WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Stream Survey Report
Unnamed Tributary to North Branch Embarrass River, Shawano County

304200

Introduction And Objectives

This unnamed tributary consists of 2.43 miles of Class I trout water in Shawano County. The unnamed tributary flows into the North Branch Embarrass River and provides spawning and nursery habitat for trout populations. Fishing access consists of one road crossing. Objectives of the rotation surveys are to determine species composition, relative abundance and size structure for trout and other game species.

DNR Contact

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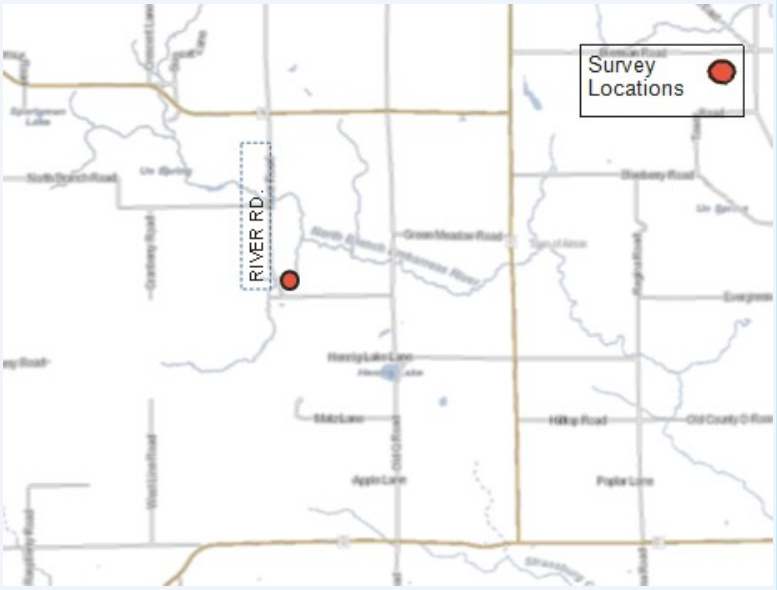
Regulations

Category: Green
Daily Bag and Size Limit:
Five and no size

SURVEY INFORMATION								
Station	**Survey Date**	**Station Length**	**Temperature (° F)**	**Mean Stream Width**	**GPS (Start/Finish)**	**Gear**	**Dippers**	**IBI**
River Road	7/01/2021	545 ft	70	15.5 ft	44.87178, -88.73803 44.37214, -88.73666	Barge Shocker	3	Yes



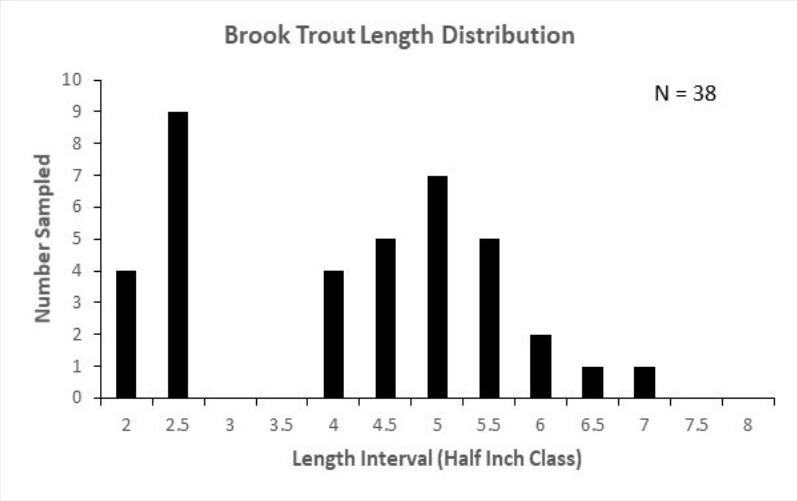
Survey Method

- All streams are sampled according to DNR wadeable streams monitoring protocols.
- All sampling stations are electrofished with either a towed barge shocker or backpack shocker.
- Sampling distance is at least 35 times the mean stream width or a minimum of 330 feet (i.e., 100 meters).
- 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.

BROOK 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)
River Road	38	4.4	2.2 - 7.1	608 (76th)	208	256 (75th)	-	-	-



SPECIES COMMUNITY AND IBI FOR RIVER ROAD			
Species Sampled	Total	IBI Score	Integrity Rating
Brook Trout	38	60	Good
Central Mudminnow	9		
Black Bullhead	1		
Brook Stickleback	6		
Johnny Darter	2		

Johnny Darter (pictured above) is a small nongame species commonly found in streams throughout the state of Wisconsin.

Summary

- Trout were found in moderate densities at the River Road with the total brook trout CPUE ranking out in the 76th percentile when compared to trout streams throughout Wisconsin. At least two distinct year classes of brook trout were captured at the River Road station. Larger trout 10+ inches were not sampled at this location.
- The River Road station was last sampled in 2009. Size structure and numbers of brook trout at River Road were similar to the last time it was sampled.
- Brook trout young of year (YOY) were captured in moderate densities at the River Road station. Cold water, small amounts of spawning substrate at this sample station suggest this stretch of stream has average habitat for trout spawning.
- The IBI scores suggests this stream is a good coldwater stream and the WI Streams Natural Community Model considers this a cool - cold headwater stream. Habitat improvements in the upper sections of this stream could result in better conditions for trout. These improvements could improve coldwater flow which is conducive to successful brook trout fisheries.