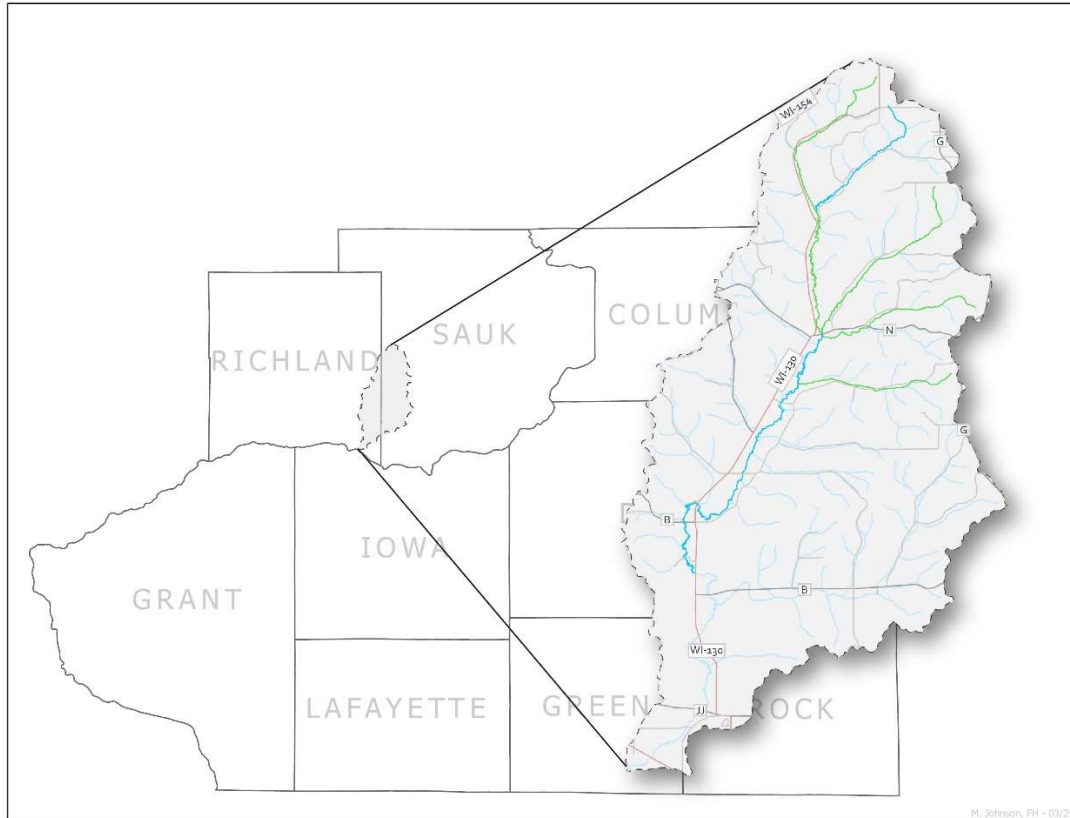


**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**  
**Trout Management and Status of Trout Streams in**  
**the Bear Creek Watershed**

Sauk and Richland Counties, Wisconsin 2024



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JUNE 2025



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## **Executive Summary**

Stream electrofishing surveys occurred at 21 locations on seven streams in the Bear Creek Hydrologic Unit Code 10 (HUC-10) watersheds. No fingerling trout were stocked in any stream in the watershed since 2016. The only stocking that occurred since 2016 in the watershed was annual stocking of small numbers of surplus adult broodstock brook and brown trout in Bear Creek. This allowed for a clear assessment of natural reproduction (age-0; young-of-year) and natural recruitment to age-1 (yearling) trout across the watershed in 2024.

At the time of the 2024 surveys, Bear Creek upstream of County Road N, McCarville Creek, Biser Creek and Marble Creek were Class 1 trout waters. Croal Creek and Bear Creek downstream of County Road N were Class 2 trout waters. Pumpkin Hollow Creek and Four Springs Hollow Creek were unclassified.

Brown trout was the predominant trout species in Bear Creek and Croal Creek, with small numbers of brook trout found in both streams. Brook trout was the predominant trout species found in Biser Creek, Pumpkin Hollow Creek, and Marble Creek with small numbers of brown trout found in each stream. Brook trout was the only trout species found in McCarville Creek. No trout were found in Four Springs Hollow Creek. The Class 1 segment of Bear Creek had the highest mean total brown trout catch rate and the highest mean catch rate for all size classes. Marble Creek had the highest mean total brook trout catch rate and the highest mean catch rate of young-of-year (YOY) and adult fish. McCarville Creek had the highest mean catch rate of yearling brook trout. Few preferred-length brook trout were found in the watershed, with the highest abundance found in the Class 2 segment of Bear Creek. Trout abundance (total and by size classes) varied from low to moderate across the watershed compared to Class 1 streams in the Driftless region and statewide. Trout abundance was higher in 2024 compared to 2018 in the Class 1 and Class 2 segments of Bear Creek, Croal Creek, McCarville Creek and Marble Creek. Trout abundance in Biser Creek was the same in 2024 as in 2018.

## **FUTURE MANAGEMENT RECOMMENDATIONS**

1. Retain current trout fishing regulations on all streams in the watershed.
2. Retain current classifications for all Class 1 and Class 2 trout waters in the watershed.
3. Reclassify Pumpkin Hollow Creek from unclassified to Class 1 from its confluence with unnamed stream 5032456 downstream to the confluence with Bear Creek.
4. Increase DNR easement and fee-title ownership when possible to facilitate water quality improvement, trout habitat improvement projects and to provide additional public access to Bear Creek and its tributaries.
5. Expand the NRB project boundary for Bear Creek Fishery Area during master planning for the Western Coulees and Ridges Ecological Landscape to facilitate

acquisition of property where the impounded reach of Croal Creek is located as well as Bear Creek between County Road N and Croal Hollow Road.

6. Implement a plan for reforestation along the improved segment of Bear Creek to help maintain suitable stream temperatures for trout. Species utilized should be large canopy species like oaks or sycamores.

## **Introduction**

### **WATERSHED LOCATIONS AND DESCRIPTIONS**

Bear Creek is a tributary to the lower Wisconsin River that rises in west-central Sauk County approximately 4.5 miles south of the Village of Lime Ridge. Bear Creek flows south and then southwest for 26.8 miles before entering the Wisconsin River as a 4th order stream on its north bank between the Village of Lone Rock and the unincorporated community of Gotham. Bear Creek drains a watershed of 126.5 square miles (Bear Creek Watershed, LW14), which in the year 2000 was dominated by forest (43.4%), followed by agriculture (31.2%), wetland (11.4%), grassland (10.3%), open water (2.2%), barren (0.9%), and development (0.5%) (Table 1, Ripp et al. 2002). By 2010, it appeared that forested land cover had declined slightly to 41%, agriculture had increased to 45%, and wetlands had declined to around 6% (Table 1, Morton et al. 2010). In general, today row crop agriculture is fairly limited across most of the upper and middle parts of the watershed, and small farms raising pastured beef cattle are common. One small dairy operates along McCarville Creek. Larger farming operations are more common lower in the watershed where valleys are wider, including along lower Bear Creek and Little Bear Creek.

Bear Creek has several coldwater tributaries that are classified trout streams including Croal Creek, McCarville Creek, Biser Creek, and Marble Creek. Other named tributaries include Pumpkin Hollow Creek, Four Springs Hollow Creek, and Little Bear Creek, but these streams are not classified trout water. Biser and Marble Creeks are listed as Exceptional Resource Waters, while Little Bear Creek and lower Bear Creek below the Little Bear Creek confluence are 303d listed as impaired. Bear Creek is known regionally as a popular trout fishing destination, with habitat improvements completed from 2011-2015 between Croal Hollow Road and County Road N helping the stream to draw an increasing amount of attention from anglers. Detailed descriptions of the locations of the streams evaluated in 2024 are provided in Table 2.

### **INDIVIDUAL STREAMS**

Bear Creek is Class 1 trout water for approximately eight miles from its headwater in west-central Sauk County downstream to County Road N. This segment was reclassified from Class 2 to Class 1 following the last watershed evaluation in 2018. Bear Creek transitions to Class 2 trout water from County Road N downstream to its second crossing of State Road 130 in southeastern Richland County (Figure 1). From the lower end of the classified trout water downstream to its confluence with the

Wisconsin River, Bear Creek is a warmwater stream. Bear Creek has an extensive stocking history; fingerling brook trout were stocked in 13 of 18 years from 1983-2000. Fingerling brown trout were stocked in 30 of 34 years from 1983-2016, and yearlings were also stocked in five of six years from 1992-1997. Fingerling Rainbow Trout were stocked in 14 of 20 years during the periods 1991-1997 and 2000-2012. Surplus adult broodstock brown trout were stocked in 28 of 34 years from 1991-2024. Surplus adult broodstock Rainbow Trout were stocked in 21 of 27 years from 1992-2018. Surplus adult broodstock brook trout have been stocked annually since 2016. Bear Creek is currently managed as a brown trout fishery and an annual stocking quota for 2,379 large fingerling brown trout is in place to provide large fingerlings to sustain the population at fishable levels in the Class 2 segment. This quota was not active prior to the 2024 evaluation, however. Beyond that, the surplus brood fish provide additional quality angling opportunities to supplement the fingerling brown trout stockings.

Croal Creek is Class 2 trout water for 3.8 miles from its headwaters to the confluence with Bear Creek just upstream of Croal Hollow Road (Figure 1). Fingerling brook trout were stocked in Croal Creek in eight of 10 years from 1991-2000. Fingerling brown trout were stocked in nine of 10 years from 1991-2000, and from 2010-2016 except for 2012. Trout stocking in Croal Creek ended after the last evaluation in 2018 found insufficient numbers of adult trout to continue stocking. There is a small impoundment on upper Croal Creek which is the likely cause of the stream running warmer than the other classified tributaries to Bear Creek, making conditions more favorable for brown trout as opposed to brook trout.

McCarville Creek is Class 1 trout water for 3.1 miles from its headwaters to the confluence with Bear Creek just upstream of County Road N (Figure 1). McCarville Creek was reclassified from Class 2 to Class 1 following the last watershed evaluation in 2018. Fingerling brook trout were stocked in 23 of 27 years from 1974-2000. Fingerling brown trout were stocked annually from 1976-2000 except for 1997. Stocking is not currently part of the management strategy for McCarville Creek and the brook trout population is sustained by natural reproduction.

Biser Creek is classified Class 1 trout water for 3.86 miles from its headwaters to the confluence with Bear Creek just downstream of County Road N (Figure 1). Fingerling brook trout were stocked in 21 of 28 years from 1973-2000 and fingerling brown trout were stocked in 21 of 25 years from 1976-2000. Stocking is not currently part of the management strategy for Biser Creek, and the brook trout population is sustained by natural reproduction.

Marble Creek is Class 1 trout water for 3.5 miles from its headwaters to the confluence with Bear Creek just upstream of the Sauk/Richland County line (Figure 1). Marble Creek was reclassified from Class 2 to Class 1 following the last watershed evaluation in 2018. Fingerling brook trout were stocked in 18 of 24 years from 1977-2000 and fingerling brown trout were stocked annually from 1973-1985. Stocking is

not currently part of the management strategy for Marble Creek and the brook trout population is sustained by natural reproduction.

Pumpkin Hollow Creek and Four Springs Hollow Creek were two streams evaluated in 2024 that were not evaluated in 2018. Pumpkin Hollow Creek (WBIC 1235800) is unclassified and flows southeast for 2.7 miles from its headwaters in Richland County downstream to the confluence with Bear Creek in Sauk County shortly after crossing State Road 130. The lower 0.2 mile of Pumpkin Hollow Creek flows through Bear Creek Fishery Area. Four Springs Hollow Creek (WBIC 1235500) flows south by southeast from its headwaters in Richland County downstream to the confluence with Bear Creek, crossing County Road T and State Road 130 along the way. Pumpkin Hollow Creek and Four Springs Hollow Creek had no stocking history prior to the 2024 evaluation. Fishery surveys of these two streams prior to 2024 were limited to a single survey of Pumpkin Hollow Creek in 2008.

The current trout fishing regulation for Bear Creek is a 12-inch minimum length limit with a two fish daily bag limit (Figure 2). This regulation has been in place since 2016 and prior to that, the regulation was a 12-inch minimum and two fish daily bag limit except from County Road N upstream to Croal Hollow Road the regulation was catch and release only. The regulation was changed to make the regulation uniform for the entire stream (simplification), and to allow harvest upstream of Highway N where over four miles of contiguous stream habitat improvements occurred from 2011-2015. This massive, multi-stage habitat improvement project was the result of a partnership between Trout Unlimited, DNR, NRCS, Sauk County Conservation, Planning, and Zoning and the riparian landowners, and could not have been accomplished without this cooperative effort. Croal, McCarville, Biser and Marble creeks all have an 8-inch minimum length limit and three fish daily bag limit, which is the county-wide base trout regulation.

Public access to Bear Creek is provided via Bear Creek Fishery Area which includes 762 acres of fee title ownership and 57 acres of streambank easement (Figure 3). Fee title lands are located downstream of County Road N and include land along two of the classified tributaries to Bear Creek; Biser Creek and Marble Creek. Embedded within this part of the Fishery Area are two parcels that make up the Bear Creek Sedge Meadow State Natural Area (SNA), totaling 89.4 acres.

Easement lands are located upstream of County Road N and include over four miles of Bear Creek, approximately 0.3 mile of the lower end of McCarville Creek including the confluence with Bear Creek, and approximately 600 feet of Croal Creek. Infrastructure at the Fishery Area is minimal and there are no developed parking areas, but there is an area along State Road 130 north of County Road N where the shoulder was widened by the Wisconsin Department of Transportation (WISDOT) so that vehicles may pull off the road and park. Two walk-in access easements also exist along State Road 130 upstream of County Road N to allow anglers access to the stream corridor from the highway. Elsewhere on the Fishery Area, anglers can park

along roadways and access the stream at bridge crossings. Downstream of County Road N most of Bear Creek Fishery Area is not conducive to constructing parking areas due to the prevalence of wetlands. Beyond that, infrastructure is limited to boundary postings. A local snowmobile club, the Plain Hillcrest Riders, has an active Snowmobile Land Use Permit for their trail to cross part of Bear Creek Fishery Area in Sauk and Richland counties. Annual renewal of this agreement has been overseen by the DNR Wildlife Biologist for Sauk County.

