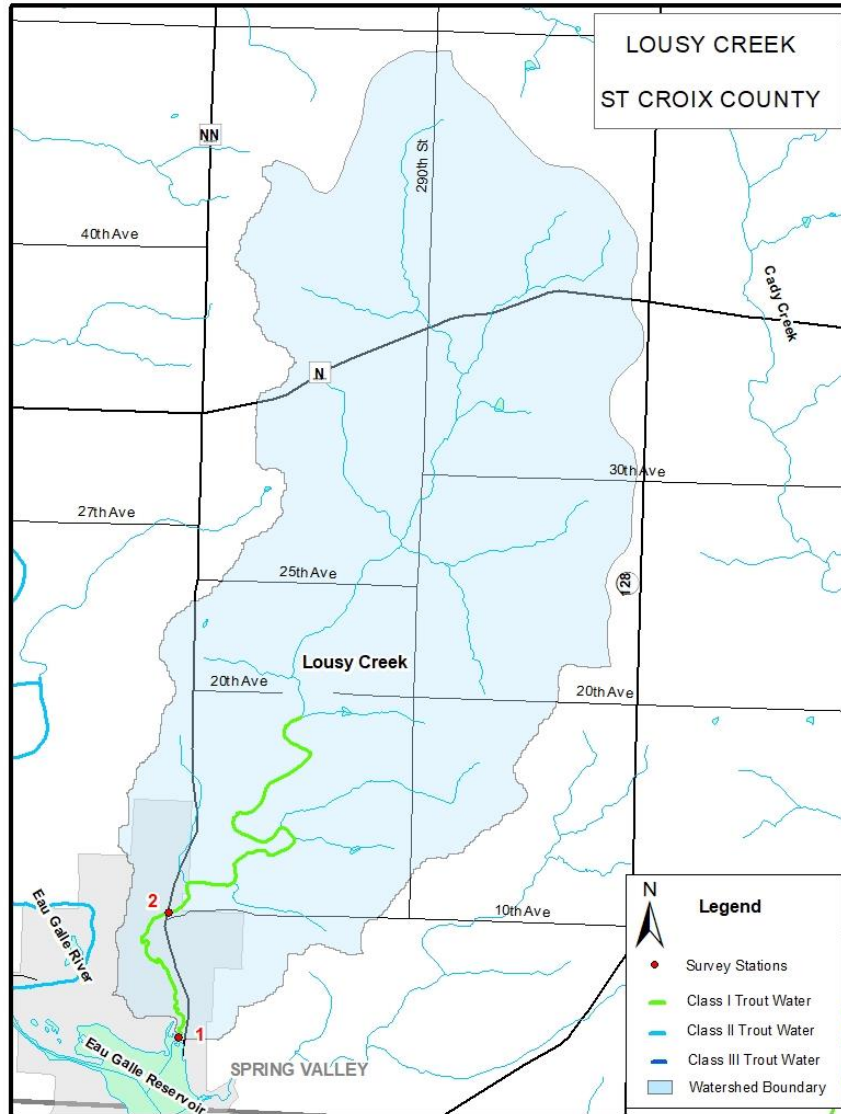


WISCONSIN DEPARTMENT OF NATURAL RESOURCES
Fisheries Survey Report for Lousy Creek, St. Croix County, Wisconsin 2021
WATERBODY IDENTIFICATION CODE 2060000



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Introduction

Lousy Creek is a small spring-fed tributary to the Eau Galle River located in southeastern St. Croix County. The stream flows directly into Lake George or Spring Valley Reservoir and is 6.2 miles long with 2.8 miles of Class I trout water. The Eau Galle watershed drains mostly agricultural and forested land and grassland to a lesser degree. The watershed as a whole is ranked high for runoff impacts on streams and groundwater. Access to the stream is limited to two road bridges. Lousy Creek has several small unnamed and unclassified tributaries along its length. The trout population within the stream is fully supported by natural reproduction. Lousy Creek is listed as a candidate stream within the Brook Trout Reserves program, with a classification of Environmentally Resilient.

Methods

Because of limited stream access, a single station was sampled on Lousy Creek in 2020 and 2021. Sampling was conducted between June 15 and Sept. 15 using a backpack stream shocking unit with a single electrode. The length of the station was determined by multiplying the mean stream width by 35. The station was located upstream of County Road NN (Station 2). All fish species were collected at this station, and all trout were identified to species and measured to the nearest 10th of an inch. All non-game species were identified to species and counted.

