



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2024 Stream Survey Summary

Plum Creek, Vilas County

WBIC:1592100

Introduction And Objectives

Plum Creek is approximately 5 miles in length running from Plum Lake to Big St. Germain Lake and includes 1.5 miles of class I and 2.3 miles of class II trout water. The stream is located in the St. Germain River drainage and is almost entirely surrounded by Northern Highland-American Legion State Forest. Plum Creek was formally managed as a combination brook trout and brown trout fishery, with naturally reproducing brook trout and stocked brown trout populations, but brown trout stocking ceased in 2011. The current management strategy is to manage the stream for naturally reproducing brook trout. Surveys in August 2024 were conducted to assess the relative abundance and size structure of brook trout, while also gathering information on the rest of the fish community.

DNR Contact

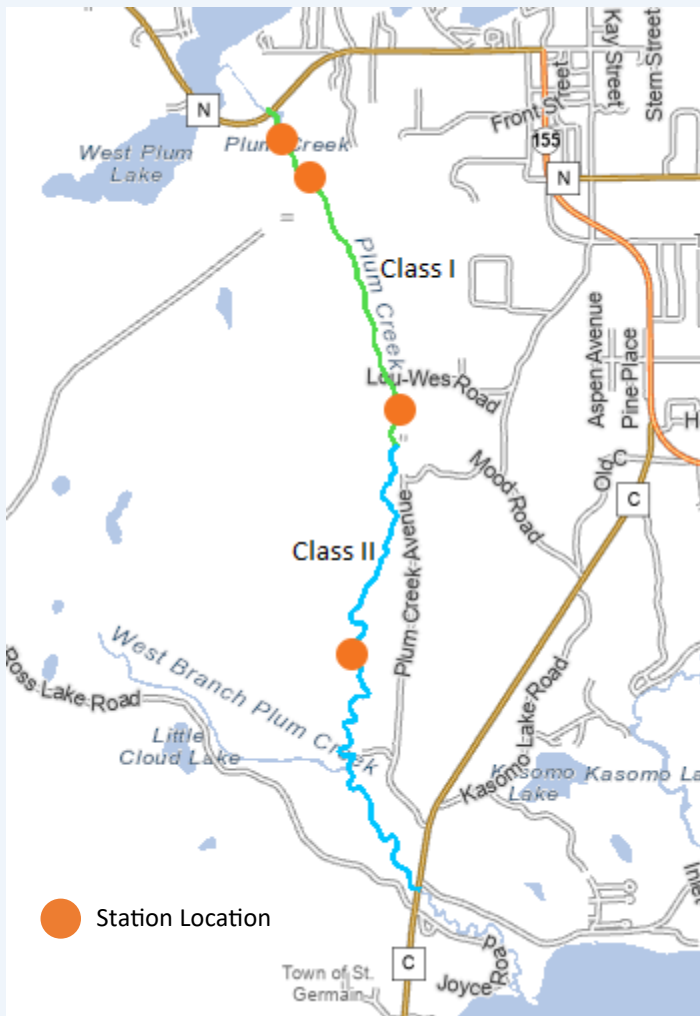
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Regulations

Category: Yellow
Daily Bag and Size Limit:
8 inch minimum length, 3 fish daily bag limit

SURVEY INFORMATION

Station	Survey Date	Station Length (m)	Temperature (° F)	Mean Stream Width (m)	GPS (Start/Finish)	Gear	Dippers	IBI
Snowmobile Bridge to CTH N	08/14/2024	422	71	5	45.98703, -89.55209 45.98976, -89.55422	Stream Shocker	3	Yes
Downstream from Snowmobile Bridge	08/14/2024	539	67	15	45.98253, -89.54838 45.98674, -89.55214	Stream Shocker	3	Yes
Long's Cabin	08/13/2024	358	68	6	45.97109, -89.54423 45.97346, -89.54395	Stream Shocker	3	Yes
Below Toppers Bridge	08/14/2024	305	62	5	45.95740, -89.54691 45.95986, -89.54721	Stream Shocker	3	Yes



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.

