

Original: Fish Division

cc: Forest Supervisor, Hiawatha National Forest
(2 copies)

Robert Gillie, Moran

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DIVISION OF FISHERIES

MICHIGAN DEPARTMENT OF CONSERVATION

COOPERATING WITH THE

UNIVERSITY OF MICHIGAN

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REPORT NO. 431

STREAM CLEANING AND BEAVER DAM REMOVAL IN
MACKINAC COUNTY

Upon complaint of Mr. Robert Gillie, Supervisor of the Township of Brevort, Moran, Mr. F. A. Westerman directed me to investigate reported destruction of trout and trout streams in Mackinac County.

Mr. R. W. Eschmeyer and I met Mr. Gillie at Moran on August 18 and visited what Mr. Gillie stated was a fair sample of the work to which he objected and found conditions as follows:

(1) North Branch Carp River, Section 6, T. 42 N., R. 4 W., at a point just below the junction of the Kenneth and Taylor creeks (North Branch of Carp and unnamed tributary heading near Kenneth on National Forest map). A beaver dam approximately 4 feet high blocked the stream at this point. Mr. Gillie stated this had been removed by dynamite in 1935 and that several days later he observed about a hundred dead brook trout from $5\frac{1}{2}$ -6 inches below the dam. He further stated fishing for trout had been good in the pond above for about 30 years to his knowledge.

Mr. George Frisbie, Wildlife Technician for the Hiawatha National Forest, later reported that he had blown this dam and had stationed CCC enrollees below the structure for some distance and that no dead trout were observed during a period of approximately one hour after the dam was removed.

It is possible that trout may have been killed by dynamite and may not have drifted downstream until sometime later. However, it seems more likely to us that the sudden release of warm, stagnant water in the pond may have resulted in the suffocation of trout below the dam. In such a case, death might not have been immediately apparent.

Whether conditions in the stream warranted the removal of this dam in 1935 cannot be stated. However, since the Conservation Department recommended the removal of all beaver dams on trout streams in 1935 in this area, and since dynamite had been advised by Mr. Salyer in his report to the Department, the Forest Service cannot be criticized for this work.

Temperatures taken at and near this point on August 18 were: air 80°F.; surface at brink of rebuilt beaver dam 70°; water coming through bottom of dam 69°; small spring tributary entering North Branch about 100 yards below dam 61.5°; 1/4 mile below dam on North Branch near old lumber camp site 66.5°; main Carp River, about 1/2 mile below North Branch entrance, 68°. From these temperatures, it is evident that on hotter days the water in this system would reach points dangerous to brook trout. Efforts in stream management should therefore be directed to lowering the water temperature as much as possible by keeping beaver dams removed, narrowing the stream channel and the encouragement of shade. This should benefit trout fishing in both the North Branch system and the main Carp River.

(2) South Branch of Carp River (West Branch), Section 26, T. 43 N., R. 6 W. At a point approximately 3 miles above the mouth, the stream flows through a gully in a sand plain denuded by lumbering and fire and recently planted. Apparently this stream was a series of small beaver dams in this section, and according to Mr. Gillie furnished good brook trout fishing up to the time of dam removal in 1935. At present brook trout are caught in the lower end but not in the headwaters.

The bottom was dominantly sand with patches of brown algae. The water has a bluish, oily appearance, characteristic of many streams stagnated by beaver. The water was 65°, which probably indicates tolerable temperatures for brook trout.

In certain sections waterlogged sticks and logs had been removed from the stream bottom and alders overhanging the brook had been cut away. It is difficult to understand why this stream cleaning had been done unless to facilitate flushing the old beaver dams. However, since such obstructions to the current trap out the silt and sand, it is generally considered desirable to leave them in place when beaver dams are removed.

Since the removal of the dams, the mucky banks of the pond bottoms have grown up with grass and weeds. Other logs and brush have fallen in and the alders are again closing over the stream. If the beaver are kept out, this section should again harbor trout to supply the stream below. Time did not permit cruising the entire South Branch, but it seems likely that the upper portion visited should be kept free of beaver in order to maintain the water temperature at safe levels over the entire stream.

