



MINNESOTA DEPARTMENT OF NATURAL RESOURCES
DIVISION OF FISH AND WILDLIFE
STREAM ASSESSMENT REPORT

Report Date: October 20, 2011

Region	Area	Stream Name	Tributary No.	Stream Length
3	Lake City	West Indian Creek	M-34-17	7.2
County	Watershed Name, No.	Source (T, R, S)	Mouth (T, R, S)	
Wabasha	Zumbro River, 41	T109N,R11W,S21	T110N,R11W,S31	

Date(s) of Assessment: October 20, 2011

Assessment Purpose: Pre-Habitat improvement project sampling.

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres	Water Temp (°F)	Air Temp (°F)	Downstream UTM's	
								utm _x (↔)	utm _y (↓)
1.2	2	1.2	960	17.5	0.38			566191	4901776

Summary:

This is the second survey that has been done prior to a habitat improvement project that will be done on West Indian Creek in the Whippoorwill Campground off Wabasha County Road 4. The project was supposed to begin in 2011 but will not begin until at least the spring of 2012. A follow up survey will be done prior to the project.

Estimates for trout were obtained doing a two pass depletion method.

There were an estimated 77 adult and 140 recruit brown trout per mile. There were an estimated 17 brown trout ≥ 12 inches and 11 ≥ 14 inches. One adult brook trout and 9 recruits were found in the station.

Fishery Characteristics – Population Estimates

Station: 1.2 Date: 10/20/2011 Gear: Stream Shocking Barge Method: Two Pass Depletion Station length (ft): 960

Brook Trout			
In Station			
	Recruits	Adults	Total
n	10	1	11
95% CI	3.36	0.00	
Per Mile			
	Recruits	Adults	Total
n	54	6	59
	≥ 10 inches		
n	--		
95% CI	--		
Per Acre			
	Recruits	Adults	Total
n	25	3	28
lbs	0.8	0.5	1.3

Brown Trout			
In Station			
	Recruits	Adults	Total
n	25	14	39
95% CI	1.83	0.00	
Per Mile			
	Recruits	Adults	Total
n	140	77	217
	≥ 12 inches	≥ 14 inches	≥ 16 inches
n	17	11	--
95% CI	0.00	0.00	--
Per Acre			
	Recruits	Adults	Total
n	66	36	102
lbs	4.4	19.7	24.1

Length (in)	Brook Trout	Brown Trout	White Sucker
1			
2			
3	1		
4	7	2	
5	1	16	
6		7	
7	1		
8		4	
9		2	
10		3	
11		2	
12			
13		1	
14		2	
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30+			
Total	10	39	0

Other Species Sampled

Common Name	Number Sampled
slimy sculpin	14
blacknose dace	4
white sucker	3
brook stickleback	2
creek chub	1

Coldwater Index of Biotic Integrity (Mundahl and Simon 1998)

Station Name: 1.2 @ Whippoorwill
 Stream Width (m): 5.3
 Station Length (m): 292.6

<u>Metric (Max Score)</u>	<u>Value (Score)</u>
Total Captured	73
Number of Species (10)	7 (5)
Number of Coldwater Species (10)	4 (10)
Number of Minnow Species (10)	2 (5)
Number of Benthic Species (10)	2 (5)
Number of Tolerant Species (10)	3 (5)
Percent Salmonids as Brook Trout (10)	20.4 (5)
Percent Intolerant Individuals (10)	32.87 (5)
Percent Coldwater Individuals (10)	89.04 (10)
Percent White Suckers (10)	4.1 (0)
Percent Top Carnivores (10)	67.12 (5)
Number of Coldwater Individuals per 150m (10)	33.32 (5)
Number of Warmwater Individuals per 150m (10)	4.1 (10)
TOTAL IBI SCORE (120 maximum)	70
Percent of maximum score	58.33

Stream Characteristics – Minnesota Stream Habitat Assessment (MSHA)

MSHA Metric	Component score maximum	Component score
Surrounding Land Use	5	3.5
Riparian Zone	15	8
Instream Zone - Substrate	27	9.7
Instream Zone - Cover	17	14
Channel Morphology	36	16
	100	MSHA Score (Max = 100)
		51.2

Discussion of Fishery:

This is the second year in a row that this station has been surveyed. There was a habitat improvement project slated for the summer of 2011 but was never started. The project will likely begin in the spring of 2012. The purpose of these surveys is to monitor the effects of the habitat project on this section of stream. Post project surveys will be done in the following years.

