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COOPERATING WITH THE
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PROGRESS REPORT ON STREAMS IN WESTERN COUNTIES
OF THE UPPER PENINSULA

By

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Following are ecological data on numerous streams of Fisheries District I (as of 1947) collected while the writer was District Fisheries Biologist there.

No complete survey was made of any one stream, but on numerous occasions streams in the various counties of District I were checked for water level, temperature, bottom type, cover, amount of food present, and surrounding terrain.

The main thought here was to make spot checks on these streams over a period of years to enable the fisheries manager to get a background for a future stocking policy and stream improvement work.

The statements given below will be brief and in outline form:

A. Baraga County

I. Cemetery Creek (Sec. 5, T50N, R38W)

- a. June 11, 1947, Evening - (Weather cloudy and cool; visibility fair). Within north village limits of Baraga. Water 50° F., high and rapid and brush covered above

(W)

U. S. 41, slow and open below; sand and gravel bottom;
no sign of fish; air 45° F.

II. Hazel (Six Mile) Creek (Sec. 1, T50N, R34W)

- a. June 11, 1947, Evening - Weather cloudy and cool; water 50° F., high; sand bottom, 25' wide and 3' deep at mouth; no fish observed; reported to be a good trout stream with some good catches made here this spring.
- b. June 6, 1948, Evening - Weather clear and warm, NW wind; water 51° F., brown, bottom muddy where it flows from swamp; numerous suckers and a few small rainbows observed in deep hole above U. S. 41 bridge.

III. Falls River (Sec. 5, 8, T50N, R33W)

- a. June 11, 1947, Evening - Weather cloudy and cool; water 51° F., very high and fast, 75' wide, rocky bottom, rapids and falls above and below U. S. 41 bridge. Brown trout reported caught. Contains suckers, smelt, and rainbows in early spring.
- b. July 1, 1947 - Water 60° F; good flow over slate rocks; rainbows reported having been caught from Ford Mill Pond below the highway bridge.
- c. April 28, 1948 - Weather cloudy and showers, NW wind; water 44° F., high, rapid and roily.
- d. June 6, 1948 - Weather clear and warm, NW wind; (on Ford Property). Water 58° F.; river from 30-60' wide, numerous shallow pools with gravel and slate rock rapids between. Numerous shiners observed at mouth. All pools had an abundance of fine scaled (long nosed) suckers. Some

hatchery brook trout observed. Also one or two natives.

Ford workers have observed small lampreys (presumably silver or brook) on the suckers from time to time.

- e. August 3, 1948 - Cloudy and cool, NW wind; air 65° F. at 11 A.M. Received report of oil taste in trout. Checked water from U. S. 41 to first falls. No trace of oil in water. Water 59° F. Checked from Power Plant to a point 600 yards down stream--that showed no signs of oil (tested by taste, odor, and feel). Conferred with Power Plant engineer who stated that every care is taken in dispensing waste oil. It is drained from engines, hauled to a dump and burned. Some oil may overflow from tanks when poured from cars and a small amount may leak from engines, but all oil is accounted for. Exhaust is expelled into air by chimney. Henshaw of L'Anse is only one who has complained about the bad taste of fish. Quite a few fish caught near plant but no complaints received. Some algae on rocks near plant which smell of decay when exposed to the sun. Fish observed in streams do seem to be disturbed by any form of pollution. Fish (two native brown trout) caught did not taste of oil.

IV. Little Carp River (Sec. 9, 10, T51N, R33W)

- a. June 12, 1947, a.m. ck. - Weather moderately cloudy and warm, NE wind; air 53° F. Observations good. (N. of Baraga on U. S. 41). Water 48° F. at mouth, high and roily following rain, six inches deep at mouth and sandy; 5' deep between mouth and highway bridge; rapids above bridge with a number of deep holes between; water 48° F.

and brown at R.R. Bridge; rapids of slate rock and gravel; cover of alder, cedar and balsam; steep slopes on side; abundance of aquatic fauna on rocks; suckers observed near R. R. Bridge; reported to be a fair trout stream.

- b. July 1, 1947 - Water dark brown; observed numerous trout or minnows rising near highway bridge.
- c. April 29, 1948 - U. S. 41, water high, dark brown, 52° F.; fishing poor on opening weekend.
- d. June 6, 1948 - U. S. 41, weather clear and warm, NW wind; water 64° F., no flow, outlet plugged with sand. Water dark brown and stagnant, some small minnows (?) observed.

V. Assinin's Creek (Sec. 15, T51N, R33W)

- a. June 12, 1947, p.m. ck. Weather moderately cloudy and warm, NE wind. Small, rapid stream with sand and gravel bottom, good holes below rapids, water 58° F., high. Flows through wooded ravine. No fish observed, aquatic life meagre.
- b. April 28, 1948 - Water appeared to be about normal. Weather rainy and cool, NW wind.
- c. June 11, 1948 - Weather clear and warm, NW wind; water 50° F., low, spring fed, about 2 1/2 feet wide. Plenty of bank cover, no fish observed.

VI. Kelsey Creek (Sec. 27, T52N, R33W)

- a. June 12, 1947 - a.m. ck. Weather moderately cloudy and warm, NE wind. Water 51°, high; rocky (shale and rubble) and sand bottom, rapids flat from U. S. 41 to Lake Superior.

Numerous suckers observed, reported to be a good trout stream; bank cover is alders, second growth hardwoods and balsam. Water in Lake Superior at mouth is 49° F.

- b. April 28, 1948 - Weather cloudy and rain, fog, NW wind. Water 52° F., slightly above normal; fishing reported poor on opening weekend.
- c. June 11, 1948 - Weather clear and warm, NW wind. Water 62° F., very meagre flow, no fish observed.

VII. Sturgeon River (Sec. 15, T50N, R35W)

- a. June 13, 1947 - Prickett's Dam. Weather showers and cool, air 49° F. a.m. ck. - Water 54° F., high, rapid and roily below dam, river quite shallow, bottom of shale and sandstone.
- b. August 3, 1948 - Near M35 below Prickett's Dam. Weather cloudy and cool, NE wind, air 68° F. Medium flow in main channel, barren sand and gravel bars halfway across river. Open and very little cover except where stream hits bank-- here it is brushy and second growth hardwood. Main channel 15-20' wide, stream bed 100' wide.
- c. August 4, 1948 - U. S. 41 crossing. Weather clear and cool to moderately cloudy, NE wind; 8:30 A.M. Air 62° F. Water 57° F., very low, rocky bottom, hardwood and alder cover.

VIII. Little Silver Creek (Sec. 18, T51N, R32W)

- a. June 13, 1947 - p.m. ck. at County Road 638. Weather showers and cool, observations fair. Water 48° F., 10-15' wide and 4-20" deep at mouth. Very rapid above highway bridge, rocky bottom, sand in eddies and pools, abundance of food in riffles; numerous suckers observed in spawning run - could be caught by hand in the rapids. Appears to be fair trout water.

- b. June 6, 1948 - Weather clear and warm, NW wind, air 53° F., water 53° F. 8:30 A.M. Very meagre flow; no fish observed.

IX. Sucker Creek (Sec. 32, T52N, R32W)

- a. June 13, 1947 - In vicinity of County Road 638. Weather rain and cool, east wind; water 52° F., high, probably intermittent in summer, drains marsh and swamp south of Pequamming; sand and gravel bottom near mouth, mud in swamp. Water in Lake Superior 50° F.

X. Big Silver River (Sec. 13, 24, T51N, R32W; Sec. 18, T31N, R31W)

- a. June 13, 1947 - Weather rain and cool.
1. At highway bridge - River is 65' wide, 1-4' deep, bottom of sand and gravel, high banks on side. Second growth hardwood lines the banks. Water 50° F., fairly rapid and a good flow. Some fish observed (?).
 2. At townline road - Water deep, brown, more sluggish than above, small feeder creek to left of bridge, sand bottom studded with large boulders.
- b. June 10, 1948 - Weather cloudy and warm, SW wind. 6:30 P.M.
1. At townline road bridge - Water 68° F., brown, moderate flow. Observed numerous shiners and suckers and four bass about 16" long.
 2. At highway bridge - Water 68° F., numerous suckers observed, some trout observed rising about 1/4 mile above the bridge.

XI. Slate River (Sec. 8, 9, T51N, R31W)

- a. June 13, 1947 - Weather rain and cool. Vicinity of highway. Water 49° F., high and rapid; very few pools except near mouth;

small falls about 500 feet above bridge. Old ore docks that were never used extend into the bay at the mouth. Numerous suckers observed, no other fish; abundance of food in the riffles.

- b. June 10, 1948 - Weather cloudy and warm, SW wind. 6 P.M. Water 64° F., very low; gravel beds exposed. Numerous suckers observed; few trout fry but no adults seen.

XII. Ravine River (Sec. 4, T51N, R31W)

- a. June 13, 1947 - Weather rain and cool. P.M. ck. Water 50° F., sluggish and deep at mouth to 1/8 mile above bridge where rapids start. Many bayous at mouth. Water high and brown. Sand bottom; alder and mixed hardwood cover. No fish observed.
- b. June 10, 1948 - Weather cloudy and warm. 6 P.M. Water 68° F., tide coming in from Lake Superior. No fish observed.

