Bureau of Fisheries Technical Brief #tb221001

Prospect Park Lake Bass and Sunfish Survey (Survey #:221001)

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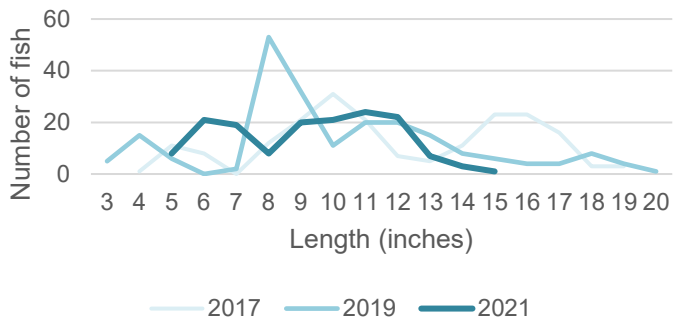
Prospect Park Lake is a 55-acre public lake located in Prospect Park, in Kings County, and part of the Long Island Watershed. The lake is the sole freshwater waterbody in Brooklyn, and it supports a variety of warmwater fish species. Prospect Park's shoreline is contoured and vegetated, but fishing access points can be found surrounding the lake. The park is adjacent to major throughways and is easily accessible by public transportation or personal vehicle. NYSDEC and NYC regulations require catch and release fishing year around and a freshwater fishing license for anglers 16 years and older. Additionally, fishing is restricted behind fenced areas and above Binnen Bridge. Prospect Park Lake is not stocked and has a naturally reproducing population of fish.

DEC fisheries staff conducted a two-night survey on the nights of May 4 -5, 2021, following the Black Bass and Sunfish Electrofishing Protocol for Lakes and Ponds (Brooking et al 2018). Four, 10-minute all-species runs, and three, 30-minute gamefish runs were performed. Netters were instructed to capture eels on all runs, deviating from the protocol. Windy conditions prevented some planned areas of the lake from be surveyed. A total of 710 fish were caught of seven species, which included golden shiner, brown bullhead, pumpkinseed sunfish, bluegill sunfish, largemouth bass, black crappie and yellow perch. Additionally, five American eel and two common carp were observed.

Figure 1. Length frequency distribution of largemouth bass from surveys in Prospect Park Lake from 2017-2021



155 largemouth bass (LMB) were captured with lengths and weights ranging from 5.3-17.3 inches and 0.9 ounces to 2.9 pounds, respectively. The LMB catch rate for all size categories was higher than 86% of all lakes surveyed by DEC in NY, and higher than 78% of lakes of similar size. The bass (PSD^1=37) to bluegill (PSD=46) ratio suggests a balanced predator-prey ratio. $RSDp^2$ was 1.8 for LMB. Possible reasons for a low value could include poor survey conditions leading to low catch rates and/or moderately high exploitation of the resource. The survey data also suggest a decline in the overall largemouth bass population, in both size and abundance compared to previous years (Figure 1). LMB is the most popular angled fish at Prospect Park (Cohen & Binns 2014) and anecdotal information from DEC regional staff observed an increase in anglers at the park in 2020. A rise in angling pressure could be a contributing factor to a low RSDp and a decline in population.

Largemouth bass and bluegill were at optimal relative weight (W_r[3] = 95-100), brown bullhead and black crappie were below optimal (W_r = <95) and pumpkinseed above optimal (W_r = >100). Catch rates of black crappie were mostly consistent with 2019 but saw a decrease in quality-sized fish. Three brown bullheads were caught in the memorable length category (>14.2 inches).

Prospect Park Lake offers the opportunity to catch a variety of species, particularly largemouth bass, bluegill, and pumpkinseed in abundance. Our data indicate that numbers of large-sized bass seemed to have declined but the lake is still ranked high for bass of all sizes, statewide. With ample shoreline

access points, bathrooms, maintained landscapes, and its centralized location, Prospect Park Lake is an ideal place to fish for first-time anglers, families, and the seasoned bass angler alike.

Table 1. Number collected and length category catch rates for species captured during a boat electrofishing survey of Prospect Park Lake in 2021.

			Catch rates (fish/h; standard error)				
Species	Total catch	Time (h)	All sizes	Age-1	≥Stock	≥Quality	≥Preferred
Largemouth bass	155	2.18	71(11)	3(2)	51(6)	19(3)	1(1)
Bluegill	319	.68	468(103)	46(16)	369(83)	171(47)	0
Pumpkinseed	134	.68	197(21)	7(2)	166(18.8)	59(12)	0
Black crappie	48	2.18	22(7)	0	23(6)	5(2)	0

Literature Cited

Brooking, T., Loukmas, J., Jackson, R., VanDeValk, T. 2018. Black bass and sunfish electrofishing protocol for lakes and ponds. New York State Department of Environmental Conservation, Federal Aid in Sport Fish Restoration, F-63-R, Study 2, Job 2-2.3, Albany, New York.

Cohen, M. and Binns, D. 2014. Prospect Park Lake Creel Survey, 2014. New York State Department of Environmental Conservation, Federal Aid in Sportfish Restoration, F-62-R-1, Study 2, Albany, New York.

[1]PSD (Proportional Stock Density) is an index that allows for standardized comparison of size classes of fish and provides a measure of fish population balance. PSD is the percent of the stock-sized population that are quality size.
[2]RSDp (Relative Stock Density Preferred) is the percent of the stock sized population that are of preferred size for angling. A RSDp of 10-25 is considered for good fishing
[3]W_r (Relative Weight) in an index of fish condition and can be used to compare condition between species, lakes and years.