## **Methods**

### **SURVEY EFFORT**

Summer stream electrofishing sampling at trend, rotation and trout potential sites in 2024 spanned from June 17 through Aug. 20, and the sampling locations, site metrics and gear used are described in Tables 3 and 4. Surveys were completed to assess current trout populations and inform trout classifications (if it's correct or if reclassification is needed) and future management (stocking, regulations, habitat, land acquisition) of the streams. Three sites on Bear Creek are surveyed every year (trend), and an additional two sites on Bear Creek have been surveyed annually in recent years to evaluate the response of the trout population to a habitat improvement project. Four sites on Bear Creek, and two sites each on Croal Creek, McCarville Creek, Biser Creek and Marble Creek are surveyed every six years (rotational). Two sites each on Pumpkin Hollow Creek and Four Springs Hollow Creek were surveyed in 2024 to assess trout potential. The timing of sampling attempted to match the dates of surveys in previous years as closely as possible. Of the 21 stream sites sampled, 14 were surveyed with a backpack electrofishing unit and seven (all on Bear Creek) 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 (YOY) 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 and is reported in cubic feet per second (cfs). Dissolved oxygen was measured using a handheld YSI Pro 2030 meter. Stream temperature, specific conductivity, pH, total dissolved solids and salinity were measured during surveys 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

2024 were <10 m in width. Continuous temperature monitoring occurred in 2024 at three locations on Bear Creek (trend monitoring, year-round), and at one location each on Pumpkin Hollow Creek, Four Springs Hollow Creek and Little Bear Creek (trout potential, summer and fall only). Stream temperature was recorded every 30 minutes using a HOBO Water Temp Pro v2 temperature logger. The mean July stream temperature, maximum July stream temperature and mean July daily maximum stream temperature were then calculated for each location, and data are presented in Table 5.

## **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 these 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 YOY, in a non-stocked year. Natural recruitment is indicated by the presence of age-1 fish, also called 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 Bear Creek watershed from 2016-2023 or prior to fishery surveys in 2024 to allow for evaluation of natural reproduction and recruitment in 2024.

The YOY trout catch rates in 2024 were thus indices of natural reproduction, while the age-1 catch rates in 2024 served as indices of natural recruitment to the fisheries of the respective streams. Adult fish ( $\geq 7$  inches for brook trout,  $\geq 8$  inches for brown trout) sampled in 2024 were fish  $\geq 2$  years of age from natural reproduction or that occurred in 2022 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 (< 4.0 inches), yearlings (4.0-7.9 inches for brown trout and 4.0-6.9 inches for brook trout) and adults (age  $\geq$  two 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) and 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 6 and 7 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, those 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, 21 stream sites were sampled on seven streams (eight total stream segments) within the Bear Creek watershed in 2024. Data are presented for both individual stream sites (tables) as well as whole streams or stream segments (average CPUE for all sites on a given stream; tables and figures) for regional and statewide comparisons. Results are reported separately for the Class 1 and Class 2 segments of Bear Creek. At least one trout was found at every sampling location except no trout were found at either sampling location on Four Springs Hollow Creek.

### BROWN TROUT

Brown trout were found in five of the seven streams and at 14 of 21 sampling locations in the Bear Creek watershed. Brown trout were absent from McCarville Creek and Four Springs Hollow Creek. Please refer to Tables 8 and 9 and Figure 5 for mean brown trout catch rates for all size classes for each stream. The Class 1 portion of Bear Creek had the highest mean total brown trout catch rate of all streams or stream segments in the watershed. On a regional and statewide scale, total brown trout abundance was low to moderate across the watershed, placing below median

catch rate values in every stream except the Class 1 segment of Bear Creek. Young-of-year brown trout were found in all streams that contained brown trout except Biser Creek, and YOY abundance in those streams ranged from low to moderate, except in the Class 1 segment of Bear Creek, where abundance was high. Mean YOY brown trout catch rates for each stream are presented in Figure 6.

Yearling brown trout were found in three of five streams that contained brown trout; abundance was low in Croal Creek and Marble Creek, and moderate in the Class 1 segment of Bear Creek. Mean yearling brown trout catch rates for all streams are presented in Figure 7. Adult brown trout were found in four of five streams that contained brown trout, and adult abundance was low in every stream except for the Class 1 segment of Bear Creek, where abundance was moderate (Figure 8). Preferred-length brown trout were found in two of five streams that contained brown trout, and abundance ranged from low in Croal Creek and the Class 2 segment of Bear Creek to moderate in the Class 1 segment of Bear Creek (Figure 9).

## **BROOK TROUT**

Brook trout were found in six of the seven streams and at 14 of 21 sampling locations in the Bear Creek watershed. Please refer to Tables 10 and 11 and Figure 10 for brook trout catch rates for all size classes from all sampling locations, as well as averages for each stream. Marble Creek had the highest mean total brook trout catch rate, followed by McCarville Creek, Pumpkin Hollow Creek, the Class 1 segment of Bear Creek, Biser Creek, the Class 2 segment of Bear Creek and Croal Creek. On a regional and statewide scale, total brook trout abundance was moderate to high in Marble Creek, moderate in McCarville Creek and low in the remaining streams where brook trout were found. YOY brook trout were found in Marble Creek, McCarville Creek, Pumpkin Hollow Creek and the Class 1 segment of Bear Creek. YOY abundance in those streams ranged from low to moderate, except in Marble Creek where abundance was high. Mean YOY brook trout catch rates for each stream are presented in Figure 11.

Yearling brook trout (Age 1; 4.0-6.9 inches) were found in Marble Creek, McCarville Creek, Biser Creek, and the Class 1 segment of Bear Creek. Yearling abundance in those four streams ranged from low to moderate. Mean yearling brook trout catch rates are presented in Figure 12. Adult brook trout ( $\geq 7$  inches) were found in all six streams that contained brook trout, and abundance was highest in Marble Creek. Mean adult brook trout catch rates ranged from low to moderate and are presented in Figure 13. Preferred-length brook trout ( $\geq 10$  inches) were only found in the Class 1 and Class 2 segments of Bear Creek and in both cases abundance was low. Mean preferred-length brook trout catch rates are presented in Figure 14.

# Discussion

## BEAR CREEK

Sampling in 2024 found the highest total abundance of brown trout in the Class 1 segment of Bear Creek out of seven streams or stream segments in the watershed where brown trout were found. This was true for all size classes of brown trout. Brown trout were found at all nine sampling locations on Bear Creek, but abundance was far higher in the Class 1 segment compared to the Class 2 segment. Total brown trout catch rates at three of six sampling locations in the Class 1 segment were above median values for the Driftless region and statewide. Catch rates at the other Class 1 sampling locations were low to moderate, while the catch rates at all three Class 2 sampling locations were low. Brown trout abundance in Bear Creek was the highest in the middle and upper portion of the Class 1 segment. In regional and statewide comparisons, the mean YOY brown trout abundance in the Class 1 segment of Bear Creek was high, while abundances of yearling, adult and preferred-length fish were all moderate. Levels of natural reproduction and recruitment as well as adult abundance are all consistent with other Class 1 streams in the area, and no change in classification for the Class 1 segment of Bear Creek is warranted.

By contrast, mean catch rates of YOY, yearling, adult and preferred-length brown trout in the Class 2 segment of Bear Creek were all low. YOY brown trout were especially scarce, with just a single individual found at one sampling location. Yearling abundance wasn't much better. Adult brown trout abundance in the Class 2 segment, while low, did exceed the minimum fishable population standard of 50 fish/mile (53.1 fish/mile), and abundance of preferred-length brown trout was second highest of any stream or stream segment in the watershed. The Class 2 segment of Bear Creek does not contain suitable habitat to support levels of natural reproduction and recruitment of trout needed to produce a Class 1 fishery. It is relatively low gradient and lacks rock and gravel substrate needed for spawning and rearing early life stages of trout. However, the Class 2 segment does have suitable habitat for larger trout including plenty of space, cover and flow volume of cold water. The current Class 2 segment of Bear Creek is correctly classified, and no changes are needed. Fingerling brown trout were not stocked in Bear Creek between the last watershed evaluation in 2018 and the 2024 evaluation, and there are no plans to resume stocking. Trout that recruit from better habitats further upstream will continue to populate lower Bear Creek in low abundance. Public access to much of the Class 2 segment of Bear Creek is available through Bear Creek Fishery Area and increasing numbers of catchable trout in that part of the stream would provide better fishing opportunities for users of the property.

In terms of brook trout, sampling in 2024 found low total abundance of brook trout in Bear Creek with slightly higher abundance in the Class 1 segment compared to the Class 2 segment. The highest numbers of brook trout were found at sites 1 and 2, both upstream of Croal Hollow Road, representing the nearest sampling locations to the

headwaters of the stream. Total abundance at sites 1 and 2 was moderate, with low to moderate abundance of YOY, yearling and adult brook trout. Brook trout were only occasionally collected from the remainder of Bear Creek (sites 3-9). Increases in brown trout abundance in the improved segment of Bear Creek between County Road N and Croal Hollow Road may have reached the carrying capacity of that segment and led brown trout to spread out and seek new living areas upstream where they are now outcompeting brook trout and contributing to reduced brook trout abundance. While variable from year to year, overall increases in brown trout abundance at trend monitoring locations (sites 2, 3 and 5) has coincided with an overall decrease in brook trout abundance at site 2 (Figures 15-18). All trend monitoring locations are in the Class 1 segment of Bear Creek.

Suggestions for land acquisition and habitat protection and improvement largely haven't changed since 2018. Upstream of County Road N, efforts should focus on acquisition of new streambank easements. The valley is relatively narrow and steep in this section of Bear Creek, and as such, negative impacts to the stream from row crop agriculture are almost non-existent. The main challenge to the health of the stream on upper Bear Creek is damage to the banks from cattle pastured in the stream corridor. Acquiring easements along upper Bear Creek would expand fishing access and allow DNR to take a more active role in streambank protection, specifically excluding cattle from the stream corridor or possibly working with landowners to install areas for cattle to safely cross the stream to limit damage from cattle along the banks. If an easement could be acquired, the segment of Bear Creek on the property immediately upstream from the current DNR easement would be a good candidate for intensive DNR trout habitat projects funded by trout stamp money. The upper end of the current DNR ownership is where habitat improvements have yielded the greatest improvement in brown trout abundance and size structure. However, to date the landowner has been unwilling to sell an easement to DNR. Upstream of the confluence of Croal Creek and Bear Creek, streambank easement acquisition is recommended as opportunities allow. However, implementing intensive habitat measures along this relatively high gradient segment with good rock and gravel substrate that would likely benefit brown trout at the expense of the existing brook trout population is not recommended.

Further downstream along DNR easements where large-scale in-stream habitat improvements have already been completed, there is an opportunity for further habitat improvement measures to be implemented. Stream temperature monitoring in summer 2024 found mean daily maximum July temperatures at two locations in the improved segment of Bear Creek were around 9°F warmer than at the monitoring location in the forested segment of upper Bear Creek (Table 5). Additionally, mean daily maximum July stream temperatures at the two locations in the improved segment were very close to the 69°F threshold for being considered a coldwater stream in Wisconsin. The improved segment flows through nearly 4 miles of flat, open land with almost no tree cover to shade the stream. This segment could benefit from a reforestation project like efforts underway on DNR lands along streams in nearby

Richland and Iowa counties. At those sites, trees (mostly oaks) have been planted at intervals along stream banks with protective fencing to limit deer browsing. Once mature, the trees will provide areas of shade to help keep the stream cold as it flows through an otherwise open area. Species like oaks produce a large canopy from a single tree, while not rapidly colonizing a stream corridor or providing a food source for beavers along the creek. These reforestation efforts have been funded with Trout Stamp money, and planting efforts have been assisted through workdays with Trout Unlimited and other groups. Duplicating these efforts at Bear Creek will help to ensure that trout population improvements resulting from earlier habitat projects are not lost to warming waters that make the stream less suitable for trout.

## **CROAL CREEK**

Sampling in 2024 found the second-highest total abundance of brown trout in Croal Creek out of seven streams or stream segments in the watershed where brown trout were found. Croal Creek was the only stream in the watershed besides Bear Creek where brown trout outnumbered brook trout. A single adult brook trout was collected from site 10, the upper sampling station on Croal Creek. The stream had the second-highest abundance of YOY, yearling and adult brown trout in the group after the Class 1 segment of Bear Creek, and the third-highest abundance of preferred-length fish after the Class 1 and Class 2 segments of Bear Creek. Mean total brown trout abundance in Croal Creek was low to moderate based on regional and statewide comparisons. When broken down by size classes, abundance of YOY brown trout was moderate, and yearling, adult and preferred-length abundances were low in regional and statewide comparisons.

The mean total brown trout catch rate in Croal Creek in 2024 was more than double what it was in 2018 indicating an increase in abundance, despite the stream not being stocked since 2016. It should be noted that flow rates in Croal Creek in 2024 at the two sampling locations were three to five times higher than they were in 2018. Sampling in 2024 occurred after a period of heavy precipitation in late June and early July, and all area creeks were running higher than normal through much of July. Higher flows equated to more space and suitable habitat for trout in tributaries to Bear Creek. This may have provided refuge for trout migrating up from Bear Creek while seeking refuge from flooding in early July. This could explain, at least partially, the dramatic increase in brown trout abundance in Croal Creek in 2024 compared to 2018.

In any case, brown trout abundance and levels of natural reproduction and recruitment in Croal Creek are well below most Class 1 streams in the Driftless Area, and the current Class 2 designation is correct. Past stocking efforts did not produce a fishable brown trout population. That fact, combined with limited public access and the thermal impairments from an upstream impoundment led to discontinuation of stocking after the 2018 evaluation. The 2024 data indicated that Croal Creek can produce a brown trout fishery as good or better without stocking as with it, and it is

not recommended to resume stocking now. The current trout fishing regulation for Croal Creek sufficiently protects trout to adult size while allowing some harvest of adult fish and a regulation change is not recommended.

Recommendations for land acquisition along Croal Creek haven't changed since 2018. Fee title acquisition of the property near the headwaters of Croal Creek with the impoundment on it would be the top priority to facilitate removal of the impoundment and the warming effect it has on both Croal Creek and Bear Creek. This thermal impairment is likely the primary reason that Croal Creek is the only Bear Creek tributary that does not have brook trout as the dominant trout species. While the current NRB project boundary for Bear Creek Fishery Area includes the stream corridor and the impoundment, fee title acquisition of the entire parcel on which the impoundment is located may be necessary to facilitate removal. To make this acquisition possible, the NRB project boundary is being explored as part of the master planning process for the Western Coulees and Ridges Ecological Landscape, to include the entire parcel where the impoundment is located, not just a narrow band along the stream corridor which is the current acquisition boundary.

Croal Creek is small, but it has a relatively high gradient, more rock and gravel substrate and fewer adjacent wetlands than the other Bear Creek tributaries. As such, it would likely rank as a higher priority for intensive trout habitat projects paid for by DNR trout stamp funds than any of the tributaries if the impoundment and its thermal impacts are removed. Acquisition of easements upstream of the existing easement on the Nelson property (the second property upstream of the Croal-Bear confluence) would give DNR habitat staff a suitable length of stream to work with. Also, easement acquisition would serve to protect the stream corridor from further degradation and provide angler access. Bank stabilization projects that incorporate additional trout habitat practices designed by Sauk County or NRCS staff in cooperation with private landowners, such as the one completed recently on the Olson property (first property upstream of the Croal-Bear confluence) are encouraged, with one lengthy project already completed on private land along lower Croal Creek after the last evaluation in 2018.

