

WISCONSIN DEPARTMENT OF NATURAL RESOURCES
2025 Trimbelle & Big River
Watershed Survey Report
HUC 8 Watershed 07040001, Pierce County



Photo Credit: Kasey Yallaly



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EXECUTIVE SUMMARY

The Trimbelle and Big River watershed is located in west central Pierce County and drains into the Mississippi River in Lake Pepin. The streams contain naturally reproducing brook and brown trout fisheries. While annual sampling occurs at three stations on the Trimbelle River and one station on Big River, previous comprehensive surveys of the streams within the watershed are dated and occurred most recently in 2014 on the Trimbelle River and 2016 on Big River. Some of the small unnamed tributaries had not been surveyed since 1996. To successfully manage the fishery, recent data is needed to understand the current status of brook and brown trout populations. Therefore, we surveyed streams within the watershed in 2025 to gather information that will aid in future management decisions. Evaluation of brook and brown trout natural reproduction, survival and size structure will aid in understanding the impacts of harvest regulations, stocking and habitat improvements. A total of 47 stations were surveyed on 17 streams within the watershed. Overall, brown trout population densities have increased in the Trimbelle River sub-watershed throughout the past fifteen years and brook trout densities have increased in Spring Creek, Goose Creek and Big River. These increases are the result of improvements in natural reproduction following stocking changes. Coldwater stream conditions have improved at most sites surveyed and stocking is no longer needed to maintain the fishery the Trimbelle River. Due to improved conditions and trout populations, the Trimbelle River warranted reclassifications to Class I status. Habitat improvement work, changes in stocking regimes and improvements in land use have all resulted in these trout population improvements.

MANAGEMENT RECOMMENDATIONS

- Continue trend station monitoring to evaluate effects of the new regulation change in 2026 and fully evaluate any changes during the next watershed survey in 2035.
- Monitor brook and brown trout populations trends within Big River to determine if further stocking of feral strain brook trout is needed to aid in population establishment.
- Consider a brown trout removal project in Big River if brook trout densities are maintained or improve.
- Reclassify the Trimbelle River from Class II status to Class I status.
- Continue brown trout genetic analysis to further understand impacts of stocking strains on maximum size, mean size and growth rates of brown trout.
- Continue streambank easement acquisition within the watershed to afford additional protections on streams, complete habitat improvement projects and increase public access to the streams.
- Continue trout habitat improvement work within the watersheds. Adjust goals of the project based on location within the watershed

- Target easement acquisitions on Big River and consider streambank erosion control in the mid and upper reaches of Big River to reduce downstream sedimentation.

WATERSHED LOCATION

The Trimbelle River and Big River are located within the Trimbelle River and Isabelle Creek Watershed which drains approximately 221 square miles of west central Pierce County in the northern portion of the Driftless region. Land use within the watershed is composed mostly of agricultural land with 40% of the land in active crop land (Pierce County LCD 2021). Only 26% of the watershed remains forested and the remainder of land is composed of wetlands and suburban areas. Grasslands cover 23% of the watershed and urban areas are minimal with only 0.25% of the land. The municipality of Ellsworth is partially located with the watershed. The Trimbelle River's headwaters are located in the north central part of the county, east of the City of River Falls. The stream flows southwest until it reaches the Mississippi River in Trenton Slough near Hager City, WI. Big River is located directly west of the Trimbelle River and begins south of the City of River Falls and flows southwesterly until it reaches the Mississippi River south of Prescott, WI.

PURPOSE OF SURVEY

The purpose of this survey was to evaluate the status and health of the fishery within the Trimbelle River, Big River and their tributaries. This survey documented trout species presence, relative abundance and the size structure of the population. Natural reproduction and survival of trout was assessed to inform management activities including trout regulation effectiveness and appropriateness, habitat improvement needs and stocking within the watershed. Trout stream classifications were also evaluated during the survey and unclassified streams were also surveyed to identify potential classifications. Index of Biotic Integrity (IBI) surveys were conducted at selected stations throughout the survey period to assess overall stream health and detect changes in water quality relative to previous surveys.

DATES OF FIELDWORK

All surveys within the Trimbelle and Big River watershed occurred from June 16th through July 8th, 2025.

SPECIES SAMPLED

- Brown trout
- Brook trout
- Mottled sculpin
- White sucker
- Brook lamprey ammocete
- Brook stickleback

- Blacknose dace
- Johnny darter
- Longnose dace
- Burbot
- Smallmouth bass

INTRODUCTION

The Trimbelle River watershed drains approximately 88 square miles and features a moderate to large sized cold water mainstem stream in west central Pierce County in the northern portion of the Driftless Area. The watershed is composed of typical coulee terrain and the streams are prone to flooding. The headwaters of the Trimbelle River upstream of CTH W just south of River Falls, Wisconsin, feature a small wetland coolwater stream which transitions into a coldwater stream with the addition of groundwater influxes and springs downstream of County Highway (CTH) W. The stream from CTH W downstream to State Highway (STH) 10 features mostly sand and limited gravel substrates. Downstream of STH 10, the stream transitions to a high gradient stream dominated by limestone cobble and gravel. Additionally, the Trimbelle River is classified as an Exceptional Resource Water for its lack of impairments and water quality.

The Trimbelle River is currently classified as a Class II stream in Wisconsin's trout stream classifications system and includes 21.1 miles of classified stream. The river has several classified tributaries including Spring Creek which features 2.6 miles of Class II water, Goose Creek which has 3.9 miles of Class II water and the Little Trimbelle River of which has 5.3 miles of Class I water. There are many unnamed and unclassified tributaries within the watershed as well. Streambank erosion and subsequent sedimentation are prominent throughout the watershed. The headwaters area continuously contributes a large sand load into the mainstem. Historically, the trout population was reliant on stocking to provide and maintain a fishery. However, annual trend surveys have documented increases in natural reproduction. The fishery has been dominated by brown trout through stocking but brook trout are present within the upper reaches and downstream near tributary mouths. Brook trout were stocked in the upper reaches at CTH W for several years after a trout habitat improvement project occurred in an effort to attempt to establish a population. Excluding trend surveys that occur annually on the Trimbelle River, previous rotational comprehensive fish surveys occurred in 1996 and in 2014 on the Trimbelle, Goose Creek and Spring Creek. The Little Trimbelle River was last surveyed in 2012.

Big River includes 5.5 miles of Class I trout water and 2.6 miles of Class II trout water. Similar to the Trimbelle River, the stream flows through steep, coulee terrain. The Class I section of stream features a high gradient and flows through limestone bedrock geology. The stream substrate is dominated by cobble and gravel within the

Class I section, however, a large sand load originating from upstream sources forms a layer over hard substrates in sections. The stream is prone to flash flooding and bank erosion is moderate through the stream. There is a lack of suitable overhead cover including lack of deep pools for adult trout which likely limits adult brown trout densities. Big River has one unclassified tributary with permanent flow. Historically, the fishery has been dominated by brown trout. Previous surveys on Big River, other than annual trend surveys at Station 2, occurred in 1988, 1991, 1999 and 2016.

STOCKING

The Trimbelle River watershed has a long history of stocking of both brown and brook trout. Brown trout have been stocked at consistently higher rates and stocking has been more consistent than brook trout stocking (Figure 1). Brown trout have only been stocked into the Little Trimbelle beginning prior to 1972 and have been stocked into the Trimbelle River beginning in 1979. Stocking ceased in 2023 in order to fully evaluate the fishery in the absence of stocking during the 2025 watershed survey. Prior to 2007, the strain of brown trout stocked in the Trimbelle River were St. Croix domestic strain which then switched to the feral Timber Coulee strain after 2007 and continued annually until 2023. The Little Trimbelle River only received St. Croix domestic strain brown trout.

Brook trout have been stocked in the Trimbelle River watershed prior to the 1970s where the majority of stocking occurred in the named tributaries (Figure 2). Brook trout stocking in the Little Trimbelle River and Goose Creek ceased in 2000 and 2001. Northwest feral strain brook trout stocking began in 2018 in Spring Creek and continued annually until 2024. The Trimbelle River mainstem has been sporadically stocked with brook trout. The most recent stocking attempt occurred in the upper reaches near CTH W prior to and after a trout habitat restoration project occurred in the area with the goal of restoring brook trout. This stocking occurred from 2010 to 2014 and 2018 to 2019.

Big River has a limited stocking history. Brook trout fingerlings were stocked in 1990 and 1991 and then feral strain yearling brook trout were stocked annually from 2018- to 2022. There is no history of brown trout stocking with the Big River sub watershed.

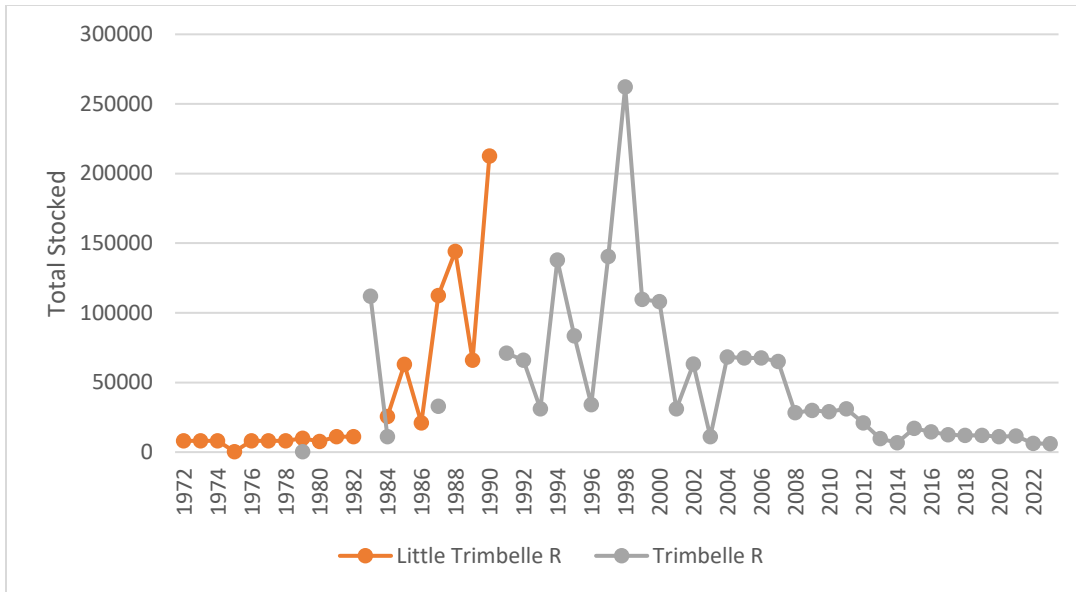


Figure 1. Brown trout stocking history within the Trimbelle River watershed. *Includes fry, small fingerling, large fingerling and yearling trout.

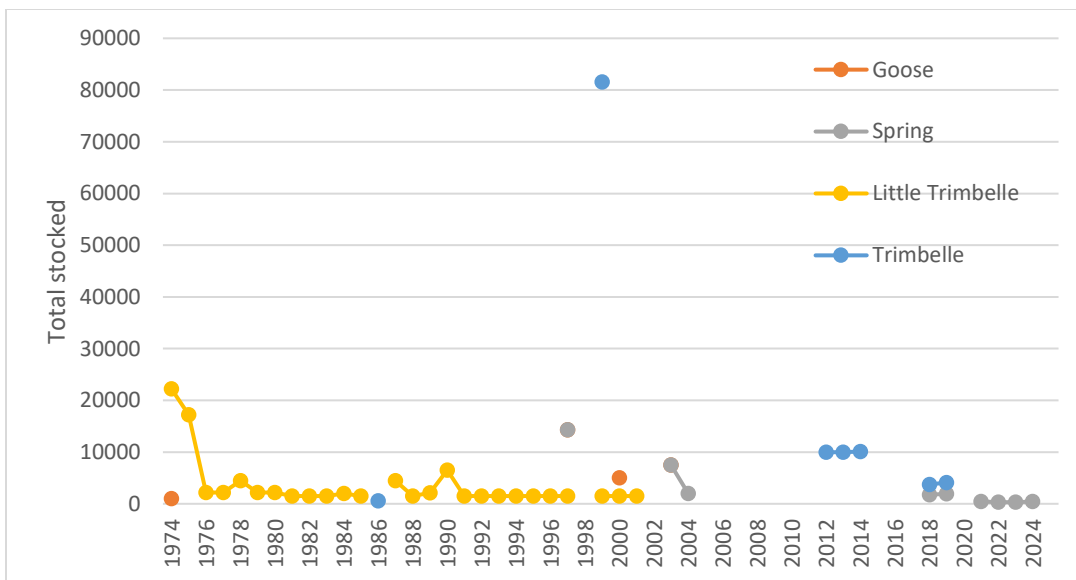


Figure 2. Brook trout stocking history within the Trimbelle River watershed. *Includes fry, small fingerling, large fingerling and yearling trout.

REGULATIONS

The current trout fishing regulations within the watershed have been in effect since 1990 and feature a 12-inch minimum length limit for brown trout and an 8-inch minimum length limit for brook trout with a total bag limit of three trout. This regulation was implemented with the goal of improving or maintaining catch rates and increasing the abundance of quality size fish. At that time, trout densities were significantly lower than present densities and many streams were reliant on stocking to maintain or provide a fishery. Trout densities have dramatically increased since

then because of higher rates of natural reproduction and survival. Therefore, trout fishing regulations within the county have been changed to a five fish bag limit and only one of those may be larger than 12 inches. This regulation will go into effect in 2026.

