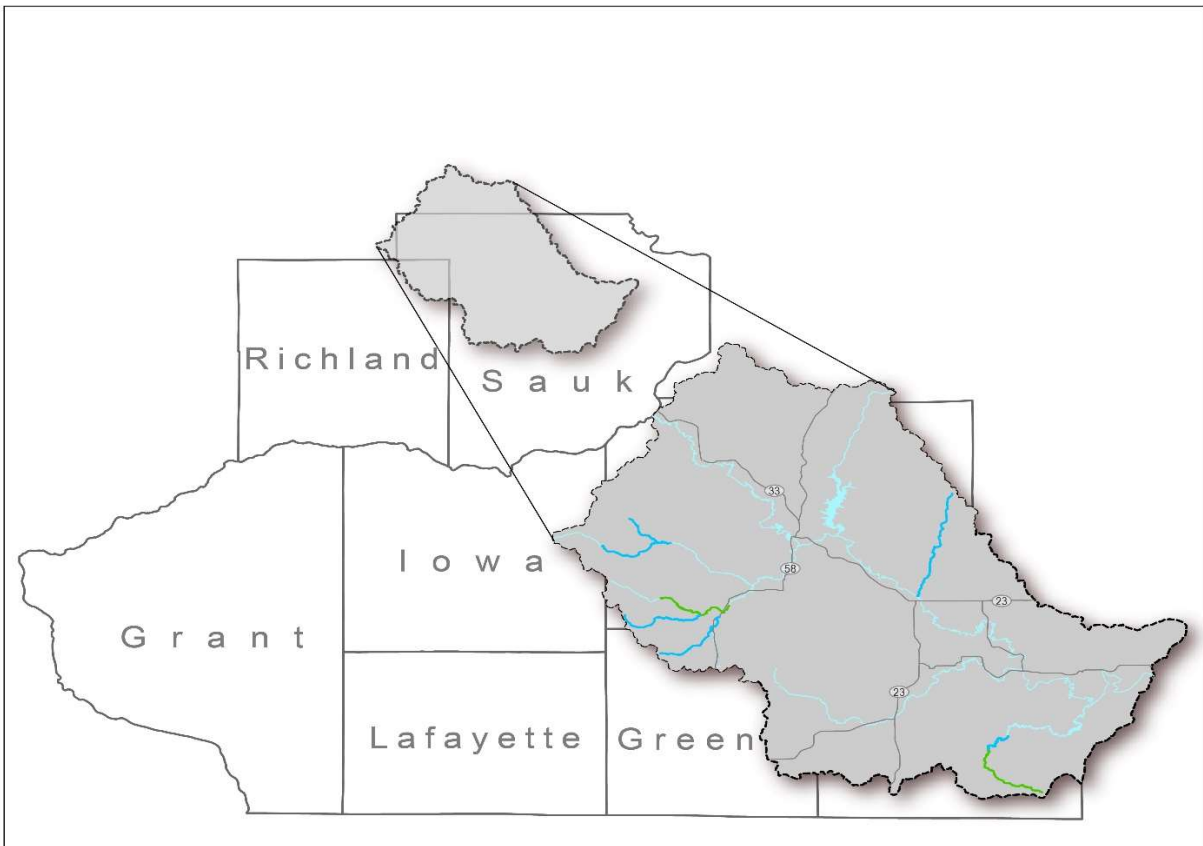


**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**  
**Trout Management and Status of Trout Streams**  
**in the Middle Baraboo River Drainage, Sauk and**  
**Richland Counties, 2022**



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## Executive Summary

Stream electrofishing surveys occurred at 28 locations on eight streams in the middle Baraboo River drainage, specifically the Little Baraboo River-Baraboo River and Narrows Creek-Baraboo River Hydrologic Unit Code 10 (HUC-10) watersheds. No fingerling trout were stocked in these systems in 2021 or prior to fishery surveys in 2022 to allow for assessment of natural reproduction (age-0; young-of-year) and natural recruitment to age 1 (yearling) in 2022.

At the time of the 2022 surveys, Cazenovia Branch and Seeley Creek upstream of County Road W were Class 1 trout waters. Bauer Valley Creek, McGlynn Creek, Mortimer Valley Creek, the Little Baraboo River, Hay Creek and Seeley Creek downstream of County Road W were Class 2 trout waters. One unnamed tributary to McGlynn Creek (WBIC 1283900) was unclassified. Prior to being suspended for this evaluation, the existing trout stocking quotas were large fingerling brook trout for Hay Creek and the Little Baraboo River and large fingerling brown trout for Bauer Valley Creek and Seeley Creek. There were no active stocking quotas for Cazenovia Branch, McGlynn Creek or Mortimer Valley Creek, and no history of stocking in unnamed stream 1283900.

Brown trout was the only trout species found in McGlynn Creek, its unnamed tributary (WBIC 1283900) and Seeley Creek. Cazenovia Branch and Bauer Valley Creek had mixed trout populations with brown trout as the predominant species. Mortimer Valley Creek had a mixed trout population, with brook trout as the predominant species. Brook trout was the only trout species found in the Little Baraboo River. Cazenovia Branch had the highest mean total brown trout catch rate and the highest mean catch rate for all size classes except age-0; Bauer Valley Creek had the highest age-0 brown trout catch rate. The Little Baraboo River had the highest mean total brook trout catch rate and the highest mean catch rate of age-0, adult and preferred-length fish. Cazenovia Branch had the highest mean yearling brook trout catch rate. Trout abundance (total and by size classes) was generally low to moderate compared to Class 1 streams in the Driftless region and statewide, with a few exceptions for specific size classes in specific streams that were present in high abundance.

### MANAGEMENT RECOMMENDATIONS

1. Retain all existing trout stream classifications on Cazenovia Branch, Bauer Valley Creek, Mortimer Valley Creek, the Little Baraboo River and Hay Creek.
2. Reclassify approximately 1.5 miles Cazenovia Branch from unclassified to Class 1 from its confluence with unnamed stream 5030086 downstream to its confluence with unnamed stream 5030194 (upstream end of current Class 1 segment).
3. Reclassify McGlynn Creek from Class 2 to Class 1 for the entire 4.82-mile length of the current Class 2 segment.

4. Reclassify an unnamed tributary to McGlynn Creek (WBIC 1283900) from unclassified to Class 1.
5. Reclassify approximately 2.3 miles of Seeley Creek from Class 1 to unclassified, from the headwater downstream to County Road PF.
6. Reclassify approximately 2.9 miles of Seeley Creek from Class 1 to Class 2, from County Road PF downstream to the upstream-most crossing of County Road W.
7. Continue to utilize existing stocking quotas for Bauer Valley Creek and the Little Baraboo River.
8. Discontinue all trout stocking in Seeley Creek.
9. Discontinue fingerling brook trout stocking in Hay Creek but continue stocking of up to 50 surplus broodstock brook trout annually.
10. Renew streambank easement outreach and acquisition efforts along Cazenovia Branch, McGlynn Creek, Bauer Valley Creek downstream of Dix Lane and the Little Baraboo River upstream and immediately downstream of County Road EE.

## **Introduction**

### **WATERHSED LOCATIONS AND DESCRIPTIONS**

The middle Baraboo River trout stream management and planning group is composed of six named streams and one unnamed stream in the Little Baraboo River-Baraboo River HUC-10 watershed and one named stream in the Narrows Creek-Baraboo River HUC-10 watershed (Seeley Creek). Streams surveyed for this evaluation included the Class 2 Little Baraboo River and a Class 2 tributary (Mortimer Valley Creek), as well as Class 2 tributaries of the Baraboo River (Hay Creek and Seeley Creek), all in Sauk County. Other streams surveyed were in Richland County and included Class 1 Cazenovia Branch and its Class 2 tributaries, Bauer Valley Creek and McGlynn Creek, plus one unnamed and unclassified tributary to McGlynn Creek (WBIC 1283900). Cazenovia Branch is a tributary to the Little Baraboo River. Several additional Baraboo River tributary streams are present in the two HUC-10s that were part of the evaluation, but those streams are part of systems that do not support trout and were not sampled in 2022. This list includes streams like Carr Valley Branch, Crossman Creek, Plum Creek, Dutch Hollow Creek, Bundy Hollow Creek, Big Creek, Twin Creek, Furnace Creek, Copper Creek and Babb Creek. Each of these streams faces one or more various impairments that prevent them from supporting trout such as a lack of cold groundwater inputs, excessive nutrient inputs, influence of large

impoundments, small size, lack of flow and habitat degradation. A number of these streams that do not support trout are listed as impaired under Section 303(d) of the Clean Water Act.

The Little Baraboo River-Baraboo River HUC-10 watershed (formerly known as the Crossman Creek-Little Baraboo River watershed) drains an area of 218.0 square miles in Sauk, Juneau, Vernon and Richland counties, which in the year 2000 was divided between agriculture (46.7%), forested lands (29.6%), grassland (17.5%), wetland (4.7%), open water (0.6%), barren lands (0.5%) and development (0.3%) (Table 1, Ripp et al. 2002). The Narrows Creek-Baraboo River HUC-10 watershed drains an area of 175.0 square miles, all within Sauk County. In the year 2000, land use in the watershed was divided between agriculture (48.9%), forested lands (30.8%), grassland (13.5%), wetlands (4.2%) and development (1.6%) (Table 2, Ripp et al. 2002). Of the streams that were part of this evaluation, Hay Creek is listed as impaired due to a degraded biological community arising from high total phosphorous levels (Wisconsin River TMDL 2019; <https://dnr.wi.gov/topic/tmdls/wisconsinriver/>). Portions of the Little Baraboo River and Seeley Creek downstream of the classified trout segments are also listed as impaired for the same reasons. No Exceptional or Outstanding Resource Waters are currently found in either HUC-10 watershed. Details on individual stream locations can be found in Table 3. Existing quotas for stocked streams in the group can be found in Table 4.

## **INDIVIDUAL STREAMS**

The Little Baraboo River is approximately 17 miles in length, originating in northeastern Vernon County and flowing southeast into Sauk County to Ironton, then north to join the Baraboo River at La Valle (Ball et al. 1971). Along the way, it is joined by Mortimer Valley Creek, Cazenovia Branch and several other smaller tributaries (mostly unnamed). The Little Baraboo River is Class 2 trout water from the Sauk-Vernon County line downstream to Rott Road. The classified portion of the Little Baraboo River is managed for brook trout, which were stocked from 1972-1976, and

nearly every year since 1994. The current quota sees large fingerling brook trout stocked every year. Brown trout were also stocked nearly every year from 1977-1997, but stocking was discontinued in favor of brook trout stocking. Public access to the Little Baraboo River is limited to road crossings and one streambank easement near Ironton, downstream of the classified trout water.

Mortimer Valley Creek is a tributary to the Little Baraboo River that originates in northwestern Sauk County north of Valton and flows southeast for approximately 2.6 miles before joining the Little Baraboo River just east of Valton. The stream is Class 2 trout water for its entire length. Past management involved stocking fingerling brook trout in most years from 1998-2019. However, stocking was discontinued after 2019 based on the results of surveys of the stream in 2016. Those surveys found that the stream did not have a fishable population of brook trout despite several years of stocking.

Cazenovia Branch is one of the larger tributaries to the Little Baraboo River, originating in northeastern Richland County. From its headwater, the stream flows southeast along County Road V for approximately 8.5 miles and takes in Bauer Valley Creek before emptying into Lee Lake in Cazenovia. The stream is Class 1 trout water for 4.6 miles from just above Walsh Creek Lane downstream to Lee Lake. Below Lee Lake Cazenovia Branch is no longer classified trout water, flowing northeast and taking in Carr Valley Branch before joining the Little Baraboo River 1.5 miles west of Ironton. The stream was noted as having significant natural reproduction of brook trout prior to 1960, but by the early 1970s, the stream was dominated by brown trout (Ball et al. 1970). Past trout management centered on stocking brown trout; fingerlings and occasionally yearlings were stocked in most years from 1972-2005. Yearling rainbow trout were also stocked from 1972-1976. More recently, fingerling brook trout were stocked in six of nine years from 2006-2014. However, no stocking has occurred in Cazenovia Branch since 2014. Public access to Cazenovia Branch comes at road crossings and one streambank easement on approximately 2,500 feet

of stream, including segments immediately upstream and downstream of County Road II. The lower 1,500 feet of the easement had in-stream trout habitat improvement work completed by the Wisconsin Department of Natural Resources (DNR) in 2019.

Bauer Valley Creek originates in northeastern Richland County and flows east for approximately 5.4 miles before joining Cazenovia Branch just upstream of Lee Lake. The stream is intermittent in its upper reaches, with the lower 3.5 miles considered perennially flowing water. Bauer Valley Creek is Class 2 trout water for its entire length. Past management focused on brown trout, with fingerlings stocked in most years from 1973-2005 and again from 2016-2020. Brook trout fingerlings were also stocked in 1976 and in six of nine years from 2006-2014. Public access to Bauer Valley Creek comes at road crossings and an approximately 2,000-foot segment located on the same property as the public fishing easement on Cazenovia Branch near Germantown.

