

Pennsylvania Fish and Boat Commission

West Branch Susquehanna River

2018-2024 Catfish Surveys

Lycoming, Northumberland, and Union counties



Warmwater Unit Biologist Benjamin Frick with a Channel Catfish from the West Branch Susquehanna River caught in 2024.

Pennsylvania Fish and Boat Commission (PFBC) Warmwater Unit (WWU) initiated a Catfish study of the West Branch Susquehanna River in the summer of 2018. WWU staff then continued this survey during the summers of 2020, 2023, and 2024. The objectives of these surveys were to 1) collect baseline abundance and species composition data on the river's catfish populations; 2) contrast catfish populations between different sampling locations and years; and 3) monitor the invasion of Flathead Catfish in the river system. Sampling focused on Section 10 (Montoursville to Northumberland) during 2018-2024, and plans are to expand survey efforts to Section 9 (Lock Haven to Montoursville) during summer 2025. These efforts are part of statewide riverine monitoring identified in the PFBC's catfish management plan.

Since catfish are most active at night, are opportunistic feeders, and utilize their sense of smell to feed, baited tandem hoop nets set for three consecutive nights are our preferred method for surveying ictalurids (e.g., Channel Catfish, Flathead Catfish) in riverine environments. We target these surveys during mid-to-late summer to capitalize on catfish resuming active feeding after spawning in late spring and early summer. This allows us to be most efficient and handle as many fish as possible, thus providing the highest quality data. Ultimately, data collected during these

surveys will be used to develop hoop net catch rate thresholds to guide catfish management in Pennsylvania.

Four, baited tandem hoop nets were set at Williamsport (PFBC Greevy access, Lycoming County) for a total of 12 net nights in 2018. In 2020, twelve tandem hoop nets were set at three locations: four near Chillisquaque (PFBC Winfield access, Northumberland County), four near the PFBC Montgomery access (Lycoming County), and four near the PFBC Watsontown access (Northumberland County) for a total of 36 net nights. In 2023, twelve tandem hoop nets were set at three locations: four each near the PFBC Greevy access, the PFBC Montgomery access, and the PFBC Watsontown access for a total of 36 net nights. A blue-green algae bloom occurred during this survey, fouling nets at Montgomery and Watsontown and negatively affecting catch. In 2024, twelve tandem hoop nets were set at three locations: four each near West Milton (DCNR Milton State Park access, Northumberland County), Lewisburg (PFBC Chillisquaque access, Northumberland County), and PFBC Watsontown access for a total of 32 net nights (Figure 1).

The 2018 survey captured 97 Channel Catfish (24.25 fish per series; Table 1, Figures 2 and 3). The 2020 survey captured 255 Channel Catfish (21.25 fish per series; Table 1, Figures 2 -5). The 2023 survey captured 97 Channel Catfish (8.08 fish per series; Table 1, Figures 2 – 5). The 2024 survey captured 351 Channel Catfish (29.25 fish per series; Table 1, Figures 2-5).

Table 1. Year, site, number (n), catch rate (fish/ series), length range (inches), and proportion of fish 20 inches or greater total length (%), and proportion of fish 24 inches or greater total length (%) for Channel Catfish at the West Branch Susquehanna River during 2018, and 2020-2024 surveys.

Year	Site	n	Catch rate (fish/ series)	Length range (in)	Prop. ≥ 20 in. (%)	Prop. ≥ 24 in. (%)
2018	Williamsport	97	24.3	16 - 30	90	44
2020	Montgomery	122	30.5	19 - 29	97	62
	Watsontown	60	15.0	19 - 30	98	75
	Chillisquaque	73	18.3	15 - 28	92	25
2023	Williamsport	76	19.0	17 - 29	84	46
	Montgomery	6	1.5	23 - 29	100	83
	Watsontown	15	3.8	19 - 30	87	67
2024	Watsontown	172	43.0	17 - 30	93	51
	West Milton	126	31.5	17 - 32	89	56
	Lewisburg	53	13.3	19 - 29	94	65

