

2014 Lake Winnebago Bottom Trawling Assessment Report

The 2014 Lake Winnebago bottom trawling assessment is in the books and as always it could not have been done without the help of our strong and very willing volunteers. Over 19 volunteers came aboard the Calumet in 2014 and we hope to carry a strong volunteer base (new and veterans) into the 2015 trawling season as well. The Lake Winnebago annual bottom trawling assessment provides critical information on year class strength, forage base status, and general population trends that helps guide fisheries management on the Winnebago System. Since 1986 the same 46 GPS waypoints have been sampled annually during the first week of August, September, and October using identical methods. The bottom trawl does capture a fair amount of adult fish, but it is most effective at catching small fishes (young of year (YOY) and yearlings) so this report will primarily focus on YOY fish. There were 10 YOY fish species sampled during the 2014 trawling assessment (Appendix A), with walleye representing the only YOY gamefish species sampled. Two species of panfish, black crappie and yellow perch were also observed during the survey. Other YOY fish species sampled included white bass, freshwater drum, gizzard shad, trout perch, emerald shiner, common carp, and burbot. In addition, 17 adult fish species were sampled including freshwater drum, walleye, sauger, lake sturgeon, white bass, yellow perch, black crappie, largemouth bass, channel catfish, trout perch, burbot, common carp, white sucker, quillback, emerald shiner, bullhead, and redhorse.



The Calumet Docked at Asylum Bay



New DNR Fisheries Employees Learning About The Winnebago Trawling Survey During Orientation

Walleye

The 2014 mean YOY walleye catch was 0.4/trawl, indicating a weak walleye year class (Figure 1). Despite high water in the spawning marshes during the spring of 2014, the walleye hatch did not appear to survive well. Having high water in the marshes and sufficient flow through them to flush out newly hatched fry is critically important, but zooplankton availability at time of hatch is also crucial. Yolk sacs provide walleye fry nourishment for the first few days after hatching, but walleye fry need a good available source of zooplankton for food to survive once the yolk sac has been absorbed. The spring of 2014 was cooler than normal, resulting in below average water temperatures. Poor zooplankton hatches in the spring often coincide with cool water temperatures, thus it plausible that a lack of zooplankton during the 2014 spring walleye hatch contributed to the low number of YOY walleye sampled during trawling. Cooler water temperatures in the spring and summer also led to slower growth of YOY walleye so other factors such as predation by larger fishes may have also played a role.

Weak year classes are not uncommon in walleye fisheries and represent the balancing act that takes place in Mother Nature on an annual basis. The 2008 and 2011 strong walleye year classes continue to drive a good walleye fishery in the Winnebago System and the strong 2013 year class is poised to contribute to the fishery as well. In fact, the 2014 trawling data indicated the third highest yearling walleye catch (5.29/trawl) since 1986. Although 2014 will go in the records as a weak walleye year class, the strong 2008, 2011, and 2013 year classes will continue to provide ample opportunities for good walleye fishing on the Winnebago System for at least the foreseeable future.

