C O P Y

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Report No. 1152

SUMMARY OF ACTIVITIES OF DISTRICT FISHERIES BIOLOGIST DISTRICT 1, 1947

by

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The following summary follows the tentative schedule of the fisheries biologist program for 1947:

I. Assisting Paul Eschmeyer in yellow pikeperch (walleye) study.

A. Assisted in tagging of walleyes at Newaygo dam from April 13 to 15.

B. Assisted at Lake Gogebic from April 23 on throughout the season whenever assistance was needed.

II. Sea lamprey investigations.

A. Subject was brought up with all parties concerned in District I (conservation officers, sportsman clubs, commercial fishermen and general public).

B. Only one authentic specimen (a 20-inch lamprey) was turned in through Roosevelt Baken by Mr. Erkella of Grand Traverse Bay, found on a lake trout caught by trolling in Lake Superior May 16, about 4 miles off Traverse River.

C. Started investigations on May 28, when report was received of sea lampreys being observed in Eliza Creek, Keweenaw County, on May 26. This was not verified. Made extensive study of streams from Huron to Porcupine Mts. during June and July, and checked on reported catches and observations made throughout the summer and early fall. There was no evidence of any spawning runs. Numerous silver and brook lampreys were sent in for identification, or identified upon receipt of report. No work was done in Marquette County. Further investigations are to be made in 1948.

III. "Spot-boat" planting experiment in Middle Branch of Ontonagon River. This experiment was carried out as set up by Dr. Shetter. It can probably be concluded that contrary to popular opinion the spot plant produced or will produce as good fishing as the boat plant in this experimental stretch of the Ontonagon River. Many fishermen still maintain that this is an exception of the rule and that fish are too easily caught at the point of spot plants in other streams. The Middle Branch will be watched next season for further returns of tagged fish. Checks on other streams are contemplated for 1948 on occasions soon after planting unit has deposited the fish.

IV. Lake and stream investigations - District I

A. Baraga County - Very little work was done in Baraga County outside of observations made of physical conditions and water temperatures at time of the sea lamprey investigations.

B. Gogebic County

1. Little Duck Lake - On July 15 and 16 gill nets set produced two (12-13") rainbow trout from depths ranging from 8 to 20 feet

off the west shore. These trout were planted experimentally September 26, 1946, at which time they averaged 4 inches. Both fishwere in excellent condition. Angling with artificial lures resulted in three largemouth bass (10-15"). Numerous small largemouth were observed under the log covers near shore. Local reports give it that numerous bass were caught this summer, but few fishermen tried to catch trout as they were not aware of their presence in this lake. Recommend that further trout stocking be continued.

2. Imp Lake - A systematic check was made on May 30 of the entire shore line of Imp Lake in search of a possible inlet or outlet. There is a small inlet about a foot wide and an inch or two deep coming into the north side of the lake, but it is not large enough to accommodate spawning rainbows; there is no outlet, unless it is seepage toward Cedar Creek. Gill nets set on June 25 and 26 produced only one rainbow trout (8") and one lake trout (16"). This is not conclusive evidence of the fish population here. Reports were received throughout the season that trout fishing was comparatively good here and that numerous rainbows weighing as much as 5 pounds were caught. Like other trout lakes, unless there are commercial establishments thereon, it is not publicized freely enough. There were reports from some, including the local conservation officer, that numerous largemouth bass were observed near the shore during the months of July and August. It is recommended that stocking of rainbow trout be continued in this body of water.

3. Moon Lake - Experimental gill nets set on June 24 produced three rainbow trout (average 11") which were presumably of the 1946 plant. One 18-inch and two 11-inch rainbows were taken on this date by anglers; the same reported taking good catches of rainbow during the week. Reports from local trout fishermen are that trout fishing had been good for the last couple of years; numerous 16-inch rainbows having been taken in 1946. Other fish found were bluegills, pumpkinseeds, rock bass, white suckers and blacknosed shiners. The bluegills were good sized and numerous nests were observed in the spawning areas along the west shoal. Recommend further stocking of fingerling rainbows.

4. Sucker Lake - Local fishermen claimed to have observed "large fish" jumping on the surface and thought them to be northern pike or muskellunge. Forty-four northern pike (averaging 21 inches in length) were planted here in 1945. Observations made on September 3 showed numerous minnows, perch and some suckers present. Further checks are planned for 1948. Sucker fishermen working this lake in the early spring reported no winterkill, but one person observed "thousands" of small perch in Sucker Creek near the USFS bridge about the time the ice was leaving the lake. The reason for this is unknown; they evidently returned to the lake later on. It was reported that some years ago suckers would flop out onto the ice undecided as soon as a hole was cut in the ice, as if seeking air.

