Bureau of Fisheries Technical Brief #2018004

Deep Pond Centrarchid Survey (Survey #s:117006, 117024, 117028)

Chart Guthrie, Region 1 Fisheries

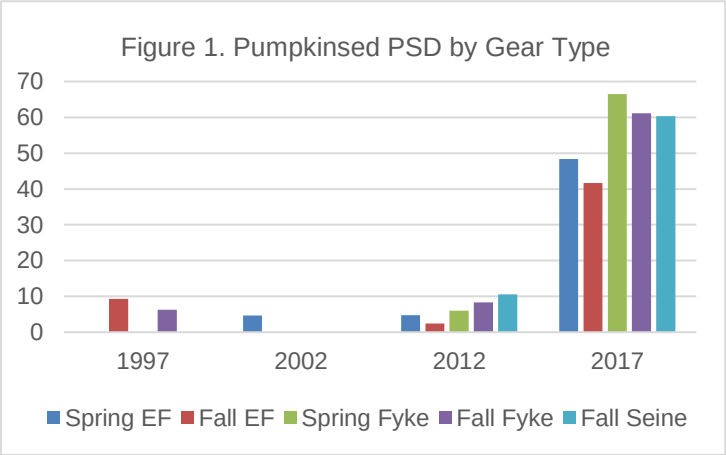
1/30/2018

Deep Pond is a 32 acre glacial kettlehole pond located in Wading River, NY on the Schiff Scout Reservation owned by the Theodore Roosevelt Council of the Boy Scouts of America (BSA). The pond has a maximum depth of 40 feet and has no inlet or outlet. The surface water contributory area to Deep Pond is very small and entirely within the Boy Scout Property. The groundwater contributory area is almost certainly larger and encompasses some unsewered residential areas and a National Cemetery. Septic leachate and fertilizers from these sources may contribute to nutrient loading in the pond.

Deep Pond was opened to public fishing in 1997 as a result of a Cooperative Agreement between the DEC and the BSA. Public access is limited to times when the camp is not in use which is weekdays between September 15 and June 15 each year. A free access permit is required. There is a 5 car parking lot for anglers, with a 300 yard carry to the water. DEC stocked 400 yearling brown trout and 400 yearling rainbow trout in Deep Pond each spring from 1999 through 2003. In 2004, the policy was shifted to fall yearling brown trout to provide trout fishing opportunity for more of the period that Deep Pond was open to the public. The larger trout are also thought to be less susceptible to pickerel predation. Based upon concerns expressed by anglers the Boy Scouts instituted their own Catch and Release Only Regulation on chain pickerel in 2010. The DEC implemented the same regulation effective October 1, 2012.

The DEC initially surveyed Deep Pond in the fall of 1997 (197024; Guthrie 1999), followed by surveys in 2002 (102001, 102003), 2012 (112007, 112023, 112026) and in 2017 (117006, 117024, 117028). Prior to 2015, the fish community consisted of native Long Island species including chain pickerel, pumpkinseed, yellow perch, golden shiner and banded killifish. In 2015, the DEC received the first reports of anglers catching largemouth bass in Deep Pond. The surveys conducted in 2017 were designed to monitor the chain pickerel population and document the status of the newly introduced largemouth bass. The number caught, catch per unit effort (CPUE) and CPUE by size group for largemouth bass, chain pickerel, pumpkinseed and yellow perch by gear for all surveys of Deep Pond are shown in the table on the next page. Number caught are also shown for brown trout, rainbow trout, golden shiner and banded killifish.

Largemouth bass are now clearly part of the fish community in Deep Pond. In the spring survey 16 largemouth bass ranging from 3 in to 18 in were caught electrofishing (Table 1). In the fall survey 114 largemouth bass, nearly all young of the year, were caught. Catches of chain pickerel were lower in 2017 than in previous years for all gear types. Not enough chain pickerel were caught to characterize the size distribution, but no young of the year chain pickerel were caught.



Pumpkinseed catch rates were also lower than previous years, but they were still abundant and the size distribution of pumpkinseed improved. Prior to 2017 pumpkinseed PSD's were 11 or less from all gears, while in 2017 pumpkinseed PSD was over 40 for electrofishing and 60 or above from the seine and the fyke net (Figure 1). Yellow perch

remained abundant and dominated by small individuals as in previous years. However, some preferred size yellow perch were caught. Banded Killifish and golden shiner remained abundant, providing a good forage source for the other species.