McGlynn Creek originates southwest of Cazenovia in northeastern Richland County. The stream flows northeast, then north for approximately 3 miles before emptying into Lee Lake in Cazenovia. Prior to the creation of Lee Lake, McGlynn Creek was a tributary of the Cazenovia Branch (Ball et al. 1970). McGlynn Creek is Class 2 water for its entire length. Discharge of waste from a cheese factory at Bunker Hill above the stream's headwater was noted as being the most serious impairment to fish populations in the stream prior to 1970, but the cheese factory has not been operational for many years (Ball et al. 1970). Past management focused on brown trout, with fingerlings or yearlings stocked nearly every year from 1972-2005. Fingerling brook trout were stocked from 1972-1974 and every other year from 2006-2014. Yearling rainbow trout were also stocked from 1972-1976. Public access along McGlynn Creek is limited to road crossings.

An unnamed tributary to McGlynn Creek (WBIC 1283900) originates south of Cazenovia and flows north along State Road 58 for 2.5 miles before joining McGlynn Creek shortly after crossing County Road II. This stream has no history of trout stocking, and no prior surveys were on file with the DNR. The stream was selected for evaluation in 2022 due to its connection to Class 2 McGlynn Creek and its potential to support trout. No public access exists along this stream except for at road crossings.

Hay Creek is a tributary to the Baraboo River that originates in north central Sauk County, flowing southwest for approximately 5.8 miles before joining the Baraboo River in the City of Reedsburg. Hay Creek is Class 2 trout water for its entire length. While yearling rainbow trout were stocked from 1972-1976, management of the stream focused on brown trout for many years, with fingerlings (and occasionally yearlings) stocked nearly every year from 1972-1994 and again in 2011. Later, management shifted to brook trout, which were stocked as fingerlings in nine of 13 years from 2010-2022. Public access to Hay Creek is limited to road crossings and a public park in Reedsburg.

Seeley Creek is a tributary to the Baraboo River that originates in central Sauk County and first flows northwest, then northeast, then east before entering Seeley Lake. From Seeley Lake, the stream then flows north and enters the Baraboo River just downstream of the Village of North Freedom. Seeley Creek is approximately 13.1 miles in length, but only the upper 4 miles are classified trout water, including 3 miles of Class 1 water beginning at the headwaters and a one-mile Class 2 segment immediately below the Class 1 segment. Past trout management saw yearling rainbow trout stocked from 1972-1976 and brown trout (mostly fingerlings, occasionally yearlings) stocked nearly every year from 1972-2020. Public access to Seeley Creek is limited to road crossings as there are no easements or fee title lands located anywhere on Seeley Creek except for the public boat landing at Seeley Lake.



All classified trout streams in the group evaluated in 2022 followed the base regulation for their county (Richland or Sauk), which was an 8-inch minimum length limit and three fish daily bag limit for brook, brown and rainbow trout. Current trout stream classifications and 2022 sampling locations can be found in Figure 1, while current regulations and public lands and fishing access opportunities are displayed in Figures 2 and 3.

## **Methods**

### **SURVEY EFFORT**

Summer stream electrofishing sampling at 6-year rotational sites and trout potential sites in 2022 spanned from June 15 through Aug. 9, and the sampling locations, site metrics and gear used are described in Tables 5 and 6. Surveys were completed for the purpose of assessing current trout populations and to inform trout classifications (correct or reclassification needed) and future management (stocking, regulations, habitat, land acquisition) of the streams. Twenty-two sites were located on currently classified trout waters and are surveyed every six years (rotational), while four sites were located on streams not yet classified as trout water to determine if the streams should be reclassified as trout water (trout potential). The timing of sampling attempted to match the dates of surveys in previous years as closely as possible. Of the 26 stream sites sampled, 16 were surveyed with a backpack electrofishing unit and 10 were sampled with a tow-barge utilizing two anodes.

Electrofishing surveys followed standard DNR protocols for cold water wadable streams (FM Handbook Chapter 510; Simonson 2015). All fish were collected at trend sites where gamefish, exotic species and threatened/endangered species were measured to total length. Only the first 200 fish of a given species were measured if large numbers of gamefish were encountered. Young-of-year were counted, and a subsample of 50 fish were measured. Individuals of other fish species were counted to calculate the index of biotic integrity (IBI) score.

Water quality and habitat metrics were also collected at each survey site. Streamflow was calculated at one transect at each site using a Hach FH950.1 handheld flow meter. Dissolved oxygen was measured using a handheld YSI Pro 2030 meter. Stream temperature, specific conductivity, pH, total dissolved solids and salinity were measured using an Oakton PCS Testr 35 handheld multi-parameter meter. Stream habitat metrics were collected using a qualitative habitat rating form. For streams less than 10 m wide, ratings included riparian buffer width, bank erosion, pool area, width: depth ratio, riffle: riffle or bend: bend ratio, fine sediments and cover for fish. All stream sites sampled in 2021 met the <10 m stream width criteria.

## **POPULATION ASSESSMENT**

Per Chapter 1 of the Wisconsin Administrative code, specifically NR 1.02(7)(b), Wisconsin trout streams can be classified into one of three groups. A Class 1 stream (or portion thereof) contains trout spawning habitat and naturally produced fry, fingerling and yearlings in sufficient numbers to utilize the habitat, or the stream contains trout with two 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. A Class 2 stream (or portion thereof) contains a population of trout made up of one or more age groups, above the age of one year, in sufficient numbers to indicate substantial survival from one year to the next and may or may not have natural reproduction of trout occurring; however, stocking is necessary to fully utilize the available trout habitat or to sustain the fishery. A Class 3 stream (or portion thereof) requires annual stocking of trout to provide significant harvest and does not provide habitat suitable for the survival of trout throughout the year or for natural reproduction of trout.

To appropriately classify a trout stream or a portion of one into one of these three classes, managers must conduct field surveys to assess the overall population age structure to determine which classification criteria are being met and to identify

impediments to meeting these criteria. Survey results may also indicate that a change in classification is warranted. The two most vital components to assess are natural reproduction and natural recruitment, and this must occur in the absence of stocking to clearly account for naturally produced fish. Natural reproduction is indicated by the presence of age-0 fish, also called young-of-year (YOY), in a non-stocked year. Natural recruitment is indicated by the presence of yearling fish in the year following a non-stocked year; these are fish that were naturally produced and survived for one year. No stocking of fingerling trout occurred in the upper Baraboo River watershed group in 2021 or prior to fishery surveys in 2022 to allow for evaluation of natural reproduction and recruitment in 2022.

The age-0 trout catch rates in 2022 were thus indices of natural reproduction, while the age-1 catch rates in 2022 served as indices of natural recruitment to the fisheries of the respective streams. For streams with regular fingerling stocking quotas, adult fish sampled in 2022 were fish  $\geq 2$  years of age that were the product of either natural reproduction or stocking that occurred in 2020 or earlier.

Trout catch-per-unit effort (CPUE, fish/mile) was calculated for each trout species based on the number of fish collected and the length of the stream station sampled. The CPUE will be referred to in the narrative as the catch rate and in tables and figures as CPUE. This allowed for comparisons of catch rates both within and among streams. Total catch rate, as well as size-specific catch rates, were calculated for YOY (age-0, <4.0 inches), yearlings (4.0-7.9 inches for brown trout and 4.0-6.9 inches for brook trout) and adults (age  $\geq 2$  years;  $\geq 7$  inches for brook trout and  $\geq 8$  inches for brown trout). Preferred-length trout were brook trout  $\geq 10$  inches and brown trout  $\geq 12$  inches.

Percentile values for size-specific trout catch rates referenced in the narrative, tables and figures in this paper were generated from summaries of DNR fishery surveys of Class 1 trout streams in the Driftless Area and Western Corn Belt Plains Ecoregion of

Wisconsin (referred to as Driftless Area) as well as statewide from 2012-2021 where at least one trout was collected in the survey (surveys where the catch was zero were excluded). For reference, the Level III Ecoregions of Wisconsin, including the Driftless Area, are shown in Figure 4. Please refer to Tables 7 and 8 for reference values for the 10<sup>th</sup>, 25<sup>th</sup>, 35<sup>th</sup>, 50<sup>th</sup> (median), 65<sup>th</sup>, 75<sup>th</sup> and 90<sup>th</sup> percentiles for catch rates for various size classes of brown trout and brook trout from surveys of Class 1 streams in the Driftless Area and statewide from 2012-2021. Catch rate values that fell below the 35<sup>th</sup> percentile indicated low trout abundance, between the 35<sup>th</sup> and 65<sup>th</sup> percentiles indicated moderate abundance and values above the 65<sup>th</sup> percentile indicated high abundance.

## **Results**

In total, 26 stream sites were sampled on eight streams within the upper Baraboo River management group in 2022. Data are presented for both individual stream sites as well as whole streams (average CPUE for all sites on a given stream) for regional and statewide comparisons. Unnamed streams sampled in 2022 are referred to by their Waterbody Identification Code (WBIC). No trout of either species were found in Hay Creek.

### **BROWN TROUT**

In general, brown trout were the predominant trout species found in the watershed. Brown trout were found in six of the eight streams sampled and at 18 of 26 total sampling locations. In streams where trout were found, only the Little Baraboo River did not contain brown trout. Please refer to Tables 9 and 10 and Figure 5 for brown trout catch rates for all size classes from all sampling locations as well as averages for each stream. Cazenovia Branch had the highest mean total brown trout catch rate of all streams in the group. On a regional and statewide scale, total brown trout abundance was low to moderate across the Middle Baraboo River management group, placing below median catch rate values in all cases. Age-0 brown trout were found in five of eight streams in the group, and abundance in those streams was low

to moderate with Bauer Valley Creek having the highest age-0 abundance of any stream in the group. Mean age-0 brown trout catch rates for each stream are presented in Figure 6.

Yearling brown trout were found in six of eight streams sampled, and abundance ranged from low to high across the management group compared to regional and statewide median values. Yearling abundance was highest in Cazenovia Branch, and mean yearling catch rates for all streams are presented in Figure 7. Adult brown trout were found in five of eight streams sampled, and adult abundance ranged from low to moderate across the management group compared to regional and statewide median values (Figure 8). Adult brown trout ( $\geq 8$  inches) were found in five of eight streams sampled and were most abundant in Cazenovia Branch. Preferred-length brown trout were only found in three of eight streams sampled, and abundance was highest in Cazenovia Branch. However, abundance was low in all three streams compared to regional and statewide values (Figure 9).

## **BROOK TROUT**

Brook trout were found in four of eight streams sampled and at 10 of 26 total sampling locations. Brook trout were not found in the unnamed tributary to McGlynn Creek, McGlynn Creek or Seeley Creek. Please refer to Tables 11 and 12 and Figure 10 for brook trout catch rates for all size classes from all sampling locations as well as averages for each stream. Brook trout were the predominant trout species in Mortimer Valley Creek, and the only trout species found in the Little Baraboo River. The Little Baraboo River had the highest mean total brook trout catch rate of any stream in the group. On a regional and statewide scale, total brook trout abundance was low to moderate across streams in the management group, placing below median catch rate values in most cases. YOY brook trout were found in four of eight streams in the group, and abundance in those streams was low to moderate with the Little Baraboo River having the highest age-0 abundance of any stream in the group. Mean age-0 brook trout catch rates are presented in Figure 11.

Yearling brook trout (Age 1; 4.0-6.9 inches) were found in four of eight streams in the group, with Cazenovia Branch having the highest abundance of all streams. In regional and statewide comparisons, yearling brook trout abundance was low in Bauer Valley Creek and Mortimer Valley Creek, moderate in the Little Baraboo River and moderate (statewide) to high (driftless region) in Cazenovia Branch (Figure 12). Adult brook trout ( $\geq 7$  inches) were observed in four of eight streams in the group, with the Little Baraboo River having the highest abundance of all streams (Figure 13). Bauer Valley Creek, Cazenovia Branch and Mortimer Valley Creek all had low adult abundance, while abundance was moderate in the Little Baraboo River. Preferred-length brook trout ( $\geq 10$  inches) were only found in the Little Baraboo River, at low abundance (Figure 14).

## Discussion

### CAZENOVIA BRANCH

Sampling in 2022 found the highest total abundance of brown trout the in Cazenovia Branch out of six streams in the Middle Baraboo River management group where brown trout were found. This was true for all size classes of brown trout, except for age-0. Catch rates at individual sampling locations were at or above median values for the Driftless region and statewide except for the site located 200 meters upstream of County Road II where abundance was low. brown trout abundance in Cazenovia Branch was the highest in the middle portion of the stream, immediately below Walsh Creek Lane. Yearling brown trout abundance was especially impressive at this location, placing above the 75<sup>th</sup> percentile in both regional and statewide comparisons. Mean yearling brown trout abundance across all sites (recruitment) was high when compared regionally and statewide. However, age-0 abundance was low in both comparisons. This likely indicates an exceptional year class of trout in produced 2021 (consistent with other area brown trout streams) but a poor year class in 2022 (also somewhat consistent across area streams). Trout abundance within the DNR

easement downstream of County Road II does appear to be slowly improving following the completion of a trout habitat improvement project there in 2019.

Brook trout were also present in Cazenovia Branch, and total abundance was the second highest of the eight streams in the management group. Brook trout were collected at four of five locations sampled, and abundance was highest upstream of County Road CC, where the catch rate was 1,354.9 fish/mile and brook trout outnumbered brown trout nearly three to one. This site had the coldest water of the five sites sampled along the Cazenovia Branch. Age-0 brook trout abundance at this site was high, placing above the 75<sup>th</sup> percentile regionally and statewide, while yearling abundance was above the 90<sup>th</sup> percentile in both comparisons. Adult abundance was moderate and fell right on the median for both comparisons. Adult abundance in this segment was limited by the small size of the stream and the resulting lack of deep holes or other overhead cover suitable for large trout. Preferred-length brook trout were not found at this site for the same reason.

