



Minnesota Department of Natural Resources  
 Section of Fisheries  
 Stream Population Assessment

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Region 5	Area Lake City	Stream Name Pine Creek	Tributary No. M - 48 - 11	Length (mi) 8.9
County Goodhue	Watershed Name, No. Cannon River, 34	Source (T-R-S) 113 - 18 - 29	Mouth (T-R-S) 112 - 17 - 9	

Date(s) of Assessment: 04/25/00, 09/12/00
Assessment Purpose: Reconnaissance to assess current stream conditions and trout populations.

Station	Similar Reach	Stream Mile	Length (ft)	Mean Width (ft)	Acres
2.0(1C)*	1	2.0	500	12	0.14

\* Station number has been changed to reflect location (miles from mouth). Historical station number is in parentheses.

**Summary:**

Fishery status: Trout populations in Station 2.0 were slightly below average. Numerous trout were observed throughout most of the stream.

Physical characteristics: Most of the reach upstream of Highway 20 has been channelized and habitat is limited. From Highway 20 to the mouth habitat is fair to good. The stream is all in private ownership, but some angling is allowed.

Landowner contacts:

Harold Gesme, downstream of Highway 20 - (507) 263-2932. Contacted during survey regarding bank stabilization and a follow-up contact regarding the sale of an easement.

Jim Nickel, downstream of County #17 (Recording Studio) Contacted during survey regarding easement and dam removal. Contact again regarding removal.

Stream Pine Creek

Tributary Number M - 48 - 11

**Fishery Characteristics - Population Estimates**

Station	2.0			
Date	09/12/00			
Gear	1 BP			
Method	1 run (minimum est)			
Length sampled	500 feet			

**Population Estimate, Age 1+**

\*SS = stream shocker, BP = backpack shocker, MB = mini-boom shocker

Species	Number	Wt. (Lb)	Number	Wt. (Lb)	Number	Wt. (Lb)	Number	Wt. (Lb)
Brown trout	13	8.2						
<b>Total</b>	13	8.2						

**Population Estimate, Young-of-Year**

Species	Number	Wt. (Lb)	Number	Wt. (Lb)	Number	Wt. (Lb)	Number	Wt. (Lb)
Brown trout	14	0.6						
<b>Total</b>	14	0.6						

**Population Estimate, Total**

Species	Number	Wt. (Lb)	Number	Wt. (Lb)	Number	Wt. (Lb)	Number	Wt. (Lb)
Brown trout	27	8.8						
<b>Total</b>	27	8.8						

**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+	137	59.6						
≥12 inches	42							
Fingerlings (YOY)	148	4.4						
<b>BROOK TROUT</b>								
Age 1+								
≥10 inches								
Fingerlings (YOY)								
<b>RAINBOW TROUT</b>								
Age 1+								
≥12 inches								
Fingerlings								
<b>ALL SPECIES</b>								
Age 1+	137	59.6						
Fingerlings (YOY)	148	4.4						
<b>Total</b>	285	64.0						





Age and Growth

Stream Pine Creek

Tributary Number M - 48 - 11

a) Length Frequency Distributions

Species	Brown trout				
Station	2.0				
Date	09/12/00				
Length Class					
0.0 - 2.4					
2.5 - 2.9					
3.0 - 3.4					
3.5 - 3.9	3				
4.0 - 4.4	4				
4.5 - 4.9	4				
5.0 - 5.4	1				
5.5 - 5.9	2				
6.0 - 6.4					
6.5 - 6.9					
7.0 - 7.4					
7.5 - 7.9					
8.0 - 8.4					
8.5 - 8.9	1				
9.0 - 9.4					
9.5 - 9.9					
10.0 - 10.4	3				
10.5 - 10.9	2				
11.0 - 11.4	3				
11.5 - 11.9					
12.0 - 12.4	1				
12.5 - 12.9	1				
13.0 - 13.4					
13.5 - 13.9					
14.0 - 14.9					
15.0 - 15.9	1				
16.0 - 16.9	1				
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 +					
Estimated Total	27				
Sample Size	27				

