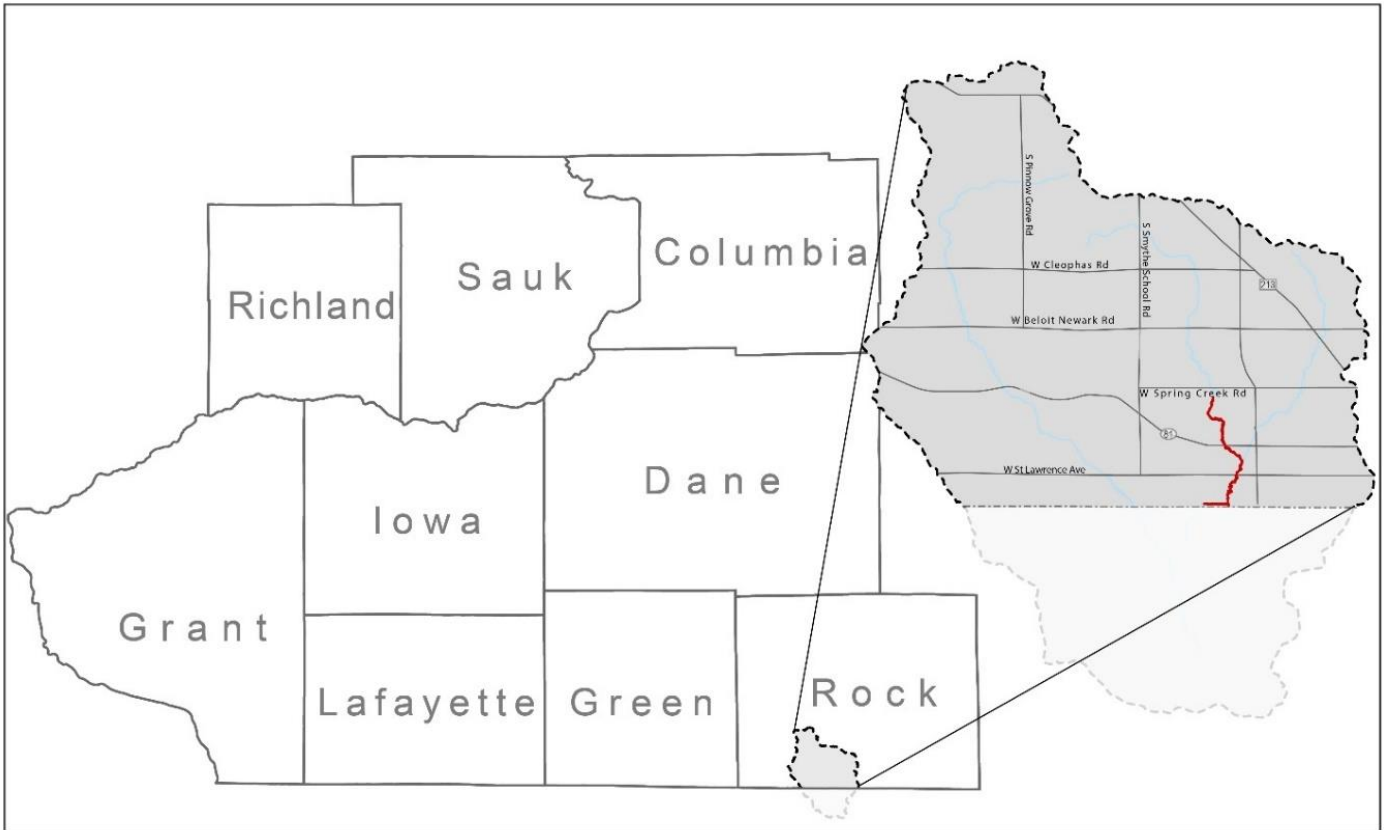


**WISCONSIN DEPARTMENT OF NATURAL RESOURCES**

**Trout Stream Management And Status Report Of  
The Raccoon Creek Watershed  
Rock County, Wisconsin 2022**



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May 2023

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## Executive Summary

The streams in the Raccoon Creek watershed detailed in this report include Raccoon Creek, East Fork Raccoon Creek, and an unnamed tributary to East Fork Raccoon Creek. East Fork Raccoon Creek has the only classified trout water and is one of three classified trout streams in Rock County.

East Fork Raccoon Creek is the only stream that has been recently stocked in the watershed and has received large fingerling and adult brook trout annually since 2003.

Streams were sampled using single pass electrofishing following the suspension of stocking to assess natural recruitment and natural reproduction. An annual trend site on East Fork Raccoon Creek located on West Cleophas Road was also sampled in 2022. DNR staff found fishable populations, evidence of limited recruitment and moderate abundances of brook trout in East Fork Raccoon Creek. In 2022 Raccoon Creek and an unnamed tributary did not contain any trout; however, brook trout have been found in Raccoon Creek in previous years.

Minor adjustments in the trout classifications are recommended. Class 2 waters of East Fork Raccoon Creek should be extended upstream to Gravedale Road. Class 2 trout waters of East Fork Raccoon Creek from West Spring Creek Road to the state line should be downgraded to unclassified trout waters. No adjustments in the trout stream classifications are recommended in Raccoon Creek or the unnamed tributary (unclassified) at this time.

Ongoing threats to the cold-water habitats in this region are intensive agricultural practices in the watershed increasing sediment and nutrients delivery to trout streams resulting in degraded habitat and reduced trout abundances. In order to increase trout numbers several of the physical habitats we evaluated like pool depth and heavy siltation need improvement, but planning for large habitat projects in this watershed is challenging. DNR does not own or have easements on any lands associated with East Fork Raccoon Creek and potential habitat improvement projects will have to navigate around rare species and their habitats. However, even small-scale additions like targeted root wads or cross logs would improve the available habitat for adult brook trout.

Management recommendations highlighted in this report include: increase YOY recruitment and adult abundances in East Fork Raccoon Creek, conduct targeted habitat improvement projects to extent feasible with partner organizations, classify the headwaters of East Fork Raccoon Creek as Class 2 trout waters, declassify the Class 2 trout waters of East Fork Raccoon Creek below West Spring Creek Road to unclassified waters, and maintain the catch and release regulation on all classified trout water.

## **ACKNOWLEDGEMENTS**

Data collection for the 2022 surveys were completed by DNR staff Josh Jonet, Mitchell Trow, Dan Oele and intern Catherine Nguyen. Bryce Linden contributed watershed maps. Claire Gaber, David Rowe and Tim Simonson provided feedback and edits for this report.

## **WATERSHED LOCATION**

Raccoon Creek, East Fork Raccoon Creek, unnamed tributary to East Fork Raccoon Creek.

## **PURPOSE OF SURVEY**

WDNR baseline trout rotation, trend and trout potential surveys  
Assess trout stream classification  
Assess natural reproduction and recruitment  
Assess current trout population abundance

## **DATES OF FIELDWORK**

June 7- June 21, 2022

## **SPECIES SAMPLED**

All fish encountered were collected and recorded including bluntnose minnow, brook stickleback, brook trout, central mudminnow, central stoneroller, creek chub, fantail darter, green sunfish, johnny darter, mottled sculpin, rainbow darter, southern redbelly dace, redbelly dace, western blacknose dace and white sucker.

# **Introduction**

## **SUMMARY OF THE WATERSHED**

The headwaters of East Fork Raccoon Creek originate west of the city of Beloit in a wetland spring complex near Gravedale Road in southern Rock County. The stream flows south over the state border with Illinois where it joins the mainstem, Raccoon Creek. East Fork Raccoon Creek is Class 2 trout waters from West Cleophus Road downstream to the state line. East Fork Raccoon Creek and Raccoon Creek are designated as Exceptional Water Resources (ERW) and are known to have excellent water quality, high recreational and aesthetic value, and high-quality fishing but may be impacted by nonpoint source pollution via agricultural runoff. A small tributary to the East Fork, unnamed Waterbody Identification Code (hereafter, WBIC) 874300 is unclassified trout water and runs 5 miles going south where it meets East Fork Raccoon Creek near HWY 81. Raccoon Creek is unclassified trout water that begins near South Pinnow Grove Road and is impounded by Beckman Millpond in southern

Rock County. It eventually flows south across the state line into Illinois. Raccoon Creek and its tributaries eventually join the Pecatonica River in northern Illinois.