However, immediately downstream of County Road CC, one or more large beaver dams and their impoundments cause the stream to be warmer over the remainder of its course. Below these impoundments, brown trout were the predominant species, and brook trout abundance was low. While removal of the dams and their impoundments would benefit the trout population in Cazenovia Branch by removing a source of thermal impairment downstream, it would probably also lead to an influx of brown trout into the upper reaches of the stream, which could prove detrimental to the brook trout population. It is important to remember that the beaver dams are on private land. The landowner values these beaver ponds for their benefits to other wildlife as well as for the large trout that live in them and has no interest in seeing them removed.

At the time of the 2022 evaluation, Cazenovia Branch was classified as Class 1 trout water from its confluence with unnamed stream 5030194 downstream to Lee Lake in

Cazenovia. The upstream beginning of the classified trout water lies between Walsh Creek Lane and Klang Acres Lane. Trout surveys at two locations upstream of the classified portion of Cazenovia Branch in 2022 found moderate to high abundances of both brown trout and brook trout, with age-0, yearling and adult trout present in sufficient numbers to fully utilize the available habitat at both locations. At the time of the 2022 surveys, brown trout had not been stocked in Cazenovia Branch since 2005, and brook trout had not been stocked since 2014. This means that populations in the unclassified portion of the stream have reached moderate to high abundances entirely through natural reproduction and recruitment. For this reason, it is recommended that Cazenovia Branch be reclassified from unclassified to Class 1 trout water from its confluence with unnamed stream 5030086 downstream to its confluence with unnamed stream 5030194, which is the current upstream end of the classified water. The newly classified portion will be approximately 1.5 stream miles in length.

Public access to Cazenovia Branch is limited to a few road crossings and the streambank easement on the lower end of the stream where it crosses County Road II. Anglers would benefit from additional streambank easement acquisitions, and such acquisitions would also increase the areas available to DNR for habitat improvement. Cazenovia Branch does suffer from impairments such as eroded banks and associated widening, sedimentation and loss of depth as well as beaver activity and associated thermal impacts. Easement acquisition on additional lands along the stream would help remedy some of these impairments while increasing the amount of public access for anglers. Cazenovia Branch is SBE eligible (both the current and proposed classified segments), and multiple rounds of outreach have occurred along the stream to date. However, continued efforts are worthwhile because of the potential benefits to the stream and the anglers that utilize it.



## MCGLYNN CREEK

Sampling in 2022 found the second-highest total abundance of brown trout out of the six streams in the Middle Baraboo River management group where brown trout were found. This was true for all size classes of brown trout, which was the only trout species found in the stream. Mean total brown trout abundance in McGlynn Creek was low to moderate based on regional and statewide comparisons. When broken down by size classes, abundances of age-0 and yearling brown trout were moderate regionally and statewide while adult abundance was low. Low adult abundance can be attributed to the small size of the stream (especially in its upper reaches) and the relative lack of deep holes or other overhead cover for larger trout. Catch rates of all size classes of brown trout were highest at the middle of the three sampling locations (35 meters upstream of County Road I) relative to the other locations.

As of 2022, McGlynn Creek was Class 2 trout water. However, brown trout had not been stocked in the stream since 2005. In the absence of stocking, McGlynn Creek was near the middle of the pack in 2022 compared to Class 1 streams statewide in terms of total brown trout abundance. McGlynn Creek also compared favorably regionally and statewide in terms of natural reproduction (age-0) and recruitment (yearlings). Mean adult brown trout abundance was also more than double the minimum fishable population standard of 50 adults/mile. For these reasons, it is recommended that McGlynn Creek be reclassified from Class 2 to Class 1 trout water over its entire current classified length.

While brown trout are fully utilizing the habitat within McGlynn Creek in its current state, in-stream habitat improvement projects would greatly benefit the stream in its middle and lower sections. The stream has numerous high-quality riffles and a few nice pools. However, it suffers greatly from steeply eroded banks and resultant channel widening, sedimentation and loss of depth, leading to a lack of cover for trout. McGlynn Creek is an excellent candidate for DNR-led habitat improvements. McGlynn Creek is SBE eligible for most of its length, from its confluence with

unnamed stream 5030869 downstream to Lee Lake. However, there is currently no public ownership along the stream, and a new round of DNR outreach to riparian landowners is recommended to facilitate the acquisition of streambank easements. The segment best suited to habitat improvements and fishability for anglers lies downstream of County Road NN. Upstream of that road crossing, the stream is too small to be a good candidate for habitat improvement projects.

### **BAUER VALLEY CREEK**

Bauer Valley Creek had the third-highest mean total abundance of brown trout out of six streams in the Middle Baraboo River management group where brown trout were found. This was true for all size classes of brown trout except age-0 fish; Bauer Valley Creek had the highest age-0 catch rate in the group. Mean total brown trout abundance in Bauer Valley Creek was low to moderate based on regional and statewide comparisons. When looking at size-specific catch rates, abundances of age-0 and yearling brown trout were moderate regionally and statewide, while adult abundance was low. Low adult abundance can be attributed to the small size of the stream (especially in its upper reaches) and the relative lack of deep holes or other overhead cover for larger trout. Catch rates of all size classes of brown trout were highest at the downstream-most sampling location (Site 8; Figure 1).

Bauer Valley Creek also had the third-highest mean total abundance of brook trout among streams in the management group. This brook trout population was supplemented by fingerling stockings until 2014, and the population observed in 2022 was entirely the result of natural reproduction and recruitment. Compared to other streams in the Driftless Area and statewide, total brook trout abundance was low. The brook trout catch in Bauer Valley Creek was primarily composed of age-0 fish, and age-0 abundance was moderate when compared regionally and statewide. Yearling and adult abundance were low, and preferred-length fish were not found. With daytime summer water temperatures in the 60s and a management strategy

(stocking) favoring brown trout, it is not surprising that brook trout were outnumbered by brown trout in Bauer Valley Creek.

As of 2022, Bauer Valley Creek was Class 2 trout water, and the stream was stocked with fingerling brown trout annually from 2016-2020 prior to being discontinued for this evaluation. Adult brown trout observed in 2022 would have been produced during years when the stream was stocked, and adult abundance in 2022 is, to some degree, reflective of stocking success. The mean adult brown trout catch rate was above the minimum fishable population size of 50 adults/mile for a stocked trout fishery. However, yearling and adult brown trout abundance in Bauer Valley Creek were both markedly lower than in a similar nearby Class 2 stream, which had not been stocked in nearly 20 years (McGlynn Creek, reclass to Class 1 recommended). This indicates that stocking is necessary to maintain a fishable population of brown trout in Bauer Valley Creek, and its Class 2 designation is correct. Reclassification is not recommended at this time. Fingerling brown trout stocking should continue at the rate utilized prior to this evaluation.

In-stream habitat improvement projects would greatly benefit Bauer Valley Creek in its lower section, where there is sufficient stream flow (~2.5 cfs) to support more trout if the physical habitat is improved. The stream has a few nice riffles and pools and some in-stream wood. However, it suffers greatly from eroded banks and resultant widening, sedimentation and loss of depth, resulting in a lack of cover for trout. A habitat improvement project is currently being planned for the 2024-25 biennium on the property on lower Bauer Valley Creek where the DNR owns a streambank easement. However, there is currently no public ownership further upstream, and a new round of DNR outreach to riparian landowners may facilitate the acquisition of additional easements. While easement acquisition further up Bauer Valley Creek will certainly improve angler access and offer some protection to the riparian corridor, the stream is too small upstream of Dix Lane (2022 flow rates were 1.0-1.5 cfs) to warrant intensive habitat improvements in that segment.

### **UNNAMED TRIBUTARY TO MCGLYNN CREEK (1283900)**

Unnamed Stream 1283900 had the fifth-highest mean total abundance of brown trout out of six streams in the Middle Baraboo River management group where brown trout were found. This was true for all size classes of brown trout except age-0 fish (third); mean total brown trout abundance in stream 1283900 was low based on regional and statewide comparisons, and this was true across all size classes as well. While abundance may have been low on a broad scale, it is important to note that this is a very small stream with flow rates at both sampling locations less than 0.5 cfs. The stream has no history of stocking, and naturally produced age-0, yearling and adult trout were present in sufficient numbers to utilize the available habitat. As such, it is recommended that the stream be reclassified from unclassified to Class 1. The stream is SBE eligible, and easement acquisition would provide a measure of protection to the riparian corridor along the stream while increasing angler access. However, the small size of the stream makes it a poor candidate for in-stream habitat work, and any fishable population of trout will be limited. A higher priority should be placed on other nearby streams like Cazenovia Branch, McGlynn Creek and Bauer Valley Creek over this unnamed stream when it comes to SBE acquisition. Finally, this stream is not likely to benefit from trout stocking, and none is recommended.

### **SEELEY CREEK**

Seeley Creek had the fourth-highest mean total abundance of brown trout out of six streams in the Middle Baraboo River management group where brown trout were found. Mean total brown trout abundance in Seeley Creek was low based on regional and statewide comparisons. When looking at size class specific catch rates, abundances of age-0 and adult brown trout were low when compared regionally and statewide, while yearling abundance was moderate and preferred-length fish were not found. Seeley Creek had limited flow in its upper reaches in 2022, more so than in previous years. Additionally, the stream is thermally marginal, particularly toward the downstream end of the classified trout water as indicated by temperatures measured

during surveys, higher species diversity than other coldwater streams, and correspondingly lower coldwater IBI scores. The best stretch for supporting trout is in the middle of the classified reach, in the vicinity of the two crossings of County Road W.

The mean adult brown trout catch rate in Seeley Creek was below the 50 fish/mile threshold (minimum fishable population) for stocked Wisconsin Trout streams. The adult catch rate was low despite excluding the Orchard Road site from the analysis. This upper reach of Seeley Creek clearly does not support trout, as no trout were found there during surveys at Orchard Road in 2011, 2017 and 2022. While yearling abundance was moderate at the remaining four sampling sites where trout were found, this may just be indicative of an exceptional year class of trout (relatively speaking) in 2021. High brown trout natural reproduction was observed in numerous other streams (including marginal streams) across southern Wisconsin in 2021. However, low natural reproduction in Seeley Creek in 2022, coupled with low adult abundance despite a lengthy history of trout stocking, indicate that over the long-term Seeley Creek has not been a high-quality trout stream and likely would not have much of a fishery without stocking. At the time of the current evaluation, Seeley Creek was split into a 5.2-mile Class 1 segment in its upper reach and a 2.8-mile Class 2 segment below the Class 1 segment. However, Seeley Creek is clearly not performing at the Class 1 level, and the uppermost portion of the creek does not support trout at all. For these reasons, it is recommended that the portion of Seeley Creek from the headwater downstream to County Road PF (approximately 2.3 miles) be reclassified from Class 1 to unclassified. Further, it is recommended that the remainder of the Class 1 portion, from County Road PF downstream to the upstream crossing of County Road W (approximately 2.9 miles), be reclassified from Class 1 to Class 2. The current Class 2 segment should remain unchanged.

Adult brown trout abundance is well below the minimum fishable population threshold despite an extensive stocking history. Whether naturally produced or

stocked, brown trout in Seeley Creek do not survive to adulthood in sufficient numbers to warrant continued stocking, and for that reason, it is recommended that trout stocking cease in Seeley Creek. If the stream was more thermally suited to support trout, then stocking and habitat improvements might facilitate a boost in adult trout numbers. However, due to the thermally marginal nature of the stream, investments in easement acquisition and habitat improvement are best saved for other higher-quality streams where those investments are likely to pay larger dividends. Seeley Creek is SBE eligible, however, acquisitions along this stream should remain a low priority.

### **MORTIMER VALLEY CREEK**

Mortimer Valley Creek had the sixth-highest mean total abundance of brown trout out of six streams in the Middle Baraboo River management group where brown trout were found. The total brown trout catch in Mortimer Valley Creek was a single yearling found at one sampling location. Mortimer Valley Creek has never been stocked with brown trout, and the only trout stream it connects to (Little Baraboo River) has not been stocked with brown trout since 1997. Brown trout were not found in Mortimer Valley Creek during the previous evaluation in 2016. Where the single 2022 brown trout came from is unclear and irrelevant.

In terms of brook trout, Mortimer Valley Creek had the fourth-highest mean total abundance of the four streams in the group where brook trout were found. In regional and statewide comparisons, total brook trout abundance was low, and this was true for all size classes. Mortimer Valley Creek had an extensive history of brook trout stocking that ended in 2019. The decision to cease stocking was made based on low trout abundance observed during sampling in 2016 and the subsequent implementation of new standards for trout stocking in Wisconsin. Mortimer Valley Creek fell well short of the minimum fishable population standard of 50 adults/mile in a stocked fishery, so the decision was made to end stocking permanently. The 2022 evaluation indicated that trout do persist in the stream in the absence of stocking,

but natural reproduction and recruitment are low, and the stream compares poorly with Class 1 streams across the region and the state. The current Class 2 designation is correct. The small size of the stream and its thermally marginal nature (stream temps in the mid to upper 60s during evaluations) will limit its potential to produce trout in greater abundance, and stocking will not improve the fishery enough to warrant the investment. Mortimer Valley Creek is SBE eligible. However, its limited potential to produce trout and provide a fishery for anglers makes it a low priority for acquisition or habitat improvement.