There were an estimated 77 adult and 140 recruit brown trout per mile. There were an estimated 17 brown trout ≥ 12 inches and 11 ≥ 14 inches per mile. One adult brook trout and 10 recruits were found in the station. The numbers for brown trout are much lower than the 2010 survey (Table 1).

It was apparent that flooding had altered the channel, collapsed banks, and filled in pools from major flooding last fall and spring. The trout habitat had degraded between surveys. The MSHA score went from 67.8 in 2010 to 51.2 in 2011 due to poor channel stability, loss of depth, damaged banks, and overall loss of cover.

The IBI score was 70 in 2011 which is unchanged from 2010 (Table 3). However, the species composition was different between the years. A northern brook lamprey and largemouth bass were sampled in 2010 and were not sampled in 2011. Also, two tiger trout were sampled in 2010 and none were sampled in 2011.

Credits and Signatures:

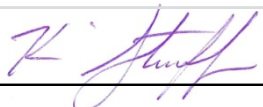
Field Crew:		
Randy Binder, Dan Dieterman, Dan Spence		
Report completed by:		
Name: Dan Spence	Title: Fisheries Specialist	Date: February 12, 2012
Approved by:		
Area Fisheries Supervisor's Signature	Regional Fisheries Manager's Signature	Date:
		

Table 1. Trends in brown trout population metrics for West Indian @ Whippoorwill 2010-2011

Station	River Mile	Similar Reach	Date	No./mile (Adult)	No./mile (Recruits)	No./mile (≥12 in.)	No./mile (≥14 in.)	No./mile (≥16 in.)	lbs/acre (all sizes)
1.2	1.2	2	10/20/2011	77	140	17	11	0	1.3
1.2	1.2	2	9/3/2010	319	446	44	11	0	58.75
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Table 2. Trends in brook trout population metrics for West Indian @ Whippoorwill 2010-2011

Station	River Mile	Similar Reach	Date	No./mile (Adult)	No./mile (Recruits)	No./mile (≥10 in.)	lbs/acre (all sizes)
1.2	1.2	2	10/20/2011	54	6	0	24.1
1.2	1.2	2	9/3/2010	-	-	-	-
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Table 3. Trends in Index of Biotic Integrity (Mundahl and Simon 1998) and Minnesota Stream Habitat Assessment (Fisheries Stream Survey Manual 2007) scores for West Indian @ Whippoorwill 2010-2011

Station	River Mile	Similar Reach	Date	IBI	Land Use	Riparian Zone	Instream Substrate	Instream Cover	Channel Morphology	Final Score
1.2	1.2	2	10/20/2011	70	3.5	8	9.7	14	16	51.2
1.2	1.2	2	9/3/2010	70	3.5	8	15.3	14	27	67.8
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References

Fisheries Stream Survey Manual. 2007. Special Publication No. 165. Minnesota Department of Natural Resources.

Mundahl, N.D., and T.P. Simon. 1998. Development and application of an index of biotic integrity for coldwater streams of the upper Midwestern United States. Pages 383-415 In Thomas P. Simon (ed.). *Assessing the Sustainability and Biological Integrity of Water Resources Using Fish Communities*. CRC Press, Boca Raton, Florida.

Discussion of Fishery:

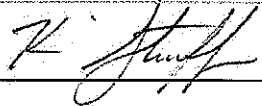
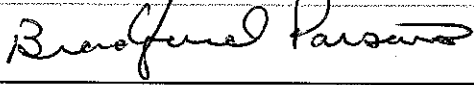
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		6.7.12