WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Stream Survey Trend Report
Mill Creek, Shawano County
299700

Introduction And Objectives

Mill Creek is a Class I and II trout stream consisting of 22.57 miles of trout water in Shawano County. Brook trout are the dominant species throughout, while low numbers of brown trout reside in the lower reaches. Fishing access is limited to road crossings and a couple of stream bank easements located on the upper reaches of Mill Creek. Objectives of the trend survey are to monitor relative abundance and size structure of trout over time.

DNR Contact

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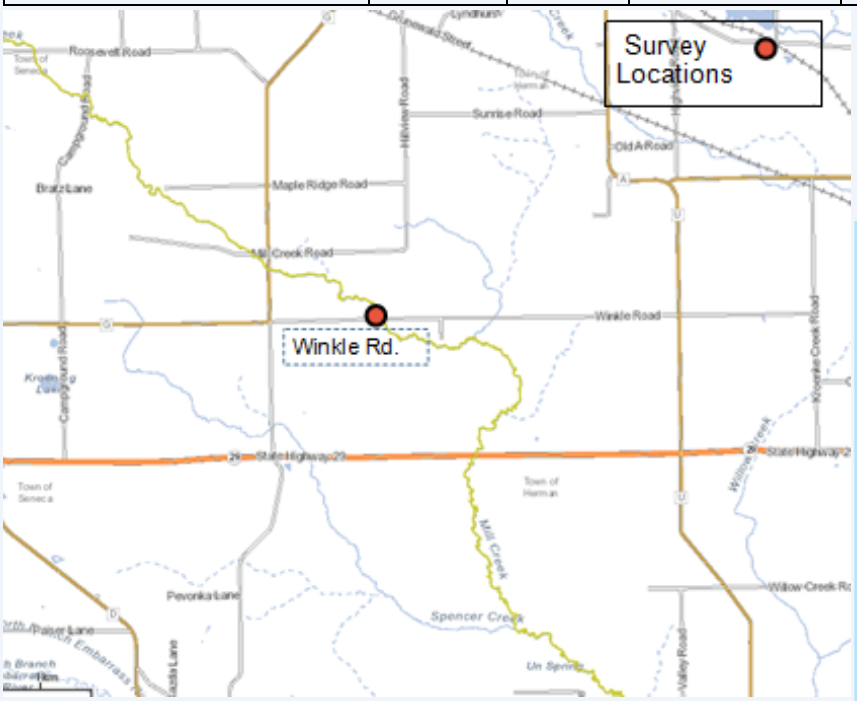
Regulations

Category: Red
Daily Bag and Size Limit:
Three: Brook Trout 8-inch minimum
Brown and Rainbow Trout 12-inch minimum

SURVEY INFORMATION

Station	Survey Date	Station Length	Temperature (°F)	GPS (Start/Finish)	Gear	Dippers
Winkle Road	07/30/2019	1,200 ft.	63	44.8115,-88.8216 44.8132,-88.8228	Towed Barge Shocker	3