### **LITTLE BARABOO RIVER**

The Little Baraboo River had the highest mean total abundance of brook trout out of four streams in the group where brook trout were found. Mean total brook trout abundance in the Little Baraboo River was moderate based on regional and statewide comparisons. When looking at size class specific catch rates, abundances of age-0, yearling and adult brook trout were all moderate, both regionally and statewide. Abundance of preferred-length brook trout was low. When looking at individual sampling locations, brook trout abundance was highest upstream of County Road EE where abundance was high when compared regionally and statewide despite numerous beaver dams and associated impoundments in this reach. Numerous springs upstream of County Road EE help to temper the effects of the beaver dams and maintain the trout population there. However, trout abundance was zero at the middle of three sampling locations (Site 22, Figure 1) and low at the downstream-most sampling location (Site 23, Figure 1). The upper reach of the Little Baraboo River carries almost all the trout production in the entire stream.

Continuous stream temperature monitoring at this location found a mean July temperature of 62.7°F which is consistent with other brook trout streams across Sauk and Columbia counties. The maximum July temperature did not exceed 70.5°F (21.4°C), which is below the lethal temperature thresholds identified in Wehrly et al. (2007). A 7-day maximum daily mean temperature of 73.9°F (23.3°C) or a 7-day

maximum daily maximum temperature of 77.7 °F (25.4°C) were identified in that study as the upper temperatures tolerated by trout at a 7-day exposure time. Additionally, the upper thermal temperature limits for trout decrease as the length of exposure increases (Wehrly et al. 2007).

The stream becomes more thermally marginal downstream, and the physical habitat becomes more degraded with eroded banks with resulting sedimentation and depth loss. At the downstream-most sampling location, the stream seems better suited to smallmouth bass (temperature, species assemblage, habitat), although none were collected there. Mean July temperatures at Woolever Road (just upstream of site 22) and Rott Road (sample site 23) were 68.7°F and 69.9°F, respectively. These values were 6-7°F higher than at the County Road EE location. Maximum July temperatures at the downstream locations were 76.5°F (24.7°C) and 80.1°F (26.7°C), respectively. These maximum temperatures were near or above the lethal temperatures for trout identified in Wehrly et al. (2007). Maximum daily temperatures at these locations were near or above upper thermal limits for several consecutive days in July 2022. Chronic exposure to these temperatures helps to explain why trout abundance is low or zero in these areas; the habitat is not thermally suitable for trout.

Results of surveys in 2022 mirror those of the previous sampling visits to the same sites in 2014, with the bulk of the trout found upstream of County Road EE, no trout found at the middle sampling location and few trout found at the lower sampling location. The Little Baraboo River has an extensive stocking history, with fingerling brook trout stocked nearly every year since 1994 and surplus adult broodstock from a DNR hatchery stocked on occasion. Stocking prior to 2021 helped to produce an adult trout fishery that exceeded the minimum fishable population size in 2022. Although reproduction and recruitment are high upstream of County Road EE, they are almost nonexistent across the remainder of the classified portion of the stream, and stocking is necessary to maintain any sort of trout population in most of the classified reach.



When taken as a whole, the classified portion of the Little Baraboo River is not performing at the Class 1 level in terms of reproduction, recruitment and adult abundance, and the Class 2 designation is appropriate. Stocking of large fingerling brook trout should continue. A small portion of the current Class 2 segment (approximately 0.4 mile) is performing at the Class 1 level. However, reclassifying such a small portion of the stream is not worth the effort currently. During the next evaluation in 2028, additional sampling should be completed further upstream in Vernon County to determine if there is additional trout water upstream of the Sauk-Vernon County line where the current Class 2 water begins. If additional trout water is found, then it should be classified, and the topic of reclassifying the current Class 2 segment upstream of County Road EE to Class 1 may be revisited at that time.

Currently, there is no public streambank access along the classified trout portion of the Little Baraboo River. The stream is SBE eligible, and an initial outreach effort to landowners along the stream in 2014 yielded no interest within the classified section. Renewed outreach efforts are warranted in this sub-watershed, especially targeting landowners upstream and immediately downstream of County Road EE. Acquisitions in this area would increase angler access to the best section of trout water and would give the DNR the ability to address impairments arising from the significant beaver activity found there. Water discharging from the beaver impoundments in 2022 occasionally exceeds 70°F. This warm discharge contributes to thermal impairments in areas further downstream, which makes the stream more marginal for trout. Numerous beaver dams also block fish passage within this stream segment and lead to sediment deposition behind the dams, which covers riffles that act as spawning substrate. Removing the beaver and their impoundments would help restore a natural flow regime and eliminate the impairments mentioned previously.

## HAY CREEK

No trout were collected from Hay Creek in 2022. Stream temperatures during sampling ranged from the upper 50s on the lower end of the stream to the upper 60s on the upper end of the stream. Mean July temperatures recorded by continuous temperature loggers at County Road WD (Site 24, Figure 1) and Bass Road (Site 26, Figure 1) were 62.4°F and 62.5°F, respectively, and these temperatures were consistent with other Sauk and Columbia counties brook trout streams. Maximum July temperatures at the same locations were both 70.4°F, which is below the upper thermal limits for trout identified in Wehrly et al. (2007). Mean July temperatures compared favorably with other brook trout streams across the Poynette management area. Mottled sculpins were found at all three sampling locations in Hay Creek, and cold water IBI scores ranged from fair to good. Favorable temperatures and the presence of other coldwater species typically found in trout streams indicated that Hay Creek should support trout. The stream had been stocked consistently with brook trout since 2010, and anecdotal reports from anglers indicated brook trout have been caught on private lands where in-stream habitat improvements were made as part of bank stabilization projects. Adult brook trout were also visually observed by DNR staff in the fall of 2021 when deploying a temperature logger at County Road WD.

Admittedly, in-stream trout habitat at the 2022 sampling locations was not great, with a lack of hard substrate and good overhead cover being notable limiting factors. Additionally, the stream is small and has relatively low flow in its upper reaches, which further limits its ability to support trout. It may simply be that there are trout in Hay Creek, but they just weren't present in the places we looked for them. It may also be that some undocumented impairment is inhibiting the trout in the stream, such as manure. While no large-scale dairy farms are operating along Hay Creek, manure residue was observed on one sampling date in an alfalfa field near the upper end of the drainage. It appeared that a recent rain event had washed some of the

manure toward the stream. However, it was unclear how much material was delivered to the stream.

Whatever the case, adult trout abundance did not meet the minimum fishable population standard of 50 fish/mile despite over a decade of brook trout stocking. Trout abundance was also very low during the previous round of surveys in 2012 (three yearling brown trout found at County Road WD). For these reasons, stocking fingerling brook trout in Hay Creek should be discontinued. However, even though no trout were collected in surveys in 2022, other evidence suggests that Hay Creek should and does support trout to some degree. For that reason, surplus adult broodstock brook trout may still be stocked in Hay Creek when suitable locations for stocking surplus fish are needed. Up to 50 surplus adults may be stocked annually. The stream should also retain its Class 2 designation.

There is no public access to Hay Creek besides bridge crossings on public roads. Hay Creek is not SBE eligible, and any benefit to anglers or habitat arising from easement acquisitions along the stream would be limited due to its small size. The addition of Hay Creek to the list of SBE eligible streams is not recommended at this time. Hay Creek should continue to be monitored for the presence of trout during future watershed evaluations.

## **Management Recommendations**

1. Retain all existing trout stream classifications on Cazenovia Branch, Bauer Valley Creek, Mortimer Valley Creek, the Little Baraboo River and Hay Creek.
2. Reclassify approximately 1.5 miles Cazenovia Branch from unclassified to Class 1 from its confluence with unnamed stream 5030086 downstream to its confluence with unnamed stream 5030194 (upstream end of current Class 1 segment).
3. Reclassify McGlynn Creek from Class 2 to Class 1 for the entire 4.82-mile length of the current Class 2 segment.
4. Reclassify an unnamed tributary to McGlynn Creek (WBIC 1283900) from unclassified to Class 1.
5. Reclassify approximately 2.3 miles of Seeley Creek from Class 1 to unclassified, from the headwater downstream to County Road PF.

6. Reclassify approximately 2.9 miles of Seeley Creek from Class 1 to Class 2, from County Road PF downstream to the upstream-most crossing of County Road W.
7. Continue to utilize existing stocking quotas for Bauer Valley Creek and the Little Baraboo River.
8. Discontinue all trout stocking in Seeley Creek.
9. Discontinue fingerling brook trout stocking in Hay Creek but continue stocking of up to 50 surplus broodstock brook trout annually.
10. Renew streambank easement outreach and acquisition efforts along Cazenovia Branch, McGlynn Creek, Bauer Valley Creek downstream of Dix Lane and the Little Baraboo River upstream and immediately downstream of County Road EE.

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# Tables

Table 1. Land cover breakdown for the Little Baraboo River-Baraboo River HUC-10 watershed (LW23<sup>1</sup>; Ripp et al. 2002) in the Lower Wisconsin River basin.

LAND COVER		PERCENT OF WATERSHED	
Agriculture		46.7%	
Forest (total)		29.6%	
	<i>Broad-leaf deciduous</i>		29.4%
	<i>Coniferous</i>		0.2%
Grassland		17.5%	
Wetland (total)		4.7%	
	<i>Emergent/Wet meadow</i>		2.0%
	<i>Lowland Shrub</i>		1.4%
	<i>Forested</i>		1.3%
Open Water		0.6%	
Barren		0.5%	
Development		0.3%	

1. LW23 was formerly known as the Crossman Creek-Little Baraboo River watershed.

Table 2. Land cover breakdown for the Narrows Creek-Little Baraboo River HUC-10 watershed (LW22; Ripp et al. 2002) in the Lower Wisconsin River basin.

LAND COVER		PERCENT OF WATERSHED	
Agriculture		48.9%	
Forest (total)		30.8%	
	<i>Broad-leaf deciduous</i>		30.0%
	<i>Coniferous</i>		0.8%
Grassland		13.5%	
Wetland (total)		4.2%	
	<i>Emergent/Wet meadow</i>		2.3%
	<i>Lowland Shrub</i>		1.3%
	<i>Forested</i>		0.6%
Development		1.6%	
Other		1.2%	

Table 3. Geographic and legal descriptions of the locations of the headwaters and outlets of streams in the Middle Baraboo River trout stream management group evaluated in 2022.

STREAM	WBIC	ORIGIN COUNTY	ORIGIN TOWNSHIP	ORIGIN T-R-S	OUTLET COUNTY	OUTLET TOWNSHIP	OUTLET T-R-S	RECEIVING WATERBODY	LENGTH (MILES)
UNT McGlynn Creek	1283900	Richland	Westford	12N-2E-36	Richland	Westford	12N-2E-24	McGlynn Creek	2.5
McGlynn Creek	1283800	Richland	Westford	12N-2E-28	Richland	Westford	12N-2E-13	Lee Lake	3.0
Bauer Valley Creek	1284100	Richland	Westford	12N-2E-17	Richland	Westford	12N-2E-14	Cazenovia Branch	5.4
Cazenovia Branch	1283100	Richland	Westford	12N-2E-17	Sauk	Ironton	12N-3E-5	Little Baraboo River	10.9
Mortimer Valley Creek	1285200	Sauk	Woodland	13N-2E-20	Sauk	Woodland	13N-2E-28	Little Baraboo River	2.6
Little Baraboo River	1282500	Vernon	Greenwood	13N-1E-27	Sauk	La Valle	13N-3E-27	Baraboo River	11.9
Hay Creek	1279000	Sauk	Winfield	13N-4E-11	Sauk	Reedsburg <sup>1</sup>	12N-4E-9	Baraboo River	7.4
Seeley Creek	1275300	Sauk	Freedom	11N-5E-33	Sauk	Freedom	11N-5E-12	Baraboo River	13.1

1. Hay Creek outlets to the Baraboo River in the City of Reedsburg, not Reedsburg Township.

Table 4. Stocking quotas for streams in the Middle Baraboo River trout stream management group prior to the 2022 evaluation.

<b>WATERBODY</b>	<b>TROUT CLASS</b>	<b>SPECIES</b>	<b>STRAIN</b>	<b>AGE CLASS</b>	<b>NUMBER</b>
Bauer Valley Creek	2	Brook Trout	Southwest Feral	Large Fingerling	750
Hay Creek	2	Brook Trout	Southwest Feral	Large Fingerling	752
Little Baraboo River	2	Brook Trout	Southwest Feral	Large Fingerling	1,055
Seeley Creek	2	Brown Trout	TCSF <sup>1</sup>	Small Fingerling	1,200

1. TCSF = Timber Coulee Southwest Feral



Table 5. Descriptions of trout sampling locations for the Middle Baraboo River trout stream management group during the 2022 evaluation. Classified streams are sampled on a 6-year rotation. Unclassified streams were sampled in 2022 to assess their potential to support trout.