The results of this initial survey of Section 10 of the West Branch Susquehanna River demonstrate a thriving Channel Catfish population with numerous large (> 24 inch) fish present, and likewise, is popular with catfish anglers. Results also suggest that Channel Catfish catch rates have remained relatively stable over time. An exception to this is 2023, where catch rates were reduced due to net

fouling from blue-green algae. This should not be interpreted as a population decline, as 2024 catch rates were similar to those observed during 2018 and 2020. The highest catch rate over the survey years was observed at Watsontown (2024), followed by West Milton (2024) and Montgomery (2020), suggesting potential locations to target Channel Catfish angling within this river reach. Additionally, six Flathead Catfish were captured, ranging from 18 to 21 inches in total length. These collections at Watsontown and Lewisburg documented the first presence of Flathead Catfish in the West Branch Susquehanna River during PFBC fisheries surveys (Figure 6). Due to the highly predatory nature of Flathead Catfish, future catfish surveys on the West Branch Susquehanna River will monitor the expansion of this species and their effects on the river's Channel Catfish and other resident fish populations. Such impacts have been documented in scientific literature following the introduction of Flathead Catfish at locations outside of Pennsylvania. Nevertheless, the West Branch Susquehanna River from Northumberland to Montoursville presently provides anglers ample opportunity to catch numerous, and large Channel Catfish.

