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PIKEPERCH EXPERIMENTS CONDUCTED AT THE

LYDELL AND WOLF LAKE HATCHERIES IN 1944

by

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For the 1944 pikeperch experiments, arrangements were made to use three ponds at the Lydell Hatchery and one pond at the Wolf Lake Hatchery. (For previous experiments refer to Reports 842, 842a, and 971.) In 1944 we attempted to stock all of the ponds at the rate of 12,500 pikeperch per acre. The eggs were obtained at the Bay City Hatchery and we waited this year until the eggs were well eyed and just about ready to hatch before they were measured out and taken to the various hatcheries for planting. An estimated 50 per cent of the pikeperch eggs had hatched by the time they were planted.

We wish to thank Messrs. J. G. Marks, Regional Fisheries Supervisor, Wolf Lake Hatchery and Claude Lydell, District Fisheries Supervisor, Lydell Hatchery, and members of the hatchery crews for their kindness, co-operation and help during the course of these experiments. Mr. James Scully, District Fisheries Supervisor, who was in charge of the pikeperch work at the Bay City Hatchery, receives our thanks for keeping us informed as to the time we should secure the eggs and for making available some of the best eggs in the hatchery.

Wolf Lake Hatchery

Pond No. 9 (1.7 acres) was used for our 1944 pikeperch experiments at the Wolf Lake Hatchery. This pond was stocked on May 4 with approximately 21,250 eggs and fry (170 cc.). The eggs and fry were scattered over clean sand bottom near shore instead of placing them on bluegill trays.

Fatheaded minnows were used as forage fish again in 1944. Because of a shortage of pond space at the Wolf Lake Hatchery, the minnows were placed in the pond before the pikeperch. Approximately 750,000 (387 quarts) fatheads were placed in this pond on April 20. A truck load of boards of various sizes was placed in the pond for the minnows to spawn on.

On June 12 and 16, Mr. Krumholz and the writer seined Pond 9 and were unsuccessful in obtaining any pikeperch. A 25 foot bag seine and a 50 foot straight seine were used. We covered a good share of the pond on each occasion and in water over six feet in depth. Fatheaded minnows were taken in each haul of the seine. After such intensive seining it was evident that few, if any, pikeperch had survived. Apparently the fatheaded minnows accounted for a large percentage of the fry and eggs, or else unfavorable weather conditions with extreme fluctuations of the water temperature killed the pikeperch eggs and fry. Probably both of these factors were responsible.

Since it seemed unlikely that any pikeperch had survived, we asked Mr. Marks to stock this pond with 10,000 largemouth bass fry. The 10,000 bass were placed in the pond on June 17. We were certain that if any pikeperch had survived, that they would be large enough so that the bass would be unable to prey upon them. Because of the large number of fatheads that were present it was believed that many would die unless they were eaten and we wanted to prevent this waste.

Pond No. 9 was drained on September 8, at which time no pikeperch were taken. The bass had cleaned up all but a few hundred fatheaded minnows. A total of 9,000 fingerling bass, 3.5 to 4 inches in length, were removed when the pond was drained. This 90 per cent survival of the largemouth bass is much better than usual and was probably due to the presence of forage fish.

Lydell Hatchery

Three ponds were used in the pikeperch experiments at the Lydell Hatchery in 1944. The ponds used and the number of pikeperch eggs and fry that were planted are presented in the following table:

	<u>Number of acres</u>	<u>Number planted</u>	<u>Number per acre</u>
Pond No. 12	1.24	16,250	13,100
Pond No. 13	1.07	13,750	12,800
Pond No. 14	0.46	6,250	13,500

All of the pikeperch eggs and fry were scattered over clean bottom instead of placing them on bluegill trays.

It was decided that Ponds 12 and 13 would be used to duplicate the experiments that were conducted in 1943, but differing in the rate of stocking (in 1943 the ponds were stocked at the rate of 25,000 pikeperch per acre). Pond 14 was to be drained and the pikeperch planted as soon as all of the forage fish had been consumed.

Over 100 quarts of sucker eggs were obtained from Silver Lake and were placed in jars. As soon as the sucker eggs were about to hatch, they were measured out and placed in Ponds 13 and 14 (Pond 12 was to be the control pond). Most of the sucker eggs were put on bluegill trays, but some few were scattered over clean sand bottom. A total of 52 quarts, or an estimated 1,560,000 sucker eggs (rate of about 1 1/2 million per acre)

was placed in Pond 13. Only 4 of the 52 quarts was scattered over clean bottom. In Pond 14, 27 quarts or approximately 810,000 sucker eggs were planted (rate of about 1 3/4 million per acre). Five of these 27 quarts were scattered over clean bottom.

