

# STREAM MANAGEMENT PLAN

REGION	AREA	STREAM NAME	TRIBUTARY NO.	LENGTH
5	510	Spring Creek	M-47	9.3
SIMILAR REACH	STREAM MILE	STREAM TYPE	ECOLOGICAL CLASSIFICATION	SPECIES MANAGED
1	0.0-2.0	Warmwater	Class IV	None
2	2.0-7.1	Coldwater	Class IC	BNT
3	7.1-9.3	Coldwater	Class IA	BKT, BNT

**Long Range Goal:**

Similar reach 2: Maintain a semi-wild brown trout population averaging 250 fish/mile with 10% greater than 12 inches.

Similar reach 3: Maintain a wild brook trout population averaging 200 fish/mile with 10% greater than 10 inches with few or no brown trout present.

**Operational Plan:**

**Stocking:** Stock 7,500 brook trout spring fingerlings in similar reach 3 in 1993. Discontinue brook trout stocking beginning in 1994 to determine if natural reproduction is sufficient to sustain a population. Stock 3,500 brown trout spring fingerlings in similar reach 3 in 1993. Stock 7000 brown trout spring fingerlings annually in similar reach 2 beginning in 1994.

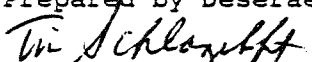
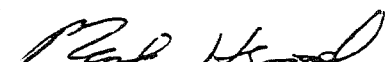
**Assessments:** Assess trout populations in stations 3, 5, 7, 8 and 9 in 1996 to evaluate wild brook trout reproduction and abundance, brown trout stocking success in similar reach 2, and to determine if the proportion of BKT to BNT has changed since removal of BNT stocking in similar reach 3.

**Midrange Objective:**

Reduce the percent population composition of brown trout within similar reach 3 from 60% to less than 10%.

**Potential Plan:**

- 1) Obtain angling easements on all parcels above mile 4.9 (Bridge 6). \$100,000-150,000.
- 2) Implement a creel census on similar reach 3 to determine whether harvest is limiting brook trout populations. \$10,000.
- 3) Evaluate the contribution of stocked brown trout to the population in similar reach 2 using clipped fish \$500.
- 4) Implement a watershed management program.

Area Supervisor's Signature Prepared by Deserae Bushong 	Date 3/18/93	Regional Manager's Signature 	Date 4/14/93
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(see additional pages)

# STREAM MANAGEMENT PLAN

STREAM NAME:  
Spring Creek

TRIBUTARY NO.  
M-47

Date:  
031693

**Narrative:**

**Past surveys and investigations:** The initial stream survey was conducted in 1946. Stream length was estimated to be 10 miles, with two similar reaches. Similar reach 1 (mile 0.0-2.0) was described as a wide sandy channel. Similar reach 2 (mile 2.0-10.0) was described as a narrow, deeply cut channel, ranging from 2-18 feet in width with frequent depths of 2-4 feet. Bottom substrates were primarily silt. Plant and animal life were listed as scarce with no fish recovered from seining.

The stream was resurveyed in 1975. Stream length was estimated to be 11.4 miles, including the portion of stream flowing through Espen Lake (Mississippi backwater lake). Stream conditions at this time may have been more degraded than in 1946, with severe bank erosion reported. Fish species captured by electrofishing included brown trout, stoneroller, emerald shiner, bigmouth shiner, blacknose dace, longnose dace, creek chub, white sucker and burbot.

A creel census in 1975 indicated low fishing pressure (400 hours for the summer or a maximum of 75 hours/mile) and limited harvest (39 trout).

Fish populations were assessed annually from 1979-1987 to evaluate various stocking regimes.

Another resurvey was completed between 1988 and 1992. This survey considered the stream mouth as the entrance to Espen Lake, making the total stream length 9.3 miles, with three similar reaches. Improvements in bank erosion and bottom substrates with abundant vegetation in the upper stream reaches was noted. Fish species captured by electrofishing included brown trout, brook trout, smallmouth bass, central mudminnow, central stoneroller, fathead minnow, blacknose dace, longnose dace, creek chub, white sucker, black bullhead, green sunfish, and johnny darter.

Historical abundance (adults/mile) of brook and brown trout are shown for stations 8, 9 and 10 in the table below. Numbers in parenthesis indicate the percent of trout captured which were greater than 10 inches for brook trout, or greater than 12 inches for brown trout. Estimates are expanded from the actual number of fish captured in one run.

