Original: Fish Division
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REPORT NO. 437

INVESTIGATION OF THE FIRESTEEL RIVER, THE WEST BRANCH OF THE STURGEON RIVER AND THE EAST BRANCH OF THE ONTONAGON RIVER IN HOUGHTON AND ONTONAGON COUNTIES

Mr. William Johnson, President of the Greenland Township Outdoor Club of Mass, Michigan, requested an investigation of a number of trout streams in which his organization was interested. The following is an extract from his letter of April 8, 1937:

> "I would like to suggest a few lakes and rivers that should have attention in our territory for they are absolutely no good to plant fish in and still they do it so I cannot see any sense in these fish plantings until we find out if the waters we plant them in are suitable and able to take care of the fish.
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> "The list of lakes* would be as follows:
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> | | |
> |---|---|
> | Six Mile Lake | Sec. 4-50-37, Ontonagon County |
> | Bob Lake | Township 49, 37, Houghton County |
> | Marqie Lake | Township 48, 36, Houghton County |
>
> "The list of rivers would be as follows:
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> | | |
> |---|---|
> | West Branch of Sturgeon River, | Houghton County |
> | Firesteel River and main branches, | Ontonagon County |
> | East Branch of Ontonagon River, | Ontonagon County." |

Camp was made on the West Branch of the Sturgeon River south of Alston on September 10. Dr. J. W. Leonard and Mr. Floyd V. Ames assisted the writer in the investigation. One week was spent in the examination of the streams listed and in preparing this report.

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* The lakes listed were surveyed by the Upper Peninsula lake survey party under the leadership of Dr. Franklyn Bond and will be reported separately.

West Branch of the Sturgeon River Houghton Co.

This stream was examined at the following points: M 35 crossing, road crossing, south of Alston and at the Cherry Grove Camp Ground. All tributaries which could be reached by road were also checked. The stream was cruised by Leonard and Ames from the Cherry Grove Camp to the road crossing south of Alston.

The main West Branch of the Sturgeon River, at the points of examination, is an excellent trout stream. Shade in the form of alders and forest cover is dense, in fact much of the upper portion can only be fished with bait. Temperatures taken by the U. S. Forest Service at the Cherry Grove Camp and by us in the lower end are well within the range for brook trout. The flow is fairly constant and is supplied by swamp drainage and some small springs. In Section 15 there are several attractive falls and cascades, one of which is impassable to trout. The extreme headwaters and the tributaries, however, originate in spruce swamp and are small, relatively warm, and, where examined, do not appear to be suited to trout.

Pools are numerous and of good quality in all parts of the main stream. Numerous log jams, down timber and overhanging alders afford excellent shelter. One occupied beaver dam was observed about 1/4 mile below the Triangle Club, but appears to be doing little if any damage at present.

The food supply is abundant below the falls where gravel and rock riffles dominate. Above the falls the bottom is largely sand and silt, so that bottom food production is much less. It is doubtful if any improvement devices could be installed in this upper section which would improve the food supply, as good natural deflectors expose very little gravel. A good supply of Cottus is available as forage fish below the falls.

Spawning conditions for trout other than brook trout are excellent in this stream below the falls. Several small springs and seepage areas provide very limited places for brook trout reproduction. Above the falls, spawning grounds are poor for any species of trout. However, there may be some good nesting sites above the Cherry Grove Camp Ground.

Planting should be confined to brook trout both above and below the falls. Large rainbow trout, probably from the main Sturgeon River, are reported as spawning up to the falls. Several fish up to 27 inches long are caught in the lower end each spring. Large numbers of young rainbow trout from 2 to 6 inches long were observed as far upstream as the falls. A few rainbows of legal size were also noted. The stream appears to be fully stocked with young rainbow from natural reproduction so that it is doubtful if any plantings of this species could be made with the expectation of increasing the yield. Plantings of brook trout may help to diversify the fishing below the falls, although probably at the expense of the rainbows already present. Such plantings seem to be definitely needed above the falls because of the scarcity of good spawning grounds. The U. S. Forest Service out of Camp Sturgeon River carried on a fish yield study on the West Branch of the Sturgeon River in 1936. Fishermen leaving Cherry Grove Camp Ground reported their catches to a CCC enrollee. Good catches of brook trout from 7 to 10 inches were made early in the season. Very few under-sized brook trout were reported, which gives further proof of limited spawning grounds for this species. Records were invariably for fishing above the falls.

