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Report 171

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

Size and location	Mud Lake, one of the Dickson lakes, is quite small. It has an area of 8.5 acres. It is located $1/2$ mile east and about $1/2$ mile north of Brethren. A trail passes within several hundred feet of the lake.
Inlets and outlets	The inlet enters the lake from Dickson Lake which is a few hundred yards to the east. The outlet is a tributary to Bear Creek. Both inlet and outlet streams are reported to be trout streams.
Water	The water is fairly clear and is clean. There is no evidence of pollution.
<u>Use of water</u>	The water is used only for fishing. Conditions are unsatis- factory for swimming. There is no resort development. Several boats were found on the lake.
Temperature	Summer temperature is high at all depths.
Oxygen	Oxygen is high at all depths.
Other chemical conditions	The water is fairly soft. It is decidedly alkaline. No free carbon dioxide was present when the lake was examined.
Bottom	The bottom is chiefly of pulpy peat. Some soft marl is present in portions of the lake.
Cover	There is very little protection for young fish except that provided by vegetation.

<u>Vegetation</u> Mud Lake is amply supplied with bulrushes, lilies, pickerel weed, several pondweeds, muskgrass, water weed, and water milfoil. Other useful weeds are present in small patches.

Natural foodMinnows are fairly abundant. Snails are plentiful. Frogs
and aquatic insects are abundant. Food, in general, is good.

Spawning
groundsSome bluegill beds were observed on the marl. The nests
were made on vegetation. No bass beds were seen. It is
reported that bass nest in Dickson Lake and that the young
bass enter Mud Lake through the short inlet from Dickson.

It is reported that bass were never known to spawn in Mud Lake. Conditions are unfavorable for their spawning.

Predators Turtles, including snappers, Blanding's and painted, are quite common. Kingfishers, great blue heron, and green heron are also common. Undesirable predatory species of fish were not seen or reported.

Species of
fish presentGame fish. Bass, bluegills, and perch are common. All
reach a fair size in this lake. Trout are reported to be
taken at certain times of the year.

Coarse fish. Common suckers are present in limited numbers.

Obnoxious fish. No obnoxious fish were seen or reported.

Forage fish. Minnows, including golden shiners, are fairly

abundant.

Recommendations

StockingBluegills are plentiful in Dickson Lake and enough appear
to enter Mud Lake from Dickson. The annual planting of
300 largemouth bass fingerlings is recommended. The lake
is too warm in summer for trout.

Predator control Predator control is considered unnecessary.

Gravel Not considered advisable.

spawning beds

Food increase Increase of food is considered unnecessary.

Vegetation and fertility increase

 $Considered \ unnecessary.$

Cover increase The construction of 10 small brush shelters is recommended. For this lake the shelters suggested in the general report are considered too large. Ten shelters of loosely woven brush (about 5' x 5' x 3') anchored in the lake at various locations, should offer excellent shelter for the young fish. This is especially desirable in winter when vegetation dies down and when both trout and warmwater fish are present.

Water levelWater level appears to remain quite constant. Damming
the outlet, to raise the water, would be difficult because of
bottom conditions in the outlet. It would also tend to flood
the road. A dam is not recommended.

Screen in outlet Screens in outlets and inlets are often desirable. Since pike are apparently not present in Mud Lake and since trout use the lake at certain times of year, a screen in the outlet appears unnecessary.

Some pike are present in Dickson Lake but these apparently do not enter Mud Lake. A screen between the two lakes would prevent young bass from entering Mud Lake. Since Dickson Lake contains more favorable spawning conditions the passage of small bass into Mud Lake appears quite desirable. A screen in the Mud Lake inlet is not now suggested.

INSTITUTE FOR FISHERIES RESEARCH