XIII. Huron River, East Branch (Sec. 22, T52N, R30W) Feeder stream

- a. June 13, 1947 - Weather rain and cool. P.M. ck. Water 49° F., fast and brown; slate rock and sandy bottom; alder cover; visibility poor--no fish observed.
- b. June 10, 1948 - (Sec. 14, T52N, R30W). Weather cloudy and warm, SW wind. At road bridge the river is 60 feet wide, was half full of water, shallow and clear, temperature 67° F.; sand and fine gravel bottom; hardwood and open margin; some trout fingerlings and numerous sucker fry and shiners were observed near bridge.
- c. June 10, 1948 - (Sec. 18, T52N, R29W). River about 30 feet wide and 3 feet deep at mouth, 8-10 feet deep above mouth

where it widens out to 150-200 feet. Sand bottom. Very little cover--pine plain with scattered pine, alder and oak. Numerous shiners and sucker fry observed.

XIV. Plumbago Creek (Ford Alberta Mill Pond) (Sec. 18, T49N, R33W)

- a. August 3, 1947 - Weather cloudy and cool, NW wind; air 65° F. at 11 A.M. Water 71° F., green, clear, nine inches below normal. No fish or fishermen observed.
- b. April 14, 1948 - Conversed with Chet Bonney and Jack McGinty at Baraga Headquarters. Both were of opinion that trout fishing was excellent at Alberta Location Pond, early in the spring. Attracts numerous town folk and tourists who visit Ford sawmill. Easy to fish from shore; boats also used.
- c. April 28, 1948 - Weather cloudy and rain, NW wind. Water 50° F., clear, normal. Bonney and McGinty at Baraga Headquarters report good trout fishing on opening weekend.
- d. June 10, 1948 - Weather cloudy and warm, SW wind; air 76° F.; 2:30 P.M. Water 69° F., clear; trout fishing has been poor since first week. Some trout caught at present but majority of fish caught are perch, suckers, and minnows. (Some 15" trout caught). Feeder stream to head of pond was almost dry before last week's rain.

XV. Backwater Creek (Includes Menges and Bogles creeks) (Sec. 1, 12, 7, T50N, R33, 34W). Highway U. S. 41.

- a. April 28, 1948 - Weather cloudy and rain, NW wind. Water 48° F., water in stream proper is high but low in lagoons near Lake Superior. Water in Lake Superior below normal.

Very good trout fishing in lagoons and lower end of creeks on opening weekend - Bloomquist.

- b. June 11, 1948 - Weather clear and warm, NW wind. Water 58° F., brown and low. Sand and mud bottoms in lagoons, stump and log cover; popular fishing ground - numerous great northern pike caught here lately.

XVI. Hickey Creek

- a. August 4, 1948 - (Sec. 34, T49N, R33W). Weather cloudy and cool, NW wind. At highway bridge U. S. 41. Air 64° F. at 1 P.M. Water 66° F., very low; rock and sand bottom; hardwood and alder cover.
- b. August 4, 1948 - (Sec. 10, T48N, R33W) at highway bridge U. S. 141. Water 66° F., shallow to no flow at all, open marsh.

XVII. Pellsie Creek

- a. August 4, 1948 - (Sec. 2, T48N, R33W) at highway bridge U. S. 141. Weather cloudy and cool, NW wind. Air 54° F. at 1:15 P.M. Water 63° F., very low, moderate flow; rocky bottom; cover of alders and second growth hardwood.

XVIII. Rock River (Sec. 18, T48N, R33W)

- a. August 4, 1948 - Outlet of Vermilac Lake at highway bridge U. S. 141. Weather cloudy and cool, NW wind; air 54° F. at 1:30 P.M. Water 67° F., medium flow, deep; sand bottom; high sandy banks with alder and second growth hardwood cover.

XIX. Perch River (M28)

- a. August 4, 1948 - Weather cloudy and cool, NW wind. Air 54° F. at 2 P.M. Water 61° F., good flow; rock and sand bottom; second growth hardwood cover.

B. Gogebic County

I. Maple Creek (Sec. 30, T49N, R46W)

- a. July 18, 1947 - Above and below truck trail bridge, about two miles above Lake Superior. Water very high in spring shown by scattered debris on banks, probably six feet above present level. Present depth ranges from 2 to 36 inches and in width from 2 to 15 feet. Water clear and colorless. Water temperature ranges from 59° F. to 61° F. Three brook trout seven to ten inches in size and one shiner were observed in pools above the bridge. Bottom fauna, ore rocks, and weeds, are abundant. Plenty of cover, stream littered with debris and banks lined with brush and second growth timber. Most of surrounding country was heavily logged in recent years. One small spring fed in stream about quarter mile above bridge, but Fire Warden Lindberg states that there are many more farther upstream and many beaver ponds are found in the headwaters. These probably help maintain the present stock; doubt if "coasters" can work up over Manakiki Falls near Lake Superior. There are very few signs to show that stream is even moderately fished, but reports are received that some nice catches of brook trout are made.
- b. July 19, 1948 - Truck road previously taken to creek is blocked by a locked gate.

II. Refer to Institute for Fisheries Research Reports No. 1099 and 1180 for details on streams in the vicinity of Wakefield and Ironwood, from surveys made in 1946 and 1947.

III. Montreal River

- a. April 18, 1948 - Sec. 27, T47N, R47W (1/4 mile above Hurley, Wisconsin). Water high, fast, and roily; Sec. 16, 21, T47N, R47W (at Highway U. S. 2), water high and roily. Odor of sewage present; sewage gases boiling up but not as bad as in August, 1947.
- b. June 7, 1948 - Weather: Rain, air temperature 65° F. NW1/4 Sec. 27, T47N, R47W - Wisconsin, Michigan border, 2 P.M. River 40 feet wide, rocky bottom, water low, 65° F., rocks covered with algal scum, grass in shallow area, lots of trash in stream, alder and willow cover, surrounding country open. SE1/4 Sec. 27 (above Norrie where 18th Creek comes into river). Creek water 64° F., muddy, meagre flow; main stream 67° F., deep and sluggish. Sewage pipe about 1/4 mile to north depositing iron waste and domestic sewage, main stream clearing up at this point but still cloudy. Many minnows observed (believed to be sucker fry). Crayfish observed also. River banks are alder studded. Surrounding country low and rolling. NW corner Sec. 34 at Board dam - river 60 feet wide; water cloudy, 67° F. Sec. 34 (center). Second creek above Norrie Park - very meagre flow; water 66° F.; no fish observed; drains farm land; very little cover. On main stream in SE corner Sec. 35 river is 50 feet wide slowed to slight ripple. Big boulders and gravel bottom, some sand; water 66° F., cloudy with oil film in pools. Numerous sucker fry observed. Rocks covered with algae; bottom fauna abundant; river draining through farm land, banks are alder bound.

NE corner Sec. 14 T46N, R47W, at Wisconsin-Michigan Highway
54 Bridge - River about 35 feet wide, shallow with rocks
and sand bottom (dirty), water 65° F.; rocks covered with
algae in riffles; bottom fauna relatively abundant;
numerous sucker fry observed, no other fish. Drains farm
land and marsh. Scattered alders and hardwood margin.
Half mile above Whitney - Weather: Cloudy with light
showers, air 60° F., 3:45 P.M. River about 40 feet wide,
medium flow. Rocky bottom, some sand in shallow pools,
numerous large boulders; rich in bottom fauna; alder and
hardwood margin. Observed numerous sucker fry and some
minnows. Sec. 25, 30, T46N, R46, 47W (where road and Under-
wood R. R. grade cross). River 25 to 35 feet wide, meagre
flow, some riffles over sand, gravel and rocky bottom,
pools almost stagnant (deepest holes are not over three
feet deep). Water 64° F. Bottom fauna are numerous (fair
hatch of may and caddis flies). Fished for an hour and
caught numerous creek chubs, common shiners, and small
yellow perch. River drains through open country and
second growth hardwood. Banks are bounded by alder.
Talked with Mr. Gorde who has a farm opposite the old
Underwood Mill Site. He has lived here a number of years
and states that the Montreal has become poorer and poorer
each year as a trout stream since the timber has been
removed from the surrounding country. He reports that
some brook and brown trout are taken as far down as 36
Bridge in the spring, but the only trout being caught at

present are a few browns in Laymen's Creek at the headwaters of the river in Wisconsin. He further stated that the river has a bad odor in midsummer and that only a few perch and shiners are found in the deeper pools. There are no springs along the stream except in Laymen's Creek.

- c. June 8, 1948 - Weather: Fog, cloudy, showers, air 50° F. at 9 A.M. Michigan-Wisconsin border, Sec. 15, T48N, R49W, at 56 Bridge, County Road 122. Bridge across flowage near mouth of Montreal River. Water 63° F. and roiled. Fish observed rising and sucker fry were numerous near the bank. Surrounding cover of marginal hardwood. Worked from dam to power house below the falls - only a slight trickle of water over the falls. (All water through tube to generator now producing 1800 KW). Deep water in channel from falls to power house, shallow water (2-5 feet) from there to mouth. Saw two muskellunge rise in river below the power house. Caretaker at the plant related that muskellunge, northern pike, and pikeperch are taken from this stretch of water throughout the summer; smelt came in as far as river mouth for four days this spring and also a few rainbows came up as far as the falls. No sea lampreys have been observed. He reports that the flowage above the dam contained bass, yellow perch, and northern pike, and that rainbow and brown trout had been caught in the river between Ironwood and the first dam below, this spring (1948).

At U. S. 2 highway bridge - Water 60° F., low and roily. Abundance of sewage present, gas bubbles on water. Tadpoles present in eddies.