West Branch Susquehanna River Catfish Sampling Locations 2018-2024

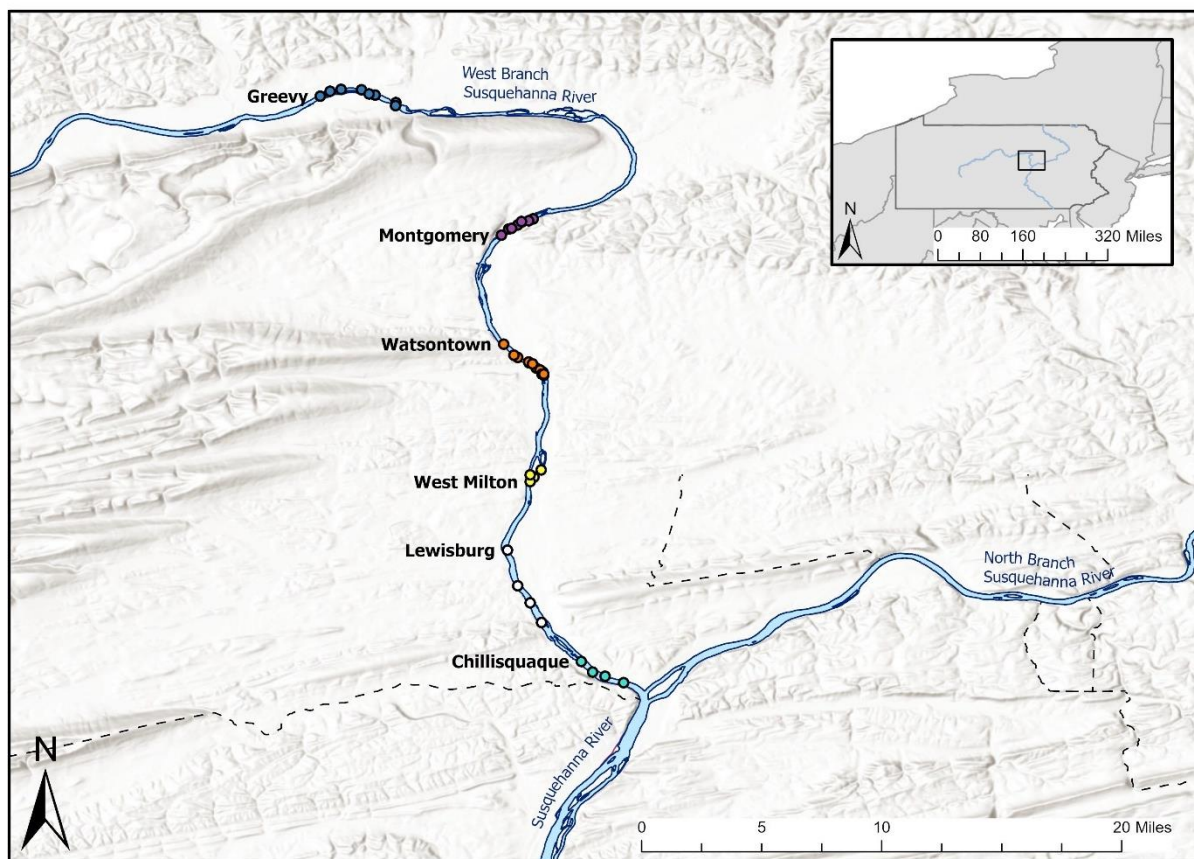


Figure 1. West Branch Susquehanna River Catfish sampling locations 2018-2024.

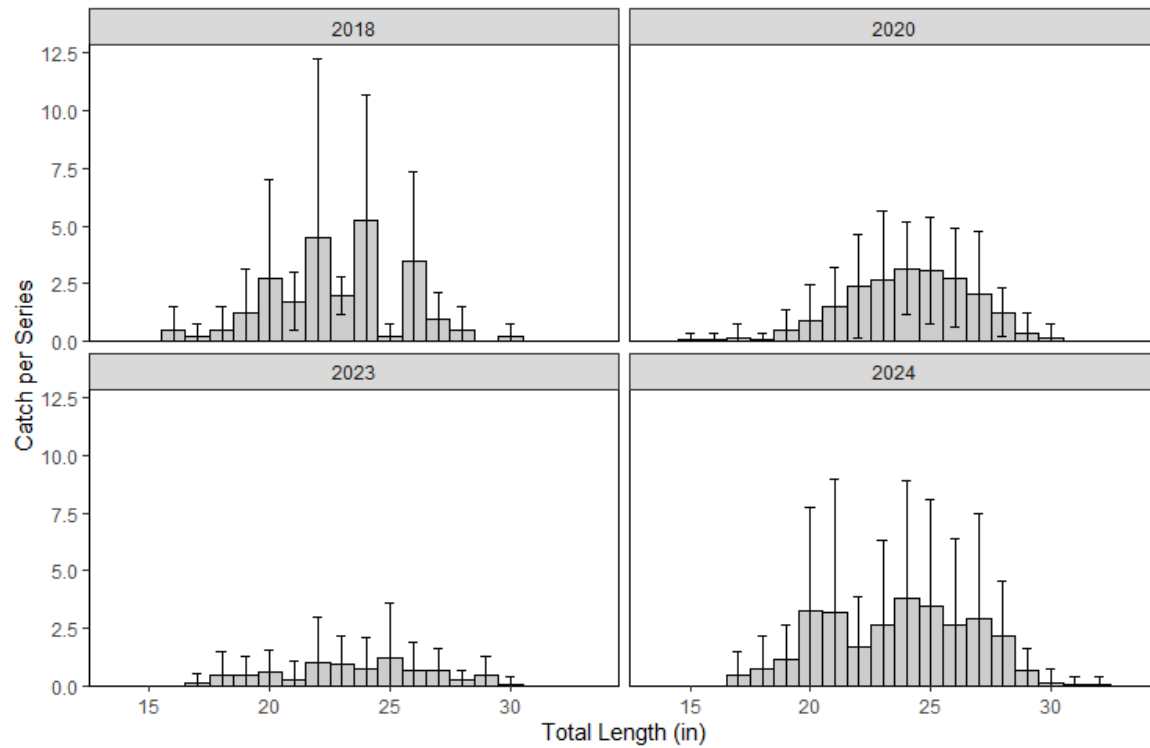


Figure 2. Length-frequency distributions (mean \pm SD) of Channel Catfish captured in the West Branch Susquehanna River during surveys conducted in 2018, 2020, 2023, and 2024.