HABITAT IMPROVEMENT

The Trimbelle River has a long history of trout habitat improvement work throughout the past several decades while Big River has no prior history of habitat improvement work on the stream. One of the first DNR habitat projects on the Trimbelle River occurred in 2000 and included 2,270 feet of stream downstream of STH 10 and off of CTH O. The site was within a previously dammed lakebed for over 90 years prior. A substantial sediment load had accumulated and after the dam removal occurred, the river incised through the sediment resulting in steep, eroding banks, a braided channel and no overhead cover. Banks were sloped to gradual slopes and riprap was used to stabilize the banks. Overhead cover was installed in the form of 48 LUNKER structures as well as rootwads, logs and boulders. An additional habitat project was completed in 2007 and 2012 directly upstream from this location on Pierce County land. This project improved a total of 2,032 feet of stream with similar habitat techniques used including the installation of 50 LUNKER structures. A habitat project was completed downstream of CTH W in 2013 on Wisconsin Department of Transportation (DOT) land that featured improvements on 2,360 feet of stream. Then in 2015, the remaining section of stream from the CTH W project down to STH 65 was completed for an additional 1,760 feet of stream improvements that included another 22 LUNKER structures.

In 2017, another habitat project was completed at the Holst easement located at the Spring Creek confluence. This project included 889 feet of one bank improvement and 345 feet of both banks on the Trimbelle and 356 feet of both banks on Spring Creek for a total of 2,291 feet of integrated bank treatment and trout habitat improvement. During the following year, another habitat project was completed upstream at 640th Avenue. This project featured habitat work both upstream and downstream of the road crossing for a total project length of 4000 feet of improvement work. No LUNKER structures were used at this site and the stream was kept at a wider width compared to traditional habitat projects done in the past. The next project completed on the Trimbelle River occurred in 2022 off of CTH O in a large horse pasture. This project was 3,200 feet in length and included the installation of riffles, rootwads, islands, backwater refuges, weirs and boulders. In 2023, another project was completed upstream of 560th Avenue on the Thom easement. This project included 3,500 feet of integrated bank treatment and habitat in the form of boulder clusters, ERO structures, islands, spawning riffles, rootwads and weirs. Several habitat improvement projects have been completed by county operations crews on what is now private land.

No habitat improvement work has been completed on Big River.

PUBLIC ACCESS

Public access to the Trimbelle River and its tributaries is available through streambank easements, DNR fee title property, United States Army Corps of Engineers (USACE) land and many road crossings. Upstream of STH 65, a total of 65 acres of DNR fee title allow stream access along CTH W and 112 acres of DOT land offer access off of CTH W and STH 65. A 2100 feet long easement is located upstream of CTH W and another 1500 feet long easement is located upstream of STH 65. An additional 14,442 feet of easement exists from STH 65 to STH 10 on four easements off of 650th Avenue, 640th Avenue and 560th Avenue. Downstream of STH 10, there are four streambank easements that total 13,088 feet of stream access off of CTH O. There is also a county owned park south of STH 10 that also provides public access to the river.

There are no existing DNR streambank easements on Big River which limits access to few road crossings and a park owned by Pierce County near the confluence with the Mississippi River.

LAND USE

The Trimbelle and Big Rivers are located in the Trimbelle River and Isabelle Creek watershed which is 221.4 mi². Land use in the watershed is primarily agricultural (40.7%), forest (26.3%) and a mix of grassland (22.9%) and other uses (10.1%). This watershed has 467.2 stream miles, 1,912.6 lake acres and 3,854.2 wetland acres. Sub-watersheds include Little Trimbelle Creek, Isabelle Creek, and Big River.

METHODS

A total of 42 stations were surveyed on the Trimbelle River and its tributaries and five stations were surveyed on Big River and its tributary in 2025 (Table 1). Tributaries surveyed included the Little Trimbelle River, Goose Creek, Spring Creek and several unnamed tributaries (Table 1). Sampling was conducted between June 15th and September 15th using a backpack stream electrofishing unit with a single electrode and a stream barge electrofishing unit with up to three electrodes. The length of stations was determined by multiplying the mean stream width by 35. Stations were located upstream of all road crossings if possible. All fish species were collected at selected predetermined stations and were counted and identified to species. All trout were identified to species and measured to the nearest 10th of an inch. Relative abundance as measured by catch rates and expressed as Catch Per Unit Effort (CPUE; fish per mile) of brown trout and brook trout were compared to other Class I and II trout streams within the Driftless Area and percentiles were assigned for each length or age class. Brook and brown trout less than 5 inches in length are considered young-of-year (YOY) or fish that hatched the previous spring and are an indicator of natural reproduction in the absence of small fingerling stocking. GIS maps were developed to allow for visualization of YOY and adult trout densities throughout the

watershed.

The Index of Biotic Integrity (IBI) was used as a measure of 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. IBI sampling was completed at 26 stations in the Trimbelle River and three stations in Big River in 2025.

SURVEY EFFORT

A total of 17,306 feet of stream was surveyed on the Trimbelle River and its tributaries in 2025 which included 15 stations on the mainstem, three stations on Goose Creek, four stations on Spring Creek, seven stations on the Little Trimbelle River and 11 stations on unnamed tributaries (Table 1). Unnamed Creek (WBIC 5012348) is a dry run and was therefore not surveyed. Goose Creek is a moderately sized spring fed tributary. It flows southwest through the village of Beldenville. Goose Creek drains mostly agricultural and wooded land. Most of the stream is surrounded by a narrow, wooded buffer and substrates are mostly composed of gravel and sand. There is a general lack of overhead cover for adult trout but the stream does provide adequate spawning and rearing habitat. Goose Creek Station 4 was a dry run and was not sampled. Unnamed Creek 16-2, Unnamed Creek (WBIC 5013509), Spring Creek Station 4, Unnamed Creek (WBIC 5014001), Unnamed Creek (WBIC 5014059), Unnamed Creek (WBIC 5014453), Little Trimbelle River Stations 5-7, Unnamed Creek (WBIC 5015133), Unnamed Creek (WBIC 5014802), Unnamed Creek (WBIC 5014480) and Unnamed Creek (WBIC 5014248) did not have water at the site and were not surveyed. Unnamed Creek (WBIC 5014384) did not have any access and was also not sampled. Spring Creek is a small spring-fed tributary that enters the Trimbelle River south of STH 10. The upper reaches of the stream drain part of the Village of Ellsworth. Pool, riffle and run sequences are adequate on this stream. The Little Trimbelle River is also a spring-fed tributary that enters the Trimbelle River just north of STH 35. It is a coulee type stream prone to flooding and it drains mostly wooded and agricultural land. Substrates in the stream are dominated by limestone cobble, gravel and sand.

A total of 737 feet of stream was surveyed on Big River and its unnamed tributary in 2025 (Table 1). The two lowermost stations on Big River were located in steep, wooded, valleys with gravel and cobble substrates in the riffles and finer substrates in lower velocity sections. The upper stations were generally located within narrow wooded corridors surrounded by pasture or crop land with a mixture of gravel and sand as dominant substrates. Unnamed Creek (WBIC 5014480) is a small, low gradient flowing through marshland.

Table 1. Number and location of stations surveyed in the Trimbelle River and Isabelle Creek watershed in Pierce County in 2025.

| STATION | STATION LOCATION | STATION LENGTH (M) | MEAN STREAM WIDTH (M) |
|--------------------------------|-------------------------------|---------------------------|------------------------------|
| Trimbelle River 1 | STH 35 | 379 | 10.8 |
| Trimbelle River 2 | Private Crossing off of CTH O | 295 | 8.4 |
| Trimbelle River (Halvorson) | Halvorson Easement | 284 | 8.1 |
| Trimbelle River 6 | CTH O | 382 | 10.9 |
| Trimbelle River (Spring Creek) | CTH O | 286 | 8.2 |
| Trimbelle River 8 | CTH O | 159 | 4.5 |
| Trimbelle River 9 | CTH O | 252 | 7.2 |
| Trimbelle River 10 | 560 th Ave | 310 | 8.7 |
| Trimbelle River 11 | 570 th Ave | 210 | 6 |
| Trimbelle River 12 | 870 th Ave | 303 | 8.7 |
| Trimbelle River 13 | 640 th Ave | 276 | 7.9 |
| Trimbelle River 14 | 650 th Ave | 115 | 7.9 |
| Trimbelle River 15 | STH 65 | 203 | 5.6 |
| Trimbelle River 15D | CTH W | 243 | 6.9 |
| Trimbelle River 17 | 770 th Ave | 110 | 2 |
| Unnamed Creek | 810 th St | 100 | . |
| Goose Creek 1 | 790 th St | 186 | 5.3 |
| Goose Creek 2 | 750 th St | 135 | 2.9 |
| Goose Creek 3 | STH 65 | 100 | 1.2 |
| Unnamed Creek 16-2 | 570 th Ave | 100 | 0.8 |
| Unnamed Creek | CTH O | 100 | . |
| Spring Creek 1 | Quarry Rd | 100 | 2.7 |
| Spring Creek 2 | 830 th St | 100 | 2.8 |
| Spring Creek 3 | 810 th St | 100 | 1.4 |
| Spring Creek 4 | STH 10 | 100 | . |
| Unnamed Creek | CTH K | 100 | . |
| Unnamed Creek | CTH O | 100 | . |
| Unnamed Creek | Confluence | 100 | . |
| Unnamed Creek | 372 nd Ave | 100 | . |
| Little Trimbelle River 1 | CTH K | 165 | 4.7 |
| Little Trimbelle River 2 | 830 th St | 150 | 4.3 |
| Little Trimbelle River 3 | 830 th St | 232 | 6.7 |
| Little Trimbelle River 4 | 830 th St | 100 | 4 |
| Little Trimbelle River 5 | CTH KK | 100 | . |
| Little Trimbelle River 6 | CTH K | 100 | . |
| Little Trimbelle River 7 | 750 th St | 100 | . |
| Unnamed Creek | 830 th St | 100 | . |
| Unnamed Creek | 830 th St | 100 | . |
| Unnamed Creek | 390 th Ave | 100 | . |
| Unnamed Creek | CTH KK | 100 | . |
| Big River 1 | 1150 th St | 175 | 5 |
| Big River 2 | STH 35 | 222 | 4 |

| | | | |
|---------------------------------|-----------------------|-----|-----|
| Big River 560 th Ave | 560 th Ave | 140 | 4 |
| Big River 5 | 1040 th St | 100 | 2.5 |
| Unnamed Creek | 620 th Ave | 100 | 4 |

RESULTS

TRIMBELLE RIVER

Trout were detected at all stations surveyed on the mainstem of the Trimbelle River during 2025 surveys. Brown trout were present at all stations surveyed while brook trout were present at nine of the fifteen stations surveyed in low to moderate densities (Table 3). With the exception of Station 17, brown trout were present at all stations in moderate to high densities when compared to other Class II brown trout streams in the Driftless Ecoregion (Table 2). Throughout the past two decades, adult brown trout densities have increased dramatically (Figure 4), while stocking of brown trout has simultaneously declined from peak stocking in the mid-1990s to no stocking beginning in 2024 (Figure 1). Therefore, the increase in brown trout densities is due to improvements in natural reproduction (Figure 3). Overall, high densities of brown trout were found throughout the Trimbelle River when compared to other Class II brown trout streams in the Driftless region with the highest densities at stations H, 6, 8, 13 and 14 (95th percentile). Adult brown trout densities ranged from 16 per mile (10th percentile) at Station 17 to 2,514 per mile at Station 8 (95th percentile; Table 2). At the Station 8 trend site, adult brown trout densities were almost double the long-term average at this site of 1,295 per mile. Adult densities at this station have revealed a steadily increasing trend since 1996 and a habitat improvement project was completed at this site in 2000. At the Station 12 trend site, adult densities have also revealed an increasing trend since the mid-1990s but with more annual variability.

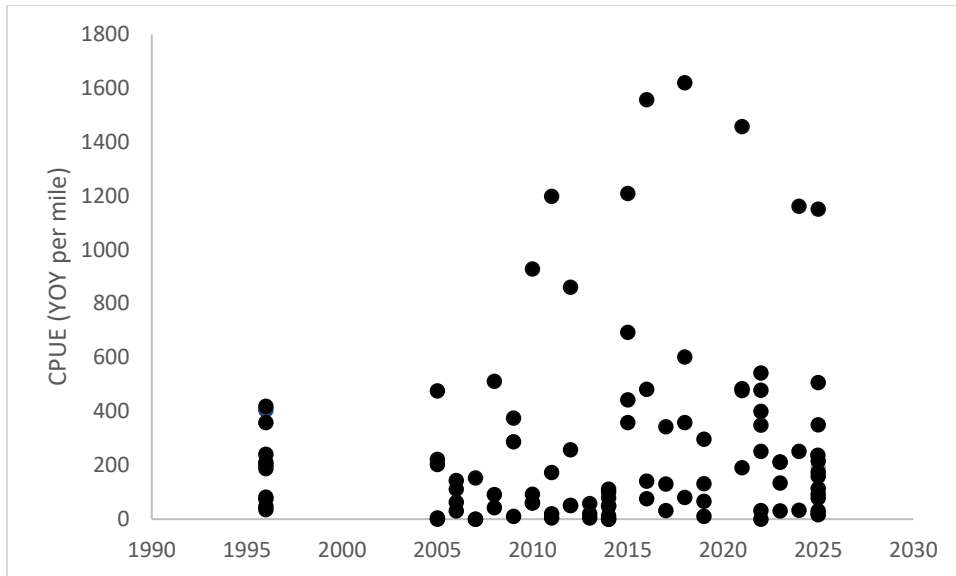


Figure 3. Relative abundance of young-of-year (YOY) brown trout (≤ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from 15 stations in the Trimbelle River from 1996 to 2025.