5. Lake Gogebic - An intensive creel census was run in conjunction with Eschmeyer's yellow pikeperch experiments this summer and there were no bluegills reported caught. Numerous sets with

trap and gill nets produced no bluegills, nor did numerous attempts with various types of seines along extensive shoal areas. I received a report of one bluegill being taken near the south end of the lake in 1946 and this specimen was returned to the lake uninjured. Netting operations showed that pikeperch were numerous in all age groups; also numerous perch, great northern pike, common and golden shiners and white suckers were taken. Other species taken in small numbers were smallmouth bass, rock bass, cisco, brook trout, black crappie and burbot. Fishing pressure is not heavy on this lake and what little is done does not produce very good results for the relative amount of game fish present. Best catches of pikeperch seem to occur in the south and when the wind is strong from the north and vice versa when the wind is from the south. Where do the fish strike when the wind isn't blowing and it is safe to venture forth? The answer may involve considerable research.

6. Thousand Island Lake - Though no nets were set, very good pikeperch fishing was reported by Conservation Officer L. Bloomquist in the early part of the season. This tapered off considerably during the latter part of the summer. Mr. Dick Richards, Superintendent of the Watersmeet schools, caught a 13-1/2 pound lake trout on May 28, and the following week a six-pound lake trout was taken. Trout fishing on this lake is not very intense.

7. Beaton's Lake - It was reported by C. Hadley, resort owner on this lake, that 17 large rainbow trout and 13 land-locked salmon (16-26") were caught at his place during the 1946 hunting season.

There was some question as to the proper identification of the land-locked salmon, so Hadley sent in the head and tails of two specimens which, upon identification, turned out to be rainbow trout. Gill nets set on June 26 and 27 produced one brook trout (9") and one lake trout (19"); also numerous yellow perch (6-1/2 - 10"), and white suckers (6-16"), and single specimens of smallmouth bass, rock bass and common shiner. Quite a few rainbows and brook trout were taken on flies and spinners earlier in the season, and later on numerous smallmouth bass, perch and rock bass were taken on live bait. Though trout fishing did not come up to that of past seasons, those taken were in excellent condition. Stocking has been discontinued on this lake due to lack of public access. (This is questionable as there is USFS land bordering this lake and land is available for purchase by the state. Mr. Hadley also allows the public free access if they care to use it). I believe it will be one of the better trout producing lakes in the district in the future, especially with more publicity, and I maintain that the lake should be stocked with fingerling rainbow trout in the fall of the year.

8. Langford Lake - A check was made of this lake by A. Adams (IFR) on July 9, at which time it was reported that fishing has dropped off considerably in the last five years. More perch and bluegills are taken than bass. Some northern pike were taken early in the season. Further investigations are warranted.

9. Bond Falls Reservoir - This body of water was checked intermittently during the winter of 1946-47, at which time the water was very low. From observations and reports, there was no

winterkill. This was more or less substantiated by a random creel census conducted this summer, which showed large catches of black crappies, and fair catches of bluegills, yellow perch and largemouth bass. Some brook trout and white suckers were also taken. All reports showed good fishing until the middle of August when the flowage was drawn down to practically the original stream level because of a water shortage. What effect this lowering of the water level will have on next summer's catch will be of interest to note.

10. Black River - On August 20, A. K. Adams and I checked temperatures, turbidity due to mine waste and domestic sewage disposal in streams in the vicinity of Ironwood, Bessemer and Wakefield (Black River, Little Black River, Montreal River, Jackson, Planters, Kallander, Powder Mill, Seamans, Spring, Welch, and Almond Creeks). We found sewage in Kallander Creek which possibly comes in from Bessemer, but the Montreal between Hurley and Ironwood and Planters (Sewage) Creek near Wakefield were reeking with sewage; yet a few miles downstream in each case the streams were comparatively clear and contained normal aquatic fauna.