## **MARBLE CREEK**

Marble Creek had the fourth-highest mean total abundance of brown trout out of seven streams or stream segments in the watershed where brown trout were found. Brown trout were not found in Marble Creek in the last watershed evaluation in 2018. Mean total brown trout abundance in Marble Creek was low in regional and statewide comparisons and the same was true for each size class of brown trout. Brook trout was the dominant trout species in Marble Creek, which had the highest mean total brook trout abundance out of seven streams or stream segments in the watershed where brook trout were found. Marble Creek had the highest abundance of YOY and adult brook trout in the watershed, and the second highest abundance of yearling brook trout. In regional and statewide comparisons, mean total brook trout



abundance was moderate to high, YOY abundance was high, and yearling and adult abundance were moderate.

The mean total brook trout catch rate in Marble Creek was over 4 times higher in 2024 compared to 2018 (515.1 vs. 120.7 fish/mile), and this was largely due to a nearly seven-fold increase in abundance at the upper sampling location. The increase in abundance was evident for all size classes, but the increase was greatest for YOY which saw the mean catch rate increase from 56.3 fish/mile in 2018 to 338.0 fish/mile in 2024. Flow volume at the upper sampling location was 2.1 cfs in 2024 compared to 0.3 cfs in 2018, and this increase in flow and corresponding increase in available trout habitat may help explain the increase in brook trout abundance in Marble Creek.

In any case, total brook trout abundance and levels of natural reproduction and recruitment in Marble Creek compare favorably with other Class 1 streams in the Driftless Area and statewide, and the current Class 1 designation for Marble Creek is correct. The stream has not been stocked since 2000, and there is no need to stock trout there now. The current fishing regulation protects brook trout to adult sizes while also allowing some harvest and should remain unchanged.

Currently DNR ownership exists along lower Marble Creek via approximately 0.6 miles of fee title ownership and 0.3 miles of easement ownership. Attempts at further land acquisition along Marble Creek should focus on lands with no DNR ownership downstream of where Marble Creek crosses Marble Quarry Road. The stream is mapped as intermittent beginning approximately 0.1 mile upstream of Marble Quarry Road, and as such, acquisition effort would be better focused further downstream in the perennial segment. The primary goal of acquisition would be for angler access and to prevent further degradation of the streambanks. Undertaking an intensive trout habitat improvement project on Marble Creek would be difficult due to the small size of the stream, its low gradient, and the prevalence of wetland areas adjacent to the stream.

## **MCCARVILLE CREEK**

Brook trout were the only trout species collected in surveys of McCarville Creek in 2024. The stream had the second-highest mean total abundance of brook trout out of seven streams or stream segments in the watershed where brook trout were found. McCarville Creek had the second highest abundance of YOY and adult brook trout in the watershed, and the highest abundance of yearling brook trout. In regional and statewide comparisons, mean total brook trout abundance was moderate, and the same was true for YOY, yearling, and adult abundance. Preferred-length brook trout were not found in McCarville Creek.

Mean total brown trout abundance in 2024 showed a marked increase from 2018 (217.3 fish/mile vs. 80.5 fish/mile), and increases in abundance were evident for all size classes. Most brook trout were collected at the upper sampling location (site 12)

compared to just a few trout collected at the downstream location (site 13). This was like past surveys in 2008, 2012 and 2018 when all brook trout were collected at the upper site and few or zero brown trout (and zero brook trout) were collected from the lower site. Additionally, catches of species that are intolerant of poor conditions like mottled sculpins are typically high at the upper site (n = 101 in 2024) compared to the lower site (n = 2 in 2024), with the lower site typically having higher catches of species that are tolerant of poor conditions like brook stickleback and central mudminnow in the catch. Reasons for the disparity include poor physical habitat at the lower site (wide, shallow, sand bottom and minimal cover) along with suspected impacts to water quality from a dairy farm located directly on the creek in between the two sampling locations. A manure-related fish kill in lower McCarville Creek was confirmed in August 2022 after the failure of a manure storage facility on the farm led to the discharge of several thousand gallons of manure that flowed directly into the creek. Other more frequent small-scale manure inputs to the stream likely occur, particularly during rain events, due to the creek flowing directly through the cow lot at the farm.

McCarville Creek was not stocked after the year 2000 and the 2018 evaluation confirmed the presence of a self-sustaining brook trout population in this small stream. Following that evaluation, McCarville Creek was upgraded from Class 2 to Class 1 status in 2021. Based on data collected in 2024, McCarville Creek compares favorably with other Class 1 streams, especially when considering its small size. The Class 1 status is correct, and no change is needed. Stocking is not needed to maintain the trout population. The current regulation protects trout to adult size while also allowing some harvest, and there is little angling pressure due to the small size of the stream and relative lack of public streambank access. Harvest is likely very low and no change to the current regulation is recommended.

Current DNR ownership includes easement on approximately 0.3 mile of lower McCarville Creek, including the confluence with Bear Creek. The DNR easement segment of lower McCarville Creek was improved together with the final phase of Bear Creek improvements in 2015. Land acquisition efforts along McCarville Creek should seek to acquire easement ownership on the stream segment running through the dairy farm. Elimination of this source of manure input would positively impact McCarville Creek and the Bear Creek watershed and places a high priority on this acquisition. Additional streambank easement acquisition downstream of the dairy would serve to protect stream banks in areas of intensive row-crop agriculture and could prevent further degradation while also providing angler access. Downstream of the lower crossing of McCarville Road, the creek enters a forested wetland where beaver activity impacts the creek on occasion. Acquisition of streambank easements along this part of the creek would help DNR to better address beaver issues on lower McCarville Creek. McCarville Creek would rank as a relatively low priority for intensive DNR trout stamp funded habitat projects based on the small size of the waterbody (limited return on habitat investment), low gradient on the lower end of the creek, and the prevalence of adjacent wetlands downstream of the lower crossing of



McCarville Road. However, bank stabilization projects, especially those that include additional habitat practices that benefit trout, on private lands that are designed by Sauk County or NRCS in cooperation with the landowner are encouraged and have the support of DNR.

## **PUMPKIN HOLLOW CREEK**

Pumpkin Hollow Creek had the fifth-highest mean total abundance of brown trout out of six streams or stream segments in the watershed where brown trout were found. The brown trout catch was limited to two YOY fish collected at the lower site near the confluence with Bear Creek. Brook trout was the most common trout species collected, and Pumpkin Hollow Creek had the third-highest abundance of brook trout out of seven streams or stream segments in the watershed where brook trout were found. Pumpkin Hollow Creek had the third-highest abundance of YOY brook trout and sixth-highest abundance of adult brook trout in the watershed. No yearling or preferred-length brook trout were collected. When compared regionally and statewide, mean total brook trout abundance was low, YOY abundance was moderate, and adult abundance was low.

Prior to the 2024 evaluation, Pumpkin Hollow Creek was unclassified, and it was not previously stocked with trout. The 2024 evaluation found a small self-sustaining brook trout population despite no direct link to any other stream where brook trout were the dominant species. Brook trout found in Pumpkin Hollow Creek are either remnant native trout that have persisted there historically, or they descended from brook trout that migrated to Pumpkin Hollow Creek from other brook trout streams in the watershed via Bear Creek. Pumpkin Hollow Creek is a small stream (average width was 1 meter at both sites) with a relatively low flow volume (0.7 cfs at the upper site, 1.1 cfs at the lower site). The stream is cold, as indicated by its mean July temperature and mean daily maximum July temperatures of 62.9°F and 68.6°F, respectively. Mottled sculpins were the most abundant non-game species found at both sampling locations. The lower 0.4 mile of the stream where it crosses Bear Creek Fishery Area appears to have been straightened and channelized at some point, and the limited habitat complexity that resulted from the straightening of the stream limits the number of trout found there. Water quality for trout is good but the small size of the stream limits the overall number of trout the stream can support. Additionally, the stream has almost no tree cover along its length to provide shade, which probably limits it from running colder than it does.

Moving forward, Pumpkin Hollow Creek should be reclassified from unclassified to Class 1 from its confluence with unnamed stream 5032456 (start of perennial water) downstream to the confluence with Bear Creek. The stream clearly has trout spawning habitat and natural reproduction occurring, with fingerling and adult trout present in sufficient numbers to utilize the available habitat. The stream is small, public ownership is limited, and the stream is not likely to draw significant attention

from anglers, so the county base trout regulation of an 8-inch minimum length limit with a 3-fish daily bag limit is the correct regulation.

Public ownership along Pumpkin Hollow Creek is limited to the lower 0.2 mile before the confluence with Bear Creek on the Fishery Area. This stream is a low priority for acquisition moving forward because its small size and low flow volume preclude it from producing large numbers of trout and becoming a destination stream for anglers and limits its value from a habitat improvement perspective. The stream is not eligible for easement acquisition through the Streambank Easement (SBE) program and pursuing SBE eligibility through the master planning process isn't warranted. Pumpkin Hollow Creek should continue to be monitored on a rotational basis every six years as part of the Bear Creek watershed evaluation.

## **BISER CREEK**

Biser Creek had the seventh-highest mean total abundance of brown trout out of seven streams or stream segments in the watershed where brown trout were found. The total brown trout catch amounted to one adult at site 15. Brook trout was the most common trout species collected, and Biser Creek had the fifth-highest abundance of brook trout out of seven streams or stream segments in the watershed where brook trout were found. No YOY or preferred-length brook trout were collected and Biser Creek had the fourth-highest abundance of yearlings and third-highest abundance of adult brook trout in the watershed. In regional and statewide comparisons, mean total brook trout abundance, YOY abundance and adult abundance were all low.

Biser Creek was Class 1 trout water prior to the 2018 evaluation. Despite low trout abundance relative to other Class 1 streams, the classification did not change then because all age classes of trout were present despite no stocking since the year 2000, and the trout were fully utilizing the limited habitat available. Total abundance of brook trout was the same in 2024 as in 2018. Multiple year classes of brook trout were present, and the fish continue to fully utilize the available habitat. For these reasons it is recommended to keep the current Class 1 designation. No regulation change is recommended because angling pressure is likely very low on this small stream with limited public access.

Current DNR ownership along Biser Creek includes fee title ownership along approximately 0.4 mile of stream including the confluence of Biser Creek and Bear Creek. This ownership is part of Bear Creek Fishery Area, and specifically the Bear Creek Sedge Meadow State Natural Area embedded within the Fishery Area. Further land acquisition efforts along Biser Creek should be directed toward streambank protection easements. If nothing else, acquisition of easements along Biser Creek would help to limit further degradation of nearly vertical eroded stream banks from livestock grazing activities and impacts from row-crop agriculture while also providing angler access. Biser Creek would rank as a relatively low priority for

intensive DNR trout stamp funded habitat projects based on the small size of the waterbody (limited return on habitat investment), as well as sensitive resources and extensive wetlands present in current DNR ownership. However, bank stabilization projects, especially those that include additional habitat practices that benefit trout, on private lands that are designed by Sauk County or NRCS in cooperation with the landowner are encouraged and have the support of DNR.

## **FOUR SPRINGS HOLLOW CREEK**

Trout were not found in Four Springs Hollow Creek in 2024. The stream was relatively small (average width 1 meter), had low flow volume (0.7 cfs at both locations), had limited in-stream cover for fish and steep eroded banks. Water temperatures were in the low 60s at the time of the fish surveys. Temperature monitoring in summer 2024 found a mean July temperature of 61.8°F and a mean daily maximum temperature of 65.7°F in July, which indicated it is a coldwater stream. However, no sculpins were collected during fishery surveys, and all species collected were characteristic of disturbed systems with warmer water. With degraded habitat and no connected waters with significant trout populations acting as a source of fish, it is not surprising that there are not trout in Four Springs Hollow Creek. The stream was not classified prior to the 2024 evaluation and should not be classified trout water moving forward. The stream is unlikely to support trout and surveying the stream as part of the next rotational watershed evaluation in 2030 is not needed.

## **Management Recommendations**

1. Retain current trout fishing regulations on all streams in the watershed.
2. Retain current classifications for all Class 1 and Class 2 trout waters in the watershed.
3. Reclassify Pumpkin Hollow Creek from unclassified to Class 1 from its confluence with unnamed stream 5032456 downstream to the confluence with Bear Creek.
4. Increase DNR easement and fee-title ownership when possible to facilitate water quality improvement, trout habitat improvement projects, and to provide additional public access to Bear Creek and its tributaries.
5. Expand the NRB project boundary for Bear Creek Fishery Area during master planning for the Western Coulees and Ridges Ecological Landscape to facilitate acquisition of property where the impounded reach of Croal Creek is located as well as Bear Creek between County Road N and Croal Hollow Road.
6. Implement a plan for reforestation along the improved segment of Bear Creek to help maintain suitable stream temperatures for trout. Species utilized should be large canopy species like oaks or sycamores.

## **Acknowledgements**

Numerous staff from the DNR Fisheries Management Bureau assisted the author with field surveys, including Fisheries Technicians Casey Weber, Clayton Roberts and Josh

Jonet. South District Fisheries Supervisor Tim Simonson reviewed the manuscript and provided valuable feedback on content and formatting that made this a strong report. Thank you all.

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## Tables

Table 1. Land cover breakdown for the Bear Creek HUC-10 watershed (LW16) in the Lower Wisconsin River basin.

LAND COVER		PERCENT OF WATERSHED (2000) <sup>1</sup>	PERCENT OF WATERSHED (2010) <sup>2</sup>
Forest (total)		43.4%	41.0%
	<i>Broad-leaf deciduous</i>		41.9%
	<i>Coniferous</i>		1.4%
	<i>Mixed</i>		0.1%
	<i>Deciduous/Coniferous</i>		
Agriculture		31.2%	45.0%
Wetland (total)		11.4%	6.0%
	<i>Forested</i>		7.7%
	<i>Emergent/wet meadow</i>		2.3%
	<i>Lowland Shrub</i>		1.4%
Grassland		10.3%	1.0%
Open Water		2.2%	
Open water and open space			6.0%
Barren		0.9%	<1.0%
Development		0.5%	
Suburban			1.0%
Urban			<1.0%

1. Ripp et al. 2002

2. Morton et al. 2010. Report uses slightly different categorizations than Ripp et al. 2002.

*Table 2. Geographic and legal descriptions of the locations of the headwaters and outlets of streams in the Bear Creek watershed evaluated in 2024.*

<b>STREAM</b>	<b>WBIC</b>	<b>ORIGIN TOWNSHIP</b>	<b>ORIGIN T-R-S</b>	<b>OUTLET TOWNSHIP</b>	<b>OUTLET T-R-S</b>	<b>RECEIVING WATERBODY</b>	<b>LENGTH (MILES)</b>
Bear Creek	1234600	Washington	11N-3E-29	Buena Vista	08N-2E-4	Wisconsin River	26.8
Croal Creek	1236200	Washington	11N-3E-28	Bear Creek	10N-3E-7	Bear Creek	3.8
McCarville Creek	1236100	Bear Creek	10N-3E-3	Bear Creek	10N-3E-19	Bear Creek	4.7
Biser Creek	1236000	Bear Creek	10N-3E-22	Bear Creek	10N-3E-19	Bear Creek	3.9
Pumpkin Hollow Creek	1235800	Ithaca	10N-2E-14	Bear Creek	10N-3E-19	Bear Creek	2.7
Marble Creek	1235700	Bear Creek	10N-3E-27	Bear Creek	10N-3E-30	Bear Creek	3.5
Four Springs Hollow Creek	1235500	Ithaca	10N-2E-24	Ithaca	10N-2E-36	Bear Creek	4.8

Table 3. Descriptions of trout sampling locations in the Bear Creek watershed in 2024.

