

**Stream Classification for an Unnamed Tributary (Yorkville Creek)  
of the West Branch Root River Canal**

Root River Watershed (SE03), Southeastern Wisconsin River Basin  
Racine County, Wisconsin  
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INTRODUCTION

A stream classification was conducted on the Unnamed Tributary to the West Branch Root River Canal locally referred to as Yorkville Creek as part of the Root / Pike River Basin monitoring. Yorkville Creek is confluent with the West Branch Root River Canal at T3N R21E S3 SESW just downstream of 50th Road in Racine County. An earlier stream classification determined that Yorkville Creek was a Limited Forage Fish Communities Stream (WDNR, 1985).

METHODS AND RESULTS

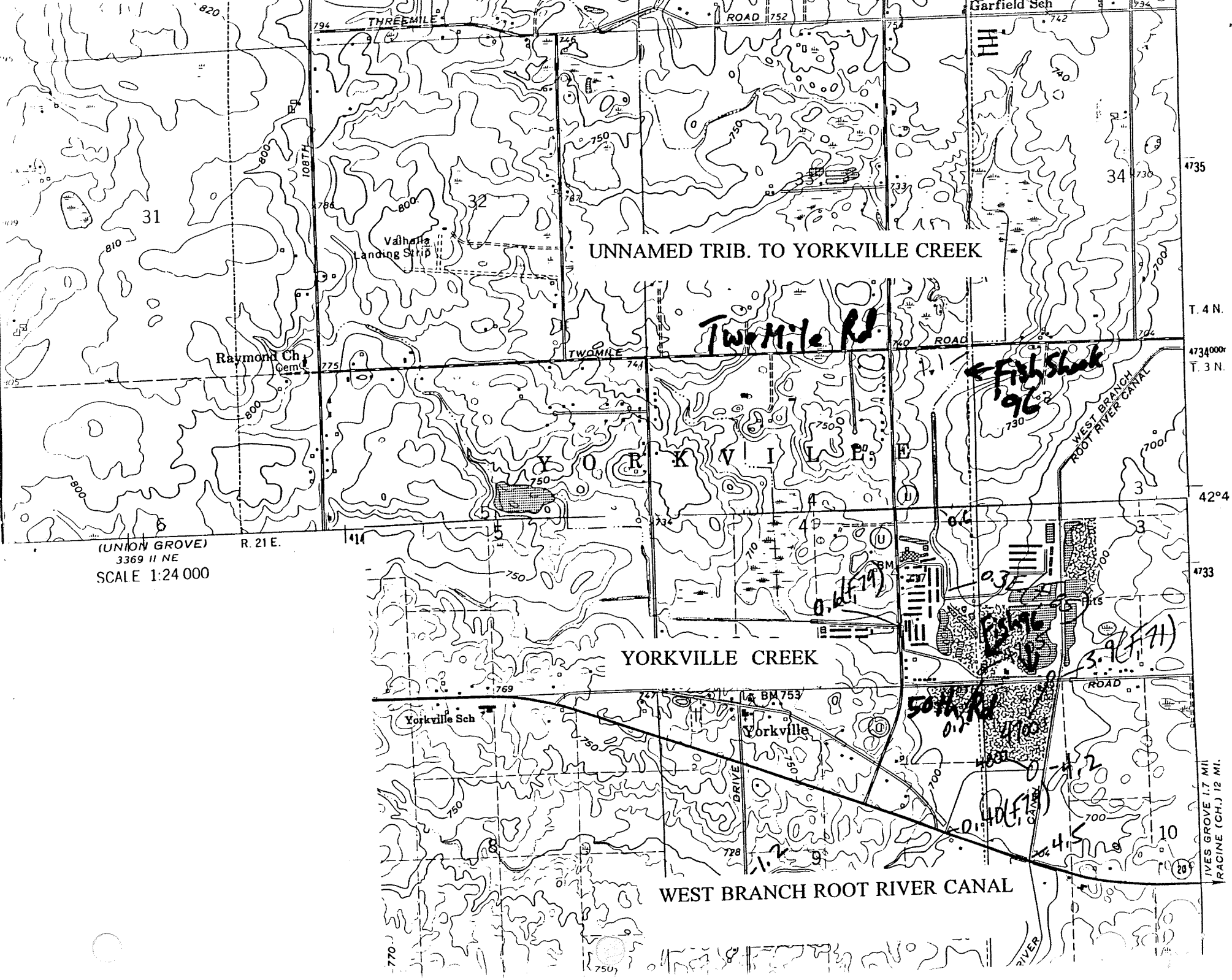
Habitat and Fish Surveys

Stations were surveyed using the habitat protocols developed by Ball (1982) and Simonson *et al.* (1994). Both stream habitat assessment methods were used for each site because they evaluate different characteristics of the stream ecosystem. The Stream Classification Guidelines for Wisconsin developed by Ball (1982) is an assessment of the whole stream system habitat including the watershed, stream bank, and instream habitat. In conjunction with this assessment, the Fish Habitat Rating (FHR) developed by Simonson, Lyons, and Kanehl (1994) was determined for each fish survey site. The FHR is an assessment of the physical habitat available for fish within a given stream reach. The fish surveys included instantaneous water quality information consisting of temperature, dissolved oxygen, turbidity, pH, and conductivity.