11. Cisco Lake - From all indications there was a "good run" of walleyes (yellow pikeperch) in the Cisco Branch of the Ontonagon this spring. Mr. Chet Bonney, District Field Administration Supervisor, and a number of fellow officers worked the "run" from April 27 to May 7. They reported the "run" the largest in the last five years. This was substantiated by Ed. Mellantine, caretaker at the outlet dam. Mr. Bonney claims

the Barr fish lock at the outlet was not in working condition, but Eschmeyer states that it was working on one of his visits to the dam this spring; evidently it is not fool-proof. On May 5, Messrs. Eschmeyer, Taube, Mellantine and I made a survey of the shoal area at the north end of the lake, using a spot-light and found numerous walleyes on the spawning grounds. The run in the river on this date seemed to be about over, but there were a few trying to get through the lock. Fishing was reported fair in Cisco Lake this summer, the largest catches being pikeperch, northerns and perch.

C. Houghton County

1. Kratt Lakes - On August 26, 1947, a partial survey was made of Kratt lakes. Barney Kratt, a local resident for 40 years, states that Kratt Lake is private, but that Clear, Bass and one other lake in the group are open to the public. He further states that trout acquired from the Houghton County fair aquarium were planted in Bass Lake some years ago, and survived there for a number of years. This lake at present is teeming with small largemouth bass that swim in "packs" around the shoal area hunting for unsuspecting minnows. Mr. P. Eschmeyer made a water analysis of Clear Lake in September, 1942, and found it to be excellent potential trout water. Temperature and a partial water analysis were run on the small (Kratt) lake south of Sandy Lake. Further work is recommended for these lakes. An experimental planting of rainbow trout fingerlings is recommended for Clear Lake.

2. Lake Thirteen - A survey was made of this lake on August 18-19 at which time gill nets produced only perch and sunfish, and no trout. The water had a maximum depth of 10 feet and temperature readings of 74° F. at the surface and 70° F. at the bottom. Being a designated trout lake, it was recommended for change to the status of an "all other" lake. (See report on Lake 13, Change of Status, August, 1947).

D. Iron County

1. Clear Lake - This lake has become privately owned and should be marked private on our maps. No further planting of state fish should be made.
2. Lake Five - This lake has become privately owned.
3. Golden Lake - Assisted Bob Frank in Brush Shelter program in March, 1947. Fine-mesh gill nets were set on July 17 and 18 and left over night. The catch consisted of six rainbow trout (6-1/2 - 16-1/2"), two smallmouth bass and three rock bass. No young lake trout or smelt were taken, and there have been no reports received to this date of any being taken by angling. Voluntary creel census was attempted at the Michigan Forestry camp and by private land owners but no support was received. Reports received from Iron River residents and members of the Forestry camp are that very few trout or bass were taken this summer, and the trout taken were in poor condition compared to those caught in Imp Lake, Gogebic County. Numerous small perch, bluegills, rock bass and smallmouth bass were taken. Observations of brush shelters (new and old) on two different occasions during the summer revealed quite a few small fish

(perch and bluegills) concentrated around them. Anglers stated that they were having trouble locating these shelters, but they are clearly discernible between the 10 and 20-foot contour interval.

It is recommended that all trout planting be discontinued as too few are being taken to justify the present program.

4. Ottawa (Pickerel) Lake - Experimental gill nets set on July 24 and 25 produced no lake trout. USFS park manager reported that numerous rainbow trout (10 - 12") and a few larger ones (18") had been taken this summer by trolling. The fish we took in order of predominence were yellow perch (60), whitefish (8), white suckers (7), pikeperch (1) and brook trout (1). Continuance of rainbow planting is recommended.

5. Smoky Lake - Experimental gill nets set on July 23 and 24 produced no lake trout, nor were any reported to have been caught. Fish caught in nets in order of predominance were yellow perch (90), cisco (8), rock bass (6) and common suckers (3). A number of small smallmouth bass were observed in a small cove at the north end of the lake. It is recommended that all trout planting be discontinued.

6. Patech Lake - (Section 3, T 46 N, R 36 W) - This small, shallow, weedy lake was criss-crossed with experimental gill nets on August 11 and 12 and produced no fish at all. Whether it ever produced any brown trout after they were experimentally planted here is not known. It is recommended that no further planting of trout be made here. It looks like a place that might very likely have winterkill were fish present therein.

