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PROGRESS REPORT ON INVESTIGATION OF EFFECT OF MINE WASTE
AND DOMESTIC SEWAGE ON FISH LIFE IN STREAMS IN THE
WESTERN END OF GOGEBIC COUNTY, MICHIGAN

by

Leland R. Anderson

This report is supplementary to the studies made by Dr. A. S. Hazzard and colleagues in October, 1946, as described in I.F.R. Report No. 1099. Coverage was made of most of the streams in the vicinity of Ironwood, Bessemer and Wakefield. The weather was warm (75-81° F.) and cloudy with light rain. Observations were made on August 20, 1947, by A. K. Adams and the present writer.

1. Black River (S. 13, T47N, R46W) - Below US 2 highway bridge, Ramsay. The water was low, clear and rapid; water temperature 70° F.; bottom of sand and rock; some algae on rocks; very little bottom fauna; fish consisted of numerous shiners and a few sticklebacks.
Black River (S. 33, 34, T48N, R46W) - In North Bessemer, where surrounding terrain is covered with forest. There was a good flow of water; water temperature 70°; bottom of sand and rock with slight silt cover (rocks very slippery); water was slightly turbid which

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was probably due to soil runoff; there was very little bottom fauna, but numerous shiners were observed.

Black River (S. 33, T48N, R46W) - At bridge crossing in N. Bessemer. There was a good flow of water, though it was low and very turbid. The turbidity was due to run-off from the Superior Gravel Company washing plant just east of the bridge; water temperature 70°; bottom of sand and rock; rocks were covered with algae; there was a medium amount of bottom fauna; numerous shiners were observed at the mouth of Powder Mill Creek of which water was clear.

2. Little Black River (S. 12, 7, T47N, R45,46W) - North of Verona.

The water was low and rapid with considerable mine waste in suspension and also covering the rocky bottom; water temperature was 69°; bottom fauna meagre and no fish observed.

Little Black River (S. 16, T47N, R45W) - South of Wakefield, at old US 2 bridge crossing. There was a medium flow of water in and out of the old mill pond below the bridge; water was clear and brown, draining from swamp above; water temperature 74°; abundance of weeds in pool; bottom fauna scarce; perch being caught in backwater.

3. Almond Creek (S. 13, T47N, R46W) - Between Ramsay and Verona. Water

flow meagre, water temperature 63°; rocky bottom, muck covered; bottom fauna meagre; no fish observed.

4. Kallender Creek (S. 3, T47N, R46W) - North Bessemer. Good flow of

water through marginal farm land; rocky bottom; water clear; water temperature 66°; water has the odor of sewage; rocks covered with algae; bottom fauna is scarce, but numerous leeches and mosquito larvae were observed; no fish were observed.

Kallender Creek (S. 10, T47N, R46W) - Bessemer City Limits. Small flow of clear water with no discernible pollution; water temperature was 71°; creek is rock and sand bottom, and very shallow; very little bottom fauna; a few minnows observed.

5. Powder Mill Creek (S. 33, T48N, R46W) - From mouth to half mile upstream. Water low and clear with no evidence of mine waste; water temperature 65°; sand and rock bottom; numerous bottom fauna near highway bridge, but very few at railroad bridge. Observed numerous shiners and a few small brook trout (4 - 7"); fishermen on stream reported that fishing was good here when the water is high. One dead brown trout (fin-clipped) was found near the highway bridge which showed probable cause of death as injury by a bird.

Powder Mill Creek (S. 8, T47N, R46W) - At Highway US 2 crossing. Small, shallow creek with low, clear water; water temperature 69°; bottom is mainly rock and sand with a light deposit of reddish sediment; there is an abundance of algal growth in the eddies; numerous bottom fauna and small minnows were observed.

6. Spring Creek (S. 34, T48N, R47W) - North Ironwood; water clear, temperature 70°; bottom rocky and covered with silt; weeds abundant (Chara and Potamogeton sp.); numerous small minnows observed; very little bank cover; stream flows through marginal farm and swampland.

