Pennsylvania Fish and Boat Commission Biologist Report

North Brach Susquehanna River

Columbia, Luzerne, Wyoming, and Bradford Counties

2021 Catfish Survey

Biologist Garret Kratina with a Channel Catfish (right hand) and Flathead Catfish (left hand) caught in 2021.

The Area 4 Fisheries Management Office initiated a catfish study of the North Branch Susquehanna River in the summer of 2014. In 2014, 2015, and 2016 a different reach of the river was sampled starting at Northumberland and working upstream to the Oakland PFBC access. 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 river reaches; and 3) to monitor the invasion of Flathead Catfish in the river system. These surveys revealed an abundant Channel Catfish population and the first documentation of Flathead Catfish in the North Branch Susquehanna River. Both Channel Catfish and Flathead Catfish are not native to this river with Flathead Catfish as noted a very recent invasive fish species.

Sampling continued in 2020 and 2021 to monitor the Flathead Catfish and Channel Catfish populations and the expansion of the Flathead Catfish range. Targeted catfish sampling took place between August 9 and October 15, 2021 and was conducted near Bloomsburg (Columbia County), Shickshinny (Luzerne County), West Falls (Wyoming County), and Wysox (Bradford County). Eight baited tandem hoop nets were set at past sampling locations: 4 at Bloomsburg PFBC Access, 2 at Shickshinny Borough Access, 2 at Union PFBC Access, 4 at the PFBC West Falls Access, and 4 at the Wysox Township Access. All nets were set for 3 net nights except for the nets at West Falls which were only set for one net night due to heavy rains and flooding. The nets were set for 40 net nights for a total of 938.8 hours.

The 2021 survey captured 1,232 Channel Catfish and 72 Flathead Catfish. Channel Catfish ranged from 13 to 31 inches in total length. Flathead Catfish captured in 2021 ranged from 18 to 33 inches in total length with the heaviest weighing 18.3 pounds.

Crew from WNEP Channel 16 Pennsylvania Outdoor Life were along for the sampling at Shickshinny and can be viewed here.

Biologist Garret Kratina and Fisheries Biologist Aid Joe Pacholec with a pair of Channel Catfish in 2021.

For Channel Catfish there was variation in catches from 2014/2015 to 2021. Catch rates increased at the Bloomsburg and West Falls sites but decreased at the Shickshinny and Wysox sites (Table 1). Size structure continues to be impressive with large percentage of fish > 20 inches at all sites (Figure 1-4).

Table 1. Catch rates for Channel Catfish on the North Branch Susquehanna River from 2014 to 2021.

Location	Catch per Hour				Catch per Net Night			
	2014	2015	2020	2021	2014	2015	2020	2021
Bloomsburg	1.57			1.73	37.25			40.75
Shickshinny	1.61		0.18	1.06	37.83		4.14	25.25
West Falls	1.40		0.49	2.68	33.25		11.67	61.50
Wysox		1.92		0.7		45.92		16.17

Biologist Garret Kratina with a pair of Flathead Catfish in 2021.

Flathead Catfish catch rates continue to increase, especially at the Shickshinny sites. Size structure showed an increase in the numbers of larger fish (Figure 5-6). The 2021 survey also documented further expansion of the Flathead Catfish range in the North Branch Susquehanna River. Currently the furthest

downstream Flathead Catfish have been caught is Bloomsburg and the furthest upstream is Wysox a distance of approximately 120 miles (Figure 7).

Table 2. Catch rates for Flathead Catfish on the North Branch Susquehanna River from 2014 to 2021.

Location	Catch per Hour				Catch per Net Night			
	2014	2015	2020	2021	2014	2015	2020	2021
Bloomsburg	-			0.01	-			0.08
Shickshinny	0.05		0.06	1.24	0.05		1.33	6.75
West Falls	-		0.01	0.01	-		0.01	0.01
Wysox		-		0.01		-		0.01

Due to the highly predatory nature of non-native Flathead Catfish, future catfish surveys on the North 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 the scientific literature following introduction of Flathead Catfish at locations outside of Pennsylvania.

