in millimeters and inches were recorded, along with the average weight in grams and ounces. Scales from the largest and smallest fish in each sample were examined for age and growth rate. Information contained on the labels with the samples was recorded, and when certain information was lacking this was also recorded (followed by a question mark) so far as it was possible to guess. These data are summarized in Table 1.

The only mistake of any importance as revealed by a careful examination of the samples was noted in the sample of "bluegills" from the Waterloo

Rearing Ponds. In this sample, 16 specimens actually consisted of 15 pumpkinseed sunfish, and one small bluegill. One sample of brown trout from Oden was incorrectly labeled "rainbow trout".

Assuming that the samples are representative of the fish raised at the various stations, certain points of interest may be considered. The three samples of smallmouth are not large enough to be at all representative. In largemouth, the best growth was obtained in fish from Hillsdale Rearing Ponds, Wolf Lake Hatchery, and Benton Harbor Ponds; the poorest was at Ortonville and Drayton Plains. In bluegills the best growth was at Wolf Lake, West Branch, and Three Rivers; the poorest was at Dowagiac, Union City, and Hillsdale. In rainbow trout the best growth was at Wolf Lake, Ontonagon, and Otter River. At both Ontonagon and Otter River the rainbows which showed excellent growth at 8 months were from Missouri stock. The poorest growth was at the Sturgeon Rearing Ponds, and Otter River, (the latter in Harrietta rainbows). In brown trout the best growth was at the Sturgeon Rearing Ponds and Tobacco River. The poorest was at Cooks Run and Harrisville. In brook trout the best growth was at the Tobacco River Station (Cresco, Pennsylvania stock), White River Station (Wolf Lake stock), and Otter River, (Paradise stock). The poorest growth was at Cooks Run (Colorado stock) and Oden (Paradise stock).

Four-months-old largemouth raised at various stations ranged in average size from 2.3 to 3.8 inches; bluegills from 3 to  $4\frac{1}{2}$  months old ranged in average size from 1.1 to 3.7 inches; 6-to 8-month rainbows ranged in average size from 3.9 to 6.1 inches; 7- to 9-month brown trout ranged in average size from 3.1 to 4.5 inches; 7- to 10-month brook trout ranged in average size from 2.6 to 5.7 inches.

INSTITUTE FOR FISHERIES RESEARCH

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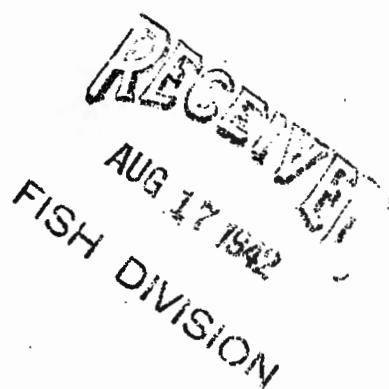


Table 1

Analysis of 64 samples of fish from 25 hatcheries.  
Question marks follow information not contained  
on label with sample.