<b>STREAM<sup>1</sup></b>	<b>WBIC</b>	<b>TROUT CLASS<sup>2</sup></b>	<b>STREAM ORDER</b>	<b>STREAM LOCATION<sup>3</sup></b>	<b>START LATITUDE</b>	<b>START LONGITUDE</b>	<b>END LATITUDE</b>	<b>END LONGITUDE</b>
UNT McGlynn	1283900	U	2	52m US STH 58	43.49948	-90.20472	43.49872	-90.20455
UNT McGlynn	1283900	U	2	55m US CTH I	43.50856	-90.20774	43.50811	-90.20707
McGlynn Creek	1283800	2	2	133m DS CTH NN	43.49700	-90.22668	43.4963	-90.22719
McGlynn Creek	1283800	2	3	35m US CTH I	43.50552	-90.21140	43.50505	-90.21101
McGlynn Creek	1283800	2	3	55m US STH 58	43.51241	-90.20726	43.51193	-90.20892
Bauer Valley Creek	1284100	2	2	161m DS Bunker Hill Rd.	43.51915	-90.26018	43.5187	-90.26112
Bauer Valley Creek	1284100	2	2	40m US Dix Rd.	43.51775	-90.23954	43.51796	-90.24061
Bauer Valley Creek	1284100	2	3	Rebhan-Duren Line Fence	43.51834	-90.22414	43.51788	-90.22525
Cazenovia Branch	1283100	U	2	140M US CTH CC	43.53586	-90.27425	43.53562	-90.27490
Cazenovia Branch	1283100	U	3	145m DS Klang Acres Lane	43.51319	-90.26334	43.53144	-90.26453
Cazenovia Branch	1283100	1	3	1295m DS Walsh Creek Lane	43.52734	-90.23871	43.52806	-90.23972
Cazenovia Branch	1283100	1	3	200m US CTH II	43.52388	-90.22634	43.52418	-90.22652
Cazenovia Branch	1283100	1	3	Hab work 560m DS CTH II	43.52340	-90.22147	43.52355	-90.22371
Mortimer Valley Creek	1285200	2	2	129m DS Mortimer Valley Rd	43.58264	-90.20665	43.58279	-90.26712
Mortimer Valley Creek	1285200	2	3	130m DS CTH EE	43.57928	-90.26051	43.57936	-90.26141
Seeley Creek	1275300	2	1	118m DS Orchard Rd.	43.38722	-89.91209	43.38687	-89.91138
Seeley Creek	1275300	2	2	180m DS CTH PF	43.39274	-89.93507	43.39165	-89.93477
Seeley Creek	1275300	2	3	30m US Upper CTH W Crossing	43.41638	-89.94932	43.41608	-89.94939
Seeley Creek	1275300	2	3	30m US Lower CTH W Crossing	43.41956	-89.94820	43.41954	-89.94916
Seeley Creek	1275300	2	4	140m DS Klein Rd.	43.42732	-89.93091	43.42816	-89.93120
Little Baraboo River	1282500	2	3	215m US CTH EE	43.57238	-90.30771	43.57246	-90.30820
Little Baraboo River	1282500	2	3	51m US Beier Rd.	43.57275	-90.26786	43.57200	-90.26942
Little Baraboo River	1282500	2	3	150m US Rott Rd.	43.57732	-90.24870	43.57747	-90.25038
Hay Creek	1279000	2	2	25m US CTH WD	43.58425	-89.99435	43.58514	-89.99438
Hay Creek	1279000	2	2	16m US Skinner Rd	43.5757	-89.99412	43.57639	-89.99348
Hay Creek	1279000	2	3	110m US Bass Rd	43.56636	-90.00175	43.56667	-90.00106

1. UNT = Unnamed Tributary
2. U = unclassified
3. US = Upstream, DS = Downstream

Table 6. Sampling station metrics for streams in the Middle Baraboo River trout stream management group during the 2022 evaluation.

<b>STREAM<sup>1</sup></b>	<b>SITE NUMBER<sup>2</sup></b>	<b>DATE</b>	<b>MEAN WIDTH; M (GEAR)<sup>3</sup></b>	<b>STATION LENGTH (M)</b>	<b>CPUE FACTOR (M)</b>	<b>FLOW RATE (CFS)</b>	<b>STREAM TEMPERATURE (F)</b>	<b>DISSOLVED O2 (PPM)</b>	<b>N SPECIES</b>	<b>COLDWATER IBI SCORE (RATING)</b>
UNT McGlynn	1	8/3/2022	1.4 (BP)	100	16.1	0.353	63.1	8.1	7	30 (FAIR)
UNT McGlynn	2	6/30/2022	2.4 (BP)	105	15.3	0.353	65.5	9.0	7	10 (POOR)
McGlynn Creek	3	6/29/2022	3.0 (BP)	100	16.1	0.706	60.4	11.6	4	50 (FAIR)
McGlynn Creek	4	6/29/2022	2.6 (BP)	100	16.1	2.119	58.8	11.7	4	70 (GOOD)
McGlynn Creek	5	7/27/2022	4.6 (B)	170	9.4	3.531	66.2	10.1	8	20 (POOR)
Bauer Valley Creek	6	7/5/2022	2.1 (BP)	100	16.1	1.059	64.0	13.8	4	80 (GOOD)
Bauer Valley Creek	7	7/12/2022	3.4 (BP)	116	13.8	1.413	63.5	8.8	8	30 (FAIR)
Bauer Valley Creek	8	7/14/2022	3.6 (B)	125	12.8	2.472	61.1	9.5	6	20 (POOR)
Cazenovia Branch	9	7/20/2022	2.6 (BP)	120	13.3	0.706	51.6	11.2	4	90 (EXCELLENT)
Cazenovia Branch	10	7/12/2022	3.3 (BP)	116	13.8	2.119	66.2	10.6	2	70 (GOOD)
Cazenovia Branch	11	7/25/2022	3.8 (B)	220	7.3	4.238	59.5	9.5	8	60 (GOOD)
Cazenovia Branch	12	7/14/2022	3.6 (B)	125	12.8	4.591	71.4	11.0	8	30 (FAIR)
Cazenovia Branch	13	7/14/2022	3.6 (B)	468	3.4	4.591	64.0	11.0		NA
Mortimer Valley Creek	14	6/22/2022	1.7 (BP)	102	15.7	0.706	65.0	9.6	8	40 (FAIR)
Mortimer Valley Creek	15	6/22/2022	1.4 (BP)	100	16.1	1.059	67.0	9.7	10	0 (VERY POOR)
Seeley Creek	16	6/27/2022	2.3 (BP)	100	16.1	NA	57.9	7.2	6	0 (VERY POOR)
Seeley Creek	17	6/27/2022	3.7 (BP)	125	12.8	NA	64.7	9.0	10	20 (POOR)
Seeley Creek	18	8/9/2022	3.4 (B)	120	13.3	4.944	62.2	10.5	12	30 (FAIR)
Seeley Creek	19	8/9/2022	2.8 (B)	108	14.8	6.003	58.6	9.9	13	20 (POOR)
Seeley Creek	20	7/27/2022	3.4 (B)	115	13.9	6.71	65.5	10.5	15	10 (POOR)
Little Baraboo River	21	8/3/2022	2.1 (BP)	100	16.0	1.059	70.5	7.6	6	70 (GOOD)
Little Baraboo River	22	8/8/2022	5.3 (B)	144	11.2	3.885	65.5	7.6	11	0 (VERY POOR)
Little Baraboo River	23	8/8/2022	5.4 (B)	210	7.7	6.36	66.3	8.7	14	30 (FAIR)
Hay Creek	24	6/15/2022	1.4 (BP)	100	16.1	1.059	68.0	NA	2	50 (FAIR)
Hay Creek	25	6/17/2022	2.7 (BP)	100	16.1	1.766	62.0	7.3	4	50 (FAIR)
Hay Creek	26	6/17/2022	2.6 (BP)	100	16.1	3.885	59.0	9.3	5	30 (FAIR)

1. UNT=Unnamed Tributary
2. Refer to Figure 1 for the mapped location of each site.
3. Gear refers to the electrofishing equipment used to complete the survey; BP = backpack, B = barge.

Table 7. Brown trout CPUE (fish/mile) percentile breakdown for fishery surveys conducted on Class 1 trout streams in the Driftless Area and statewide where at least one trout was collected, 2012-2021.

Percentile	CPUE TOTAL (ALL SIZES)		CPUE AGE-0 (<4.0 INCHES)		CPUE AGE 1 (4.0-7.9 INCHES)		CPUE ADULT (≥ 8 INCHES)		CPUE PREFERRED (≥12 INCHES)	
	Driftless Area	Statewide	Driftless Area	Statewide	Driftless Area	Statewide	Driftless Area	Statewide	Driftless Area	Statewide
10	108.3	39.7	15.1	12.5	27.9	21	40.2	18.9	16.1	10.6
25	323.6	178.4	40.2	32.2	82.6	70.6	128.7	63.8	31.9	20.3
35	492.2	305.9	71.1	58.1	135.6	115	191.6	112.7	42.9	30.3
50 (median)	729.8	537.3	136.1	119.3	229.9	199.2	330.8	205.8	63.2	47.6
65	1121.4	880.6	256.1	247.5	383.2	337.2	509.7	341.9	85.8	72
75	1478.3	1241.7	405.4	402.1	518.8	482.8	677.6	479.2	115	91.4
90	2720	2203.1	856.7	933.5	877.1	836.6	1194.2	864.5	181.5	156.5

Table 8. Brook trout CPUE (fish/mile) percentile breakdown for stream surveys conducted on Class 1 trout streams in the Driftless Area and statewide where at least one trout was collected, 2012-2021.

Percentile	CPUE TOTAL (ALL SIZES)		CPUE AGE-0 (<4.0 INCHES)		CPUE AGE 1 (4.0-6.9 INCHES)		CPUE ADULT (≥7 INCHES)		CPUE PREFERRED (≥10 INCHES)	
	Driftless Area	Statewide	Driftless Area	Statewide	Driftless Area	Statewide	Driftless Area	Statewide	Driftless Area	Statewide
10	15.1	22.9	16.0	16.1	12.4	16.1	12.8	15.3	6.5	5.7
25	53.0	96.6	46.0	45.3	30.5	48.3	30.0	32.2	11.1	10.3
35	107.1	174.7	68.6	72.4	44.9	80.5	47.9	48.3	14.3	12.8
50 (median)	219.9	336.8	128.7	145.3	80.5	149.2	80.5	80.5	16.1	16.4
65	402.3	579.7	209.2	241.4	150.9	257.2	124.0	129.4	29.1	27.5
75	590.1	772.5	321.9	365.5	234.2	366.7	177.7	185.2	37.5	37.4
90	1223.0	1488.4	787.1	812.3	548.7	662.7	347.0	344.0	64.4	64.4

Table 9. Brown trout CPUE (fish/mile) for all sampling locations in the Middle Baraboo River trout stream management group in 2022.

<b>STREAM<sup>1</sup></b>	<b>SITE NUMBER<sup>2</sup></b>	<b>TOTAL CPUE</b>	<b>AGE-0 (&lt;4 INCHES)</b>	<b>Age 1 (4.0-7.9 INCHES)</b>	<b>ADULT TOTAL (≥8 INCHES)</b>	<b>ADULT&lt;PREFERRED (7.0-11.9 INCHES)</b>	<b>ADULT PREFERRED (≥12 INCHES)</b>
UNT McGlynn	1	241.5	128.8	96.6	16.1	16.1	0.0
UNT McGlynn	2	61.3	0.0	30.7	30.7	15.3	15.3
McGlynn Creek	3	305.9	16.1	193.2	96.6	96.6	0.0
McGlynn Creek	4	676.1	128.8	386.3	161.0	161.0	0.0
McGlynn Creek	5	378.8	94.7	208.3	75.8	66.3	9.5
Bauer Valley Creek	6	354.1	144.9	144.9	64.4	64.4	0.0
Bauer Valley Creek	7	277.5	13.9	194.3	69.4	69.4	0.0
Bauer Valley Creek	8	592.4	244.7	257.6	90.1	90.1	0.0
Cazenovia Branch	9	576.8	0.0	523.2	53.7	53.7	0.0
Cazenovia Branch	10	811.9	56.0	433.9	322.0	322.0	0.0
Cazenovia Branch	11	1,163.4	51.2	731.7	380.5	322.0	58.5
Cazenovia Branch	12	90.1	25.8	64.4	0.0	0.0	0.0
Cazenovia Branch	13	677.6	3.4	295.8	378.4	288.9	89.4
Mortimer Valley Creek	14	0.0	0.0	0.0	0.0	0.0	0.0
Mortimer Valley Creek	15	16.1	0.0	16.1	0.0	0.0	0.0
Seeley Creek	16	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	17	64.4	0.0	38.6	25.8	25.8	0.0
Seeley Creek	18	201.2	67.1	134.1	0.0	0.0	0.0
Seeley Creek	19	268.3	29.8	193.8	44.7	44.7	0.0
Seeley Creek	20	238.0	0.0	182.0	56.0	56.0	0.0
Little Baraboo River	21	0.0	0.0	0.0	0.0	0.0	0.0
Little Baraboo River	22	0.0	0.0	0.0	0.0	0.0	0.0
Little Baraboo River	23	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	24	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	25	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	26	0.0	0.0	0.0	0.0	0.0	0.0

1. UNT = Unnamed Tributary
2. Refer to the map in Figure 1 for numbered sampling locations.

Table 10. Mean brown trout CPUE (fish/mile) for streams in the Middle Baraboo River trout stream management group in 2022.