7. Robinson Lake (Lake 27) - This lake has produced some very good bass fishing in years past and the bass fishing this season was reported good. Interested parties thought trout might do well here, so on August 11 a temperature series was run. Though the water looks clear and cool as a spring, it has a maximum depth of only 18 feet and has no thermocline. The temperature at the surface and bottom were the same, i.e., 75.5° F. There are about 35 cottages on this lake. One faction of the populace wants the lake private and the other faction would throw it open to the public. The state owns some swamp land on the west side of the lake, which is not easily accessible. Being a good bass lake, it was recommended that a plot of land now available on the east side and easily accessible by county road be obtained for a fishing site. It is not believed advisable to stock with trout.

8. Paint Lake - A check was made on the poor fishing reported. There are two trends of thought by local residents. Mr. W. Silk, who has boats available, states that fishing for perch and northern pike was good during the winter of 1946-47 and fair during the summer of 1947, especially for crappies and perch. Mr. Carlyle, secretary of the Ottawa Improvement Association, states that fishing was poor this year in comparison with other years, but holds that the water level was three or four feet higher at that time, which may have contributed toward better results. He did concede that some large crappies were taken here this summer. It has been recommended that the dam at the foot of Paint Lake be restored in order to bring

the lake back to the old level before the dam was removed. (See report on "Winterkill - Silk Lake" May 1947). The property owners are working on this project with the county board of supervisors at present.

9. Sunset Lake - A. K. Adams made a check of this lake on July 7 at which time the residents still reported poor fishing. A creel census book left at Anderson's Resort has produced no results as of this date. Fishes reported caught in limited numbers are smallmouth bass, rock bass, bluegills, crappies, perch and walleyes. Netting operations might be in order for 1948.

10. Fire Lake - A. K.Adams made a check of this lake on July 7 when it was found that perch fishing was good. Some nice schools of perch and bluegills were observed, also a few smallmouth bass. The fellow that registered the original complaint of poor fishing wants the lake planted with trout.

11. Spring Lake - An examination was made of the beaver dams at the outlet of this lake. There are a series of dams (old and new). The one farthest upstream impounds about 2 feet of water. It is temporary and no beaver are actively working on it. Should further improvement be deemed advisable on this lake, it is suggested that some Wakefield piling be placed across the opening in a lower and more substantial looking dam. If the lake is to be poisoned, the water can be lowered first and the piling put in afterward. Further study of this lake is contemplated during the high water levels early in the spring of 1948.

12. Lake Mary - A petition was received from the property owners on this lake reporting very poor fishing and that a survey should be made. Three experimental gill nets were set in the lake on September 15 and 16 which produced 34 pikeperch (10 - 17-1/2") and 10 yellow perch 9 - 14"), one northern pike and one common sucker. A number of smallmouth bass fingerlings were observed along the western shoal area. Residents questioned had varied opinions; one said the fishing was good, others didn't believe the fish were caught in Lake Mary and some wanted bluegills planted in preference to the species present. Fish were in excellent condition, and the perch and pikeperch had been feeding almost entirely on "bloodworms." It is believed that the balance would not be upset if bluegills were introduced here, so it is recommended that a number of adult bluegills be experimentally planted before the 1948 spawning season.

13. Glidden Lake - On September 16 some seining with the 35-foot bag seine was done along theeastern shoal which produced numerous small perch and pumpkinseeds and one largemouth bass fingerling. This lake had been stocked with bass and bluegills in the past, but no reports have been received relative to the production thereof. It is probably overstocked with stunted perch and pumpkinseeds; therefore no management recommendation is advisable until more is known about this lake.

14. Hannah Webb Lake - On August 19, contact was made with Mr. Hemminger, proprietor of a cabin camp on this lake. He stated that rainbow trout fishing was very good here early

in the season, but the few fishermen from Iron River that fished here most extensively were not giving this lake any publicity at the time the fishing is good. He had observed large schools of rainbow trout on the shoals soon after the ice went out in the spring; they were moving about as if looking for a place to spawn. It is suggested that this lake be opened up to fall fishing of rainbows to compensate for the poor fishing during the latter part of July and August, and also accommodate a few late fall fishermen. I would encourage such action as long as there are plenty of mature fish present in the lake. I do not think fall fishing for trout is carried on to such a great extent in this part of the country as to deplete the adult trout population of lakes hereabouts, especially those that are stocked year after year. Fishing tapers off very sharply as soon as hunting season comes.

