

## STREAM MANAGEMENT PLAN

REGION  5	AREA  510	STREAM NAME Cannon River (above Byllesby)	TRIBUTARY NO.  M48	LENGTH  26.7 miles
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SIMILAR REACH	STREAM MILE	STREAM TYPE	ECOLOGICAL CLASSIFICATION	SPECIES MANAGED
I	32.2-41.6	Warmwater- gamefish	IIB, A	WAE, SMB
III	45.8-50.8	Warmwater- gamefish	IIB, A	WAE, SMB
IV	52.7-58.2	Warmwater- gamefish	IIB, A	WAE, SMB

**Long Range Goal:**

Maintain habitat and fish species diversity. Enhance fisheries habitat where feasible. Protect the natural riparian corridor from agricultural encroachment, habitat losses associated with flood control, and residential or commercial development.

**Specific fisheries management:**

**Walleye:**

- Maintain electrofishing CPE\* at  $\geq 3/1000$  ft ( $\geq 15$ /mile), in similar reaches I, III, and IV, with PSD and RSD-20 of 40 and 20, respectively.

**Smallmouth bass:**

- For similar reaches I, III, and IV, maintain electrofishing CPE\* at  $\geq 1/1000$  ft ( $\geq 5$ /mile), with PSD and RSD-14 of 40 and 20, respectively.

\* Number based on an average 25% electrofishing efficiency for single run CPE's when compared to population estimates on the Main Zumbro River, 1994. Approximate long range goals at 100% efficiency would be to maintain walleye and smallmouth bass abundance at 60 and 20/mile, respectively.

**Operational Plan:**

1. Protect fisheries habitat through environmental review. Where the opportunity exists to create or enhance gamefish habitat, support improvements which may include large rock, tree revetments, or sloped banks with vegetation, etc.
2. Continue to support and participate in watershed projects that promote wise land use and stream corridor protection.
3. Conduct a Population Assessment in 1997, and every third year thereafter (see Survey Needs and Evaluations in the Narrative for details). Duplicate stations sampled in 1994.

**Potential Plan:**

1. Determine the extent of suitable habitat for walleye through field inspection. Traverse similar reaches I, III, and IV, and record abundance of coarse substrate, silt/sand flats, and deep holes (>5 ft.) as described by Paragamian (1989). Combine these data with percentages of various habitat types reported in the Initial Survey, to determine (cont'd on next page)

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## Potential Plan (cont'd)

the feasibility of walleye stocking. If (based on walleye population data from similar systems described in the literature) data suggests the Cannon River can support higher walleye densities, consider stocking fry at rates recommended in the Stream Management Planning Guide.

2. Develop a short questionnaire to distribute to angling groups and sportsmen's clubs (include the Cannon River Watershed Partnership) to determine:

- Citizen awareness of angling opportunities available in the Cannon River.
- How much time is spent recreating on the river?
- If anglers, what species they most often seek, or what species do they prefer?

Use this information and past survey data, together with the recreational use study completed by Hirsch and Peterson (1984) to aid in determining appropriate species management.

3. Contact interested anglers to schedule annual or biannual fishing trips that complement data collected from population assessments. Use this additional information to determine if angler catch rates can be related to electrofishing CPE.
4. Incorporate trapnets into population assessments as described in the 1984 Initial Survey.
5. Depending on the level of local interest (estimated from the questionnaire survey), organize meetings with sportsmen's groups to solicit citizen participation in fisheries management strategies.

## Narrative:

### Past Surveys and Investigations

In July 1977, Thorn (1977) completed an electrofishing survey of the Cannon River from the Northfield Dam, upstream approximately to the Hwy. 56 Bridge. The river was divided into three sections, with 5-8 electrofishing stations in each section. A total of 2.5 hours was spent electrofishing using pulsed A.C. current. Eighteen different species were collected for a total of 1356 fish, 95 percent of which were forage, or non-gamefish. Of the gamefish collected, walleye comprised the highest percent of the sample (47%).

A Fish Kill Inspection Report was completed by Gates (1984) following a "chance" discovery of dead fish in Station 4D, immediately below the Woolen Mills Dam. Dead fish were observed from the dam, .2 miles downstream. Only small fish appeared to have been effected. A conservative estimate of total fish killed was 542, 117 of which were gamefish. Suspected cause was ammoniated effluent from Jerome Faribault Foods in Faribault.

An Initial Survey was completed in 1984 (Hirsch 1985) for the Cannon River between miles 32.2 and 58.2. Four similar reaches were established with 1-4 electrofishing stations in each reach. The survey reported intensive agricultural use within the watershed as causing a variety of water quality problems. The waterway was classified as IIB and IIC (warmwater gamefish - WAE and NOP).