Two and a half miles below U. S. 2 - Sec. 8, T47N, R47W. Water temperature 62° F., shallow, fifty feet wide, water slightly cloudy; rocky bottom, algal scum and slime on rocks; numerous leeches on rocks; other bottom fauna is also abundant; no fish observed. Surrounding country is open farm land and marginal hardwood.

- d. July 20, 1948 - Weather: Clear and warm, air 73° F. at 8:15 A.M.
1. NW1/4 Sec. 27, T47N, R47W - water 68° F., very low and full of grass.
 2. SE1/4 Sec. 27 - Water cloudy and stagnant where Norrie sewage flows in; water 70° F. at this point.
 3. NW corner Sec. 34 (Norrie Dam) - Water 70° F., brown, numerous minnows observed.
 4. Norrie Park - Water 70° F.; contains 5.5 ppm of oxygen; numerous minnows observed, swimming allowed.
 5. M54 Bridge Crossing - NE corner Sec. 14 - Water 70° F., brown, very low but with a fair flow; numerous minnows observed.
 6. Underwood Mill Site (Sec. 25) - Water 65° F., brown, fair flow; some nice riffles and pools through open marsh with alder cover, stone and sand bottom; oxygen test showed 6 ppm; abundance of bottom fauna; one trout observed rising, numerous minnows taken in seine.

- e. August 12, 1948 - Weather: Moderately cloudy to cloudy, NE wind, air 61° F. at 3:30 P.M. At U. S. 2 bridge - water 68° F., very low, bottom covered with a thick mat of grass.

IV. Slate River

- a. June 7, 1948 - Weather: Cloudy, rain, NE wind. U. S. 2 crossing Sec. 21, T46N, R42W. Water 52° F., very low, gravel bottom; margins of alder and mixed hardwood. Bottom fauna abundant. Fished heavily.
- b. June 30, 1948 - Same location. Weather: Moderately cloudy, air 54° F., water very low, 54° F.

V. Pelton Creek

- a. June 7, 1948 - Weather: Cloudy, rain, NE wind. U. S. 2 crossing Sec. 20, T46N, R42W. 12 A.M. Water 54° F., low, sand and mud bottom with numerous large boulders. Some weeds in center of creek; medium amount of bottom fauna; alder margin with swamp and hardwood cover types.
- b. June 30, 1948 - Same location. Air 54° F. Water 55° F., medium flow.
- c. July 19, 1948 - Same location. Air 74° F. Water 55° F., very low; bottom covered with algae and grass in shallows; trout observed rising.

VI. Whitney Creek

- a. June 7, 1948 - Weather: Cloudy, rain, NW wind, air 54° F. Sec. 13, T46N, R47W. Creek 6-48 inches wide, sand, mud, and rock bottom; water 64° F., very low; grass growing throughout creek bed; swamp and marsh margin with alder

and hardwood cover; abundance of caddis casings on rocks;
numerous sucker fry observed.

VII. Triplett Creek

- a. June 8, 1948 - Weather: Cloudy, NW wind, air 58° F. at
12 noon. County road crossing Sec. 6, 7, T48N, R47W.
Water 53° F., shallow, clear, medium flow; sand bottom;
alder, willow, and grass margin.

VIII. Spring Creek

- a. June 8, 1948 - Weather: Cloudy, warm, NW wind, air 58° F.
County road crossing Sec. 32, 33, T48N, R47W. Water 61° F.,
medium flow; numerous shiners observed.

IX. Mud Creek

- a. June 8, 1948 - Weather: Cloudy, warm, NW wind, air 58° F.,
county road crossing Sec. 9, 10, T48N, R47W. Water 60° F.,
low, medium flow, spring fed, brown; gravel and sand
bottom with mud in holes and eddies; bottom fauna abundant;
numerous minnows and muddlers; hardwood and marsh margin.

X. Welch Creek

- a. June 8, 1948 - Weather: Cloudy, warm, NW wind, air 59° F.
Sec. 3, 4, T47N, R47W. Water 63° F., low, medium flow;
rock bottom through open farm land; no cover; no fish
observed.

XI. Siemens Creek

- a. June 8, 1948 - Weather: Cloudy, warm, air 59° F. U. S. 2
crossing Sec. 13, T47N, R47W. Water 66° F., shallow and
narrow, meagre flow; red silt bottom, some iron ore in
suspension, alder margin.

XII. Powder Mill Creek

- a. June 8, 1948 - Weather: Cloudy, warm, air 58° F. U. S. 2 crossing, Sec. 8, T47N, R46W. Water 66° F., clear and shallow, algae covers bottom; abundance of bottom fauna; alder and hardwood brush margin and cover.
- b. July 19, 1948 - (near mouth) Sec. 33, T48N, R46W - air 81° F., water 71° F., very low; gravel bottom.

XIII. Little Presque Isle River

- a. June 8, 1948 - Weather: Cloudy, west wind, air 55° F. U. S. 2 crossing Sec. 14, T46N, R44W. Water 60° F., low, clear, medium flow; sand bottom; alder margin; abundance of log and brush cover; one muddler, numerous shiners, some trout fry and one legal-sized trout observed. Signs of much fishing near highway.
- b. July 19, 1948 - Weather: Moderately cloudy, air 79° F. at 11:45 A.M. Same location. Water 63° F., brown but clear, very low but fair flow; three trout observed rising for grasshoppers.
- c. August 12, 1948 - Weather: Moderately cloudy to cloudy, NW wind, air 59° at 3:30 P.M. Same location. Water 62° F., light flow; a few shiners and trout fry observed.

XIV. Big Presque Isle River

- a. June 30, 1948 - Weather: Cloudy, rain, air 55° F. at 2 P.M. At West Branch Dam Site, Sec. 32, T46N, R43W. Gogebic County plans on putting in a 4-foot dam to facilitate better pike fishing and develop a duck marsh. Flood waters to be about 4 miles long and 1/2 mile wide, with a maximum

depth of 8 feet in channel. Water 60° F. Above Marenisco Falls in Sec. 33, T47N, R43W, water brown, good flow, 50-75 feet wide, temperature above falls 64° F., below falls 63° F.; some hatchery brown trout being caught above the falls in fast water. Old camp site at end of gravel road, Sec. 21, T47N, R43W - river 50 feet wide, 3 1/2 feet deep, medium flow, brown water, temperature 63° F.; alder and marginal hardwood along banks.

- b. July 19, 1948 - Weather: Clear to moderately cloudy, west wind, air 81° F. (From lower falls to mouth). Sec. 19, 30, T50N, R45W - water 70° F. (Lake Superior at mouth 67° F.), very low, tumbling water, deep pool below falls producing smallmouth bass, numerous pools in flat sandstone and rocky bottom; observed some bass and suckers and numerous shiners; fair harbor in mouth of river for small boats; Lake Superior shoreline is very rocky. Sec. 32, T50N, R45W (above third falls) - water 76° (air 78°), shallow, riffles, river 35 feet wide with marginal hardwood border, low land; medium amount of bottom fauna.
- c. July 20, 1948 - Weather: Clear and warm, air 80° F. at 2 P.M. U. S. 2 crossing Sec. 16, T46N, R43W - river low, weedy, water 72° F., moderately clear. Oxygen test showed 7.1 ppm. Few minnows observed.

XV. Tenderfoot Creek

- a. June 30, 1948 - Weather: Cloudy, rain, moderately cloudy, air 65° F. Sec. 31, T46N, R41W - water very low; silt on rubble bottom; abundance of weeds; medium amount of bottom fauna.

- b. July 19, 1948 - Same location. Air 74° F. Water 67° F., very low; a few minnows observed.

XVI. Grosbeck Creek

- a. June 30, 1948 - Weather: Moderately cloudy, air 56° F. U. S. 2 crossing in Sec. 5, T45N, R41W. Water 56° F., medium flow, 10 feet wide, rocky bottom, covered with algae; medium amount of bottom fauna, alder brush cover, also numerous logs.
- b. July 20, 1948 - Same location. Air 80° F., water 70° F., fickle trickle; abundance of algae on rocks. No fish observed.

XVII. Middle Branch Ontonagon River

- a. July 19, 1948 - Weather: Moderately cloudy, air 74° at 9:30 A.M. U. S. 2 crossing Sec. 21, T45N, R40W. Water 60° F., medium flow through marsh with alder lined banks, log cover.

XVIII. Cisco Branch Ontonagon River

- a. July 19, 1948 - Weather: Moderately cloudy, air 74° at 9:45 A.M. U. S. 2 crossing in Sec. 15, T45N, R41W. Water 63° F., very low, very little flow (small rock dam across river on south side of bridge - water 18 inches deep in pool above) no passage of fish, a few minnows observed. River flowing through open meadow north of bridge, alder fringed to the south.
- b. July 20, 1948 - Thayer Crossing in Sec. 32, T46N, R41W. Weather: Clear and warm, air 80° F. Water at bridge 76° F., a fickle trickle through canyon and over falls. Traversed

stream to the mouth of Tenderfoot Creek. Rocky bottom all the way. Few scattered pools contained a few stranded trout fry and numerous minnows. Two large log jams in this stretch of river; observed one mink, and numerous sign of bear and deer. Old beaver dam at mouth of Tenderfoot - entire flow through a small hole in dam.

XIX. Planter's (Sewage) Creek

- a. July 19, 1948 - Weather: Moderately cloudy, air 79° at noon. M28 crossing in Sec. 9, T47N, R45W. Water 63° F., low, cloudy and smelling of sewage, medium flow; rock bottom covered with algal slime. Presque Isle Road crossing in Sec. 4. Water 63° F., low, medium flow; sandy bottom covered with algal slime; flows through open marsh, some brush cover.