STREAM	WBIC	TROUT CLASS <sup>1</sup>	STREAM ORDER	LOCATION <sup>2</sup>	START LATITUDE	START LONGITUDE	END LATITUDE	END LONGITUDE
Bear Creek	1234600	1	3	20m US STR 130 upper	43.38976	-90.17319	43.39008	-90.17237
Bear Creek	1234600	1	3	US of UNT 5031993	43.38342	-90.18575	43.38373	-90.18513
Bear Creek	1234600	1	4	15m US lower Fargen line	43.34373	-90.17849	43.34432	-90.17860
Bear Creek	1234600	1	4	924m US Sprecher-Bolz line	43.34016	-90.17942	43.34055	-90.17905
Bear Creek	1234600	1	4	US Sprecher-Bolz line	43.33544	-90.17766	43.33710	-90.11783
Bear Creek	1234600	1	4	30m US CR. N	43.32774	-90.17579	43.32826	-90.17672
Bear Creek	1234600	2	4	30m US Weitzel Rd.	43.30716	-90.19219	43.30793	-90.19057
Bear Creek	1234600	2	4	30m US St. Killians Rd.	43.28602	-90.20791	43.28758	-90.20674
Bear Creek	1234600	2	4	35m US CR B west	43.27149	-90.23206	43.27299	-90.23161
Croal Creek	1236200	2	3	10m US CHR upper	43.37688	-90.16039	43.37757	-90.15981
Croal Creek	1236200	2	3	10m US CHR lower	43.37141	-90.16702	43.37175	-90.16605
McCarville Creek	1236100	1	2	McCarville Rd. upper	43.35201	-90.14407	43.35257	-90.14291
McCarville Creek	1236100	1	2	McCarville Rd. lower	43.33730	-90.16731	43.33814	-90.16677
Biser Creek	1236000	1	2	20m US CR N	43.32975	-90.15656	43.33018	-90.15619
Biser Creek	1236000	1	3	27m US Biser driveway	43.32710	-90.16354	43.32784	-90.16338
Pumpkin Hollow Creek	1235800	U	2	US Mueller/Weitzel line	43.33079	-90.19216	43.33116	-90.19318
Pumpkin Hollow Creek	1235800	U	2	122m DS STR 130	43.32498	-90.17979	43.32542	-90.18085
Marble Creek	1235700	1	3	15m US Marble Quarry Rd.	43.31310	-90.13960	43.31330	-90.13880
Marble Creek	1235700	1	3	123m DS Kramer driveway	43.31320	-90.17850	43.31330	-90.17750
Four Springs Hollow Creek	1235500	U	2	123m DS driveway	43.31040	-90.21145	43.31109	-90.21125
Four Springs Hollow Creek	1235500	U	2	120m DS STR 130	43.29839	-90.20168	43.29901	-90.20259

1. U = Unclassified

2. US = Upstream, DS = Downstream, UNT = Unnamed Tributary, STR = State Road, CR = County Road, CHR = Croal Hollow Road.

Table 4. Sampling station metrics for streams in the Bear Creek watershed during the 2024 evaluation.

STREAM <sup>1</sup>	SITE NUMBER <sup>2</sup>	DATE	MEAN WIDTH; M (GEAR) <sup>3</sup>	STATION LENGTH (M)	CPUE FACTOR (M)	FLOW RATE (CFS)	TEMPERATURE (F)	DISSOLVED O2 (PPM)	N SPECIES	COLD WATER IBI SCORE (RATING) <sup>4</sup>
Bear Creek	1	6/18/2024	2.0 (BP)	100	16.1	0.4	55	10.4	4	90 (E)
Bear Creek	2	7/25/2024	2.2 (BP)	100	16.1	1.8	56	10.6	3	90 (E)
Bear Creek	3	8/13/2024	3.1 (B)	140	11.5	6.7	59	11.8	7	60 (G)
Bear Creek	4	8/13/2024	3.8 (B)	108	14.9	9.9	57	10.8	4	60 (G)
Bear Creek	5	8/13/2024	2.6 (B)	105	15.3	7.8	56	10.1	6	30 (F)
Bear Creek	6	7/29/2024	2.7 (B)	100	16.1	15.5	59	8.4	6	60 (G)
Bear Creek	7	8/5/2024	5.7 (B)	210	7.7	22.6	62	8.7	7	50 (F)
Bear Creek	8	8/5/2024	5.7 (B)	210	7.7	26.8	64	7.9	3	10 (P)
Bear Creek	9	8/20/2024	6.3 (B)	221	7.3	28.3	59	9.0	5	20 (P)
Croal Creek	10	7/10/2024	3.2 (BP)	110	14.6	3.9	62	8.8	5	50 (F)
Croal Creek	11	7/10/2024	3.8 (BP)	130	12.4	10.2	65	10.3	5	40 (F)
McCarville Creek	12	7/25/2024	2.3 (BP)	100	16.1	1.4	57	10.0	2	90 (E)
McCarville Creek	13	7/25/2024	2.2 (BP)	100	16.1	3.9	56	10.0	4	80 (G)
Biser Creek	14	7/24/2024	2.0 (BP)	100	16.1	2.1	62	9.6	5	80 (G)
Biser Creek	15	8/20/2024	1.3 (BP)	100	16.1	2.5	57	9.9	4	80 (G)
PH Creek	16	6/18/2024	1.0 (BP)	100	16.1	0.7	57	9.7	3	90 (E)
PH Creek	17	6/17/2024	1.0 (BP)	100	16.1	1.1	57	9.1	6	60 (G)
Marble Creek	18	7/24/2024	1.8 (BP)	100	16.1	2.1	55	11.4	3	90 (E)
Marble Creek	19	7/24/2024	3.2 (BP)	100	16.1	3.5	56	10.2	5	70 (G)
FSH Creek	20	6/17/2024	1.0 (BP)	100	16.1	0.7	60	9.2	2	0 (VP)
FSH Creek	21	6/17/2024	1.1 (BP)	100	16.1	0.7	63	7.8	5	10 (P)

1. PH = Pumpkin Hollow, FSH = Four Springs Hollow.

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.

4. E = Excellent, G = Good, F = Fair, P = Poor, VP = Very Poor.



*Table 5. Mean July stream temperatures recorded during continuous temperature monitoring in Bear Creek and two tributaries in the summer of 2024.*

<b>STREAM<sup>1</sup></b>	<b>WBIC</b>	<b>SITE NUMBER</b>	<b>MEAN JULY TEMPERATURE (°F)</b>	<b>MEAN DAILY MAXIMUM JULY TEMPERATURE (°F)</b>	<b>MAXIMUM JULY TEMPERATURE (°F)</b>
Bear Creek	1234600	1	56.0	59.7	64.8
Bear Creek	1234600	3	63.6	68.8	72.7
Bear Creek	1234600	5	63.9	68.1	72.0
PH Creek	1235800	17	62.9	68.6	73.1
FSH Creek	1235500	21	61.8	65.7	71.9
Little Bear Creek	1234700	NA	66.7	71.3	75.0

1. PH = Pumpkin Hollow, FSH = Four Springs Hollow.

Table 6. 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.

	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)	
Percentile	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	1,121.4	880.6	256.1	247.5	383.2	337.2	509.7	341.9	85.8	72
75	1,478.3	1,241.7	405.4	402.1	518.8	482.8	677.6	479.2	115	91.4
90	2,720.0	2,203.1	856.7	933.5	877.1	836.6	1,194.2	864.5	181.5	156.5

Table 7. 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.

	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)	
Percentile	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	1,223.0	1,488.4	787.1	812.3	548.7	662.7	347.0	344.0	64.4	64.4

Table 8. Brown trout CPUE (fish/mile) for all sampling locations on streams in the Bear Creek watershed in 2024.

STREAM	SITE NUMBER <sup>1</sup>	TOTAL CPUE	AGE-0 (<4 INCHES)	Age 1 (4.0- 7.9 INCHES)	ADULT TOTAL (≥8 INCHES)	ADULT<PREFERRED (8.0-11.9 INCHES)	ADULT PREFERRED (≥12 INCHES)
Bear Creek	1	402.4	386.3	16.1	0.0	0.0	0.0
Bear Creek	2	804.9	482.9	193.2	128.8	128.8	0.0
Bear Creek	3	1,103.8	390.9	333.4	379.4	230.0	149.5
Bear Creek	4	1,177.5	253.4	372.6	551.5	462.1	89.4
Bear Creek	5	689.9	30.7	306.6	352.6	260.6	92.0
Bear Creek	6	257.6	0.0	80.5	177.1	128.8	48.3
Bear Creek	7	145.6	7.7	15.3	122.6	84.3	38.3
Bear Creek	8	15.3	0.0	7.7	7.7	7.7	0.0
Bear Creek	9	36.4	0.0	7.3	29.1	29.1	0.0
Croal Creek	10	307.3	204.9	43.9	58.5	58.5	0.0
Croal Creek	11	210.5	74.3	61.9	74.3	61.9	12.4
McCarville Creek	12	0.0	0.0	0.0	0.0	0.0	0.0
McCarville Creek	13	0.0	0.0	0.0	0.0	0.0	0.0
Biser Creek	14	0.0	0.0	0.0	0.0	0.0	0.0
Biser Creek	15	16.1	0.0	0.0	16.1	16.1	0.0
Pumpkin Hollow Creek	16	0.0	0.0	0.0	0.0	0.0	0.0
Pumpkin Hollow Creek	17	32.2	32.2	0.0	0.0	0.0	0.0
Marble Creek	18	112.7	16.1	48.3	48.3	48.3	0.0
Marble Creek	19	0.0	0.0	0.0	0.0	0.0	0.0
Four Springs Hollow Creek	20	0.0	0.0	0.0	0.0	0.0	0.0
Four Springs Hollow Creek	21	0.0	0.0	0.0	0.0	0.0	0.0

1. Refer to the map in Figure 1 for numbered sampling locations.

Table 9. Mean brown trout CPUE (fish/mile) for streams or stream segments in the Bear Creek watershed in 2024.

<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 (8.0-11.9 INCHES)</b>	<b>ADULT PREFERRED (≥12 INCHES)</b>
Bear Creek-Class 1 (6)	739.4	257.4	217.1	264.9	201.7	63.2
Bear Creek-Class 2 (3)	65.8	2.6	10.1	53.1	40.4	12.8
Croal Creek (2)	258.9	139.6	52.9	66.4	60.2	6.2
McCarville Creek (2)	0.0	0.0	0.0	0.0	0.0	0.0
Biser Creek (2)	8.0	0.0	0.0	8.0	8.0	0.0
Pumpkin Hollow Creek (2)	16.1	16.1	0.0	0.0	0.0	0.0
Marble Creek (2)	56.3	8.0	24.1	24.1	24.1	0.0
Four Springs Hollow Creek (2)	0.0	0.0	0.0	0.0	0.0	0.0

1. The number of sampling locations for each stream or stream segment is in parenthesis.

Table 10. Brook trout CPUE (fish/mile) for all sampling locations on streams in the Bear Creek watershed in 2024.

STREAM	SITE NUMBER <sup>1</sup>	TOTAL CPUE	AGE-0 (<4 INCHES)	Age 1 (4.0- 6.9 INCHES)	ADULT TOTAL (≥7 INCHES)	ADULT<PREFERRED (7.0-9.9 INCHES)	ADULT PREFERRED (≥10 INCHES)
Bear Creek	1	161.0	144.9	16.1	0.0	0.0	0.0
Bear Creek	2	144.9	32.2	48.3	64.4	64.4	0.0
Bear Creek	3	11.5	0.0	0.0	11.5	0.0	11.5
Bear Creek	4	0.0	0.0	0.0	0.0	0.0	0.0
Bear Creek	5	0.0	0.0	0.0	0.0	0.0	0.0
Bear Creek	6	32.2	0.0	0.0	32.2	32.2	0.0
Bear Creek	7	30.7	0.0	0.0	30.7	23.0	7.7
Bear Creek	8	0.0	0.0	0.0	0.0	0.0	0.0
Bear Creek	9	0.0	0.0	0.0	0.0	0.0	0.0
Croal Creek	10	14.6	0.0	0.0	14.6	14.6	0.0
Croal Creek	11	0.0	0.0	0.0	0.0	0.0	0.0
McCarville Creek	12	386.3	161.0	96.6	128.8	128.8	0.0
McCarville Creek	13	48.3	0.0	48.3	0.0	0.0	0.0
Biser Creek	14	64.4	0.0	0.0	64.4	64.4	0.0
Biser Creek	15	48.3	0.0	32.2	16.1	16.1	0.0
Pumpkin Hollow Creek	16	144.9	128.8	0.0	16.1	16.1	0.0
Pumpkin Hollow Creek	17	16.1	16.1	0.0	0.0	0.0	0.0
Marble Creek	18	772.7	482.9	64.4	225.4	225.4	0.0
Marble Creek	19	257.6	193.2	64.4	0.0	0.0	0.0
Four Springs Hollow Creek	20	0.0	0.0	0.0	0.0	0.0	0.0
Four Springs Hollow Creek	21	0.0	0.0	0.0	0.0	0.0	0.0

1. Refer to the map in Figure 1 for numbered sampling locations.

Table 11. Mean brook trout CPUE (fish/mile) for streams or stream segments in the Bear Creek watershed in 2024.

