

Monocacy & Saucon Creeks

Northampton County

August 2023 Trout Slot Limit Regulation Evaluation

Pennsylvania Fish and Boat Commission (PFBC) biologists returned to Monocacy Creek, Section 07 and Saucon Creek, Section 05, for monitoring population size distributions managed under the [Trout Slot Limit, Artificial Lures Only regulations](#) in August 2023. The 2023 season is the first year under this regulation. It is anticipated selected harvest by anglers from the slot limit would reduce density-compensatory competition, enabling greater occurrences of trophy-sized trout. [Previous surveys within both creeks were accomplished in 2022](#) to establish baseline conditions for subsequent comparison.

A total of 360 and 432 Brown Trout were captured from the Monocacy Creek and Saucon Creek, respectively (Table 1). Within the Monocacy Creek site, most of the adult trout (i.e., >5-inch total length) catch was found on the sparse occurrences of large woody debris or the crib dam plunge pool. Whereas within the Saucon Creek site, large-sized (i.e., ≥ 14 -inch to <18-inch total length) or trophy-sized (>18-inch total length) trout, were principally caught in the “Canyon” (i.e., an exceptionally deep pool). In either creek, young-of-the-year (YOY; <5-inch total length) were consistently caught throughout the sites. Distribution of trout within the creeks generally reflected the relatively degraded habitat (i.e., sedimentation, lack of velocity breaks, and overhead cover), such that instream habitat is best characterized as a shallow, fine sediment/gravel homogenous substrate. Yet, both sections demonstrated the continuance of Class A wild Brown Trout populations (Monocacy Creek: 63.17 kg/ha; Saucon Creek: 132.23 kg/ha). No Rainbow Trout or Brook trout were captured at either monitoring site.

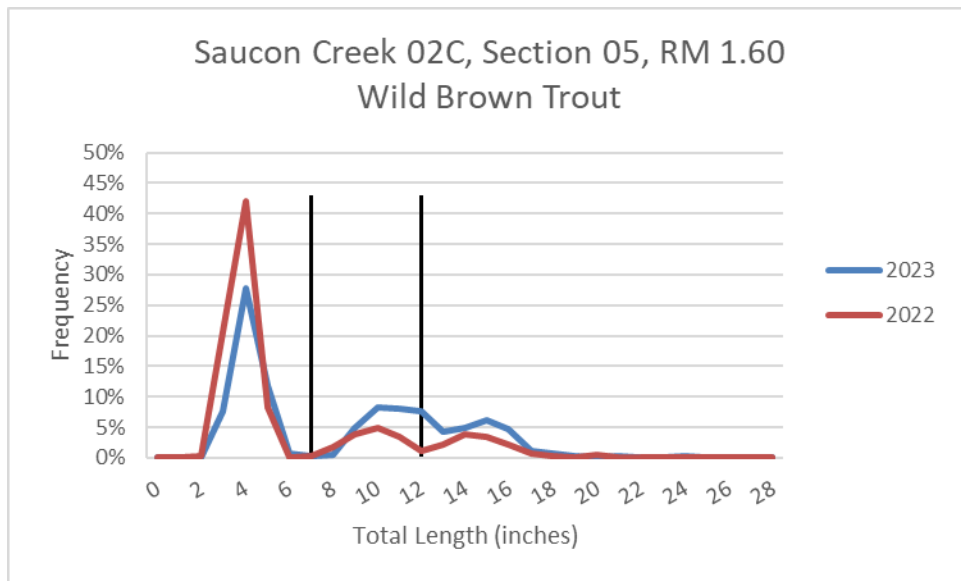
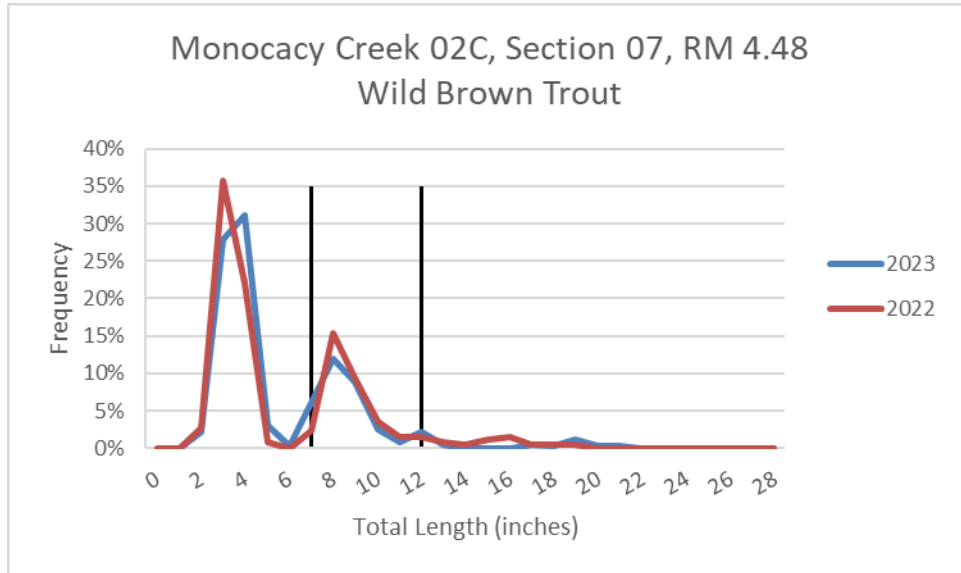
Observed size distributions in both the Monocacy Creek and Saucon Creek were represented by multiple modal size groups. In either creek, total catches were inclusive of a strong presence (Monocacy Creek: 64.2%; Saucon Creek: 47.2%) of YOY sized trout (i.e., 3-inch to 5-inch total length) (Table 1). The remainder of the catch from Monocacy Creek was principally composed of the 7-inch to 9-inch modal group (26.9%). Occurrences of large-sized (≥ 14 -inch to <18-inch total length, 2.5%) and trophy-sized trout (≥ 18 -inch total length, 1.9%) trout were rare. In contrast, large-sized trout (16.9%) were more prevalent in Saucon Creek, yet trophy-sized trout (1.4%) were similarly rare in the total catch. Additionally, a 9-inch to 13-inch modal group was also evident in Saucon Creek composing 33.1% of the total catch. Occurrences of trout specifically within the slot limit (i.e., ≥ 7 -inch and <12-inch) were common, representing 30.2% and 21.9% of the total catches for Monocacy Creek and Saucon Creek, respectively (Figure 1).