XX. Jackson Creek

- a. July 19, 1948 - Weather: Moderately cloudy, air 79° F. Presque Isle crossing in Sec. 28, T48N, R45W. Water 69° F., very low; gravel bottom; flows through marginal hardwood on low ground, steep hills on either side; a few minnows observed.

XXI. Copper Creek

- a. July 19, 1948 - Weather: Moderately cloudy, air 76° F. Six miles above Connorsville in Sec. 21, T49N, R45W. Water 61° F., low but good flow; rocky bottom with sandy pools, abundance of algae on rocks. Bottom fauna (caddis, may and stone flies) abundant. Good truck trail to creek - bridge washed out. Flows through second growth and cut over hardwood.

XXII. Black River

- a. July 19, 1948 - Weather: Moderately cloudy, air 75° F.
Between Conglomerate and Gorge falls in Sec. 15, 21, T49N,
R46W. Water 76° F., very low, entire flow in channel three
feet deep and three feet wide. No fish observed.
- b. July 20, 1948 - Weather: Clear and warm, air 80° F. at
1 P.M. U. S. 2 crossing in Ramsey. Water 75° F., low.
Barren, rocky bottom.

XXIII. Morrison Creek

- a. July 9, 1948 - Old U. S. 2 crossing in Sec. 16, T45N, R38W.
Air 90° F.; water 76° F., low, medium flow, sand bottom below
beaver ponds. Flows through marsh with alder cover along
banks.

C. Houghton County

I. Grand Traverse River

- a. May 29, 1947 - (Sec. 4, T55N, R31W) Water deep and dark at
mouth. Large commercial fishing settlement here. No fish
observed. No lampreys reported by fishermen (a sea lamprey
taken in Grand Traverse Bay off here on May 16). Water 44° F.
at mouth, 45° F. at bridge 1/2 mile upstream, 45° F. at old
dam site (500 feet upstream). River wadable above bridge.
Gravel and sand bottom; alder cover, surrounding country
wooded, low sand plain.

II. Sawmill (Mill) Creek

- a. May 29, 1947 - (Sec. 5, T55N, R32W) Supposed to be a trout
stream, but not a likely habitat at this point. Creek
used as a dumping ground (near bridge); wagon and harness

but no horse found in stream. Water 48° F. 1/2 mile above Torch Lake; stream 10 to 12 feet wide, 6 to 24 inches deep, sand bottom; alder cover; flows for the most part through open farmland.

III. McCullum Creek

- a. May 29, 1947 - (Sec. 17, 20, T55N, R32W) Water 48° F., spring fed, shallow and rapid, rock and sand bottom; some good pools below bridge, gets very low in late summer, 20 feet wide at present; flows through open farmland and marginal hardwoods; beaver dams about one mile above highway bridge. Signs of considerable fishing pressure.

IV. Trap Rock River

- a. May 29, 1947 - (Sec. 5, T55N, R33W) Water 50° F., deep and dark where it enters Torch Lake but spreads out to 100 feet and becomes very shallow above highway bridge. Sand and mud bottom near mouth, current slow. Stamp sand dumped into Torch Lake near mouth may hinder fish from running up into river. Reported to be a good trout water farther upstream.

V. Mason Creek

- a. May 29, 1947 - (Sec. 11, T55N, R33W) Water 49° F. A small fast-moving stream about two miles above Hubell and flows into Torch Lake (25' falls just above lake). Shale rock bottom with very few pools. Flows through open country; goes almost dry by end of June. Not recommended as a trout stream.

VI. Hungarian (Dover) Creek

- a. May 29, 1947 - (Sec. 3, T55N, R33W) Water 48° F. Stream 6 to 8 feet wide and 6 to 24 inches deep at highway crossing. Mud bottom with a few shale rock rapids. Small brush on margins and flows through open farmland, except in wooded headwaters near Calumet. There is an abundant growth of water lilies in eddies. Stream has its origin in Calumet mines. Has trout in headwaters, but doesn't look much like trout water at this point.

VII. Gooseneck (Highway) Creek

- a. May 29, 1947 - (Sec. 9, T55N, R33W) U. S. 41 crossing between Houghton and Calumet. A small feeder to Portage River. Water 48° F. Spring fed. Rock and sand bottom. Thick alder margin. Flows through farmland and marginal swamp. Has brook trout in it, no doubt maintains a small population; easy to fish.
- b. July 1, 1947 - (same location) Air 67° F.; water 62° F., meagre flow; numerous small pools in brushy area. Observed numerous trout fry near bridge.
- c. July 29, 1947 - (same location) Air 73° F.; water 67° F., barely a trickle; trout fry noted under bridge and one 5-inch trout in pool above bridge. Not enough water for dispersal of legal-sized fish.
- d. April 26, 1948 - (same location) Air 60° F.; water 60° F., high and fast; some good catches of brook trout made on opening day. Early plant of legal-sized fish could be made.

- e. May 6, 1948 - (same location) Air 39° F.; water 47° F., normal flow, clear.
- f. July 14, 1948 - (same location) Air 75° F. at noon; water 69°, very fickle trickle; no fish observed.

VIII. Swedetown Creek

- a. May 29, 1947 - (Sec. 28, T55N, R34W) On NW outskirts of Hancock. Water 48° F., 20 feet wide, very rocky (shale) and shallow from mouth (Portage River) to 1/4 mile above highway bridge (M203). Abundance of bottom fauna. Might be improved with small rock dams. Very little cover on lower end. Some trout reported caught by school kids. A few small trout observed. Small rainbow run from Portage River in spring.
- b. June 30, 1947 - (same location) Weather cloudy, air 67° F.; water 58° F., very low; no fish observed, fit for nothing but fry at this point.
- c. August 1, 1947 - (Sec. 14, T55N, R33W) Headwaters. Air 75° F.; water 60° F., barely any flow; small earth and rock dam at bridge to back up water for farm stock. Two small trout observed in pond, not enough water in creek below for legal-sized fish; sand and rock bottom; flows through farm lands but has alder, rock and log cover. (Sec. 23, T55N, R33W) Water 63° F. (a few small springs come in above road bridge), light flow, very shallow with gravel and sand bottom; alder cover. Numerous trout fry and fingerlings observed. Fisherman had caught one legal trout today, four yesterday.

- d. April 26, 1948 - (Sec. 23, T55N, R33W) Weather cloudy, showers, air 60° F.; water 57° F., creek high with good flow, clear; number of fishermen on creek but only small brook trout being caught; fit for a spring plant of legal brook trout.
- e. July 14, 1948 - (Sec. 26, T55N, R33W) M203. Air 75°; water 66°, very low.

IX. Lily Creek

- a. May 29, 1947 - Sec. 33, 34, T55N, R34W. Water 48° F., medium flow, flows into Portage River; sand and rock bottom, some deep pools below riffles; looks as if it flushes fast during high water (may be good trout stream if water level was maintained throughout the year); plenty of marginal cover including hardwood and alder.
- b. June 30, 1947 - Same location. Air 67° F.; water 57-60° F., creek low with fair flow (enough for legal-sized trout-- could stand a small plant); evidence of heavy fishing; sucker fry observed.
- c. April 26, 1948 - Sec. 35, T55N, R34W. Air 60° F.; water 60° F. with normal flow; evidence of heavy fishing over weekend; road in poor condition.
- d. July 14, 1948 - Sec. 33, 34 (M203) Air 75° F.; water 66° F., very light flow; numerous minnows observed.

X. Bear (Smith) Creek

- a. May 29, 1947 - Sec. 14, 23, 24, T56N, R34W. Water 44° F. at M203 and 1/4 mile upstream and at mouth where it flows

into Lake Superior. Good flow; bottom is of rock, sand and clay; nice series of rapids and covered holes. Some beaver work above highway bridge where it flows through second growth hardwood and swamp types. Below M203 creek flows through open country but banks are alder studded. (The stream is about two miles long). It has a tributary from Bear Lake (160 acres) and another small tributary (spring creek) flowing from the north and entering near the mouth. Some small trout and suckers were observed. A fisherman near mouth stated that he caught over 200 brook trout here last season (I presume they were "coasters"). Sunfish and suckers are also caught in the deeper pools. This stream is heavily fished and should be stocked.

- b. June 30, 1947 - Same location. Air 67° F.; water 55° F. at M203, low but with a fair flow, water 63° F. near mouth where water is dark and sluggish (54° F. in Lake Superior at mouth). The mouth of creek has shifted about 300 feet to the northwest in past month. This creek is fished heavily by kids from Hancock throughout the summer.
- c. April 26, 1948 - Same location. Air 60° F.; water 56° F., normal flow at M203; water near mouth lower than usual due to Lake Superior being down about two to three feet. (Two fishermen in three hours took two brook trout).
- d. July 14, 1948 - Same location. Air 72° F.; water 58°, very low; medium amount of bottom fauna; no fish observed.

