

# WISCONSIN DEPARTMENT OF NATURAL RESOURCES

## 2022 STREAM SURVEY REPORT

### GILSON CREEK

TROUT STREAM ROTATION (WBIC 101200)

BROWN COUNTY



### INTRODUCTION AND OBJECTIVES

Gilson Creek is a Class I trout stream consisting of 3.59 miles of trout water. Gilson Creek originates in Brown County and flows north into Green Bay. Three road crossings, Marys Road, Gravel Pit Road and Servais Road, provide public fishing access to Gilson Creek. The objectives of the rotation surveys are to determine species composition, relative abundance and size structure of trout and other fish species present.

Regulations Category: **Yellow**

Size Limit: 8 inches

Daily Bag Limit: 3 (in total)

### WISCONSIN DNR CONTACT INFO.

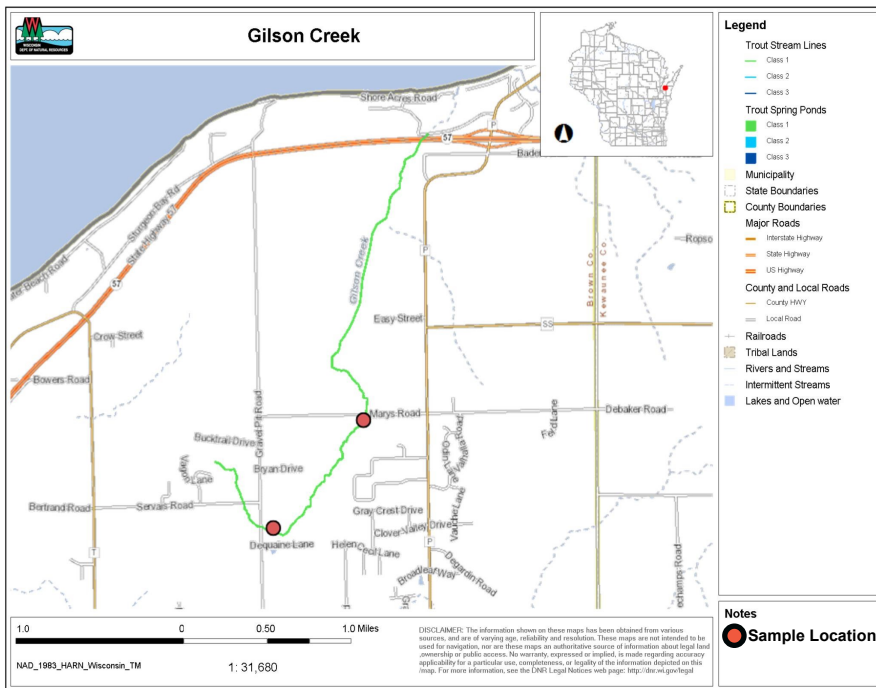
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### SURVEY INFORMATION

Station	Survey Dates	Station Length	Temperature (°F)	Mean Stream Width (ft)	GPS (Start/Finish)	Gear	Dippers	IBI
Marys Road	07/20/2022	288 ft	69	7	44.6106817, -87.791323 44.6101617, -87.792317	Backpack Shocker	1	Yes
Gravel Pit Road	07/20/2022	330 ft	63	7.3	44.6019177, -87.804398 44.6014900, -87.803450	Backpack Shocker	1	Yes



### SURVEY METHOD

- All trout streams are sampled according to DNR wadeable streams monitoring protocols. Gilson Creek is on a six year rotation schedule with one site identified for this stream.
- 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 and other gamefish are measured for length and examined for fin clips.
- In at least one stream segment (if multiple stations are being sampled), all fish species are collected and counted for the calculation of an Index of Biotic Integrity (IBI).
- Metrics used to describe trout populations include average length, catch per unit effort (CPUE), length frequency distribution and an IBI.

### 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 rank out in. For example, if a CPUE is in the 90<sup>th</sup> 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 (<33<sup>rd</sup> percentile), moderate density (33<sup>rd</sup> - 66<sup>th</sup> percentile), high density (67<sup>th</sup> - 90<sup>th</sup> percentile) and very high density (>90<sup>th</sup> 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.



Figure 1. Brook trout captured in a DNR fisheries survey. Photo credit Wisconsin DNR.



# WISCONSIN DEPARTMENT OF NATURAL RESOURCES

## 2022 STREAM SURVEY REPORT - CONTINUED

### GILSON CREEK

#### TROUT STREAM ROTATION (WBIC 101200)

#### SIZE AND ABUNDANCE (CPUE) METRICS

Station	Species	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)
Marys Road	No trout sampled	-	-	-	-	-	-	-	-	-
Gravel Pit Road	Brook trout	1	4.7	4.7	16 (12th)	-	-	-	-	-

**Brook Trout Length Frequency Distribution**

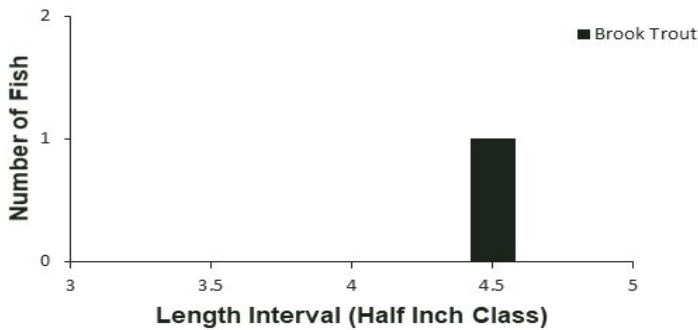


Figure 2. Brook trout captured in a DNR fisheries survey. Photo credit Wisconsin DNR.

#### Species Community and IBI for Marys Road

Species Sampled	Total	IBI Score	Integrity Rating
Brook stickleback	32	<b>10</b>	<b>Poor</b>
Central mudminnow	16		
Fathead minnow	1		
Largescale stoneroller	3		

#### Species Community and IBI for Gravel Pit Road

Species Sampled	Total	IBI Score	Integrity Rating
Brook trout	1	<b>40</b>	<b>Fair</b>
Brook stickleback	11		
Central mudminnow	6		

### SUMMARY

- Trout were found in low densities at the Gravel Pit Road station, with only one brook trout being captured and the total brook trout CPUE ranking out in the 12th percentile compared to trout streams throughout Wisconsin. No trout were captured at the Marys Road station. Poor habitat (i.e., shallow water that is mostly soft substrate) and warmer water temperatures as one moves further downstream are likely contributing factors to the overall low density of brook trout in Gilson Creek and the lack of brook trout at Marys Road.
- Gilson Creek was last sampled at Marys Road in 2016 with no trout being captured at this location in that year. Gilson Creek was surveyed at three locations in 2002 (CTY HWY P, Marys Road and Gravel Pit Road) and a total of two brook trout (one at CTY HWY P and one at Gravel Pit Road) were captured. Catch rates in 2022 were similar to previous year's surveys.
- No young of year (YOY) brook trout were captured in 2022. Limited habitat for all life stages of trout likely means very low densities of all age classes within the creek.
- The IBI scores suggest this stream is a poor-fair coldwater stream, and the Wisconsin Streams Natural Community Model considers this a cool - warm headwater stream. Habitat improvements, including narrowing the stream, flushing soft sediment and creating deeper pockets of water, could result in better conditions for trout.
- Despite a very low-density brook trout population, this population continues to persist through natural reproduction. Given this stream is isolated without another brook trout source population to repopulate the stream should brook trout get extirpated, this stream should be monitored closely, and locations identified to pursue habitat restoration efforts to increase the likelihood this population persists in the future.