

September 26, 1932

Report 169

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

<u>Size and location</u>	Chief Lake has an area of 126 acres. The maximum length is slightly over seven-eighths mile while the maximum width is about 1/4 mile. The lake is located in Bear Lake and Brown Townships, and is a short distance west of the village of Chief.
<u>Inlets and outlets</u>	The lake has no inlets. One small intermittent outlet is present at the northwest end. This was dry when the lake was examined. The outlet is reported to contain water only after heavy rains.
<u>Water</u>	There are no signs of pollution. The water is slightly silty but appears to be quite satisfactory for fish life.
<u>Use of water</u>	Several farm houses are located on the shore. A few boat-houses are present. Boats can be rented. Resort development is very slight. Boats are used in connection with fishing.
<u>Temperature</u>	Temperature is warm at the surface (74 degrees, air temperature 84 degrees). It drops gradually with depth and is fairly cold (56 degrees) at the bottom. Some evidence of stratification occurs (thermocline between five and seven meters).
<u>Oxygen</u>	Oxygen is fairly high at the surface and at the middle. Only a trace was found near the bottom. Evidently the lower few meters of the lake are not suited for fish life.
<u>Other chemical conditions</u>	The water is quite soft. No carbon dioxide occurs at the surface but a large amount is present near the bottom. The upper half of the lake is alkaline while the lower portion is acid.

- Bottom A margin of sand occurs around most of the lake. The margin at the southeast end is of fibrous peat. The bottom at the dropoff (where a dropoff occurs) and below the dropoff is pulpy peat. The northeast shoal area contains a mixture of sand and pulpy peat. A sandy area exists in the lake in shallow water near the southeast end. This contains some gravel. It intergrades into pulpy peat at the margin.
- Cover Some snags occur along the margin. These are common but are not abundant. Except for these snags the only cover available is that afforded by vegetation.
- Vegetation Vegetation occurs in sufficient variety and quantity to afford very good feeding grounds as well as fair protection for small fishes and fish fry. While leafy pondweed is apparently too dense to be desirable in the center of the east end of the lake, the vegetation elsewhere is very satisfactory. White and yellow water lilies, various pondweeds, water-weed, water milfoil, bushy pondweed, wild celery, musk-grass, pickerel feed, bulrushes, and cat-tails are commonly too abundantly distributed through the lake.
- Natural food No minnows were seen or reported. Efforts to obtain minnows by extensive seining were unsuccessful. Great Lakes shiners were planted by local residents, but were evidently not successful in getting established. Crayfish and aquatic insects are numerous. Food is fairly abundant but is not plentiful.
- Spawning grounds Bluegills seem to spawn quite satisfactorily. Only a small amount of gravel for spawning beds is available. This is mostly in quite shallow water. Conditions for bass spawning are fair but might well be improved.
- Predators Predators are few. Some turtles and fish-eating birds are present. Undesirable predatory fishes were not seen or reported.
- History of fishing Perch and bass fishing is reported to have been much better in the past. Fishing has been on the decline in recent years.
- Species of fish present Game fish. Northern pike, largemouth bass, and pumpkinseed sunfish are common. Black crappies are fairly common. Perch are fairly abundant and reach a fair size. Bluegills are

quite abundant but are evidently dwarfed. Almost all bluegills are below legal size.

Coarse fish. None taken or reported.

Obnoxious fish. None taken or reported.

Forage fish. None taken or reported.

Laws and regulations

This is an undesignated lake. Bass, bluegills, sunfish, and perch predominate.

Acknowledgments

Valuable assistance was received from Mr. Moen and Mr. McCurdy of Chief. These two men also provided boats for the investigation of the lake.

Recommendations

Stocking

Bluegills are now overabundant. Fairly heavy stocking with bass should act, more or less, as a check on the bluegills. Stocking with 3000 largemouth bass, advanced fingerlings, is recommended. The annual plant of 2000 perch fingerlings is also recommended. Planting of bluegills, smallmouth bass or of any cold water species is not recommended.

Predator control

Control of predators is considered unnecessary.

Gravel spawning beds

Relatively little gravel is now available for bass spawning. Good bass spawning areas are quite desirable. The spreading of 15 cubic yards of gravel on firm bottom in 3 to 5 feet of water is recommended.

Food increase

Although planting of shiners was apparently unsuccessful, more efforts should be made to get minnows established in the lake. Stocking with 3000 blunt-nosed minnows is recommended. The lake seems fairly well suited for this species. Ten slab devices, of the kind illustrated in the general report, should be installed, preferably, before the minnows are introduced. When, and if, this species becomes established the construction of 30 more devices is recommended.

Vegetation and fertility increase

Considered unnecessary.

Cover increase            Although a limited amount of cover is now available more protection is desirable. The construction of 20 brush shelters is recommended. These should be placed along the shoal in water from three to ten feet deep.

Water level            Water level appears to be fairly constant. Since the outlet is generally dry, little can be done to bring the water to a more constant level.

Screen in outlet        Considered unnecessary.

Illegal methods of fishing        It appears desirable, in this particular report, to mention that netting and other illegal devices will undoubtedly injure the lake to a great extent. Should persons be seriously interested in improvement of fishing conditions, as most of the local residents appear to be, it is very desirable that efforts be made to keep persons from injuring the lake by illegal means. That a few individuals in the vicinity have tendencies toward lawlessness is apparent. Although excellent cooperation was received on the part of most individuals, one or more persons saw fit to interfere with the work by robbing the experimental nets used to determine fish conditions and to help in making intelligent stocking recommendations.

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