<b>STREAM<sup>1</sup></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>
Bear Creek-Class 1 (6)	58.3	29.5	10.7	18.0	16.1	1.9
Bear Creek-Class 2 (3)	10.2	0.0	0.0	10.2	7.7	2.6
Croal Creek (2)	7.3	0.0	0.0	7.3	7.3	0.0
McCarville Creek (2)	217.3	80.5	72.4	64.4	64.4	0.0
Biser Creek (2)	56.3	0.0	16.1	40.2	40.2	0.0
Pumpkin Hollow Creek (2)	80.5	72.4	0.0	8.0	8.0	0.0
Marble Creek (2)	515.1	338.0	64.4	112.7	112.7	0.0
Four Springs Hollow Creek (2)	0.0	0.0	0.0	0.0	0.0	0.0

1. The number of sampling locations for each stream or stream segment is in parenthesis.

# Figures

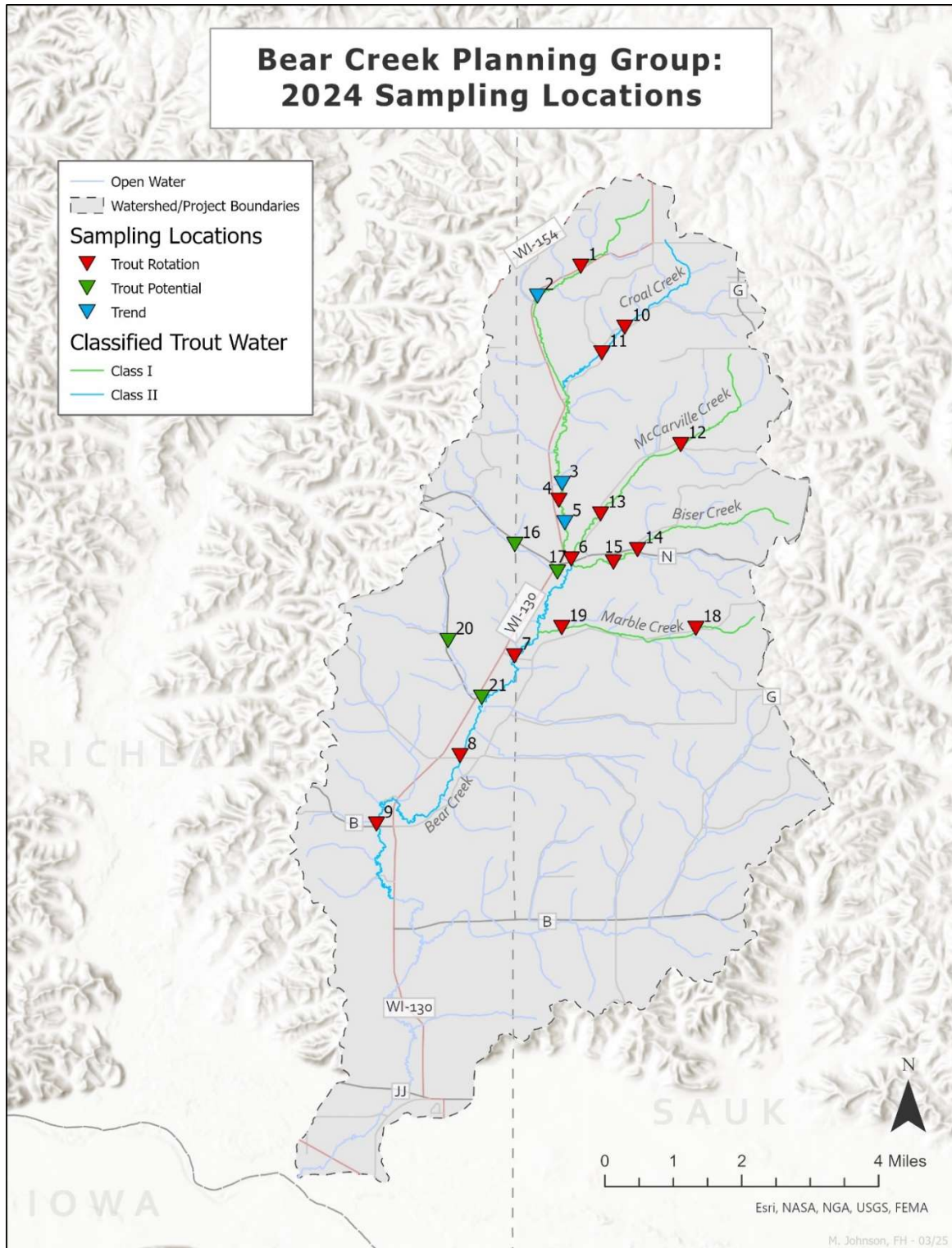


Figure 1. Trout class designations and 2024 fishery survey locations within the Bear Creek watershed.



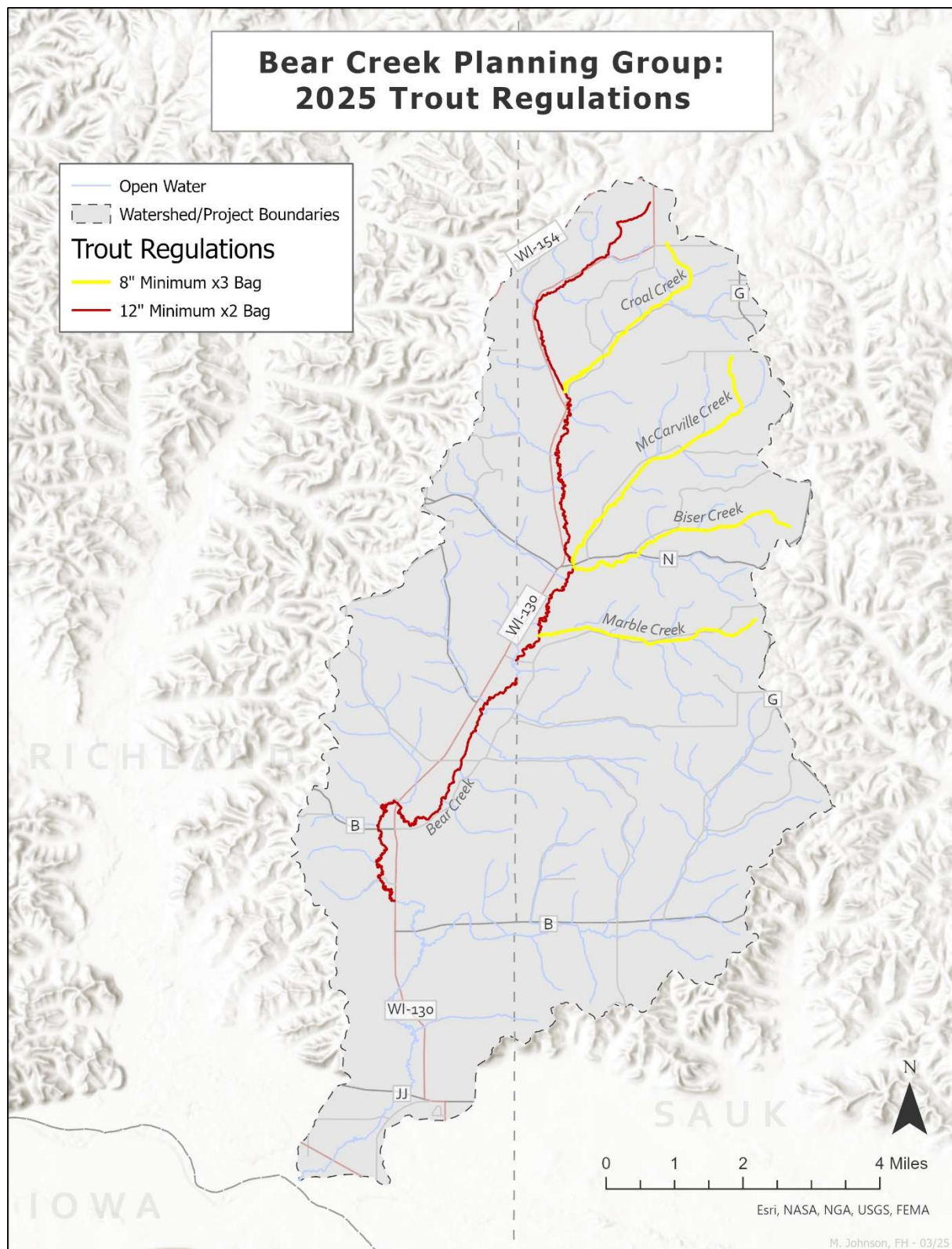


Figure 2. Current trout fishing regulations for classified trout streams in the Bear Creek watershed.



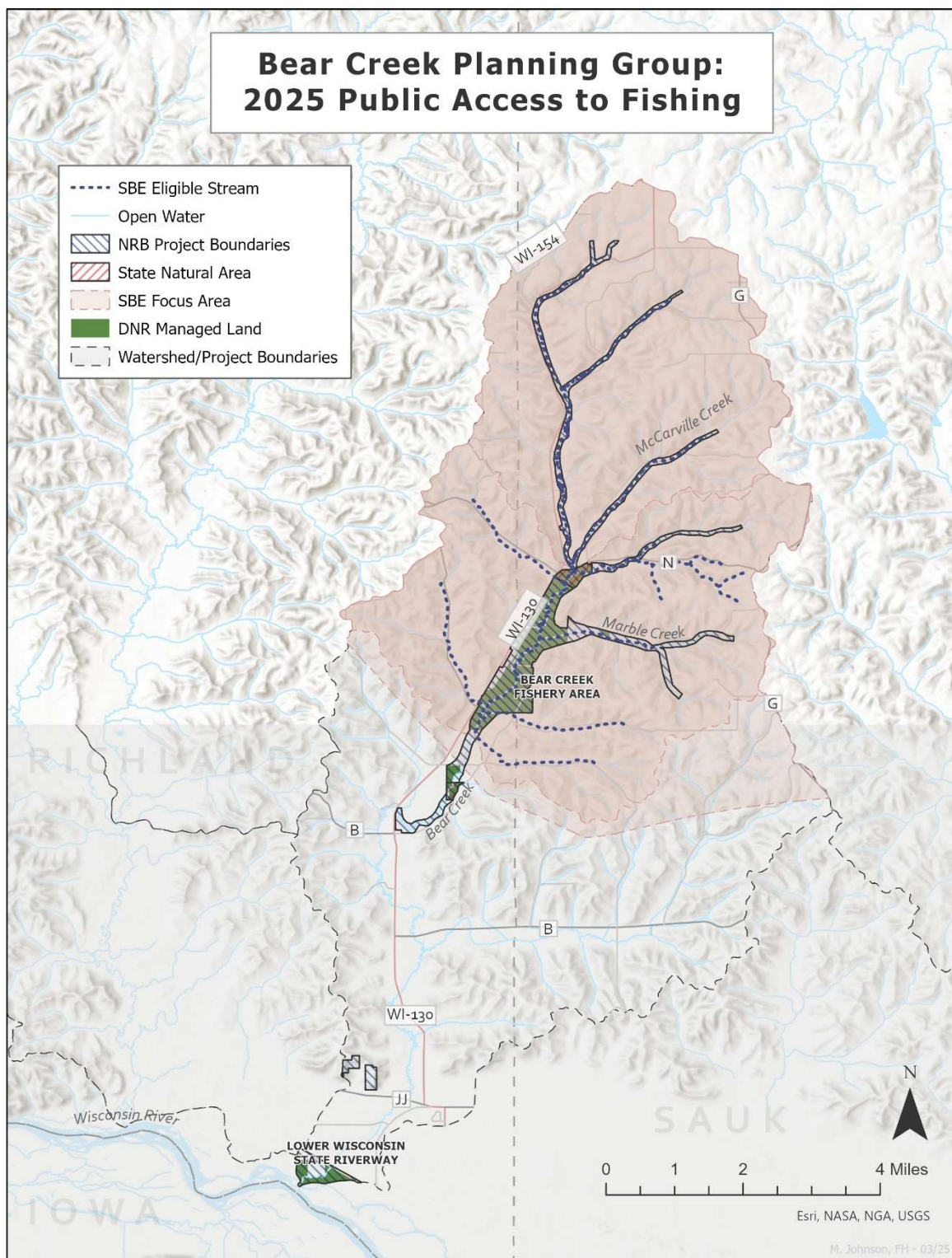
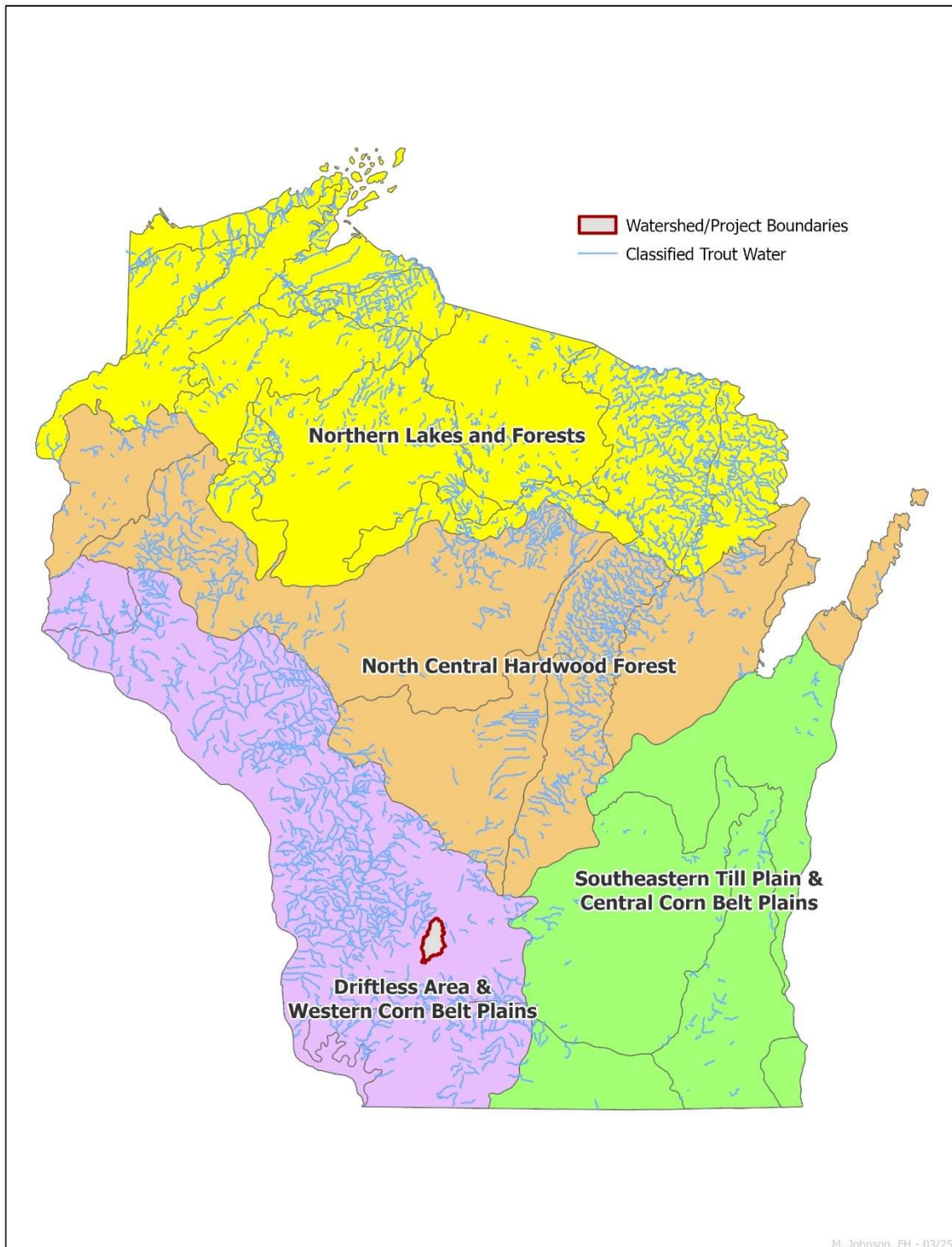


Figure 3. Public land access within the Bear Creek watershed.