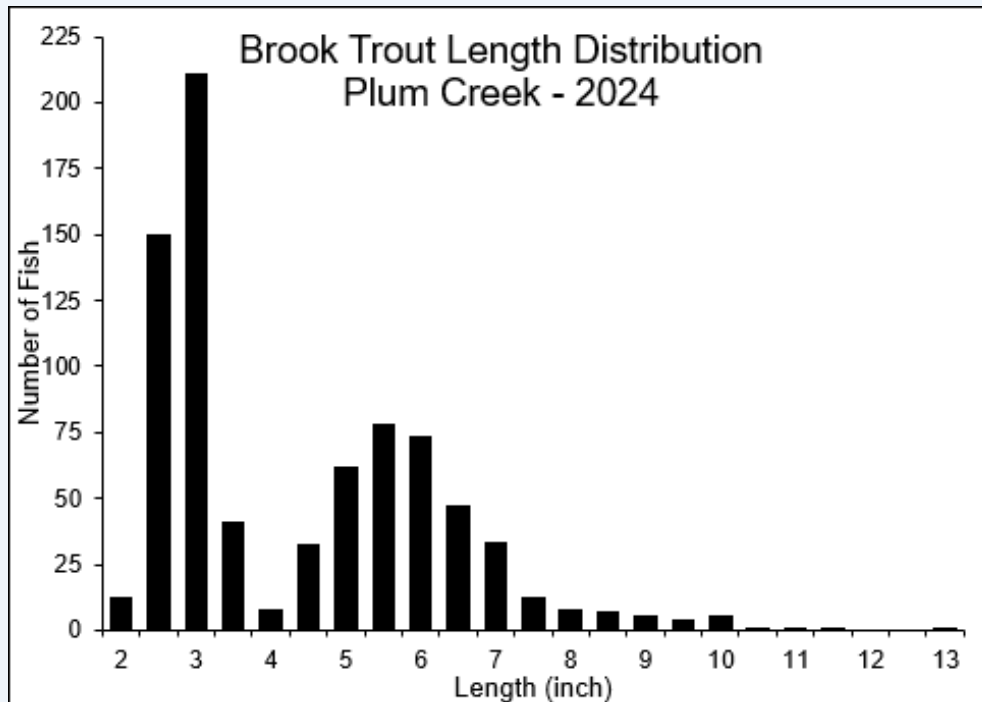


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BROOK TROUT SIZE AND ABUNDANCE (CPUE) METRICS										
Station	Total Number Sampled	Average Length (inches)	Length Range (inches)	CPUE (Number per Mile)						
				Total CPUE	Young-of-Year CPUE	≥5" CPUE	≥8" CPUE	≥10" CPUE	≥12" CPUE	IBI Score
Snowmobile Bridge to CTH N	10	6.4	5.0 - 8.7	38	0	38	4	0	0	60
Downstream from Snowmobile Bridge	149	5.0	2.2 - 10.2	445	182	257	15	3	0	100
Long's Cabin	360	4.8	2.3 - 11.5	1,618	670	827	99	27	0	90
Below Toppers Bridge	273	3.9	2.0 - 13.0	1,440	1,076	306	26	11	5	100

Year	BROOK TROUT CPUE			
	Bridge to Hwy N	DS from Bridge	Long's Cabin	Toppers
2024	38	445	1,618	1,440
2022	11	215	634	385
2018	0	191	333	185
2012	103	645	611	781



Summary

- Plum Creek supports a healthy naturally reproducing brook trout population with a robust 2024 year class.
- Results from the 2024 surveys indicate a large increase in brook trout numbers when compared to other recent surveys.
- Catch rates of harvestable sized brook trout (≥ 8") was below statewide average for 2 of 3 class I stations and 1 of 1 class II station.
- IBI scores indicate excellent stream quality for a cool/cold water stream at 3 of the 4 sites. The uppermost site had a classification of good rather than excellent because the water tends to be warmer in the area nearest to Plum Lake.
- In addition to brook trout the following species were caught: western blacknose dace, cheek chub, largemouth bass, northern brook lamprey, mottled sculpin, hornyhead chub, white sucker, longnose dace, smallmouth bass, central mudminnow, common shiner, northern pike and yellow perch.