



Introduction And Objectives

Radtke Creek is a cool-warm headwater stream meandering 0.43 miles within the Noisy and Pike Creeks watershed in south central Oneida County. Radtke Creek is classified as class 1 trout water when a theoretical model using temperature, hydrology, land-use and archived species occurrence was applied. The appropriateness of model assessment to Radtke Creek has not been evaluated as the system has not been sampled before this survey. The Wisconsin Department of Natural Resources (DNR) survey sought to describe the trout population characteristics, asses the overall condition of the system, and evaluate the appropriateness of the assigned trout classification.

DNR Contact

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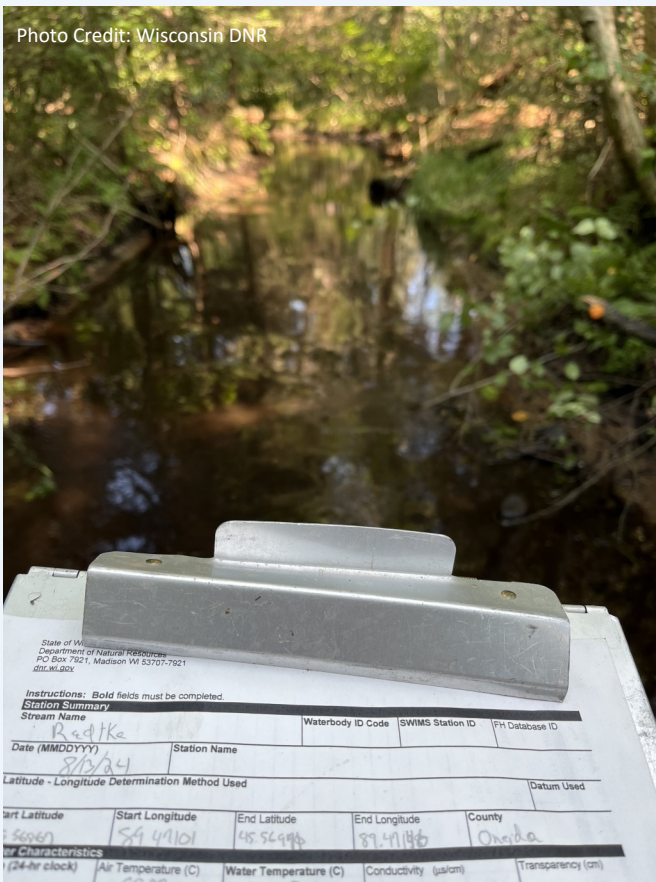
Regulations

Category: Green
 Daily Bag and Size Limit:
 5 trout in total of any length

SURVEY INFORMATION

Station	GPS (Start/Finish)	Survey date	Station length (ft)	Temperature (°F)	Mean stream width (ft)	Qualitative habitat score	Habitat status	Gear	Dippers	IBI
Radtke Creek	45.56867, -89.47101 45.56971, -89.47146	8/13/2024	400	52	12	55	Good	Stream shocker	2	80

Photo Credit: Wisconsin DNR



Survey Method

- The stream was sampled according to DNR wadeable streams fish and habitat 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 fish 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, typically CPUE is quantified 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 cool-cold streams.
- **Habitat score** is a qualitative rating of the abilities to support a fishery based off the diversity and quality of fish habitat. Scores of 75-100 indicate excellent stream habitat, while scores less than 25 indicate poor stream habitat. Our assessment utilizes qualitative habitat rating for streams < 10 m wide and > 10 m wide.

Figure 1. Recording data of fisheries sampling in Radtke Creek following brushing.



SPECIES SIZE AND ABUNDANCE (CPUE) METRICS									
Species	Total number sampled	Average length (inches)	Length range (inches)	CPUE (No. per Mile)					
				Total CPUE	YOY CPUE	≥5" CPUE	≥8" CPUE	≥10" CPUE	≥12" CPUE
Brook trout	88	3.5	1.6–7.3	1,100.0	210.0	54.0	0.0	0.0	0.0
Mottled sculpin	16	NA	NA	200.0	NA	NA	NA	NA	NA

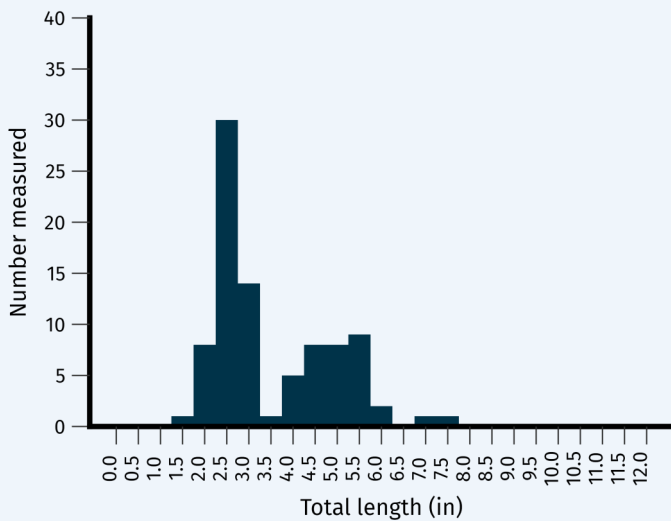


Figure 3. Brook trout size structure within Radtke Creek.



Photo Credit: Wisconsin DNR

Figure 4. Red Pine collapsed across Radtke Creek requiring substantial brushing to facilitate sampling.

Summary

- A simple fish community consisting of brook trout and mottled sculpin was found in Radtke Creek.
- The fish community in Radtke was found to be in excellent overall health (80) using the IBI.
- Brook trout catch rate was above average for individuals < 7.9 inches and below average for individuals > 8.0 inches at the statewide scale.
- The average size of brook trout was 4 inches smaller than the 7.5 inch statewide average of Wisconsin but not surprising based of the stream width (≤ 12 feet) and depth (≤ 2 feet).
- Consistent recruitment appears to be occurring within Radtke Creek as 3 distinct age groups of brook were noticeable by peaks within the length frequency histogram.
- Habitat was classified as good (55) and in the 50th percentile for Oneida county and statewide.
- Beaver activity was noticeable throughout the station requiring two dams to be removed to allow sampling.
- A trout class ranking of 1 seems appropriate for Radtke with the cold water, habitat available, simple fish community and abundance of brook trout.