

Young-of-the-year yellow perch survey in nearshore waters of Lake Michigan, 2015

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An annual survey of young-of-the-year (YOY) yellow perch along the Lake Michigan shoreline was conducted using a beach seine and micromesh gillnets from 8/24/15 to 9/23/15.

Seining assessment:

The seining survey was carried out from 8/24/15 to 9/23/15. We used a standard 25-foot beach seine which was pulled by two persons in shallow nearshore waters of Lake Michigan. In general, each pull consisted of a 100-foot sweep either parallel to the beach or perpendicular to the beach along piers and jetties depending on the depth and feasibility of seining. At each station, depending on conditions, two 100-foot pulls were attempted unless algal bloom limited our ability to effectively pull the net, especially when sampling around the jetties.

A total of fourteen stations were sampled from Sheboygan to Kenosha (Sheboygan – 3, Ozaukee – 2, Milwaukee – 5, Racine – 2 and Kenosha – 2). Seining conditions during the sampling period varied among different sites on different days depending on the wind direction. Some sites were very difficult to seine due to cladophora clogging the net while others were extremely clear and easy to sample. The water temperature during the survey was in the 40s for the most part due to upwelling event that started in mid-August. In previous years we have seen the water being much warmer at this time of the year (70⁰ F). We caught 188 YOY yellow perch in 2015 survey compared to only six in 2014. However, of the 188 YOY yellow perch 121 were caught in a single pull at Racine North Pier. Very few young perch were caught north of Milwaukee. The average size of YOY yellow perch was only 45 mm (standard deviation of 6.6) in 2015 similar to that of 2014 perch (44mm, average). This is probably due to cooler temperature compared to previous years (Table 1). The average size of the YOY yellow perch in 2013 was 53mm and in 2012 was 62mm. A total of 17 species of fish were captured during the seining survey (Table 2). Young-of-the-year and juvenile alewife dominated the catch followed by Spottail shiner, round goby and YOY yellow perch. We had a total of 86 YOY bloater chub which is unusually high. In addition, we had only seven longnose dace captured in the survey this year.

We attempted to sample each site twice during the sampling season. However, sometimes due to excess cladophora algae we were able to take one sample only. A total of 54 seine hauls were taken in fourteen sites for a total of 4,955 ft. of seine haul

capturing 188 YOY yellow perch yielding a catch per effort (CPE) of 3.79 YOY yellow perch per 100 foot seine haul. This is a great improvement since 2011 (Figure 1).

Micromesh gill net assessment:

Two index stations, Shoop Park (Racine Co.) and Doctors Park (Milwaukee Co.), have been used for setting micromesh gill net. The nets were set in nearshore waters using an inflatable boat on a calm day at depths ranging from 5 to 10 feet and fished overnight. We used a 100-foot long and 5-foot deep monofilament net consisting of 12mm stretch mesh. A total of 200 feet of net was fished at each station per lift. Two lifts were conducted at each location - Shoop Park and Doctors Park, for a total of 800 ft. of effort.

Micromesh gill net sampling was conducted on 9/2/15, 9/3/15 and 9/24/15. A total of seven species of fish were captured in these nets with alewife, spottail shiners and round goby dominating the catch (Table 2). Only six YOY yellow perch were caught, three at Doctors Park and three at Shoop Park (Table 3). The YOY yellow perch ranged from 56mm to 63mm with an average total length of 59.8mm. The catch per 100 ft of gillnet was only 0.75 YOY yellow perch (CPE=0.75) (Figure 2). The waters off Doctors Park were clear, and calm but suspended algae still clogged the nets. Similar conditions existed at the Shoop Park site with a lot of suspended algae. Winds were mild, and the temperature ranged from 48 °F to 58 °F. Overall very few fish were caught at both locations.

Table 1. Average size of YOY yellow perch in late summer in the nearshore waters of Lake Michigan, WDNR.

Year	Average total length (mm)	Temperature range (°F)
2015	45	40s
2014	44	50s
2013	53	50-70
2012	62	60-70
2011	57	58-70
2010	61	60-70
2009	37	55-70

Table 2. Number of fish caught in YOY yellow perch beach seining assessment (Lake Michigan shoreline from Kenosha to Sheboygan), WDNR - 2015.

Fish species	Number of fish
Alewife (YOY+juvenile)	3595
Bloater chub	86
Round whitefish (YOY)	4
Rainbow smelt	5
Golden shiner	1
Common shiner	4
Spottail shiner	610

Sand shiner	21
Fathead minnow	12
Longnose dace	7
White sucker	21
Banded killifish	96
Green sunfish	5
Smallmouth bass	1
Largemouth bass	2
Yellow perch (YOY)	188
Yellow perch (juvenile)	1
Round goby (YOY+juvenile)	203

Table 3. Numbers of fish captured in the YOY yellow perch micromesh gillnet survey at index stations (Lake Michigan nearshore waters), WDNR – 2015.

