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DIVISION OF FISHERIES
MICHIGAN DEPARTMENT OF CONSERVATION
COOPERATING WITH THE
UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.
DIRECTOR

June 27, 1952

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UNIVERSITY MUSEUMS ANNEX
ANN ARBOR, MICHIGAN

Report No. 1341

SURVEY OF SILVER CREEK,

(T. 3, 4 N., R. 14 W., Secs. 2, 3, 11, 34), ALLEGAN COUNTY

by

I. A. Rodeheffer and Jason Day

Abstract

Silver Creek is a relatively short trout stream, a part of which flows through the Allegan State Forest. It is a tributary of Big Rabbit River. A fisheries survey was made here in July, 1947.

Silver Creek is largely fed by springs. Water temperatures were found to be low. Good pools are scarce and the bottom consists primarily of shifting sand which is unfavorable for good production of fish food organisms. Two ponds formed by dams were present on the stream at the time of the survey. These ponds provided some trout fishing, but excessive aquatic vegetation and the presence of competing fishes detracted from the value of the ponds for trout.

Recommended for Silver Creek was an addition to the height of the upper dam, installation of improvement structures in the stream, and a reduction of the daily creel limit to two trout.

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Silver Creek, Allegan County, rises in the southeast corner of Section 11 of Heath Township and runs in a northwesterly direction to flow into Sections 2 and 3 of the same township. From here it flows almost directly north into Section 34 of Overisel Township, and then empties into Big Rabbit River, a tributary of the Kalamazoo River.

The banks of the stream are accessible over two-thirds of its length from two plains roads running approximately parallel with it, one running south for about a mile from County Highway No. 436 in the area of an Allegan Forest camp site, and the other running north about 200 yards through an extension of the same camp site lying north of Highway 436. This highway is the east and west road between Sections 2 and 11 of Heath Township. The upper two-thirds of the stream lies within the boundaries of the Allegan State Forest.

About 300 yards north of this highway the stream crosses a western boundary of the Allegan State Forest, and flows through private farm lands for about a mile. It is accessible in this area only from a highway bridge 2 miles west of the village of Diamond Springs.

The entire water supply of Silver Creek comes from numerous springs and surface run-off at the foot of steep banks. At the time of the survey in July, 1947, there was little evidence of flooding from the stream's source to its crossing of Highway 436. Below a dam located in this area, some evidence of flooding was present where the stream flows through farm lands in a broad valley. No evidence whatever of pollution was seen by the survey party.

Two dams had been constructed across Silver Creek to impound water for trout ponds. One was located about 100 yards downstream from Highway No. 436, and had a head of about 5 feet. This dam provided two small ponds, one above and the other below the highway, and they were connected by a culvert about 3 feet in diameter. The other dam is located about a half mile upstream from Highway No. 436, and had a head of 2 feet of water.

The banks of the stream and the ponds were heavily wooded from the source of Silver Creek to about a quarter mile upstream from the bridge, 2 miles west of Diamond Springs. At this point trees became sparse, and the stream bed lay in a pastured valley having little shade.

In the Allegan State Forest the stream is open to the public for fishing and picnics. A picnic and camping area has been provided east of the ponds near Highway 436.

Silver Creek and the ponds have offered good trout fishing in the past. It was reported as furnishing good fishing early in the season. A 24-hour set of two experimental gill nets (1 1/2 inch to 4 inch stretch mesh and 125 feet long) on July 26, 1947, caught one 9-inch brook trout and a 12-inch brown trout in the pond at Highway 436. Ten creek chubs, 5.1 to 6.2 inches long, and 3 chubsuckers, 5.6 to

6 inches, were also caught. Twenty to 30 young creek chubs were observed along the shore. Four young creek chubs and 10 mudminnows were captured in a seine. Altogether, only 3 fishermen were observed during July when the survey party frequently stopped at the stream where Highway 436 crosses.

Stocking records for Silver Creek show that the stream was planted with 75 adult brook trout, 500 eight-inch brook trout and 20,000 two-inch and 26,000 one-inch brook trout in 1945. In 1946, the plantings consisted of 1,200 brook trout 7 1/2 to 9 1/2 inches long, and 10,000 that were one inch long. In 1947, plantings consisted of 750 legal brook trout and 5,000 fingerlings.

Spawning areas were limited for trout in this stream as almost the entire bottom consisted of shifting sand. Only in the stream below the small log dam, about half a mile above Highway 436, was any exposed gravel observed.

The stream had a normal-volume flow of 5 to 6 cubic feet per second, with a velocity of 0.8 to 1.4 feet per second during the latter part of July. Water temperatures varied from 54° F. at the upper end, where it is fed by numerous springs, to 65° F. just below the dams.

Good pools were not common in the stream. Shallow pools with shifting sand bottom were numerous. Many of these latter had been covered with logs and brush to provide cover and shade. The upper and middle sections of the stream were well shaded by large trees and brush, except at the impoundments. The lower section of the stream, flowing through pasture and farm land, was shaded by only an occasional bush.

The water carried an adequate supply of dissolved oxygen, which varied from 9.8 to 10.8 ppm. Carbon dioxide was absent, and methyl orange alkalinity varied from 97 to 109 ppm.

Water cress, algae, and mosses were common in the stream, along the banks, and on stones and sunken logs. In the shallow trout ponds, aquatic vegetation had become a problem. In the pond at Highway 436, Anacharis was very dense. The lower part of the pond, between the highway and the dam, was drained in the spring of 1947 and the aquatic vegetation cleaned out. By the end of July, Anacharis was again dense in the pond and in many places almost reached the surface. The part of the pond just above the highway, which had not been cleaned out, was choked with Anacharis, Ceratophyllum, floating algae, and duckweed (Lemna). The vegetation here was so dense that fishing was almost an impossibility. In the shallow upper pond which lay about a half mile above Highway 436, a narrow-leaved Potamogeton had virtually taken over.

Silver Creek offered good trout fishing for a limited amount of fishing pressure. The volume of water, 5 to 6 cubic feet per second, and temperatures in the middle 60's, provided good conditions for trout. However, shifting sand bottom limited the food supply.

The attempt to increase trout water by damming the stream and making trout ponds had not proven entirely satisfactory because of the abundant growth of vegetation here. Cleaning out the lower part of the lower pond had given only temporary relief. By July of the year that the pond was drained and cleaned, vegetation was again abundant.

As for management, it was thought that the upper pond (one-half mile above County Highway 436) might be improved by increasing the head on the dam to 4 or 5 feet. Control of vegetation in the ponds was suggested if some practicable means were found. Also recommended were installation of improvement structures in Silver Creek, and addition of gravel to the stream bottom where conditions were otherwise suitable for spawning.

Annual stocking of fingerling brook trout in the spring until spawning facilities were improved was suggested, and a daily creel limit of 2 trout was advised.

Press of work on other projects (including several in Allegan County) has not permitted development of the improvement proposals for Silver Creek to date (1952). Stocking of brook trout, both fingerlings and legal-sized fish, has been continued.

INSTITUTE FOR FISHERIES RESEARCH

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