## **CURRENT STATUS AND MANAGEMENT HISTORY**

Class 1 trout streams are those with high quality habitat with sufficient levels of natural reproduction to sustain the fishery and no stocking is required. Class 2 streams are those in which some natural reproduction occurs but not enough to utilize all available food and space and stocking is required to maintain a desirable fishery. Class 3 streams are those in which trout habitat is marginal with no natural reproduction occurring and requires stocking of catchable sized trout to provide a fishing opportunity for trout. East Fork Raccoon Creek is a class 2 stream and contains the only classified trout waters in the watershed. Brook trout were discovered in East Fork Raccoon Creek in 2002 and brook trout stocking began in 2003. Brown trout were also present in the stream from 2003 to 2006. The stream has received supplemental brook trout stocking since 2003 to support the naturally reproduced fish (Figure 1, Table 1).

## **REGULATIONS**

East Fork Raccoon Creek has a special regulation where only artificial lures can be used and all trout must be immediately released (Figure 2).

## **HABITAT IMPROVEMENT**

There have not been any Wisconsin Department of Natural Resources (DNR) habitat projects in this watershed. The Green-Rock Audubon Society and Prairie Enthusiasts actively manage roughly 90 acres on East Fork Raccoon Creek for prairies which provides an excellent buffer area to the stream, protecting it from excess nutrient pollution and sediment runoff.

## **PUBLIC ACCESS**

The best public access for trout angling is on land owned by the Green-Rock Audubon Society and Prairie Enthusiasts on East Fork Raccoon Creek which can be accessed from West Cleophus Road.

## **Methods**

Understanding the natural reproduction capacity and recruitment of a stream is critical to managing trout populations. In our fishery assessments, natural recruitment is defined by juvenile fish surviving to age-1. Natural reproduction is the presence of age-0 fish (young-of-year, YOY) and they are difficult to accurately assess since their vulnerability to electrofishing gear is more variable than larger sized fish. Additionally, YOY are not evenly distributed since they often occur upstream in nursery habitats and migrate downstream to adult and juvenile habitats later in life.

Therefore, documenting the lack of natural reproduction does not mean there is a necessarily a complete lack of natural recruitment.

To assess recruitment to age-1, all stocking of fingerling trout was suspended the year prior to these surveys (or we surveyed before stocking occurred). Our assumption was that all yearling (age-1) trout are from natural recruitment somewhere in the watershed and all YOY (age-0) trout are from natural reproduction. If previous stocking occurred, age-2 and older fish are assumed to be from mixed sources. High levels of natural reproduction, natural recruitment and several age classes without stocking are indicative of self-sustaining Class 1 waters. WDNR assumes put and grow stocking was effective if an absence or low abundance of yearling trout is observed, but an abundance of adult trout can conclude a given stream should be classified as class 2. Marginal waters where only stocked fish survive during early spring and summer with limited carry-over and no reproduction are Class 3.

WDNR surveyed three stations in East Fork Raccoon Creek, two in Raccoon Creek and two in the unnamed WBIC 874300 (Figure 1 for map of sample locations). All seven stream sites were surveyed with either a tow behind barge stream shocking unit or backpack electrofishing unit.

The number of fish sampling sites in a particular stream was dependent on the length of stream following WDNR Fish Management Handbook protocols. One sampling site is required for stream segments less than 1.5 miles, two sites for stream segments 1.5-3 miles and one site every three miles on long rivers (minimum 3 sites). The length of each fish survey at a particular site is determined by stream width; thirty-five times the mean stream width on segments greater than 3 meters and 100 meters minimum for streams less than 3 meters wide.

For each sampling site, staff calculated the catch-per-unit-effort (CPUE) by dividing the number of fish collected by the length of the survey yielding a number of trout per mile estimate. This procedure allows for straight-forward analyses of catch rates within and among stream sites as well as standardized regional and statewide comparisons. Fish length data are analyzed by size classes and age groups of interest. These groups include the number of age-0, young-of-year (YOY), age-1 yearlings and adult trout (age-2+). YOY are fish less than 4 inches in length, yearlings are between 4-7 inches for brook trout, and adults are considered greater than seven inches for brook trout. Preferred sized fish are often of special interest to anglers and are fish greater than 10 inches for brook trout.

All fish encountered during these surveys were collected and staff recorded species of fish and total length (nearest tenth of an inch). Non-trout species are counted to calculate the cold-water index of biotic integrity (IBI) score (0-100). For added context, catch rates of mottled sculpin (intolerant of poor water quality and a cold-water indicator species) and white sucker (tolerant of poor water quality and warmer

water indicator species) were also evaluated as a proxy for long-term water temperature and habitat condition at each survey station. WDNR Fisheries Management Handbook chapter 510 details each of the sampling protocols in greater detail. All fish were returned to the stream.

Water quality and habitat metrics were also collected at each survey site. Streamflow (cubic feet per second, CFS) was calculated at one cross-sectional transect at each site using a HACH FH950 handheld flow meter. Temperature, dissolved oxygen and specific conductivity and pH are also measured using a handheld YSI Pro 2030 meter. Stream habitat metrics were collected using a WDNR 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. For streams greater than 10 m wide, ratings include bank stability, maximum thalweg depth, riffle: riffle or bend: bend ratio, rocky substrate and cover for fish. All data is recorded digitally using weatherproof handheld Toughbook™ laptops and a custom software application.

## Results

Brook trout were only observed in this watershed at the West Cleophus Road station in East Fork Raccoon Creek (Figure 1, Table 2). No brown trout were observed in this watershed. YOY brook trout (natural reproduction) was observed in low abundance at West Cleophus Road (Figure 4) but yearling sized fish (195 per mile), adults (115 per mile) and total catch rates (345 per mile) all exceeded the Southeast Wisconsin Till Plains region median catch rates (Figure 5-6, Table 5). No preferred (>10") sized trout were observed (Figure 7).

The West Cleophus Road station is also a DNR trend station where we survey the same location, with the same gear, at the same time of year annually (Figure 8). The highest catch rates were recorded in 2009 (2400 per mile) but were followed by several years of declines. For example, the average adult catch rate from 2012-2018 was only 64 trout per mile. In the period 2019-2022, the adult catch rates rebounded and stabilized to an average of 430 trout per mile. YOY recruitment and adult abundances have fluctuated considerably while the largest sized fish (>10") are very scarce across the period of record.

The absence of cold-water indicator species like mottled sculpin in most of the watershed indicate the stream temperatures and habitat are likely not suitable or water quality is too poor to support increased trout abundances even with habitat improvements (with the headwaters of East Fork Raccoon Creek as a notable exception). Mottled sculpin were only observed at the West Cleophus Road station (112 per mile). White suckers were observed in all three of the streams we surveyed with the highest catch rates observed in Raccoon Creek (Table 4).

## **COLDWATER INDEX OF BIOTIC INTEGRITY SCORES AND HABITAT QUALITY**

Median cold-water IBI score across all sites were very low, 0 out of 100 and an average score of 17. Average qualitative habitat ratings for the watershed was 47 (out of 100). Average riparian buffer scores were excellent (13.5 out of 15). Bank erosion scores were acceptable but nearly all stations had some erosion issues (range 0-15 out of 15, average 8.5). Adequate habitats defined as pool area were poor with median score of 3 and max score 7 (out of 15). Median scores for other physical habitat metrics showed similar degraded patterns including width: depth ratio (5 out of 15), riffle habitat (5 out of 15) and fine sediments present (5 out of 15). Scores for cover for fish were fair with an average score of 8.5 (max score 15). Average temperature across all stations was 66°F (ranged 61°F to 71°F). Average stream flow was 3.07 CFS (ranged 1.05 – 8.12 CFS) with an average width of 2.8 meters (Table 3).

## **Discussion**

The only trout stream in the watershed is East Fork Raccoon Creek. Though the Unnamed WBIC 874300 is plenty cold enough for trout, it is too silty and shallow to support trout at this time. Raccoon Creek is impounded by the Beckman Millpond at HWY H and impacts the lower reaches of the stream. The two stations surveyed upstream of the impoundment did not have any trout present in 2022 surveys, but previous surveys did show some potential to support a modest number of brook trout in some years. Trout surveys have not been performed in the headwaters of Raccoon Creek for nearly 20 years so an additional three stations on the upper reaches of Raccoon Creek (e.g., West Cleophas Road, West Skinner Road and South Luther Valley Road) should be more thoroughly examined in future surveys during the next watershed rotation to determine if any brook trout are present. If brook trout are present in upper stretches of Raccoon Creek, it should be considered for reclassification.