Brook trout are a minor component of the trout fishery within the Trimbelle River. The highest densities of brook trout were found near tributary mouths including Goose and Spring Creeks and in the upper reaches of the mainstem. The highest densities of brook trout were found at Stations 14 and 15D (Table 3). Station 14 is near the confluence with Goose Creek and Station 15D is the site of brook trout stocking following a habitat improvement project conducted in 2013. No brook trout were found at stations 1, 2, H or 9 (Table 3). At Station 15D, brook trout densities have declined from a peak in 2015 that was likely due to the three prior years of stocking, to the lowest densities observed since 2012 at 258 per mile. Brown trout densities at this site have also experienced declines. Natural reproduction of brook trout was highest at stations 12, 14 and 15D with densities of young-of-year (YOY) above the 70th percentile. No natural reproduction of brook trout was documented at or downstream of Station 9 (Table 3). When brook trout were present, adult densities ranged from low to moderate and were highest at Station 14 with 147 per mile. Adult brook trout larger than 10 inches were present at four stations which included stations Spring Creek, 11, 13 and 14 (Table 3).

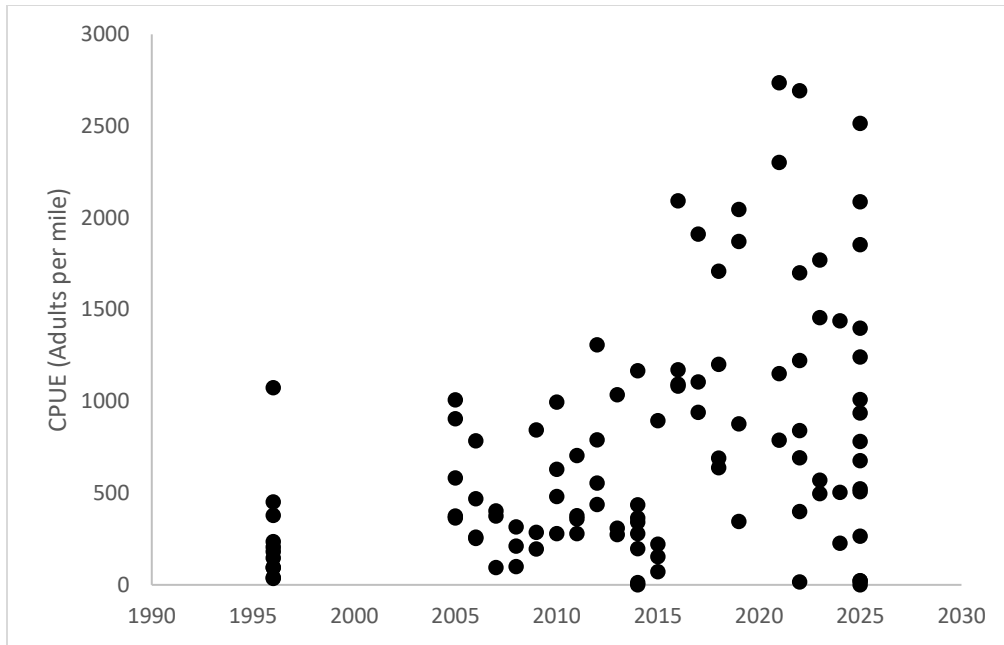


Figure 4. Relative abundance of adult brown trout (≥ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from 15 stations in the Trimbelle River from 1996 to 2025.

Size structure of adult brown trout was highest at stations 1, Spring Creek, 8, 13, 14 and 15 in terms of abundance of fish larger than 15 inches (Table 2). Brown trout larger than 15 inches were only captured at these stations and densities of these fish ranged from 4 per mile (60th percentile) at Station 1 to 24 per mile (85th percentile) at Station 15. The largest brown trout captured in surveys in 2025 was 21 inches. This was the only fish captured that was larger than 20 inches and a total of three fish were larger than 18 inches at all stations surveyed. All stations except for Station 17 contained brown trout larger than 12 inches in moderate to high densities ranging from 23 per mile (45th percentile) at Station 11 to 372 per mile (95th percentile) at Station 8.

Table 2. Relative abundance of total, young-of-year (YOY), adult (≥ 5.5 inches), ≥ 8 inch, ≥ 12 -inch and ≥ 15 -inch brown trout at 15 stations on the Trimbelle River in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class II brown trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 5.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 12 INCHES | CPUE ≥ 15 INCHES |
|--------------------------|------------|-----------|---------------------------------|----------------------|-----------------------|-----------------------|
| Trimbelle 1 | 637 (75) | 114 (70) | 523 (75) | 295 (70) | 42 (55) | 4 (60) |
| Trimbelle 2 | 1027 (85) | 350 (85) | 677 (80) | 524 (85) | 98 (80) | 0 |
| Trimbelle H | 2280 (95) | 191 (80) | 2088 (95) | 1638 (95) | 175 (90) | 0 |
| Trimbelle 6 | 1491 (95) | 21 (50) | 1470 (95) | 939 (95) | 236 (95) | 0 |
| Trimbelle @ Spring Creek | 1098 (85) | 23 (50) | 1075 (90) | 777 (90) | 191 (90) | 17 (80) |
| Trimbelle 8 | 2545 (95) | 30 (55) | 2514 (95) | 1549 (95) | 372 (95) | 20 (85) |
| Trimbelle 9 | 1247 (90) | 237 (80) | 1010 (90) | 543 (85) | 153 (90) | 0 |
| Trimbelle 10 | 1319 (90) | 78 (65) | 1241 (90) | 763 (90) | 135 (85) | 0 |
| Trimbelle 11 | 1097 (85) | 507 (90) | 591 (75) | 207 (60) | 23 (45) | 0 |
| Trimbelle 12 | 1933 (95) | 1151 (95) | 781 (85) | 539 (85) | 69 (70) | 0 |
| Trimbelle 13 | 2069 (95) | 216 (80) | 1853 (95) | 1305 (95) | 332 (95) | 23 (85) |
| Trimbelle 14 | 1558 (95) | 159 (75) | 1399 (95) | 823 (90) | 129 (85) | 6 (60) |
| Trimbelle 15 | 1110 (85) | 174 (75) | 936 (85) | 555 (85) | 143 (90) | 24 (85) |
| Trimbelle 15D | 358 (60) | 93 (70) | 265 (55) | 106 (40) | 27 (45) | 0 |
| Trimbelle 17 | 16 (5) | 0 | 16 (10) | 16 (15) | 0 | 0 |

Natural reproduction of brown trout has increased overall since the previous watershed survey in 1996. The largest increases were documented in the mid-to upper stations and YOY densities at the remaining stations have remained relatively stable despite the continuous reduction in stocking and lack of stocking from 2024-2025. YOY densities were highest at stations 11 (507 per mile; 90th percentile) and 12 (1151 per mile; 95th percentile). All other stations except for Station 17 contained moderate densities of YOY brown trout. Station 17 did not contain any YOY brown trout but did contain YOY brook trout.

A total of seven stations were surveyed in 2025 on previously improved sites including stations H, Spring Creek, 8, 9, 13, 15 and 15D. Stations H, Spring Creek, 8, 9, 13 and 15 either only had a single pre-improvement survey completed or did not have any pre-improvement surveys completed; therefore, there was no further analysis of effects of the habitat improvement work. However, Stations H, 8 and 13 contained the highest densities of adult brown trout and four of the six stations that contained brown trout larger than 15 inches were in previously improved sections of stream with high densities of this size class present. Station 15D was the only station that had an adequate number of pre-improvement surveys completed (N = 3) and 11 post-habitat improvement surveys completed. Initially after the project was completed, brown trout densities increased significantly in 2016 and 2017, likely due to the large year classes from 2015 that occurred in many streams in the area. Stocking of brook

trout within this reach of stream also convolutes analysis of the actual effects of the habitat improvement work. However, despite brook trout stocking ending in the Trimbelle River in 2019, brook trout abundance has remained relatively stable at Station 15D from 2021 to 2025. Mean adult abundance from 2021 to 2025 were 241 per mile and mean YOY abundance was 409 per mile while pre-project brook trout abundance of YOY was 12 per mile and no adults were present from 2010 to 2012. Mean brown trout YOY abundance increased by 55% while mean adult abundance increased by 27%. Mean abundance of brown trout larger than 12 inches increased by 87%.

Table 3. Relative abundance of total, young-of-year (YOY), adult (≥ 4.5 inches), ≥ 8 inch, and ≥ 10 -inch brook trout at 15 stations on the Trimbelle River in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class II brook trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 4.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 10 INCHES |
|--------------------------|------------|----------|---------------------------------|----------------------|-----------------------|
| Trimbelle 1 | 0 | 0 | 0 | 0 | 0 |
| Trimbelle 2 | 0 | 0 | 0 | 0 | 0 |
| Trimbelle Halvorson | 0 | 0 | 0 | 0 | 0 |
| Trimbelle 6 | 4 | 0 | 4 (0) | 4 (15) | 0 |
| Trimbelle @ Spring Creek | 51 (30) | 0 | 51 (35) | 34 (50) | 6 (55) |
| Trimbelle 8 | 20 (15) | 0 | 20 (20) | 10 (25) | 0 |
| Trimbelle 9 | 0 | 0 | 0 | 0 | 0 |
| Trimbelle 10 | 42 (25) | 16 (50) | 26 (20) | 5 (15) | 0 |
| Trimbelle 11 | 31 (20) | 15 (50) | 15 (10) | 8 (20) | 8 (55) |
| Trimbelle 12 | 106 (45) | 100 (70) | 5 (5) | 0 | 0 |
| Trimbelle 13 | 175 (60) | 41 (60) | 134 (55) | 58 (65) | 29 (80) |
| Trimbelle 14 | 441 (80) | 294 (80) | 147 (60) | 76 (70) | 24 (75) |
| Trimbelle 15 | 63 (35) | 8 (45) | 56 (35) | 32 (45) | 0 |
| Trimbelle 15D | 258 (70) | 212 (80) | 46 (30) | 13 (25) | 0 |
| Trimbelle 17 | 16 (15) | 16 (50) | 0 | 0 | 0 |

IBI surveys conducted at Stations 1, 6, 11, 13, 14, 15D and 17 resulted in ratings ranging from Fair with a score of 40 at Station 17 to Good with a score of 80 at stations 11, 14 and 15D (Table 4). All stations resulted in a percent tolerant score of less than 20. Stations 1, 6 and 13 received ratings of Good with scores of 60, 70 and 60 respectively. Other gamefish species sampled on the Trimbelle River included smallmouth bass and burbot while seven non-game species were surveyed. Coldwater IBI ratings have improved from previous surveys in 1996 and 2005 in which the mean scores were 23 and 28, respectively. The mean score across all stations in 2025 was 65.

Table 4. Total number of each species captured at 7 stations on the Trimbelle River, summer 2025.

| SPECIES | 1 | 6 | 11 | 13 | 14 | 15D | 17 |
|-----------------|-----|-----|-----|-----|-----|-----|----|
| Brown Trout | 151 | 354 | 143 | 355 | 265 | 54 | 1 |
| Brook Trout | 0 | 1 | 4 | 30 | 75 | 39 | 1 |
| Mottled Sculpin | 12 | 20 | 15 | 41 | 7 | 38 | 12 |

| | | | | | | | |
|--------------------------|----|----|---|-----|----|---|----|
| Burbot | 5 | 0 | 0 | 0 | 0 | 0 | 0 |
| Smallmouth Bass | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| White Sucker | 47 | 49 | 0 | 133 | 36 | 1 | 0 |
| Logperch | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Brook Stickleback | 2 | 16 | 8 | 2 | 0 | 2 | 9 |
| Longnose Dace | 0 | 5 | 2 | 0 | 2 | 0 | 0 |
| Blacknose Dace | 0 | 0 | 0 | 0 | 1 | 8 | 24 |
| Johnny Darter | 0 | 0 | 0 | 0 | 0 | 0 | 1 |

GOOSE CREEK

Trout were found at the two lowermost stations on Goose Creek (Stations 1 and 2), but none were found Station 3. Six non-game species were found at Station 3 (Table 7). Brook trout were found in moderate to high densities and brown trout were found in moderate densities at both stations (Tables 5 & 6). Densities of both species have increased during the past two decades. Adult brook trout densities have increased at both stations since the 1996 watershed survey while brown trout have increased dramatically at Station 1 (Figures 5 & 6). Adult brown trout at Station 2 experienced a smaller, more gradual increase. Adult trout of both species were present in low to moderate densities at both stations. Few larger adult brook trout were found and only at Station 1 in which brook trout larger than 10 inches were found in moderate densities (60th percentile; Table 5). Very few brown trout larger than 12 inches were found and only at Station 1 in low densities (30th percentile; Table 6).

