

STREAM ASSESSMENT



MINNESOTA DEPARTMENT OF NATURAL RESOURCES DIVISION OF FISH AND WILDLIFE

Report Date: December 13, 2007

Region	Area	Stream Name	Tributary No.	Stream Length
3	Lanesboro	Long Creek	M-34-22	11.5 miles
County	Watershed Name, No.	Source (T, R, S)	Mouth (T, R, S)	
Wabasha	Zumbro River - 41	T108N.R12W.S8	T109N.R12W.S3	

Date(s) of Assessment: June 25, 2007

Assessment Purpose: Fisheries Research – brook trout reconnaissance

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres	Water Temp (F)	Air Temp (F)	Downstream UTM's	
								utm _x (↔)	utm _y (↓)
4.4	2	4.4	705	12.0	0.194	-	-	560960	4897737

Summary:

Long Creek was assessed for brook trout reconnaissance purposes. Adipose fins from 11 brook trout were collected and sent to Dr. Loren Miller at the University of Minnesota for genetic testing.

Estimated numbers of adult brown trout were 799/mile with 47 brown trout recruits/mile. Brown trout ≥12 inches were estimated to be 7/mile. Brown trout were not weighed.

The brook trout population was estimated to be 142 adults/mile and 7 recruits/mile. No brook trout were collected ≥10 inches. Brook trout were not weighed.

Stream
Tributary number
Report Date

Long Creek
M-34-22
December 13, 2007

Fishery Characteristics – Population Estimates

Population Metrics

Station	4.4			
Date	June 25, 2007			
Gear	Barge			
Method	Two pass depletion			
Station length (ft)	705			

Population Estimate in Station, Adults

Species	Number	Wt (lbs)	Number	Wt (lbs)	Number	Wt (lbs)	Number	Wt (lbs)
Brown trout	107	-						
95% CI	± 10.03							
Brook trout	19	-						
95% CI	± 0.0							
Rainbow trout	0	0						
95% CI	-							
Total trout	126							

Population Estimate in Station, Recruits (YOY or yearlings)

Species	Number	Wt (lbs)	Number	Wt (lbs)	Number	Wt (lbs)	Number	Wt (lbs)
Brown trout	6	-						
95% CI	± 1.53							
Brook trout	1	-						
95% CI	± 0.0							
Rainbow trout	0	0						
95% CI	-							
Total trout	7	-						

Population Estimate in Station, Total

Species	Number	Wt (lbs)	Number	Wt (lbs)	Number	Wt (lbs)	Number	Wt (lbs)
Brown trout	113	-						
Brook trout	20	-						
Rainbow trout	0	0						
Total trout	133	-						

Stream
 Tributary number
 Report Date

Long Creek
 M-34-22
 December 13, 2007

Fishery Characteristics – Population Estimates (continued)

Population Estimate Summary

Station	4.4							
Date	June 25, 2007							
Species	No/Mile	Lbs/Acre	No/Mile	Lbs/Acre	No/Mile	Lbs/Acre	No/Mile	Lbs/Acre
Brown trout	846	-						
Adults	799	-						
≥12 inches	7							
95% CI	± 0.0							
≥14 inches	0							
95% CI	-							
≥16 inches	0							
95% CI	-							
Recruits	47	-						
Brook trout	149	-						
Adults	142	-						
≥10 inches	0							
95% CI	-							
Recruits	7	-						
Rainbow trout	0	-						
Adults	0	-						
≥12 inches	0							
95% CI	-							
Recruits	0	-						
All trout species								
Adults	941	-						
Recruits	54	-						
Total	995	-						

Stream
 Tributary number
 Report Date

Long Creek
 M-34-22
 December 13, 2007

Fishery Characteristics – Length Frequency in Station (Actual Catch)

Species	Brown trout	Brook trout		
Station	4.4	4.4		
Date	June 25, 2007	June 25, 2007		
Length Class				
0 – 2.9	6			
3.0 – 3.4		1		
3.5 – 3.9				
4.0 – 4.4				
4.5 – 4.9	1	3		
5.0 – 5.4	15	5		
5.5 – 5.9	24	5		
6.0 – 6.4	19	3		
6.5 – 6.9	18	1		
7.0 – 7.4	9			
7.5 – 7.9	4			
8.0 – 8.4	2			
8.5 – 8.9	1	1		
9.0 – 9.4		1		
9.5 – 9.9				
10.0 – 10.4				
10.5 – 10.9	1			
11.0 – 11.4	2			
11.5 – 11.9	2			
12.0 – 12.4				
12.5 – 12.9				
13.0 – 13.4				
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 – 28.9				
29.0 – 29.9				
30.0+				
Sample Size	105	20		