Species	Source	Hatchery	Number specimens	Age (young)	Minimum total length		Maximum total length		Average total length		Average weight (grams)	Planting weight (milligrams)	Hatched	Planted	
					(mm.)	(inches)	(mm.)	(inches)	(mm.)	(inches)					
LIP	Pond 8	Benton Harbor	6	3.5	77	3.0	111	1.4	98	3.5	9.5	0.3	1000	May 1st	9-15-11
LIP	Pond 7	Brayton Plains	12	4.0	55	2.2	90	3.5	64	2.5	4.1	0.1	600/1000	May 1st	9-2-11
LIP	Pond 1	Brayton Plains	13	4.0	49	1.9	93	3.7	58	2.3	3.1	0.1	600/1000	June 1st	9-25-11
LIP	...	Fontenay	10	4.0	44	2.1	141	5.6	71	2.8	1.3	0.2	8 1/2/1000	June 1st	9-10-11
LIP	...	Orionville	10	4.0	49	1.9	71	2.3	59	2.3	2.6	0.1	1000	May 1st	9-10-11
LIP	...	Wolf Lake	7	4.0	21	3.6	103	1.1	96	3.6	12.6	0.4	1000	May 1st	10-3-11
LIP	Pond 4	Hilldale	12	5.0*	80	3.1	121	1.9	97	3.0	13.0	0.5	1200/1000	May 1st	10-3-11
CMB	Pond 5	Brayton Plains	15	3.5	58	2.3	116	1.5	72	2.8	5.0	0.2	900/1000	June 1st	9-4-11
SIT	...	Burrsville	10	2.5?	52	2.1	122	1.8	83	3.3	10.0	0.4	1000	June 1st	9-4-11
SIT	Ingraham Pond	Cowfoot Park	6	5.0	101	4.1	131	5.2	122	4.9	28.0	1.0	350/1000	June 1st	10-28-11
Bluegill	...	West Branch	20	3.0	46	1.8	83	3.3	71	2.8	6.4	0.2	...	July 1st	10-15-11
Bluegill	...	Bowditch	39	3.5	21	0.8	61	1.6	23	1.1	0.3	0.01	...	...	...
Bluegill	...	Three Rivers	13	3.5	53	2.1	61	2.1	55	2.2	2.6	0.1	1000	...	...
Bluegill	Pond 2	Brayton Plains	15	4.0	27	1.5	53	2.1	47	1.9	1.3	0.1	1000	...	...
Bluegill	...	Cullen City	19	4.0	26	1.0	51	2.0	34	1.3	0.6	0.01	200/1000	May 1st	9-19-11
Bluegill	...	Wolf Lake	10	4.0	47	3.1	101	4.0	93	3.7	11.7	0.5	1000	...	...
Bluegill	Pond 2, 3, 5, 6	Waterloo	15	4.0	33	1.3	90	2.0	43	1.7	1.6	0.1	200/1000	June 1st	10-2-11
Bluegill	Pond 2, 3, 5, 6	Hilldale	59	4.0	21	0.9	61	2.1	39	1.5	1.0	0.01	1000/1000	Aug. 1st	11-10-11
Bluegill	...	Benton	11	4.5	29	1.1	56	2.2	39	1.5	1.0	0.01	200/1000	June 1st	10-7-11
Bluegill	Pond 1	Adrian	19	4.5	29	1.1	57	2.3	42	1.7	1.0	0.01	200/1000	June 1st	10-10-11
Rainbow	Marquette	Otter River	17	6.0	39	3.5	135	5.3	111	4.4	13.0	0.6	300/1000	1-1-11	9- - -11
Rainbow	...	Marquette	12	7.0*	22	3.6	107	4.2	100	3.9	13.0	0.5	300/1000	Feb. 1st	9- - -11
Rainbow	Wolf Lake	Baldwin	12	7.0	106	4.2	111	5.6	123	4.8	21.0	0.7	1000	Feb. 1st	9-5-11
Rainbow	Missouri	Otter River	6	8.0*	137	5.4	135	6.1	144	5.7	47.0	1.7	600/1000	Feb. 1st	9- - -11
Rainbow	...	Otter River	7	8.0*	137	5.4	165	6.5	154	6.1	52.0	1.8	500/1000	Feb. 1st	9- - -11
Rainbow	...	Sturgeon 10	10	8.0	65	2.6	150	5.9	107	4.2	18.0	0.6	2200/1000	March 1st	10-25-11
Rainbow	...	Sturgeon 9	8	8.0	65	2.6	151	5.9	105	4.1	17.0	0.6	2200/1000	March 1st	10-25-11
Brown	Paris	Baldwin	11	7.0	93	3.7	119	4.6	105	4.1	13.0	0.5	...	Feb. 1st	9-5-11
Brown	Paris	Tobacco R.	12	7.0	99	3.9	101	4.0	103	4.3	15.0	0.5	...	Feb. 1st	9-5-11
Brown	...	Farrisville	11	7.0*	73	2.9	101	4.0	80	3.1	7.0	0.2	...	Feb. 1st	9-5-11
Brown	Paris	Cooks Run	31	8.0*	55	2.2	118	4.6	77	3.9	6.0	0.2	1000/1000	1-20-11	9- - -11
Brown	Paris	Catonsburg	5	8.0*	76	3.0	121	5.2	106	4.0	16.0	0.5	200/1000	1-20-11	9- - -11
Brown	...	Sturgeon 5	12	8.0	76	3.1	121	5.2	102	4.0	13.0	0.5	200/1000	March 1st	10-25-11