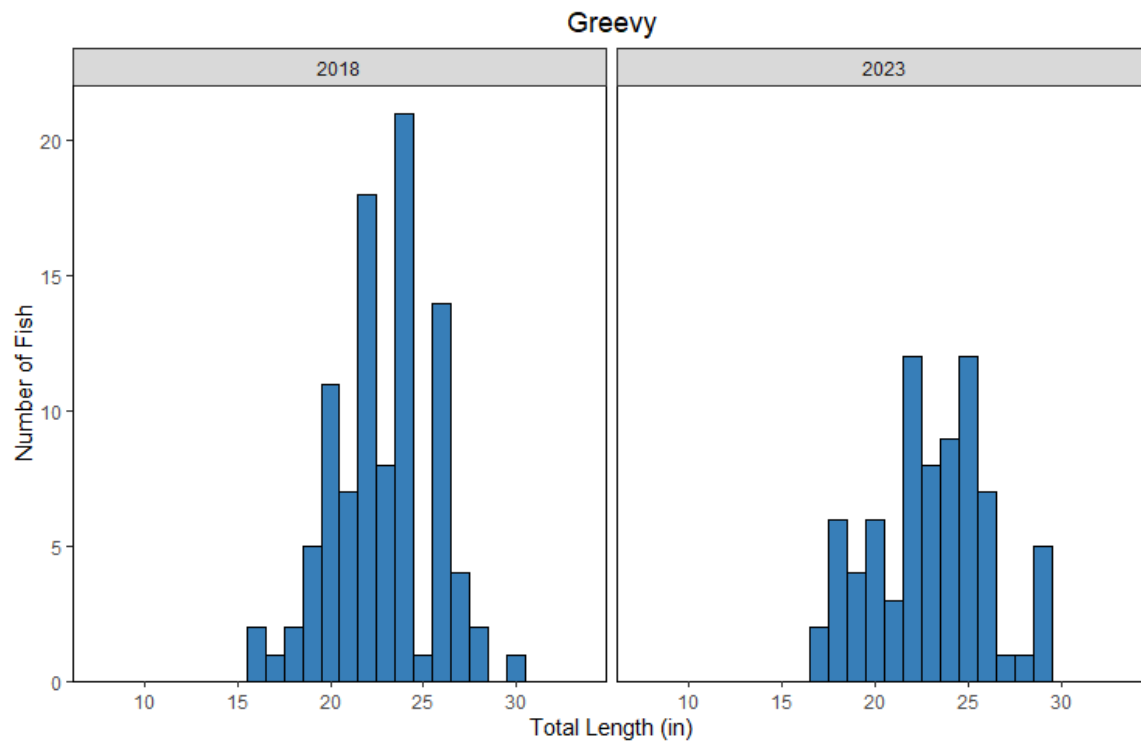


Figure 3. Length-frequency distributions of Channel Catfish captured at Williamsport during the 2018 and 2023 surveys of the West Branch Susquehanna River.