XI. McGunns Creek

- a. May 29, 1947 - Sec. 17, T56N, R33W. (Source of creek in Tamarack Mine Pond, Calumet) Water 46° F., good flow (reported to maintain good flow throughout a normal summer). Relatively rapid with scattered pools, rock and sand bottom; flows through farmland marginal hardwood and alders; medium amount of bottom fauna. Trout fish fair, fish run small. Might be improved with small rock dams placed at intervals.
- b. June 30, 1947 - Sec. 12, T56N, R34W (Lake Shore Drive). Air 67° F.; water 59° F., fast, good flow, not polluted; two foot waterfall over rock shelf just below bridge; rocks contain abundance of algae and bottom fauna; rock and sand bottom; wooded banks; two small trout observed. C & H Chief Police Murphy, who has cabin near mouth, stated that a number of small "coaster" brook trout have been caught at the mouth, and that this creek is extensively fished by kids from Calumet and other nearby towns. Seems that this creek can stand a small plant of legal-sized fish in the spring and early summer.
- c. April 26, 1948 - Same location. Air 60° F.; water 57° F., good flow, above normal, enough water for trout but too fast and not enough pools for good trout water. Reports received today of good trout fishing in Tamarack Pond at head of creek on opening weekend.
- d. July 14, 1948 - Sec. 17. Air 72° F.; water 63° F., medium flow; one school boy fishing creek had seven illegal trout,

stated that it was practice of the boys to take everything they caught; gave him a good lecture on trout conservation.

XII. Portage River

- a. June 12, 1947 - (Portage Entry) Sec. 24, T53N, R33W.
Coast Guard Station and fishing village here. Entry is 29 feet deep. Fishermen friendly and cooperative. No sea lampreys reported.

XIII. Snake River

- a. June 12, 1947 - Sec. 10, T53N, R33W. Air 58° F.; water 55° F., sluggish and dark brown, 40 feet wide and moderately deep; enters Portage Lake; flows through large open marshes, farmland, and second growth timber. No fish observed, good pike fishing reported.
- b. June 11, 1948 - Same location. Water 72° F. noon, roily with tidal back water; no fish observed.

XIV. Sturgeon River

- a. June 12, 1947 - Sec. 4, 9, T53N, R33W. Air 58° F.
River spreads out considerably at mouth making some deep bayous that produce good northern pike fishing and into which large runs of burbot are made in the early winter; water in bayous is slow, dark brown, 61° F., have a muddy bottom and an abundant growth of water lilies. The main stream at U. S. 41 bridge crossing is 150 feet wide and shallow, water 58° F. and sluggish; mud and sand bottom. Flows through large marsh from bridge to Portage Lake, otherwise flows through swamp and farmland.

- b. June 11, 1948 - Same location. Water in slough 72° F., roily and stagnant; water at U. S. 41 bridge 69° F., roily with moderate flow; no fish observed in either case.

XV. Pike River

- a. June 12, 1947 - Weather cloudy and warm. Air 60° F. noon. Sec. 5, T53N, R33W (U. S. 41) Water 56° F., sluggish, brown, roily, 50 feet wide; abundant weed growth; swampy shores; no fish observed.

XVI. Pilgrim River

- a. June 12, 1947 - Weather cloudy and warm. Air 60° F. Sec. 5, 7, T54N, R33W (below U. S. 41) Water 56° F., from highway water is sluggish and dirty; sand and mud bottom; stamp-sand in mouth where it enters Portage River; flows through swampland and is alder fringed. Sec. 13, T54N, R34W - (second road crossing above mouth) Water 55° F., good flow of clear water; bottom of sand and rubble - rapids with good pools below; gravel very productive in insect larvae; flows mostly through farmland with brushy banks. Observed a number of small trout (looks like good trout water). Reports were received of good catches last week between this bridge and U. S. 41.
- b. July 1, 1947 - Weather cloudy and warm, air 67° F. Sec. 22, 23, T54N, R34W. (South of Houghton on Bridge Street). Water at bridge 59° F., tributary 200 feet below bridge 57° F., half mile upstream 56° F. and tributary at this point 61° F., good flow; sand and gravel bottom; rocks covered with algae and laden with aquatic fauna; counted

approximately 500 brook trout (2-11 inches) in half mile stretch above the bridge. Cheese factory at Baltic (headwaters) still dumping waste into tributary which is slightly turbid at junction with main stream. Tried fishing but took only two legal fish in an hour (fish too well fed to bite).

- c. April 26, 1948 - Sec. 5, 7 (U. S. 41) Air 60° F.; water 54° F., slightly above normal with a good flow. No fish observed.
- d. June 11, 1948 - Sec. 5, 7 (U. S. 41) Noon - water 60° F.; low with light flow; clear above bridge, but cloudy below where sewage enters. A few minnows observed.

XVII. Otter River

- a. July 2, 1947 - Weather clear and warm, air 71° F. Sec. 34, 35, T51N, R36W (near White's Siding) Water 57° F., clear, light brown, good flow; bottom of sand, gravel, and clay; riffle and pools good; abundance of bottom fauna; good cover of brush and logs; log drives made here at one time. One brook trout caught and a few others observed; reports of good fishing in this vicinity. A grayling was reported taken in this stretch of river by Frank Marzene, Calumet, on June 15, 1947.
- b. August 3, 1948 - (Nisula Road) Sec. 19, T51N, R35W. Air 67° F. at noon. Water 53° F., stream shallow, about 25 feet wide, good flow; sand and gravel bottom; banks open but lined with alders; evidence of trout being caught; abundance of caddis casings on rocks, also some small mayfly nymphs.

XVIII. Sleepy River

- a. April 26, 1948 - (M26) Sec. 31, T52N, R36W. Air 60° F.;
water 57° F., clear, about four inches above normal, stream
six to eight feet wide and shallow with numerous pools and
riffles; sand and gravel bottom; stream flows through
cedar and alder thickets.
- b. May 6, 1948 - (M26) Sec. 31. Air 39° F. at 6 P.M.
Water 46° F., normal flow and clear; signs of being fished.

XIX. Silver River

- a. August 3, 1948 - (M35) Sec. 4, T50N, R35W. Air 67°;
water 58° F., medium flow; shallow and sandy; good cover.

XX. Boston Creek

- a. April 26, 1948 - (County Road) Sec. 2, T55N, R34W. Air
60° F.; water 60° F., high and fast; flowing through low
pasture land, banks studded with alders.

XXI. Hill Creek

- a. August 4, 1948 - (M28) Sec. 6, T47N, R36W. Air 62° F.;
water 56° F., good flow; sand rock bottom; good cover of
logs and alder, flows through sand plain (hilly) and
second growth woods; fresh beaver work along stream.

XXII. East Branch Ontonagon River

- a. August 4, 1948 - (M28 - Kenton) Sec. 11, T47N, R37W. Air
62° F.; water 60° F., medium flow; sand and rock bottom;
very little cover; surrounding country is open and hilly.

D. Iron County

I. Michigamme River

- a. July 9, 1948 - (M69) Sec. 31, T43N, R31W. Air 90° F.; water

68° F., fair flow, dark brown but clean, river 150 feet wide and 6 feet deep at bridge. Flows through open meadow and second growth hardwood. Good fishing reported.

- b. July 27, 1948 - (M69) Sec. 31, air 80° F.; water 70° F., good flow; numerous cars parked at bridge for past two days--fishermen hitting river and Peeve flowage.

II. Parks Creek

- a. July 9, 1948 - (M69) Sec. 27, 34, T43N, R31W. Air 89° F. at 11 A.M. Water 74° F., light flow below series of old beaver dams now torn out. Creek four feet wide and three inches deep; sand and rock bottom; bottom fauna light; a few minnows observed; flow through open meadows and alder studded banks.

III. Nash Creek

- a. July 9, 1948 - (U. S. 2) Sec. 20, T43N, R35W. Weather moderately cloudy, SW wind. Air 93° F. at 3 P.M. Water 83° F.; low and full of algae; sandy bottom; very little cover; flows through open marsh; too shallow and warm for trout.

IV. Iron River

- a. July 9, 1948 - (Old U. S. 2) Sec. 17, T43N, R35W. Weather moderately cloudy, air 93° F.; water 83° F., shallow with medium flow, clear, sand bottom, some riffles; alder studded banks in open meadow. Numerous shiners observed. Sec. 7, T43N, R35W (at old RR grade) Water 78° F., medium flow, pools and riffles, small amount of bottom fauna; alder and log cover; one trout and numerous shiners observed.

V. Cooks Run

- a. July 9, 1948 - (Old U. S. 2) Sec. 36, T44N, R37W. Weather moderately cloudy, SW wind, air 93° F. at 4 P.M. Water 68° F., fair flow but very shallow and spread over gravelly bottom, numerous springs in vicinity. Stream has been improved; fishing reported good. Flow through alder swamp and marginal hardwood and evergreens.

VI. South Branch Paint River

- a. July 9, 1948 - (Old U. S. 2) Sec. 10, 11, T44N, R37W. Weather moderately cloudy and sultry, air 92° F.; water 82° F., fair flow, stream 20 feet wide and 4 feet deep; some rocky riffles with medium amount of bottom fauna. Flows through alder, tamarack, and cedar swamp.

VII. North Branch Paint River

- a. August 4, 1948 - (U. S. F. S. 565) Water 64° F., low; abundance of vallisneria; stream shallow and wide; sandy bottom; banks alder studded.

VIII. Tamarack River

- a. July 9, 1948 - (Old U. S. 2) Below Tamarack Lake, Sec. 31, T45N, R37W. Air 90° F.; water 82° F., very turbid with algae from Tamarack Lake, good flow of fast water; rock and sand bottom; abundance of bottom fauna; cover on banks is good (second growth hardwood and alder).
- b. August 4, 1948 - (Old U. S. 2) Water 67° F., good flow, green with algae from Tamarack Lake, abundance of algae slime on rocks, also abundance of bottom fauna.

