



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

Report Date: February 29, 2012

Region	Area	Stream Name	Tributary No.	Stream Length
3	Lake City	Long Creek	M-34-22	11.5 miles
County		Watershed Name, No.	Source (T, R, S)	Mouth (T, R, S)
Wabasha		Zumbro River, 41	108N12W8	109N12W3

Date(s) of Assessment: Stations 8.1 and 4.2 were sampled on September 15, 2011 and station 0.2 was sampled on October 17, 2011.

Assessment Purpose: Scheduled stream assessment

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres	Water Temp (°F)	Air Temp (°F)	Downstream UTM's	
								utm _x (↔)	utm _y (↓)
0.2	1	0.2	720	17	0.28			560568	4901446
4.2	2	4.2	975	12	0.27			560960	4897737
8.1	2	8.1	700	14	0.22			558634	4895743

Summary:

A scheduled stream assessment was done on Long Creek in the fall of 2011. Long Creek flows through Wabasha County. It flows near the town of Millville and empties into the Zumbro River.

A one pass depletion was done in station 0.2. Two brook trout recruits were sampled giving an estimate of 15 per mile. This is the first time brook trout have been sampled in the lower end of Long Creek. No brook trout adults were sampled in station 0.2. There were 22 brown trout adults sampled and no recruits. There were an estimated 161 adult brown trout per mile.

Station 4.2 had an estimated 229 recruit brook trout per mile and 68 adult brook trout per mile. There were no brook trout sampled over 10 inches. This is the first time brook trout were sampled in 4.2 but they have been sampled in nearby stations in previous surveys. There were an estimated 743 recruit brown trout per mile and 1300 brown trout adults per mile. There were 32 brown trout ≥ 12 inches/mile and none ≥ 14 or 16 inches.

Station 8.1 had a brook trout population estimated at 411 recruits per mile and 188 adults. There were no brook trout ≥ 10 inches. There were an estimated 215 recruit brown trout per mile and 487 adults. There were 94 brown trout ≥ 12 inches, 30 ≥ 14 inches, and 8 ≥ 16 inches per mile

Fishery Characteristics – Population Estimates

Station: 0.2 Date: 10/17/2011 Gear: Stream Shocking Barge Method: Two Pass Depletion Station length (ft): 720

Brook Trout			
In Station			
	Recruits	Adults	Total
n	2	0	2
95% CI	0.00	--	
Per Mile			
	Recruits	Adults	Total
n	15	0	15
	≥ 10 inches		
n	--		
95% CI	--		
Per Acre			
	Recruits	Adults	Total
n	7	0	7
lbs	--	0.0	--

Brown Trout			
In Station			
	Recruits	Adults	Total
n	0	22	22
95% CI	--	0.00	
Per Mile			
	Recruits	Adults	Total
n	0	161	161
	≥ 12 inches	≥ 14 inches	≥ 16 inches
n	--	--	--
95% CI	--	--	--
Per Acre			
	Recruits	Adults	Total
n	0	78	78
lbs	0.0	--	--

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

Other Species Sampled

Common Name	Number Sampled
Central Stoneroller	1
Creek Chub	3
Longnose Dace	1
Northern Hogsucker	4
Spotfin Shiner	7
White Sucker	20

Station: 4.2 Date: 9/15/2011 Gear: Stream Shocking Barge Method: Two Pass Depletion Station length (ft): 975

Brook Trout			
In Station			
	Recruits	Adults	Total
n	42	13	55
95% CI	12.19	2.17	
Per Mile			
	Recruits	Adults	Total
n	229	68	296
	≥ 10 inches		
n	--		
95% CI	--		
Per Acre			
	Recruits	Adults	Total
n	157	47	204
lbs	2.8	7.6	10.4

Brown Trout			
In Station			
	Recruits	Adults	Total
n	137	240	377
95% CI	52.69	56.16	
Per Mile			
	Recruits	Adults	Total
n	743	1300	2044
	≥ 12 inches	≥ 14 inches	≥ 16 inches
n	32	--	--
95% CI	0.00	--	--
Per Acre			
	Recruits	Adults	Total
n	511	894	1405
lbs	14.6	205.9	220.6

Length (in)	Brook Trout	Brown Trout	White Sucker
1			
2			
3	25	28	
4	10	68	
5	1	7	
6	5	27	
7	4	42	
8	2	50	
9	1	29	
10		11	
11		10	
12		3	
13		3	
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30+			
Total	48	278	0