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## Past Surveys and Investigations (cont'd):

A water quality survey of the Cannon River in the city of Northfield was completed by Vick and Spessard (1984). They concluded that the City of Northfield had made great strides over the years in reducing its contribution of pollutants to the river, and that water quality had improved.

A Population Assessment to evaluate smallmouth bass stocking was completed in 1989 (Hayes and Wiechman 1990) for stations in similar reaches I and III. Adult and YOY smallmouth bass were collected in station 1B and 1C, but not in 3A or 3B.

Another Population Assessment to further evaluate smallmouth bass stocking was completed in 1990 (Wiechman 1991). Similar reaches I and III were again electrofished to determine the success of prior stockings. Smallmouth bass were collected this time from stations in both similar reaches I and III. The report suggested that stocking from 1986-1989 was successful (see Table 1). Additional stockings or harvest restrictions were suggested to possibly aid smallmouth bass in becoming self-sustaining.

Esch (1992) completed a Population Assessment in similar reach III during September 1991. No smallmouth bass were collected. It was recommended that until a self-sustaining population of smallmouth bass was established, additional stockings and/or restrictive harvest regulations may be needed.

A 1994 Population Assessment was completed by Schmidt (1995) in similar reaches I, III, and IV. Walleye, particularly in tailwater areas, were occasional to common, with large individuals (4-8 pounds) present. A walleye weighing 12.5 pounds was reported caught by an angler fishing the tailwaters of the Woolen Mills Dam. Electrofishing catch rates for walleye and smallmouth bass averaged 15 and 7 per mile, respectively.

A public fishing platform is scheduled for construction near the confluence of the Straight and Cannon Rivers during summer 1995.

## Past Management

Past management includes:

- Annual smallmouth bass stockings from 1986-1989.
- Periodic population assessments conducted since 1977.
- Instream habitat and riparian corridor protection through environmental review.
- Watershed protection through coordination with the Cannon River Watershed Partnership.