<b>STREAM<sup>1</sup></b>	<b>TOTAL CPUE</b>	<b>AGE-0 (&lt;4 INCHES)</b>	<b>Age 1 (4.0-7.9 INCHES)</b>	<b>ADULT TOTAL (≥8 INCHES)</b>	<b>ADULT&lt;PREFERRED (7.0-11.9 INCHES)</b>	<b>ADULT PREFERRED (≥12 INCHES)</b>
UNT McGlynn	151.4	64.4	63.6	23.4	15.7	7.7
McGlynn Creek	453.6	79.9	262.6	111.1	107.9	3.2
Bauer Valley Creek	408.0	134.5	198.9	74.6	74.6	0.0
Cazenovia Branch	664.0	27.3	409.8	226.9	197.3	29.6
Mortimer Valley Creek	8.0	0.0	8.0	0.0	0.0	0.0
Little Baraboo River	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	193.0	24.2	137.1	31.6	31.6	0.0

Table 11. Brook trout CPUE (fish/mile) for all sampling locations in the Middle Baraboo River trout stream management group in 2022.

<b>STREAM</b>	<b>SITE NUMBER</b>	<b>TOTAL CPUE</b>	<b>AGE-0 (&lt;4 INCHES)</b>	<b>Age 1 (4.0-6.9 INCHES)</b>	<b>ADULT TOTAL (≥7 INCHES)</b>	<b>ADULT&lt;PREFERRED (7.0-9.9 INCHES)</b>	<b>ADULT PREFERRED (≥10 INCHES)</b>
UNT McGlynn Creek	1	0.0	0.0	0.0	0.0	0.0	0.0
UNT McGlynn Creek	2	0.0	0.0	0.0	0.0	0.0	0.0
McGlynn Creek	3	0.0	0.0	0.0	0.0	0.0	0.0
McGlynn Creek	4	0.0	0.0	0.0	0.0	0.0	0.0
McGlynn Creek	5	0.0	0.0	0.0	0.0	0.0	0.0
Bauer Valley Creek	6	193.2	193.2	0.0	0.0	0.0	0.0
Bauer Valley Creek	7	124.9	97.1	13.9	13.9	13.9	0.0
Bauer Valley Creek	8	12.9	0.0	12.9	0.0	0.0	0.0
Cazenovia Branch	9	1,354.9	456.1	818.3	80.5	80.5	0.0
Cazenovia Branch	10	0.0	0.0	0.0	0.0	0.0	0.0
Cazenovia Branch	11	109.8	7.3	58.5	43.9	43.9	0.0
Cazenovia Branch	12	51.5	51.5	0.0	0.0	0.0	0.0
Cazenovia Branch	13	6.9	3.4	0.0	3.4	3.4	0.0
Mortimer Valley Creek	14	177.1	112.7	32.2	32.2	32.2	0.0
Mortimer Valley Creek	15	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	16	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	17	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	18	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	19	0.0	0.0	0.0	0.0	0.0	0.0
Seeley Creek	20	0.0	0.0	0.0	0.0	0.0	0.0
Little Baraboo River	21	1,078.5	418.5	402.4	257.6	241.5	16.1
Little Baraboo River	22	0.0	0.0	0.0	0.0	0.0	0.0
Little Baraboo River	23	38.3	0	7.7	30.7	23.0	7.7
Hay Creek	24	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	25	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	26	0.0	0.0	0.0	0.0	0.0	0.0

Table 12. Mean brook trout CPUE (fish/mile) for streams in the Middle Baraboo River trout stream management group in 2022.

<b>STREAM</b>	<b>TOTAL CPUE</b>	<b>AGE-0 (&lt;4 INCHES)</b>	<b>Age 1 (4.0-6.9 INCHES)</b>	<b>ADULT TOTAL (≥7 INCHES)</b>	<b>ADULT&lt;PREFERRED (7.0-9.9 INCHES)</b>	<b>ADULT PREFERRED (≥10 INCHES)</b>
UNT McGlynn	0.0	0.0	0.0	0.0	0.0	0.0
McGlynn Creek	0.0	0.0	0.0	0.0	0.0	0.0
Bauer Valley Creek	110.3	96.8	8.9	4.6	4.6	0.0
Cazenovia Branch	304.6	103.7	175.4	25.6	25.6	0.0
Mortimer Valley Creek	88.5	56.3	16.1	16.1	16.1	0.0
Little Baraboo River	0.0	0.0	0.0	0.0	0.0	0.0
Hay Creek	372.3	139.5	136.7	96.1	88.2	7.9
Seeley Creek	0.0	0.0	0.0	0.0	0.0	0.0



# Figures

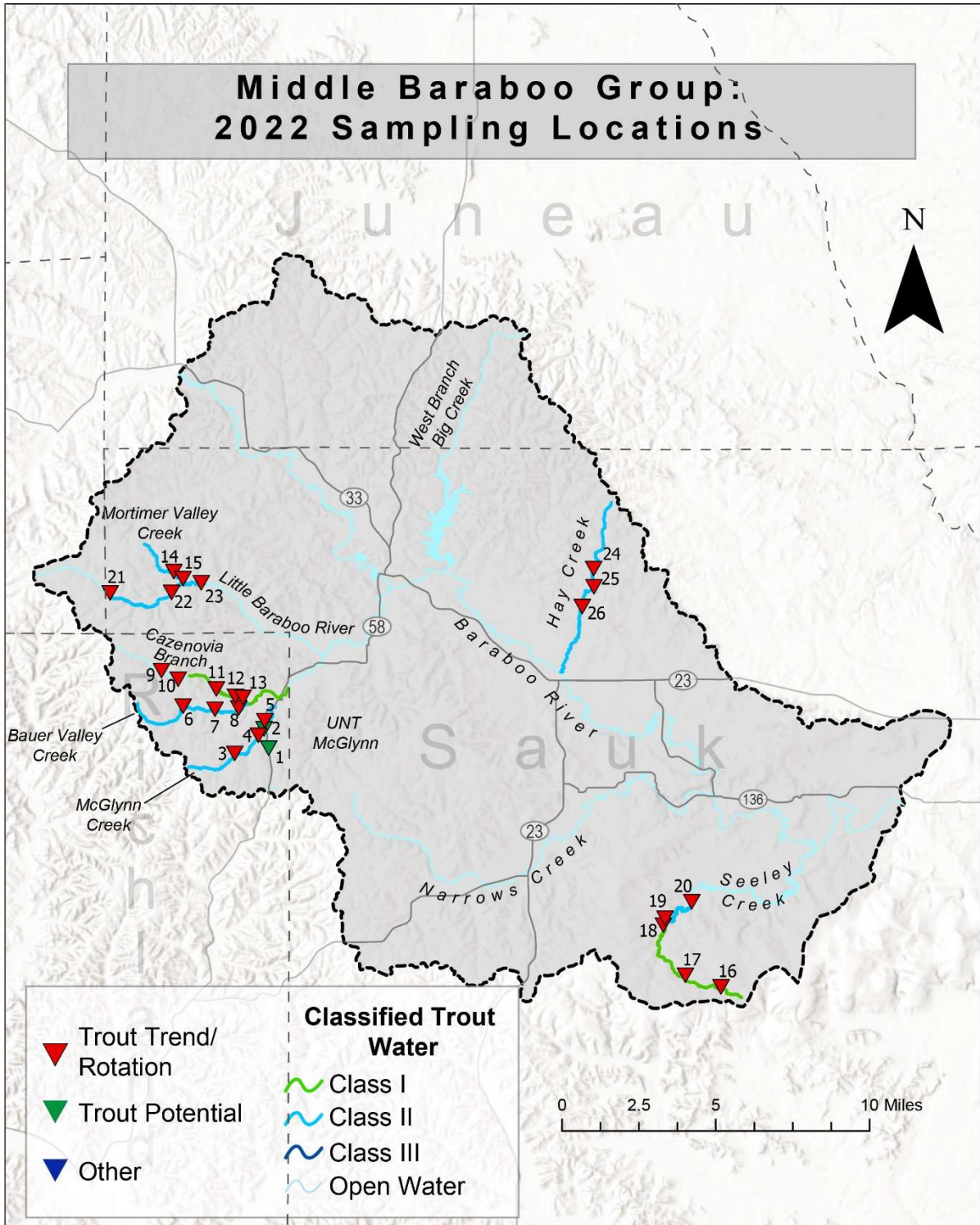


Figure 1. Trout class designations and 2022 fishery survey locations within the Middle Baraboo River planning group.



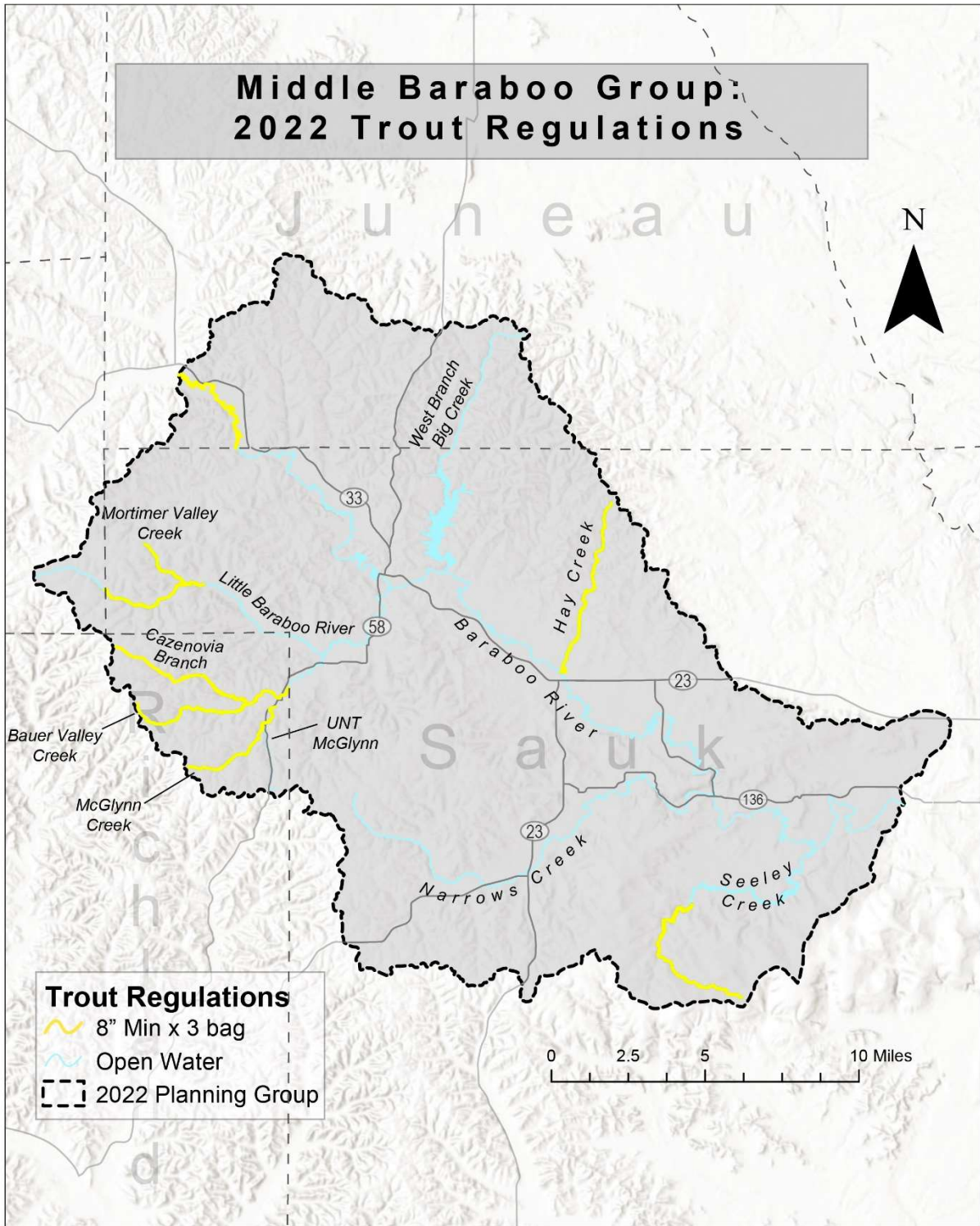


Figure 2. Current trout fishing regulations for classified trout streams in the Middle Baraboo River planning group.