Year	Station 8		Station 9		Station 10	
	Brook	Brown	Brook	Brown	Brook	Brown
1975	----	18 (50)	----	32 (33)		
1979			49 (0)	27 (4)		
1980					11 (100)	----
1981					281 (12)	50 (0)
1982	9 (0)	55 (18)	59 (0)	288 (2)	225 (19)	8 (0)
1983	----	36 (36)	47 (0)	335 (11)	66 (11)	3 (0)
1984	----	45 (40)	124 (5)	141 (4)	475 (12)	25 (0)
1985			47 (25)	129 (27)	292 (0)	----
1986			106 (0)	1288 (1)	333 (3)	75 (0)
1987			18 (0)	1329 (1)	167 (25)	75 (0)
1992	45 (40)	182 (0)			158 (0)	----

Add additional pages if needed

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**Narrative:**

**Past management:**

Stocking: The following table lists the approximate number of fish stocked in Spring Creek. Most of these fish were stocked in similar reach 3.

	<u>BNT YLG</u>	<u>BNT FGL</u>	<u>BKT FRY</u>	<u>BKT FGL</u>	<u>RBT FRY</u>	<u>RBT FGL</u>	<u>RBT YLG</u>
1946-1950 -	1,200						
1951-1965 -	600						
1966-1967 -	300						
1968-1970 -	400						300
1971 -	600						
1972-1973 -	200						
1974 -	430						
1975 -	500						
1976 -				300			
1977 -		500		300			
1980 -		1050*					
1983 -		520	3,000				
1984 -		515					
1985 -		4,500		3,250		20,025	
1986 -		4,000					
1987 -				7,500			
1988 -		7,560			15,010	6,085	
1989 -			7,500	7,500			
1990 -		3,460		10,000			
1991 -		3,500		7,500			
1992 -		3,500*					

\*Stocked BNT were given an adipose clip.

Yearling trout (brown or rainbow) were stocked between 1946 and 1975. After 1975, only fry or fingerlings have been stocked, in varying number and species. Clipped BNT fingerlings were stocked in 1980 and 1992.

Habitat Improvement: Three cattle crossings were constructed in 1985 between miles 8.7-9.2 at a cost of \$738. Fencing was scheduled to follow but was not completed due to wet conditions limiting cattle use of the stream corridor.

Aquisition: State of Minnesota fishery easements are in place from miles 7.3-7.8 and 9.0-9.3 (total 0.8 miles). Spring Creek is designated trout water in the following areas: T112 R15 S5, 6, 7, 18; T113 R15 S29, 31, 32, 33, 34 (stream miles 2.5-9.3).

**Stream and watershed alterations:** Extensive agriculture and pasturing throughout the watershed has contributed to siltation problems. A gravel quarry is located near stream mile 7.1. A salvage yard near stream mile 5.0 may also be a potential source of pollution.

Add additional pages if needed

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**Narrative:**

**Social considerations:** Spring Creek is one of the few designated trout streams within 50-75 miles of the Twin Cities. The lower two miles of stream flows through Red Wing and is residential between mile 0.9-2.0. Access is available at several bridges and Anderson City Park (mile 0.9). Fishing easements allow access on 0.8 miles of stream above mile 7.3.

**Limiting factors:** Stream bank erosion and agricultural practices in the watershed and along the stream corridor have degraded habitat. Fine substrates limit spawning habitat and invertebrate food production in certain reaches. In similar reach 3, since their introduction in 1976, brook trout reproduction has been documented 7 out of 9 years where stocking did not occur (1978-1982, 1992). Evidence of brown trout reproduction was found in similar reaches 2 and 3 in a total of 4 years which were either not stocked or stocked with clipped fish (1980-82, similar reach 3; 1992, similar reach 2). Brown trout reproduction was generally at much lower levels than brook trout.

Stream temperatures become marginal for trout during warm weather periods in the lower end of similar reach 2. A lack of coldwater sources below mile 7.7 and poor shading contribute to warm temperatures.

Stocking of both brown and brook trout within similar reach 3 may have limited brook trout populations by increasing competition between species.

**Survey needs and evaluation plans:** Conduct population assessments in stations 3, 5, 7, 8 and 9 in 1996 to evaluate brown trout survival in similar reach 2, wild brook trout populations, and competition between trout species in similar reach 3.

Evaluation of fin-clipped brown trout stocked into similar reach 2 is recommended.

A creel survey of similar reach 3 is needed to determine if harvest is limiting brook trout populations.

**Land acquisition needs:** Obtain angling easements on all parcels above mile 4.9 (bridge 6) (\$100,000-150,000).

**Habitat development needs:** If easements are acquired in similar reach 2, the addition of instream cover, tree planting to shade the stream in open areas, and bank stabilization to reduce siltation are recommended for this reach.

Sustainable land use practices and the development of watershed management programs should be encouraged. Natural stream corridors should be protected and maintained.

**Stocking:** Brown trout stocking will be restricted to similar reach 2 to avoid competition with wild brook trout populations in similar reach 3. Brown trout will be stocked throughout similar reach 2 (mile 2.0-7.1) at a rate of 715/acre or 7000 total beginning in 1994. Brook trout stocking will be discontinued in 1994.

**Regulations:** An experimental regulation for similar reach 3 should be considered if brook trout populations appear to be limited by angler harvest.