

Summary Report

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Project: Walleye and Sauger Recruitment Assessment in Pool 5 of the Mississippi River
Period: November, 2010
Objective: To summarize electrofishing young-of-year walleye and sauger in Pool 5

INTRODUCTION

Walleye and sauger are highly sought after recreational fish of the Upper Mississippi River. Both species provide recreational fishing opportunities and a food source. Although generally favorable, angler success is variable, as walleye and sauger populations fluctuate.

Previous assessments have shown walleye and sauger young-of-year (YOY) recruitment can significantly vary year to year. Fluctuations are due to biotic and abiotic factors during critical life stages. These limiting factors determine year class strength.

METHODS

Eleven sampling stations were previously established in Pool 5. Ten of the eleven were sampled November 15; station five was not sampled due to angler presence. Stations 1-4, which are contiguous along a railroad track, were sampled as one station. Water temperature was 44 degrees F. The tailwater elevation was 662.76 feet, while the discharge through Lock and Dam 4 was 52,500 cfs.

The stations were sampled with a direct current electrofishing boat, providing 15 amps pulsed at 80 cycles per second. All YOY were measured to the nearest tenth-inch. Electrofishing efforts were recorded and catch per unit effort (CPUE) was determined for each station.

RESULTS

Young-of-year walleye were sampled at all stations, while sauger YOY were sampled during three of the seven electrofishing runs. Catch per unit effort for walleye ranged from 9 to 120 per hour (average = 58; Table 1), while sauger CPUE ranged from 0 to 28 per hour (average = 6; Table 1). Length of walleye YOY ranged from 6.1-9.5 inches and averaged 7.7 inches (n = 90; Table 2), while sauger length ranged from 6.2-8.7 inches and averaged 7.1 inches (n = 13; Table 2).

Over the past 31 years, both species have shown high variability in recruitment and length. Catch per unit effort for walleye YOY has ranged from 0 fish/h in both 1981 and 1993 to 260 fish/h in 1997. Similarly, CPUE for sauger YOY has ranged from 1 fish/h in 1993 to 332 fish/h

in 1997 (Table 3). Average annual lengths over the past 31 years have ranged from 5.9-8.1 inches (average = 7.4) for walleye and 5.6-8.0 inches (average = 6.4) for sauger (Table 3).

In previous surveys, walleye averaged 80 fish/h, while sauger averaged 83 fish/h. During this year's survey, walleye CPUE was near average and sauger CPUE was well below average.

The data collected from the assessment has been used as an index of current YOY populations, as well as a predictor of future population size structures and fishing success. At a minimal cost, this project will continue to provide useful information about the walleye and sauger fishery in Pool 5 of the Mississippi River.

Table 1. Catch per unit effort of walleye and sauger young-of-year (YOY) sampled at ten stations in Pool 5 of the Mississippi River in November, 2010.

Station	Walleye YOY/h	Sauger YOY/h
1-4	32	11
6	80	0
7	120	0
8	102	28
9	9	0
10	27	3
11	33	0

Table 2. Length and number of walleye and sauger sampled at ten stations in Pool 5 of the Mississippi River in November, 2010.

Length (inches)	Walleye (n)	Sauger (n)
6.0-6.9	11	7
7.0-7.9	46	4
8.0-8.9	26	2
9.0-9.9	7	0

Table 3. Average catch per unit effort and average length of walleye and sauger young-of-year (YOY) sampled at Stations 1-8 from 1980-2010 in Pool 5 of the Mississippi River. Numbers in parentheses equals sample size.

Year	Walleye YOY/h	Sauger YOY/h	Walleye Length	Sauger Length
1980	37	11	7.2 (73)	6.4 (82)
1981	0	53		8.0 (87)
1982	105	31	7.6 (459)	6.3 (270)
1983	47	64	7.6 (241)	6.7 (385)
1984	30	5	7.2 (182)	6.1 (75)
1985	115	11	7.5 (33)	6.1 (93)
1986	107	15	7.2 (267)	6.5 (83)
1987	134	37	7.1 (258)	6.2 (139)
1988	9	31	7.5 (18)	6.7 (49)
1989	14	24	7.0 (36)	6.4 (48)
1990	7	28	7.8 (11)	6.3 (88)
1991	63	47	7.1 (81)	6.2 (92)
1992	131	115	7.2 (203)	6.0 (193)
1993	0	1	5.9 (2)	5.6 (16)
1994	63	29	6.7 (65)	6.0 (60)
1995	43	14	7.5 (79)	6.8 (77)
1996	150	301	7.3 (258)	6.1 (447)
1997	260	332	6.9 (237)	6.1 (303)
1998	144	167	7.9 (149)	6.7 (212)
1999	40	112	7.7 (24)	7.2 (115)
2000	46	82	7.8 (53)	6.6 (90)
2001	143	138	8.0 (269)	6.4 (183)
2002	133	179	7.2 (120)	6.4 (134)
2003	69	168	7.4 (63)	5.9 (131)
2004	28	248	7.7 (37)	6.4 (281)
2005	121	84	8.0 (111)	6.8 (129)
2006	117	47	8.1 (107)	7.2 (39)
2007	123	59	7.6 (199)	6.4 (135)
2008	9	14	7.4 (22)	6.5 (17)
2009	103	37	6.8 (139)	5.6 (39)
2010	84	10	7.7 (90)	7.1 (13)

Note: Stations 1-8 have been sampled most years and were used to generate catch per unit effort. Fish captured at all stations were used to generate average lengths.