Michigan Department of Natural Resources
Status of the Fishery Resource Report 93-7, 1993.
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SPRING CREEK

St. Joseph County (T6S, R10W, Sections 9, 10, 13, 14, 15, 16, 17, 19, 20) and (T6S, R9W, Sections 16, 17, 18, 20)
Surveyed July 24, 1991

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Environment

Spring Creek is a designated second-quality, coldwater trout stream in the center of St. Joseph County. It is a large second-order tributary to the Prairie River. Shortly after the Prairie River and Spring Creek join they empty into the St. Joseph River at Centreville.

Most of Spring Creek flows through active farmland. The underlying soils of the creek drainage are primarily Adrian and Houghton muck, which are very poorly drained soils. The topography is level to slightly rolling, and ponding of water is a problem.

Spring Creek is estimated to be 28.5 miles in length and to fall only 50 feet in its total length. Its source is Washburn Lake. Several small first-order tributaries also contribute to the stream. Most of these are intermittent in nature. The lower 8.3 miles of the stream is stocked with trout. The upper waters are not stocked because they lack public access.

In the three 1991 survey sites (at Rambadt, Bucknell, and Nottawa roads) the creek averaged 23 feet wide and 18.7 inches deep. Depths range from 0 to 5 feet. Stream discharge, as measured in October 1970 for a rotenone reclamation project, was 4 cfs at the upper end and 31 cfs at the lower end. Fish habitat includes: undercut banks, overhanging vegetation, pools and deep water runs (common); logs (scarce); and at one site each, watercress and eel grass (common). Overall habitat for fish can be rated as poor to fair.

Bottom substrates in the surveyed area averaged 4% rock, 20% gravel, 53% sand, and 23% silt. Embeddedness of gravel by sand and silt is high. Water quality information collected for this survey included pH (8.0), alkalinity (232 ppm), and dissolved oxygen (11.2 ppm). All were measured at Rambadt Road. Aquatic insects collected included mayflies, caddisflies, and odonates (common), and amphipods (sparse).

Development in the watershed is limited to active farmland. Crops and livestock are raised along the entire stream corridor, primarily by Amish farmers. Much of the creek has a wetland edge, especially in the middle and lower reaches. However, farm animal access to the creek is evident everywhere, and substantial degradation of the creek has resulted. No state-owned land occurs on the creek, and public access is very limited. Many parcels are posted no trespassing and are fenced to keep animals on the property.

Fishery Resource

Spring Creek has been managed as a trout stream since at least 1933. Various combinations of brook, brown, and rainbow trout were planted through 1964. Since then only brown trout have

been stocked, at the rate of 60-270 per acre.

The earliest fishery survey (using electroshocking gear) on file was in 1969. The stream received no trout plantings in 1967 or 1969. The 1969 survey, at six stations, found only four trout (11-17 inches long) and 19 other species of fish. The trout were found only at Rambadt Road, which had the highest water temperature of the six sites (75°F). Competing species were so numerous that a reclamation project using rotenone was carried out in the fall of 1970. The treatment was considered very successful, removing many competing species and only 10 trout. Restocking of fall-fingerling brown trout occurred soon after the treatment at the rate of 270 per acre.

Additional fish surveys were conducted in 1971, 1972, 1973, 1976, and 1978. Numerous brown trout were collected in each survey (primarily at the same three sites surveyed in 1991). However, reinfestation of the creek was immediate. By 1971, 14 other species were present, many at high densities. High densities of competing fish continued. It was noted in the 1978 survey that water temperatures were higher than normal (77°F at Bucknell Road). Investigation revealed beaver activity (one dam and two lodges) which raised the water temperature 13°F. No further surveys were conducted at Spring Creek until 1991.

There are three management problems on Spring Creek. First, summer temperatures in stocked waters are high, close to lethal for trout. Second, farm-animal access to many areas of the stream continually degrades the riparian corridor. Third, the activities of beavers in the system (since at least 1978) may be elevating water temperatures and limiting trout survival. There appeared to be evidence of beaver activity during the 1991 survey, as several areas had very deep, slow water, which the technicians did not recall from previous surveys.

The 1991 survey utilized a 250-Volt D.C. streamshocker with two probes. A total of 22 species of fish were collected in 1 hour of electroshocking (Table 1). Sampling was limited due to extremely deep water and poor habitat. No trout were collected at any site. White suckers, common shiners, carp, bluntnose minnows, and bluegill dominated the catch. Common shiners and white suckers were so abundant at Rambadt Road that only a subsample was tabulated.