*Figure 4. Level III Ecoregions of Wisconsin. The Bear Creek watershed is in the Driftless Area & Western Corn Belt Plains Ecoregion.*

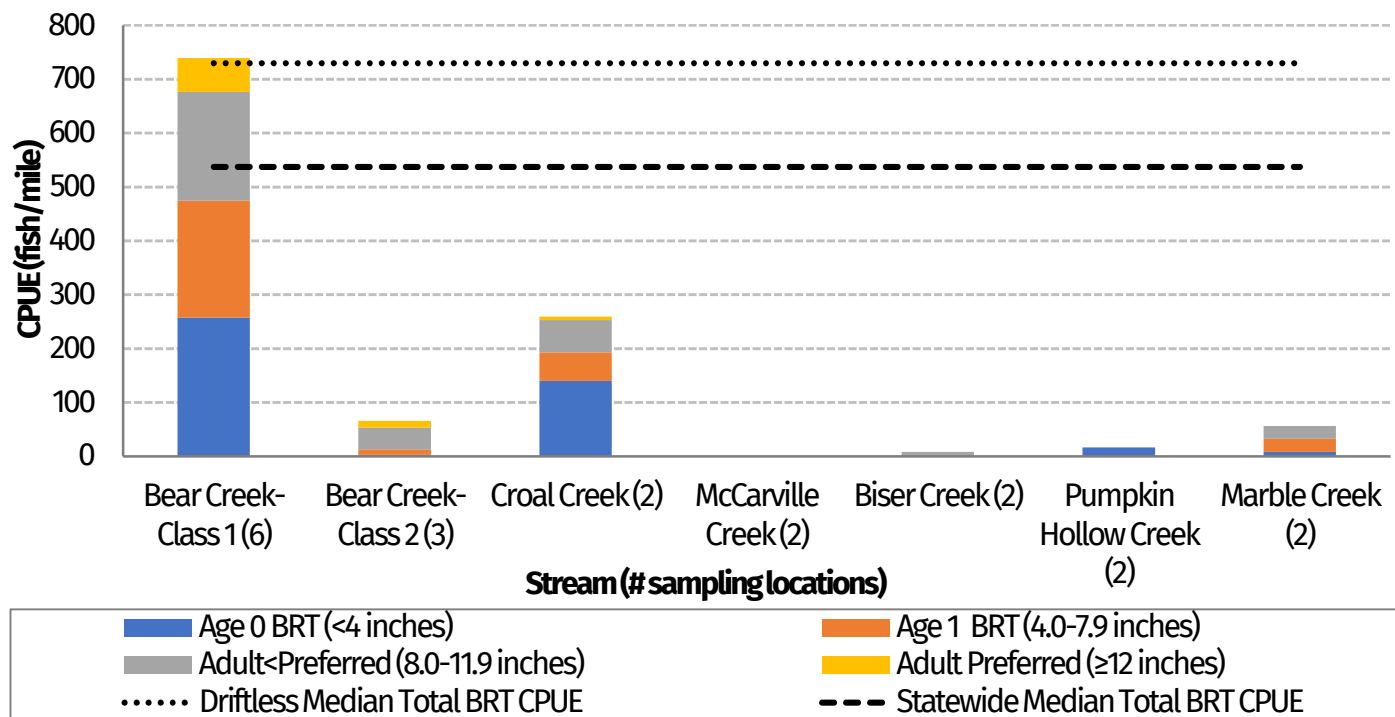


Figure 5. Mean total brown trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek and watershed in 2024. The number of sampling locations for each stream is in parenthesis.

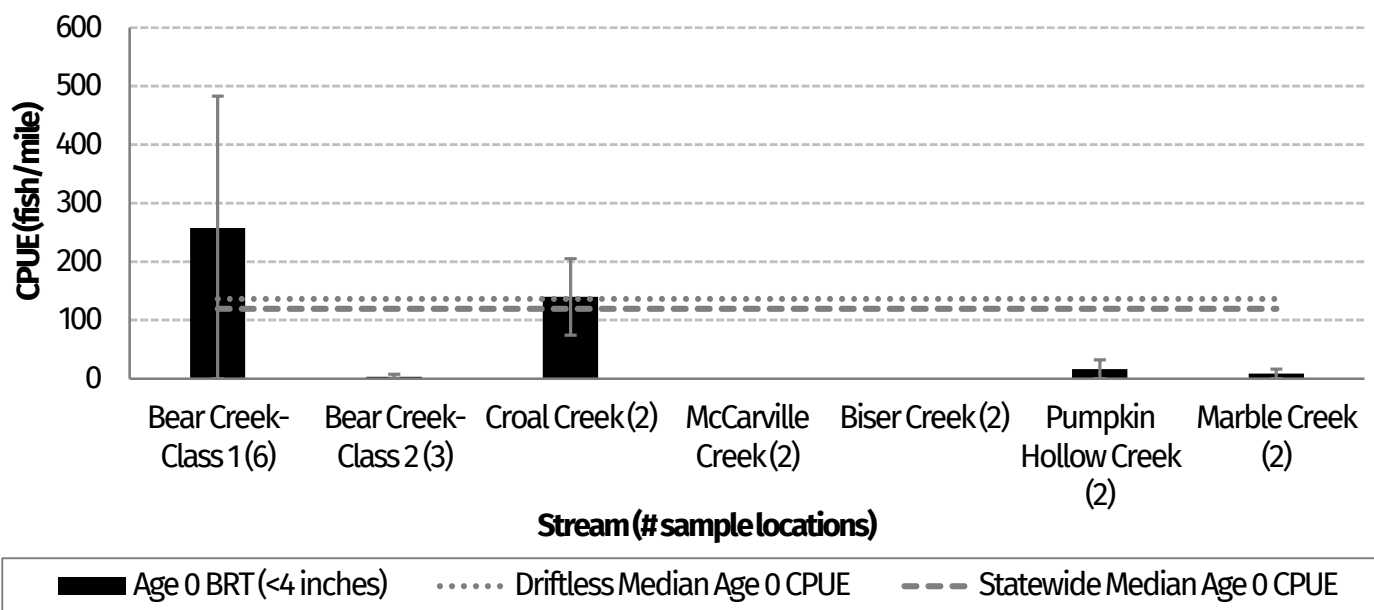


Figure 6. Mean age-0 brown trout catch-per-unit effort (CPUE) by stream in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream or stream segment. The number of sampling locations for each stream is in parenthesis.

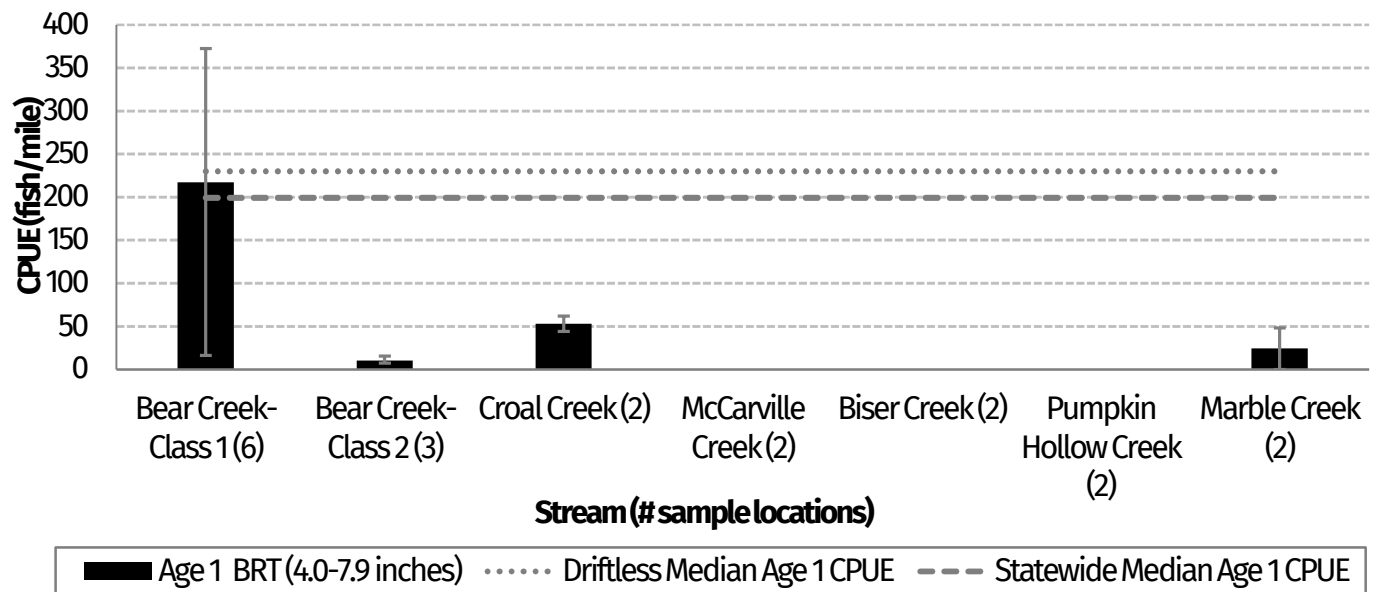


Figure 7. Mean yearling brown trout catch-per-unit effort (CPUE) by stream in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream or stream segment. The number of sampling locations for each stream is in parenthesis.

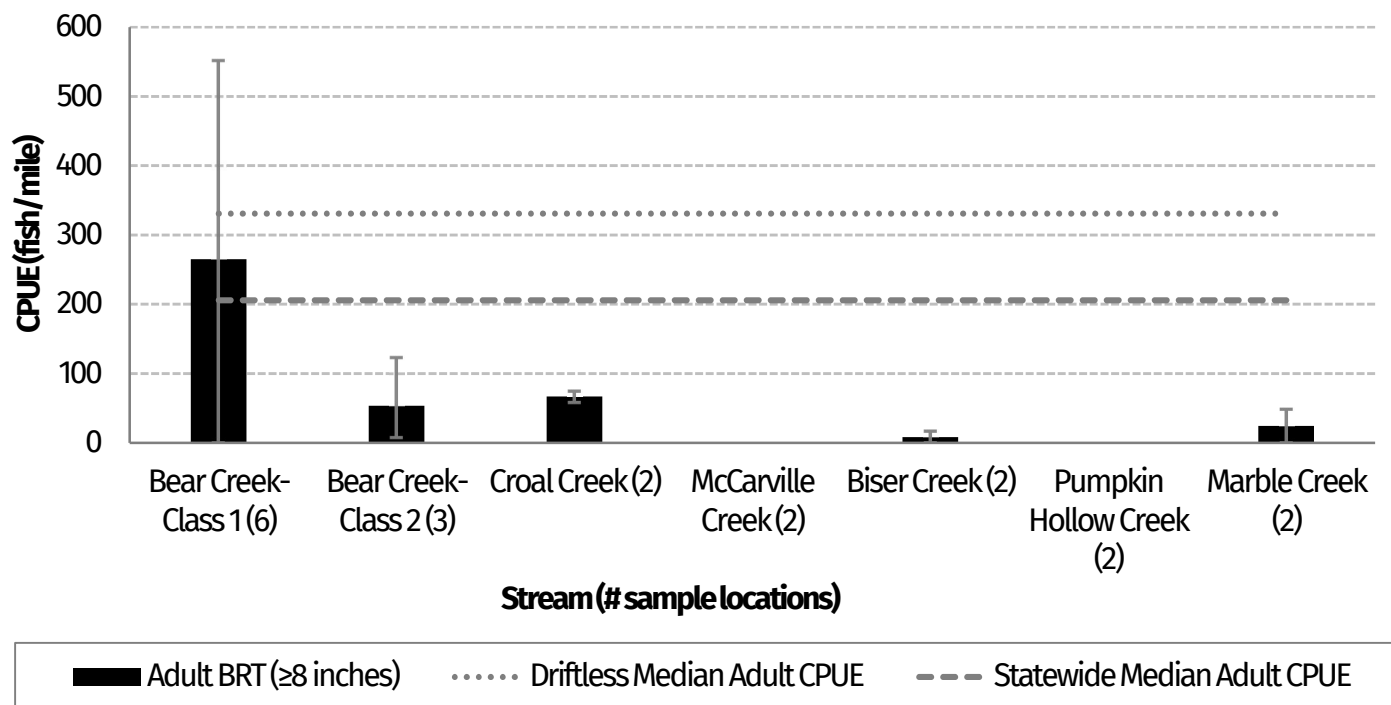


Figure 8. Mean adult brown trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream or stream segment. The number of sampling locations for each stream is in parenthesis.

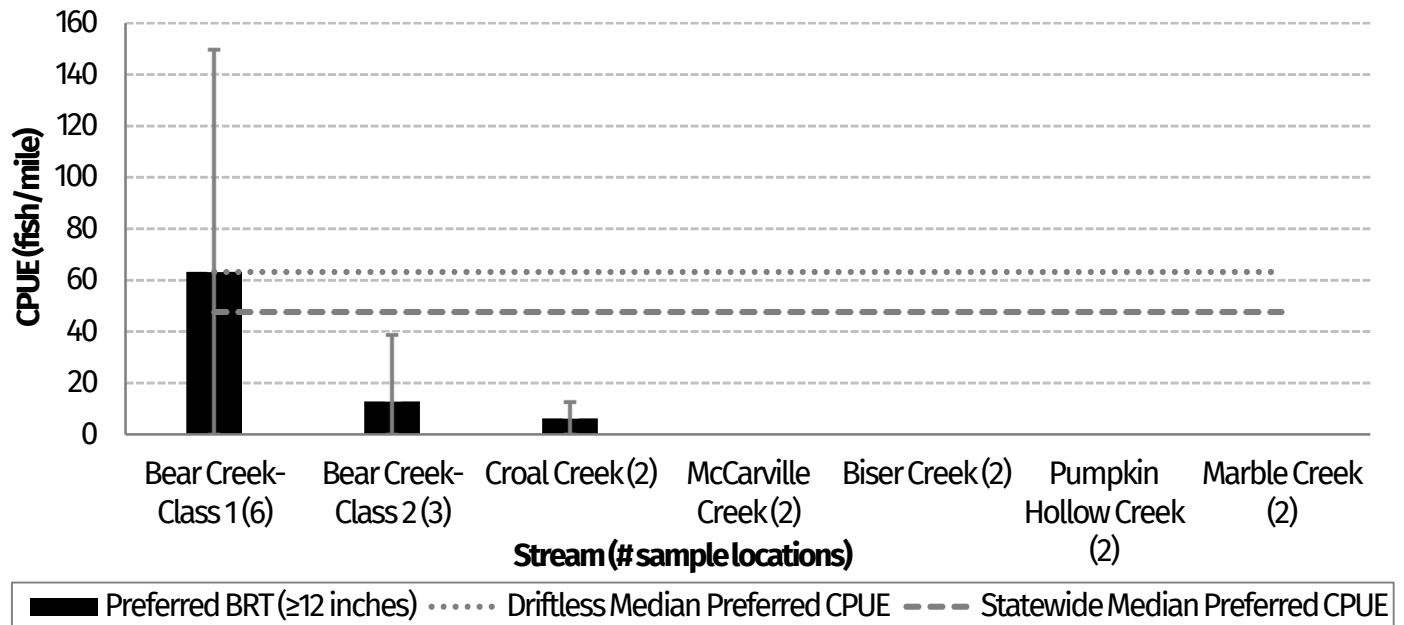


Figure 9. Mean preferred-length brown trout catch-per-unit effort (CPUE) by stream in the Bear watershed in 2024. Error bars represent the range of CPUE values observed for each stream or stream segment. The number of sampling locations for each stream is in parenthesis.