Recruitment in East Fork Raccoon Creek was very low in our 2022 survey, a rarity for this stream where only one other survey year recorded zero YOY. Low brook trout recruitment was apparent in other streams in southern Wisconsin too, suggesting 2022 was a poor year for brook trout reproduction region wide which might be caused by lower than normal baseflows in many streams. Brook trout YOY abundances and recruitment are known change from year to year based on precipitation and flow rates. Years following a wet year with high precipitation amounts tend to have better brook trout reproduction where increased flows provide more spawning substrates and young fish habitat which results in increased YOY production. For example, high brook trout abundances were found in 2019 through 2021 following flooding events from 2018. Stream flows in East Fork Raccoon Creek were reduced 40-50% in 2022 from previous survey years resulting in poor YOY production (Figure 8 and 9). Drought



conditions force brook trout to find refuge near springs or optimal habitat and the low flows in 2022 may also have affected the presence of brook trout found at Beloit-Newark Road which previously has held trout as recently as 2021.

Historical data shows that no brook trout have been documented at any of the road crossings that are south of Beloit-Newark Road (e.g., West Spring Creek Road, Highway 81 and West Saint Lawrence Avenue) on East Fork Raccoon Creek. Previous surveys at all three locations have found water temperatures between 65°F and 70°F degrees which are temperatures that are outside of the thermal tolerance range for brook trout. Brook trout prefer water temperatures below 60°F so it is likely that water temperature is the factor limiting brook trout presence in lower reaches of East Fork Raccoon Creek near the state line.

Stocking of large fingerling brook trout in East Fork Raccoon Creek has provided a unique angling opportunity for brook trout in this watershed. Adult catch rates (115 per mile) exceeded the minimal fishable population (>50 per mile) but no fish over 10" were observed in the survey. Modest levels of natural recruitment and supplemental stocking have produced adequate numbers of yearling sized fish, but those fish are not surviving into adult sizes regularly and are not reaching sizes that anglers are likely to target most (>10"). Stocking brook and brown trout in Raccoon Creek and Unnamed WBIC 874300 have not established a trout fishery in these streams.

The lack of adult habitat features in the stream greatly limit the adult habitat and therefore, the upper size classes of brook trout are rare in East Fork Raccoon Creek. The highest performing areas of the stream are associated with the cold-water spring inputs and high quality prairie buffers downstream of West Cleophus Road along the Green-Rock Audubon Society and Prairie Enthusiast lands. The stream channel morphology is largely intact and has not been straightened or modified like many others in the area. The sinuosity provides important habitat features for trout including riffles, runs, deeper areas near bends and the occasional pool. The restored prairie grasses blanket the stream in the peak of summer, which provides shade to the stream during the warmest periods of the year and helps keep the stream temperatures cold. The overhanging vegetation provides terrestrial food sources for brook trout as well as redbreast dace, a terrestrial prey specialist and a species of special concern found in only a handful of WI streams.

Beaver activity on East Fork Raccoon Creek appears to provide habitat for adult trout where fish were found in pools above dams or in small riffles below dams. The highest abundances of adult and yearling brook trout were found in the pools near beaver dams. In the absence of beaver dams, the stream would be almost entirely riffles and runs and devoid of habitats like pools that provide adult fish with cover and feeding areas. As long as beaver dams are not causing serious erosion or threatening infrastructure like road decks and private property, allowing beavers to persist here appears to be an asset to the brook trout population.

Like many streams, East Fork Raccoon Creek has become incised and has many reaches with exposed soil and steep banks. Even in the well-buffered prairie reaches, the banks can be vertical with active sluffing and erosion occurring. Bank sloping with heavy equipment that removes the overburden of eroding soils that wash into the stream and improves floodplain connectivity would benefit the stream greatly. Careful placement of boulders creating narrow pinch points and diversifying flow patterns should create more available habitat for trout to utilize. Installing features like brush bundles will provide much needed habitat complexity to the stream. Adult trout will benefit from adding large, downed wood which provide preferred habitats in deeper habitats with overhead cover where they feel safe and have easy access to food resources. Adding cross logs that mimic small dams (that beavers are currently providing sporadically) will create small head pools adult brook trout prefer. However, since the area contains the federally endangered Hine's Emerald Dragonfly, any habitat improvement projects will need to be carefully planned and implemented with great care to ensure the dragonfly's habitats are not impacted while trying to improve brook trout habitat.

Our fieldwork and analyses revealed that the minor adjustments in the trout classifications are appropriate. Class 2 waters of East Fork Raccoon Creek should be extended upstream of West Beloit Newark Road to West Gravedale Road while Class 2 waters from West Spring Creek Road to the state line should be downgraded to unclassified trout waters. No adjustments are needed in Raccoon Creek or the unnamed WBIC 874300 (appropriately unclassified). Raccoon Creek should be reevaluated and considered for trout stream reclassification on the next watershed rotation.

In addition to physical habitat stressors caused by urban and agricultural pressures, along with climate change, invasive species like New Zealand Mudsnailed continue to colonize Wisconsin's trout streams. Research and monitoring is underway to determine any impacts new invaders like mudsnails pose to the trout fishery and ecology of the stream. Anglers, paddlers and other recreational enthusiasts need to be mindful transporting these organisms between the waterways they recreate in. Freezing gear or robust disinfecting protocols (e.g. freeze, Virkon™, steam) are the best ways to be sure your gear is free of aquatic invasive species between trips.

## Management Recommendations

- 1) **Goal** –Increase brook trout natural recruitment in East Fork Raccoon Creek  
**Objectives** – a) Increase YOY size trout (>4”) CPUE >125 per mile (Statewide 50<sup>th</sup> percentile is 148 per mile) without additional stocking.  
**Strategy**- Collaborate with conservation organizations landowners to conduct trout habitat improvement projects designed to increase spawning habitat along publicly accessible streambank frontage.
  - a) Spot treatments and or careful planning to minimize impacts to established prairies and rare species.
  
- 2) **Goal** –Increase angling opportunities for preferred >10” sized brook trout in the East Fork Raccoon Creek  
**Objectives** – a) Increase preferred size trout (>10”) CPUE >20/ mile (Southeast Wisconsin Till Plains is 27.3 and Statewide 50<sup>th</sup> percentile is 16 per mile)  
**Strategy** – Maintain high quality trout habitats instream and along riparian corridor while promoting increased pool habitats and complex woody habitats to extent feasible along publicly accessible lands with targeted habitat improvement projects and avoiding impacts to rare species.
  
- 3) **Goal** –To extent feasible, increase public access to trout streams in rural Rock County  
**Objectives** – a) Acquire new public fishing easements in the watershed  
**Strategy** – Modify the stream bank eligible streams to include East Fork Raccoon Creek in next Southeast Glacial Plains DNR Master Planning effort.

### Additional Management Recommendations:

- 1) Trout classification modifications:
  - a. Upgrade unclassified trout waters of the headwaters of East Fork Raccoon Creek upstream of West Beloit Newark Road to West Gravedale Road to Class 2 trout waters.
    - i. 2021 surveys showed 860 trout per mile ranging in size 2-8” upstream of West Cleophus Road.
  - b. Downgrade Class 2 waters of East Fork Raccoon Creek from West Spring Creek Road to the state line to unclassified waters.
- 2) Extend the current special regulation on East Fork Raccoon Creek upstream to West Gravedale Road where only artificial lures may be used and all brook trout must be released.
- 3) Discontinue stocking of large fingerling brook trout in East Fork Raccoon Creek and consider upgrading stream to class 1 trout water during next survey rotation.
  - a. Continue to monitor brook trout population in East Fork Raccoon Creek during annual trend survey to evaluate natural reproduction and recruitment following the discontinuation of stocking.

- b. Reevaluate brook trout population during next watershed rotation and stock again if necessary.
- 4) Monitor brook trout in the headwaters of Raccoon Creek on the next watershed rotation and consider for reclassification.

## Tables and Figures

Table 1. DNR trout stocking in East Fork Raccoon Creek Watershed 2014-2022 (note: Raccoon Creek stocked in 2002 with brook trout and brown trout in the 1970's and the Unnamed tributary WBIC 874300 last stocked with brook trout in 2001).