Fish community surveys were conducted using a DC pulsed backpack shocker. Each survey consisted of a single pass from downstream moving upstream. All fish were collected then identified, enumerated and released. Fish collections were assessed using the Index of Biotic Integrity (IBI) protocol developed by Lyons (1992). Three fish community surveys were conducted April 23, 1996 in Yorkville Creek and a unnamed tributary to Yorkville Creek (Map 1). The survey sites and habitat ratings are shown in Table 1.

Table 1. Fish community assessment station locations and habitat survey results for the Yorkville Creek and an unnamed tributary to Yorkville Creek sampled on April 23, 1996.

STREAM	SAMPLE SITE	HABITAT RATING			RIVER MILE	LEGAL DESCRIPTION
		Ball	FHR	IBI		
Yorkville Creek	upstream of confluence with the West Branch Root River Canal (adjacent 50th Road)	Poor	Fair	Poor	0.1	T3N R21E S3 SESW
Unnamed Tributary to Yorkville Creek	upstream of confluence with Yorkville Creek	Poor	Fair	Fair	0.1	T3N R21E S4 SESE
Unnamed Tributary to Yorkville Creek	downstream of Two Mile Road	Poor	Fair - Good	Fair	1.1	T3N R21E S3 SW



(UNION GROVE)  
3369 II NE  
SCALE 1:24 000

UNNAMED TRIB. TO YORKVILLE CREEK

*Two Mile Rd*

*Fish Shack*  
*96*

YORKVILLE CREEK

*50th Rd*

WEST BRANCH ROOT RIVER CANAL

IVES GROVE 1.7 MI.  
RACINE (CH.) 12 MI.

## Fish Community

The results from the three fish community surveys conducted in 1996 for Yorkville Creek and an unnamed tributary to Yorkville Creek are shown in Table 2.

Table 2. Number of fish collected during the fish community surveys of the Yorkville Creek and an unnamed tributary to Yorkville Creek sampled on April 23, 1996. (RM = River mile upstream from the confluence with the West Branch Root River Canal and Yorkville Creek respectively, Map 1).

Fish Species	Yorkville Creek Adjacent 50th Road RM = 0.1 4/96	Unnamed Tributary to Yorkville Creek upstream of confluence RM = 0.1 4/96	Unnamed Tributary to Yorkville Creek downstream of Two Mile Road RM = 1.1 4/96
Bigmouth Shiner	82	94	
Blackside Darter	2	1	
Bluntnose Minnow	9	4	
Brook Stickleback	3	10	13
Central Mudminnow	5	15	10
Common Shiner	21		
Creek Chub	42	51	39
Fathead Minnow	17	17	30
Golden Shiner			1
Green Sunfish	4	6	28
Johnny Darter	7	3	3
Logperch	1		
White Sucker	58	15	27
Yellow Bullhead	1		

Fourteen species of fish were collected during the 1996 survey of Yorkville Creek and a tributary to Yorkville Creek, including two species of sport fish (green sunfish and yellow bullhead). As can be seen in Table 2, Yorkville Creek and its tributary has an existing diverse forage fishery and limited sport fish community.

## SUMMARY AND RECOMMENDATIONS

A stream classification survey was completed for Yorkville Creek as part of the 1996 Basin Monitoring. The stream classification provides information for establishing water quality criteria and for calculating effluent limits for dischargers to Yorkville Creek. Based on the results of the fish and habitat surveys conducted in the 1996 stream classification survey, **Yorkville Creek is classified as Full Fish and Aquatic Life Stream - Warm Water Forage Fish Communities**. This stream classification for Yorkville Creek uses recent fish surveys and is based on guidelines developed by Ball (1982).

## REFERENCES

- Ball, Joseph. 1982. Stream Classification Guidelines for Wisconsin. Technical Bulletin. Wisconsin Department of Natural Resources, Madison, Wisconsin.
- Lyons, John. 1992. Using the Index of Biotic Integrity (IBI) to Measure Environmental Quality in Warmwater Streams of Wisconsin. North Central Forest Experiment Station, Forest Service - U.S. Department of Agriculture. St. Paul, MN.
- Simonson, T., J. Lyons and P. Kanehl. 1994. Guidelines for Evaluating Fish Habitat in Wisconsin Streams. U.S. Dept. of Agriculture, Forest Service, North Central Forest Experimental Station. General Technical Report NC-164. St. Paul, MN.
- WDNR. 1985. Stream Classification for an Unnamed Tributary (Yorkville Creek) of the West Branch of the Root River Canal. Southeast Region Headquarters File, Milwaukee, WI.