

MINNESOTA DEPARTMENT OF NATURAL RESOURCES

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RIVER OR STREAM SURVEY

DATE(S) OF FIELD WORK August 26, 1985

Initial Survey   
Resurvey   
Assessment X

LEADER Steven Hirsch  
ASSISTANT(S) Dale Sogla

NAME, LOCATION, AND FLOW CHARACTERISTICS

- (1) Stream Name Cannon River
  - (2) Alternate Name(s) none
  - (3) Tributary Number M-48
  - (4) Counties Goodhue
  - (5) Watershed Name and Number Cannon River - 34
  - (6) Sequence of Waterways to Basin to Mississippi River
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- (7) Map(s) Used USGS Quadrangles: Hastings - 1957, Red Wing - 1952
  - (8) Length of Stream 25 miles - from mouth to the Wood Dam in Cannon Falls
  - (9) Average Width - Upper Station 96 feet Lower Station 92 feet
  - (10) Mouth Location T. 113N. R. 14W. S. 24
  - \*(11) Flow at Mouth 116 cfs, Date 080177
  - \*\* (12) Flow at Gaging Station - Minimum 75 cfs Average 694 cfs
  - (13) Location of Gaging Station T.113N., R.16W., S.28
  - (14) Initial Source of Sustained Flow The 1977 survey began at Wood Dam, Cannon Falls.
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- (15) Gradient 5 feet per mile
  - (16) Sinuosity 1.3

WATERSHED DESCRIPTION AND USE

- (17) Description of Watershed (soil types, cover types, topography, land usage and ownership)
  - a) Entire watershed Gently sloping to moderately steep uplands have moderately well to well-drained silt and sandy loams. Valley slopes along ravines and stream valleys are steep and have shallow soils and occasional rock outcroppings. The Cannon River flood plain is 0.2 to 0.4 mile wide, is nearly level and has moderately well to somewhat poorly drained alluvial silt loams. Uplands and the Cannon River flood plain are used extensively for (over)
  - b) Land adjacent to stream Ownership is private, except along miles 3.0 to 4.5 which has been purchased by the Division of Forestry, MN DNR. The lower 7.0 miles are in flood plain forest or marsh. Land use adjacent to the stream along the remaining 18.0 miles is 55% wooded; 35% narrow wild corridor, outside of which use is agricultural (tillage and pasture); 5% recreational (campgrounds, municipal park and golf course); and 5% residential and industrial (Welch and Cannon Falls).

\*Flow was measured at Welch, 12.7 miles from the mouth.

\*\*Daily, monthly, and yearly mean values of discharge are available only for years prior to 1973. Values presented are for water years 1968 through 1971. Minimum flow was recorded on November 29, 1968.

*DNR-85LC01*

*85LC002*

*85LC003*

(34) Fishery Characteristics

a)	Station no.	2		2A		Hwy. 52 <sup>1</sup>			
b)	Date	082685		082685		082685			
c)	Loc. (miles from mouth)	17.4		17.4		25.3			
d)	Length of station	1.5 mi.		1,500 ft.		1,400 ft.			
e)	Gear	Mini-boom shocker - 80 pps, 20% duty cycle, 8 amps		Two backpack shockers		Mini-boom shocker - 80 pps, 20% duty cycle, 8 amps			
f)	Amt. of sampling effort	84.5 minutes <sup>4</sup>		One upstream run		24.5 minutes			
g)	Species Present	No.	Wt.	No.	Wt.	No. <sup>5</sup>	Wt.	No.	Wt.
	Brown trout	4 <sup>3</sup>	1.8			1	4.2		
	Brook trout	13 <sup>3</sup>	6.1						
	Northern pike					1 <sup>+2</sup>	0.7		
	Carp	21	46.0	Common		Abundant			
	Spotfin shiner	12	tr.	Common		Occasional			
	Bluntnose minnow	Rare							
	Blacknose dace			Occasional					
	Longnose dace	Abundant		Rare					
	Creek chub			Occasional					
	Quillback	4	7.8			Occasional			
	White sucker	58	47.8	Common		Abundant			
	Northern hog sucker	23	16.8			Common			
	Bigmouth buffalo					3	9.0		
	Golden redhorse	10	20.5			Common			
	Shorthead redhorse	16	39.2			Abundant			
	Black bullhead					2	0.5		
	Channel catfish					1	3.8		
	Green sunfish					1	0.1		
	Smallmouth bass	4 <sup>4</sup>	1.1			3	0.6		
	Black crappie					1	0.3		

*→ +5*

*→ +1*

Species:

Fantail darter				Occasional					
Johnny darter				Occasional					
Yellow perch	1	tr.				Rare			
Log perch	1	tr.							
Blackside darter				Present					
Walleye						5	13.4		
Freshwater drum	4	2.2				Occasional			
h) Gamefish young-of-year									
Smallmouth bass				1	tr.				

Remarks <sup>1</sup> Station boundaries are from Hwy. 52 bridge to 1,400 ft. upstream (includes two pools) (over)

Remarks (cont'd)

- <sup>2</sup> Brown trout, brook trout, smallmouth bass, yellow perch, log perch, and freshwater drum were collected for 84.5 minutes. Bluntnose minnow and longnose dace were not collected, but relative abundance was noted. All other species noted were collected for 33.5 minutes.
- <sup>3</sup> All brook trout and one brown trout were recovered in the pool adjacent to the mouth of Trout Brook. Three brown trout were recovered 800 to 1,000 ft. upstream of the mouth of Trout Brook.
- <sup>4</sup> Five smallmouth bass were sited in station 2 but not recovered: approximate sizes; two young-of-year (3 inches), two at 5 inches, and one at 13 inches.
- <sup>5</sup> Several other walleyes from 1 to 5 lbs. were sited. Two northern pike were sited; approximately 16 and 32 inches. One smallmouth bass, approximately 14 inches, was sited.

