

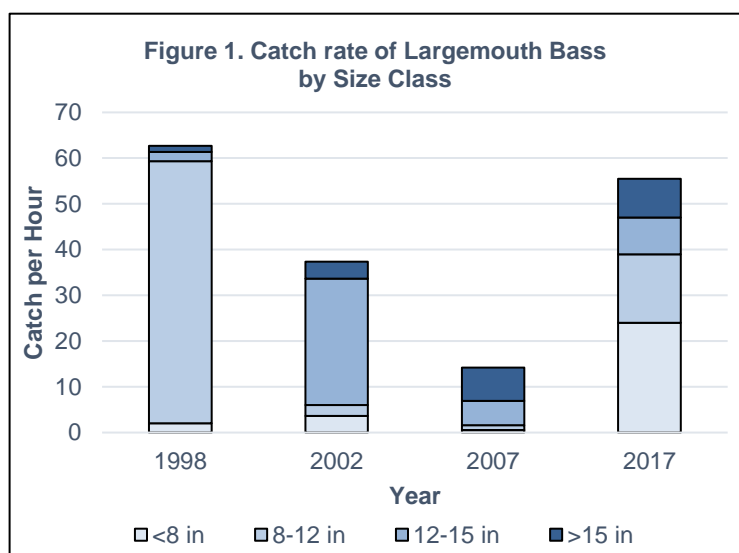
## New Mill Pond Largemouth Bass Regulation Evaluation

### Chart Guthrie, Region 1 Fisheries

12/12/2017

New Mill Pond, also known as Blydenburgh Lake, Stump Pond or Weld's Pond, is a 111-acre impoundment of the Nissequogue River located in Blydenburgh County Park in the town of Smithtown on the north shore of Long Island. Boating access is provided via rowboat rentals by the county from Memorial Day weekend through Labor Day weekend, and as of 2014, hand launching of private boats is also permitted. New Mill Pond has long had a reputation for producing trophy largemouth bass. To provide anglers the opportunity to fish for bass year-round, a special regulation was established in 2002 to allow catch-and-release only from December 1 to the Friday before the opening of regular bass season on the first Saturday in June. To evaluate the impact of the regulation on the largemouth bass and panfish populations, pre-regulation surveys were completed in 1998 (Survey #: 198012) and 2002 (102008), and post-regulation surveys were conducted in 2007 (107004) and 2017 (117005). All four surveys were spring electrofishing surveys with at least four 15-min all-fish runs and two 30-min gamefish runs, except 1998 which had only one 30-min gamefish run. In addition, in 2017 three fyke nets were set for two nights each.

A total of 370 largemouth bass were captured during the four electrofishing surveys, ranging in size from 4.4 in to 22.2 in. The largest bass weighed 6.8 lbs (2017). Bass over 20 in were caught in 2007 and 2017, but not in 1998 or 2002. In 1998, the bass population was dominated by small fish with only 5% of the adult stock population over 12 in (PSD=5)<sup>i</sup> and 2% over 15 in (RSD<sub>p</sub>=2) (Figure 1, Table 1). In 2002, the size structure improved dramatically, with nearly all fish 12 in or larger (PSD=92, RSD<sub>p</sub>=11). In 2007, there was a higher percentage of bass over 15 in (PSD=93, RSD<sub>p</sub>=53), but the catch rate (number of bass caught per hour) dropped substantially from 37 in 2002 to 14 in 2007. In 2017 the catch rate recovered to 55 and the population shifted to a more balanced size distribution (PSD=52, RSD<sub>p</sub>=27; Figure 1).



Bluegill were the most consistently common panfish species with catch rates over 80 fish/hour in all four electrofishing surveys (Table 1). The size structure of this population has also been consistently good with PSDs over 40 through the time series. Yellow perch and pumpkinseed were also important panfish in New Mill Pond, both with catch rates exceeding bluegill in 2017. While electrofishing surveys indicated a shift in the size distributions of bluegill, pumpkinseed and yellow perch toward smaller fish (Table 1), the fyke net survey indicated that there were still substantial numbers of quality size bluegill and pumpkinseed and preferred size yellow perch.

There were three important changes in the fish community and habitat since the regulation change was implemented: 1) introduction of black crappie; 2) introduction of common carp; and 3) introduction of Hydrilla. Black crappie were first reported in New Mill Pond by Angler Diary Cooperators in 2001, but

were not confirmed in sampling gear until 2017 when 11 fish were caught in the electrofishing survey. The fyke net survey was much more effective, producing 339 crappie, most of which were quality sized (the largest was 13.6 in). Common carp were also first caught in 2017; six by electrofishing and three in fyke nets. Carp ranged from 24.9 in to 31.8 in, and all were kept for contaminant analysis. Hydrilla was first documented in New Mill Pond in 2008 and DEC Fisheries began annually monitoring it in 2012. It has steadily declined since then, going from being considered dense in almost 80% of the samples in 2012 to dense in none of the samples in 2017.

The implementation of the catch and release bass fishing season had no adverse effect on the bass population. In fact, the size structure of the consistently abundant bass population was more balanced in 2017 than in any of the other years surveyed. Largemouth bass will continue to be managed under the current regulation. Panfish also continue to thrive, providing anglers with excellent fishing opportunities. In addition, good-sized black crappie are now well-established in the pond and promise to add variety to the fishery. While the introduction of Hydrilla to the lake is troubling, it does not appear to be adversely affecting the fish community or the recreational opportunities on the lake. Posting signs to inform boaters about the risk of spreading aquatic invasive species is recommended.

Table 1. Catch per Unit Effort (CPUE<sup>a</sup>) and size structure indices of sportfish and panfish from boat electrofishing surveys on New Mill Pond, 1998, 2002, 2007 and 2017.

Species	1998			2002			2007			2017		
	CPUE	PSD	RSD <sub>p</sub>	CPUE	PSD	RSD <sub>p</sub>	CPUE	PSD	RSD <sub>p</sub>	CPUE	PSD	RSD <sub>p</sub>
Largemouth bass	63	5	2	37	93	11	14	92	53	56	52	27
Bluegill	128	94	38	115	61	21	82	71	23	102	41	7
Pumpkinseed	17	100	31	83	24	2	24	67	27	108	26	1
Yellow perch	22	68	36	20	44	37	52	88	61	165	14	5
Black crappie <sup>b</sup>	0	-	-	0	-	-	0	-	0	11	-	-

<sup>a</sup>CPUE is the catch rate (number of fish caught per hour).

<sup>b</sup>An additional 339 black crappie were caught in the 2017 fyke net survey. The CPUE was 57 per net night, the PSD=92, and RSD<sub>p</sub>=7.

<sup>i</sup> PSD (Proportional Stock Density) and RSD (Relative Stock Density) are indices that allow for standardized comparisons of size classes of fish and provide measures of fish population balance. PSD is the percent of the stock sized population that are quality size, and RSD<sub>p</sub> is the percent of the stock sized population that are preferred size. Populations of bass that are well-balanced (i.e., have good size distributions) have PSDs of 40-70 and RSD<sub>p</sub>s of 10-25. Balanced panfish populations have PSDs of 30-60 and RSD<sub>p</sub>s of 8-15.

Length categories for size structure indices for sportfish and panfish in New Mill Pond.

	Largemouth Bass	Bluegill & Pumpkinseed	Yellow Perch & Black Crappie
Stock	≥8 in	≥3 in	≥5 in
Quality	≥12 in	≥6 in	≥8 in
Preferred	≥15 in	≥8 in	≥10 in