Table 5. Relative abundance of total, young-of-year (YOY), adult (≥ 4.5 inches), ≥ 8 inch, and ≥ 10 -inch brook trout at 2 stations on Goose Creek in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class II brook trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 4.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 10 INCHES |
|----------------|-------------------|-----------------|--|--|---|
| Goose 1 | 459 (85) | 225 (80) | 234 (70) | 78 (70) | 9 (60) |
| Goose 2 | 215 (65) | 24 (55) | 191 (65) | 36 (50) | 0 |

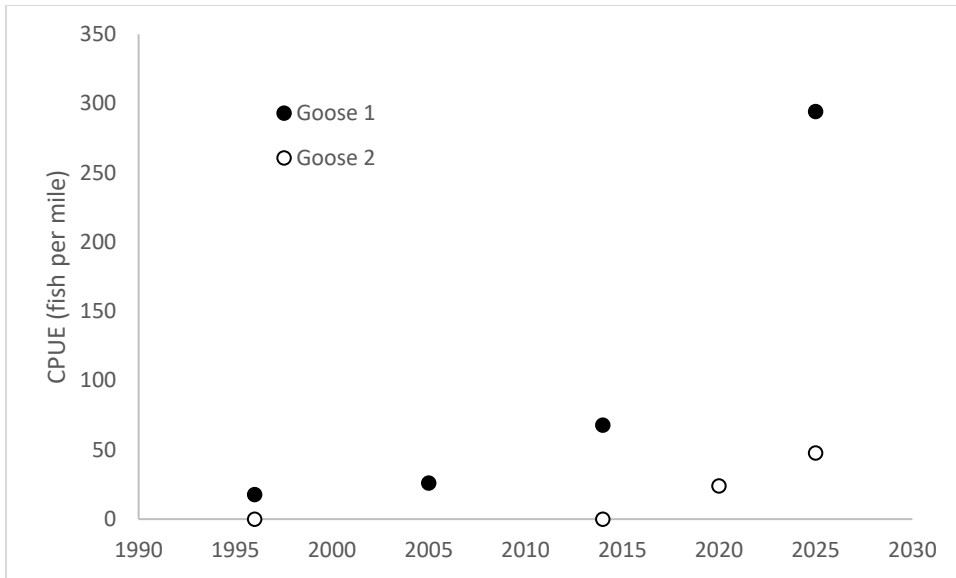


Figure 5. Relative abundance of adult brown trout (≥ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Goose Creek from 1996 to 2025.

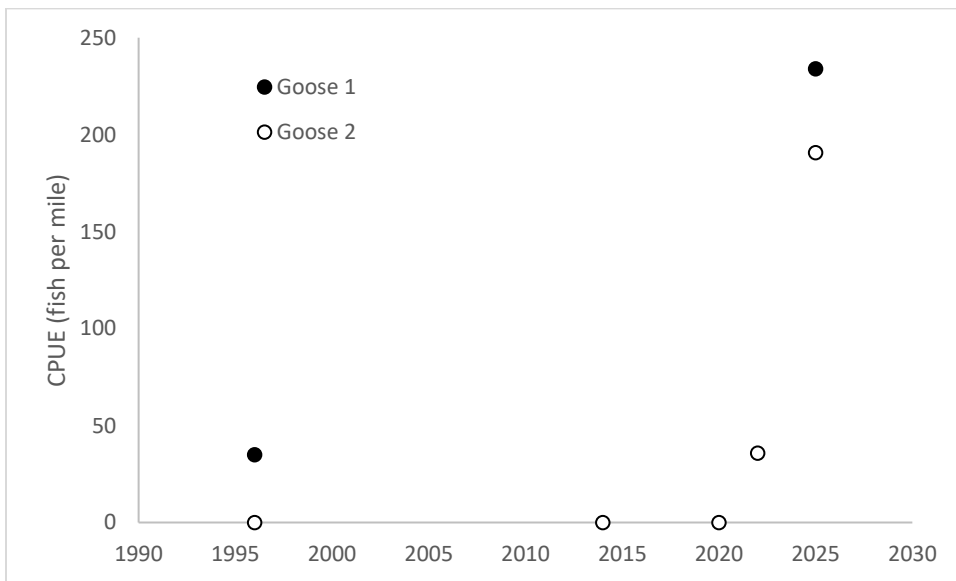


Figure 6. Relative abundance of adult brook trout (≥ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Goose Creek from 1996 to 2025.

Natural reproduction of both species was documented at both stations on Goose Creek in 2025. YOY brook trout were found in moderate to high densities (Table 5) and YOY brown trout were found in high densities at both stations (Table 6). Natural reproduction of both species has increased at both stations since previous surveys (Figures 7 & 8). Few YOY brook or brown trout were found in surveys conducted in 1996 and 2005. No natural reproduction has been documented at Station 2 until surveys in 2020.

Table 6. Relative abundance of total, young-of-year (YOY), adult (≥ 5.5 inches), ≥ 8 inch, ≥ 12 -inch and ≥ 15 -inch brown trout at two stations on Goose Creek in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class II brown trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 5.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 12 INCHES | CPUE ≥ 15 INCHES |
|---------|------------|----------|---------------------------------|----------------------|-----------------------|-----------------------|
| Goose 1 | 476 (65) | 182 (80) | 294 (55) | 139 (50) | 9 (30) | 0 |
| Goose 2 | 227 (45) | 179 (75) | 48 (20) | 24 (20) | 0 | 0 |

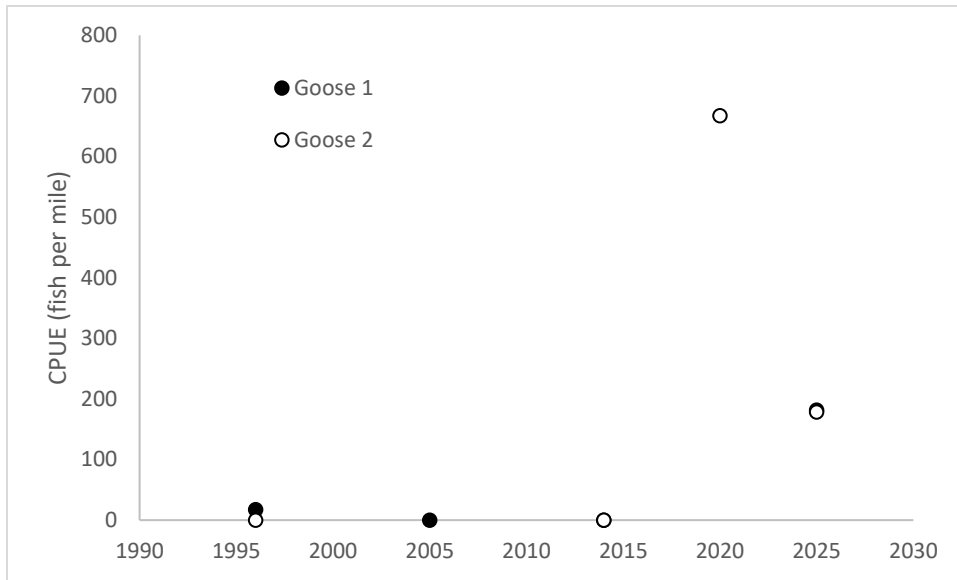


Figure 7. Relative abundance of young-of-year brown trout (≤ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Goose Creek from 1996 to 2025.

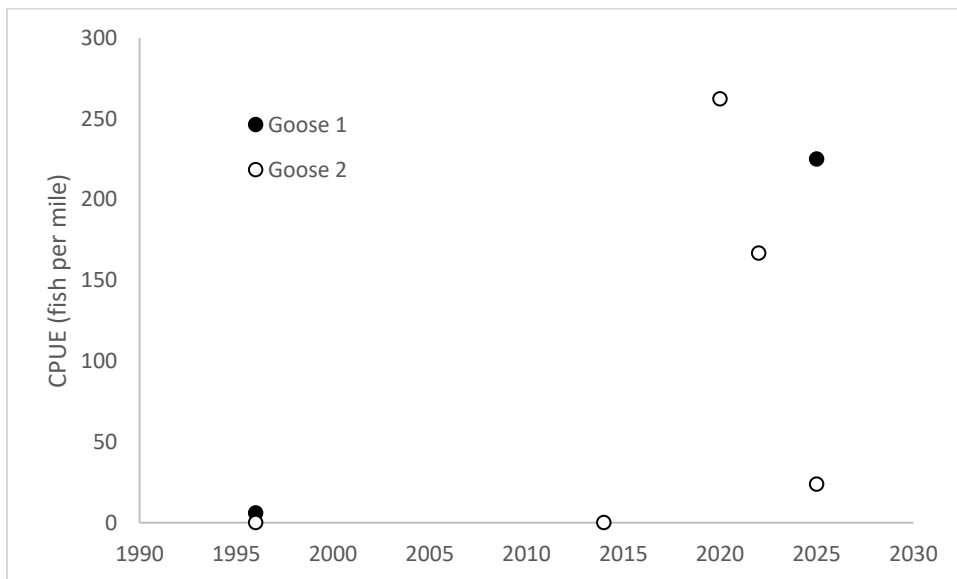


Figure 8. Relative abundance of young-of-year brook trout (≤ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Goose Creek from 1996 to 2025.

IBI surveys conducted at Stations 1 and 2 resulted in ratings of Good with scores of 80 and 70, respectively (Table 4). All stations resulted in a percent tolerant score of less than 10.

Table 7. Total number of each species captured at three stations on Goose Creek, summer 2025.

| SPECIES | ST. 1 | ST. 2 | ST. 3 |
|--------------------------|--------------|--------------|--------------|
| Brown trout | 55 | 19 | 0 |
| Brook trout | 53 | 18 | 0 |
| Mottled sculpin | 5 | 5 | 1 |
| White sucker | 0 | 4 | 0 |
| Brook stickleback | 12 | 21 | 27 |
| Creek chub | 0 | 0 | 4 |
| Blacknose dace | 0 | 0 | 8 |
| Pearl dace | 0 | 0 | 1 |
| Fathead minnow | 0 | 0 | 4 |

SPRING CREEK

Similar to Goose Creek, trout were found at the two lowermost stations (Station 1 and 2) but none were found at Station 3 which is consistent with historical findings. Both brook and brown trout were found at both stations but brook trout were found in higher densities than brown trout at both stations. Densities of adult brook trout have increased overall throughout the past two decades (Figure 9) with substantial increases observed at Station 2 (Figure 9). The highest densities of adult brook trout were found at Station 2 with 644 per mile (90th percentile; Table 8). Adults were present at very low densities (15th percentile) at Station 1 which was similar to previous survey results (Figure 9). The largest brook trout found at Station 1 was 6 inches while densities of brook trout larger than 10 inches at Station 2 were moderate (Table 8).

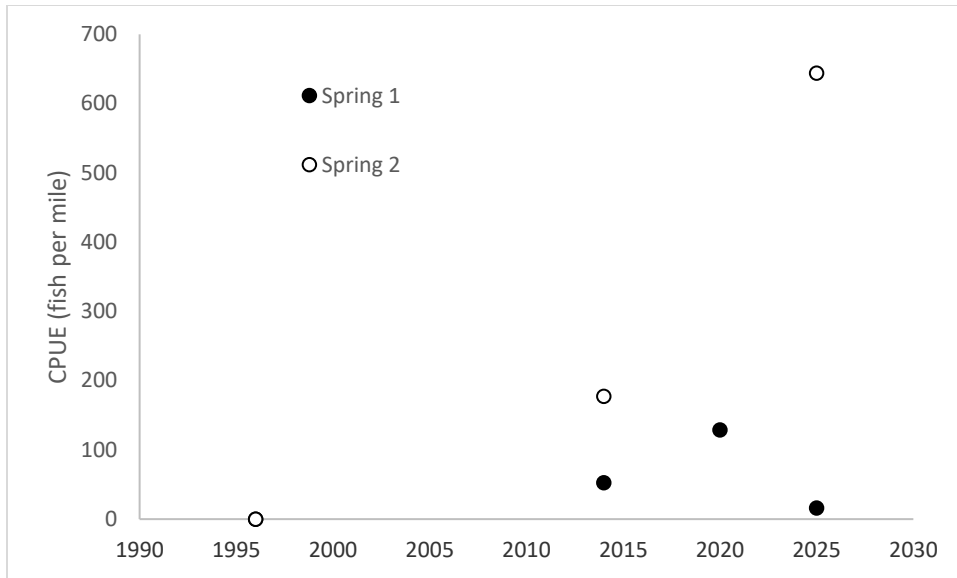


Figure 9. Relative abundance of adult brook trout (≥ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Spring Creek from 1996 to 2025.

Table 8. Relative abundance of total, young-of-year (YOY), adult (≥ 4.5 inches), ≥ 8 inch, and ≥ 10 -inch brook trout at 2 stations on Spring Creek in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class II brook trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 4.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 10 INCHES |
|----------------|------------|----------|---------------------------------|----------------------|-----------------------|
| Spring Creek 1 | 129 (50) | 113 (70) | 16 (15) | 0 | 0 |
| Spring Creek 2 | 837 (90) | 193 (80) | 644 (90) | 113 (80) | 16 (70) |

Brown trout were found in low densities at both stations ranging from 32 to 97 per mile (Table 9). Adult densities of brown trout were also low with no fish larger than 8 inches found at Station 1 and low densities of brown trout larger than 12 inches found at Station 2. However, a single 15-inch brown trout was sampled at Station 2. Adult brown trout densities have remained relatively stable in Spring Creek throughout recent sampling history with the exception of the 2020 survey at Station 1 in which adult brown trout catch rates were 144 per mile, well above the average for the station of 50 per mile (Figure 10).