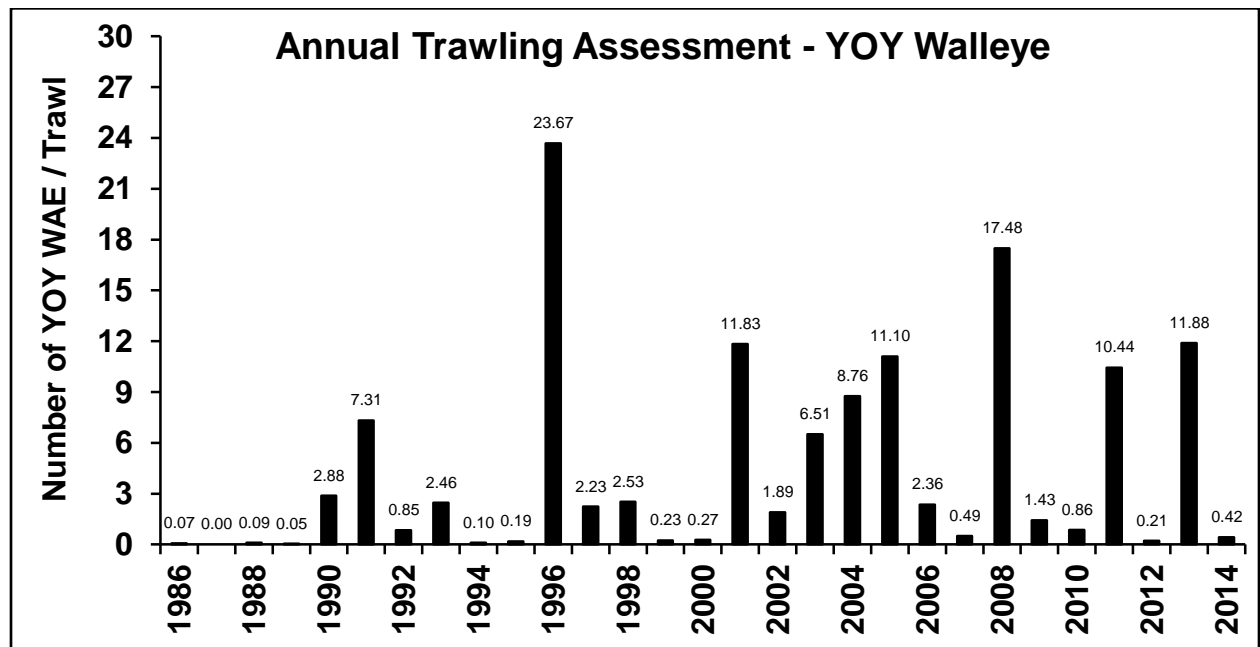


Figure 1. Average number of YOY walleye/trawl in Lake Winnebago from 1986-2014.

Yellow Perch and Black Crappie

Similar to the 2014 walleye year class, the yellow perch year class was also weak, averaging 0.07 YOY/trawl. In fact, the 2014 yellow perch year class tied 1989 and 2000 as the lowest average catch on record since 1986 (Figure 2). Similar to walleye YOY survival, cooler spring water temperatures, a lack of zooplankton, and predation may have contributed to poor yellow perch YOY survival. Changes in the adult spawning stock size structure may have also been a contributing factor (stay tuned for a panfish update from Ryan Koenigs). The black crappie YOY catch was also low during 2014, averaging 0.25/trawl that was the lowest catch since 2001. However, the strong black crappie year classes from 2009 and 2010 (the two highest on record) continue to provide excellent fishing opportunities, particularly during the spring spawning periods. Only time will tell when the next strong black crappie year classes will appear.