Stream
 Tributary number
 Report Date

Long Creek
 M-34-22
 December 13, 2007

Fishery Characteristics – Non-game species

Species Sampled

Station	4.4			
Date	June 25, 2007			
Length (ft)	705			
Mean Width (ft)	12.0			
Species	Number	Number	Number	Number
Non-game species were not sampled				

**Stream Characteristics – Minnesota Stream Habitat Assessment (MSHA)
 (Fisheries Stream Survey Manual)**

MSHA Metric	Component score maximum	Component score of station
Surrounding Land Use	5	MSHA scores were not calculated
Riparian Zone	15	
Instream Zone – Substrate	27	
Instream Zone – Cover	17	
Channel Morphology	36	
	100	Final score

Stream
Tributary number
Report Date

Long Creek
M-34-22
December 13, 2007

Discussion of Fishery:

Long Creek was assessed as part of a study that Fisheries Research is conducting looking at the origins of our brook trout populations.

This assessment, sampling Station 4.4, will be compared with Station 4.5 to establish some trend information (Table 1).

Estimated numbers of adult brown trout were above the 6-assessment mean of 521/mile at 799/mile (Table 1). The brown trout recruit population is below the 6-assessment mean but this is the case with most southeast Minnesota streams this year as a result of heavy March flooding.

Numbers of brown trout ≥ 12 inches was estimated to be 7/mile. This is also down from the 6-assessment mean of 37/mile. There were no brown trout collected ≥ 14 inches. Weights were not collected on brown trout in this assessment.

The brook trout population was estimated to be 142 adults/mile and 7 recruits/mile (Table 2). No brook trout were collected ≥ 10 inches. Brook trout were not weighed during this assessment

Long Creek is currently being managed using the southeast Minnesota trout angling regulation of a limit of 5 trout with only one of those allowed ≥ 16 inches.

Non-game species were not collected in this assessment and therefore the Index of Biotic Integrity could not be determined.

Minnesota Stream Habitat Assessment was not taken during the assessment but will be calculated in the summer of 2008 during more reconnaissance.

Credits and Signatures:

Field Crew:

Doug Dieterman, John Hoxmeier, Amy Obraske

Report completed by:

Name:	Title:	Date:
Vaughn A. Snook	Fisheries Specialist	December 13, 2007

Approved by:

Area Fisheries Supervisor's Signature	Regional Fisheries Manager's Signature	Date:
--	---	--------------

Steve Klotz

Table 1. Trends in brown trout population metrics for Long Creek, years 1988-2007.

Station	River Mile	Similar Reach	Date	No./mile (Adult)	No./mile (Recruits)	No./mile (≥12 in.)	No./mile (≥15 in.)	No./mile (≥16 in.)	lbs/acre (all sizes)
0.2	0.2	1	9/12/2002	154	390	22	-	-	-
0.2	0.2	1	8/27/2001	87	0	0	0	-	15
0.2	0.2	1	9/5/1995	91	0	62	62	-	78
4.2	4.2	2	9/12/2002	1,638	2,584	48	19	-	375
4.4	4.4	2	6/25/2007	799	47	7	0	0	-
4.5	4.5	2	7/3/2001	1,394	0	23	-	-	135
4.5	4.5	2	4/24/1998	680	0	55	9	-	66
4.5	4.5	2	9/5/1995	83	769	62	8	-	43
4.5	4.5	2	7/17/1989	62	0	15	0	-	17
4.5	4.5	2	8/30/1988	108	0	62	31	-	46
			Mean	521	136	37	10		
5.6	5.6	2	4/24/1998	27	0	0	0	-	2
8.1	8.1	2	7/3/2001	209	0	76	-	-	63
8.8	8.8	2	8/27/2001	286	0	130	25	-	160
8.8	8.8	2	4/24/1998	73	0	45	8	-	25
8.8	8.8	2	9/5/1995	10	207	10	10	-	43

Table 2. Trends in brook trout population metrics for Long Creek, years 1998-2007.

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	9/12/2002	0	0	0	0
0.2	0.2	1	8/27/2001	0	0	0	0
4.2	4.2	2	9/12/2002	0	0	0	0
4.4	4.4	2	6/24/2007	142	7	0	-
4.5	4.5	2	7/3/2001	8	0	0	3
4.5	4.5	2	4/24/1998	0	0	0	0
5.6	5.6	2	4/24/1998	0	0	0	0
8.1	8.1	2	7/3/2001	5	0	0	1
8.8	8.8	2	8/27/2001	0	99	0	2
8.8	8.8	2	4/24/1998	0	0	0	0

References

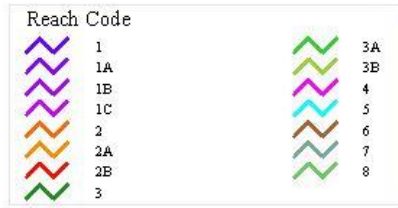
Fisheries Stream Survey Manual. 2007. Special Publication No. 165. Minnesota Department of Natural Resources.