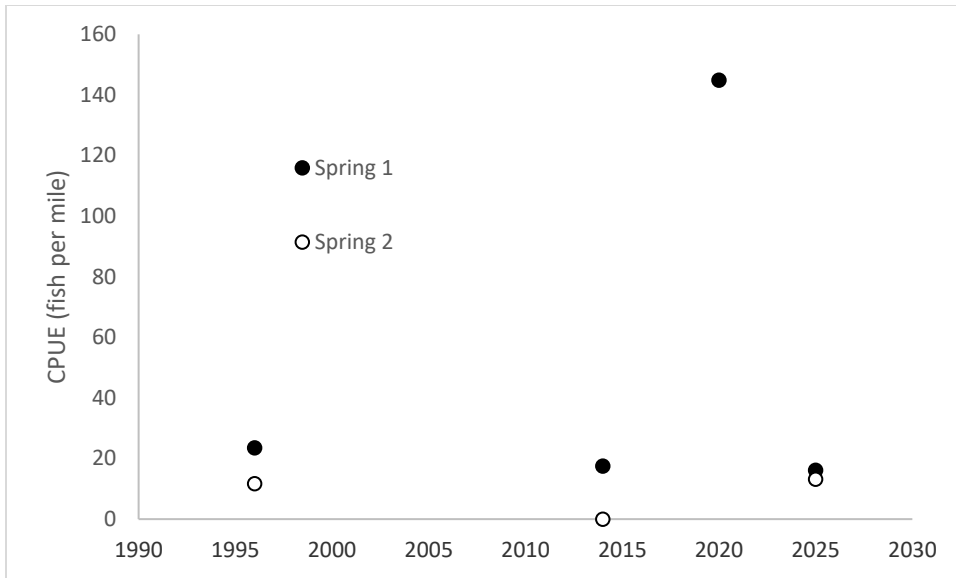


Figure 10. Relative abundance of adult brown trout (≥ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Spring Creek from 1996 to 2025.

Natural reproduction of brook trout was evidenced at both stations in 2025 with YOY present in high densities (Table 8). YOY brook trout made up the majority of the sample at Station 1. The surveys in 2025 were the first surveys to document YOY brook trout in Spring Creek. Evidence of natural reproduction of brown trout was only present at Station 1 while no YOY were found at Station 2 which is consistent with historical findings (Figure 12). YOY brown trout were present in moderate densities at Station 1. YOY densities in 2025 were higher than all previous surveys at this station (Figure 12).

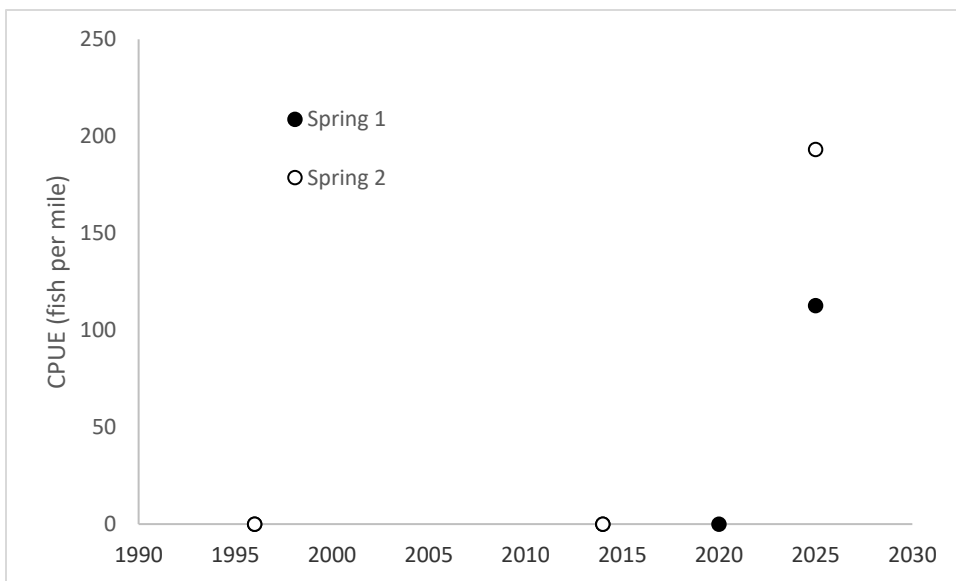


Figure 11. Relative abundance of young-of-year brook trout (≤ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Spring Creek from 1996 to 2025.

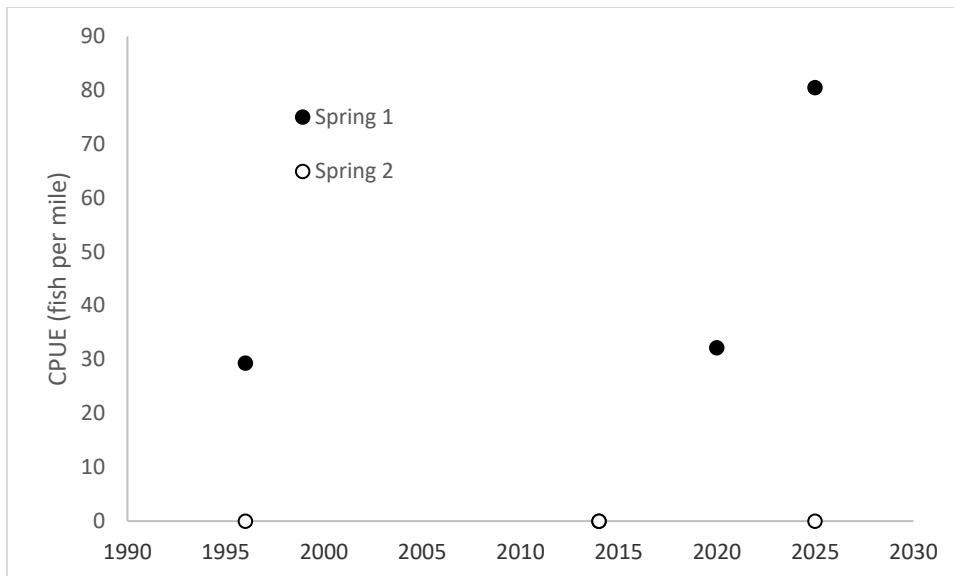


Figure 12. Relative abundance of young-of-year brown trout (≤ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from two stations in Spring Creek from 1996 to 2025.

Table 9. Relative abundance of total, young-of-year (YOY), adult (≥ 5.5 inches), ≥ 8 inch, ≥ 12 -inch and ≥ 15 -inch brown trout at two stations on Spring Creek in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class II brown trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 5.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 12 INCHES | CPUE ≥ 15 INCHES |
|----------------|------------|----------|---------------------------------|----------------------|-----------------------|-----------------------|
| Spring Creek 1 | 97 (30) | 81 (65) | 16 (10) | 0 | 0 | 0 |
| Spring Creek 2 | 32 (15) | 0 | 13 (5) | 13 (10) | 7 (25) | 7 (65) |

IBI surveys were completed at Stations 2 and 3 which resulted in ratings of Excellent and Poor. The coldwater IBI score at Station 2 was 100 while the score at Station 3 was 20, indicative of lack of suitable habitat for trout at Station 3 which is consistent with fish surveys at this location. Brook stickleback were the only fish species surveyed at Station 3 (Table 10).

Table 10. Total number of each species captured at three stations on Spring Creek, summer 2025.

| SPECIES | ST. 1 | ST. 2 | ST. 3 |
|--------------------------|-------|-------|-------|
| Brown trout | 6 | 2 | 0 |
| Brook trout | 8 | 52 | 0 |
| Mottled sculpin | - | 2 | 0 |
| Brook stickleback | - | 3 | 38 |

LITTLE TRIMBELLE RIVER

Brown trout were found at four stations on the Little Trimabelle River in 2025 while brook trout were found at three stations (Tables 11 & 12). Stations 5 and 6 were not

surveyed due to lack of base flow and Station 7 did not contain fish. Brown trout were present in moderate to high densities at the lower four stations with catch rates ranging from 541 per mile at Station 4 to 2,193 per mile at Station 3. Based on recent surveys, relative abundance of adult brown trout has increased at the upstream-most stations (Stations 2-4) and remained stable at Station 1 (Figure 13). Adult brown trout densities have increased substantially at all stations since the previous watershed survey in 1996. Adult densities in the present survey were low to moderate (Table 12). Brown trout larger than 12 inches were only present at Stations 3 and 4 in low densities.

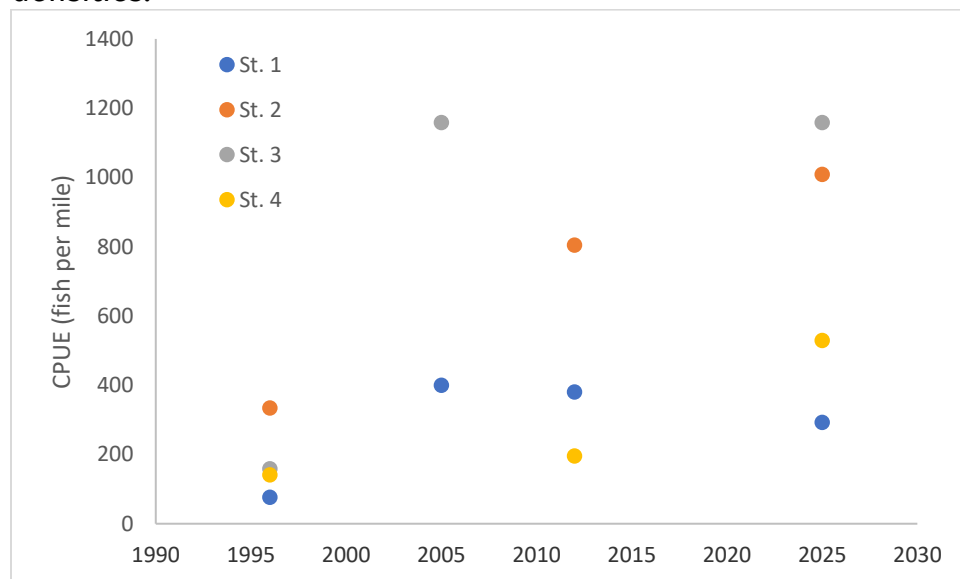


Figure 13. Relative abundance of adult brown trout (≥ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations in the Little Trimbelle River from 1996 to 2025.

Brook trout were only present at Stations 2, 3 and 4 in low to moderate densities. No adult brook trout were found at any station. Adult brook trout densities have severely declined since previous surveys. Adult brook trout have been found at all stations in past surveys. Specifically at Station 4, adult brook trout were found in high densities (644 per mile; Figure 14) in 2012. Natural reproduction of brook trout was apparent at Stations 2, 3 and 4 and YOY were present in moderate densities at these stations with the highest YOY catch rates observed at Station 4 (Table 11). YOY brook trout densities have declined at all stations based on previous survey results (Figure 15).

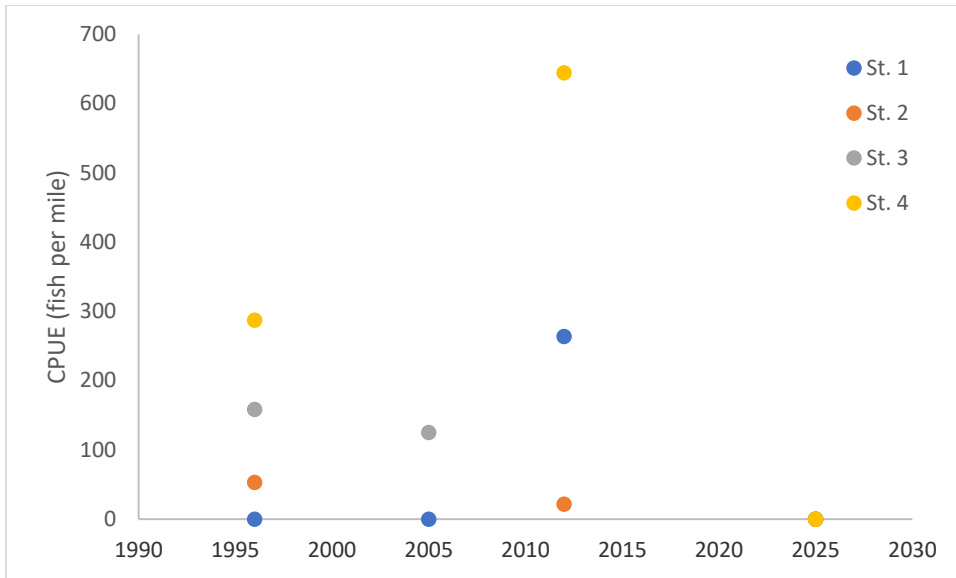


Figure 14. Relative abundance of adult brook trout (≥ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations on the Little Trimbelle River from 1996 to 2025.