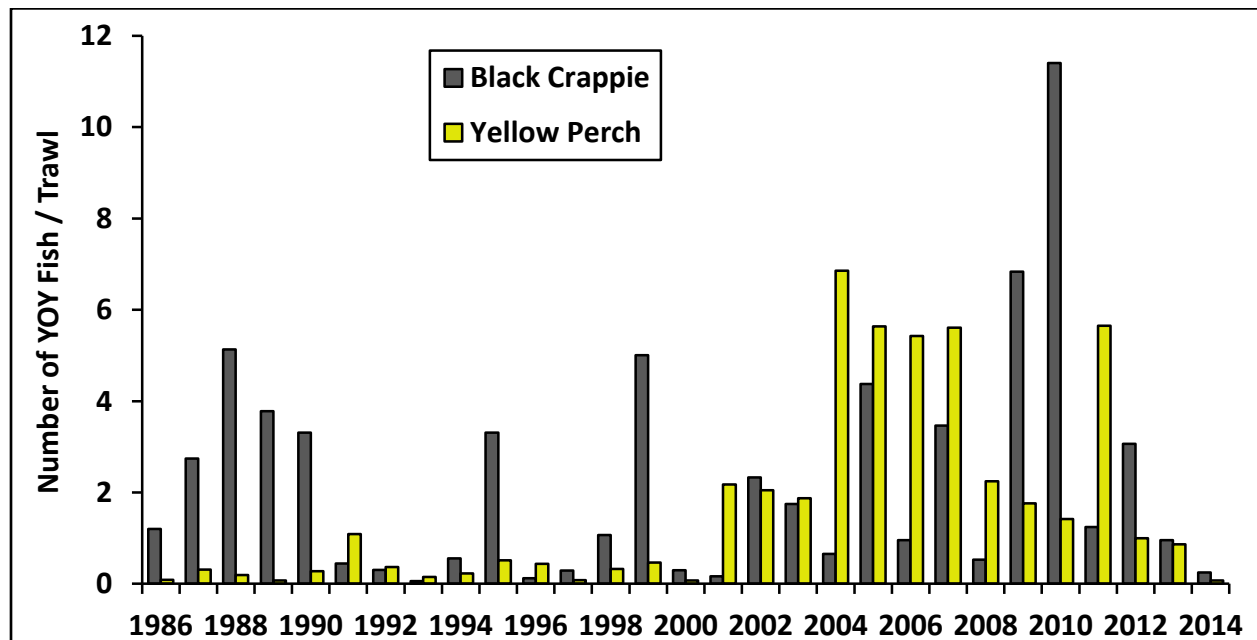


Figure 2. Average number of YOY black crappie (gray bars) and yellow perch (yellow bars)/trawl in Lake Winnebago from 1986-2014.

White Bass

White bass have historically been a dominant species sampled in the bottom trawl that is sought for by many anglers, particularly during ice fishing and spring spawning migrations. Prior to 2014, YOY white bass catch averaged greater than 10/trawl in 25 of the last 28 years (Figure 3). In 2014 the white bass year class was negligible, averaging a record low of 0.20/trawl. However, the strong 2011 year class that averaged 102.41/trawl (2nd highest in history) continues to provide good white bass fishing opportunities in the Winnebago System.

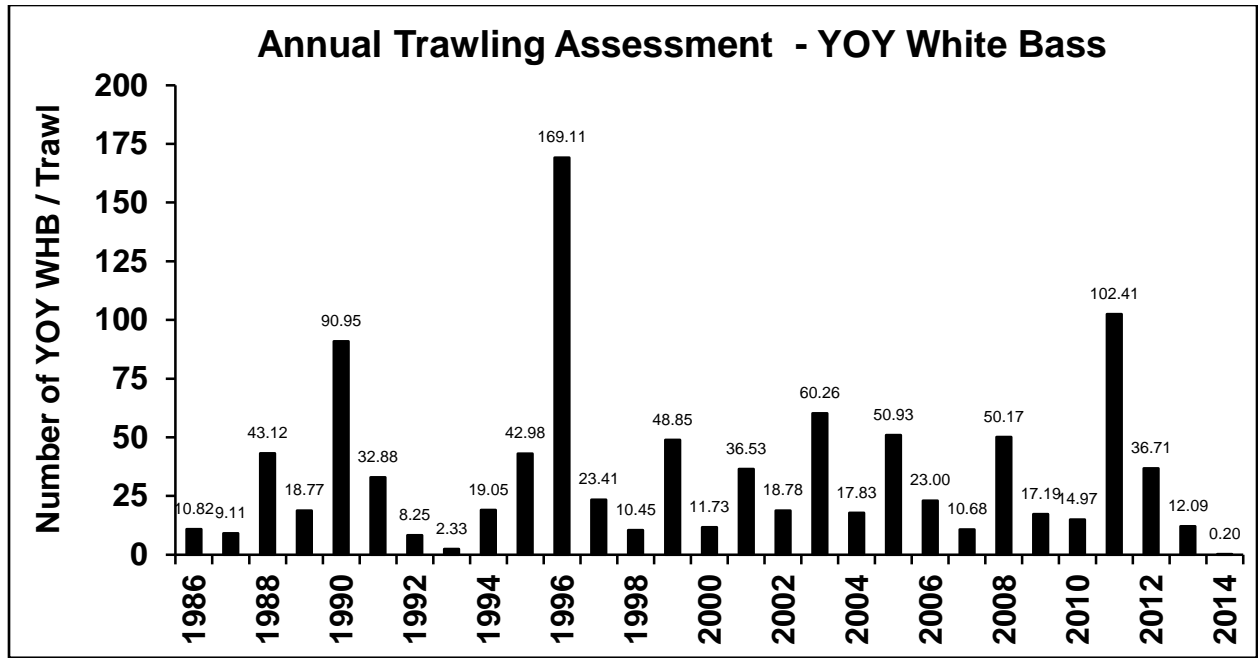


Figure 3. Average number of YOY white bass/trawl in Lake Winnebago from 1986-2014.