Mixed insight was gleaned from comparison of the observed 2022 and 2023 size distributions (Figure 1). Size distributions of trout from Monocacy Creek were essentially similar among both years. Growth of modal groups observed in 2022 into presumably larger size classes for 2023 season remains unclear, likely given the rare catches of large-sized trout. In contrast, within Saucon Creek, modal groups appear to demonstrate approximately one to two inches total length growth from 2022 to 2023 season. Hopefully these modal groups can successfully recruit into the trophy-sizes desirable by the fishery. Likely causative influences of selective angler harvest from slot-sized trout are limited given the infancy of the Trout Slot Limit regulation. Regardless, both the Monocacy Creek and Saucon Creek continue to offer exceptional trout angling opportunities.

Table 1. Capture numbers of wild Brown Trout that were marked on the first day (i.e., Mark), number of unmarked trout caught on the second day (i.e., Catch), and number of recaptured trout on the second day that were initially marked (i.e., Recapture) on the first day used to calculate total estimate Brown Trout within the site (i.e., Peterson) and site biomass (i.e., Biomass), from the August 21-22, 2023 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 (%)
0	0	0	0	0	0	0.00	0	0	0	0	0	0.00
1	0	0	0	0	0	0.00	0	0	0	0	0	0.00
2	7	1	0	8	0.04	2.22	0	0	0	0	0	0.00
3	71	37	8	304	3.54	27.78	21	13	1	33	0.23	7.64
4	71	68	27	177	4.65	31.11	77	63	20	238	3.75	27.78
5	5	8	2	11	0.53	3.06	41	26	16	67	1.93	11.81
6	1	0	0	1	0.08	0.28	2	1	0	3	0.14	0.69
7	14	17	9	27	3.33	6.11	0	1	0	1	0.07	0.23
8	30	30	17	53	9.44	11.94	2	1	1	2	0.21	0.46
9	22	21	11	42	10.41	8.89	19	9	7	25	3.71	4.86
10	7	6	4	11	3.68	2.50	28	15	7	58	11.62	8.33
11	2	3	2	3	1.3	0.83	26	18	9	51	13.29	8.10
12	8	8	8	9	5.01	2.22	23	16	6	58	19.36	7.64
13	2	1	1	2	1.4	0.56	14	14	10	20	8.4	4.17
14	0	0	0	0	0	0.00	18	12	9	25	13	4.86
15	0	0	0	0	0	0.00	23	16	12	31	19.69	6.25
16	0	0	0	0	0	0.00	16	9	5	28	21.43	4.63
17	2	2	2	2	3.15	0.56	5	3	3	6	5.67	1.16
18	1	1	1	1	1.92	0.28	2	1	0	3	3.46	0.69
19	3	2	1	4	8.81	1.11	1	1	1	1	1.32	0.23
20	1	1	1	1	2.49	0.28	0	0	0	0	0	0.00
21	0	1	0	1	3.39	0.28	1	1	1	1	2.03	0.23
22	0	0	0	0	0	0.00	0	0	0	0	0	0.00
23	0	0	0	0	0	0.00	0	0	0	0	0	0.00
24	0	0	0	0	0	0.00	0	1	0	1	2.92	0.23
Total	247	207	94	657	63.17		319	221	108	652	132.23	

Figure 1. Size distribution (inches) of wild Brown Trout captured within the Trout Slot Limit, Artificial Lures Only sections of Monocacy Creek and Saucon Creek, August 2023 compared to the baseline condition (i.e., 2022 catches). The vertical black lines represent the slot limits. Trout must be at least 7-inches but less than 12-inches in total length to be harvested.



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