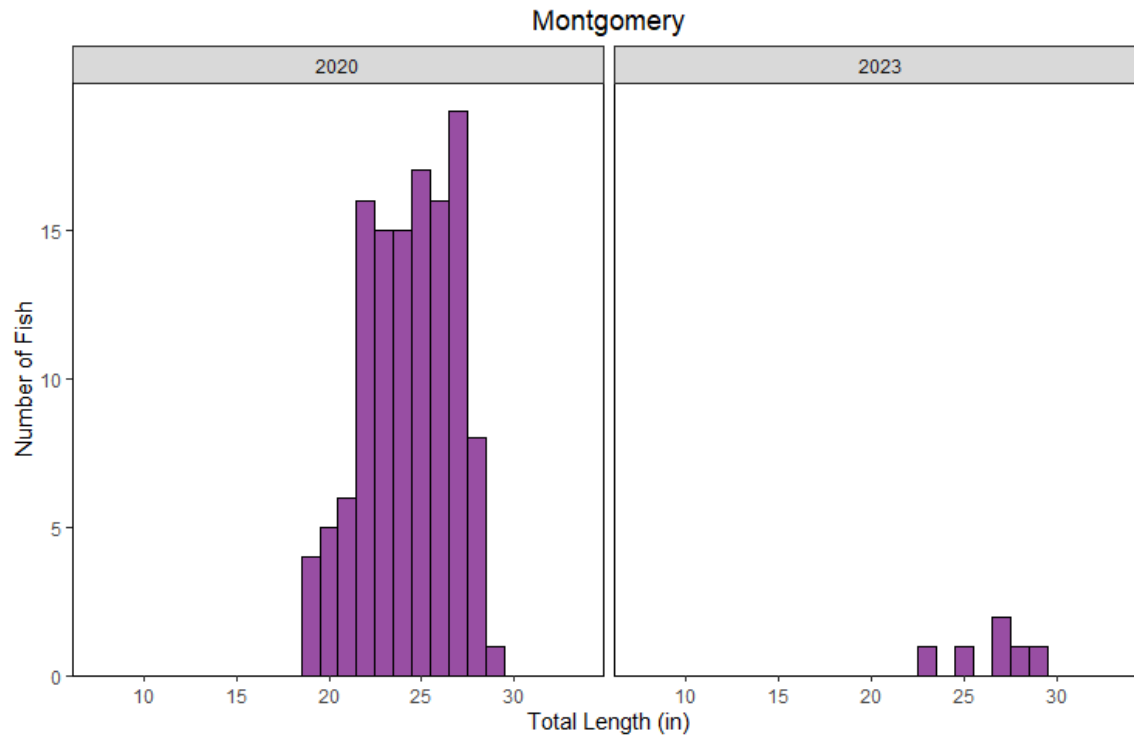


Figure 4. Length-frequency distributions of Channel Catfish captured at Montgomery during the 2020 and 2023 surveys of the West Branch Susquehanna River.

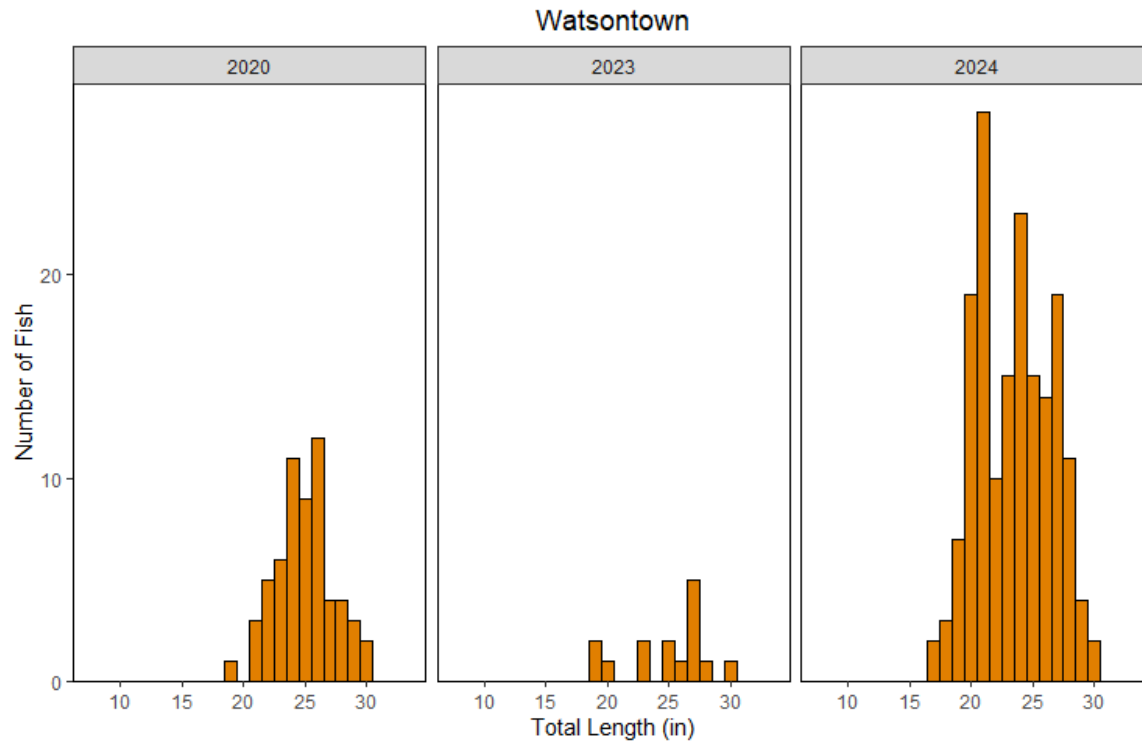


Figure 5. Length-frequency distributions of Channel Catfish captured at Watsontown during the 2020, 2023, and 2024 surveys of the West Branch Susquehanna River.