Scale samples were collected from bluegill and largemouth bass. Growth analysis (Table 2) indicates these two species were growing at the State average rate for lakes. This indicates that the environment of Spring Creek is more suited to these species than to trout.

Many of the species captured have free access to Spring Creek from the St. Joseph and Prairie rivers. Others undoubtedly come from ponds that have drainage into the system, or Washburn Lake. Therefore, even with a successful major chemical reclamation, incursion of competing species would be very quick.

Management Direction

Management of Spring Creek as a stocked trout stream should not be continued. Period chemical reclamation would be required to thin out trout competitors. Application of this management tool is impractical, however, because of the continued degradation of the stream environment by poor farming practices and possible beaver activity. News releases were made concerning the poor results of the 1991 survey and anglers were asked to call the District office if they have had any success on Spring Creek. No calls were received; in fact, no calls have been received regarding this fishery in at least 7 years. Spring Creek was removed from the trout stocking list in winter 1991.

Some of the serious farm degradation sites have been reported to Surface Water Quality Division's non-point source program. These have subsequently been turned over the U.S. Department of Agriculture for investigation for compliance with the right-to-farm guidelines. The status of these situations is not known at this point. Under the right-to-farm guidelines, the landowner is not required to do anything that the Department of Agriculture recommends.

Spring Creek should remain on the designated trout stream list as this is the best method currently available to protect its quality from point-source discharges. The loss of Spring Creek as a trout stream brings the number of fishable trout streams left in St. Joseph County to two. There are several other streams that are designated trout streams but they do not contain fishable trout populations.

Spring Creek is now comparable to the Prairie River, Portage Creek, or the Nottawa River. These streams all support gamefish populations but do not contain coldwater fishes.

Fisheries Division goals into the next century should be to continue pursuing upgraded farming practices which fence livestock from the stream corridor, and management of potential beaver problems. While we will not pursue the agricultural problems directly ourselves, we need to support stricter legislation which will force farm owners to adhere to the right-to-farm guidelines. As far as the beavers are concerned, we can only hope that pelt prices improve so that trappers will reduce their population. Limited access, excessive stream degradation, and unpleasant scenery all contribute to a lack of fishing pressure on Spring Creek.

Report completed: January 1993

Table 1.-Species, relative abundance, and length of fishes collected by streamshocker at three stations on Spring Creek, July 24, 1991.

Common Name	Number	Percent by number	Length range (inches)[1]
White sucker	71	23.2	2-15
Common shiner	51	16.7	3-7
Carp	34	11.1	3-25
Bluntnose minnow	18	5.9	3
Bluegill	17	5.6	3-6
Green sunfish	14	4.6	3-5
Redhorse	14	4.6	3-20
Creek chub	13	4.3	1-7
Northern hogsucker	12	3.9	4-11
Largemouth bass	11	3.6	2-10
Grass pickerel	10	3.2	3-8
Common stoneroller	8	2.6	4-5
Central mudminnow	7	2.3	2-3
Bullhead	6	2.0	7-10
Hornyhead chub	5	1.7	3-4
Johnny darter	4	1.3	3
Blackside darter	4	1.3	2-3
Pumpkinseed	3	1.0	3-4
Rock bass	1	0.3	9
Pirate perch	1	0.3	3
Hybrid bluegill	1	0.3	6
Bowfin	1	0.3	5
Total	306	100.0	

Table 2.-Average total unweighted length (inches) at age, and growth relative to the State average, for fish sampled from Spring Creek with streamshocker, July 24, 1991. Number of fish aged is given in parentheses.

Species	Age				Mean growth
	I	II	III	IV	index[1]
Bluegill	3.2	---	5.1	6.0	-0.2
	(1)	---	(2)	(6)	
Largemouth bass	4.2	7.5	9.6	---	---
	(3)	(4)	(3)	---	---

[1]Mean growth index is the average deviation from the state average length at age.

Table 3.-Estimated age frequency (percent) of fish caught from Spring Creek with streamshocker July 24, 1991.

Species	Age						Number
	0	I	II	III	IV	V	caught
Bluegill	---	6	---	47	47	---	17
Largemouth bass	10	20	40	30-	---	---	10

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Questions, comments and suggestions are always welcome! Send them to tinchert@michigan.gov