Four brown trout were caught in the spring and three in the fall 2017 surveys. While this is not many, it is more than caught in previous years and the brown trout are surviving and growing as shown by the largest one which was over 22 inches. The August temperature/oxygen profile showed good trout water in a depth range of 17 to 22 feet.

While the decline in the catch of chain pickerel in 2017 could be the result of the introduction of largemouth bass, there was another substantial change in Deep Pond between 2012 and 2017. In that time Phragmites which had covered about a quarter of the shoreline was eradicated from the pond. Before its eradication Phragmites was the primary emergent vegetation in the pond. No comparable vegetation has taken its place. The decline in the pickerel catch could be due to the loss of habitat, or to the pickerel moving to other habitat that was not effectively sampled by the gear. Future surveys should clarify the status of the chain pickerel population in Deep Pond.

Table 1. Deep Pond survey results by gear type.

	Electrofishing						Fyke Net					Seine			Gill Net		
Year	2017		2012		2002	1997	2017		2012		1997	2017	2012	1997	2017	2012	2002
Season	Fall	Spring	Fall	Spring	Spring	Fall	Fall	Spring	Fall	Spring	Fall	Fall	Fall	Fall	Spring	Spring	Spring
Effort[a]	1.99	2.00	1.08	0.81	0.75	2.17	3	6	2	1	2	4	4	3	3	3	5
Chain Pickerel																	
Number	2	6	46	20	6	34	1	16	9	3	41	1	5	0	6	15	21
CPUE[b]	1.0	6.0	42.6	24.7	8.0	15.7	0.5	2.7	4.5	3.0	20.5	0.3	1.3	0.0	2.0	5.0	4.2
CPUE Quality	1.0	6.0	12.0	23.5	4.0	1.4	0.5	2.7	4.0	3.0	4.0	0.3	0.0	0.0	2.0	5.0	3.8
CPUE Preferred	1.0	3.0	0.9	2.5	0.0	0.0	0.0	0.7	0.5	1.0	1.0	0.0	0.0	0.0	0.3	2.0	1.4
Largemouth Bass																	
Number	114	16	0	0	0	0	0	0	0	0	0	11	0	0	0	0	0
CPUE	57.3	8.0	--	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--
CPUE Quality	0.0	4.0	--	--	--	--	--	--	--	--	--	0.0	--	--	--	--	--
CPUE Preferred	0.0	3.0	--	--	--	--	--	--	--	--	--	0.0	--	--	--	--	--
Pumpkinseed																	
Number	36	246	498	648	286	228	36	204	12	83	129	53	63	7	3	3	0
CPUE	36.0	246.0	461.1	800.0	383	105.1	12.0	34.0	6.0	83.0	64.5	13.3	15.8	2.3	1.0	1.0	0.0
CPUE Quality	15.0	119.0	8.3	27.2	12.0	8.8	7.3	22.5	0.5	5.0	4.0	8.0	0.5	0.0	0.7	0.3	0.0
CPUE Preferred	0.0	0.0	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow Perch																	
Number	366	426	736	702	618	113	89	400	16	71	42	97	58	0	304	157	291
CPUE	366.0	426.0	681.5	866.7	824.0	52.1	29.7	66.7	8.0	71.0	21.0	24.3	14.5	0.0	101.3	52.3	58.2
CPUE Quality	2.0	3.0	8.3	22.2	10.7	1.8	4.0	6.7	1.5	29.0	7.5	3.0	0.0	0.0	1.7	12.0	3.8
CPUE Preferred	0.0	2.0	0.0	8.6	4.0	0.0	0.3	2.3	0.5	3.0	5.0	0.3	0.0	0.0	0.7	3.0	3.0
Brown Trout																	
Number	2	2	0	1	0	0	0	1	0	0	0	0	0	0	1	1	0
Rainbow Trout																	
Number	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Golden Shiner																	
Number	3	12	0	0	0	0	1	799	0	0	0	1133	0	0	282	0	0
Banded Killifish																	
Number	0	3	0	0	0	0	0	0	0	0	0	549	0	0	0	235	0

[a]Units of effort for each gear type are: hours (electrofishing), net nights (fyke and gill nets) and hauls (seine).
[b]CPUE is the number of fish caught per unit effort.

Literature cited

Guthrie, C.A.. 1999. Deep Pond, Wading River, NY Survey Report. New York State Department of Environmental Conservation, Bureau of Fisheries, Stony Brook, New York.