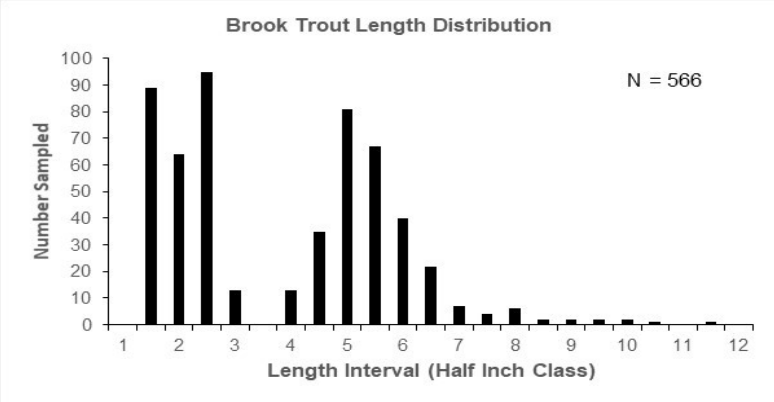


Survey Method

- 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									
Year	Average Length (Inches)	Length Range (Inches)	Number Sampled	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)
1998	4.8	(1.9-10.5)	463	3261	1162	1824	134	7	0
1999	4.3	(2.0-11.9)	295	2077	965	838	42	7	0
2000	5.9	(2.4-12.6)	200	1408	324	1056	155	42	7
2001	5.1	(2.2-11.1)	179	1260	77	711	197	35	0
2005	4.6	(1.6-11.6)	451	3790	1496	1899	244	34	0
2007	6.1	(2.4-11.4)	171	1204 (85th)	77	915 (95th)	162 (90th)	28 (90th)	0
2008	4.0	(2.0-10.5)	224	1577 (90th)	1099	479 (85th)	106 (85th)	21 (85th)	0
2009	5.2	(2.0-10.2)	219	1646 (90th)	316	1008 (95th)	83 (80th)	15 (80th)	0
2010	6.4	(2.2-10.4)	101	711 (80th)	92	592 (90th)	134 (90th)	14 (80th)	0
2011	7.6	(2.8-12.0)	61	430 (65th)	42	387 (80th)	190 (95th)	42 (95th)	7 (90th)
2012	6.0	(2.2-11.9)	246	1732 (90th)	113	1401 (95th)	127 (90th)	49 (95th)	0
2013	4.6	(2.0-9.5)	102	718 (80th)	373	324 (80th)	70 (80th)	0	0
2014	5.2	(1.8-10.9)	264	1161 (85th)	270	787 (95th)	57 (75th)	13 (80th)	0
2015	5.9	(2.0-9.8)	216	900 (85th)	104	742 (90th)	54 (75th)	0	0
2016	5.8	(1.5-10.8)	217	917 (85th)	274	637 (90th)	118 (90th)	21 (85th)	0
2017	5.8	(2.0-12.8)	288	1217 (85th)	291	903 (95th)	93 (85th)	25 (85th)	8 (90th)
2018	5.2	(2.1-10.1)	273	1153 (85th)	367	751 (90th)	80 (80th)	4 (65th)	0
2019	4.9	(2.0-10.7)	232	1114 (85th)	486	611 (90th)	58 (75th)	14 (80th)	0
2021	4.6	(1.5 - 11.5)	546	2306 (96th)	1102	1001 (96th)	68 (80th)	17 (85th)	0

Summary

- Results from the 2021 survey showed that brook trout densities in Mill Creek continues to remain high. Catch per unit effort for the total number of brook trout captured along with all adult size classes except brook ≥ 12 inches remain at, or above the 80th percentile when compared to trout streams throughout the state of Wisconsin.
- Similar to previous years surveys, the majority of adult brook trout captured were between 5 - 8 inches. The catch of 5 - 8 inch brook trout has doubled since 2019 and currently is at the highest densities recorded at this site. High densities of young trout should provide for an excellent fishing opportunity in the upcoming years.
- Density of young of year (YOY) brook trout in 2021 was the highest it has been since 2005. High water due to near record rainfall throughout the summer of 2021 has resulted in a lot of flooded grasses and shallow undercut banks along the stream edge, providing ideal habitat for YOY trout. Consistent recruitment will ensure a strong brook trout fishery into the future.
- Opportunities exist to catch a true trophy brook trout in Mill Creek. Brook trout ≥ 10 inches were captured in the 2021 survey and good numbers of brook trout ≥ 10 inches have been captured in almost every survey in previous years. Furthermore, brook trout ≥ 12 inches have occasionally been caught as well.
- Brown trout densities continue to remain low at this site with twenty brown trout captured in the 2021 survey. Of concern is the fact that three different year classes of brown trout were captured in this survey. Higher densities of brown trout have been captured at sites further downstream.
- The current regulation of a 12 inch minimum size limit for brown trout tends to protect the brown trout, however at the expense of the native brook trout. A regulation change to a yellow regulation (i.e., 8 inch minimum for all species with a daily bag limit of 3) should be considered, at least for the upper portion upstream of US Highway 29 to eliminate the protections that the current regulation is giving to brown trout.