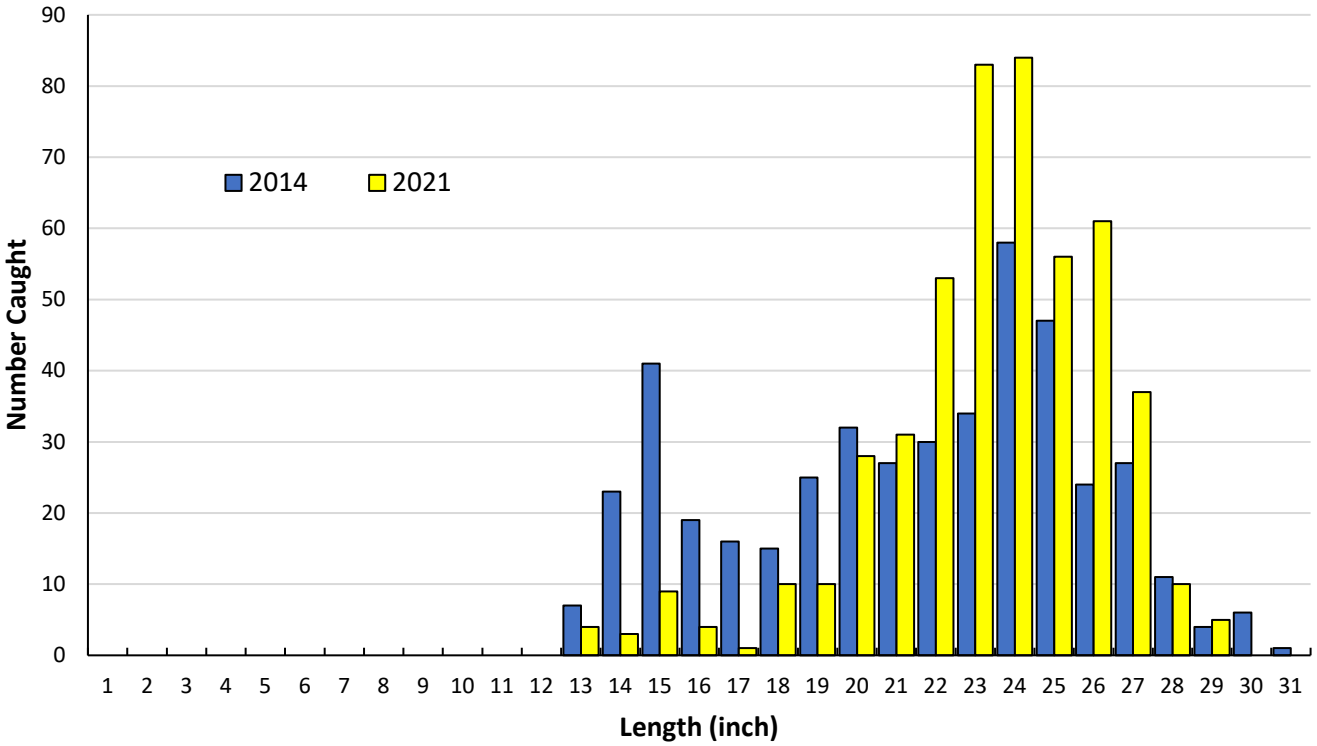

Figure 1. Length-frequency distribution for Channel Catfish captured at Bloomsburg during the 2014 and 2021 surveys of the North Branch Susquehanna River.