West Branch Susquehanna River Flathead Catfish Collection Locations 2024

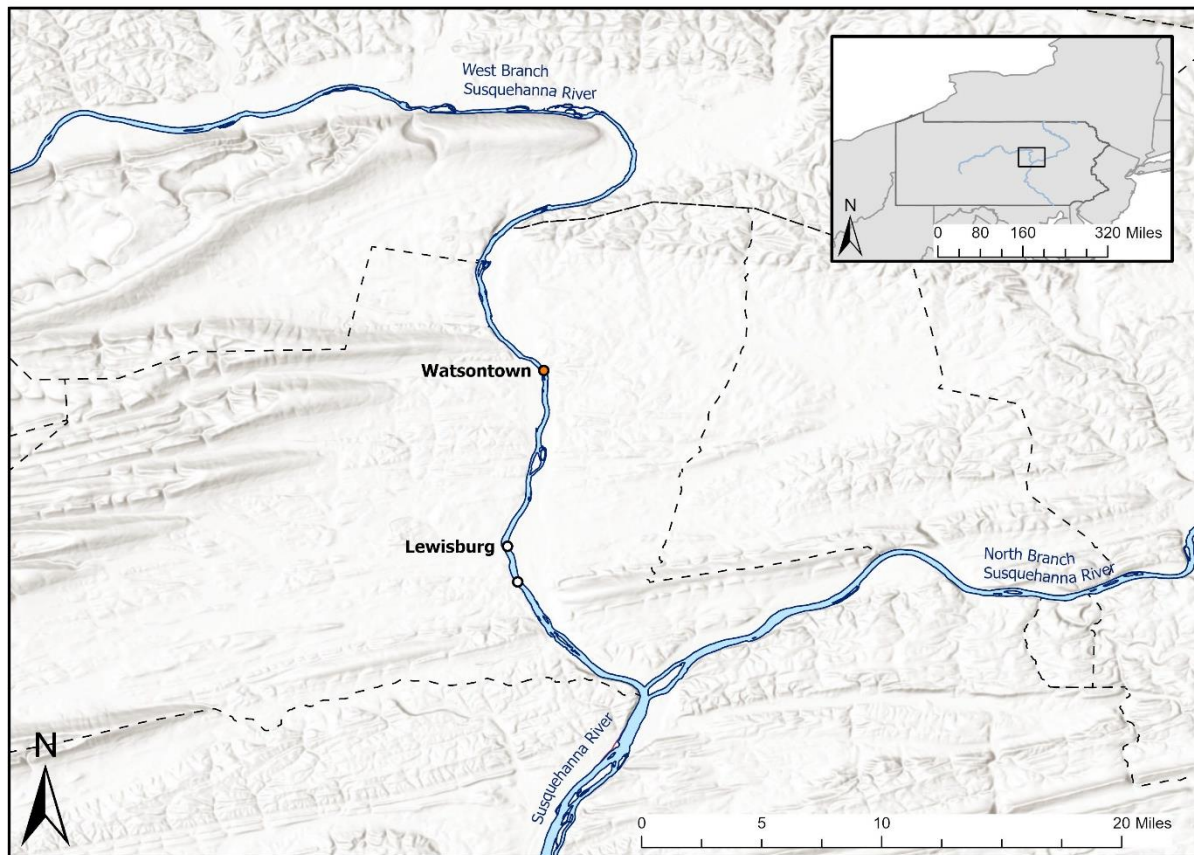


Figure 6. West Branch Susquehanna River Flathead Catfish collection locations during 2024.

Susquehanna River Biologist Garret Kratina

Warmwater Unit Leader Geoff Smith