



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Stream Survey Report Gardner Creek, Shawano County

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Introduction And Objectives

The Gardner Creek consists of 2.2 miles of Class I trout water in Shawano County. The Gardner Creek is a tributary to the Red River and provides spawning and nursery habitat for trout populations. Fishing access consists of two road crossings. Objective of the rotation surveys are 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
CTH VV	7/01/2021	545 ft	70	15.5 ft	44.87178, -88.73803 44.37214, -88.73666	Barge Shocker	3	Yes
Butternut Road	7/01/2021	380 ft	66	10.9 ft	44.84758, -88.75638 44.84845, -88.75628	Barge Shocker	3	No



Survey Method

- All streams are sampled according to DNR wadable 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.



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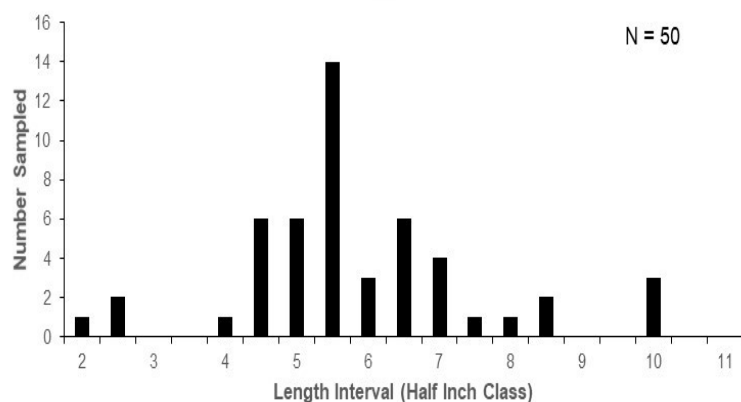
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BROOK TROUT SIZE AND ABUNDANCE (CPUE) METRICS

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)
Butternut Road	50	6.1	2.2 - 10.2	695 (79th)	42	556 (90th)	83 (84th)	42 (94th)	-

Brook Trout Length Distribution



SPECIES COMMUNITY AND IBI FOR CTH VV

Species Sampled	Total	IBI Score	Integrity Rating
Northern Redbelly Dace	1	10	Poor
Mottled Sculpin	21		
Pearl Dace	6		
Creek Chub	3		
Central Mudminnow	32		
Common Shiner	14		



Mottled sculpin (pictured above) is a small nongame species commonly found in coldwater streams. Similar to trout they require colder temperatures, are considered thermally intolerant and their presence can be indicative of healthier environmental quality.

Summary

- Brook trout were found in moderate to high densities at the Butternut Rd. station with the total brook trout CPUE ranking out in the 79th percentile when compared to trout streams throughout Wisconsin. At least three distinct year classes of brook trout were captured at the Butternut Rd. station. Larger trout 10+ inches ranked above the 90th percentile. Poor habitat and warmer water temperatures in the upper reaches of this stream are likely a contributing factor to the lack of trout and spawning activity near the headwaters.
- The Butternut Rd. and CTH VV stations were last sampled in 2015. Size structure has improved and numbers of brook trout at Butternut Rd. were higher than 2015, 2011 and 2005.
- Brook trout young-of-year (YOY) were captured in moderate densities at the Butternut Rd. station. Cold water, but lack of spawning substrate at this sample station suggest this stretch of stream has marginal habitat for trout spawning.
- The IBI scores suggests this stream is poor 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. Historical beaver activity along with poor culvert placement near CTH VV, has slowed the stream flow and created loss of overhead cover. Cold water and cover are conducive to successful brook trout fisheries.