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.

Long Creek

M-34-22

Date: December 27, 2007
 Map For: Population Assessment
 Prepared By: Jim Melander
 Fisheries Office: Lanesboro
 Mouth TRS: 109-12-3
 Source TRS: 108-12-8
 Counties: Wabasha

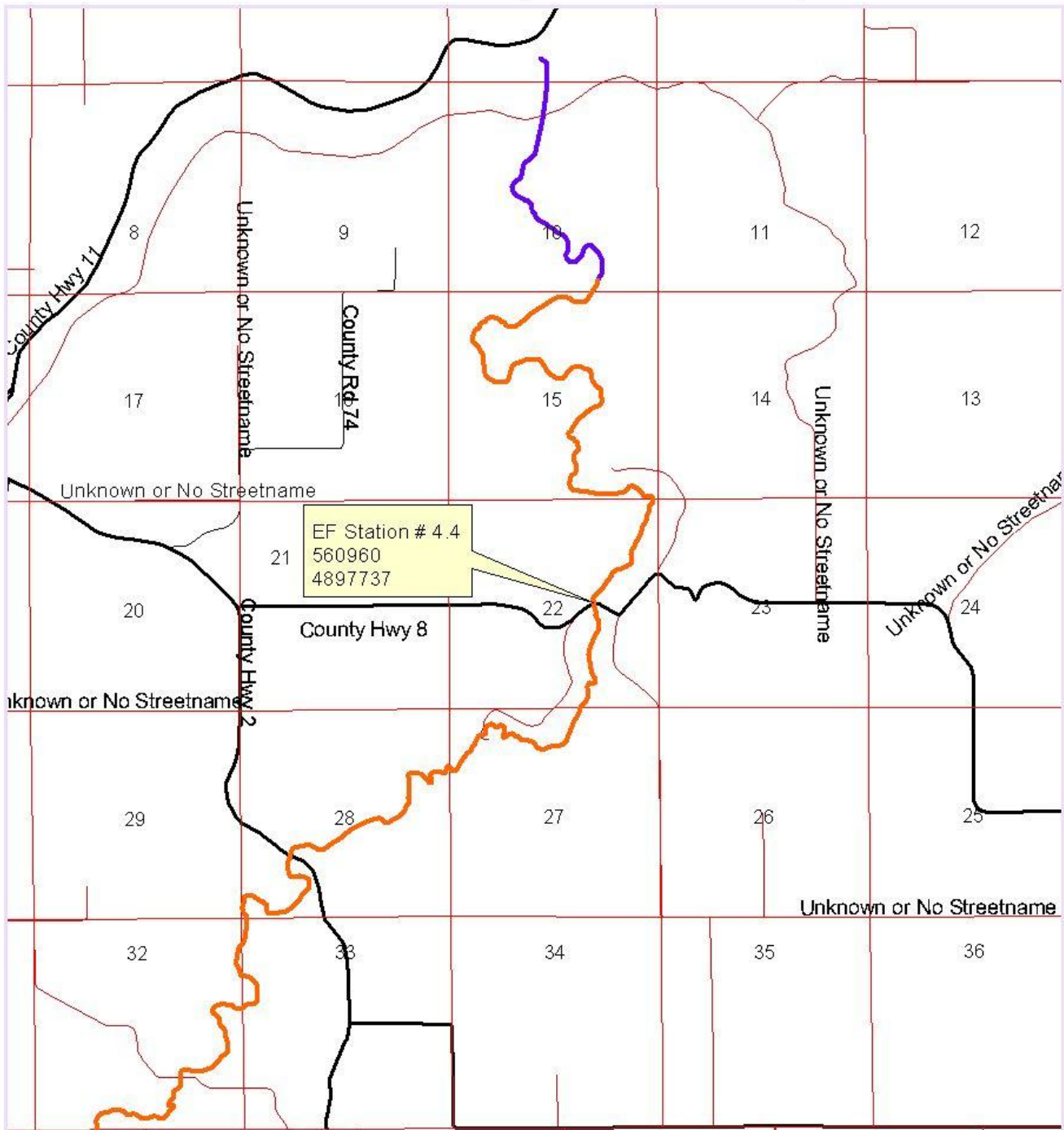


Copyright December 2007
 MN Dept of Natural Resources
 Division of Fisheries



0 0.3 0.6 0.9 Miles

Electrofishing Station Location



u:\jim m\stream assessment maps\garvin.apr