(3) Brevort River, Sections 5 and 13, T. 42 N., R. 6 W. The upper part of this stream and of the tributaries have been extensively "beavered" in past years. At the point visited, a large, old dam had been removed. This and supplementary dams above had flooded back for a distance of approximately 1/2 mile. The main dam is about 1/4 mile long, about 6 feet in height, heavily sodded and grown up with tall alders. Mr. Gillie states the lake formed by this dam was in existence for 30 years to his knowledge and always furnished good trout fishing. It may be ^{seriously} questioned whether the removal of this dam benefited the stream. Immediately below, the stream enters dense alder and forest cover and springs are common. Spawning grounds appear to be adequate in the lower courses and the temperature was (at old U.S. 2) 55.5° at 5 p.m.

As on the South Branch of the Carp, the stream channel for a hundred yards above and below the large beaver dam and the smaller structures had been cleaned of debris; alders and fallen or overhanging cedars had been cut away. This was without any good purpose which we could discover. According to Mr. Gillie, the beaver dam removal and stream cleaning was also done in 1935.

(4) Silver Creek, Sections 7, 8, 17 and 20, T. 42 N., R. 5 W. This small stream, tributary to Brevort Lake, was cleaned for a distance of about one hundred yards below the large beaver dam and all the dams on the creek were removed--all work in 1935. On other parts a limited amount of cleaning has been done in connection with stream improvement. Some of this may have been necessary in order to install deflectors to create larger pools, but in other places it was difficult to see why any material in or over the stream should have been disturbed.

The large beaver dam created a pond of an acre or less and according to Mr. Gillie, 273 brook trout up to 15 inches in length were taken in it in 1935 by two men who fished it considerably before the dam was removed. This dam had been in about 5 years.

The major part of this stream was cruised on August 25 by Mr. Gillie, Mr. George Frisbie of the U. S. Forest Service and the writer. Spring fed gravel areas were found below the lower of the two large beaver ponds. Springs are abundant at the headwaters, but very little gravel was found, and this may have come from the road at the bridge. The introduction of gravel in the stream bed of the upper mile should be a worthwhile experiment to determine if brook trout spawning beds can be created where spring feeders are present but gravel is lacking. If this upper section can be made suitable for spawning, it would do no harm, as far as the writer is aware, to permit the beaver to rebuild the upper of the two larger dams. This has been partly done already and if unmolested the beaver will completely repair the dam by fall.

Under these conditions, separate and sustaining populations of brook trout might be built up both below and above the dam and might result in a larger yield of trout than if the dam were kept out. Since there is good shade and spring supply below this dam, the warming of the water in the pond should do little harm to the stream below. However, the beaver on this stream should be managed and no new dams permitted where spawning runs will be blocked or needed shade may be destroyed.

Conclusions

The removal of certain beaver dams and stream cleaning in the vicinity of these dams apparently warranted complaint. From our observation, this cleaning seems to have been largely restricted to such places and was done prior to 1936. Since dam removal and cleaning were carried on simultaneously, it is difficult to say which caused the trout to leave (as reported). Probably the removal of the dams was mainly responsible. Some removal may have been justified in order to lower temperatures and check stagnation, but no reason for cleaning the streams can be conceived.

Removal of beaver dams by dynamite has not been done on the National Forests since the fall of 1935, according to Mr. Frisbie, and is not now recognized as a proper method by any agency except in rare cases.

Mr. Gillie stated that he was satisfied that no destructive work was being done on trout streams in his district at the present time by the CCC. However, he feels that the state CCC work is not being as carefully supervised as it should be and that sections of streams are being cleaned and subsequently improved which might better be left untouched. He also strongly objects to wholesale removal of beaver dams without adequate investigation as to the need for removal in each case.

INSTITUTE FOR FISHERIES RESEARCH

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