The Index of Biotic Integrity (IBI) was used to measure biological attributes that are influenced by human activities to assess the overall health of the stream. The index uses the species assemblage present to assess water quality and thermal regimes within a waterbody. Coldwater IBI's range in score from 0 to 100, with a high score (90-100) interpreted as an Excellent Integrity rating and 10-20 interpreted as a Poor Integrity rating.

Study Site

Station 2 was located upstream of County Road NN, with the stream running through a semi-wooded corridor with open to heavy canopy cover. Habitat was not quantitatively evaluated during the surveys; however, anecdotally, the stream at Station 2 exhibited very minimal erosion with high gradient. The substrate consisted of large cobble and gravel. Aquatic vegetation was prevalent in the unshaded areas of the station. Large woody debris was present in low quantities in the pools. High gradient riffles and pools made up the majority of the station.

Results

Brook Trout were the only trout species found at Station 2. Brook Trout ranged from 2 to 8 inches long (Figure 1). The relative abundance of Brook Trout as measured by catch per effort was 2914 total trout/mile, which resulted in the 95th percentile for Class I Brook Trout streams in the Driftless and Western Corn-belt ecoregions (Table 1). A sampling of this site in 2020 resulted in a total catch rate of 705 total trout/mile, and no adults were captured (Figure 2). In 2021, adult (larger than 4.5 inches) Brook Trout abundance was 724 adults/mile or the 85th percentile for similar streams (Table 1; Figure 2). Natural reproduction of Brook Trout was high in 2020 and 2021, with 705 young-of-year/mile (85th percentile) in 2020 and 2189 young-of-year/mile (95th percentile) in 2021 (Table 1; Figure 2).

The survey resulted in a Coldwater IBI rating score of 100, which is ranked as Excellent. A total of two non-salmonid fish species were collected at Station 2, while six were collected in the 2020 survey (Table 2). Species in the 2021 survey included Mottled Sculpin and Creek Chub, while White Sucker, Brook Stickleback, Blacknose Dace, Mottled Sculpin, Green Sunfish and Largescale Stoneroller were collected in 2020 (Table 2). The abundance of more tolerant species in the 2020 survey resulted in a Coldwater IBI score of 80, with a ranking of Good.

Discussion

Brook Trout abundance in Lousy Creek at Station 2 is higher than in all previous surveys of the station in terms of adult and young-of-year abundances. Adult densities are well above the long-term average for this site of 212 adults/mile. No adult trout were detected in the 2020 survey. The size structure of adult trout was small, with only 48 adults/mile larger than 7 inches and no fish captured larger than 8 inches. No Brown Trout were detected at this site in 2021 or in previous surveys. However, Brown Trout were detected in previous surveys (1964 to 1998) of Station 1, which is located at the mouth of Lousy Creek where it enters Lake George (Station 1). No Brown Trout were detected in the 2008 survey of Station 1. The absence of Brown Trout in this stream is beneficial for the Brook Trout population, reducing competition between the species and allowing for Brook Trout sustainability in the future. Natural reproduction of Brook Trout is very strong in Lousy Creek, with 2020 and 2021 producing excellent year classes of trout in this stream and others in the area. This is likely due to stable spring weather patterns in these years that have allowed for excellent stable flows during the spring egg incubation and hatching periods.

The Excellent Coldwater IBI ratings indicate excellent water quality and thermal regimes preferred by trout and other coldwater species. Instream and riparian habitat were excellent at this site with good adult cover, nursery habitat and spawning substrates.

Lousy Creek is currently classified as a Class I trout stream, and this classification is correct based on this survey. Historically, no stocking has occurred in this stream and current management within the watershed is focused on enhancing and promoting native Brook Trout. Brown Trout stocking within the entire Eau Galle watershed ceased in 2020 to aid in Brook Trout management. Lousy Creek has excellent thermal regimes, habitat and water quality and likely serves as an important spawning and nursery stream for the Eau Galle River and is likely to be an essential part of the sustainability of the Brook Trout population in the future for the upper Eau Galle watershed.

Table 1. Relative abundance (catch per effort; number per mile) of Brook Trout at two stations on Lousy Creek. (. Indicates no survey)

	ST. 1		ST. 2	
Year	Juv.	Adult	Juv.	Adult
1998	610	182	334	123
2002	.	.	720	80
2008	386	348	373	133
2020	.	.	705	0
2021	.	.	2189	724

Table 2. Total number of each species captured at Station 2 on Lousy Creek, summer 2020 and 2021.

