

ELECTROFISHING REPORT

**Blue Spring Lake, Jefferson Co. Wisconsin (MWBC 819800)
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INTRODUCTION

Blue Spring Lake, located in southeastern Jefferson County, was originally formed in 1929 by impounding the outflow of a natural spring. This spring is the primary water source for this 137-acre lake. The 2.5-mile lake shore is completely developed with 198 homes within 1000 feet of the water according to 1995 data. Chemical and mechanical methods have been used for weed control in the past decade and rotenone and antimycin treatments were conducted in 1979 to remove the overwhelming biomass of stunted carp. The lake is now regarded as a panfish and largemouth bass fishery with healthy if somewhat stunted populations. The carp have not returned since the 1979 treatment.

An electrofishing survey was conducted to estimate catches per units of effort and to generally assess the current status of the lake's fishery.

METHODS

The lake was sampled on the night of October 17, 2001 using a pulse D.C. electrofishing boat. Field output was approximately 280 volts at 15 amperes, using a duty cycle of 25 % with a pulse rate of 65 c.p.s. Sampling was limited to waters four feet deep or less and a 30-minute run is the basis for this report. A second run of 1.5 hours completed the circumnavigation where panfish were not captured and only game fish numbers were counted and measured.

RESULTS

A total of 10 largemouth bass were caught during the 30-minute sample and 34 more were counted and measured during the second sample of 1.5 hours. Lengths of the 10 that were measured in the first sample ranged from 8.9 to 16.5 inches and the average length bass was 12.3 inches. The catch rate known as the Catch Per Unit of Effort (CPUE) was 20 fish per hour. Spring 2000 catch rates (CPUE) were much higher than those observed in the fall of 1993 and 2001, most likely due to spawning activity.

Bluegills ranged in length from 1.6 to 7.1 inches and the average length was 5.81 inches. The catch rate was 447 bluegills per hour. In 1994, the fall CPUE was a spectacular 1916 bluegills per hour but the average length was 5 inches. Surprisingly, no pumpkinseed sunfish were captured during the autumn, 2001 sample.

During the spring 2001 sampling, a total of 7 species of fish were captured. This is a drop from 9 species collected in 1993 but consistent with the 2000 summer sample. The fall 2001 list includes: largemouth bass, bluegill, yellow perch, black crappie, yellow bullhead, northern pike and golden shiner. The 1994 list had the fish listed above as well as central mudminnow and common shiner.

There has been some interest in the northern pike stocking records therefore Table 1 includes this information since 1994.

Year	Numbers	Individual fish per pound (average)	Average Length
1994	330	30 per pound	6.5 inches
1995	455	36.7 per pound	5.6 inches
1996	364	63.8 per pound	4.3 inches
1997	455	108 per pound	3.6 inches
1998	455	40.3 per pound	5.0 inches
1999	N/A	N/A	N/A
2000	455	91 per pound	3.9 inches
2001	755	75 per pound	4.0 inches

Table 1: Northern Pike Stocking Record for Blue Spring Lake.

Table 2 is a summary of largemouth bass electro-shocking sampling from Blue Spring Lake based on several years of data from the Wisconsin Department of Natural Resources, South Central Region, Newville Fish Management Field Station.

Date	Min. Length	Ave. Length	Max. Length	CPUE	PSD (8-12)
10/26/1993	2.5	9.87	16.4	82.4 / hour	22.3%
10/24/1994	5.8	10.5	18.2	46.4 / hour	32.6%
10/31/1995	7.2	11.8	18.1	9 / hour	50.0%
11/04/1996	N/A	N/A	N/A	N/A	N/A
06/06/2000	4.2	9.8	19.5	230 / hour	35.3%
10/17/2001	8.9	12.31	16.5	20 / hour	40.0%

Table 2: Largemouth Bass Electro-Fishing Summary.

Table 3 is a summary of bluegill sunfish electro-shocking sampling from Blue Spring Lake based on several years of data from the Wisconsin Department of Natural Resources, South Central Region, Newville Fish Management Field Station.

Date	Min. Length	Ave. Length	Max. Length	CPUE	PSD (3-6)
10/26/1993	1.3	4.26	7.2	994 / hour	4.3%
10/24/1994	3.4	5	6.9	1916 / hour	13.2%
10/31/1995	1.8	5.1	6.3	1082 / hour	12.6%
11/04/1996	1.6	5.6	7.1	216 / hour	42.5%
06/06/2000	1.5	4.9	7.7	572 / hour	15.2%
10/17/2001	1.6	5.81	7.1	894 / hour	44.1%

Table 3: Bluegill Sunfish Electro-Fishing Summary.

DISCUSSION

The CPUE for largemouth bass was quite low for this sample. A number of variables could have caused these results. Time of year, weather and efficiency of the shocking apparatus may have contributed to these numbers.

Proportional Stock Density (PSD) is an index that reflects the percentage of fish in a given species that are of the preferred angling sizes. A low PSD demonstrates smaller sizes and therefore a lower quality fishery. A balanced largemouth bass population would have a PSD between 40 and 60. The PSD for largemouth bass in Blue Springs Lake was 40, indicating "good" angling opportunities.

The CPUE for bluegill sunfish was 894 individuals per hour. This number is consistent with the majority of previous investigations and causes no immediate areas of concern. In the summer of 1996, 72,000 bluegills were removed and planted into Lake Koshkonong. This reduced the fall bluegill CPUE to 216 / hour and boosted the PSD to 42.5.

A balanced bluegill population would have a PSD somewhere between 20 and 60. Blue Spring Lake had a PSD for bluegills at 44. This is the highest value that has shown up since 1993. Because the CPUE was classified as good, the PSD is considered as an encouraging trend toward a high quality bluegill angling experience.

The total lack of pumpkinseed sunfish is somewhat puzzling. All previous investigations produced at least several pumpkinseed individuals. This situation may be similar to the largemouth bass sample in that there may be seasonal or technical reasons for the lack of fish. However, attention should be paid to pumpkinseed numbers in future samplings.

No carp were found throughout the lake.

SUMMARY

- 1.) Blue Spring Lake should continue to be a good bluegill sunfish lake if no drastic changes occur in the future. If bluegills reach numbers that indicate overpopulation, additional removal and relocation will be considered.
- 2.) Effort should be made to assess the northern pike population in this lake.
- 3.) Monitoring should continue for the return of carp in the future. Blue Spring Lake is a true "success" story of carp eradication.
- 4.) Largemouth bass and pumpkinseed sunfish numbers should be closely monitored to determine if a real population crash did occur in this community
- 5.) Efforts to provide vehicle parking closer to the boat launch should be pursued.

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