<b>Stream</b>	<b>Species</b>	<b>Age</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>
E. Fork Raccoon Cr.	Brook	Large Fingerling Adult	465	897	667	450 100	500	1155	500	490	725

Table 2. Brook trout catch rates for the Raccoon Creek watershed during the 2022 assessment. Catch Per Unit Effort units are numbers of fish per electrofishing mile. Values shown in red indicate catch rate below Statewide median CPUE.

Stream	Station (ID)	N	Mean Length (In)	<4" YOY CPUE	4-7" Yearling CPUE	>7" Adult CPUE	>10" Preferred CPUE	Total CPUE
E. Fork Raccoon Cr.	<b>Stream Average</b>	10		<b>11.48</b>	<b>65.14</b>	<b>38.31</b>	<b>0.00</b>	<b>114.95</b>
	West Cleophas Rd. (215)	30	6.36	34.46	195.42	114.95	0.00	344.86
	Beloit Newark Rd. (214)	0		0.00	0.00	0.00	0.00	0.00
	W. Spring Creek Rd. (212)	0		0.00	0.00	0.00	0.00	0.00
Unnamed WBIC 874300	<b>Stream Average</b>	0		0.00	0.00	0.00	0.00	0.00
	S. Paddock Rd. (217)	0		0.00	0.00	0.00	0.00	0.00
	HWY 81 (218)	0		0.00	0.00	0.00	0.00	0.00
Raccoon Creek	<b>Stream Average</b>	0		0.00	0.00	0.00	0.00	0.00
	Beloit Newark Rd. (216)	0		0.00	0.00	0.00	0.00	0.00
	HWY 81 (213)	0		0.00	0.00	0.00	0.00	0.00
<b>Southeast Wisconsin Till Plains Median CPUE</b>				<b>61</b>	<b>113</b>	<b>92</b>	<b>27</b>	<b>177</b>
<b>Statewide Median CPUE</b>				<b>148</b>	<b>156</b>	<b>85</b>	<b>18</b>	<b>336</b>

*Table 3. Coldwater index of biotic integrity (IBI) scores, temperature, flow, stream width, and qualitative habitat ratings for the Raccoon Creek watershed.*

<b>Stream</b>	<b>Station (ID)</b>	<b>Coldwater IBI Score</b>	<b>Temp. (°F)</b>	<b>Mean Stream Width (meters)</b>	<b>Flow (CFS)</b>
E. Fork Raccoon Cr.	West Cleophas Rd. (215)	80	61.2	2	1.06
	Beloit Newark Rd. (214)	30	70.1	2.2	1.77
	W. Spring Creek Rd. (212)	0	71.2	3.8	3.18
Unnamed WBIC 874300	S. Paddock Rd. (217)	0	64.1	2.8	1.41
	HWY 81 (218)	0	67	1.9	1.41
Raccoon Creek	Beloit Newark Rd. (216)	10	66	4.2	4.59
	HWY 81 (213)	0	64.3	3	8.12

Table 4. Total catch rates for mottled sculpin and white sucker, IBI scores and predicted stream natural community categories for the Raccoon Creek Watershed.

<b>Stream</b>	<b>Station (ID)</b>	<b>IBI Score</b>	<b>Natural Community Prediction</b>	<b>Mottled Sculpin CPUE</b>	<b>White Sucker CPUE</b>
E. Fork Raccoon Cr.	West Cleophas Rd. (215)	80	Cool-Warm Headwater	112.65	68.97
	Beloit Newark Rd. (214)	30	Cool-Warm Headwater	0.00	64.37
	W. Spring Creek Rd. (212)	0	Cool-Warm Headwater	0.00	0.00
Unnamed WBIC 874300	S. Paddock Rd. (217)	0	Cool-Cool Headwater	0.00	0.00
	HWY 81 (218)	0	Cool-Cool Headwater	0.00	0.00
Raccoon Creek	Beloit Newark Rd. (216)	10	Cool-Cold Headwater	0.00	206.00
	HWY 81 (213)	0	Cool-Cold Headwater	0.00	241.40



Table 5. Brook trout CPUE (fish/mile) percentile breakdown for stream surveys conducted on Class 1 trout streams in the Southeast Wisconsin Till Plains region and statewide where at least one trout was collected, 2012-2021.

	CPUE total (All sizes)		CPUE age-0 (<4.0 ")		CPUE age-1 (4.0-6.9 ")		CPUE adult (≥7 ")		CPUE preferred (≥10 ")	
Percentile	SE		SE		SE		SE		SE	
	Glacial Till Plain	Statewide	Glacial Till Plain	Statewide	Glacial Till Plain	Statewide	Glacial Till Plain	Statewide	Glacial Till Plain	Statewide
10	12	22.9	12.1	16.1	12.3	16.1	13	15.3	14.7	5.7
25	38.1	96.6	29.3	45.3	32.2	48.3	32.2	32.2	16.1	10.3
35	87.6	174.7	32.2	72.4	38.8	80.5	48.3	48.3	19.3	12.8
50 (median)	177	336.8	61.4	145.3	112.7	149.2	92	80.5	27.3	16.4
65	392.9	579.7	147.6	241.4	215.7	257.2	150	129.4	32.2	27.5
75	633.9	772.5	217.3	365.5	305.8	366.7	234.7	185.2	45	37.4
90	1049	1488.4	452.2	812.3	539.6	662.7	362.7	344	79.3	64.4

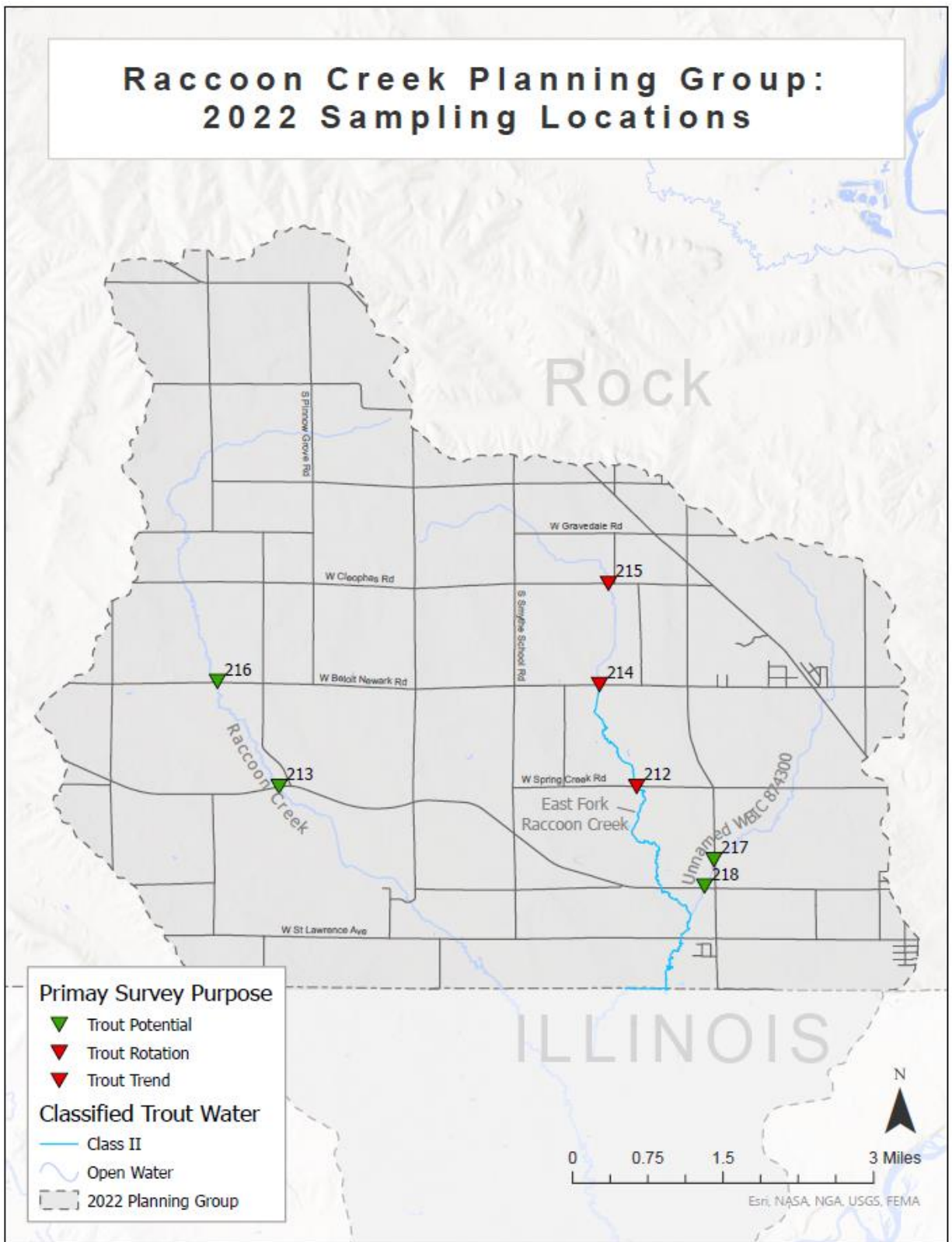


Figure 1. Stream classifications and fishery assessment survey sites within the Raccoon Creek Watershed.