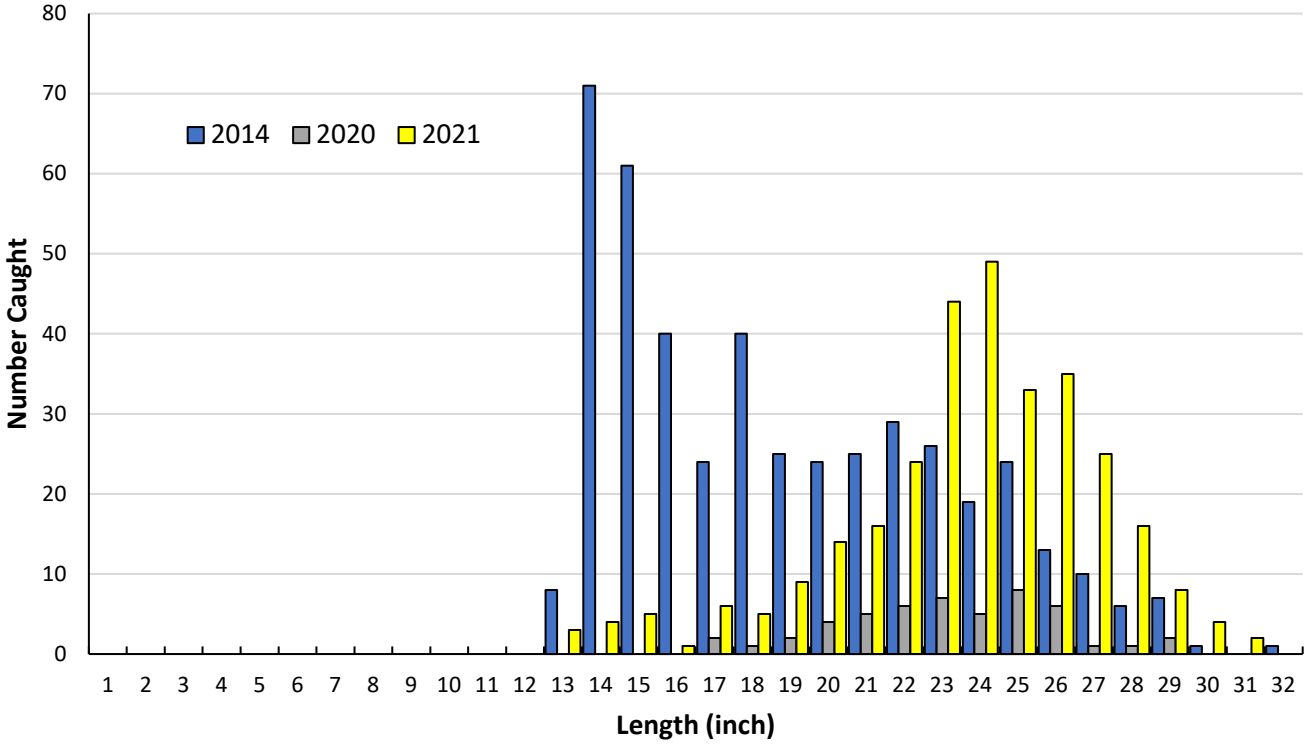

Figure 2. Length-frequency distribution for Channel Catfish captured at Shickshinny during the 2014, 2020, and 2021 surveys of the North Branch Susquehanna River.