IX. Fence River

- a. July 26, 1948 - Weather clear to moderately cloudy with strong west wind. Sec. 23, T45N, R31W. Air 81° at noon. Water 62° F. River from 30 to 60 feet wide, river with fair flow following yesterday's rain; shallow pools and riffles (river reported to be very low before rain.) Bottom fauna is abundant on rocks. Caddis and stone flies abundant. Abundance of white sucker fry (black spot grub common on these). Black-nose and black-chinned shiners abundant in eddies. One small brook trout observed in a quarter mile of stream, a few darters also observed. Sec. 22, T45N, R31W (old farm) Air 78° F.; water 66° F., stream 75 to 100 feet wide and 2 1/2 feet deep; rubble bottom; some weeds (vallisneria and potamogeton); bottom fauna scarce to medium (few mayflies and abundance of caddis, stone flies scarce; a few shiners and one legal trout observed; surrounding country open and rolling, scattered alders along the bank, very little cover. Sec. 7, T45N, R31W (3:30 P.M.) - Worked from bridge down stream 1/2 mile. Air 78° F.; water 70° F., stream about 80 feet wide and 3 feet deep in holes; abundance of potamogeton and other weeds; very little cover except for a few logs and boulders, some alders along the marshy banks; shiners and sucker fry abundant, observed one large sucker; eight to ten native brook trout, also numerous brook trout fry. Spring creek near bridge with temperature of 48° F.; bottom fauna numerous.

X. Camp (Smith) Creek

- a. July 26, 1948 - Weather clear to moderately cloudy, strong west wind, air 79° F. Sec. 9, T45N, R31W. Water 62° F., good flow, sand bottom; abundance of chara on bottom; abundance of cover; flows through cedar and tamarack swamp, but surrounding country is open and hilly with scattered poplar stands. One 5-inch trout observed.

XI. Michigan Creek

- a. July 26, 1948 - Sec. 14, T45N, R31W. Weather moderately cloudy, air 76° F.; water 70° F., good flow; stream 20 to 30 feet wide, 1 to 5 feet deep; bottom of sand and boulders; alder and marshy banks, surrounding country open and rolling hills with scattered second growth pine; little cover in stream; numerous shiners observed near bridge.

XII. Deer River

- a. July 27, 1948 - Sec. 16, T44N, R32W. Air 79° F.; water 64° F., fair flow; very rocky bottom, rather open, little cover; alders line the bank.

XIII. Paint River

- a. July 27, 1948 - (M69) Sec. 29, T43N, R32W. Air 80° F.; water 74° F., fair flow, roily (smells of sewage).

XIV. Slate Quarry Creek

- a. August 4, 1948 - (U. S. F. S. 565) Sec. 2, T46N, R37W. Water 46° F., good flow, about 3 to 4 feet wide and 4 to 12 inches deep; sand and gravel bottom; alder cover; drains cedar swamp.

XV. East Branch Jumbo Creek

- a. August 4, 1948 - (U. S. F. S. 565) Sec. 23, 24, T46N, R37W. Water 65° F., fair flow, shallow, 4 to 20 feet wide. Beaver dams on creek east of bridge, alder cover; surrounding cover of swamp types and marginal hardwood.

XVI. Six Mile Creek

- a. August 19, 1948 - Sec. 21, T42N, R31W. Inlet to Erickson Lake. Weather clear and warm, light west wind. Water 50° F., fair flow, 3 to 4 feet wide; sand and gravel bottom; flows through alder, tamarack and mixed marginal hardwood.

XVII. Hemlock River

- a. August 19, 1948 - (Amasa) Sec. 8, T44N, R33W. Air warm, water 74° F., shallow; gravel bottom; flows through open farmland.

E. Keewenaw County

I. Eliza Creek

- a. May 28, 1947 - Sec. 6, T58N, R30W. Weather clear and warm, air 48° F. Water 52° at Lake Superior (mouth) where creek is 6 feet wide, mostly pools 4-5 feet deep for 500 feet upstream, then mostly rapids and small pools to Eliza Pond, stream ranges between 5 and 25 feet from Lake Superior to the pond, above the pond it varies between 4 and 10 feet. Stream has rock and sand bottom. Water temperature at pond outlet is 56° F. and 44°-45° F. above the pond. Flows

through town of Eagle Harbor and thence above entirely through cedar and other swamp types. The CCC Dam is washed out at foot of pond. Creek has a few small feeder streams. Numerous suckers observed; trout planted in both creek and pond.

- b. July 30, 1947 (at Road Bridge, Section 6) - Weather clear and warm, air 75° F.; water 65° F., very low, riffles almost bare, some water in pools, no fish observed.
- Eliza Pond - Water 77° F., very low, beaver house out of water, shores muddy, just a trickle of water over old beaver dam. A few shiner fry observed near CCC Dam.
- c. April 27, 1948 - (Section 6) Weather moderately cloudy and cool, air 60° F.; water 47° F., high; Eliza Pond is about 8 inches above normal and looks good. Pool below "cemetery" bridge was full of large long-nosed suckers; some brook trout being caught and rainbows observed running in creek last weekend. Note: A Mrs. Elinor Curday, wife of Dr. Curday, Hancock, was met on stream. She showed me a detailed map of Keweenaw County, drawn in 1885 which hangs on the wall of their camp on Agate Beach, Eagle Harbor, Michigan. It might be used as a historical reference.
- d. May 6, 1948 - (Section 6) Weather cloudy, rain to moderately cloudy, air 39° F. Water 44° F., about normal, clear, suckers observed at bridge and dam.
- e. July 12, 1948 - (Section 6) Weather clear and warm, air 74° F. Water in pond 81° F., choked with weeds (Scirpus and water lilies), barely a trickle down the creek, some sucker and shiner fry in pond. Water at bridge 64° F.

II. Cedar Creek (Beaver)

- a. May 28, 1947 - Sec. 5, T58N, R30W. This creek flows into Eagle Harbor on Lake Superior at Eagle Harbor. Weather clear and warm, air 47° F.; water temperature at mouth was 50° F. The creek is 6 feet wide at mouth, shallow and slate bottom to a mud bottom about 50 feet upstream where it drains from a swamp. No fish observed.
- b. July 30, 1947 - Same location (M26) Weather clear and warm; water very low, 75° F.; no fish observed.
- c. April 27, 1948 - Same location. Weather moderately cloudy and cool, air 50-64° F.; water 47° F., high with rapid flow.
- d. May 6, 1948 - Same location. Weather cloudy and rain, air 39° F.; water 50° F., clear, normal flow.
- e. July 12, 1948 - Same location. Weather clear and warm, air 74° F.; water very low--no water flowing through culverts, 76° F.

III. Silver River

- a. May 28, 1947 - Sec. 35, T59N, R30W. Weather clear and warm, air 46° F.; water flow seemed about normal, temperature 52° F. from M26 on downstream one mile. River flows into Lake Superior. There is a small falls over slate rock just below M26. Bottom is sandy above M26 and below rapids where it spreads out through tag alders (on many courses) and open swamp near lake. A number of suckers were observed in rapids below falls; nothing above. Some small trout were observed rising in calm water in meadows where they are

reported caught in considerable numbers; rainbows are reported to have made a small run in this stream in the spring (1947).

- b. July 30, 1947 - Same location (M26). Weather clear and warm, air 75° F.; water having fair flow, 64° F. One angler on stream with no fish. A number of trout fry and a few fingerlings were observed. This stream could stand a plant at this time.
- c. April 27, 1948 - (M26) Weather moderately cloudy and cool, air 50°; water high and turbid, 50° F. Keith Finnerty, Conservation Officer at Eagle River, reports that on April 25th 138 brook trout were taken by 14 anglers from Bailey Pond, headwaters of Silver River.
- d. May 6, 1948 - At mouth (L. Superior) Sec. 35. Weather cloudy and rain to moderately cloudy, air 39° F.; good flow of water, brown in color, 47° F.; there is a rock shelf at mouth, river being rapid for 75 yards upstream terminated by a small beaver dam behind which the water is 4 feet deep. Water is spread out considerably above. A boat tied up here shows signs of recent use. Numerous fine-scaled suckers observed in rapids. No trout.
Section 35 at M26 crossing - good flow over falls, water 46° F.; no fish observed.
- e. July 13, 1948 - (M26) Weather clear and warm, air 75° F.; water very low and clear, but with a fair flow, 58° F.

IV. Little Silver River

- a. July 30, 1947 - Sec. 35, T59N, R30W. Weather clear and

warm, air 75° F.; merely a trickle of water down the 5-10 foot sand and gravel bed. Creek flows through wooded country with mostly alder and log cover. Water temperature 61° F. A few trout fry observed.

- b. April 27, 1948 - Same location. Weather moderately cloudy and cool, air 53° F.; water about normal, good flow, temperature 48° F.
- c. May 6, 1948 - Same location. Weather cloudy and rain, air 39° F. Water normal, clear, 44° F.; very little bottom fauna.
- d. July 12, 1948 - Same location. Weather clear and warm, air 74° F.; water very low--would not support legal fish, temperature 63° F.

V. Tobacco River

- a. May 29, 1947 - Sec. 19, 20, T56N, R30W. Weather cloudy and cool, snow and rain, 38-44° F.; water dark and fast near mouth, flowing over shale rocks, 47° F.; no fish observed. Deep enough at mouth to allow fishing boats upstream for a couple hundred yards.

VI. Big Betsy River

- a. May 29, 1947 - Sec. 29, T57N, R29W. Weather cloudy and cool, rain, air 42° F. Water dark and slow at mouth, deep enough to allow fishing boats in for 400 feet; about that it has rocks and sand bottom and is 4-8 feet wide, water 44° F.; reported to go nearly dry in midsummer. A few fine-scaled suckers were observed. No lampreys seen by fishermen in settlement at mouth. Road to mouth of creek is not shown on county map.