15. Iron and Brule River - A study of the mine waste and pollution of the Iron and Brule Rivers was made in June 1947. The Iron River was extremely turbid with mine waste and domestic sewage from the town of Iron River on down to where it enters the Brule River and on down the Brule River to the first bridge crossing. The Brule is perfectly clear about the mouth of the Iron and quite clear at the bridge crossing at US 2, south of Crystal Falls. The Iron River is free of turbidity above the mining districts. It is recommended that mines put in a series of sedimentation ponds to remove iron deposits before they reach the river if this is a practicable procedure. (See report on Mine Waste in Iron and Brule Rivers - June 1947).

B. Keweenaw County

1. Lake Fannie Hooe - Three experimental gill nets set in this lake on July 29 and 30 produced only one rainbow trout (12.4"), 12 cisco, one yellow perch, two white suckers, and one common shiner. Reports were received from reliable persons that rainbows were observed in both Manganese Creek and the Fanny Hooe outlet during the spring "run," 1947. The runs were considered quite extensive. Reports were also received that some nice catches of rainbow were taken by trolling this season, and that catches of some large sized bass (species not designated - probably smallmouth) were made. It might be possible to retain some of the rainbows from the spring run by installing a weir at the outlet of Lake Fannie Hooe. Mr. Alex Dow, Fort Wilkins State Park manager, suggested that care of such a weir might be worked into his program by having an assistant attend the weir until late in the summer, when the water was low enough in the outlet to discourage downstream movement of the fish. No further planting of rainbow trout should be made in this lake.

2. Manganese Lake - Three experimental gill nets set in this lake on July 31 produced four brook trout (7-1/2 - 10-1/2") and thirteen bluegills (4-1/2 - 10-1/2"). The bluegills were in good condition, and some bluegills were noticed spawning on the northern shoal. No bass were taken. Very good brook trout fishing was reported for the early part of the season. Numerous brook trout (fry and fingerlings) were observed in Manganese creek between the lake and Lake Fannie Hooe.

3. Lake Medora - Three experimental gill nets set on August 1 produced 19 yellow perch, 1 smallmouth bass, 1 white sucker and 3 whitefish. No trout were taken, but there were reliable reports received of good rainbow trout fishing in the early part of the season. Numerous whitefish, perch and bass were being taken at the time of our examination. Further trout planting is not considered justified.

4. Eliza Pond - An extensive study was made of this pond during the spring and late summer. Both Eliza Creek and pond were stocked with legal sized brook trout this summer which produced some good fishing, the extent of which is not known. Fish were observed in both places. (A special report of September 25, 1947, was written recommending replacement of the dam at the outlet of Eliza Pond in order to produce a more substantial trout pond above).

5. Garden City Pond - Check made in August 1947, found dam in poor shape and water warm. Recommend no further stocking until dam is repaired. This pond produces excellent fishing.

F. Ontonagon County

1. Rockland Pond - This pond has been planted with legal-sized trout since 1940. Fishing is reported good only after a plant is made; no fish have been caught after the spring breakup so it is believed that fish do not carry over the winter in this pond. This pond is shallow and weedy during the summer, and during the winter it is usually covered with a heavy layer of snow. A survey made of this pond on August 22 found it to be rather poor trout water.

2. Mass Pond - Checks were made at various times during the season and reports were received of fair trout fishing throughout the season. This pond has been stocked with trout since 1940 and some have carried over sufficiently during the winter to produce fishing soon after the spring breakup. It is a shallow and turbid mine pond containing a few weeds and an abundance of filamentous algae. Its maximum depth at present is 7-1/2 feet where the temperature on August 22 was 62° F. There is a continuous flow of water from the pond. It is recommended that a dam be constructed at the outlet in order to raise the water about five feet. This would afford more pond area and better access for fly fishermen and yet not harm any of the surrounding property (this pond lies in a deep bowl). It is further recommended to continue stocking with legal-sized brook or rainbow trout throughout the season. Fish were noted jumping for flies at the time of the survey.

3. Mirror Lake - An investigation was made on September 5 for the possibilities of controlling chub spawning by weirs in tributary streams to Mirror Lake. At this time of the year there was little water in any of the creeks except the main inlet and outlet. It would certainly be possible to put in the weirs providing there was someone present to maintain them. During the second week in November, I assisted Drs. Cooper and Beckman (IFR), Drs. Lagler and Gosline (University of Michigan) on a research problem dealing with the study of fish species found in the drainage of the Little Carp River, Mirror Lake and tributaries thereof. The brook trout were

abundant and in good condition, but the cisco, suckers and minnows, though abundant were in rather poor condition. Soundings wwre made to get data on bottom soil types, which were found to be sand from 0-15 feet, pulpy peat from 15-42 feet and some trace of fibrous peat in the extreme end of the "arm". No trout should be planted in this lake as natural spawning is adequate.