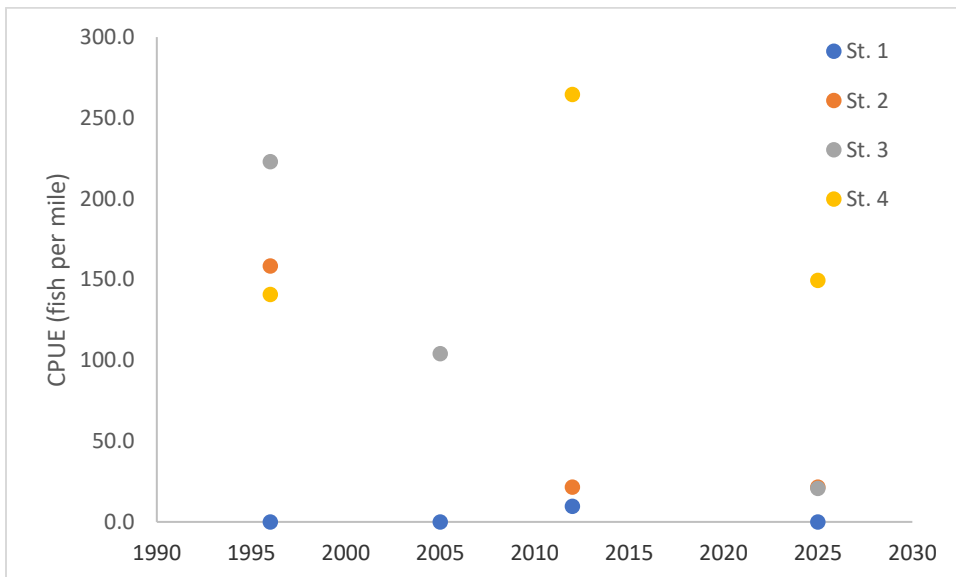


Figure 15. Relative abundance of young-of-year brook trout (≤ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations on the Little Trimbelle River from 1996 to 2025.

Table 11. Relative abundance of total, young-of-year (YOY), adult (≥ 4.5 inches), ≥ 8 inch, and ≥ 10 -inch brook trout at 4 stations on Little Trimbelle River in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class I brook trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 4.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 10 INCHES |
|--------------------|------------|----------|---------------------------------|----------------------|-----------------------|
| Little Trimbelle 1 | 0 | 0 | 0 | 0 | 0 |
| Little Trimbelle 2 | 22 (15) | 22 (40) | 0 | 0 | 0 |
| Little Trimbelle 3 | 21 (15) | 21 (40) | 0 | 0 | 0 |

| | | | | | |
|--------------------|----------|----------|---|---|---|
| Little Trimbelle 4 | 150 (45) | 150 (65) | 0 | 0 | 0 |
|--------------------|----------|----------|---|---|---|

Table 12. Relative abundance of total, young-of-year (YOY), adult (≥ 5.5 inches), ≥ 8 inch, ≥ 12 -inch and ≥ 15 -inch brown trout at 4 stations on Little Trimbelle River in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class I brown trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 5.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 12 INCHES | CPUE ≥ 15 INCHES |
|--------------------|------------|-----------|---------------------------------|----------------------|-----------------------|-----------------------|
| Little Trimbelle 1 | 1171 (75) | 878 (90) | 293 (30) | 49 (15) | 0 | 0 |
| Little Trimbelle 2 | 1835 (85) | 826 (90) | 1009 (70) | 215 (40) | 0 | 0 |
| Little Trimbelle 3 | 2193 (90) | 1034 (95) | 1159 (75) | 389 (55) | 7 (20) | 0 |
| Little Trimbelle 4 | 541 (45) | 12 (25) | 529 (50) | 173 (35) | 12 (25) | 0 |

Natural reproduction of brown trout was evidenced by YOY present in high densities at Stations 1, 2 and 3 and low densities at Station 4 (Table 12). YOY brown trout densities were considerably lower at Station 2 compared to previous surveys while densities at all other stations remained relatively stable (Figure 16).

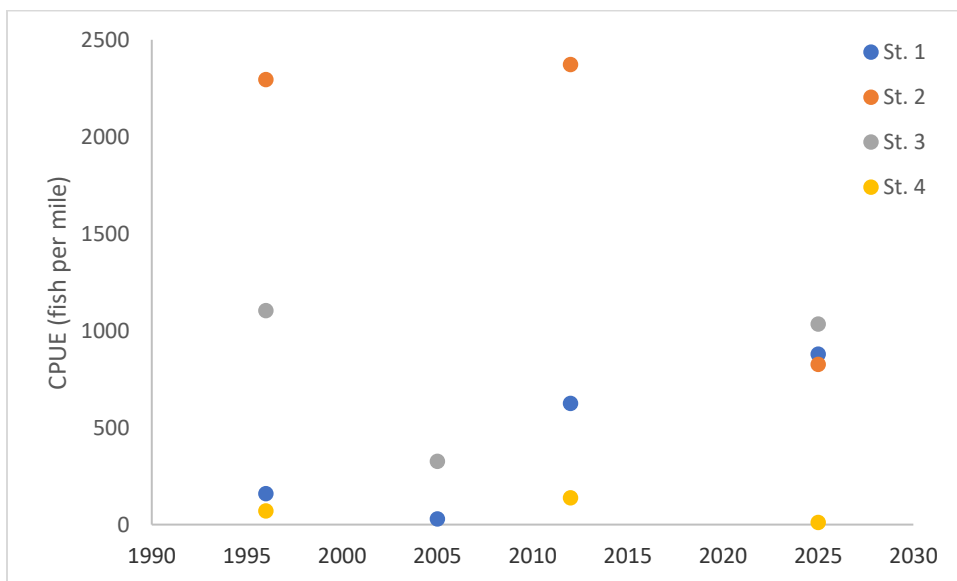


Figure 16. Relative abundance of young-of-year brown trout (≤ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations on the Little Trimbelle River from 1996 to 2025.

Coldwater IBI surveys resulted in ratings of Good for all four stations with ratings of 60 or 70, which is consistent with surveys conducted in 2005 and 2012. Stations 5, 6 and 7 were not surveyed or did not contain fish due to lack of base flow. Other than trout species, the only other fish species documented in the Little Trimbelle River in 2025 were mottled sculpin and brook stickleback (Table 13).

Table 13. Total number of each fish species captured at four stations on the Little Trimbelle River, summer 2025.

| SPECIES | ST. 1 | ST. 2 | ST. 3 | ST. 4 |
|---------|-------|-------|-------|-------|
|---------|-------|-------|-------|-------|

| | | | | |
|--------------------------|-----|-----|-----|----|
| Brown trout | 120 | 171 | 316 | 47 |
| Brook trout | 0 | 2 | 3 | 13 |
| Mottled sculpin | 14 | 0 | 0 | 0 |
| Brook stickleback | 35 | 1 | 0 | 15 |

BIG RIVER

Brown trout were found at three of four stations on Big River in 2025 while brook trout were found at all four stations (Tables 14 & 15). Brown trout were present in low densities in the three downstream-most stations, ranging from 23 per mile at 560th Ave to 254 per mile at Station 2 (Table 14). Natural reproduction of brown trout was only recorded in Station 2 with 7 YOY per mile. Based on previous surveys, densities of adult and YOY brown trout have declined across all stations surveyed on Big River in 2025 (Figures 17 & 18). Only one brown trout larger than 12 inches was surveyed throughout all stations in 2025.

Table 14. Relative abundance of total, young-of-year (YOY), adult (≥ 5.5 inches), ≥ 8 inch, ≥ 12 -inch and ≥ 15 -inch brown trout at 4 stations on Big River in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class I brown trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| STATION | TOTAL CPUE | YOY CPUE | ADULT CPUE (≥ 5.5 INCHES) | CPUE ≥ 8 INCHES | CPUE ≥ 12 INCHES | CPUE ≥ 15 INCHES |
|---------------------------------|------------|----------|---------------------------------|----------------------|-----------------------|-----------------------|
| Big River 1 | 175 (20) | 0 | 175 (25) | 101 (30) | 9 (25) | 0 |
| Big River 2 | 254 (30) | 7 (25) | 247 (30) | 87 (25) | 0 | 0 |
| Big River 560 th Ave | 23 (10) | 0 | 23 (5) | 0 | 0 | 0 |
| Big River 5 | 0 | 0 | 0 | 0 | 0 | 0 |

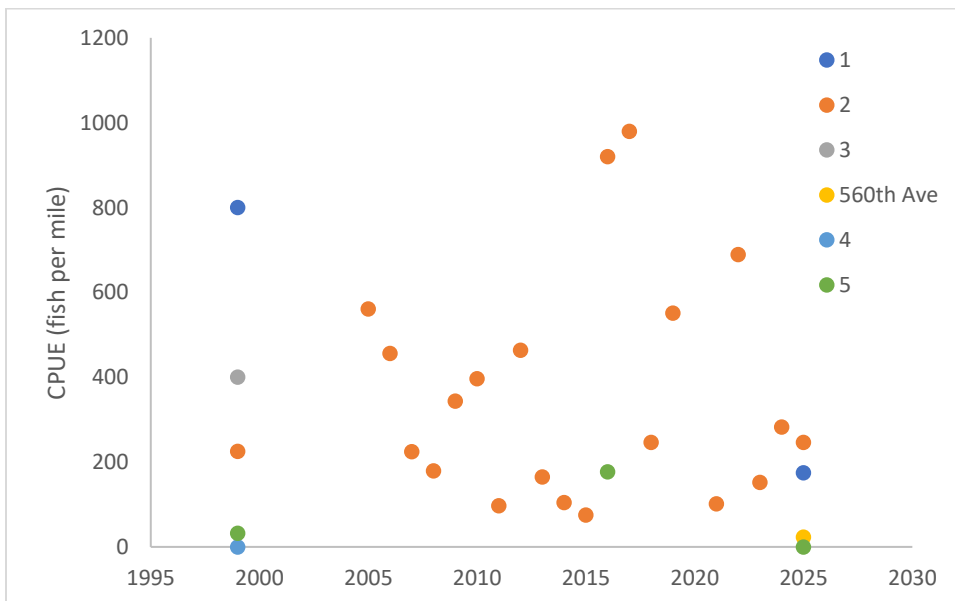


Figure 17. Relative abundance of adult brown trout (≥ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from six stations in Big River from 1999 to 2025.

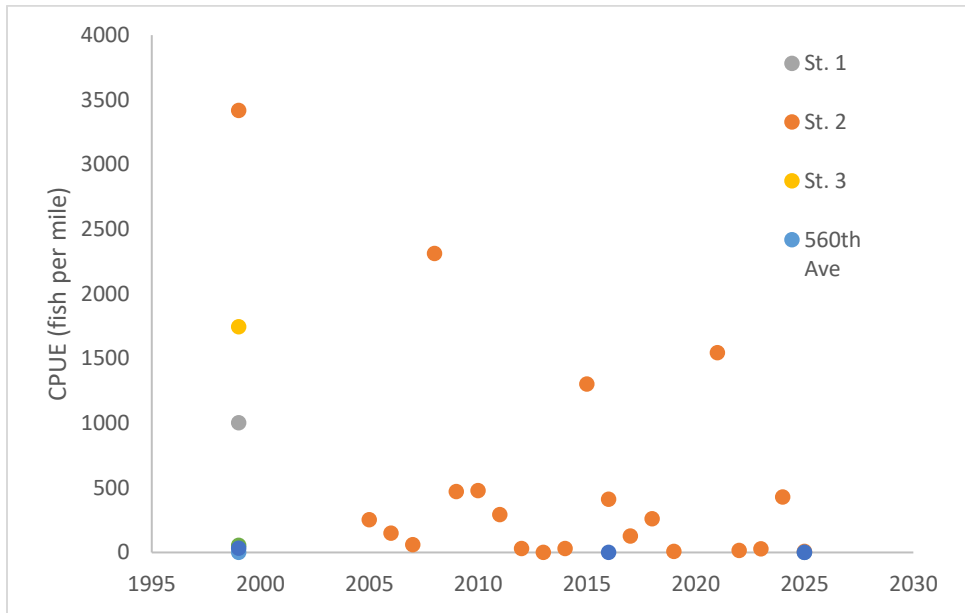


Figure 18. Relative abundance of young-of-year brown trout (≤ 5.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations on Big River from 1999 to 2025.

Brook trout were present in four stations on Big River in moderate densities ranging from 101 per mile in Station 1 to 357 per mile at 560th Ave (Table 15). Adult brook trout densities have increased since 2022 (Figure 19). Natural reproduction was observed at all four stations with YOY present in moderate to high densities, with the highest catch rates observed at 560th Ave with 276 per mile. YOY densities were lower in 2025 compared to 2024 estimates but catch rates were moderate to high in the three other stations where brook trout have not been observed in previous surveys (Figure 20).

