



**Minnesota Department of Natural Resources  
Division of Fisheries  
Stream Population Assessment**

Report Date: 9/27/2005

<b>Region</b> 4	<b>Area</b> Lanesboro	<b>Stream Name</b> West Indian Creek	<b>Tributary No.</b> M-34-17	<b>Length</b> 7.2 miles
<b>County:</b> Wabasha		<b>Watershed Name, No.</b> Zumbro River, 41	<b>Source (T.R.S.)</b> 109N 11W 21	<b>Mouth (T.R.S)</b> 110N 11W 31

<b>Date(s) of Assessment:</b>	9/27/2005
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**Assessment Purpose:** Long-term brown and brook trout database station.

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres	Downstream UTM	
5.4	2	5.40	975	20.0	0.450	4898689	568328
						4898495	568344

**Summary:**

This station is one of the Lanesboro area's long-term stations, which are sampled annually to examine temporal variation. A continuous water quality monitoring station was installed farther downstream which is presently measuring dissolved oxygen, water and air temperature, rainfall, and river stage. Overall numbers of adult brown trout decreased from 1,111/mile (fall 2004) to 766/mile (fall 2005), while numbers of fingerlings in the fall decreased dramatically from 975/mile (fall 2004) to 92/mile (fall 2005). Brown trout numbers over 12 inches decreased in fall from 114/mile (fall 2004) to 32/mile (fall 2005). Brook trout were absent; overall adult numbers decreased from 5/mile in fall 2004 to zero in fall 2005.

In general, West Indian Creek has a moderate overall population of brown trout, with moderate numbers over 12 inches, and a possible brook trout population. The Stream Management Plan written in 2000 lists a long range goal for Station 5.4 as 1000 brown trout per mile with 150 per mile over 12 inches; this year neither goal was met.

Although station 5.4 had been sampled in spring and fall every year since 1981, the spring of 2004 was the last scheduled sampling event in the spring. Fall sampling will continue.

A set of habitat data were collected within most of the long-term electrofishing stations for the first time in 2005; this is intended to be a complementary long-term effort to examine temporal variation in habitat as well as correlations with fish variables. Compared with the other long-term streams sampled, the West Indian Creek station is notable for having a high Brown Trout Habitat Quality Index (Thorn and Anderson 2001), much wood cover, and a low percentage of riffles. Habitat data are summarized on the attached page.

Stream West Indian CreekTributary Number M-34-17

## Fishery Characteristics - Population Estimates

Date 9/27/2005

Station	5.4			
Date	9/27/2005			
Gear	SS2			
Method	DEP			
Effort (minutes)	N/A			

## Population Estimate, Age 1+

Species	Number	Wt (Lbs)	Number	Wt (Lbs)	Number	Wt (Lbs)	Number	Wt (Lbs)
Brown trout	142	41.7						
Total	142	41.7						

## Population Estimate, Young-of-Year (YOY)

Species	Number	Wt (Lbs)	Number	Wt (Lbs)	Number	Wt (Lbs)	Number	Wt (Lbs)
Brown trout	17	0.7						

## Population Estimate, Total

Species	Number	Wt (Lbs)	Number	Wt (Lbs)	Number	Wt (Lbs)	Number	Wt (Lbs)
Brown trout	159	42.4						
Total	159	42.4						

## Population Estimate Summary

Species	No/Mi	Lb/Acre	No/Mi	Lb/Acre	No/Mi	Lb/Acre	No/Mi	Lb/Acre
<b>Brown Trout</b>								
Age 1+	766	93.1						
>12 inches	32							
Fingerlings (YOY)	92	1.5						
<b>Brook Trout</b>								
Age 1+								
>10 inches								
Fingerlings (YOY)								
<b>Rainbow Trout</b>								
Age 1+								
>12 inches								
Fingerlings (YOY)								
<b>All Species</b>								
Age 1+	766	93.1						
Fingerlings	92	1.5						
Total	858	94.6						



Age and Growth

Stream West Indian Creek

Tributary Number M-34-17

Date 9/27/05

a) Age Class Distributions


b) Growth of gamefish

Species	Calculated mean total length at time of last annulus formation (N)							
	I	II	III	IV	V	VI	VII	VIII+
No ageing done								

**Length-Frequency Distribution**

**Stream**  
**Tributary Number**  
**Date**

West Indian Creek  
M-34-17  
9/27/2005

Species	BNT						
Station	5.4						
Date	9/27/05						
Length Class							
0 - 2.4							
2.5 - 2.9							
3.0 - 3.4							
3.5 - 3.9							
4.0 - 4.4	4						
4.5 - 4.9	3						
5.0 - 5.4	2						
5.5 - 5.9	1						
6.0 - 6.4	5						
6.5 - 6.9	14						
7.0 - 7.4	14						
7.5 - 7.9	16						
8.0 - 8.4	14						
8.5 - 8.9	5						
9.0 - 9.4	6						
9.5 - 9.9	11						
10.0 - 10.4	11						
10.5 - 10.9	9						
11.0 - 11.4	6						
11.5 - 11.9	6						
12.0 - 12.4	1						
12.5 - 12.9	1						
13.0 - 13.4	3						
13.5 - 13.9	1						
14.0 - 14.9							
15.0 - 15.9							
16.0 - 16.9							
17.0 - 17.9							
18.0 - 18.9							
19.0 - 19.9							
20.0 - 20.9							
21.0 - 21.9							
22.0 - 22.9							
23.0 - 23.9							
24.0 - 24.9							
25.0 - 25.9							
26.0 - 26.9							
27.0 - 27.9							
28.0 +							
<b>Estimated Total</b>	159						
<b>Sample Size</b>	133						

Stream West Indian Creek  
Tributary Number M-34-17

Date 9/27/2005

<b>Report Completed by</b>		
<b>Name:</b> Eric Merten	<b>Title:</b> NR Specialist	<b>Date:</b> 27-Sep-05
<b>Approved by</b>		
<b>Area Fisheries Supervisor:</b>	<b>Regional Fisheries Manager:</b>	<b>Date:</b>

Stream West Indian Creek

Tributary Number M-34-17

Date 8/25/2005

**Fishery Characteristics - Habitat Sampling**

<b>Station</b>	5.4	<b>Length in ft</b>	975
<b>Date</b>	25-Aug	<b>Wetted width in ft</b>	20
<b>Mean cross-section width/depth</b>	10	<b>Mean cross-section entrenchment ratio</b>	

(note habitat spreadsheet for individual cross-sections)

**QHEI** (note QHEI data sheet for scores on individual metrics)

5	10	8.1	13	23	59.1
<b>Land use</b>	<b>Riparian</b>	<b>Substrate</b>	<b>Cover</b>	<b>Morphology</b>	<b>QHEI total</b>

**Brown trout HQI** (note data sheets for scores on individual metrics)

4	3	4	1	4	4	4	2	26
<b>Shade</b>	<b>Pool area</b>	<b>Pool type</b>	<b>Fines</b>	<b>Cover</b>	<b>Erosion</b>	<b>Width</b>	<b>Width/depth</b>	<b>HQI total</b>

**Cover for large fishes**

Type	Area	Percent	Wood pieces per mile over 3 inches diameter
INV total	1368	7.0%	438.6
IR total	342	1.8%	over 12 inches diameter
LWD total	574	2.9%	21.7
OBC total	84	0.4%	
OHV total	866	4.4%	
<b>TOTAL COVER</b>	<b>3234</b>	<b>16.6%</b>	<b>Large brown trout mean P2 value</b> 0.384