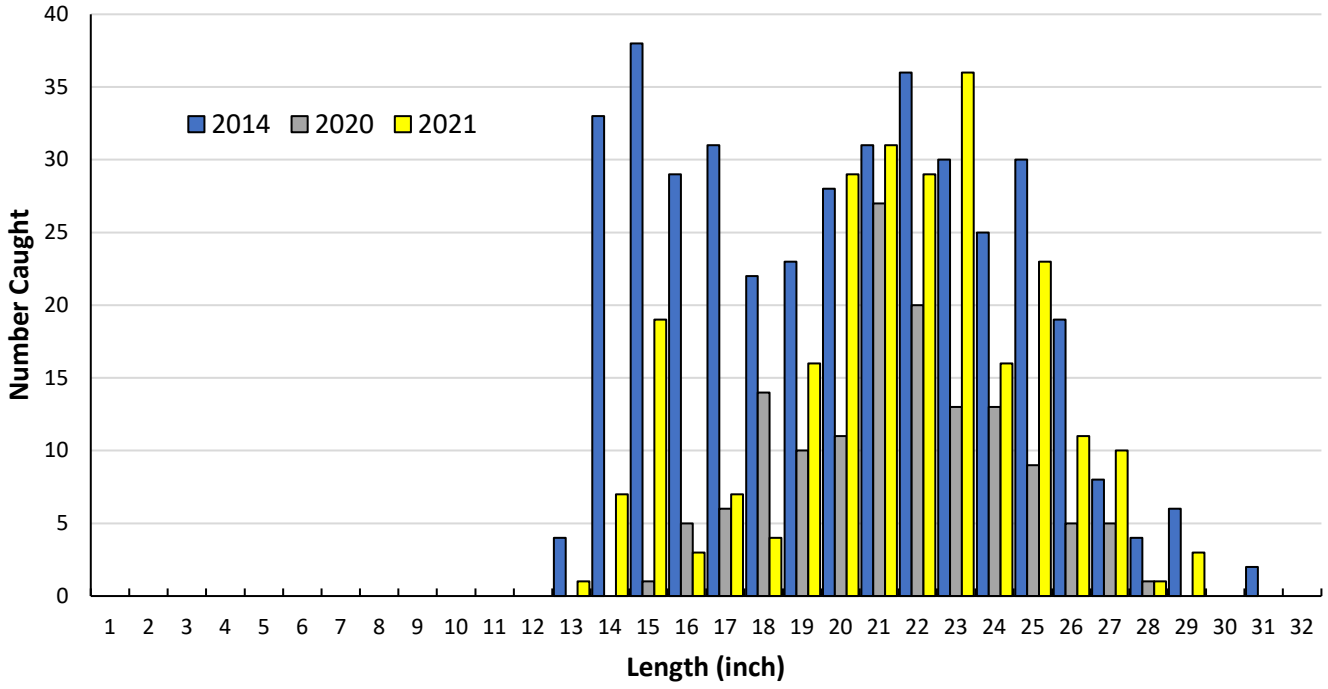

Figure 3. Length-frequency distribution for Channel Catfish captured at West Falls during the 2014, 2020, and 2021 surveys of the North Branch Susquehanna River.

