

Monocacy & Saucon Creeks

Northampton County

July 2022 Trophy Trout Regulation Evaluation

The Monocacy and Saucon creeks are tributaries to the Lehigh River located in Northampton County. Monocacy Creek originates north of Bath, PA flowing southward through the City of Bethlehem to the Lehigh River. Whereas Saucon Creek originates south of the Lehigh River in the vicinity of Limeport, PA flowing northwards to its confluence with the Lehigh River. Both creeks have multiple designated sections dependent on various management objectives. Specifically, Monocacy Creek, Section 7 (upstream boundary of Gertrude Fox Conservation Area downstream to Illicks Mill Dam, 2.2 miles) and Saucon Creek, Section 5 (0.38 miles upstream of Seidersville Road bridge downstream to Hellertown Road (SR 412) bridge (i.e., Saucon Park), 2.1 miles) are both designated Class A wild trout waters. Historically these waters were managed under Trophy Trout, Artificial Lures Only regulations.

Biologists, resurveyed Section 07 and 05 of the Monocacy and Saucon creeks, respectively, August 8 – 9, 2022. The intent was to characterize present day trout biomass and population size distribution. Absolute abundance was determined via Peterson estimation, which is based on the ratio of marked fish captured and released on the first day to the number of marked fish recaptured on the following day relative to the second day total catch. One site per section was prosecuted, beginning just below Macada Bridge and ending at the crib dam for Monocacy Creek and beginning near Traveler Ave. bridge continuing up through the “Canyon” in Saucon Creek, terminating at the end of the concrete apron.

A total of 198 and 706 Brown Trout were captured from the Monocacy Creek and Saucon Creek, respectively (Table 1). Both sections demonstrated the continuance of Class A wild Brown Trout populations. Brown Trout biomass estimates were 49.68 kg/ha and 121.11 kg/ha of Brown Trout, respectively in the Monocacy Section 07 and Saucon Section 05. No Rainbow Trout or Brook Trout were captured at either site.

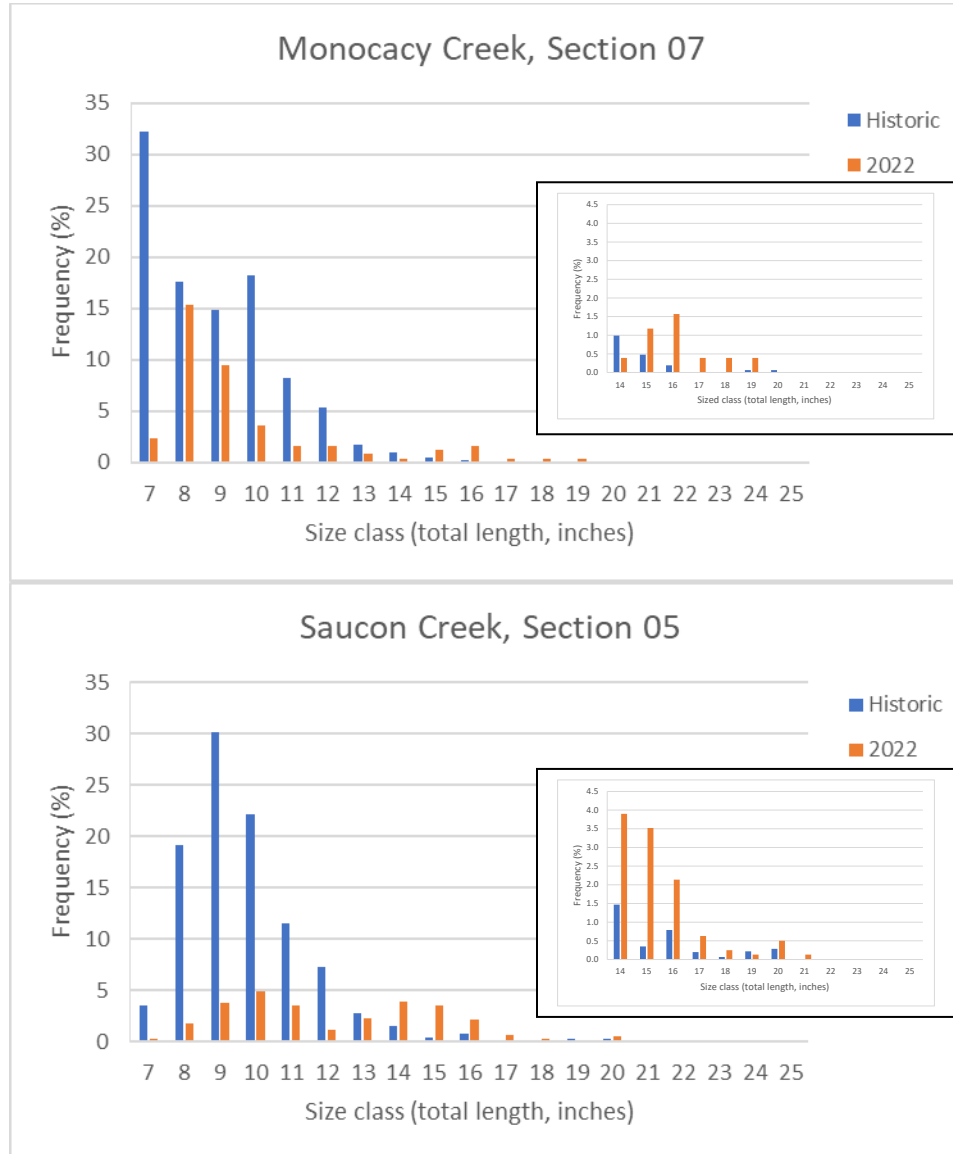
All sizes of trout, young-of-the-year (YOY) to mature adults, were captured (Figure 1). Highly encouraging were YOY and yearling trout (< 7 inches) being well-represented, 61.8% and 71.1% cumulative occurrence for Monocacy and Saucon creeks, respectively. Thus, a plethora of young trout are available for growing into desirable sizes for the fishery as the older, mature trout age-out of the population. Large trout 14-in. to 18-in. was relatively frequent in Saucon Creek (10.4%), but not as prevalent in Monocacy Creek (3.9%). Whereas less than one percent (1%) of the catch represented 18-in. or larger-sized trout in either water. Comparison of the July 2022 surveys to historic size distributions suggest some annual variation occurring, likely due to annual recruitment success. Yet, the July 2022 surveys continue to demonstrate the rarity of ≥ 18 -in. fishes in either water.