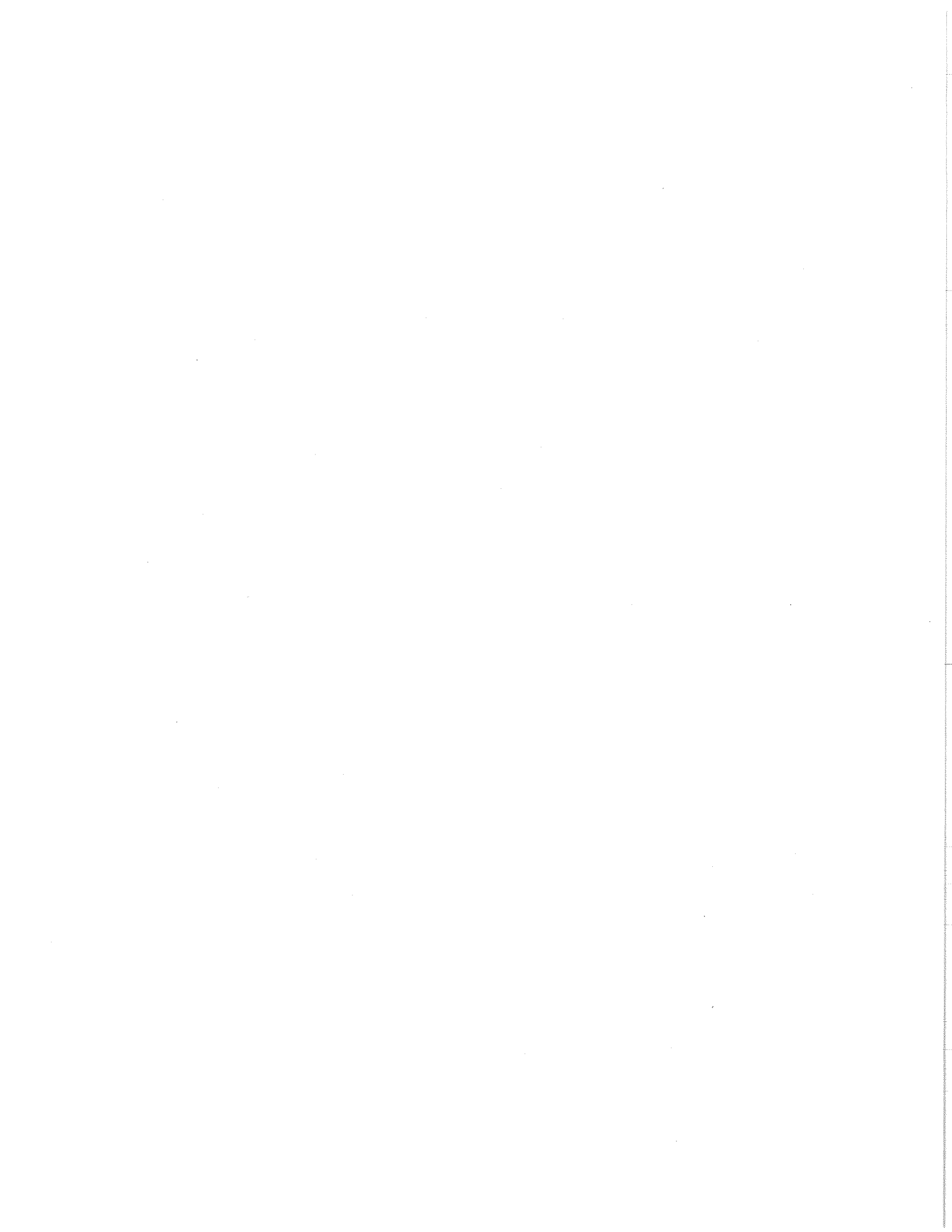
## Stream and Watershed Alterations

Watershed alterations are extensive and have been occurring for over 70 years. Due primarily to intensive agriculture, investigators have reported unstable stream flows, high rates of erosion, and high turbidity problems that adversely affect aquatic biota since the 1930's. Dams in the cities of Faribault, Northfield, and Cannon Falls represent total fish migration barriers.

## Social Considerations

Data from a recreational use survey conducted in 1984 described the Cannon River as an intensely fished resource that received significant tubing and canoeing pressure (Hirsch and Peterson 1987). From an economic standpoint, the report suggested that recreational opportunities provided the greatest benefit relative to other uses of instream water and the corridor in general.

The Faribault based Cannon River Watershed Partnership is actively involved in water quality monitoring, land stewardship, and conservation advocacy.



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## Limiting Factors

Poor land use practices within the watershed contribute sediment to the river. Extreme fluctuations in streamflow during floods and periods of drought may be limiting gamefish abundance.

## Survey Needs and Evaluations

Electrofishing (assessments) should be completed at stations in similar reaches I, III, and IV in 1997, and every third year thereafter (duplicate 1994 stations). Efforts should focus on ways to better determine walleye and smallmouth bass distribution, habitat, and general population structure. A survey questionnaire should be distributed to members of various sportsmen's clubs to determine the level of angling interest in the Cannon River. Results may help refine management.

## Land Acquisition Needs

Continue to support acquisition projects that restore or protect the natural stream corridor.

## Habitat Development Needs

Preserve the remaining natural integrity of the riparian corridor through environmental review.

## Stocking

Smallmouth bass stocking evaluations during 1986-1989 suggested additional stocking and/or restrictive harvest regulations to assist smallmouth bass in establishing populations capable of supporting moderate fishing pressure. The 1994 assessment collected very few smallmouth bass (7/mi). Walleye, however, were more abundant, and seemed to be of more interest to anglers (conversations with local fishermen). In light of this, and following:

- Results from the angler questionnaire survey,
- Habitat identification and quantity as suggested by Paragamian (1989);

consider appropriate management to bolster existing walleye populations which may include stocking.

## Regulations

None at this time.

## References

- Esch, C.H. 1992. Population Assessment, Cannon River - Lake Byllesby to Faribault. Lake City files, 8 pp.
- Gates, L. 1984. Fish Kill Inspection Report. Lake City files, 23 pp.
- Hayes, M., and Wiechman, J. 1990. Population Assessment, Cannon River - Lake Byllesby to Faribault. Lake City files, 11 pp.



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Hirsch, S., and Peterson, D. 1987. The Cannon River: Recreational use of a warmwater stream. Section of Fisheries Fish Management Report No. 28, Lake City files, 59 pp.

Hirsch, S. 1985. Initial Survey, Cannon River - Lake Byllesby to Faribault. Lake City files, 39 pp.

Paragamian, V.L. 1989. Seasonal habitat use by walleye in a warmwater stream, as determined by radio telemetry, N. Amer. J. Fish Mgmt. 9:392-401, 1989.

Schmidt, A. 1995. Population Assessment, Cannon River - Lake Byllesby to Faribault. Lake City files, 8 pp.

Thorn, W.C. 1977. Cannon River stream survey. Lake City files, 18 pp.

Thorn, W.C. 1992. Stream Management Plan. Lake City files,

Table 1. Stocking history in the Cannon River, above Lake Byllesby.

Date	Species	Size	Pounds	Number
9/19/86	SMB (River)	Fgl	83	2470
7/14/87	SMB (River)	Fgl	67	12000
7/6/88	SMB (River)	Fgl	75	15000
8/30/89	SMB (River)	Fgl	114	11742
9/15/89	SMB (River)	Fgl	160	13600