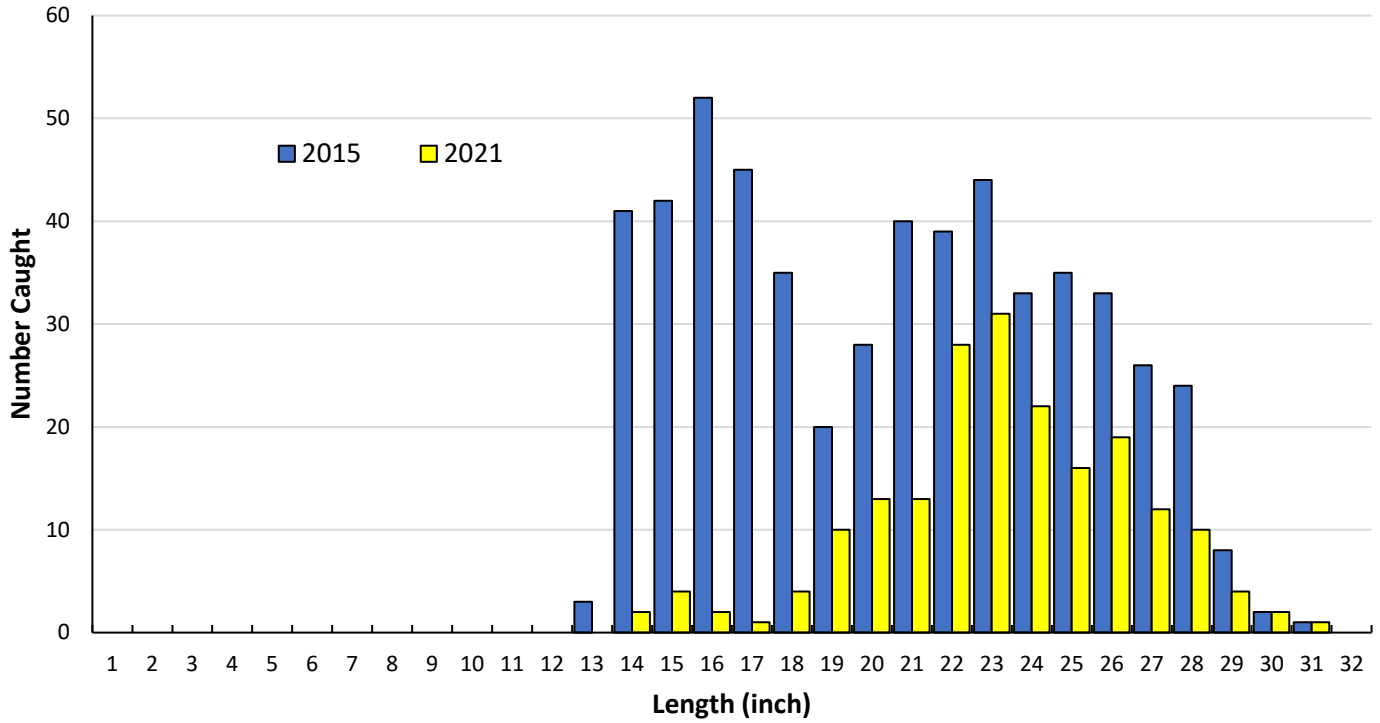

Figure 4. Length-frequency distribution for Channel Catfish captured at Wysox during the 2015 and 2021 surveys of the North Branch Susquehanna River.