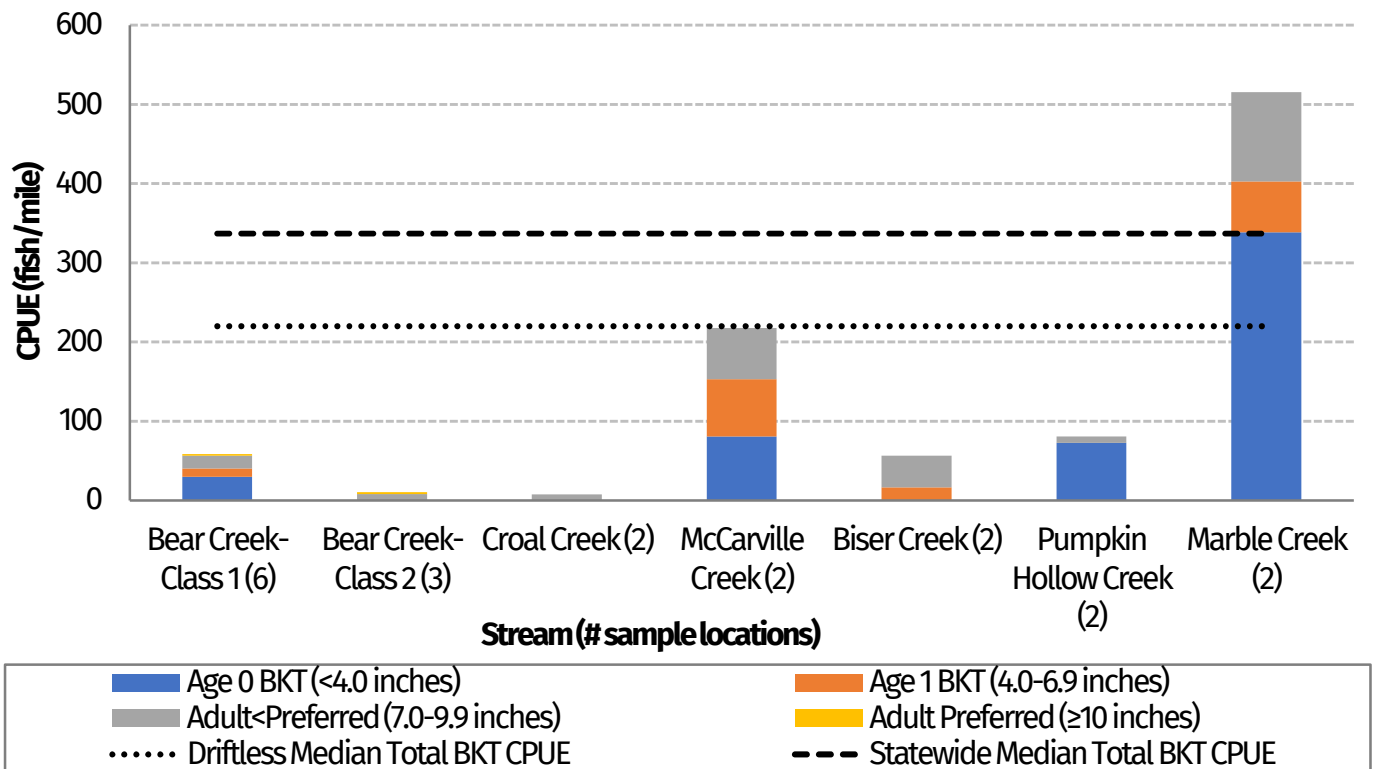


Figure 10. Mean total brook trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek watershed in 2024. The number of sampling locations for each stream is in parenthesis.

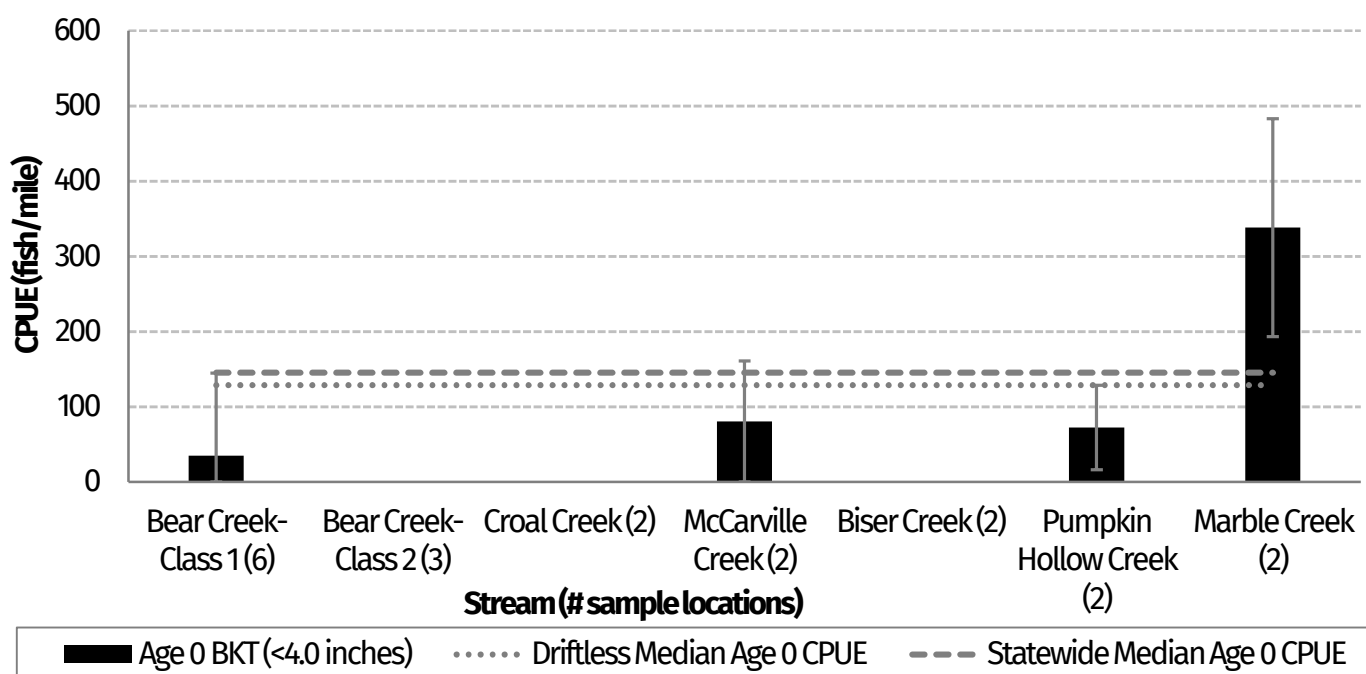


Figure 11. Mean age-0 brook trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream. The number of sampling locations for each stream is in parenthesis.

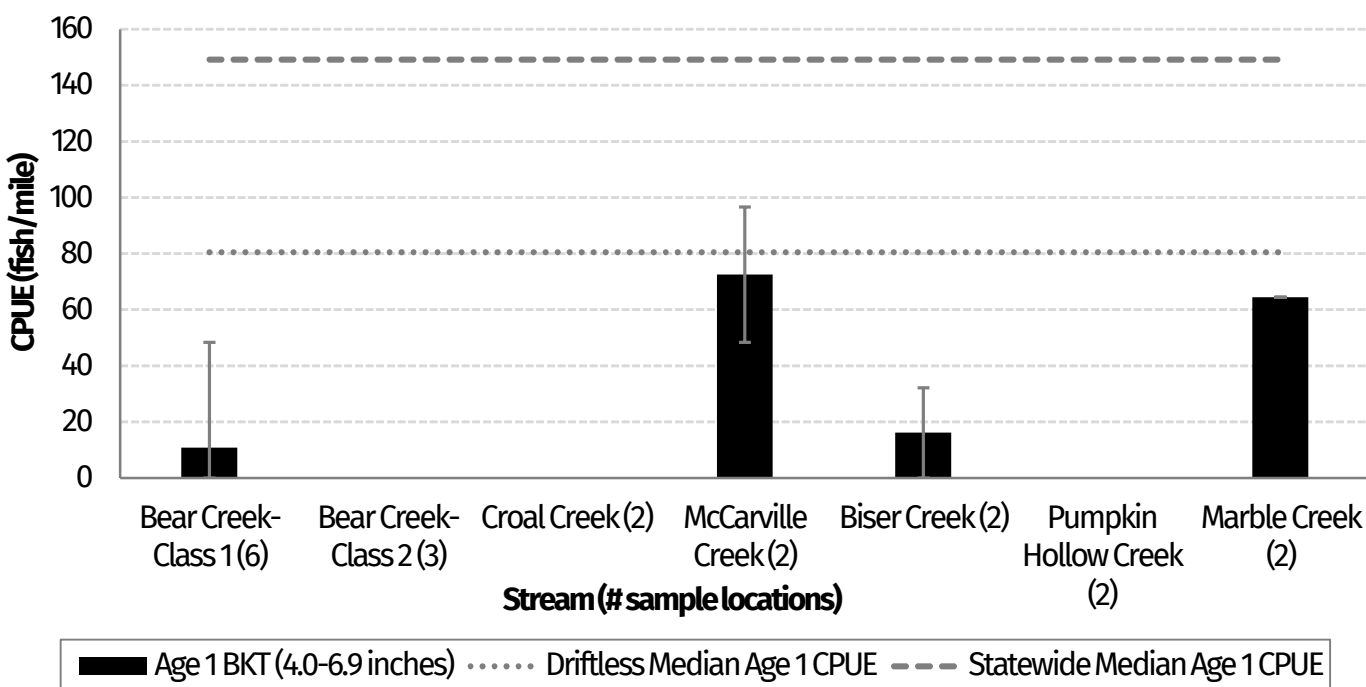


Figure 12. Mean yearling brook trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream. The number of sampling locations for each stream is in parenthesis.



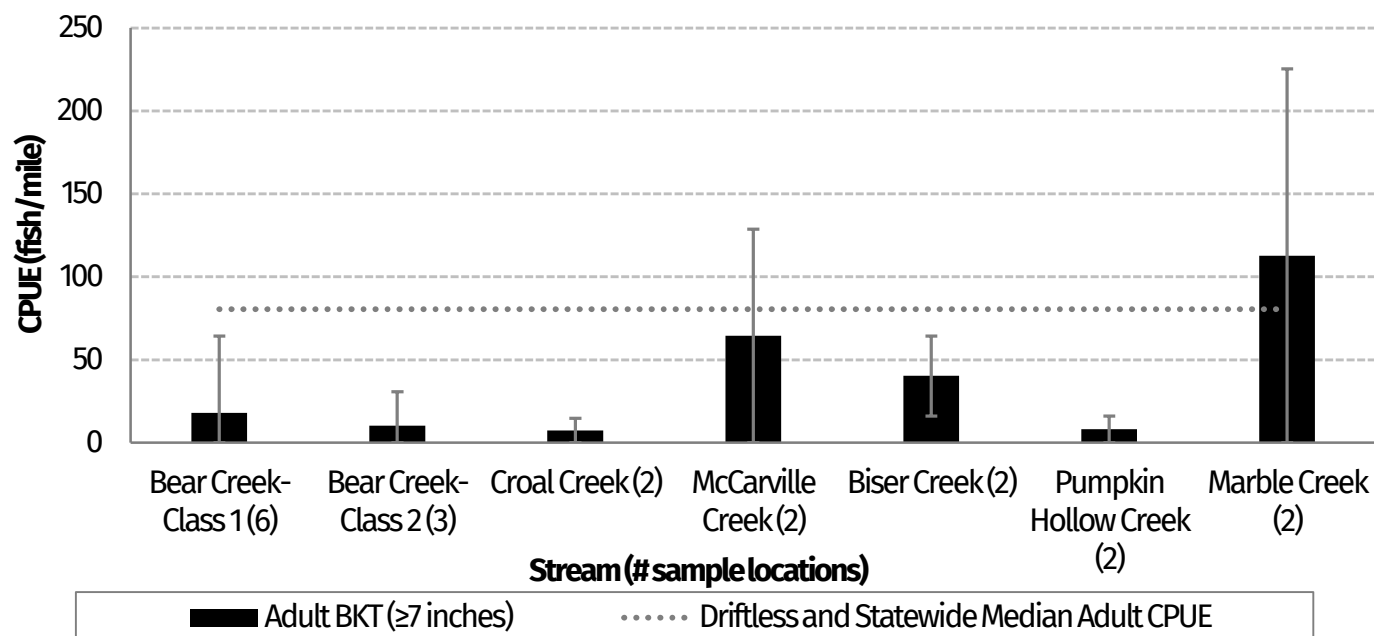


Figure 13. Mean adult brook trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream. The number of sampling locations for each stream is in parenthesis.

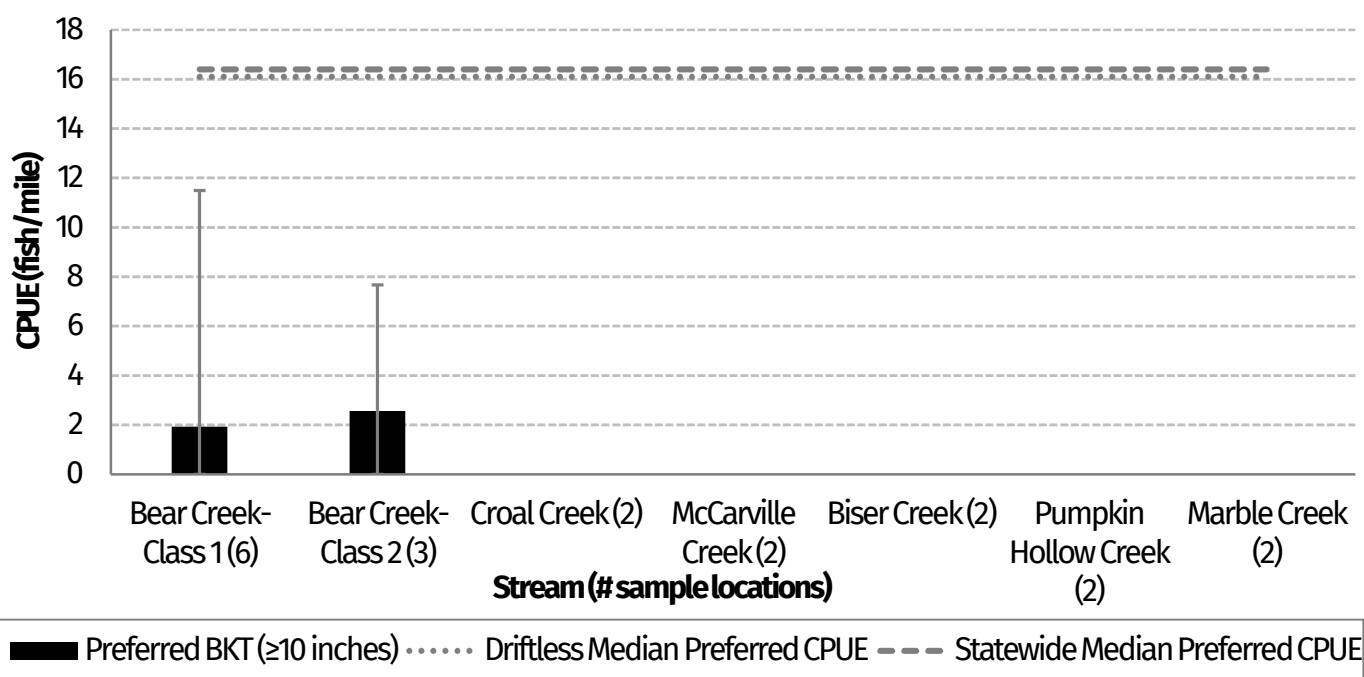


Figure 14. Mean preferred length brook trout catch-per-unit effort (CPUE) by stream or stream segment in the Bear Creek watershed in 2024. Error bars represent the range of CPUE values observed for each stream. The number of sampling locations for each stream is in parenthesis.