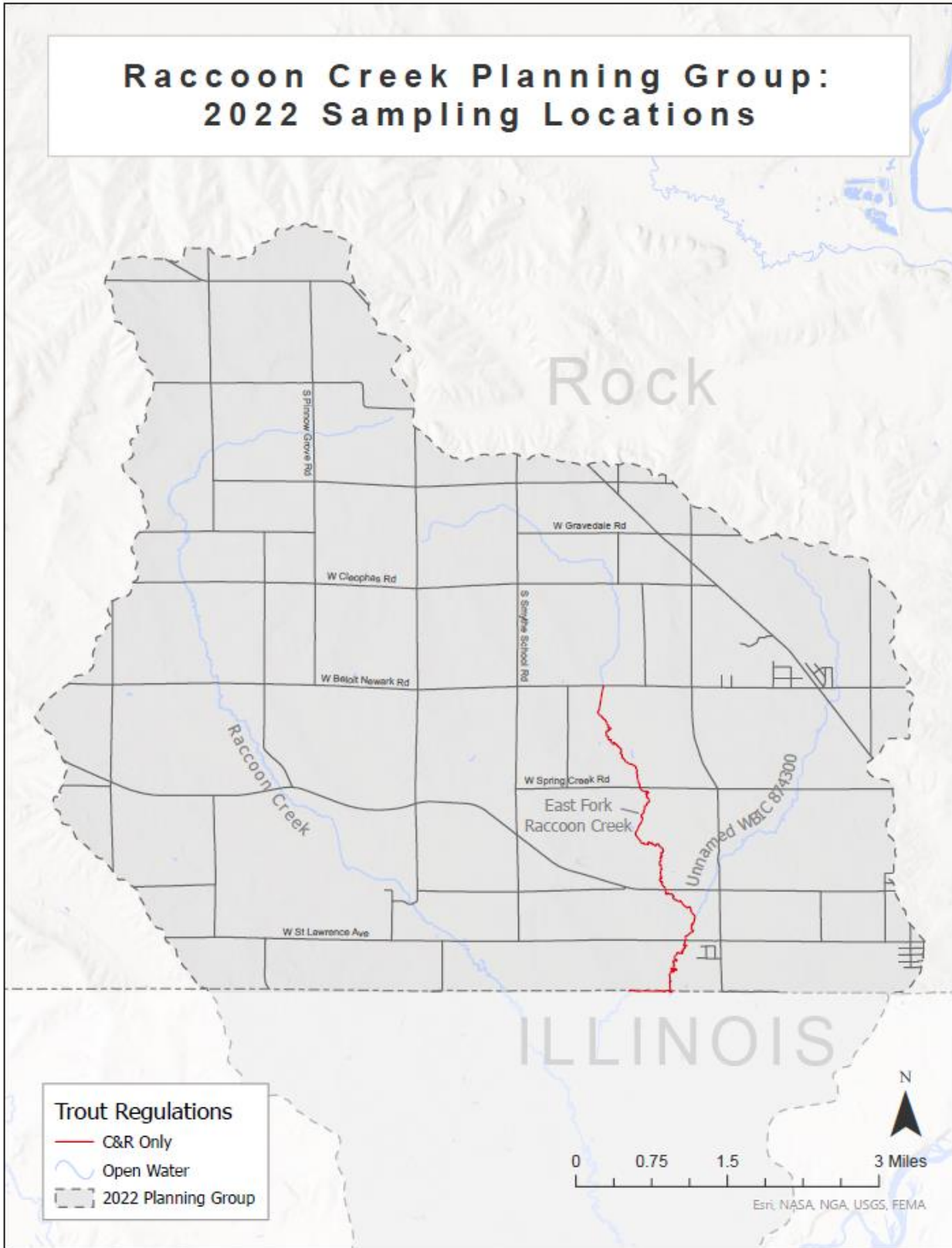


Figure 2. East Fork Raccoon Creek waters have a special regulation of artificial lures only, all trout must be immediately released.

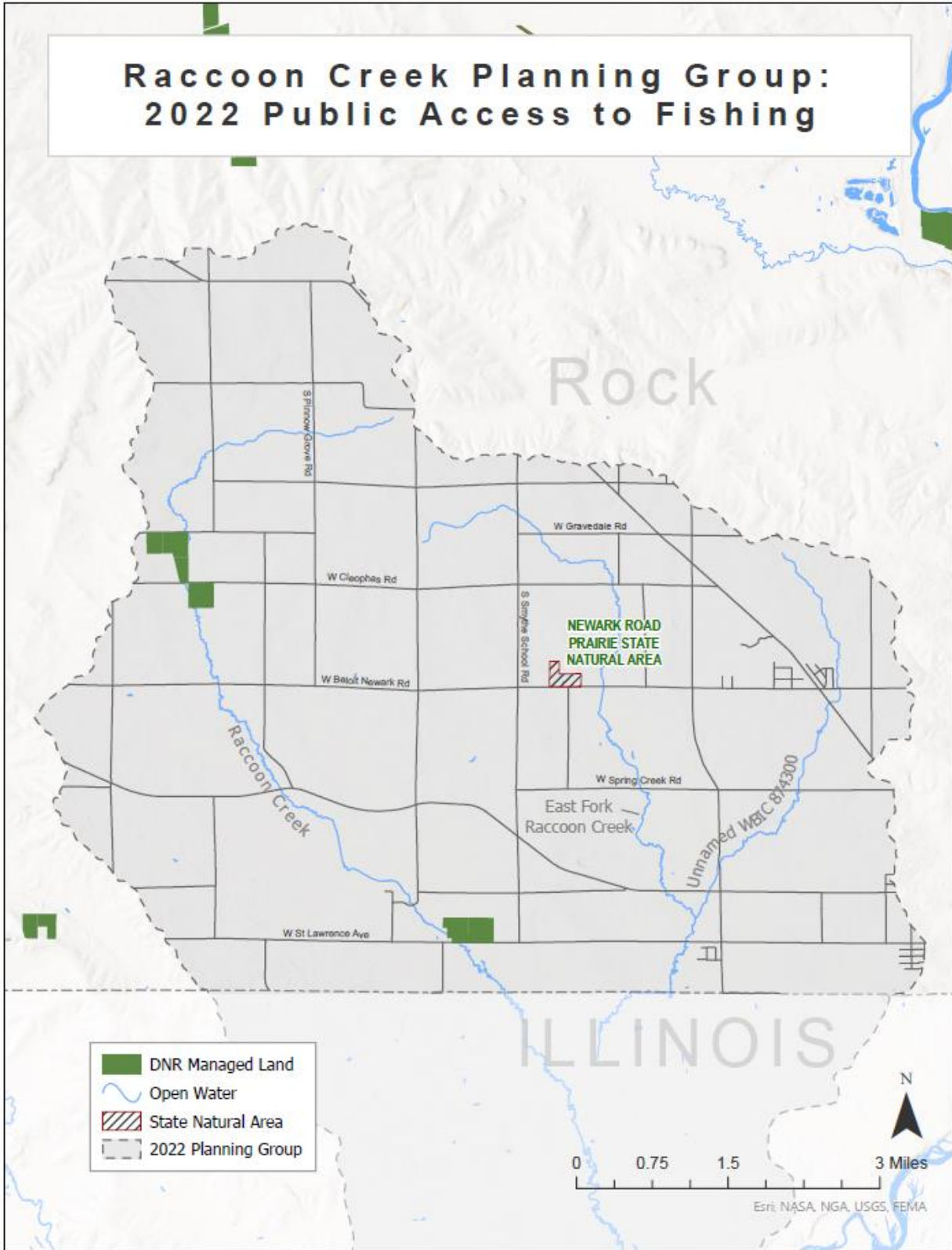


Figure 3. Raccoon Creek Watershed public access points and WDNR Stream Bank Easement program eligible waters.

