WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2022

Thunder Creek, Oneida County

1530300

Introduction And Objectives

Thunder Creek is a cool-warm headwater stream meandering 3.11 miles within the Middle Tomahawk River watershed in northern Wisconsin. Thunder Creek is a Class 2 trout system with some natural reproduction but not enough to utilize available space. Sampling sought to describe the trout population characteristics and asses the overall condition of the system.

DNR Contact

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Regulations

Category: Green
Daily Bag and Size Limit:
5 and none

SURVEY INFORMATION								
Station	**Survey Date**	**Station Length**	**Tempera-ture (° F)**	**Mean Stream Width**	**GPS (Start/Finish)**	**Gear**	**Dippers**	**IBI**
Old Dave Wrights Rd Crossing	08/11/2022	575 ft	59	16.4	45.670345, –90.02856	Backpack Shocker	1	60
211 meter below north Turcott road	08/11/2022	650	61	18.4	45.669127, –90.02007	Backpack Shocker	1	70

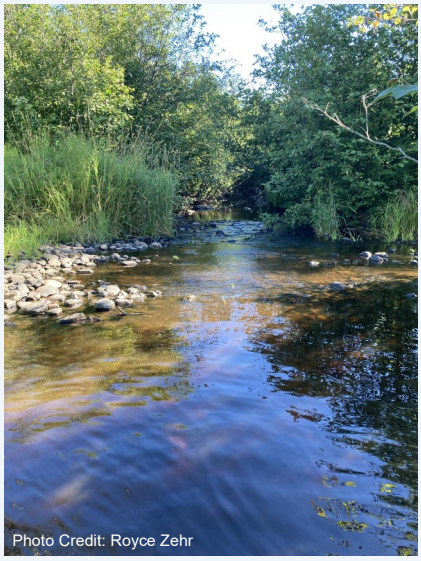


Photo Credit: Royce Zehr

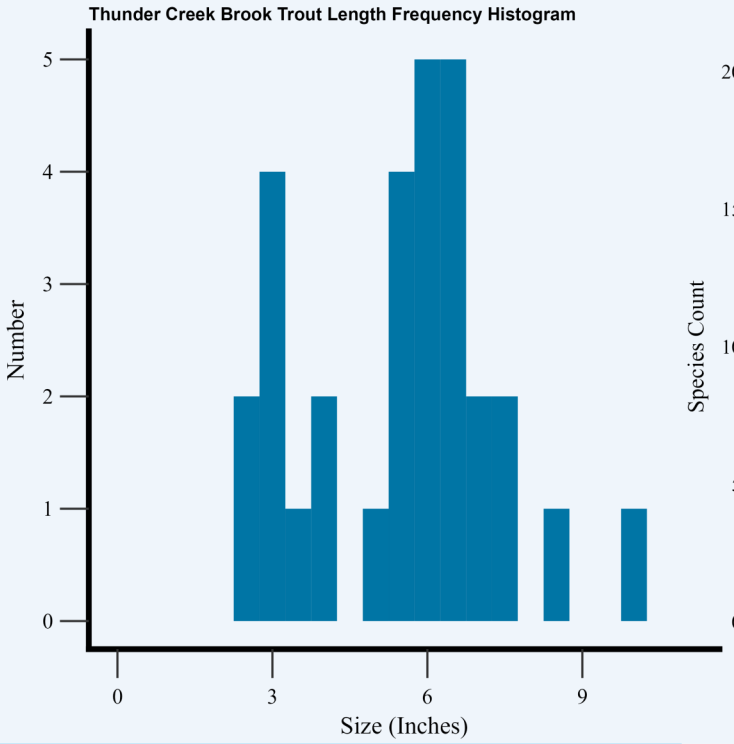
Survey Method

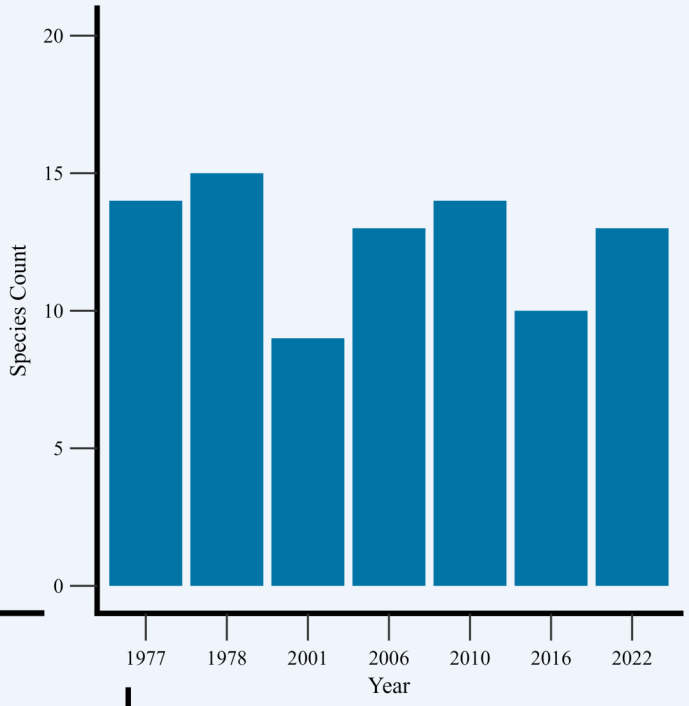
- All streams are sampled according to DNR wadeable streams monitoring protocols.
- All trout are counted and measured and all other species are counted in order to calculate an Index of Biotic Integrity (IBI) score.
- Metrics used to describe trout populations include average length, catch per unit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

SPECIES 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	YOY CPUE	≥5" CPUE	≥8" CPUE	≥10" CPUE	≥12" CPUE
Old Dave Wrights Rd Crossing	0	0.0	0.0—0.0	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)	0.0 (0)
211 meter below north Turcott road	30	5.5	2.4—10.0	272.7 (70)	81.8 (70)	190.9 (75)	18.2 (45)	9.1 (70)	0.0 (0)





Summary

- Brook trout abundance appears to be increasing in Thunder Creek. Catches are above average for Wisconsin across most size classes within Thunder Creek. Sizes of brook trout remain relatively small, 2 inches smaller than the average (7.5 inches) in Wisconsin. Given the shallower depth and wider width of Thunder Creek, the smaller size structure is not surprising. Species richness has remained relatively similar throughout time indicating the stability of the creek. Thunder Creek is remains in an overall good condition with an increasing brook trout population. Brook trout were stocked regularly into Thunder Creek until 2008. Thunder Creek is scheduled to be sampled again in 2028.