VII. Grand Traverse River

- a. May 29, 1947 - Sec. 28, 29, 31, T56N, R31W. Weather cloudy and cool, rain, air 42° F. At old beaver dam site about 1/4 mile above the Lake Linden Road. Alternate shallow and deep water (2-10 feet), mostly sand bottom, some rapids, about 35 feet wide, water 45° F.; reported to be a good trout stream. No fish observed.

VIII. Gratiot River

- a. July 1, 1947 - Sec. 11, 13, 14, T57N, R33W. Weather moderately cloudy and cool, air 59° F. At mouth, water low over shallow rock and sand bottom (probably dry in late summer), water temperature 54° F.; 1/4 mile upstream, 55° F. No fish observed.
- b. July 31, 1947 - (County Road north of Ahmeek) Sec. 19, T57N, R32W. Weather clear to moderately cloudy and cool, north wind, air 71° F. Water low but flowing over sandy bottom, temperature 64° F.; flowing through open country. At U. S. 41 crossing - Sec. 13, T57N, R32W - water low (3"-4" deep), 63° F.; some of larger pools contain fry and fingerlings; alder cover.
- c. April 27, 1948 - (At Cut-off Bridge) Sec. 10, T57N, R32W. Weather moderately cloudy and cool, air 50° F.; water high and fast over rough rocky bottom, 44° F.; cutover hardwood cover; one fisherman fishing two hours had no fish.
- d. May 6, 1948 - Same location. Weather cloudy and rain, air 30° F.; water about normal, good flow, clear, 46° F.

- e. July 12, 1948 - Same location. Weather clear and warm, air 74° F.; water very low, 71° F.

IX. Hill Creek

- a. July 1, 1947 (At old stamp-mill site in N. Ahmeek) Sec. 24, T57N, R33W. Weather moderately cloudy and cool, air 59° F. Creek flows through rather open country below this point but in second growth evergreens and hardwood above here. Creek is fed by numerous springs and has a good flow. The water is clean at this point but it is reported that Ahmeek sewage is deposited therein at headwaters; has rock and sand bottom, is about 10-20 feet wide, water looks good for trout (ripples and holes well interspersed). Water temperature 54° F. Banks lined with alder and second growth woods. A number of fingerling trout observed.
- b. July 31, 1947 - Same location. Weather clear and cool, air 71° F.; good flow of water, 59° F.; one legal brook trout observed. Bottom fauna abundant, algae on rocks; could stand a small plant of legal fish; shows signs of being fished.
- c. July 12, 1948 - Same location. Weather clear and warm, air 74° F.; water in mine spring 44° F.; water above spring 70° F., below spring 68° F., good flow; bottom fauna abundant. Checked water at old farm above mine site - water 74° with odor of sewage, has slight milky color, abundance of filamentous algae in eddies.

X. Upson Creek

- a. July 30, 1947. Sec. 31, T59N, R30W (outlet of Lake Upson)

Weather clear and warm, air 75° F.; flows through open beaver marsh, grassy banks, muddy bottom; water low, 80° F. Observed numerous shiners but no trout.

XI. Garden City Brook

- a. July 30, 1947 - Sec. 19, T58N, R31W. Weather clear and warm, air 70° F.; practically no flow, water 61°; flows through hardwood and marginal swamp, comes down steep gradient from source to mouth. No fish observed.

Garden City Pond - Sec. 20, T58N, R31W - Water low and stagnant in pond, 77° F.; in creek below pond, fickle trickle, 75° F. Four anglers on pond had caught no fish.

- b. July 13, 1948 - Garden City Pond - Weather: air 58° F. at 8:30 P.M.; water 77° F.; numerous minnows observed rising.

XII. Jacobs Creek

- a. July 30, 1947 - Sec. 22, T58N, R31W (M26) Weather clear and warm, air 70° F.; fair flow of water in small creek 2-4 feet wide, water 55° F., slate rock and sand bottom; alder brush and marginal hardwood cover; one legal sized brook trout observed; recommend a small plant of legal brookies.

- b. April 27, 1948 - (M26) Weather moderately cloudy and cool, air 54° F.; water 44° F., flow about normal but showed evidence of being very high, no signs of being fished; tried fishing for an hour and took 13 brookies on worms, only one of which was legal size. There is about a 4 foot dropoff over an old railroad grade 100 yards downstream from temp. M26 which is probably impassable to trout moving upstream from below that point.

- c. May 6, 1948 - Same location. Weather moderately cloudy, raw, air 39° F.; water normal to low, 44° F. at 5 P.M.
- d. July 12, 1948 - Same location. Weather clear and warm, air 74° F.; water low with medium flow, 56° F.

XIII. Eagle River - West Branch

- a. July 31, 1947 - Sec. 31, T58N, R31W. Weather moderately cloudy and cool, air 71° F.; water 67° F., shallow, some small pools, sand and rocky bottom, bottom fauna sparse, alder cover.
- b. April 27, 1948 - Same location. Weather moderately cloudy and cool, air 52° F.; water high, 46° F.
- c. May 6, 1948 - Same location. Weather cloudy, rain, air 39° F.; water normal, clear, 46° F.
- d. July 12, 1948 - Same location. Water 77° F., fickle trickle.

XIV. Eagle River - East Branch (Central Creek)

- a. July 31, 1947 - Sec. 30, T58N, R31W. Weather moderately cloudy and cool, air 71° F.; water 69° F., shallow, rocky bottom, shallow sandy pools, bottom fauna sparse, very little cover.
- b. April 27, 1948 - Same location. Weather moderately cloudy and cool, air 52° F.; water high and roily, 44° F.
- c. May 6, 1948 - Same location. Weather cloudy, rain, air 39° F.; water normal, clear, 46° F.
- d. July 13, 1948 - Same location. Weather: air 68° at 4:30 P. M. Water very low, 76° F.

XV. Eagle River - Main Stream

- a. July 31, 1947 - (At Phoenix) Sec. 30, T58N, R31W. Weather

moderately cloudy and cool, air 71° F.; water 66° F., shallow, rocky bottom with sandy bottom pools of medium depth, boulder and alder brush cover, bottom fauna is sparse. Only small plant recommended.

XVI. Montreal River

- a. July 31, 1947 - (old County Road Bridge) Sec. 14, T58N, R30W. Weather moderately cloudy, air 71° F.; water 65° F., good flow, large pools, sand bottom; alder and wooded banks. One legal sized and numerous fingerling trout and shiners observed.
- b. July 13, 1948 - Same location. Weather: air 64° F.; water 74° F., low but with medium flow; no fish observed.

XVII. Garden Brook

- a. August 1, 1947 - (U. S. 41) Sec. 32, T59N, R28W. Weather moderately cloudy and cool, air 60° F.; water 51° F., fickle trickle over a gravel bottom, flow through hardwood and marginal swamp. Number of brook trout fry noted.
- b. July 13, 1948 - Same location. Weather: air 68° at 4:30 P.M.; water 60° F., fickle trickle. No fish noted.

XVIII. Manganese Creek

- a. April 27, 1948 - Sec. 5, 32, T58N, R28W. Reported by Frank Marzene, Calumet; Don Dow, Copper Harbor; and K. Finnerty, Eagle Harbor, that fair catches of rainbows and brookies were made here on opening weekend.
- b. May 6, 1948 - Same location. Weather moderately cloudy, raw, 41° F.; water 49° F., slightly above normal (falls

beautiful), water had been much higher, evidence of many fishermen being present. Made observations from L. Fannie Hooe to L. Manganese but noted no fish. Water in L. Manganese 50° F. and clear; two fishermen in 1 1/2 hours had caught no fish, but reported numerous brook trout having been taken the first couple of days of season. Numerous crayfish found in rocks along the north shore. A five acre fire occurred in vicinity of the second foot bridge last fall (bridge raised); water flowing from both outlets into Manganese Creek.

XIX. French Annie Creek

- a. May 6, 1948 - Sec. 1, T58N, R29W. Weather moderately cloudy, air 40° F.; water 44° F., moderate flow; very little sign of fishing. Creek about 10 feet wide, sand and gravel bottom, flow through marginal hardwood and evergreens into south side of Lake Manganese.
- b. July 13, 1948 - Same location. Weather: air 68°; water 60° F., very low.

XX. Fannie Hooe Creek (At Ft. Wilkins)

- a. May 6, 1948 - Sec. 33, T59N, R28W. Weather moderately cloudy, air 41° F.; water 49° F., 4 inches above normal, fast with moderate flow (water in Lake Superior 45° F.). Thousands of fine-scale suckers were running in from Lake Superior and concentrated below falls. No rainbows observed. Don Dow, Superintendent of Ft. Wilkins State Park, reports that some rainbows ran last week and that quite a number of small ones

(12"-18") were taken--they were in much better shape than the fin-clipped rainbow taken by his son from Lake Fannie Hooe last week. Looked over stream bed (almost solid rock) for site of rainbow weir (would suggest a replaceable structure just above the falls). The rainbow run up and down covers a period of about six weeks.

XXI. Lake Medora Creek

- a. July 13, 1948 - (At outlet of Lake Medora near U. S. 41 crossing) Sec. 9, T58N, R29W. Weather: air 68° F.; water 76° F. with a very light flow. Old logging dam at outlet has been rebuilt. There is about a 5-6 foot drop between the present lake and creek level. Suspect that rainbows planted in Lake Medora may leave via this creek on the downward spring migration.