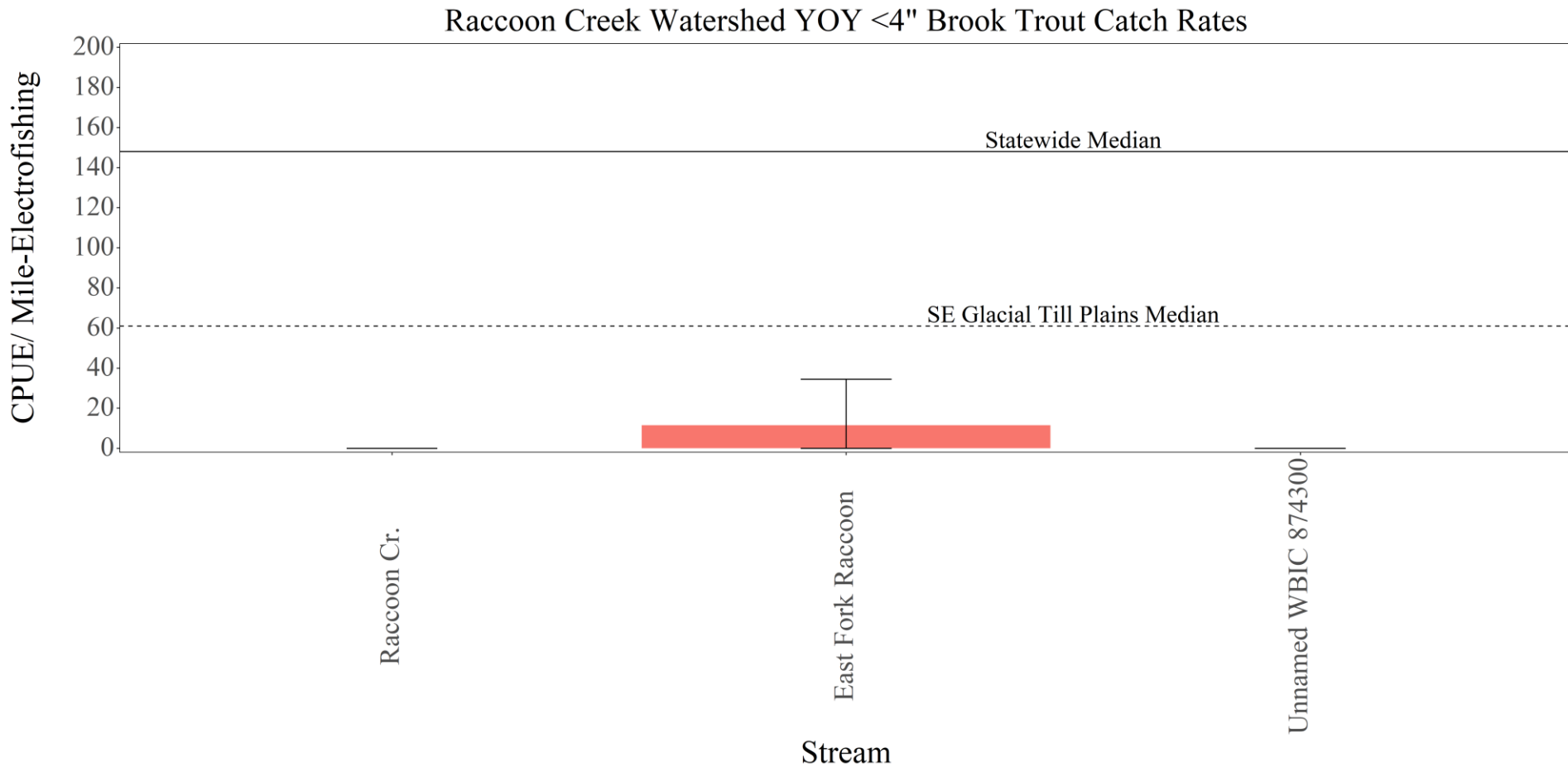


Figure 4. Average young-of-year brook trout catch rates (<4") across all survey sites for each stream in the Raccoon Creek Watershed. Error bars represent minimum and maximum catch rates observed in the survey for each stream.

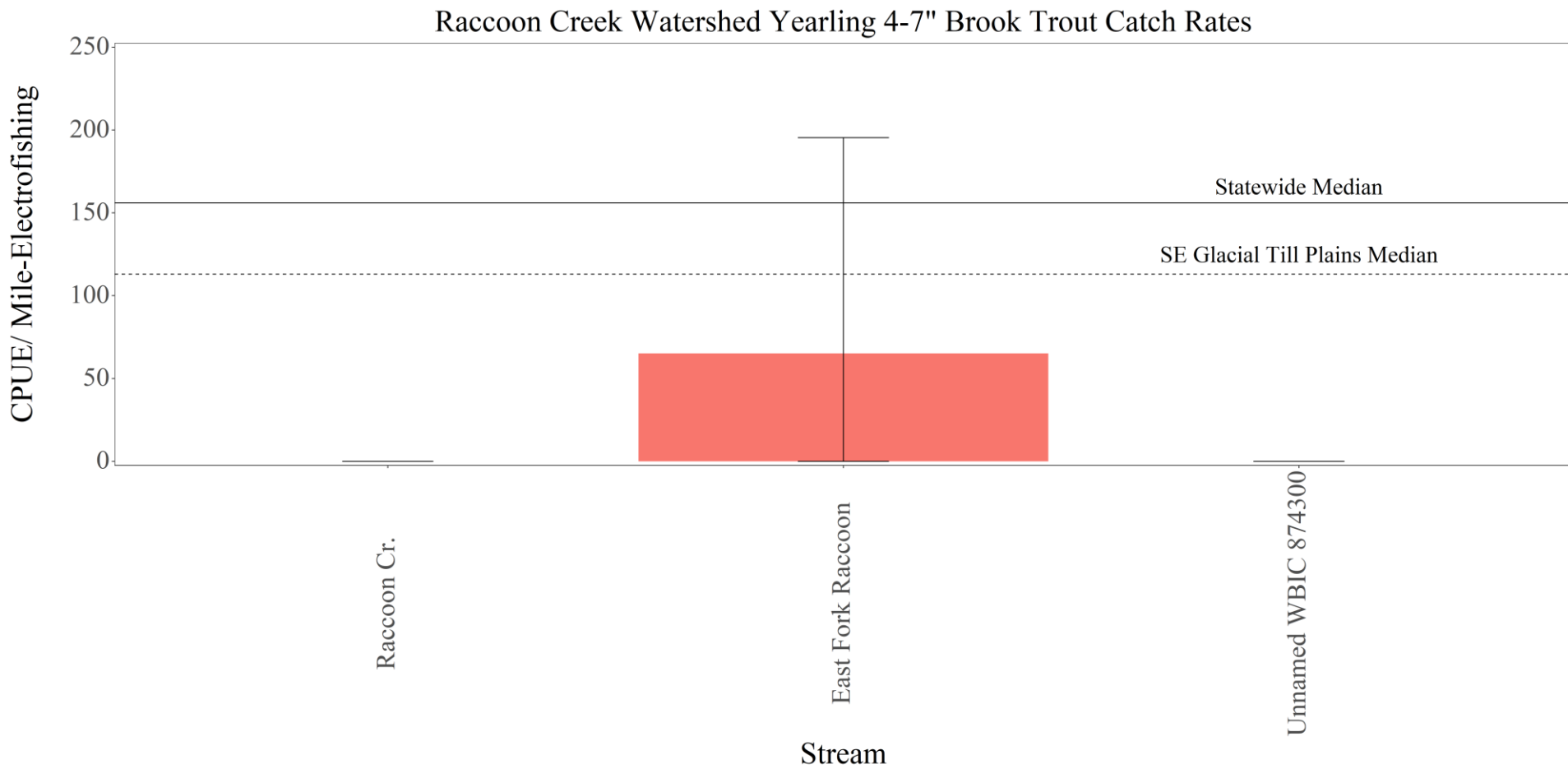


Figure 5. Average yearling brook trout catch rates (>4 & <7") across all survey sites for each stream in the Raccoon Creek Watershed. Error bars represent minimum and maximum catch rates observed in the survey for each stream.

