



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Stream Survey Report Kroenke Creek, Shawano County 326700

Introduction And Objectives

The Kroenke Creek consists of 4.55 miles of Class I trout water in Shawano County. The Kroenke Creek is a tributary to the Red River which provides spawning and nursery habitat for trout populations. Fishing access consists of six road crossings along with the Mountain Bay recreational trail crossing the creek multiple times. Objectives of the rotation surveys are to determine species composition, relative abundance and size structure for trout and other game species.

DNR Contact

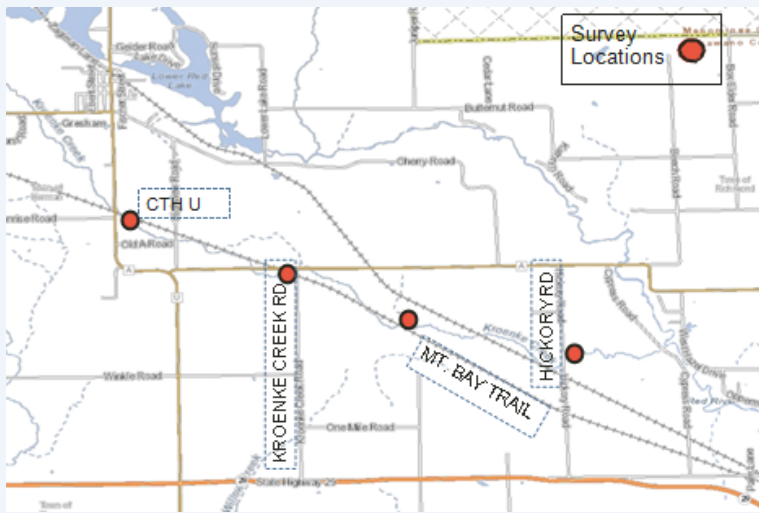
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Regulations

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
CTH U	7/19/2021	330 ft	60	9.6 ft	44.83304, -88.78514 44.8333, -88.78626	Backpack Shocker	1	NO
Kroenke Creek Road	7/12/2021	364 ft	58	10.4 ft	44.8253, -88.75657 44.825, -88.75739	Barge Shocker	3	YES
Mountain Bay Trail	7/12/2021	339 ft	58	9.7 ft	44.8173, -88.73802 44.81774, -88.73914	Barge Shocker	3	NO
Hickory Road	7/12/2021	508 ft	56	14.5	44.81321, -88.71088 44.81241, -88.71169	Barge Shocker	3	NO



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.

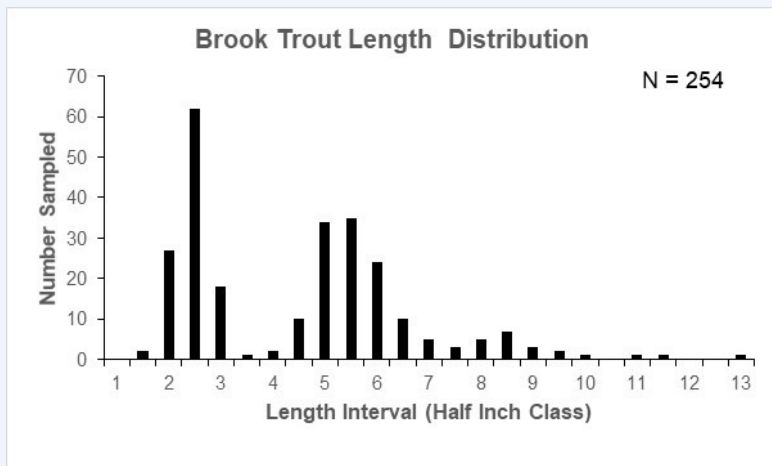


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326700

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)
CTH U	11	2.5	1.9 - 3.5	176 (48th)	176	-	-	-	-
Kroenke Creek Road	68	4.9	2.5 - 10.2	986 (86th)	377	566 (90th)	58 (77th)	15 (82nd)	-
Mountain Bay Trail	121	4.5	2.1 - 11.6	1885 (95th)	903	857 (95th)	187 (95th)	16 (82nd)	-
Hickory Road	54	5.6	2.6 - 13.2	561 (74th)	156	395 (85th)	52 (74th)	21 (87th)	12 (96th)



SPECIES COMMUNITY AND IBI FOR KRONKE CREEK ROAD			
Species Sampled	Total	IBI Score	Integrity Rating
Brook Trout	68	80	Good
Mottled Sculpin	6		
Creek Chub	7		
Pearl Dace	2		
Common Shiner	2		
Blacknose Dace	8		
Central Mudminnow	6		



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

- Trout were found in moderate to high densities at three stations with the total brook trout CPUE ranking out in the 74th and above percentile when compared to trout streams throughout Wisconsin. At least three distinct year classes of brook trout were captured at the same three stations. YOY trout were captured at all four stations in moderate densities, but larger trout 10+ inches ranked above the 80th percentile in the three stations besides CTH U.
- The Kroenke Creek Rd. station was last sampled in 2015 and has shown an improvement in size structure and numbers of brook trout.
- 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 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.
- Beaver activity, agricultural impacts and heavy fishing pressure are some of the limiting factors to the brook trout fishery on Kroenke Creek.