Forage Fish Species

Trout perch have made up a major portion of the Lake Winnebago forage base since the late 1990's and average YOY catch has ranged from 258.15/trawl to 568.96/trawl from 2000-2010. Since 2010, YOY trout perch catch has progressively decreased with sharp declines occurring from 2010-2012 (Figure 4). Trawl surveys in 2012, 2013, and 2014 indicated a more consistent YOY trout perch catch; however, the 2014 average of 94.23/trawl was the lowest since 1995. Weak year classes of freshwater drum and gizzard shad were also observed during 2014 averaging 14.20 and 11.41 YOY/trawl, respectively. In fact, the cumulative YOY catch of trout perch, freshwater drum, and gizzard shad averaged 119.84/trawl in 2014 that is the lowest cumulative average recorded since 1993. Nonetheless, the forage base going into 2015 appears to be lower than in years past, such as 2010 and 2012 where large freshwater drum and gizzard shad hatches occurred. The cool spring and mild summer likely were the main contributors to the weak year classes of forage fish species in 2014, but predation by robust populations of walleye, white bass, and black crappie is also a probable factor. Anecdotal reports have already indicated good walleye action in 2014 and the current low forage base could set up for a productive year of fishing in 2015.



Common Forage Numbers Found After One Trawl in 2014

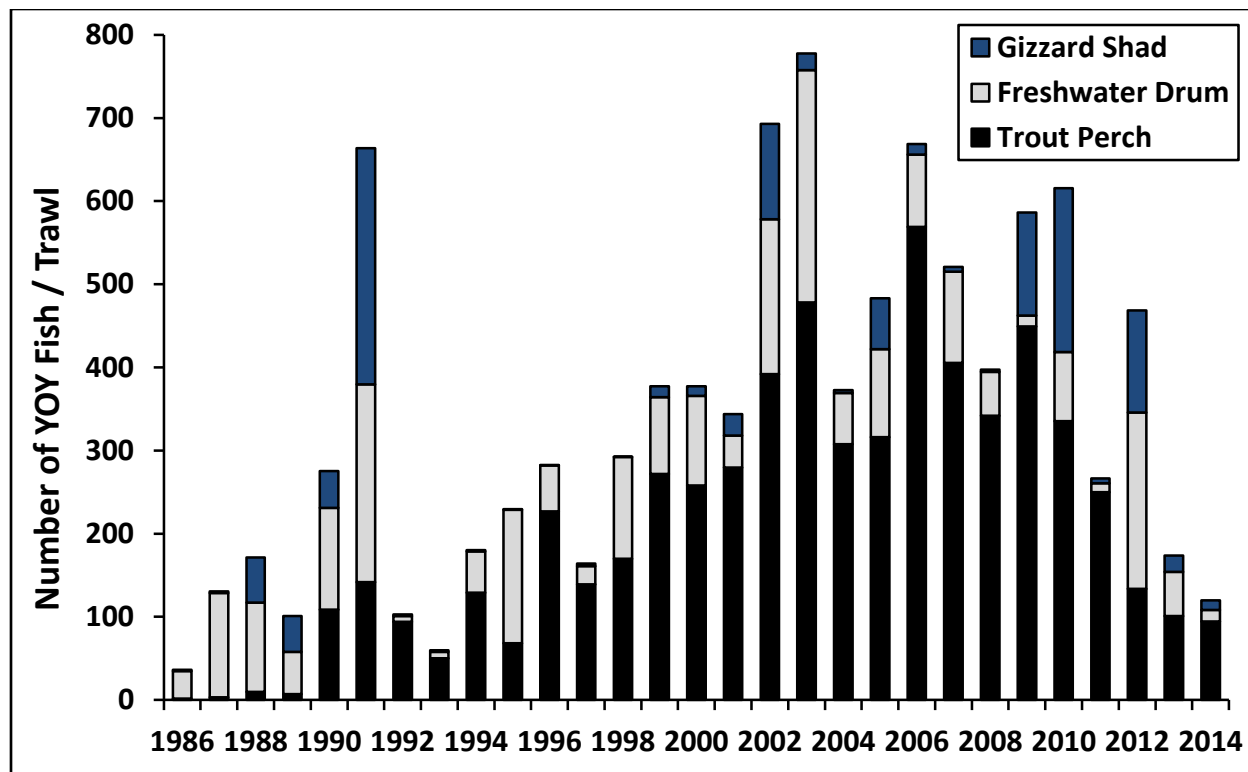


Figure 4. Average number of YOY trout perch (black bars), freshwater drum (gray bars), and gizzard shad (blue bars)/trawl in Lake Winnebago from 1986-2014.

Thank You Volunteers and
Good Luck Fishing!

Sincerely, Adam D. Nickel

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Appendix A. List of Trawling Records for Young of Year Fish Species Sampled in Lake Winnebago During 2014.