Table 15. Relative abundance of total, young-of-year (YOY), adult (≥ 4.5 inches), ≥ 8 inch, and ≥ 10 -inch brook trout at 4 stations on Big River in Pierce County in 2025. Percentiles of catch rates (fish per mile) are denoted in parentheses. Percentiles were assigned from catch rates of Class I brook trout streams in the Driftless and Western Corn Belt ecoregion in Wisconsin.

| Station | Total CPUE | YOY CPUE | ADULT CPUE (≥ 4.5 INCHES) | CPUE ≥ 8 inches | CPUE ≥ 10 INCHES |
|---------------------------------|------------|----------|---------------------------------|----------------------|-----------------------|
| Big River 1 | 101 (40) | 27 (40) | 74 (40) | 9 (30) | 0 |
| Big River 2 | 188 (50) | 87 (55) | 101 (45) | 7 (30) | 0 |
| Big River 560 th Ave | 357 (65) | 276 (75) | 80 (40) | 34 (50) | 0 |
| Big River 5 | 241 (70) | 241 (85) | 0 | 0 | 0 |

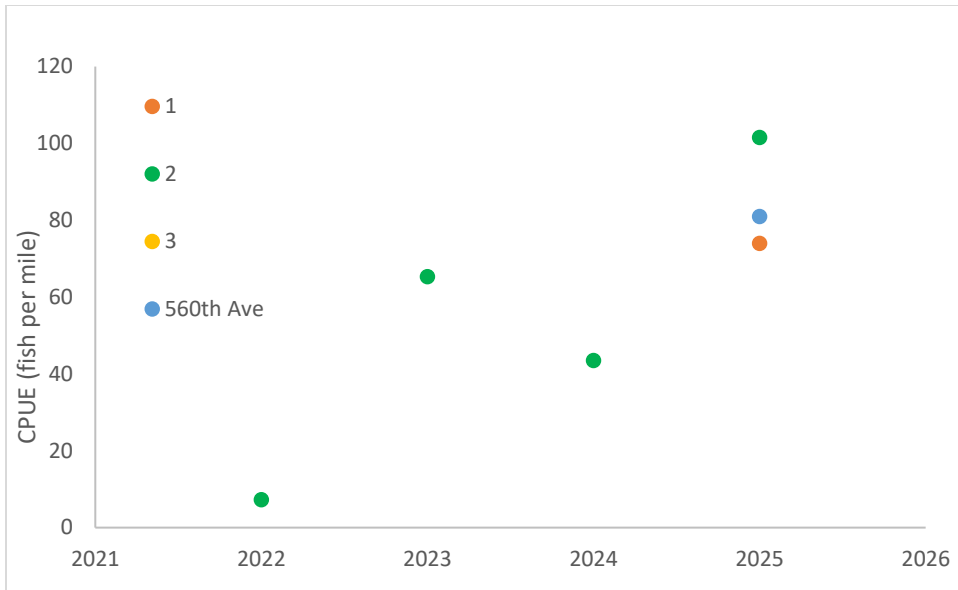


Figure 19. Relative abundance of adult brook trout (≥ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations on Big River from 2022 to 2025.

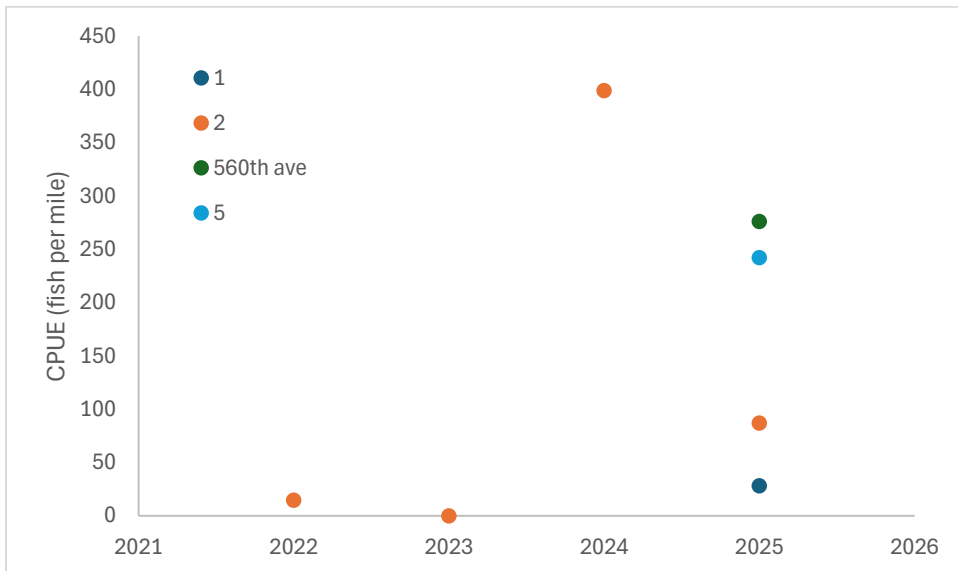


Figure 20. Relative abundance of young-of-year brook trout (≤ 4.5 inches) as expressed by catch per unit effort (CPUE; fish per mile) collected from four stations on Big River from 2022 to 2025.

Coldwater IBI surveys resulted in ratings of Good for all stations surveyed which included Stations 1, 5 and 560th Ave with scores of 80, 70 and 80, respectively. This is an improvement for Station 5 and 560th Ave which both had ratings of Poor in previous surveys. Other fish species sampled other than brook and brown trout on Big River in 2025 were mottled sculpin, brook stickleback, longnose dace and blacknose dace (Table 16).

Table 16. Total number of each fish species captured at five stations on Big River, summer 2025.

| SPECIES | ST. 1 | ST. 2 | 560 TH AVE | ST. 5 | UNAMED CREEK 620 TH |
|--------------------------|-------|-------|-----------------------|-------|--------------------------------|
| Brown trout | 19 | 35 | 2 | 0 | 0 |
| Brook trout | 11 | 26 | 31 | 15 | 0 |
| Mottled sculpin | 2 | - | 3 | 0 | 0 |
| Brook stickleback | 0 | - | 1 | 13 | 103 |
| Longnose Dace | 0 | - | 6 | 1 | 0 |
| Blacknose Dace | 2 | - | 22 | 0 | 0 |

Discussion

TROUT POPULATION CHANGES AND CURRENT STATUS

The Trimbelle River trout population has undergone significant changes throughout the past several decades. These changes are likely due to multiple factors that directly impact water quantity and quality and instream and riparian habitats within the watershed. Trout densities have increased throughout the mainstem of the Trimbelle River and several of its tributaries throughout the past two decades and current densities are high when compared to other Class II streams in the Driftless Area in Wisconsin. This increase is due to improvements in natural reproduction of brown trout and brook trout to a lesser degree. Brown trout densities have increased at all stations surveyed on the mainstem despite continued reductions in stocking until 2023 when stocking ceased. Brook trout densities were higher in several stations on the Trimbelle River in 2025 compared to previous surveys. Brook trout are a minor part of the overall trout fishery with the watershed and are concentrated near tributary confluences and within the upper reaches of the Trimbelle River. The uppermost stations contained the highest densities of brook trout which coincide with stocking and habitat availability within the reach. The upper reaches of the Trimbelle River are heavily impacted by a large sand load from upland sources. The substrate throughout this reach is therefore dominated by sand which has also impacted previously restored sections of stream. However, these impacts may benefit brook trout while simultaneously reducing habitat suitability for brown trout, especially for spawning (Witzel and MacCrimmon 1983). Within the mid to upper reaches of stream, brown trout natural reproduction is highest and has steadily increased during the past 20 years. YOY densities were high in stations within this reach in 2025 and have increased or remained stable despite simultaneous reductions in stocking. These improvements are likely due to land use improvements within the watershed based on IBI surveys conducted in 1996, 2005 and 2025 which have revealed likely improvements in water quality and thermal regimes.

Trout densities within the larger tributaries to the Trimbelle River have also increased due to increases in natural reproduction. Goose Creek has experienced increases in both brook and brown trout densities. This stream offers excellent

spawning and rearing habitat for both species. Natural reproduction was documented for the first time during surveys in 2020 at Station 2. Brook trout densities within Spring Creek have increased as well while brown trout densities have remained low. Brook trout have been stocked in Spring Creek since 2018 which has likely influenced the increases in brook trout densities. However, brook trout have also increased in Goose Creek which has not received stocking so there are likely environmental factors influencing this change as well. Within the Little Trimbelle River, brown trout densities have increased while brook trout have declined. This change in trout species dominance has occurred in many streams across the Driftless region (Yallaly 2024; Yallaly 2025). Studies have documented brown trout excluding brook trout from optimal resting and foraging habitats while other studies have found that brook trout may change behaviors in the presence of brown trout (Fausch and White 1981; Waters 1983; Dewald and Wilzbach 1992). Displacement of brown trout by brook trout has resulted in brook trout population declines and loss of viable populations (Waters 1983; Hoxmeier and Dieterman 2016; Jacobson 2024). Displacement of brook trout by brown trout in conjunction with potential effects of climate change may influence the decline documented in Little Trimbelle River. Brook trout populations have declined across Wisconsin and climate models predict a widespread loss of viable brook trout habitat by mid-Century (Maitland and Latzka 2022; Mitro et al. 2019).

Tributary use within the Trimbelle River sub watershed is mostly limited to spawning and rearing purposes. Stream size limits the use of Goose Creek and Spring Creek to spawning by adult brown trout and brook trout while the Little Trimbelle River is large enough to support a moderate adult brown trout population throughout the summer. Goose Creek in particular has experienced increases in densities of both brook and brown trout. Improvements in natural reproduction were documented especially at the upper station in which YOY were found for the first time in 2020 surveys. While both trout species were found in similar densities in Goose Creek, Spring Creek was dominated by brook trout. The 2025 surveys were the first surveys to document natural reproduction of brook trout in Spring Creek. These improvements in brook trout densities in Spring Creek are likely due to the stocking of feral brook trout within the stream. The Northwest Feral strain of brook trout were stocked into Spring Creek beginning in 2018 and continued until 2024. This strain of brook trout has been successful in establishing naturally reproducing brook trout populations in other streams in western Wisconsin as well. However, YOY brook trout densities also increased simultaneously in Goose Creek as well which likely indicates improvements in conditions for brook trout spawning within the watershed. Adult brown trout densities have increased within the Little Trimbelle River during the past 20 years while adult and YOY brook trout have simultaneously declined. Brown trout appear to be the dominant trout species within the Little Trimbelle River currently and are likely to remain in that position based on trends.

While the Little Trimbelle River has revealed increasing brown trout population trends, brown trout population densities in Big River have declined. Furthermore, at

the Station 2 trend site, brown trout densities have been below average for all size classes for the past three years and are currently at low densities. This is likely due to declining rates of natural reproduction of brown trout in Big River. Only seven YOY brown trout per mile were detected at a single station (Station 2) and YOY brown trout were not found at any other station in 2025. Additionally, only one brown trout larger than 12 inches was found throughout surveys. While brown trout are declining, brook trout densities have increased in recent years. Similar to Spring Creek, feral strain brook trout have been stocked in Big River since 2018. This stocking has likely driven the increases in brook trout densities in Big River. YOY brook trout were observed for the first time in sampling history in three stations on Big River in 2025 and brook trout were observed for the first time in Big River at the trend site (Station 2) in 2022 other than a few adult brook trout that were sampled in the 1999 watershed survey following 2 years of domestic brook trout stocking. The Station 2 trend site has documented increasing trends in adult and YOY brook trout since 2022. Declining brown trout populations and increasing brook trout populations is the opposite trend that many streams have experienced during the past two decades. Streams including Pine Creek, Cady Creek, Burkhart Creek, Gilbert Creek, Parker Creek, Lost Creek and Cave Creek in Pierce and Dunn counties have all experienced declines in brook trout populations while brown trout densities have increased. A similar phenomenon occurred in a Minnesota stream in which brook trout replaced brown trout as the dominant trout species (Hoxmeier and Dieterman 2019). This change was attributed to potential decreasing water temperatures resulting from increasing base flow discharges (Hoxmeier and Dieterman 2019).

TROUT FISHING REGULATIONS

Trout fishing regulations have been largely unchanged within the watershed since 1990 when the current regulation of a 3 fish bag limit, only brown trout larger than 12 inches and brook trout larger than 8 inches may be kept, was put into place. At that time, many streams within the area relied on stocking to maintain or support the fishery and natural reproduction was limited. This was the case in the neighboring watersheds including the Rush River, Trimbelle River, Eau Galle River and Isabelle Creek. Within the past ten years, brown trout populations have increasing dramatically within many streams in the county and across the Driftless region due to improvements within the watersheds including increasing base flows, improvements in land use, reduction in runoff and streambank erosion efforts, trout habitat improvement work and water quality. These factors have resulted in increases in natural reproduction of trout, specifically of brown trout in many instances where the species is the sole trout species present or within sympatric streams.

With the increases in natural reproduction, increases in adult brown trout populations has also occurred because of high recruitment and survival to adulthood. This has resulted in high densities of adult brown trout in streams across Pierce County. Many streams have reached or overcame carrying capacity which has resulted in density dependence in brown trout populations. Density dependence in

trout is well documented and can result in reduced size structure, reduced growth rates and reduced maximum size potential for these populations (Bohlin et al. 2002; Klemetsen et al. 2003). Because of this occurrence, new regulations were proposed in 2024 which included a county wide change to a 5 fish bag limit and only 1 fish larger than 12 inches may be kept. This regulation is designed to increase harvest opportunity by increasing the bag limit and by allowing anglers to harvest abundant, small fish less than 12 inches in length. If angler harvest is high enough, this may aid in reducing densities of small trout (< 12 inches) while simultaneously protecting larger and rarer sized fish within the population. Reducing densities of small, abundant trout less than 12 inches would aid in improving size structure, growth rates and maximum size of brown trout within these streams. However, angler harvest of trout is currently minimal based on recent creel surveys (Yallaly and Scott 2023; Olson 2023). and is unlikely to aid in reducing density dependent effects unless angler attitudes change and harvest increases in the future. The size structure of brown trout within the Trimbelle River is relatively limited based on catch rates of fish larger than 15 inches. The new regulation will aid in protecting this size class of fish and may reduce any harvest that is occurring on these less abundant large fish.