Other Species Sampled

Common Name	Number Sampled
white sucker	71
creek chub	2
brook stickleback	2
Johnny darter	1

Station: 8.1 Date: 9/15/2011 Gear: Stream Shocking Barge Method: Two Pass Depletion Station length (ft): 700

Brook Trout			
In Station			
	Recruits	Adults	Total
n	54	25	79
95% CI	14.55	5.11	
Per Mile			
	Recruits	Adults	Total
n	411	188	599
	≥ 10 inches		
n	--		
95% CI	--		
Per Acre			
	Recruits	Adults	Total
n	242	111	353
lbs	8.5	21.6	30.1

Brown Trout			
In Station			
	Recruits	Adults	Total
n	28	65	93
95% CI	13.26	10.43	
Per Mile			
	Recruits	Adults	Total
n	215	487	701
	≥ 12 inches	≥ 14 inches	≥ 16 inches
n	94	30	8
95% CI	160.01	52.26	0.00
Per Acre			
	Recruits	Adults	Total
n	126	287	413
lbs	5.6	117.8	123.4

Length (in)	Brook Trout	Brown Trout	White Sucker
1			
2			
3	5		
4	28	12	
5	13	11	
6	5		
7	8	1	
8	5	9	
9	5	26	
10		10	
11		4	
12		3	
13		2	
14		1	
15		1	
16			
17			
18		1	
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30+			
Total	69	81	0

Other Species Sampled

Common Name	Number Sampled
white sucker	24
creek chub	2
brook stickleback	2
Johnny darter	1

Coldwater Index of Biotic Integrity (Mundahl and Simon 1998)

Station Name:	0.2	4.2	8.1
Stream Width (m):	5.2	3.7	4.3
Station Length (m):	219.5	297.2	213.4

<u>Metric (Max Score)</u>	<u>Value (Score)</u>	<u>Value (Score)</u>	<u>Value (Score)</u>
Total Captured	60	572	179
Number of Species (10)	8 (5)	6 (5)	6 (5)
Number of Coldwater Species (10)	2 (5)	3 (5)	3 (5)
Number of Minnow Species (10)	4 (0)	1 (10)	1 (10)
Number of Benthic Species (10)	3 (0)	2 (0)	2 (5)
Number of Tolerant Species (10)	2 (5)	2 (5)	2 (5)
Percent Salmonids as Brook Trout (10)	8.33 (0)	23.99 (5)	46 (5)
Percent Intolerant Individuals (10)	10 (5)	20.8 (5)	38.54 (5)
Percent Coldwater Individuals (10)	40 (0)	87.06 (5)	84.91 (5)
Percent White Suckers (10)	33.33 (0)	12.41 (0)	13.4 (0)
Percent Top Carnivores (10)	40 (5)	86.71 (10)	83.79 (10)
Number of Coldwater Individuals per 150m (10)	16.4 (0)	251.36 (10)	106.86 (10)
Number of Warmwater Individuals per 150m (10)	24.6 (5)	37.35 (5)	18.98 (5)
TOTAL IBI SCORE (120 maximum)	30	65	70
Percent of maximum score:	25.00%	54.17%	58.33%

Stream Characteristics – Minnesota Stream Habitat Assessment (MSHA) Station 0.2

MSHA Metric	Component score maximum	Component score
Surrounding Land Use	5	3.5
Riparian Zone	15	7
Instream Zone - Substrate	27	5
Instream Zone - Cover	17	10
Channel Morphology	36	15
	100	MSHA Score (Max = 100)
		40.5

Stream Characteristics – Minnesota Stream Habitat Assessment (MSHA) Station 4.2

MSHA Metric	Component score maximum	Component score
Surrounding Land Use	5	2.5
Riparian Zone	15	13
Instream Zone - Substrate	27	12.2
Instream Zone - Cover	17	14
Channel Morphology	36	26
	100	MSHA Score (Max = 100)
		67.7

Stream Characteristics – Minnesota Stream Habitat Assessment (MSHA) Station 8.1

MSHA Metric	Component score maximum	Component score
Surrounding Land Use	5	4
Riparian Zone	15	9
Instream Zone - Substrate	27	12.4
Instream Zone - Cover	17	14
Channel Morphology	36	28
	100	MSHA Score (Max = 100)
		67.4

Discussion of Fishery:

Three stations were sampled on Long Creek in the fall of 2011. A stream shocking barge was used in all stations. IBI scores were also calculated for each station as well as a Minnesota Stream Habitat Assessment (MSHA).