Year	Freshwater Drum	White Bass	Walleye	Yellow Perch	Black Crappie	Trout Perch	Emerald Shiner	Gizzard Shad	Common Carp	Burbot
1986	32.90	10.82	0.07	0.09	1.20	1.80	0.03	1.58	0.00	0.00
1987	125.26	9.11	0.00	0.31	2.74	3.30	0.03	1.83	0.00	0.00
1988	107.59	43.12	0.09	0.20	5.13	9.56	0.25	54.32	0.01	0.00
1989	50.72	18.77	0.05	0.07	3.78	7.01	0.01	43.23	0.00	0.00
1990	122.29	90.95	2.88	0.27	3.31	108.76	0.16	44.27	0.00	0.00
1991	237.93	32.88	7.31	1.09	0.45	141.72	0.17	283.99	0.00	0.07
1992	7.09	8.25	0.85	0.37	0.30	93.83	0.02	1.78	0.03	0.00
1993	7.57	2.33	2.46	0.15	0.06	50.12	0.00	1.95	0.00	0.00
1994	49.41	19.05	0.10	0.23	0.56	129.12	0.04	1.66	0.00	0.00
1995	160.56	42.98	0.19	0.51	3.31	68.16	0.00	0.62	0.07	0.00
1996	55.49	169.11	23.67	0.43	0.12	226.88	0.19	0.25	0.00	0.00
1997	22.09	23.41	2.23	0.08	0.29	138.99	0.25	2.83	0.00	0.00
1998	122.58	10.45	2.53	0.33	1.07	169.69	0.15	0.13	0.00	0.00
1999	92.69	48.85	0.23	0.46	5.01	271.65	1.12	12.89	0.00	0.00
2000	107.74	11.73	0.27	0.07	0.30	258.15	0.85	11.39	0.00	0.00
2001	38.51	36.53	11.83	2.17	0.17	279.38	0.25	25.72	0.00	0.00
2002	186.39	18.78	1.89	2.05	2.33	391.83	0.26	114.75	0.00	0.00
2003	279.15	60.26	6.51	1.88	1.75	478.25	0.02	20.33	0.00	0.00
2004	61.73	17.83	8.76	6.85	0.65	307.62	0.14	3.18	0.00	0.00
2005	106.18	50.93	11.10	5.63	4.38	315.94	0.59	60.96	0.00	0.00
2006	87.02	23.00	2.36	5.43	0.96	568.96	0.32	12.51	0.00	0.00
2007	109.79	10.68	0.49	5.61	3.46	405.41	16.95	5.60	0.00	0.01
2008	52.78	50.17	17.48	2.24	0.53	341.75	1.05	2.87	0.00	0.00
2009	13.08	17.19	1.43	1.76	6.84	449.16	1.58	124.05	0.00	0.00
2010	83.24	14.97	0.86	1.42	11.41	335.21	1.31	197.21	0.04	0.00
2011	10.92	102.41	10.44	5.65	1.25	249.89	1.72	5.65	0.00	0.00
2012	212.19	36.71	0.21	1.00	3.07	133.61	5.46	122.60	0.09	0.00
2013	53.46	12.09	11.88	0.86	0.96	100.78	3.43	19.49	0.00	0.00
2014	14.20	0.20	0.42	0.07	0.25	94.23	0.17	11.41	0.01	0.01