Lake Medora - Talked with Mr. Elliot who runs the boat livery. He reported poor rainbow fishing in lake all season. The few trout taken on worms are small; very little trolling is done. Some largemouth bass also being taken. Whitefish were hitting good last week. Good catches of yellow perch are being made.

Note: Vulcan Creek above Lake Fannie Hooe produced some nice rainbow fishing this spring.

F. Ontonagon County

I. Firesteel River - East Branch

- a. May 6, 1948 - (M26) Sec. 20, T51N, R37W. Air 38° F.; water 47° F., clear, normal flow; one fisherman had one brook trout in one hour of fishing.

- b. July 14, 1948 - (M26). Water 70° F., very low and cloudy.

II. Firesteel River - West Branch

- a. May 6, 1948 - (M26) Sec. 29, T51N, R37W. Air 38° F.; water 47° F., slightly above normal, slightly roily (clay in suspension).
- b. July 14, 1948 - (M26) Water 65° F., very low and cloudy.
- c. August 20, 1948 - (U. S. F. S. truck trail) Sec. 17, 18, T50N, R37W. Weather: moderately cloudy and warm, strong SW wind; late in afternoon. Water 56° F., good flow, clear; 10-15 feet wide, sandy bottom; well shaded, flowing through dense tag alder and marginal hardwood.
- Sec. 7, 8, T50N, R37W - water 49° F., clear, good flow; 2-3 feet wide, sandy bottom; flowing through dense alder and marginal hardwood; one small trout observed.

III. Bluff Creek - East Branch

- a. July 7, 1948 - (U. S. 45) Sec. 27, 28, T46N, R39W. 10 A.M. Air 61° F., water 57°, clear, good flow, sand and gravel bottom, 8-10 feet wide; good cover, flows through marginal hardwood and swamp types, surrounding country hilly, sandy soil. Sec. 21, 22, - water 56° F., good flow, many springs; sand and gravel bottom, 4-6 feet wide, some weeds; alder and swamp type cover, abundance of logs etc. in creek. A few small trout observed. A popular creek for brush fishermen, contains a number of beaver ponds in headwaters.
- b. July 14, 1948 - (U. S. 45) Sec. 21, 22. Water 60° F., good flow.

- c. July 20, 1948 - (U. S. 45) Sec. 27, 28. Air 73° F. Water 61° F., good flow. Sec. 21, 22 - water 60° F., good flow. Reversion Ditch (U. S. 45) Sec. 9, 10 - water 73° F., cloudy, good flow.
- d. August 3, 1948 - (U. S. 45) Sec. 27, 28. Weather moderately cloudy, NW wind, air 69° F., 11 A.M. Water 53° F., clear, good flow. One muddler and numerous caddis larvae observed.
- e. August 17, 1948 - (U. S. 45) Sec. 27, 28. Weather cloudy and cool, air 60° F. Water 55° F., good flow. Sec. 21, 22 - water 53° F., good flow; good fishing reported.
- f. August 24, 1948 - (U. S. 45) Sec. 27, 28. Weather clear and warm, SW wind, air 78° F. Water 62° F., good flow. Sec. 21, 22 (U. S. 45) Water 60° F., good flow (normal).

IV. Baltimore River

- a. July 7, 1948 - (U. S. 45) Sec. 16, T49N, R39W. Air 65° F. Water 74° F., low and cloudy (some clay in suspension). River 25 feet wide, sandy and shallow, some riffles below bridge; numerous black-nose shiners and sucker fry observed; also a large insect hatch in vicinity.
- b. August 3, 1948 - Same location. Weather moderately cloudy and warm, NW wind, air 70° F. Water 65° F., low and roiled with clay. No fish observed.
- c. August 8, 1948 - (M28) Sec. 29, T48N, R39W. Weather cloudy and cool, water 58° F., low, roiled with clay.

V. Ontonagon River

- a. July 7, 1948 - (U. S. 45) Sec. 27, T50N, R38W. Air 65° F. Water 67°, low with clay in suspension. Shallow, gravel

bottom, about 100 feet wide.

b. August 17, 1948 (M28)

(1) South Branch (Cisco) Ontonagon River. Sec. 23, 26, T48N, R40W. Weather cloudy and cool. Water 63° F., fair flow, roily with clay.

(2) West Branch Ontonagon River - Sec. 3, T48N, R42W. Water 67° F., low but fair flow, wide and shallow, rocky riffles. Bottom fauna light (mayflies and stone flies).

VI. Rockland Pond

a. July 7, 1948 - Sec. 15, T50N, R39W. Air 65° F. Water 73° F., level normal. Very weedy. Some sticklebacks observed.

VII. Mass Pond

a. July 14, 1948 - Sec. 35, T51N, R38W. Water 76° F., clear, slightly below normal, very small flow from outlet stream. Abundance of weeds on shoal along west shore. Algal scum near shore. Three trout observed rising. Good hatch of mayflies, damsel and dragon flies.

VIII. First Creek

a. July 7, 1948 - (M64) Sec. 24, T52N, R40W. Air 75° F., water 69° F.; creek almost dry; sand bottom.

IX. Second Creek

a. July 7, 1948 - (M64) Sec. 24, T52N, R40W. Air 75° F., water 67° F., almost stagnant. Sand and rock bottom. Alder and hardwood cover.

X. Potato River

a. July 7, 1948 - (M64) Sec. 33, T52N, R40W. Air 75° F. Water 81° F. Stagnant. Flow into Lake Superior blocked

by sand bar. Abundance of minnows (black-chinned, black-nosed, and lake shiners), sucker fry and a few log perch and darters.

XI. Floodwood River

- a. July 7, 1948 - (M64) Sec. 4, T51N, R40W. Air 77° F. Water 69° F., no flow, blocked by sand bar at mouth, stagnant and weedy (white water lilies at mouth), numerous shiners observed. Abundance of driftwood (floodwood) on beach near mouth.

XII. Cranberry River

- a. July 7, 1948 - (M64) Sec. 5, T51N, R40W. Air 79° F. Water 74° F., cloudy, no flow; 80 feet wide, sandy bottom; flows through open meadows. Numerous common shiners observed (three caught).

XIII. Little Cranberry River

- a. July 7, 1948 - (M64) Sec. 6, T51N, R40W. Air 79° F. Water 74° F., cloudy, no flow. Meanders through sand plain and second growth hardwood. One hundred feet wide at bridge. Observed numerous sucker and perch fry, shiners and one northern pike fingerling; the latter was feeding on shiners.

XIV. Townline Creek

- a. July 7, 1948 - (M64) Sec. 12, T51N, R41W. Air 81° F. Water 79° F., low, cloudy and weedy, blocked at mouth by sand bar. Alder and marginal hardwood cover. Few shiners observed.

XV. Halfway River

- a. July 7, 1948 - (M64) Sec. 12, T51N, R41W. Air 81° F. Water 75° F., no flow, deep and cloudy. Blocked at mouth by sand

bar. Flows through sand plain. Abundance of weeds. Cover of alder and marginal hardwood. Numerous minnows observed.

XVI. Duck Creek

- a. July 7, 1948 - (M64) Sec. 11, T51N, R41W. Air 81° F. 2 P.M. Water 72°, deep, brown, stagnant, littered with logs and deadheads. Weedy. Alder and marginal hardwood cover.

XVII. Pine Creek

- a. July 7, 1948 - (M64) Sec. 10, T51N, R41W. Air 81° F. Water 68°, brown, light flow; some weeds; shallow with sand bottom; good cover of alder and second growth hardwood; few minnows.

XVIII. Mineral River

- a. July 7, 1948 - (M64) Sec. 7, T51N, R41W. Air 81° F. Water 76° F., very low and stagnant, blocked at mouth by a sand bar. One hundred twenty feet wide, shallow, sandy bottom; banks more or less open with scattered alder and hardwoods.

XIX. Iron River

- a. July 7, 1948 - (M107 - Silver City) Sec. 12, T51N, R42W. Air 81° F., water 68° F.; river wide open and sandy. Report that walleyes and northern pike are being taken; numerous shiners observed near shore. Numerous commercial fishing and trolling boats anchored here.

XX. Little Iron River

- a. July 7, 1948 - (M107) Sec. 11, T51N, R42W. Air 80° F. Water 77° F., stagnant, low; shallow with sand and mud bottom, flows through open country with scattered growth of hardwood. Numerous minnows observed.

XXI. Union River

- a. July 7, 1948 - (M107) Sec. 15, T51N, R42W. Air 80° F.
Water 68° F., clear, light flow, shallow with sand and rubble
bottom. Few minnows observed. Flows through open marsh
and second growth hardwood forest.
- b. (Nonesuch Road) Sec. 22, T51N, R42W. Water 68° F., light
flow through impoundments, otherwise very low. Solid rock
bottom. Good cover of marginal hardwood and swamp types.
Most impoundments contain trout fingerlings (2"-6"). One
4 inch rainbow taken on worms. One camp present in park;
people swimming in upper pool.

XXII. Cascade Creek

- a. July 7, 1948 - (M64) Sec. 21, 22, T49N, R42W. Air 77° F.
Water 76° F., very low.

XXIII. Two Mile Creek

- a. July 20, 1948 - (Paulding Truck Trail) Sec. 9, T46N, R40W.
Air 77° F., clear. Water 68° F., good flow; very little
cover near road. Medium amount of fauna on rocky bottom.
Small mayflies abundant. Two small trout observed.

Note: Notes for 1947 and spring, 1948 (Ontonagon County)
were either lost or mislaid.

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