STOCKING

The Trimbelle River has a long history of stocking that dates back to the midcentury. The stream has been reliant on stocking until rates of natural reproduction began to increase around ten to fifteen years ago. This increase in natural reproduction coincided with the change in strain of brown trout stocked from domestic strain to the feral Timber Coulee strain of brown trout. The change occurred in 2007 in the Trimbelle River and has potentially resulted in increases in natural reproduction and establishment of self-sustaining brown trout populations. However, increases in natural reproduction of brown trout and subsequent increases in adult densities have also occurred within other non-stocked streams, likely indicating improvements in environmental conditions for spawning and survival. Therefore, stocking of Timber Coulee strain brown trout likely occurred during improving environmental conditions for trout; which combined, has resulted in successful brown trout populations. Because of increases in natural reproduction within the Trimbelle River during the past decade, stocking is no longer needed to maintain densities or provide a fishery and is not recommended to be reinitiated. While densities of brown trout have increased, size structure of brown trout has declined. Mean maximum size of brown trout has declined from pre-stocking strain change (2007) to post change from 13.8 inches to 13.2 inches. It is difficult to determine the mechanism causing this change but density dependence is likely a determining factor. Genetic analysis of brown trout populations may help to understand influences on maximum size potential of populations.

Along with the improvements in brown trout populations, brook trout populations have increased in streams that were stocked with feral Northwest strain brook trout. These streams include Spring Creek and Big River within this watershed. The feral

brook trout stocking was initiated in 2018 in both streams. In Spring Creek, natural reproduction of brook trout has increased relative to previous surveys prior to stocking and YOY brook trout were documented for the first time in survey history during the 2025 survey. The stocking within Big River has also been successful in establishing brook trout natural reproduction for the first time in this stream's history. YOY brook trout were also observed in Big River for the first time in 2025 in three stations and adult brook trout densities have been increasing within the trend site since 2022. The success of this stocking is rare in light of the already well-established brown trout population. Current population trends in Big River suggest declining brown trout populations which may provide an opportunity for brook trout to establish a dominant population. Additional stocking may be needed in Big River to supplement the population while establishment occurs. A brown trout removal project may be beneficial on Big River in aiding the establishment of the brook trout population. Very low densities of adult brown trout were present at Station 560th Ave and no YOY brown trout were detected upstream of this point. Following a brown trout removal effort, any reestablishment of a brown trout population would only be possible by movement into the stream from the Mississippi River during fall or winter months.

TROUT HABITAT

Trout habitat improvement work has been widespread on the Trimbelle River during the past 30 years. Most of the work has been completed with the goal of improving overhead cover for adult trout through the use of bank covers (LUNKER structures), plunge pools, weirs and rootwads. More recently, goals of projects have included habitat improvement for spawning and rearing of juvenile trout as well through alteration of stream width within project areas and incorporating islands, additional rootwads and boulders. Throughout the fifteen stations surveyed on the Trimbelle River, the stations that contained the highest densities of trout were located within habitat improvement areas. Specifically, the top three stations with the highest densities of trout were within these habitat improvement areas. YOY trout were present within all previously improved stations and densities were moderate to high. However, YOY densities at two of the previously improved stations were the 13th and 14th lowest stations for YOY densities in the 2025 surveys. In Stations 15D, mean YOY densities are higher in post-project surveys relative to the pre-project mean for that station for both brook and brown trout. This station is located near the headwaters of the Trimbelle River and habitat is more suitable for spawning and rearing than lower stations where YOY densities are low and adult densities are higher. This station has also filled in with sand which has reduced depths and the amount of overhead cover for adult trout. These factors as well as abundant overhanging herbaceous vegetations has likely improved habitat suitability for juvenile trout.

With limited or no pre-habitat improvement project surveys completed on most of the habitat improvement stations, full analysis on the effects of improvements on trout populations was limited. However, size structure of brown trout was

substantially higher within improved stations relative to unimproved stations. Brown trout larger than 15 inches were only found in 6 of the 15 stations surveyed in 2025 and four of those stations were within previously improved sections of stream. Two previously improved stations contained the highest densities of fish larger than 15 inches. The extent of trout habitat improvement work completed on the Trimbelle River, as well as work within the watershed to improve upland conditions and stream buffers has likely contributed to the improvement of conditions for trout. Natural reproduction and adult densities have increased within the Trimbelle River and surrounding watersheds and instream and upland improvements have large impacts on these improvements.

TROUT STREAM CLASSIFICATIONS

Trout populations have improved with the Trimbelle River within the past two decades and significant increases in brown trout densities have occurred within the past 15 years. Natural reproduction of brown trout has increased and resulted in increases in adult trout densities throughout the river. Trend station monitoring has documented these increases and the 2025 watershed survey has shown that these increases are widespread, even in the absence of stocking. Additionally, while large fingerling stocking was ongoing, increases in YOY densities from 2010 to 2023 during summer surveys was evident, indicating stocking was likely having little effect on the population. Because of these improvements, stocking is no longer needed to sustain the populations and provide a fishery and the Trimbelle River meets the classification of a Class I trout stream. This definition states “a stream that contains a self-sustaining population of trout and contains trout spawning habitat and naturally reproduced fry, fingerling, and yearling in sufficient numbers to utilize the trout habitat; or contains trout with 2 or more age groups, above the age of one year, and natural reproduction and survival of wild fish in sufficient numbers to utilize the available trout habitat and to sustain the fishery without stocking.”

While densities of trout have increased in both Goose and Spring Creeks, trout populations within these streams are still indicative of Class II trout streams in that populations are made up of one or more age classes above the age of one year and survival is evident from year to year. However, adult age classes are limited periodically and habitat is generally not suitable for adult trout and these streams are mostly used for spawning and rearing purposes. The Little Trimbelle River is currently classified as a Class I stream and this classification is suitable based on the current survey. Big River’s classifications of Class I and Class II is also correct based on survey results.

Management Recommendations

Continued monitoring of trend stations on the Trimbelle and Big Rivers’ is recommended to detect future changes in fish populations in light of changes in the watershed and management practices. Monitoring of the brook trout population in

Big River is necessary to ensure success of population establishment following stocking. Big River may be a candidate for a brown trout removal project in light of already declining brown trout densities in lower reaches and no brown trout present within upper reaches. Brown trout removal may be effective in Big River because of its lack of direct connection to other brown trout streams. Surveys on the Trimbelle River have indicated warranted reclassification of the river to a Class I stream because of increases in natural reproduction and adult densities allowing trout to occupy available habitat without the use of stocking to maintain populations. Additionally, with the change in stocking strain of brown trout within the Trimbelle River, analysis of the effects of various stocking strains on the trout population is necessary to inform future management decisions based on goals for the fishery.

1. Continue trend station monitoring to evaluate effects of the new regulation change in 2026 and fully evaluate any changes during the next watershed survey in 2035.
2. Monitor brook and brown trout populations trends within Big River to determine if further stocking of feral strain brook trout is needed to aid in population establishment.
3. Consider a brown trout removal project in Big River if brook trout densities are maintained or improve.
4. Reclassify the Trimbelle River from Class II status to Class I status.
5. Continue brown trout genetic analysis to further understand impacts of stocking strains on maximum size, mean size and growth rates of brown trout.
6. Continue streambank easement acquisition within the watershed to afford additional protections on streams, complete habitat improvement projects and increase public access to the streams.
7. Continue trout habitat improvement work within the watersheds. Adjust goals of the project based on location within the watershed
8. Target easement acquisitions on Big River and consider streambank erosion control in the mid and upper reaches of Big River to reduce downstream sedimentation.

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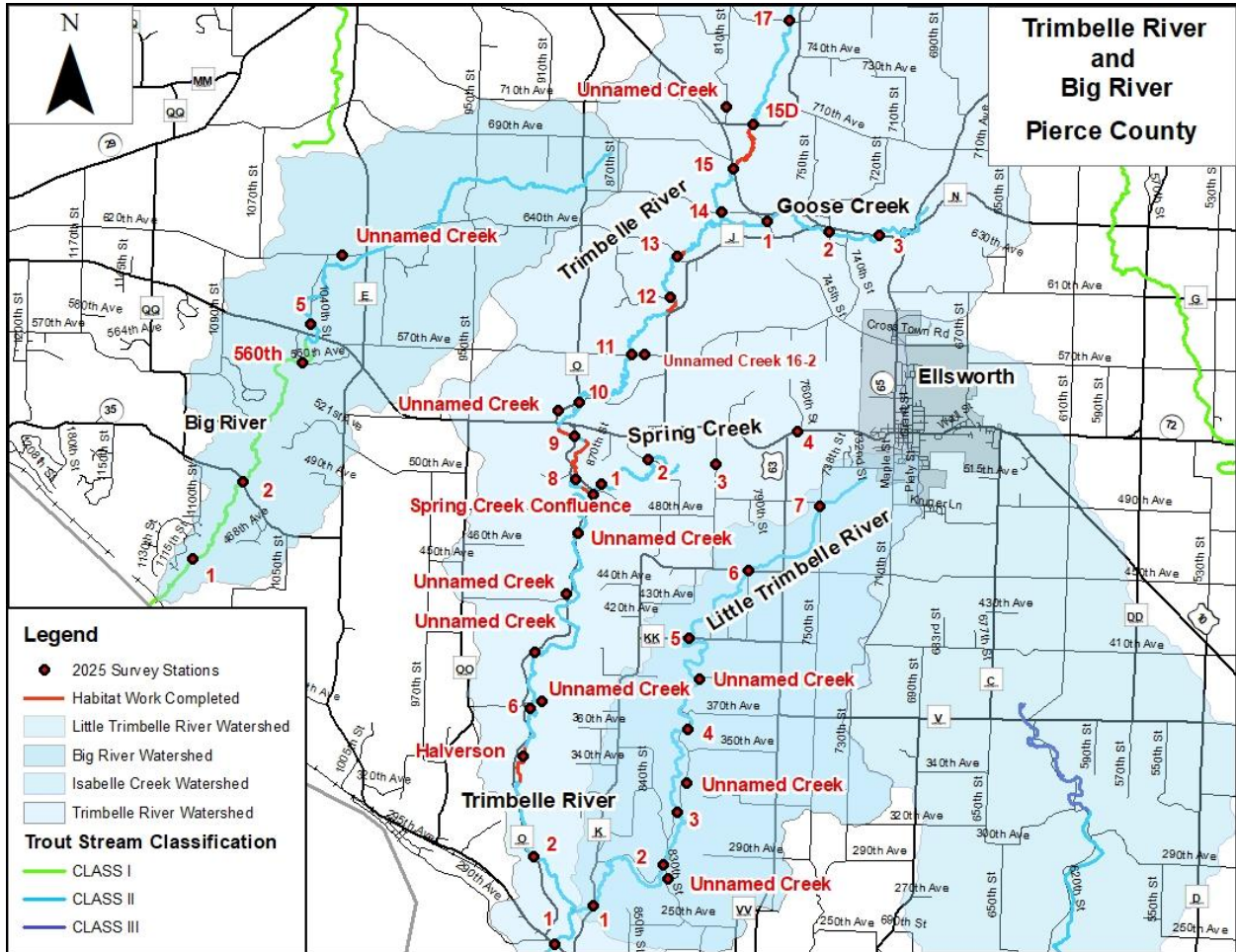
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Appendix A. Guidelines for interpreting Coldwater Index of Biotic Integrity (IBI) scores (from Lyons et al, 1996).

| Overall IBI Score | Biotic Integrity Score | Interpretation and Fish Community Attributes |
|-------------------|------------------------|--|
| 100 – 90 | Excellent | Comparable to the best situations with the least human disturbance: mottled or slimy sculpins are usually common; intolerant, native stenothermal coolwater species such as lampreys or redbreast dace may also be present; brook trout are the primary top carnivores and are present in good numbers; exotic salmonids are absent or uncommon; tolerant species may be present in low to moderate numbers. |
| 80 – 60 | Good | Evidence for some environmental degradation and reduction in biotic integrity; either brook trout or sculpins may be uncommon or absent; exotic salmonids often dominate, keeping the abundance of top carnivores high; tolerant species may be common but do not dominate. |
| 50 – 30 | Fair | The stream reach has experienced moderate environmental degradation, and biotic integrity has been significantly reduced; total species richness is often relatively high, but intolerant and native stenothermal coldwater species are uncommon or absent; native stenothermal coolwater species and exotic salmonids may be moderately common, but tolerant eurythermal species or warmwater species or both are usually more abundant |
| 20 – 10 | Poor | Major environmental degradation has occurred, and biotic integrity has been severely reduced; total species richness may be relatively high, but intolerant species, top carnivores, and salmonids are absent; a few native stenothermal coolwater species such as brassy minnows or brook sticklebacks may persist in low numbers; tolerant eurythermal species or warmwater species or both dominate. |
| 0 or no score | Very Poor | Human disturbances and environmental degradation have decimated the natural coldwater fish assemblage of the reach; either only warmwater and tolerant species remain, or fish abundance is so low (<25 individuals captured) that the IBI cannot be calculated. |

Appendix B. Survey station locations that were surveyed within the Trimble and Big Rivers watershed in 2025.



Appendix C. Mapping representation of trout species abundance by juvenile (YOY) and adult age classes in the Trimble and Big Rivers survey in 2025.