4. Hemlock Lake - Three experimental gill nets set on August 27-28 produced no fish whatsoever. Mr. C. Hadley of Beaton's Lake reports that a few small perch were caught here this summer, C. MacDonald, Watersmeet, reported that a can of rainbow fry were planted here in 1933, but the results were negative.

Water analysis was made on August 27 revealing temperatures ranging from 69° F. at the surface to 42.5° F. at 35 feet, with a definite thermocline present. We had trouble with the chemicals, so further analysis will have to be continued in 1948. It is very possible that this lake may have trout potentialities.

5. Stuesser Lake - A complete survey was made by P. Eschmeyer in 1946, at which time he reported fair to good bass fishing. He thought the lake to be suitable for trout and recommended that an experimental planting of brook trout be made.

6. Clear Creek - Survey of pollution to this creek by flow of waste from creamery at Bruce's Crossing. Pollution is extensive, but do not know extent of damage to aquatic fauna. Observations were made August 22.

V. The minnow vs. trout problem

A. Very little work was completed along this line, outside of casual observations made and notes taken from interested parties during the course of other studies this past summer.

B. One of the vital problems that is drawing more attention every year is an adequate source of minnows for bait. Thereare certain streams that do not produce trout fishing and others that are only intermittent that may produce a source of minnows. There are also certain trout streams that have had a reputation for good trout fishing, but have become overstocked with minnows. If a case of this type is known, it is reported to the local conservation officer, that he list the streams as open to the use of glass minnow traps.

1. Morrison Creek, Gogebic County - A large population of minnows were observed in some of its beaver ponds in the latter part of the summer. Minnow dealers made use of some of these minnows, but attempts to get minnows there through the ice this winter proved futile. The question comes up: Where did these fish disappear to?

2. Heal Lake, Gogebic County - This lake was surveyed in March, 1947, at which time it was reported to have nothing but minnows present in it and was being used by residents and small minnow dealers as a source of bait. Rather than send dealers to a trout stream for minnows the local conservation officer sent them to Heal Lake. It was therefore recommended that this lake be designated as an official minnow lake.

3. In conjunction with sea lamprey investigations many of the small streams throughout the district were kept under observation, temperatures taken, amount of water in mid-summer, and physical characteristics of stream and surrounding country noted. Many local residents of Houghton and Keweenaw counties were asking recognition of many small streams as trout streams to be subjected to our regular planting program. It was found that the following small streams maintain low enough temperatures for trout throughout the summer: Garden City Brook, Jacobs Creek and Mill Creek in Keweenaw County, McGunns, Bear (Seith), headwaters of Lily, Headwaters of Boston, and headwaters of Swedetown creeks, Gooseneck Creek at US 41 and McCullums Creek east of Torch Lake in Houghton County. Similar observations will be carried on in other creeks in the district in the future.

VI. Creel census - A general creel census was made throughout the district whenever the opportunity presented itself. Numerous creel census books were issued to boat liveries in Iron County through various tourist bureaus, but few returns have been received. Results of this census are not conclusive, but have brought forth some interesting items. I would say that fishing was very good in the early part of the season but fell off sharply from August 1 on, then improved somewhat in September and October. Winter fishing is very spotty in this district so it is hard to make any general statement. I will continue to carry on a general creel census in 1948, with hopes that by contacting more boat livery personnel I can teach them the essentials of keeping more accurate records.

VII. Marginal surveys and sounding of lakes in District I - With the assistance of F. Simonis (IFR) and H. Moilanen (Watersmeet Hatchery) marginal surveys and soundings were made of the following lakes: Tamarack in Iron and Gogebic counties; Gisco, Duck, Little Duck, Rangeline, Chickadee, Trail, Lake on the Hill, Summit Pond, Little Moon, Little Dwarf, Perch, Doyle and Heal in Gogebic County; and Blair and Hemlock in Ontonagon County; and Silk Lake in Iron County.

