



Introduction And Objectives

The Onion River is a coldwater stream located in central Sheboygan County, Wisconsin. The Onion River is a Class I trout stream which supports natural reproduction of brown trout. The Department of Natural Resources (DNR) conducted an electrofishing survey of the Onion River on August 2, 2023. The survey site began at the County Trunk Highway E bridge and continued upstream for 228 meters. This survey site is a DNR watershed long-term reference monitoring site that has been surveyed via electrofishing annually since 2010.

The objective of the 2023 survey was to continue to gather cold water trend data on the Onion River, including species composition and the relative abundance and size structure of brown trout. While the target species for the survey was brown trout, all fish species sampled were counted.

DNR Contact

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Regulations

Category: Red
Daily Bag and Size Limit:
2 trout over 12"
Artificial lures only

SURVEY INFORMATION

Station	Survey Date	Station Length	Temperature (° F)	Mean Stream Width	GPS (Start)	Gear	Dippers	IBI
Onion River at Hwy E	08/02/2023	228 m	62	6.5 m	43.71025, -87.9917	Stream Shocker	2	Fair (40)



Survey Method

- All streams are sampled according to DNR wadable streams monitoring protocols.
- All trout are counted and measured and all other species are counted in order to calculate an Index of Biotic Integrity (IBI) score.
- Metrics used to describe trout populations include average length, catch per unit effort (CPUE) and length frequency distribution.

Metric Descriptions

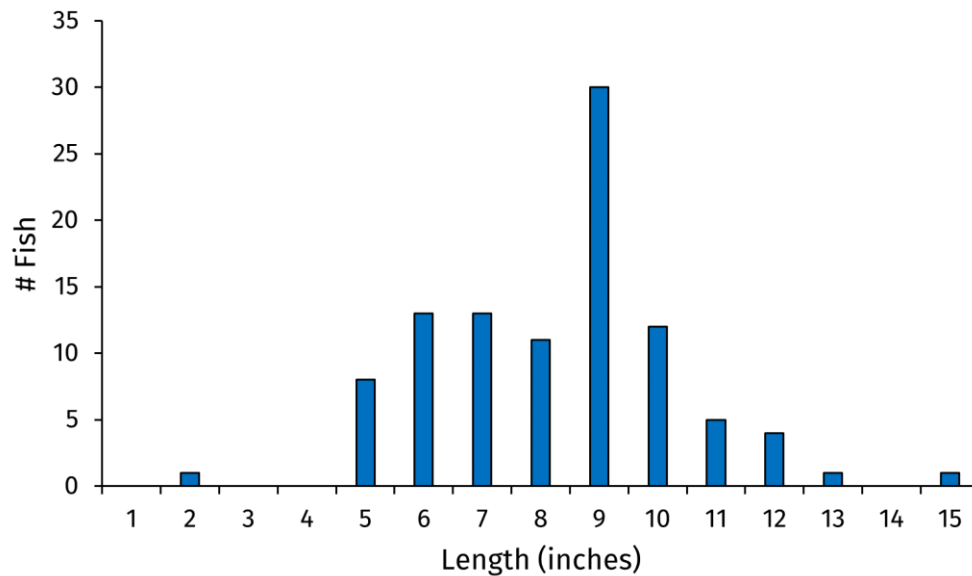
- **Catch per unit effort (CPUE)** is a method of quantifying fish population relative abundance. For all trout surveys, we typically quantify CPUE as the number of a given size class of trout captured per mile of stream. CPUE indexes are compared to other trout streams throughout Wisconsin by what percentile (PCTL) they fall out in. For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state. CPUE percentiles can also be used to categorize trout abundance as low density (<33rd percentile), moderate density (33rd - 66th percentile), high density (66th - 90th percentile) and very high density (>90th percentile).
- **Length frequency distribution** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals.
- **Index of Biotic Integrity (IBI)** is a rating of environmental quality based on the fish assemblage. Scores of 90 - 100 indicate excellent stream quality, while scores less than 30 indicate poor stream quality. Our analysis utilizes the IBI for Wisconsin coldwater streams. Coldwater streams in Wisconsin are those in which the maximum daily mean water temperature is usually <22°C (71.6°F). A coolwater stream IBI may also be used when a stream doesn't fit the temperature criteria for a coldwater stream.



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2023 Onion River Stream Survey Report Onion River, Sheboygan County Waterbody Code 51200

BROWN TROUT SIZE AND ABUNDANCE (CPUE) METRICS									
Station	Total Number Sampled	Average Length (inches)	Length Range (inches)	CPUE (No. per Mile) Statewide Percentile in Parentheses					
				Total CPUE (PCTL)	YOY CPUE	≥5" CPUE (PCTL)	≥8" CPUE (PCTL)	≥10" CPUE (PCTL)	≥12" CPUE (PCTL)
Onion River at Hwy E	166	8.7	0.6 -15.8	1171.5 (85th)	14.1	690.1 (80th)	450.7 (85th)	162.0 (80th)	42.3 (75th)



Summary

A total of 166 brown trout were sampled for a catch rate of 1,171.5 brown trout per mile. This catch rate is in the 85th percentile when compared with other Class I trout streams in Wisconsin. Brown trout ranged in length from 0.6 to 15.8 inches with an average length of 8.7 inches. While the number of brown trout fluctuates from year to year, the 2023 catch rate was lower than in 2022 (1298.8 brown trout per mile). Overall, the 2023 survey data indicated a brown trout population with high-quality size structure and above average abundance for a Class I brown trout stream. The IBI score of 40 suggests that the Onion River is a fair coldwater stream. Habitat improvement projects could enhance conditions for brown trout. Other species sampled during the 2023 survey included 176 white suckers, 8 brook lamprey and 49 mottled sculpin.

The Onion River Fishery Area and Stream Bank Protection Area (SBPA) is the premier trout fishing property in the region. The DNR currently owns 1,071 acres plus 50 acres in easements in the SBPA and 49 acres in the fishery area. The restoration of the Onion River to [Class 1 trout stream](#) status was accomplished by collaborative efforts beginning in the early 1990s between the Lakeshore Chapter of Trout Unlimited, Windway Corporation, the River Alliance of Wisconsin, the Sheboygan County Conservation Association, the Sheboygan River Basin Partnerships, Michels Corporation, private citizens and DNR. Habitat restoration efforts are ongoing and include thousands of feet of bank protection, bank covers, brush removal and other activities to improve habitat quality and protect water quality.