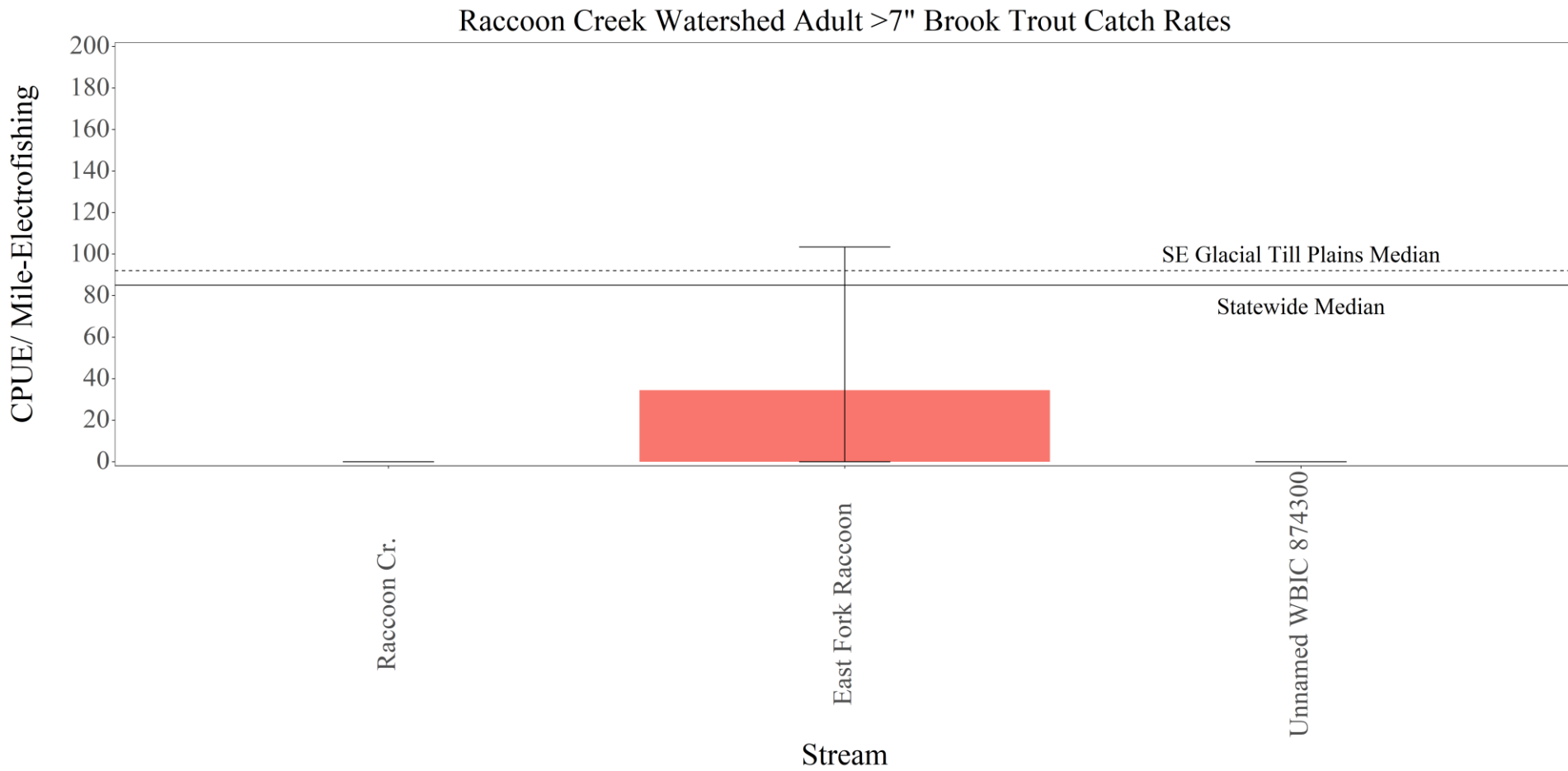


Figure 6. Average adult brook trout catch rates (>7") across all survey sites for each stream in the Raccoon Creek Watershed. Error bars represent minimum and maximum catch rates observed in the survey for each stream.

### Raccoon Creek Watershed >10" Brook Trout Catch Rates

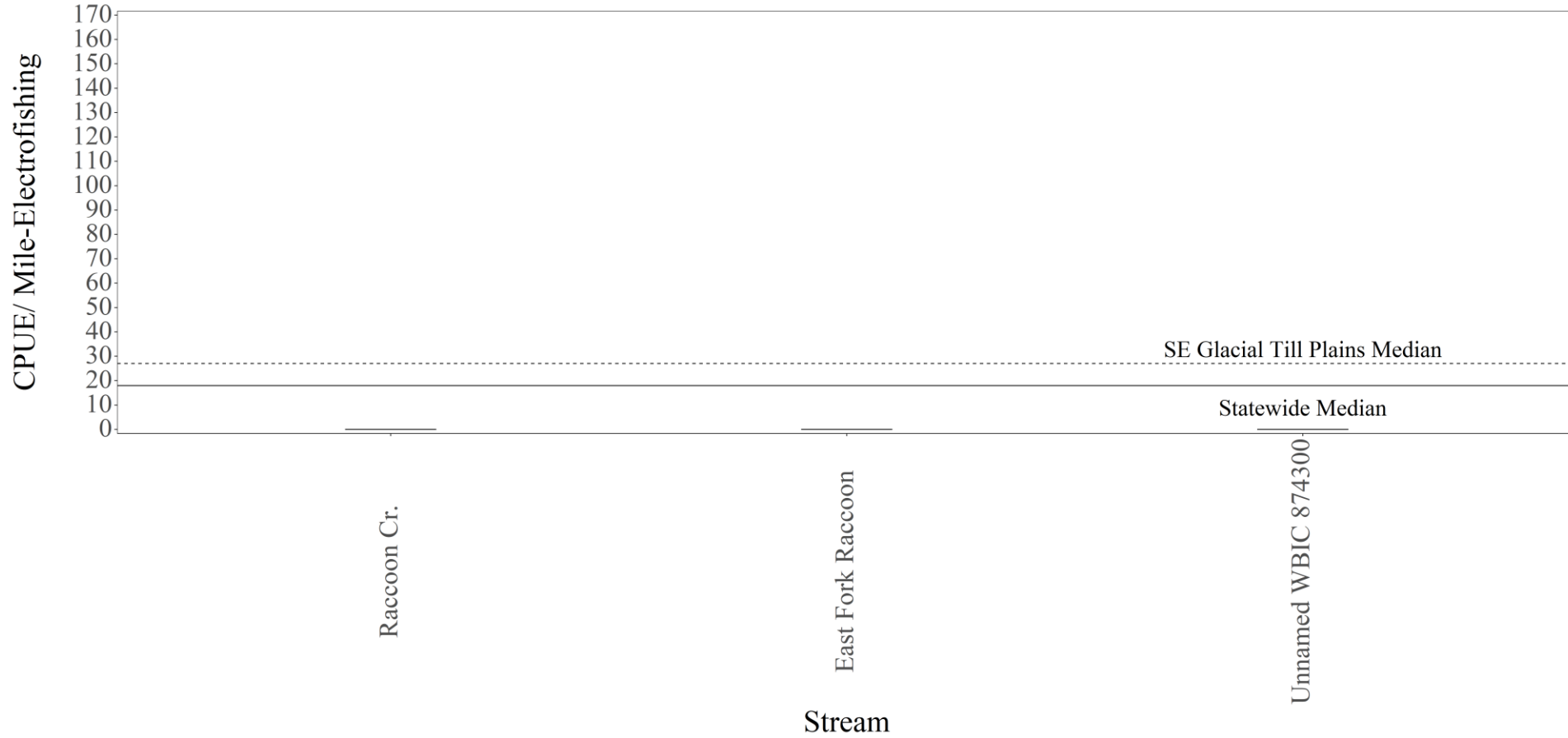


Figure 7. Average adult brook trout catch rates (>10") across all survey sites for each stream in the Raccoon Creek Watershed. Error bars represent minimum and maximum catch rates observed in the survey for each stream.