Spring Creek (S. 34, T48N, R47W) - At pumping station crossing. Light flow of clear water through marshy ground; pool extends 200 feet upstream from bridge; small rock dam at bridge; rocky bottom; no weeds; numerous minnows observed; water temperature 69° F.

Spring Creek (S. 33, 34, T48N, R47W) - Water is clear and flow light, water temperature 71^o; creek is shallow and wide above and below bridge with a slate-rock bottom; weed (cattails, sedges, lilies and pondweeds) growth is medium; marsh and alder growth cover low banks; bottom fauna is meagre, but numerous small shiners were observed.

Spring Creek (S. 32, 33, T48N, R47W) - Creek about 60 feet wide here flowing through marginal farm land; water sluggish and slightly turbid; water temperature 73^o; rocky bottom covered with silt; water from 4 - 6 feet deep at bridge; abundant weed (cattails and pond lilies) growth; fish (probably minnows) observed rising; brush cover lines banks.

Spring Creek (S. 31, 32, T48N, R47W) - At large culverts. One half mile above mouth. The creek is about 75 feet wide here, is clear and has a medium flow (2 - 4 feet deep); water temperature 70^o; bottom rocky; flows through woodland with brushy banks; some cattails and lilies on shoal; small amount of bottom fauna and numerous shiners and darters observed in mid-stream. No pollution.

7. Welch Creek (S. 33, T48N, R47W) - North of Ironwood in Montreal River drainage. A small, shallow creek with a light flow of clear water; water temperature 71^o; bottom of rock and sand, flowing through farmland; banks having dense alder cover; observed a medium amount of bottom fauna and numerous shiners. No pollution.
8. Montreal River (S. 5, T47N, R47W) - This stream is about 35 feet wide flowing through marginal wood and farmland; water was clear and low and slightly rapid; water temperature 72^o; bottom rocky and covered with algae; fair amount of bottom fauna; no fish were observed.

Montreal River (S. 16, T47N, R47W) - At Highway US 2 crossing, between Ironwood and Hurley. Water very turbid with sewage disposal (reaked of sewage gases); water temperature 72°; bottom fauna consisted of numerous Tubifex; no fish were observed.

9. Sieman's Creek (S. 13, T47N, R47W) - At Highway US 2 crossing. This is a small creek with a good flow of clear water draining mine fields, farmland and woodland; it has a sand and shale-rock bottom that is covered with a layer of red silt; water temperature 72°; no bottom fauna or fish were observed.
10. Planters (Sewage) Creek (S. 9, T47N, R45W) - At M 28 highway crossing. A medium sized creek with a fair flow of water draining iron mine field N.E. of Sunday Lake and land adjacent to Wakefield. At this point the water is very rapid and very turbid; sewage from Wakefield is plainly evident (water had oily cast and greasy feel); there may also be some mine waste as water had a red tinge; there was an abundance of refuse on shore and flies filled the air above; water temperature 63°; rocky bottom covered with algae; no fish or bottom fauna were observed.

Planters (Sewage) Creek (S. 4, T47N, R45W) - About three miles below above point of inspection, one would not think it the same creek; water had slowed down considerably here, but with still a fair flow; water temperature 66°; the water was almost clear flowing over sand, gravel and boulders, through marginal swamp and farm land; there was an ample amount of cover along the bank and quite a litter of brush in the stream bed (probably carried along in high water stage); bottom fauna was scarce, but there were numerous minnows observed.

11. Jackson Creek (S. 27, 28, T48N, R45W) - At Presque Isle road crossing. This creek is shallow and wide with a very light flow of clear water; water temperature 71°; bottom is of sand and rock and the rock slightly covered with algae; the banks are bordered by marginal hardwoods; an abundance of bottom fauna and numerous minnows were observed.

Jackson Creek (S. 31, 32, T48N, R45W) - Below mouth of Planters Creek. This is a rather large creek with a fair flow of clear water tumbling over a rocky and sand bottom; there was some algae and reddish sediment on the rocks and bottom; water temperature 67°; bottom fauna was from meagre to fair and a few minnows were observed; it looks like good trout water, and there were reports that some trout are caught here earlier in the season.

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