Species Total Length in Inches	Species								
	BNT	BKT	NOP	CAP	QBS	WTS	NHS	B IB	GLR
3.0 - 3.4						1			
3.5 - 3.9						3	4		
4.0 - 4.4						1	3		
4.5 - 4.9						5			
5.0 - 5.4									
5.5 - 5.9									
6.0 - 6.4									
6.5 - 6.9							1		
7.0 - 7.4									
7.5 - 7.9									
8.0 - 8.4									
8.5 - 8.9		2				1	1		
9.0 - 9.4	2					2	1		
9.5 - 9.9		2							
10.0 - 10.4	2	4				2			
10.5 - 10.9		2				1			
11.0 - 11.4		3				3	3		
11.5 - 11.9						1			
12.0 - 12.4				1			3		1
12.5 - 12.9				3		3	1		
13.0 - 13.4				3		8	1		
13.5 - 13.9				5		5			
14.0 - 14.9			1	2	1	20	1		1
15.0 - 15.9				1	2	2	2	1	1
16.0 - 16.9				2			2		4
17.0 - 17.9					1			1	3
18.0 - 18.9								1	
19.0 - 19.9									
20.0 - 20.9				1					
21.0 - 21.9				1					
22.0 - 22.9				1					
23.0 - 23.9	1								
24.0 - 24.9				1					
25.0 - 25.9									
26.0 - 26.9									
27.0 - 27.9									
28.0 - 28.9									
29.0 - 29.9									
30.0 - 30.9									
31.0 - 31.9									
32.0 - 32.9									
33.0 - 33.9									
34.0 - 34.9									
35.0 - 35.9									
Totals	5	13	1	21	4	58	23	3	10

Species Total Length in Inches	SHR	BLB	CCF	GSF	SMB	BLC	YEP	WAE	FRD
3.0 - 3.4							1		
3.5 - 3.9									
4.0 - 4.4									
4.5 - 4.9				1	1				
5.0 - 5.4									
5.5 - 5.9									
6.0 - 6.4					2				
6.5 - 6.9					1				
7.0 - 7.4		1							
7.5 - 7.9		1			4				
8.0 - 8.4						1			
8.5 - 8.9									1
9.0 - 9.4									1
9.5 - 9.9									
10.0 - 10.4									
10.5 - 10.9									
11.0 - 11.4									1
11.5 - 11.9									
12.0 - 12.4									1
12.5 - 12.9									
13.0 - 13.4									
13.5 - 13.9								1	
14.0 - 14.9								1	
15.0 - 15.9								1	
16.0 - 16.9	8							1	
17.0 - 17.9	3								
18.0 - 18.9	4								
19.0 - 19.9	1								
20.0 - 20.9									
21.0 - 21.9			1						
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								1	
30.0 - 30.9									
31.0 - 31.9									
32.0 - 32.9									
33.0 - 33.9									
34.0 - 34.9									
35.0 - 35.9									
Totals	16	2	1	1	8	1	1	5	4



(40) Discussion of Fishery (continued)

b) Fish management problems The winter 1977 drawdown of Byllesby Reservoir increased ammonia and suspended solids and decreased dissolved oxygen levels in the Cannon River. This caused an extensive fish kill which severely reduced or extirpated sensitive fish species, notably smallmouth bass and northern hog sucker. Reintroduction of smallmouth bass and channel catfish has been attempted. The 1985 assessment is only the second time smallmouth bass and channel catfish have been recovered during electrofishing between Welch and Byllesby since the drawdown. Creel census clerks observed 21 channel catfish and 13 smallmouth bass while interviewing anglers in 1984. These fish were all taken between U.S. Hwy. 52 (mile 25.4) and the Byllesby dam (mile 26.4), a reach of stream which had not been sampled prior to 1985.

(41) Ecological Classification of Waterway Miles 12.7 to 25.0 - Class IIA (Warmwater game fish-smallmouth bass)

(42) Summary Smallmouth bass were recovered in both station 2 and in the Hwy. 52 station. As mentioned above, these are the second recoveries of smallmouth bass by assessment since the 1977 drawdown of Byllesby. Smallmouth bass were relatively scarce; however, the sizes of fish which were taken indicate that natural reproduction is taking place (no stocking of smallmouth bass has been done since August, 1981).

One channel catfish was recovered in the Hwy. 52 station; however, its size (21.2 inches) indicates that it was probably not from stocking. The first channel catfish were stocked in 1982 as yearlings and would have been age IV+ in 1985. Average length for a four-year-old catfish would be 13.3 inches (Mississippi River - pool 9).

Sampling in 1985 was done with the pulsed DC mini-boom shocker. Prior to this, AC boom shocking gear had been used; however, accessibility and the size of the stream make sampling with the mini-boom more practical. CPUE for (over)

(43) Credits and Signatures

a) Funding F-29-R-5

b) Field work by

Name of crew leader Steven Hirsch

Name of aide(s) Dale Sogla

c) Completed report by

Name Steven Hirsch

Title NRS II - Fisheries

Approved by

William D. Johnson  
Regional Fisheries Manager

Date

4/18/86

Typist's Initials: bkd