Brown	...	Sturgeon 3	9	8.0	81	3.2	117	5.8	103	4.1	16.0	0.5	200/1000	March 1st	9-30-11
Brown	...	Sturgeon 11	7	8.0	65	2.6	114	5.7	107	4.2	17.0	0.6	200/1000	March 1st	10-10-11
Brown	...	Sturgeon 11	7	8.0	76	2.9	110	5.5	111	4.5	18.0	0.6	200/1000	March 1st	10-25-11
Brown	Display Pond	Brayton Plains 3	11	9.0	91	3.6	103	4.1	103	4.1	14.0	0.5	200/1000	Feb. 1st	11-10-11
Brown	Paris	Baldwin	6	10.0	172	6.8	195	7.1	103	7.1	71.0	2.6	...	March 1st	9-5-11
Brook	Natives	Cooks Run 2	12	8.0*	46	1.8	136	5.1	66	2.6	5.0	0.2	1500/1000	1-21-11	9- - -11
Brook	Natives	Olen A3	26	8.0*	55	2.2	113	4.4	87	3.1	3.0	0.2	1700/1000	Jan. 1st	9-16-11
Brook	Golf Lake	Catonsburg 1	15	8.0*	65	2.6	132	5.2	93	3.7	9.0	0.3	200/1000	Jan. 1st	9- - -11
Brook	Colorado	Cooks Run 3	24	9.0*	55	2.3	110	5.7	95	3.7	11.0	0.4	200/1000	12-28-10	9- - -11
Brook	Paradise	Olen A2	9	8.0*	80	3.1	108	4.3	27	3.0	12.0	0.4	2300/1000	Feb. 1st	10-13-11
Brook	Paradise	Olen A1	8	8.0*	81	3.2	126	5.0	102	4.0	11.0	0.5	200/1000	Feb. 1st	10-13-11
Brook	Paradise	Olen B1	10	8.0*	76	3.0	121	4.8	103	4.1	11.0	0.5	200/1000	Feb. 1st	10-13-11
Brook	Paradise	Harrisville	6	8.0*	97	3.8	129	5.1	109	4.3	17.0	0.6	300/1000	Feb. 1st	10-23-11
Brook	...	Olen A5	13	7.0	94	3.7	123	4.3	110	4.3	15.0	0.5	...	Feb. 1st	9-23-11
Brook	...	Harrisville	7	8.0*	104	4.1	123	4.8	116	4.6	21.0	0.7	1000/1000	Feb. 1st	10-13-11
Brook	...	Harrisville	2	8.0*	111	4.1	127	5.0	117	4.6	20.0	0.7	1000/1000	Jan. 1st	10-13-11
Brook	...	Sturgeon 12	7	8.0*	63	3.8	111	4.1	118	4.5	21.0	0.7	1000/1000	Feb. 1st	10-13-11
Brook	Paradise	Cooks Run 1	6	8.0*	92	3.7	127	4.8	113	4.5	22.0	0.7	200/1000	Jan. 1st	9- - -11
Brook	Paradise	Olen B2	6	8.0*	91	3.6	137	4.3	121	4.0	21.0	0.7	200/1000	Jan. 1st	9- - -11
Brook	Paradise	Olen A1	12	8.0*	91	3.6	152	5.0	121	4.0	21.0	0.7	1000/1000	Jan. 1st	9- - -11
Brook	...	Sturgeon 1	6	8.0*	93	3.7	118	4.8	115	4.5	26.0	0.8	16 1/2/1000	Feb. 1st	10-14-11
Brook	Cape Cod	Parquette	5	9.0	118	4.6	137	5.4	126	4.9	22.0	0.8	200/1000	Feb. 1st	10-17-11
Brook	Paradise	Catonsburg 1	6	9.0*	116	4.6	132	5.2	126	4.8	26.0	0.8	1000/1000	1-26-11	9- - -11
Brook	...	Parquette	7	9.0	111	4.1	151	5.9	120	5.0	22.0	0.9	...	Feb. 1st	9-10-11
Brook	Wolf Lake	Grayling	7	9.0	97	3.8	157	4.2	130	5.1	31.0	1.0	...	Feb. 1st	9-3-11
Brook	...	Platte R.	7	10.0	106	4.2	151	5.1	131	5.2	35.0	0.9	...	Jan. 1st	10-10-11
Brook	Paradise	...	9	7.0	128	5.0	152	5.6	133	5.2	27.0	0.9	200/1000	...	...
Brook	Paradise	Otter River	11	8.0*	127	5.0	157	6.2	139	5.5	38.0	0.6	2200/1000	1-27-11	9- - -11
Brook	Flynn's Rock	Kitterman	5	9.0	131	5.2	143	5.6	138	5.4	30.0	1.0	1000/1000	Jan. 1st	9-25-11
Brook	Golf Lake	Kitterman	7	9.0	133	5.2	159	5.5	143	5.6	32.0	1.2	...	Feb. 1st	9-1-11
Brook	Cresco, Pa.	Tobacco R.	8	7.0	125	4.9	152	5.7	144	5.7	34.0	1.2	...	Feb. 1st	9-6-11

Weight as given on label with sample.

Actually 15 pumpkinseeds and one bluegill.

Mislabeled rainbow trout.

The scales from these specimens show one annulus, as would be expected from their age.

Sample of trout fin-clipped and planted in West Twin Lake, Otsego County, September 23, 1961.