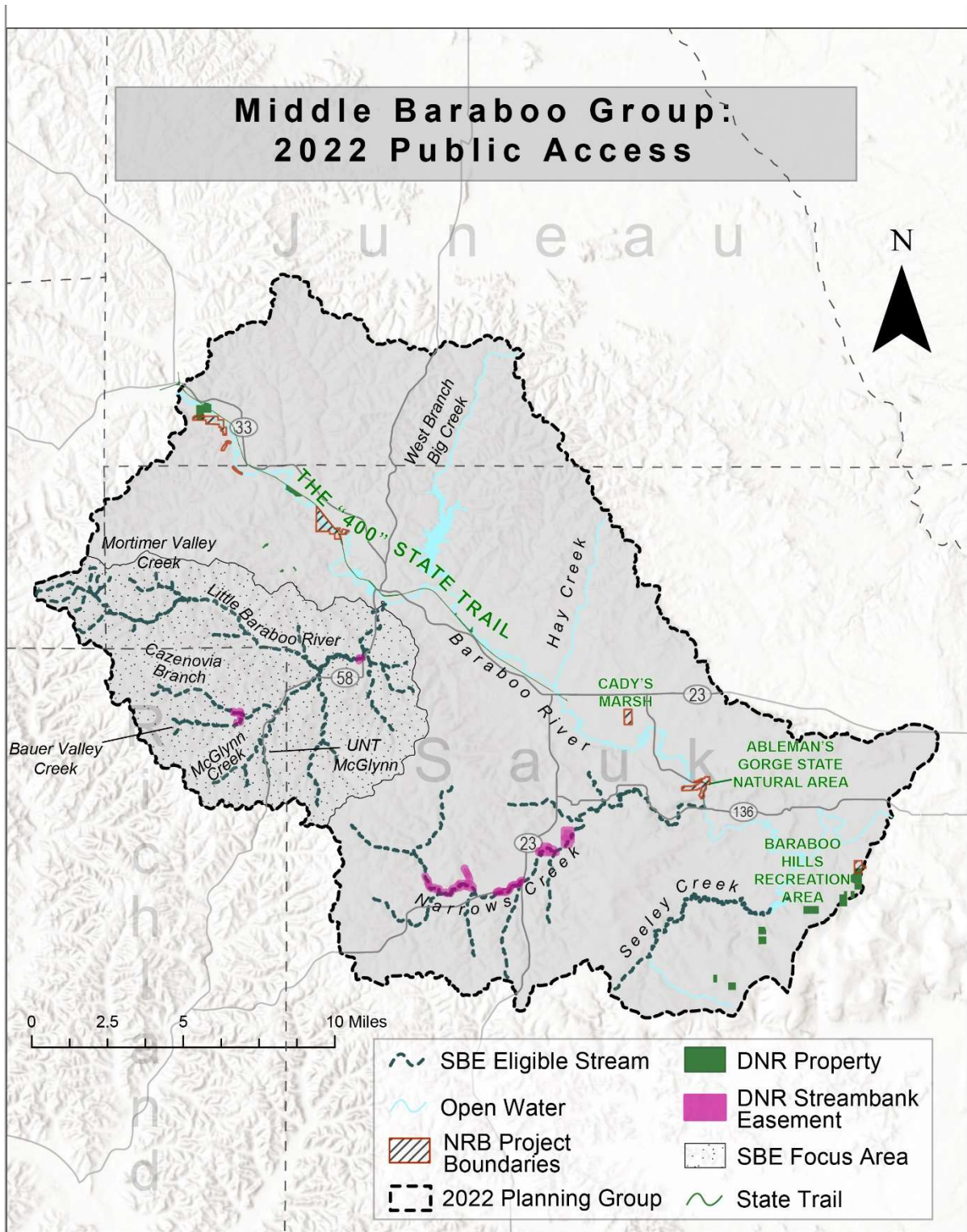


Figure 3. Public land access within the Middle Baraboo River planning group.



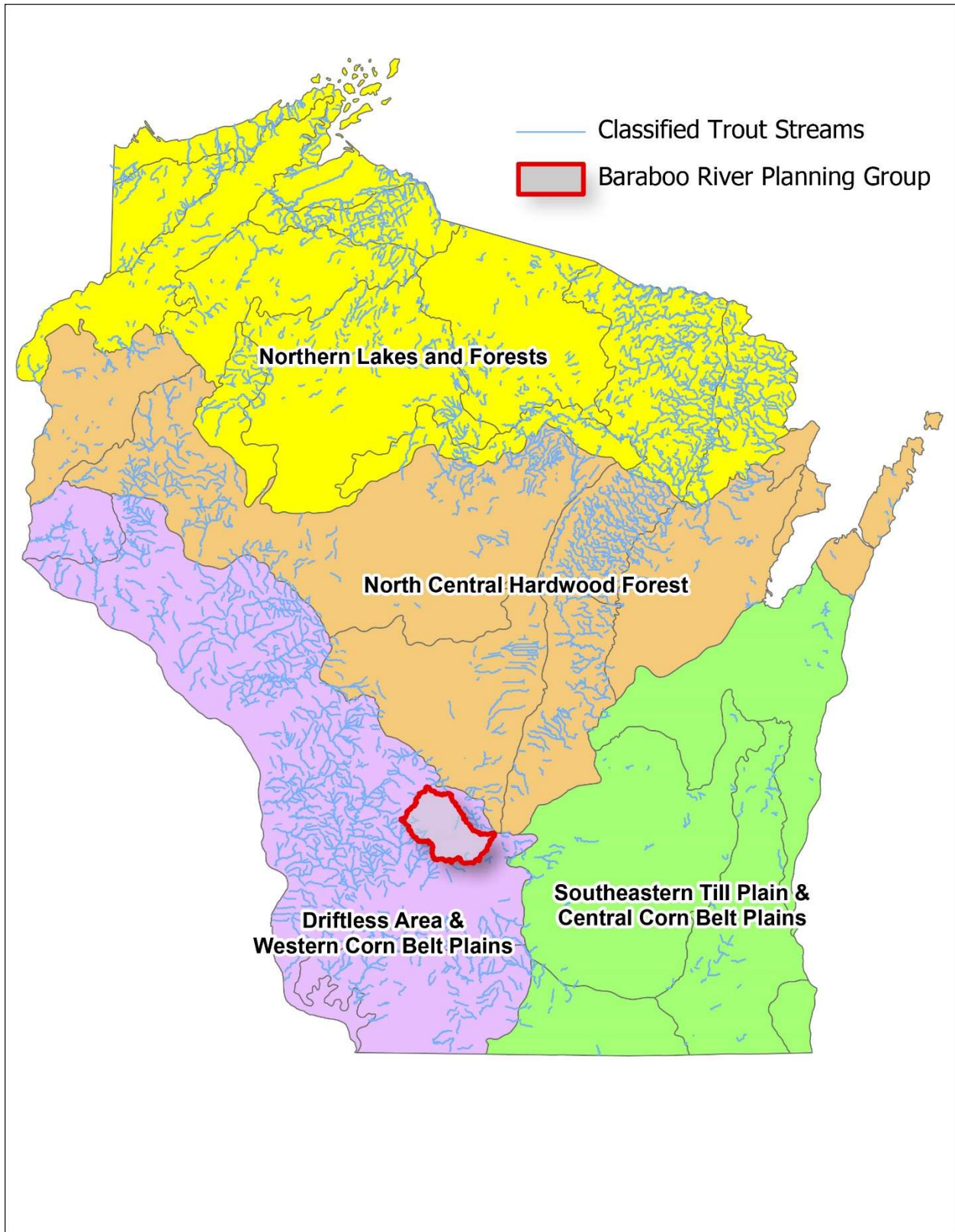


Figure 4. Level III Ecoregions of Wisconsin. The Middle Baraboo River planning group is in the Driftless Area & Western Corn Belt Plains Ecoregion.

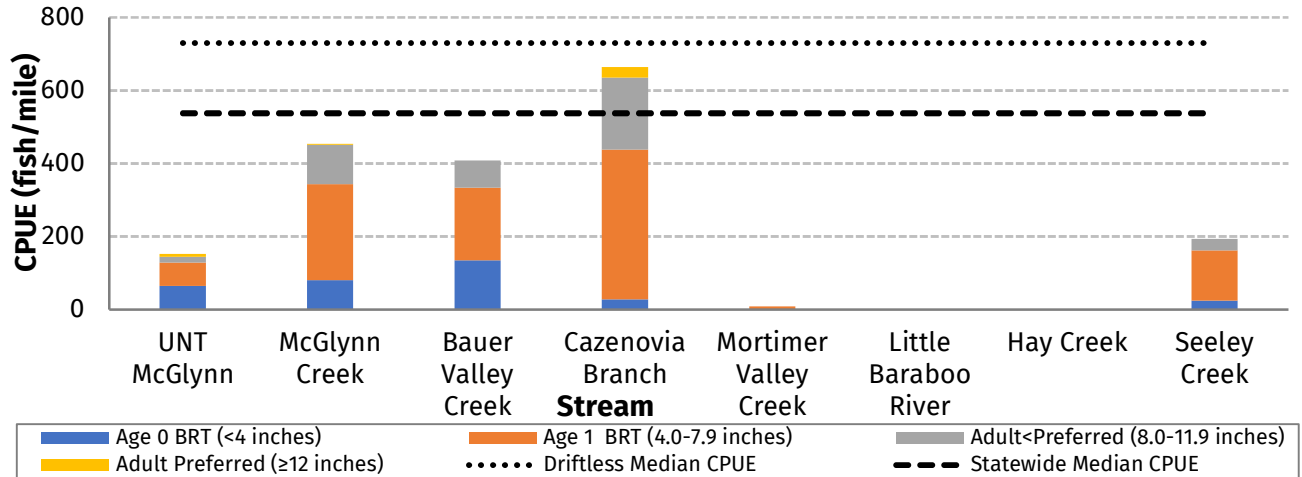


Figure 5. Mean total brown trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022.

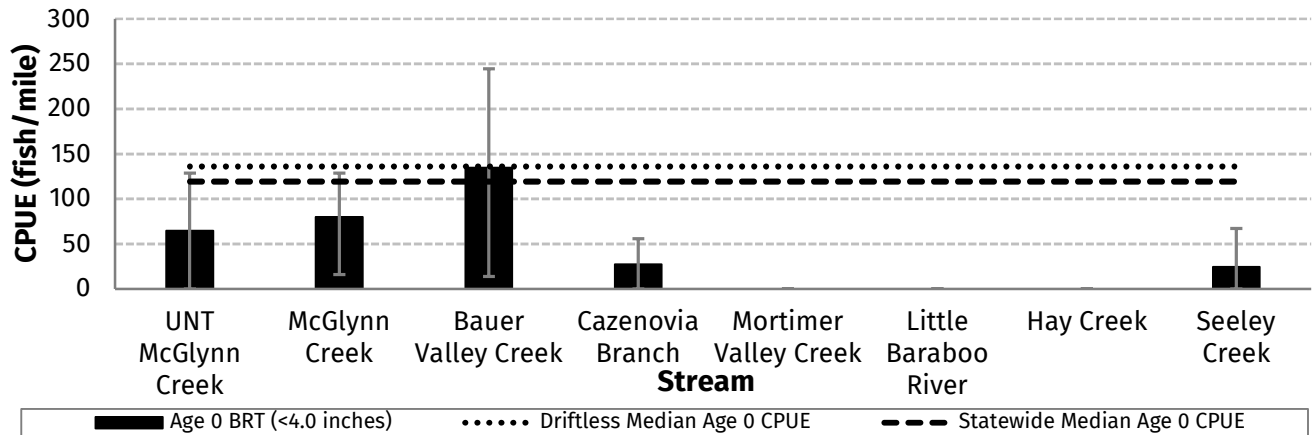


Figure 6. Mean age-0 brown trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream or stream segment.

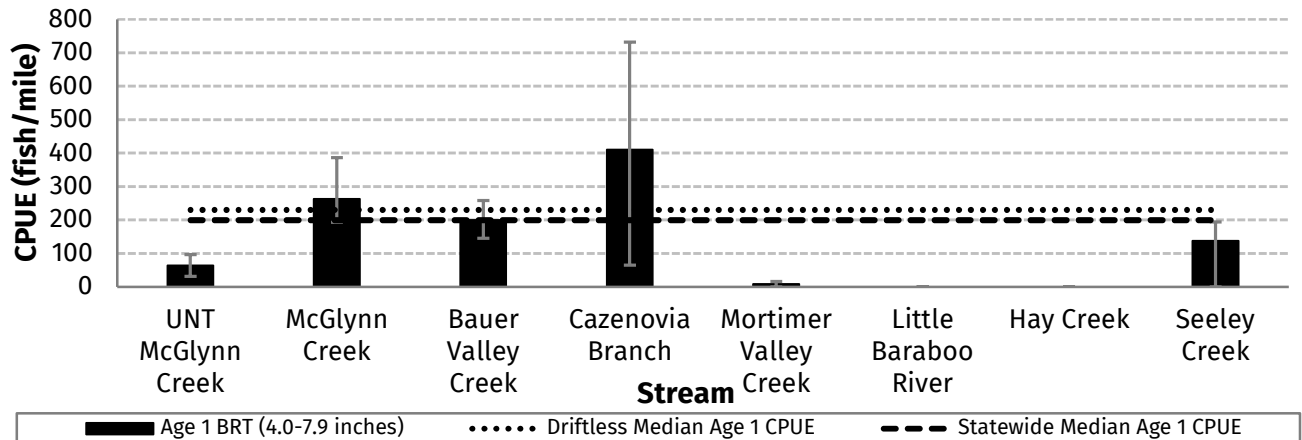


Figure 7. Mean yearling brown trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream or stream segment.

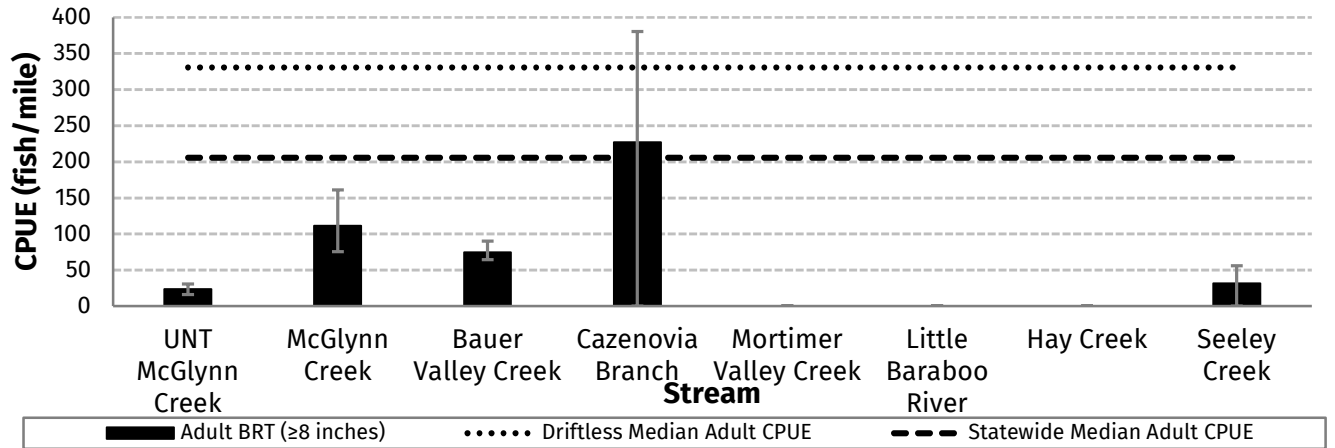


Figure 8. Mean adult brown trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream or stream segment.