VIII. Fish mortality studies

A. Bond Falls Reservoir, Ontonagon County - The water in this flowage was drawn very low in the 1946 season and winterkill was suspected. Observations throughout the winter and spring showed no mortality. The flowage was again lowered almost to the original stream level in August 1947, due to lack of precipitation and there were reports of fish being isolated in marginal pockets and that some mortalityoccurred. These pockets were checked, but reports were not substantiated. It will be interesting to note what the outcome will be in the spring, 1948.

B. Gallagher Lake, Gotebic County - On March 28, report was received from Joe Blake, USFS Watersmeet, that while fishing on this lake bluegills were observed rising to the surface in holes spudded in ice, as if seeking air. This was checked, but no evidence was gathered at that time and there was no evidence of winterkill at the time of the spring breakup.

C. Silk Lake, Iron County - A survey was made when report was received of what was probably an extensive winterkill on this lake. Report was confirmed. Kill was extensive to largemouth bass, bluegills and sunfish. (See written report of incident). It is hard to say

whether a total kill occurred as this lake lies in the Paint Lake chain, and there were reports that some fish were caught here during the 1947 season. Perch were considered numerous here before the "kill", yet none were found at the time. Kill in this lake may be either the indirect results of lowering of water level by removal of dam at lower end of Paint Lake or excessive decay of flocculent peat and extensive weed growth causing toxic gases and oxygen depletion.

D. Michigamme River, Iron County - Report of extensive fish mortality below Michigamme Falls was checked on May 1. This report was confirmed. Though the time of the survey was about two weeks after the mortality occurred, there was still evidence of a large kill of black crappies and some bass, northern pike and pikeperch. The actual cause of said mortality is not known. It may have been indirectly caused from the lowering of the water level in Way Reservoir to the original stream level during a dry period in the fall of 1946.

IX. Activities outside of district - With R. Robertson, foreman, Cherry Creek Hatchery, made observations of spawning brook trout in Swaney Lake, Marquette County, on two occasions.

Contacted mayor of Iron Mountain and members of city improvement council to study Crystal Lake within the city limits as a possible lake for stocking panfish. Also looked over some other lakes in the vicinity. Recommend that Crystal be mapped and the water analyzed. The city had planned on killing all the emergent weeds by using 24 D; but that has not gone through as yet. Dex Reynolds looked over this lake in October and stated that it was

still choked with all kinds of weeds - almost impossible to get a boat through. Water was not analyzed.

Made observations along the Black River, Mackinac County, in early April, at which time this river had been opened to rainbow fishing. Looked over private stream improvement project when asked for advice by C. Gunders of Gould City, Mackinac County.

X. Public relations - A big item is educating the public to the program of the Fish Division. There are various ways of handling this: by personal contact, teaching, speaking at public functions and producing visible results. The following are some of the functions involving the fisheries biologist, District I:

A. March 11 - meeting of Bergland Sportsman Club, Bergland - General discussion of the duties of a fisheries biologist, the program set for study of the pikeperch in Lake Gogebic in 1947, discussion of the fish stocking program with Mr. F. Warren, District Fisheries Supervisor. (About 25 persons present).

B. May 1 - meeting of Iron River Sportsman Club - Attended with Mr. Warren; discussed the general fisheries program, for Iron County in particular. (About 35 men present).

C. May 23 - Keweenaw Sportsman League Meeting at Calumet - Attended with Mr. Warren; discussed general fisheries program but stressed importance of sea lamprey studies. (About 75 persons present).

D. August 27 -Watersmeet Lions Club (am a member) - Attended with Art Adams and discussed principal work of a fisheries biologist. about 35 business men present.

E. August 5 - Demonstration netting and fish identification talk at Camp Mitigwaki, Lake 33, Iron County.

F. 4-H Club leadership of Rain or Shine Conservation Club, Watersmeet; completing first year achievement in fly tying and beaver study. Started new program this winter in winter feeding of birds and study of conifer trees in the Watersmeet area.

G. Getting acquainted with local young people by taking active part in sports (bowling and basketball).

XI. Special meetings attended during 1947

A. Upper Peninsula Sportsman's Convention at Norway, September 24.

B. State Fisheries Conference at Higgins Lake Conservation School, October 26-31.

C. American Limnological Society Annual Meeting (AAAS) at Chicago, Illinois, December 29.

Mr. A. K. Adams assisted in biologist program from June 15 to September 15.

INSTITUTE FOR FISHERIES RESEARCH

Leland R. Anderson
District Fisheries Biologist

Approved by: A. S. Hazzard

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