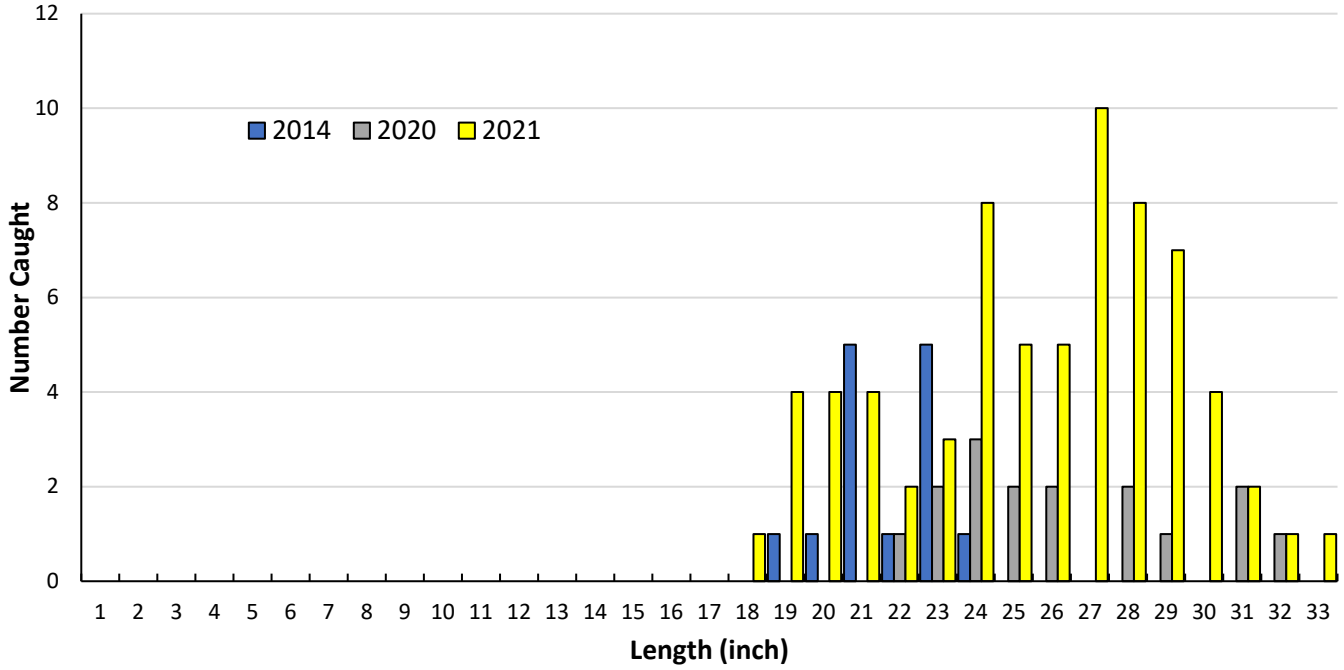

Figure 5. Length-frequency distribution for Flathead Catfish captured at Shickshinny during the 2014, 2020, and 2021 surveys of the North Branch Susquehanna River.

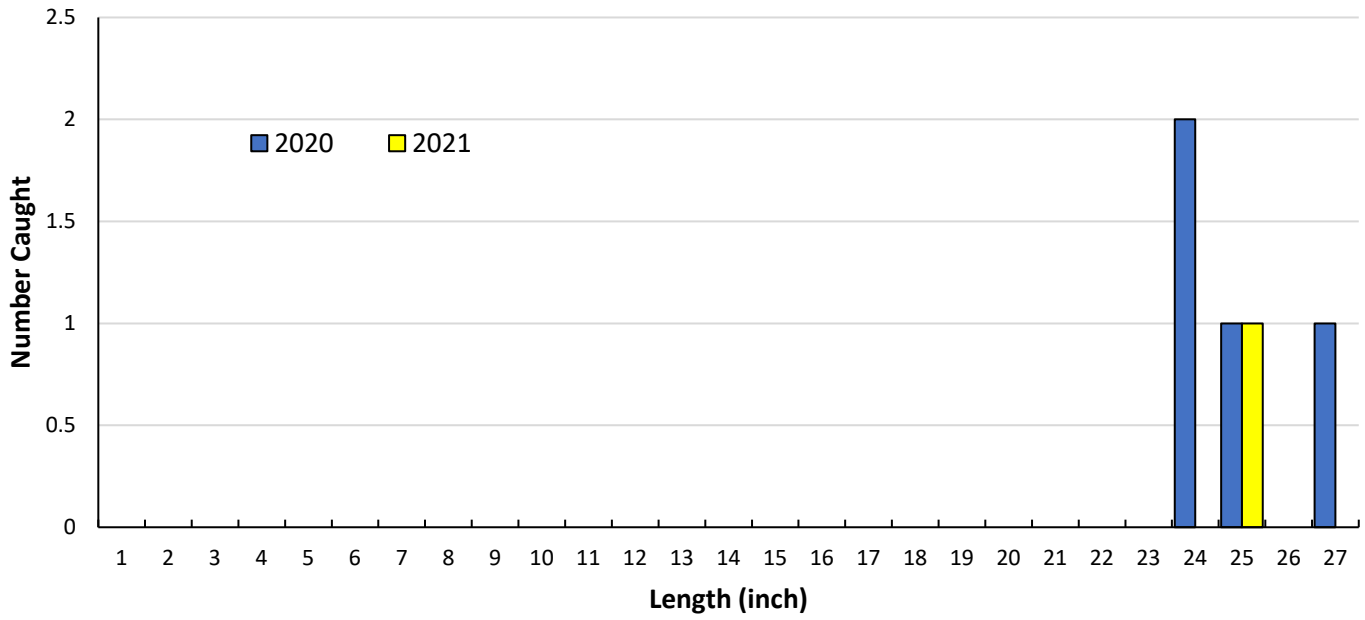

Figure 6. Length-frequency distribution for Flathead Catfish captured at West Falls during the 2020 and 2021 surveys of the North Branch Susquehanna River.