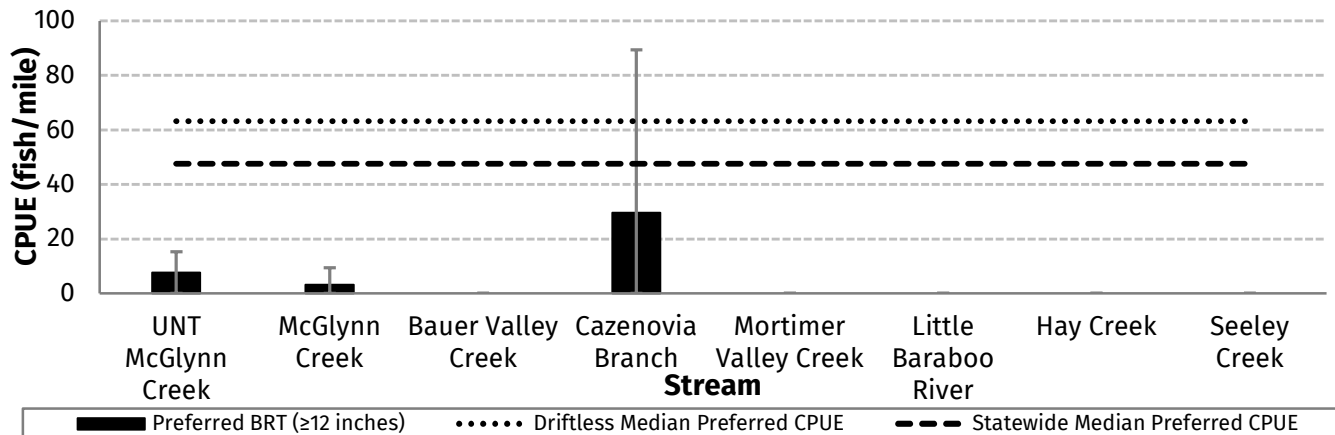


Figure 9. Mean preferred-length brown trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream or stream segment.

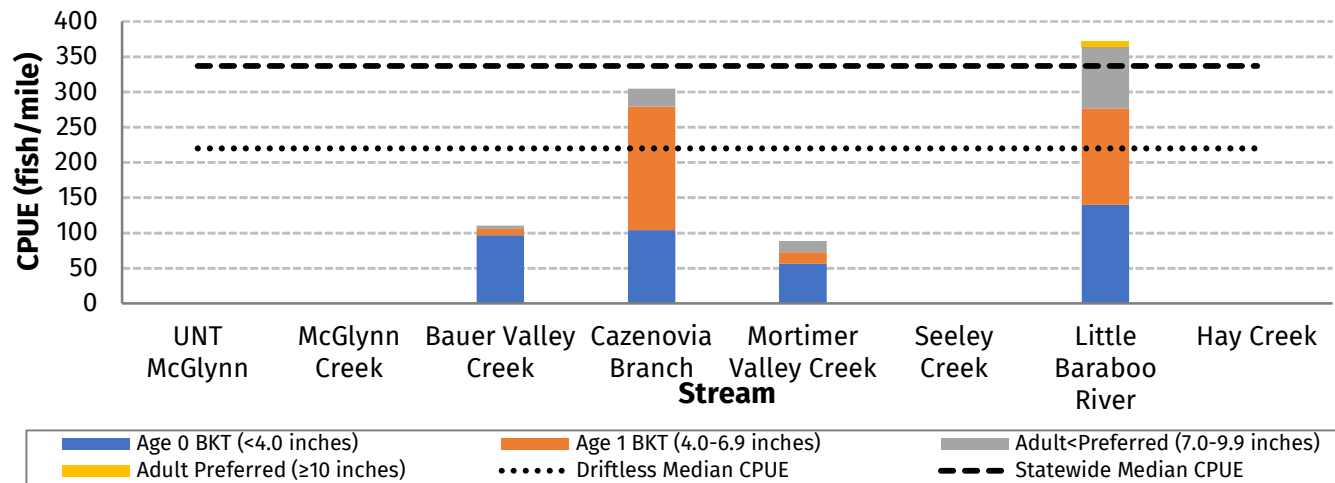


Figure 10. Mean total brook trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022.

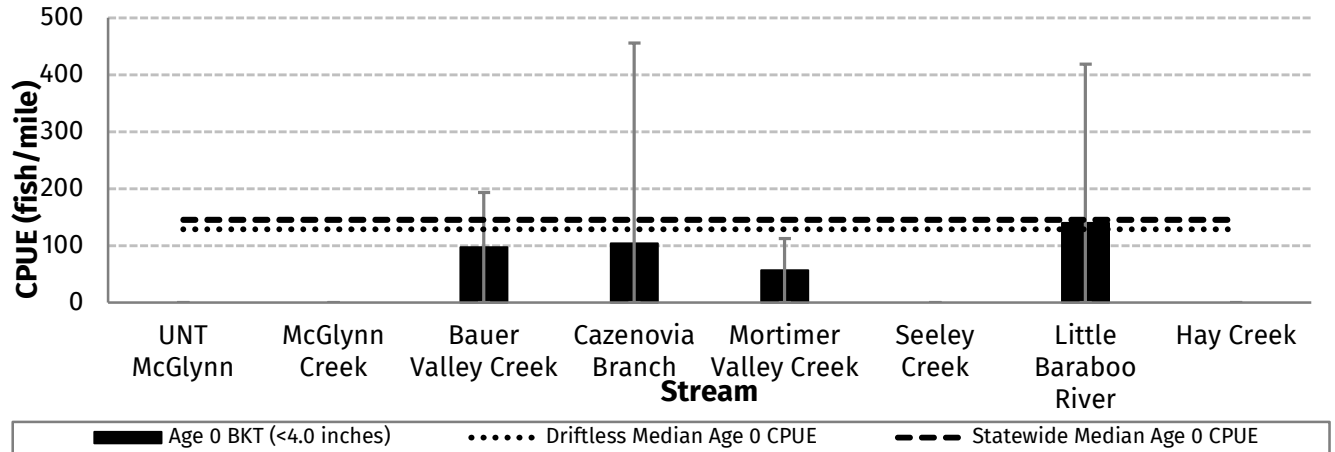


Figure 11. Mean age-0 brook trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream.

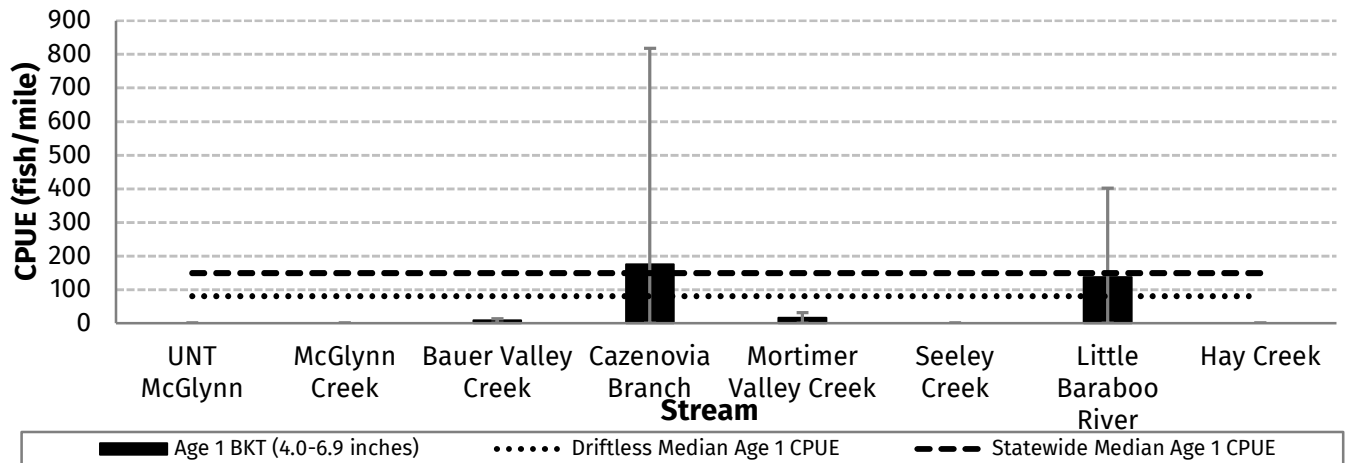


Figure 12. Mean yearling brook trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream.

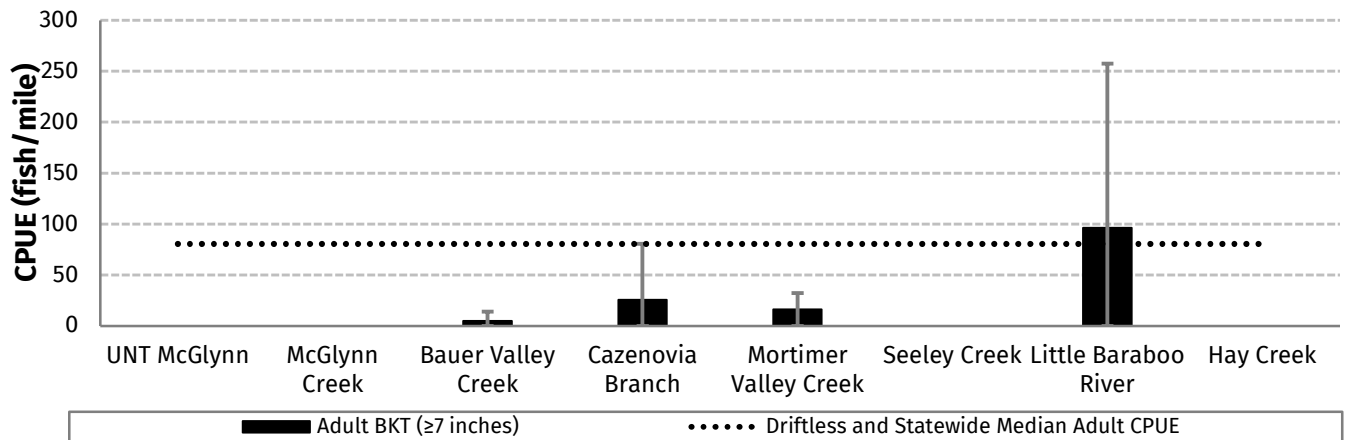


Figure 13. Mean adult brook trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream.

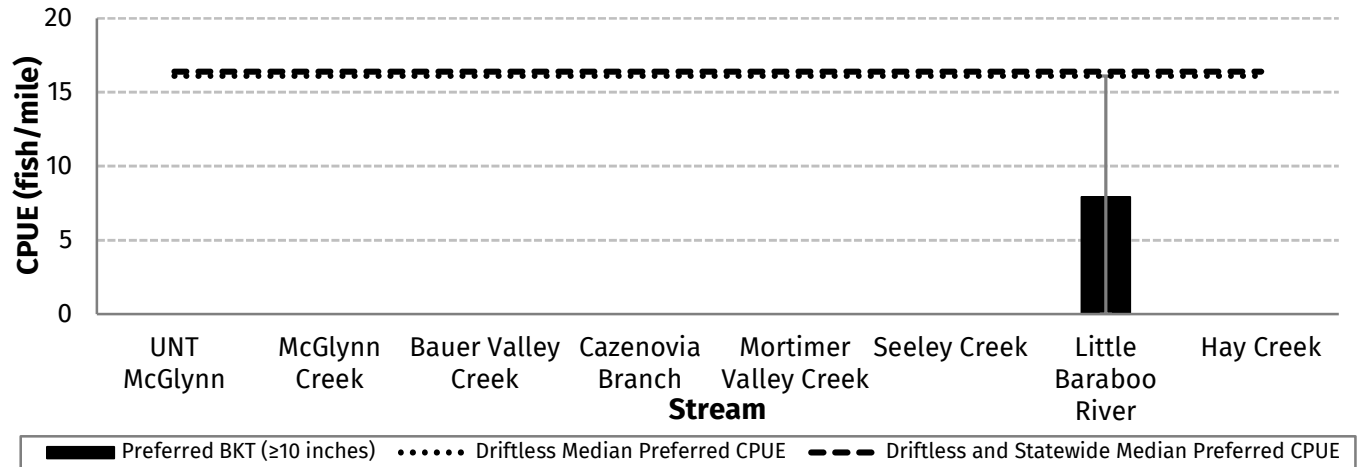


Figure 14. Mean preferred length brook trout CPUE by stream in the Middle Baraboo River trout stream management group in 2022. Error bars represent the range of CPUE values observed for each stream.