No improvement is necessary, in our opinion, in this section of the West Branch of the Sturgeon except that erosion caused by the cut made by the highway between sections 7 and 8 (T. 50 N., R. 36 W.) should be checked. This brings in a large quantity of clay (as observed following a heavy rain) which smothers out food organisms and collects on spawning grounds below the bridge.

It might be worthwhile to place several bushels of gravel on one or two riffles near the bridge at Cherry Grove. This should be considered as an experiment and observations made during the spawning seasons for brook and rainbow trout to determine if it is being used for spawning.

Firesteel River Ontonagon Co.

This stream system was examined where it could be reached by road. The West Branch in T. 51 N., R. 37 W., Section 33 is good trout water and the entire river apparently provides some fair fishing for large rainbow spawners which ascend from Lake Superior or the lower portion of the river. The East Branch and other tributaries of the Firesteel examined were too small in flow to be considered as trout streams.

At M 35 crossing the West Branch is a clear, rapid stream with a bottom of gravel mixed with some sand and clay. Pools appeared to be of fair quality, improved somewhat by log deflectors installed several years previously. Shade, of alder and forest growth, is excellent. Fishing with a fly would be difficult. The food supply was found to be fair and spawning grounds for trout, other than brook trout, were numerous. Seining indicated a heavy population of rainbow trout from 2 to 6 inches and a number of legal sized fish. Suckers, sculpins and dace were also present. A few of the trout were preserved for stomach analysis and the rest returned. From this investigation and reports of anglers, rainbow trout evidently run the stream to spawn.

The main river was examined at Mr. Ahola's farm, T. 51 N., R. 38 W., Section 2. The stream is dominantly sand and clay bottom at this point and the current is less rapid. Large, deep pools are numerous. According to Mr. Ahola, good catches of rainbow trout are made here. The water was turbid, probably due to heavy rain the preceding day. Shade is less dense in this section.

This stream system is probably better adapted to rainbow and brown trout than to brooks. Although temperatures taken during our investigation were not significant, the relatively exposed nature of the watershed and evident scarcity of springs indicate that the water may become too warm for brooks. The stream is doubtless fully stocked with rainbow trout as a result of the spawning run from below, but the introduction of brown trout to add variety and provide larger fish during the summer might be worthwhile.

East Branch of the Ontonagon River Ontonagon Co.

This stream was examined at a number of points from its junction with the Middle Branch to its source. Beaver Creek and the East Branch of Jumbo Creek, two of its principal tributaries, were also investigated.

From Kenton downstream the East Branch receives a great deal of erosion from clay banks. This is probably responsible for the decline in trout fishing reported in this river. Older residents claim that the lower East Branch yielded good catches of trout but these were probably made before the timber was cut. Driving doubtless contributed to the increased erosion.

Much of the stream bed is rock and gravel and still produces a fair supply of bottom food, although not as much as would be expected were the water clear. Temperatures approach (and may exceed) the danger point for trout in much of this part of the river. We are in agreement with U. S. Forest Supervisor Hendee that until this watershed is again heavily forested and the soil erosion checked little improvement in the trout fishing can be expected. Removal of beaver from tributary streams such as Beaver and Jumbo creeks may help in lowering water temperatures.

At points above Kenton where this stream was examined, conditions are apparently ideal for brook trout. Large numbers of naturally spawned young were seined and observed in the river. The food supply also appeared

to be good. If the results of natural spawning are as successful everywhere on this stream as at the point seining was done (T. 48 N., R. 37 W., Section 16), it appears questionable whether any plantings of fingerling trout in the East Branch are desirable or necessary at the present time.

Beaver Creek Houghton Co.