Garret Kratina
Area 4 Fisheries Biologist

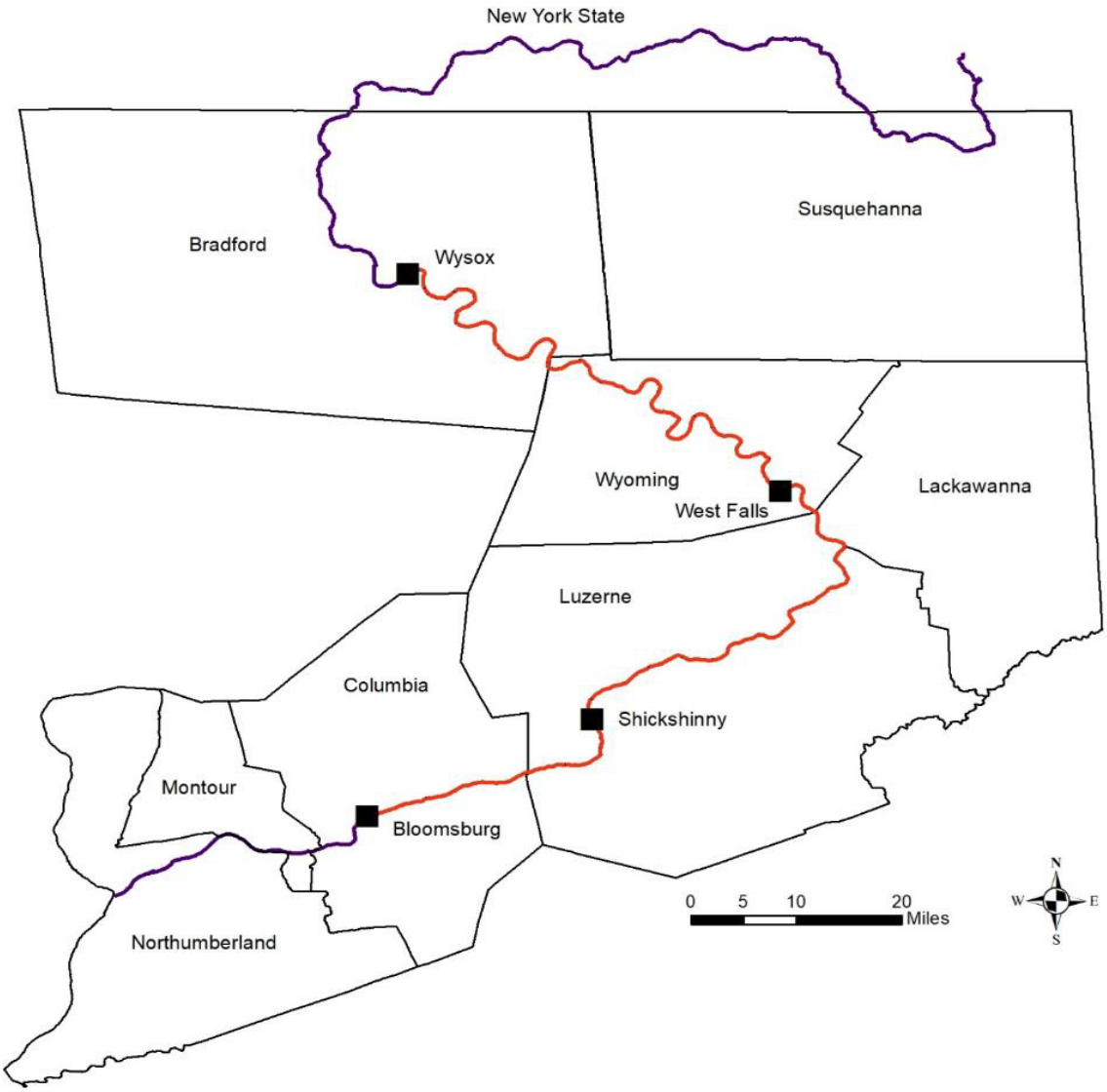

Figure 7. North Branch Susquehanna River with the 2021 sampling locations and the red indicating the known distribution of Flathead Catfish.

Garret Kratina
Area 4 Fisheries Biologist