Species	Number of fish
Alewife	96
Rainbow smelt (adult)	8
Spottail shiner	29
Fathead minnow	1
Longnose dace	4
Yellow perch (YOY)	6
Round goby (juvenile/adult)	18

Summary:

Beach seining and micromesh gill net surveys were conducted at index sites similar to the previous years of sampling. Overall, the conditions for sampling were good except in some locations that had excessive algae. We met our goal in covering area from Kenosha to Sheboygan and visiting each site at least twice. The nets were effective in capturing multiple species of fish. However, compared to previous years the total number of fish caught per species during the 2015 survey was low, especially in our gillnet assessment. Only six YOY yellow perch were caught in the micromesh gillnet for a CPE of 0.75 YOY yellow perch per 100 ft. of the net. The seining effort had a slightly higher CPE than the previous year with the CPE of 3.79 YOY yellow perch per 100 ft. of seine haul. The surface water temperature was in the range of 45-55⁰ F throughout the sampling period. Slow spring warming may have delayed spawning and hatching of yellow perch. Cooler temperature coupled with low plankton availability may have contributed to the smaller size YOY yellow perch.

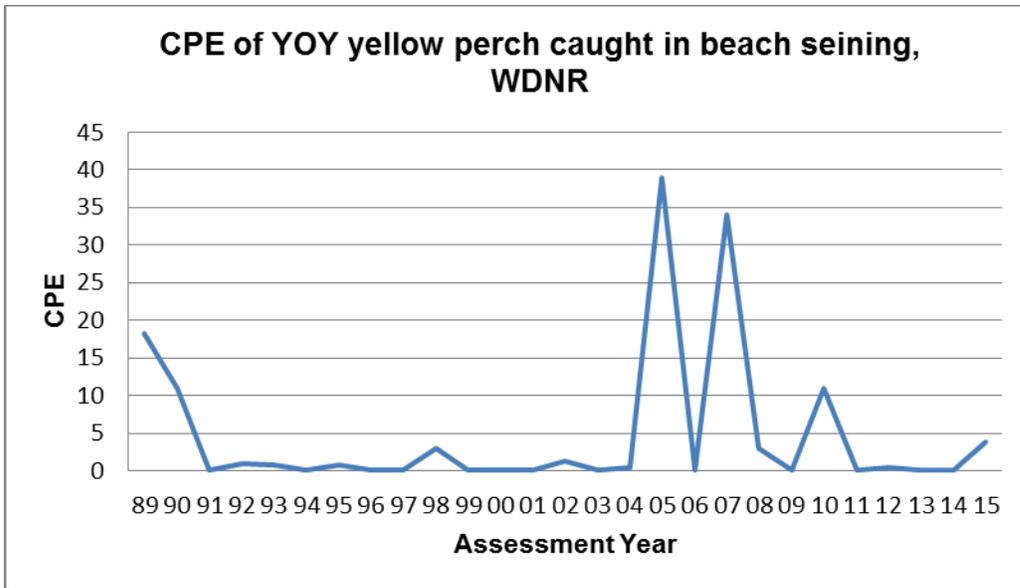


Figure 1. Beach seining catch per 100 ft of young-of-the-year yellow perch in nearshore waters of Lake Michigan, WDNR.

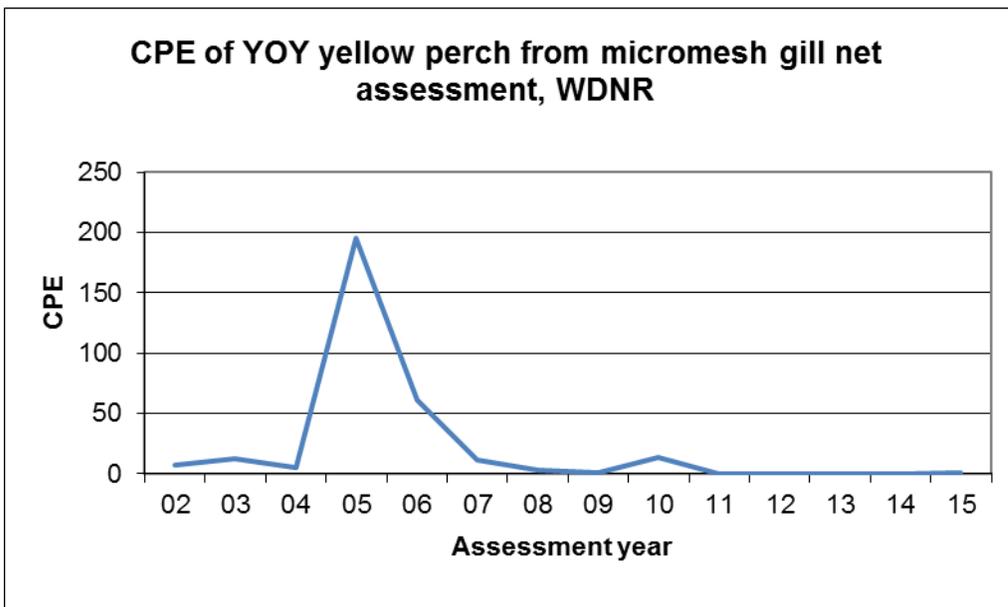


Figure 2. Micromesh gill net catch per 100 feet of young-of-the-year yellow perch in the nearshore waters of Lake Michigan, WDNR.