Stream Pine Creek

Tributary Number M - 48 - 11

**DISCUSSION OF FISHERY**

**Fishery status:**

A population estimate was completed on Station 2.0 (historically 1C) on 09/12/00, utilizing 1 backpack shocker. Due to battery failure a one-run (minimum estimate) method was used. This yielded an estimate of 137 adult and 148 fingerling brown trout per mile. The estimate of large ( $\geq 12$  inches) brown trout was 42 per mile. Adult and fingerling biomass estimates were 59.6 and 4.4 pounds per acre, respectively. Average adult abundance in this station is 174 per mile. Trout habitat appears to be better downstream and abundance estimates for Station 0.6 have typically been higher (see Table 1).

**Physical characteristics:**

A stream inspection covering the reach from State Highway 20, downstream to the mouth was completed on 04/25/00 and included observations on land use and habitat quality. Most of the entire reach upstream from Highway 20 has been channelized and receives flow from numerous tile lines. Habitat in this reach is limited to in-stream vegetation and current breaks. Few riffles and pools are well defined.

Between Highway 20 and County # 17 the stream is mostly pastured (90%) with approximately 10% wild, wooded corridor. Bank heights range from 2 to 5 feet. Bank erosion is severe in some reaches. The upper part of this reach is mostly low gradient, with few riffles. Downstream of there, to Highway 17, gradient increases and most of the stream consists of rapids and riffles, often flowing over bedrock material. Substrates in this reach are coarse to medium size materials. Pool depths through this reach range from 1 to 2.5 feet and cover is provided by woody debris, undercut banks and in-stream rock. A caddis hatch was occurring and numerous trout were observed feeding. . The landowner (Harold Gesme) had removed numerous cedar trees nearby and was contacted regarding the use of these trees to stabilize eroding streambanks. A follow-up contact regarding the sale of an angling easement was made, but with no interest on the landowner's part. This entire reach was posted against trespassing. The landowner does allow some angling, but has had trouble with parking and fences. He did express some interest in stream bank stabilization, but did not call for any more information.

Downstream of County #17 the stream flows near a residence that has two low-head dams on the property. The uppermost dam is still functional, but the lower one has been by-passed and has recaptured nearly 300 feet of stream. The upper dam has a 5 foot head and impounds water for approximately 350 feet. The reach from the highway to near the mouth provides good habitat, with a good pool:riffle structure and sinuosity. Pool depths range from 1 to 3 feet. Good cover is available in the form of woody debris. Bank heights range from 1 to 3 feet and erosion is light. Riffle substrates are mostly medium size materials. The stream valley is narrow and the hillsides are wooded, but most of the valley is an open grassy area. Several trout and many white suckers were observed in this reach. Most of the stream is less than 15 feet wide, but within the last several hundred yards from the mouth the stream widens and loses gradient. A 4-wheeler trail crosses the stream near the mouth and bank erosion is evident. This entire reach of stream is very scenic, with some rock outcrops and white pines. This reach is not posted, and the landowner does allow some angling. The mouth of the stream has migrated approximately 60 yards downstream since the previous survey.

**Credits and Signatures**

Field Crew: Randy Binder, Pat Rivers, Dan Dieterman

**Report Completed by:**

<p>Name: Randy Binder</p>	<p>Title: Natural Resource Specialist, Fisheries</p>	<p>Date March 9, 2001</p>
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**Approved by:**

<p>Area Fisheries Supervisor <i>Tim Schlegel</i> 4/30/01</p>	<p>Regional Fisheries Manager's Signature <i>Mark Hyslop</i></p>	<p>Date 5/14/01</p>
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Stream Pine CreekTributary Number M - 48 - 11

Table 1 Brown trout adult abundance (number/mile) Stations 0.6 and 2.0 (1C), Pine Creek. 1985 - 2000.

Year	Station 0.6	Station 2.0 (1C)
1985	94	307
1986	126	109
1987	300	226
1989	1383	93
1990	205	ND
1997	348	ND
2001	ND	137
<b>Average</b>	<b>409</b>	<b>174</b>