SPECIES	2020	2021
Brook Trout	53	181
Brown Trout	0	0
White Sucker	2	0
Brook Stickleback	2	0
Blacknose Dace	2	0
Mottled Sculpin	448	110
Green Sunfish	1	0
Largescale Stoneroller	1	0
Creek Chub	0	3

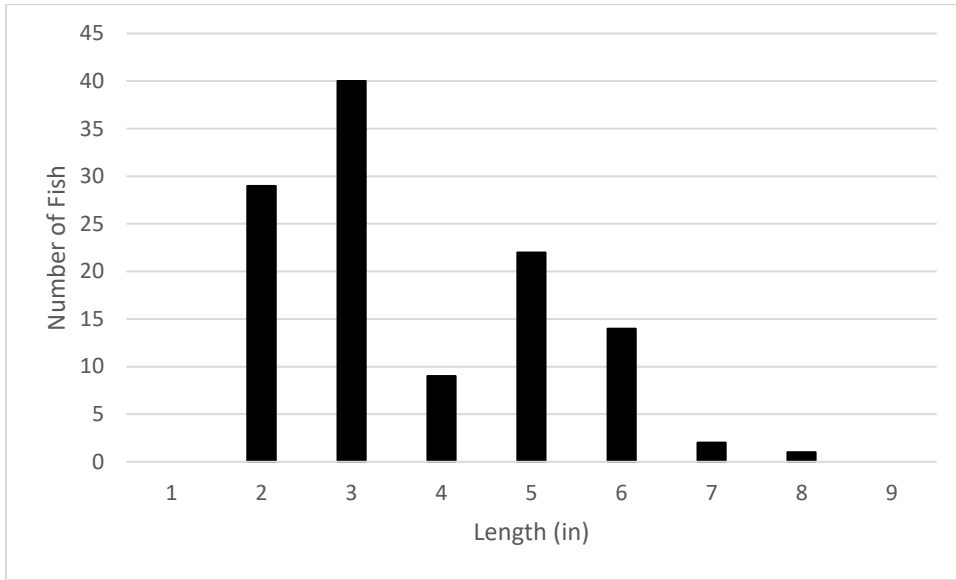


Figure 1. Length frequency distribution of Brook Trout at Station 2 on Lousy Creek, summer 2021.

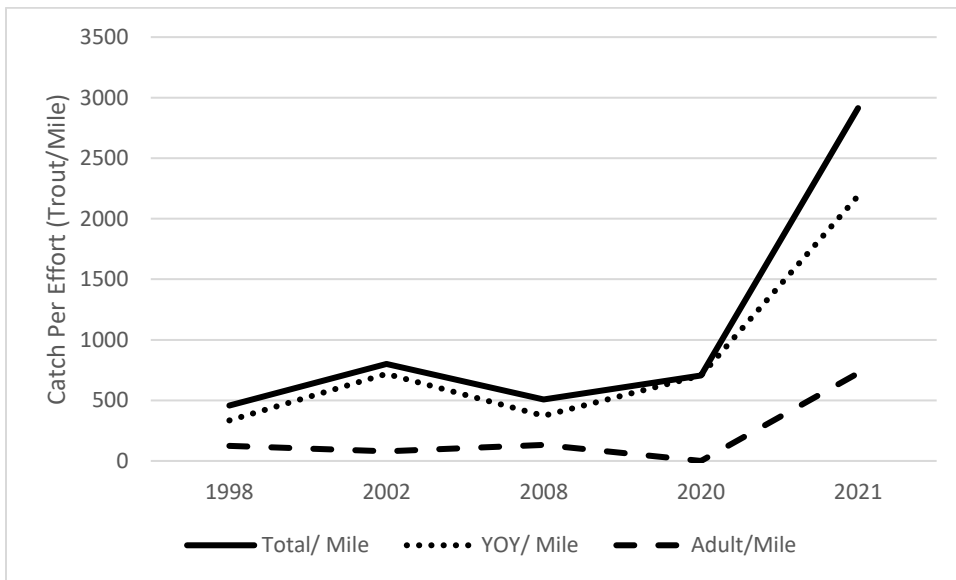


Figure 2. Relative abundance (Catch per effort; fish per mile) of Brook Trout at Station 2 in Lousy Creek from 1998 to 2021.