Beaver Creek is well named. From source to near its mouth this stream runs through a wide swampy valley forested with spruce. At frequent intervals the beaver have dammed the water, often killing the timber and creating huge "beaver meadows." Many old beaver dams have washed out or have been removed and the stream has dug a deep channel through the rich deposit. Alders line the banks and form dense thickets on the old pond bottoms. In places the spruce is apparently again encroaching upon the stream. Along approximately a mile of stream south of Kenton the land has been cleared for farming. In this section the stream meanders through grassy meadows.

Except in the lower portion, the bottom appears to be silt and sand. A food sample taken near the U. S. Forest Service camp ground contained large numbers of burrowing mayflies. Temperatures probably run high over most of the stream's course, although the increase in alder shade, where beaver dams have been eliminated, should help to make the water more suitable for trout.

In its lower course, the stream valley narrows and cuts through clay and gravel soil. The food production is good in this section; pools are numerous and provide excellent shelter. A few spring-fed gravel spawning areas were observed.

A series of air and water temperatures should be taken along this stream during the hottest part of the summer to determine whether enough

cold sections are present to make brook trout plantings worthwhile.

East Branch of Jumbo Creek Iron Co.

Mr. E. S. Hurd, Junior Forester assigned to Camp Jumbo, was directed by Ranger T. E. Robertson to accompany us on our inspection of the East Branch of Jumbo Creek.

We examined this stream at two points in T. 46 N., R. 37 W., Sections 10 and 3. At the Jumbo Spur truck trail crossing, a fisherman's camp has been developed by the Forest Service and a number of single and double wing log deflectors have been installed.

Mr. Hurd kindly furnished us with a copy of air and water temperatures taken at the bridge during July of this past summer. On eight days the water temperature exceeded 80 degrees F. (maximum 89°) at 2 p.m. The stream flows through an old beaver meadow for about a mile at this point. The channel is very wide and only a few clumps of alders supply any shade. The improvement work here was designed to narrow and deepen the channel and speed up the current. This it has undoubtedly done. Plantings of willow cuttings are to be made along the banks next spring, according to Mr. Hurd.

Whether any of this work will be effective in lowering the stream temperatures to a point where trout can tolerate them except during the first six weeks or so of the fishing season (when almost any water is cold enough for trout) is questionable. However, this improvement may reduce temperatures downstream and extend the range of brook trout somewhat. Since a good series of temperatures are available before improvement, it will be most instructive to observe the results after shade has been established. Planting this meadow to cedar or spruce to further shade the stream might be worthwhile if foresters agree these species will thrive on such a site.

The next observation was made near the State Quarry Creek Camp Ground. This camp site is very beautifully located. State Quarry Creek runs through this valley to join the East Branch of Jumbo Creek about 3/4 of a mile below the point where this stream was examined previously. State Quarry Creek heads in a series of fine springs in a cedar swamp about a mile from the camp ground. It has a considerable flow of cold (48° near the mouth) water. An excellent site for a small series of trout rearing ponds is available near the camp ground.

The East Branch of the Jumbo Creek just above the camp ground passes over a series of cascades and falls, several of which are impassable to trout. Above the falls an old beaver dam has been removed and the stream channel cleared of debris. Excellent gravel bottom has been uncovered by this removal, which should be frequented by spawning brook trout this fall. A series of fine springs, emerging at the head of the old pond at a temperature of 42.5°, cool the water 1.5°F. after thorough mixing.

Conclusions

All three streams listed by Mr. Johnson contain good trout water in certain sections. Other sections are unsuitable for trout under present conditions and will likely remain so for some time. Neither stocking nor stream improvement would be worthwhile in such waters.

The need for a comprehensive survey of our streams to determine which are suitable for and require stocking is indicated by the present preliminary investigation.

The U. S. Forest Service is to be commended for the excellent progress they have made in mapping and describing the physical conditions of streams and lakes within their boundaries. The data they are securing are basic to a proper understanding of the possibilities and requirements of their fishing waters. When completed and coupled with the results of research and

continuous systematic observations, these surveys will provide the foundation for fisheries management in the true sense of the word.

INSTITUTE FOR FISHERIES RESEARCH

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