



WISCONSIN DEPARTMENT OF NATURAL RESOURCES

2021 Stream Survey Report Waupaca River, Waupaca County 257400

Introduction And Objectives

The Waupaca River is a Class II trout stream, consisting of 64.9 miles of trout water. Located in both Waupaca and Portage Counties, the stream name changes to the Tomorrow River when it crosses into Portage County. The Waupaca River is managed for trophy-sized trout as well as a put and take fishing area located in the City of Waupaca. Several public fishing accesses are located throughout the length of the river, including road crossings and DNR managed property. This trend site is part of the trophy management area, has had past habitat development work done and feral trout are stocked on a fairly regular basis to supplement natural reproduction. Objectives of the surveys are to monitor species composition, relative abundance, and size structure trends over time.

DNR Contact

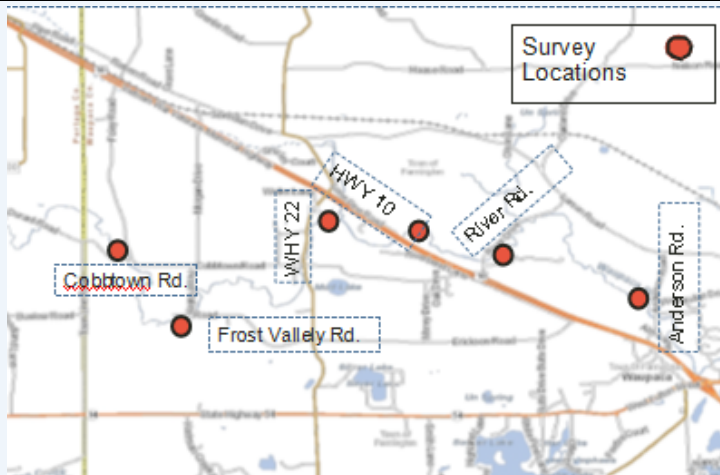
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Regulations

Category: Red (Durant Road to River Drive)
Yellow (All except portion listed above)
Daily Bag and Size Limit:
Red: 1 and 18-inch minimum (artificial only)
Yellow: Three and 8-inch minimum

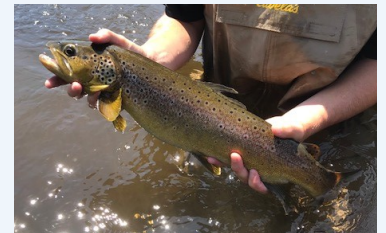
SURVEY INFORMATION

Station	Survey Date	Station Length	Temperature (° F)	Mean Stream Width	GPS (Start/Finish)	Gear	Dippers	IBI
Cobbtown Road	9/08/2021	2400 ft	58	65.6 ft	44.37551, -89.21586 44.37952, -89.22096	2X Towed Barge Shockers	6	NO
Frost Valley Road	8/23/2021	1810 ft	64	51.5 ft	44.36674, -89.20466 44.21983, -89.12477	2X Towed Barge Shockers	6	NO
County Highway Q	9/08/2021	4000 ft	59	-	44.3806, -89.1785 44.3740, -89.1852	2X Towed Barge Shockers	6	NO
Highway 10	8/23/2021	1374 ft	63	39.2 ft	44.37853, -89.16364 44.37811, -89.16748	2X Towed Barge Shockers	6	YES
River Road	9/09/2021	1908 ft	59	54.5 ft	44.37667, -89.14824 44.37438, -89.1532	2X Towed Barge Shockers	6	YES
Anderson Road	9/09/2021	2014 ft	58	57.5 ft	44.36618, -89.12339 44.36889, -89.12739	2X Towed Barge Shockers	6	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

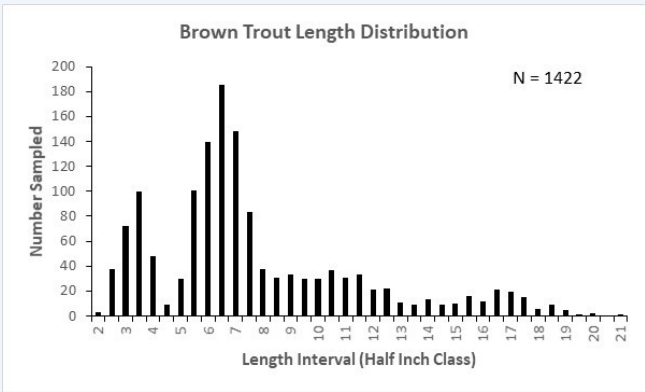
- Catch per unit effort (CPUE)** is a method of quantifying fish population relative abundance. For all trout surveys, we typically quantify CPUE as the number of a given size class of trout captured per mile of stream. CPUE indexes are compared to other trout streams throughout Wisconsin by what percentile (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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BROWN 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	>6" CPUE (PCTL)	>8" CPUE (PCTL)	>10" CPUE (PCTL)	>12" CPUE (PCTL)	>15" CPUE (PCTL)
Cobtown Road	382	7.8	2.8 - 18.8	840 (84th)	90	645 (90th)	260 (84th)	158 (85th)	86 (90th)	42 (98th)
Frost Valley Road	187	7.8	2.5 - 21.3	551 (77th)	102	327 (80th)	166 (76th)	131 (83rd)	85 (90th)	55 (99th)
County Highway Q	362	8.4	2.6 - 20.5	478 (74th)	90	322 (80th)	178 (77th)	144 (84th)	102 (93rd)	66 (99th)
Highway 10	159	7.9	2.2 - 20.2	611 (79th)	81	446 (84th)	204 (80th)	165 (86th)	88 (91st)	38 (97th)
River Road	73	8.7	3.2 - 19.2	202 (56th)	22	172 (66th)	91 (63rd)	58 (67th)	22 (65th)	19 (91st)
Anderson Road	259	7.5	2.4 - 19.7	679 (81st)	110	509 (87th)	181 (78th)	113 (80th)	68 (87th)	31 (96th)



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.

SPECIES COMMUNITY AND IBI FOR HIGHWAY 10			
Species Sampled	Total	IBI Score	Integrity Rating
Brown Trout	159	90	Excellent
Longnose Dace	4		
Northern Hog Sucker	5		
Bluntnose Minnow	4		
Johnny Darter	4		
Rainbow Darter	1		
Brook Lamprey	2		
Blacknose Dace	17		
Hornyhead Chub	12		
Mottled Sculpin	40		
Central Mudminnow	20		
Creek Chub	23		
Common Shiner	42		
White Sucker	213		



Summary

- Brown trout were found in moderate to high densities throughout the stations on the Waupaca River with the total brown trout CPUE ranking out in the 56th - 84th percentiles when compared to trout streams throughout Wisconsin. Brown trout 15+ inches ranked above the 91st percentile at every station. YOY brown trout were captured at all stations were in moderate to low numbers.
- The Highway 22 station had a drastic improvement in number of brown trout since the last survey in 2019.
- Brown trout populations are doing well throughout the Waupaca River system and provide both opportunities to catch quantity and quality sizes.
- The IBI scores suggests this stream is an excellent cool-coldwater stream near Highway 10, and the WI Streams Natural Community Model considers this a cool - cold stream. Habitat should be protected and this is possible due to the large tracts of state owned land. Lower reaches of the creek have received a lower IBI score, but still manage to be in the fair category. Agriculture, warmer water temperatures and recent sediment deposits may be having an impact on the fishery and the habitat.