September 28, 1932

Report 172

REPORT ON LEMON LAKE, MANISTEE COUNTY, WITH RECOMMENDATIONS FOR THE IMPROVEMENT OF FISHING

Size and location — Lemon Lake has an area of 37 acres. It is located 1/2 mile west and 1/4 mile south of Lemon Lake village. It has a maximum length of about three-eighths mile and a maximum width of about three-sixteenths mile.

Inlets and outlets — Lemon Lake has both inlet and outlet. Little Cedar Creek flows into and out of the lake. This creek is a tributary to Bear Creek and is a trout stream. The water in both inlet and outlet was so low, however, that even small fish would have difficulty in passing from the lake into the stream and visa versa.

Water — The water was found to contain much whitish matter in suspension. Except for this suspended material it was fairly clear. No pollution was observed.

Use of water — The water is fished to some extent but is not used extensively. No cottages are located on the shore. The Red Wing Club, said to be an organization from Muskegon, has posted much of the land in the vicinity of the lake. It has been stated, however, on good authority, that several roads to the lake have been planned and that thepublic will have access. According to reports these roads will be cleared and made usable in the near future. Evidently fishing has been discouraged, more or less, because of the "no trespassing" signs.

The lake is surrounded by second growth timber. A railroad (the M. and N. E.) passes within a few hundred feet of the lake.

Temperature — A very narrow warmwater layer is located in the lake. All water below 15 feet is cold. Surface temperature (air temperature 82 degrees) was found to be 78 degrees, temperature at 5 meters was 50 degrees, and bottom temperature 45 degrees. Much of the volume of water is suited primarily for cold water fishes.

Oxygen — Oxygen is fairly high at all depths. Sufficient oxygen for fish life is available in the entire volume of water.

Other chemical conditions — The water is moderately soft. It is quite alkaline in the upper half and almost neutral near the bottom. A fairly large amount of carbon dioxide is present in the lower portion. None was found in the upper half.

Bottom — Bottom below the dropoff is pulpy peat. Much of the shoal area also has pulpy peat bottom. Some woody peat was found along the margin. A small amount of sand is present on both north and south shores. No firm sand was seen.

Cover — A number of snags line the shore in various places. Most of the protection provided now, however, is afforded by the weed beds. Relatively little shelter is present in the winter.

Vegetation — Aquatic plants are very abundant, forming dense beds along the dropoff and extending in ample quantity over the shoal area. Beyond a depth of 13 feet no weeds were found. Filamentous green algae is present to a depth of 26 feet or slightly deeper. This plant, however, grows only in a thin mat over the bottom; hence it does not tend to choke-up the deeper waters of the lake.

Natural food — Minnows are common but are not especially abundant. Clams, crayfish, aquatic insects and frogs are quite common. Food, in general, is fairly abundant.

Spawning grounds — Some spawning beds were seen at various places along the north and south sides of the lake, and near the outlet. The nests were made on wood chips and roots of vegetation. Conditions for bass spawning are more or less unsatisfactory, especially for the smallmouth species.

Predators — No undesirable predatory species of fish were seen or reported. Kingfishers, herons, and turtles are quite common. In general, predators are not very abundant. The northern pike is quite common and undoubtedly plays a part in keeping down the fish population.

History of fishing — Fishing now is fair. It is reported that pike are more abundant than they were formerly and that bass are fewer. It is also reported that a few trout have been taken here from time to time.

Species of fish present

Game fish. Northern pike, perch, largemouth bass, and pumpkinseed are quite common. All reach a fair size. No evidence of dwarfing on the part of any of these fishes was found. Bluegills were also taken, but this species is present only in limited numbers. Trout are reported.

Coarse fish. Common suckers and brown bullheads are fairly abundant. No other coarse fish were taken.

Obnoxious fish. None seen or reported.

Forage fish. Minnows are present but are not especially abundant.

Laws and regulations

This is an undesignated lake. Pike are common but apparently do not predominate.

Recommendations

Stocking

Annual stocking with 300 bluegills and 300 largemouth bass, all fingerlings, recommended. Stocking with 1000 perch fingerlings also recommended.

Much of the water is suited primarily for cold water fish. Since the lake is relatively small, stocking with lake trout is not recommended. Experimental stocking for three years with 500 brown trout fingerlings is suggested. Should these not confine themselves to the lake, their entrance into the outlet would do no harm since Bear Creek contains primarily brown and brook trout.

Predator control

Predator control appears unnecessary. No undesirable predatory species of fish are known to occur here. The northern pike, however, appear to be heavily infested with some bacterial disease and, since this species has highly predatory tendencies, and since it appears to be in poor condition, heavy fishing for pike would probably benefit the lake considerably. Fish, other than the northern pike, were apparently in good condition.

Gravel spawning beds

Not recommended.

Food increase

The introduction of minnows is not recommended. Construction of slab devices to improve minnow spawning is also not recommended. The lake is not well suited to those minnows which

spawn under slabs. Some food increase will be made possible by the introduction of brush shelters. Further efforts to increase food are considered unnecessary.

Cover increase — Cover increase is desirable. The construction of 12 brush shelters is recommended. These should be "hung" along the slope so that one end is in the water not over 5 feet deep and the other end is in 15 to 20 (or more) feet of water.

Vegetation and fertility increase — Considered unnecessary.

Water level — Water level appears to be quite constant. A dam in the outlet to regulate water level is considered unnecessary.

Screens in inlet and outlet — The inlet and the outlet, trout streams, are both small except during high water. Pike have a tendency to run into these streams when possible. Trout running into the lake may also become the food of the pike. The brush shelters will, of course, tend to prevent the pike from eating the trout in the lake. The placing of brush screens in both inlet and outlet, near the lake, is recommended. This will prevent the pike from running up and down stream and eating the trout in the streams.

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