Brook Trout CPUE for East Fork Raccoon River @ W. Cleophus Rd.

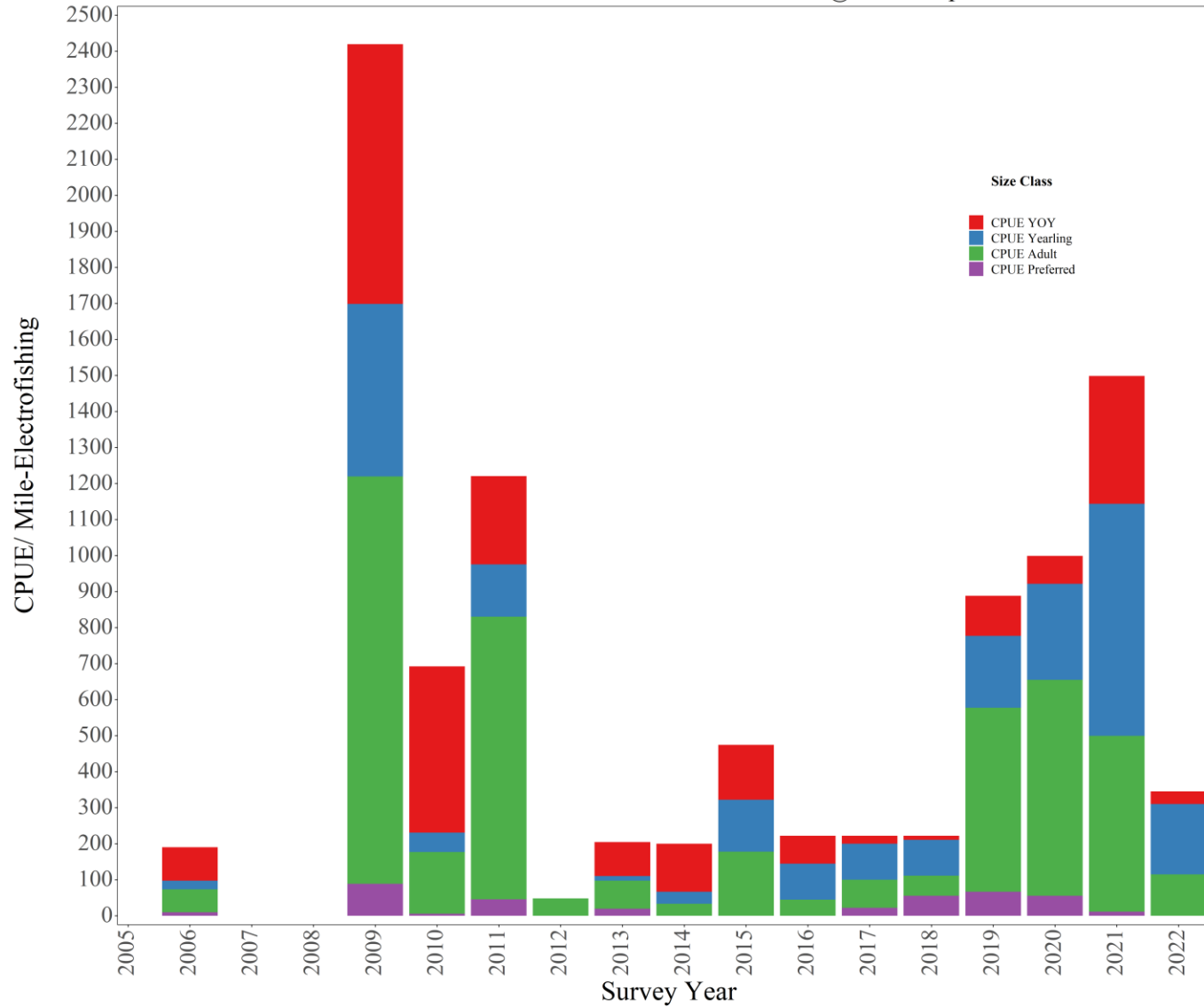


Figure 8. Brook trout size-specific catch rates at the DNR annual trend site at West Cleophas Road (no surveys conducted 2005, 2007, or 2008).

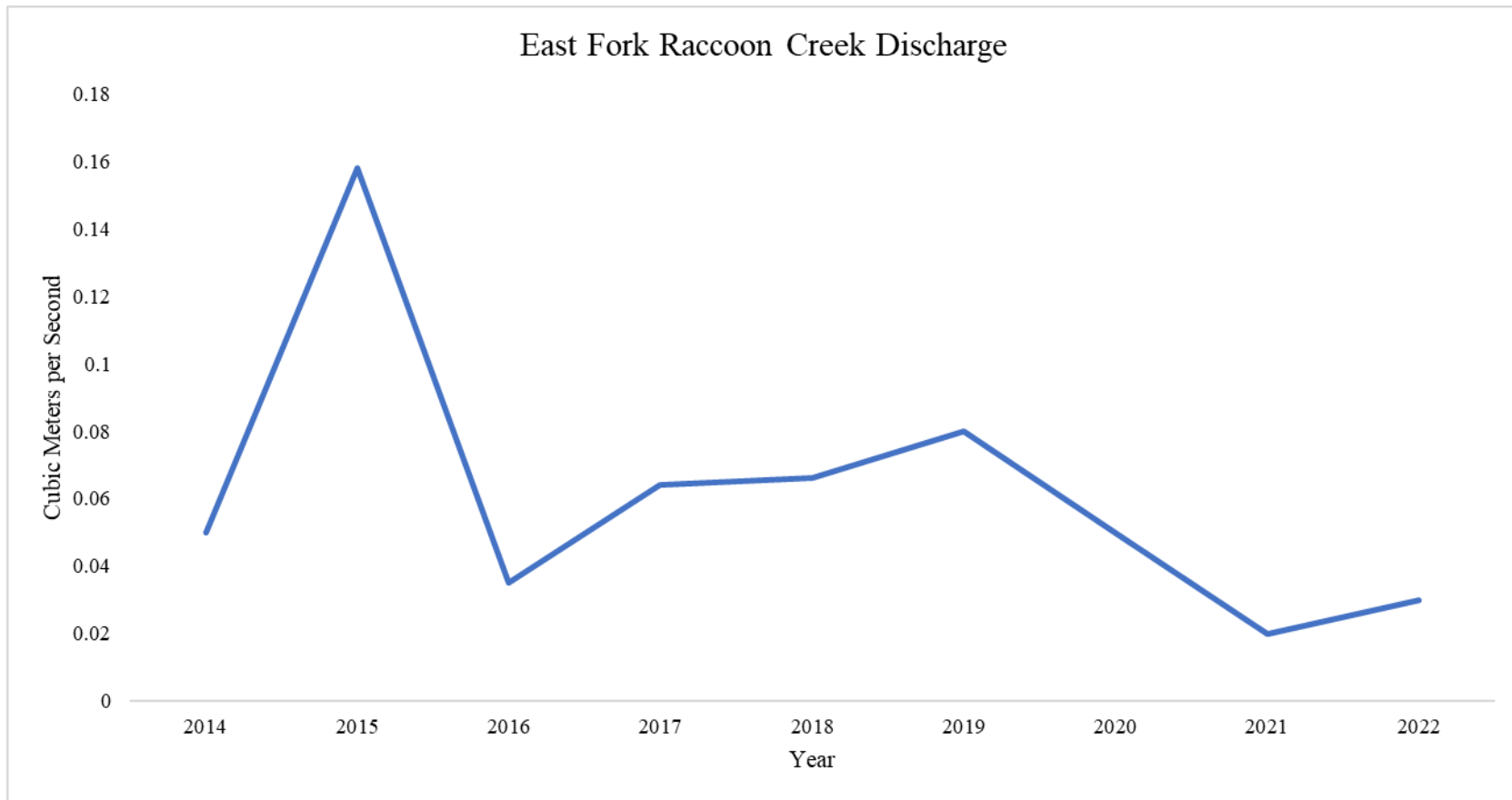


Figure 9. Flow rates in East Fork Raccoon Creek at West Cleophas Road trend site from 2014 to 2022. Flow rates were measured in cubic meters per second.