Initiated in 2023, both waters were transitioned into the Artificial Lures Only, Trout Slot Limit program (ALO-TSL). This regulation allows for angling year-round and harvest of two trout per day of at least 7-inches but less than 12-inches in total length, from opening day of trout season through Labor Day, with catch-and-release the remainder of the year. The principal management objective for a water within the ALO-TSL program is two-fold. First, the regulation offers anglers opportunity to harvest trout from the most abundant size class, reducing competition within the population for stream resources. Thereby potentially enabling more fish to grow to trophy sizes (≥ 18 -inches). Second, offers protection to fishery-desirable large-sized trout (i.e., ≥ 12 -inches). Ultimately, we hope to generate a consistent size structure supportive of trophy-sized trout. Biologists plan on routine monitoring to evaluate regulation efficacy. We highly encourage anglers to fish these waters as the Class A biomass will offer an excellent trip experience.

Table 1. Capture numbers of Brown Trout that were marked on the first day (i.e., Mark) and total catch (i.e., Catch) and number of recaptured trout that were initially marked (i.e., Recapture) on the second day used to calculate total estimate Brown Trout within the site (i.e., Peterson) and site biomass (i.e., Biomass), from the August 8-9, 2022 evaluation at Monocacy Creek, Section 07 and Saucon Creek, Section 05. The size distribution (i.e., Frequency) of trout by size class (Mark + Catch – Recapture) are represented as the percentage of total trout caught (Mark + Catch – Recapture).

Size Class (in.)	Monocacy Creek, Section 07						Saucon Creek, Section 05					
	Mark (N)	Catch (N)	Recapture (N)	Peterson (N)	Biomass (kg/ha)	Frequency (%)	Mark (N)	Catch (N)	Recapture (N)	Peterson (N)	Biomass (kg/ha)	Frequency (%)
1	0	0	0	0	0.00	0.00	0	0	0	0	0.00	0.00
2	1	7	1	7	0.03	2.75	1	1	0	2	0.01	0.25
3	46	58	13	198	2.32	35.69	104	83	23	368	2.58	20.63
4	30	30	4	192	5.06	21.96	224	186	76	546	8.63	42.01
5	0	2	0	2	0.10	0.78	41	38	13	117	3.38	8.3
6	0	0	0	0	0.00	0.00	0	0	0	0	0.00	0.00
7	4	4	2	6	0.74	2.35	2	2	2	2	0.15	0.25
8	22	30	13	51	9.08	15.29	11	6	3	21	2.24	1.76
9	14	20	10	29	7.17	9.41	26	18	14	34	5.07	3.77
10	5	8	4	11	3.68	3.53	33	20	14	48	9.54	4.91
11	2	3	1	4	1.74	1.57	19	20	11	35	9.11	3.52
12	2	3	1	4	2.23	1.57	8	3	2	9	3.01	1.13
13	2	1	1	2	1.40	0.78	14	13	9	21	8.84	2.26
14	1	0	0	1	0.87	0.39	26	23	18	34	17.78	3.90
15	1	3	1	3	3.19	1.18	26	15	13	31	19.64	3.52
16	3	4	3	5	6.38	1.57	17	11	11	18	13.77	2.14
17	1	1	1	1	1.58	0.39	5	4	4	6	5.69	0.63
18	0	1	0	1	1.92	0.39	2	2	2	2	2.30	0.25
19	1	1	1	1	2.19	0.39	0	1	0	1	1.32	0.13
20	0	0	0	0	0.00	0.00	3	3	2	4	6.06	0.50
21	0	0	0	0	0.00	0.00	0	1	0	1	1.99	0.13
Total	135	176	56	518	49.68		562	450	217	1,300	121.11	

Figure 1. Size distribution (inches) of Brown Trout captured within the Trophy Trout sections of Monocacy Creek and Saucon Creek, July 2022 compared to the historic time-series. For clarity, the young-of-the-year and yearling size classes (i.e., < 7-in.) were not included in the graphs and the inset graphs for each creek represent rescaling of the 14-in and larger-sized trout.



Daryl Pierce
Area 5 Fisheries Manager