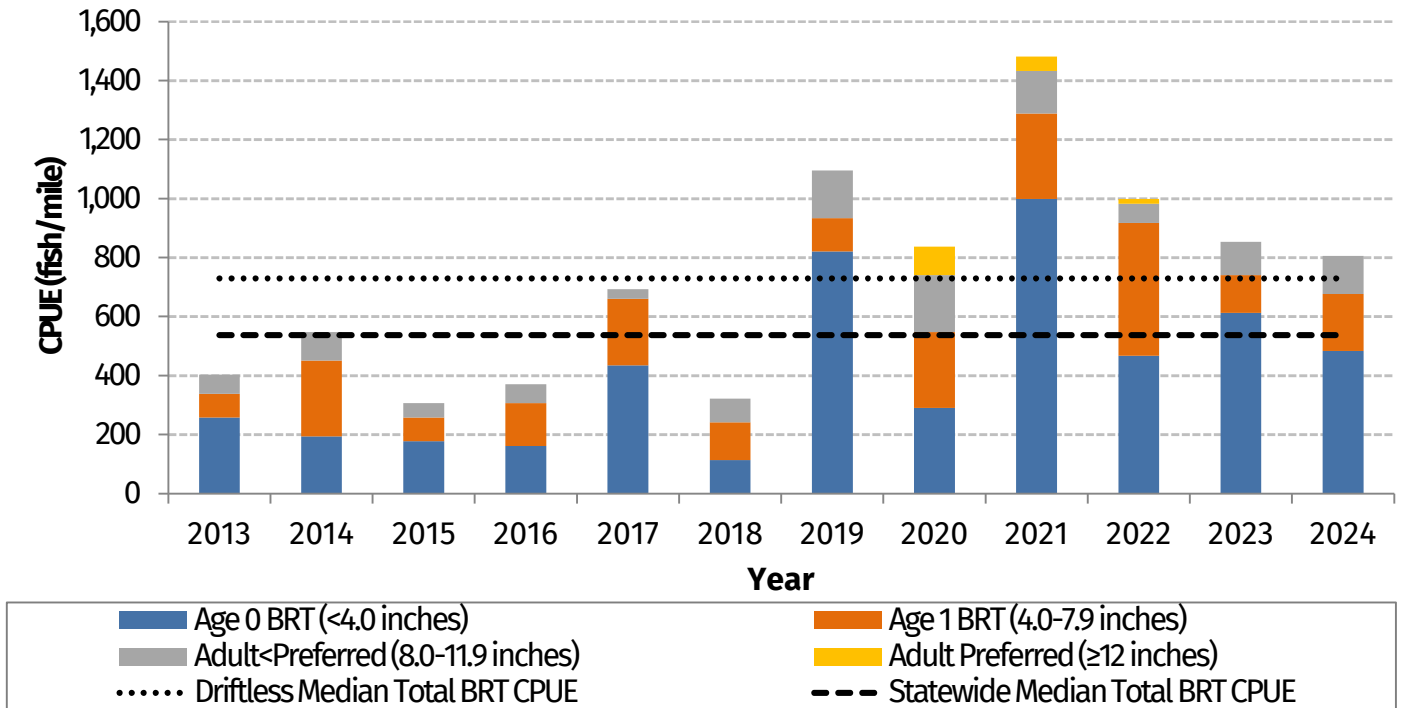


Figure 15. Mean total brown trout catch-per-unit effort (CPUE) at the upper Bear Creek trend monitoring station (site 2) 2013-2024.

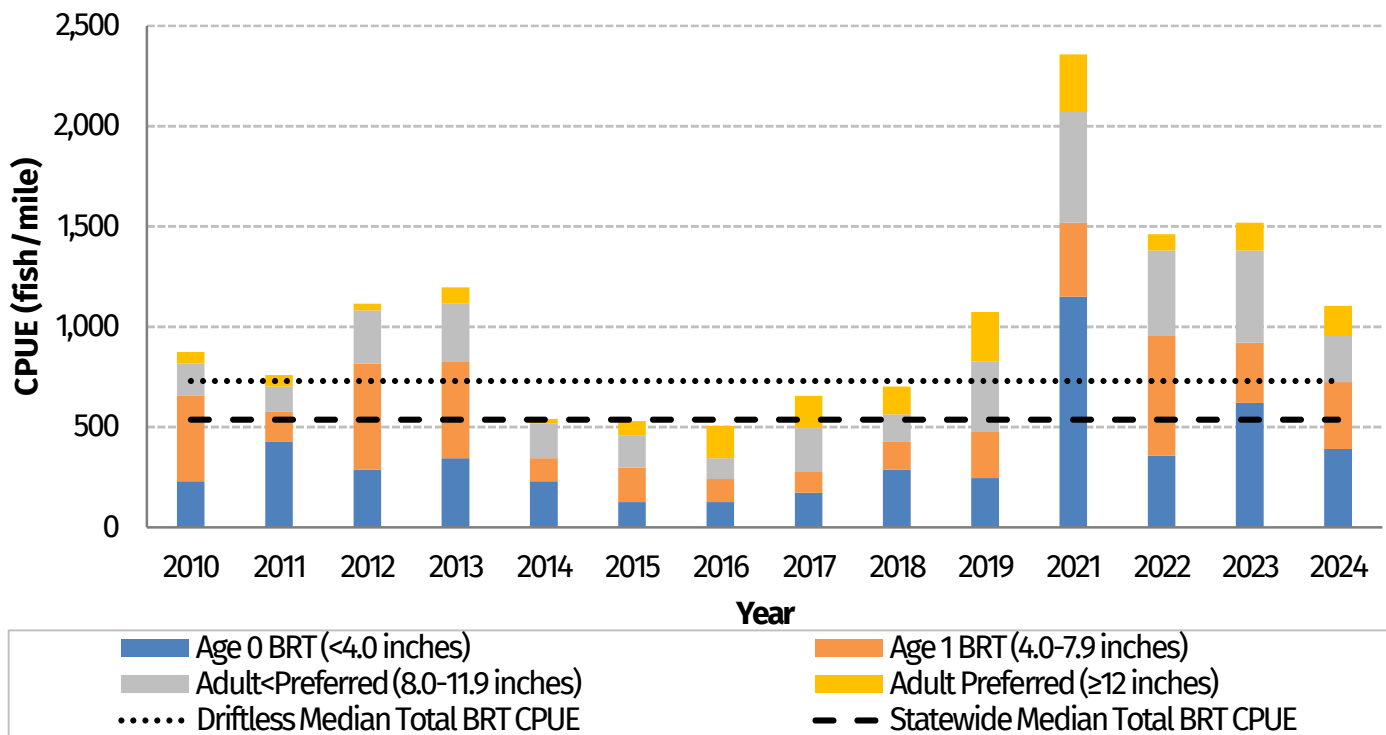


Figure 16. Mean total brown trout catch-per-unit effort (CPUE) at the lower Fargen trend monitoring station (site 3) on Bear Creek, 2010-2024.



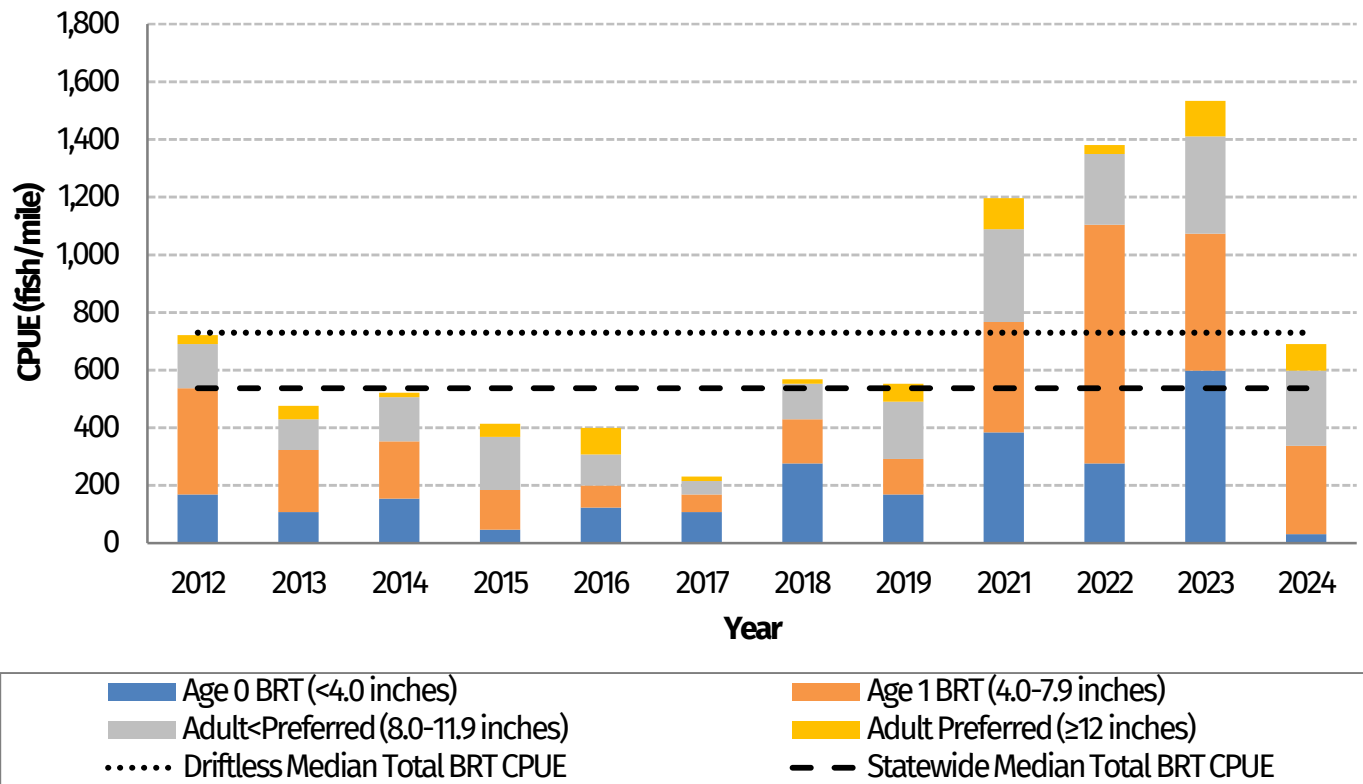


Figure 17. Mean total brown trout catch-per-unit effort (CPUE) at the lower Sprecher trend monitoring station (site 5) on Bear Creek, 2012-2024.

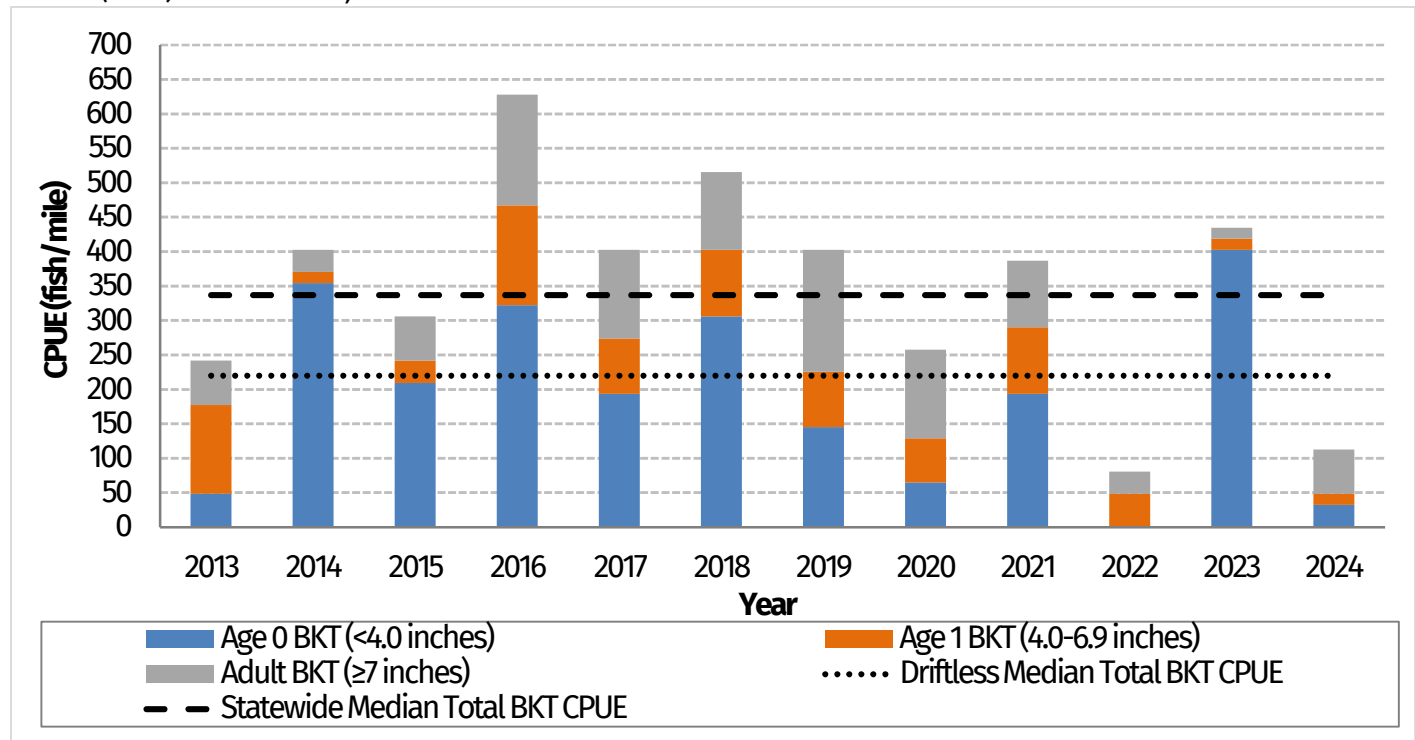


Figure 18. Mean total brook trout catch-per-unit effort (CPUE) at the upper Bear Creek trend monitoring station (site 2), 2013-2024.