On June 15, Mr. Krumholz and the writer checked the pikeperch ponds at the Lydell Hatchery. The results were as follows: Pond 12. Six seine hauls were made that covered more than half of the shoreline of this pond and no fish were taken. After finding pikeperch in Ponds 13 and 14 we returned to this pond and seined for several more hours and were unable to take any fish. Pond 13. After covering approximately one-half of the shoreline, we were unable to take any pikeperch. After we found that pikeperch were fairly numerous in Pond 14 we again returned to this pond and after several hours of seining we had taken just 2 pikeperch about three inches in length. Suckers were extremely numerous. Some were over an inch in length, while others were mere pinheads. This pond was definitely overstocked with suckers and the few pikeperch that were present were unable to eat them up fast enough. Consequently many thousands of suckers were dying of starvation. Pond 14. It was only necessary to make 2 short hauls with our seine in order to obtain a sample of 39 pikeperch. These pikeperch ranged from 2.7 to 3.2 inches in length with an average of 3.0 inches. Suckers were numerous in this pond and many of the pinheads were dying of starvation.

Mr. Lydell was anxious to use Ponds 12 and 13 for rearing largemouth bass. Because of this and the fact that no pikeperch were obtained in Pond 12, and only 2 in Pond 13 and because the suckers were so numerous and many of them were dying in Pond 13, it was decided that our pikeperch experiments would not be greatly affected if 10,000 largemouth bass fry were placed in each of Ponds 12 and 13. Messrs. Krumholz, Lydell and

Carbine measured out and planted these largemouth bass on July 15. The bass averaged less than three-quarters of an inch in length and weighed one-quarter of a pound per thousand. The pikeperch in Ponds 13 and 14 averaged about 3 inches in length and therefore could not be preyed upon by the bass.

On June 23 the writer stopped at the Lydell Hatchery. Observations indicated that there were still enough suckers in Pond 14 to last the pikeperch for several weeks. Mr. Lydell was to notify the Ann Arbor office as soon as he thought Pond 14 should be drained.

Mr. George Washburn assisted by Mr. Lydell and the hatchery crew drained Lydell Hatchery Pond No. 14 on July 6. A total of 290 pikeperch weighing 8.7 pounds was removed from the pond. An estimated 3,000 suckers ranging in length from 1.1 to 3.2 inches remained at the time the pond was drained. The pikeperch ranged in size from 4.4 to 5.2 inches with an average length of 4.8 inches (Table 1). No cannibal or hog pikeperch were taken and there was only a difference of 0.8 inches in the length of the largest and the smallest fish. These pikeperch grew at an average rate of about one-twelfth of an inch per day during the 64 days since the first eggs hatched. A total of 267 of these pikeperch was planted in Fine Lake, Barry County. These pikeperch should have had an excellent chance of surviving in Fine Lake.

Ponds 12 and 13 were drained on September 7, 1944. Pond 12 produced only 100 pikeperch (Table 1) with an average length of 7.2 inches (range 4.8 to 9.8 inches) and a total weight of 13.5 pounds. Pond 13 produced 172 pikeperch averaging 7.9 inches in length (range 6.6 to 9.4 inches) and a total weight of 25.8 pounds. There were 440 suckers taken from Pond 13 when it was drained. The suckers averaged 6.0 inches in length and ranged from 4.2 to 8.0 inches. The production of largemouth bass was higher in Pond 13 (4,575) than in Pond 12 (3,600).

TABLE 1. COMPARISON OF LENGTH, WEIGHT AND PERCENTAGE SURVIVAL  
OF PIKEPERCH RAISED AT THE LYDELL HATCHERY IN 1944

Pond	Date pond drained	Number of fish planted	Number of fish removed	Percentage survival	Weight of fish-- pounds	Number of fish per acre	Number of pounds per acre	Total length-- inches	
								Range	Average
Lydell Pond 12	Sept. 7	16,250	100	0.61	13.5	80.6	10.9	4.8-9.8	7.2
Lydell Pond 13	Sept. 7	13,750	172	1.25	25.8	161.0	24.1	6.6-9.4	7.9
Lydell Pond 14	July 6	6,250	290	4.64	8.7	630.4	18.9	4.4-5.2	4.8

Our control experiment in Pond 12 may have been somewhat affected when we introduced largemouth bass. But it was evident early in June that the initial loss of pikeperch was extremely high in the pond because we were unable to take a single pikeperch in our seining operations. We do not know what this initial loss was, but from observations that were made in June it is believed that the loss was greater in Pond 12 than in Pond 13, and greater in Pond 13 than Pond 14. Because of this, it is rather difficult to draw any definite conclusions regarding the production of pikeperch in 1944. But the evidence does indicate that better growth and survival and a more uniform size is attained when forage fish (in this case suckers) are present in the ponds for pikeperch to feed on. The presence of an unlimited supply of suckers was probably responsible for eliminating cannibalism in Pond 14. It is believed that "hog" pikeperch appeared in Pond 13 after the suckers had been practically eliminated. The growth of the largemouth bass and pikeperch and the better survival (4,575 as against 3,600) of the largemouth bass in Pond 13 can be attributed, in part, to the presence of suckers in Pond 13.

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