Station 0.2 is very near to the Zumbro River and is off of township road 131 just outside of the town of Millville in Wabasha County. A one pass depletion was done in station 0.2. Two brook trout recruits were sampled giving an estimate of 15 per mile. This is the first time brook trout have been sampled in the lower end of Long Creek. No brook trout adults were sampled in station 0.2. There were 22 brown trout adults sampled and no recruits. There were an estimated 161 adult brown trout per mile. No large brown trout were sampled in this station. Station 0.2 had an IBI score of 30, which is low for typical trout water. There were warm water species found due to the station's proximity to the Zumbro River. Other species found were central stoneroller, creek chub, longnose dace, northern hogsucker, spotfin shiner, and white sucker. The MSHA score of 40.5 indicates poor habitat. High banks with much erosion, embedded substrates, and lack of cover contribute to the low score in this station.

Station 4.2 is just below the Wabasha County Road 8 bridge on a public angling easement. Station 4.2 had an estimated 229 recruit brook trout per mile and 68 adult brook trout per mile. There were no brook trout sampled over 10 inches. This is the first time brook trout were sampled in 4.2 but they have been sampled in previous surveys. There were an estimated 743 recruit brown trout per mile and 1300 brown trout adults per mile. There were 32 brown trout ≥ 12 inches per mile and none ≥ 14 or 16 inches. Station 4.2 had an IBI score of 65 which is in the mid-range. White sucker, creek chub, brook stickleback, and Johnny darter were sampled. The MSHA score of 67.7 reflects the presence of overhead cover, deep pools, riffles, and good substrate.

Station 8.1 is on private land just off of Wabasha County Road 2 outside of the town of Millville. Station 8.1 had a brook trout population estimated at 411 recruits per mile and 188 adults. There were no brook trout ≥ 10 inches. There were an estimated 215 recruit brown trout per mile and 487 adults. There were 94 brown trout ≥ 12 inches, 30 ≥ 14 inches, and 8 ≥ 16 inches per mile. There was one brown trout sampled in this station in the 18 inch class. Station 8.1 had an IBI score of 70. This is a score in the mid-range. White sucker, creek chub, brook stickleback and Johnny darter were sampled along with brook and brown trout. The MSHA score of 67.4 reflects decent habitat. There are deep pools, overhead cover, good substrate, and stable banks.

There are no special regulations on Long Creek. There is little public access on this stream. Easement acquisition should be pursued for additional segments on Long Creek.

Credits and Signatures:

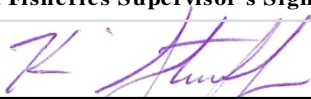
Field Crew:		
Dan Dieterman, Jeff Weiss, Dan Spence		
Report completed by:		
Name:	Title:	Date:
Dan Spence	Fisheries Specialist	2/29/2012
Approved by:		
Area Fisheries Supervisor's Signature	Regional Fisheries Manager's Signature	Date:
		

Table 1. Trends in brown trout population metrics for Long Creek 2001, 2002, and 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)
0.2	0.2	1	10/17/2011	161	0	0	0	0	-
0.2	0.2	1	9/12/2002	154	390	22	0	0	-
0.2	0.2	1	8/27/2001	87	17	0	0	0	-
4.2	4.2	2	9/15/2011	1300	743	32	0	0	220.6
4.2	4.2	2	9/12/2002	1638	2584	48	-	-	375
8.1	8.1	2	9/15/2011	487	215	94	30	8	123.4
8.1	8.1	2	7/3/2001	209	-	76	-	-	-

Table 2. Trends in brook trout population metrics for Long Creek 2001 and 2011.

Station	River Mile	Similar Reach	Date	No./mile (Adult)	No./mile (Recruits)	No./mile (≥10 in.)	lbs/acre (all sizes)
0.2	0.2	1	10/17/2011	0	15	0	0
4.2	4.2	2	9/15/2011	68	229	0	10.4
8.1	8.1	2	9/15/2011	188	411	0	30.1
8.1	8.1	2	7/3/2001	5	-	0	-

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.