



Original: Fish Division  
cc: Education-Game  
Mr. Shust

Mr. Warren  
District Office, Div. of Field Adm., Baraga  
INSTITUTE FOR FISHERIES RESEARCH  
Mr. Dow, Supt., State Park,  
Fort Wilkins  
DIVISION OF FISHERIES  
MICHIGAN DEPARTMENT OF CONSERVATION  
Institute for Fish. Res.  
COOPERATING WITH THE  
UNIVERSITY OF MICHIGAN

ALBERT S. HAZZARD, PH.D.  
DIRECTOR

ADDRESS  
UNIVERSITY MUSEUMS ANNEX  
ANN ARBOR, MICHIGAN

January 29, 1945

REPORT NO. 994

AN ATTEMPT TO ESTABLISH THE MEDORA WHITEFISH  
(COREGONUS CLUPEAFORMIS MEDORAE) BY TRANSFER OF ADULTS  
FROM LAKE MEDORA TO LAKE FANNY HOE AND MANGANESE LAKE,  
ALL IN KEWEENAW COUNTY

by

A. S. Hazzard

A most unusual sport fish occurs only in Lake Medora, Keweenaw County in the form of the Medora Whitefish (Coregonus clupeaformis medorae). It is a true whitefish, not a cisco or a Menominee whitefish. Closely related to the Great Lakes whitefish, it differs from its relative only by its longer pectoral fins, deeper body and smaller head. It attains a maximum size of about twenty inches and is always rather thin and laterally compressed in contrast to the heavier body of the Great Lakes whitefish. The maximum weight of Medora whitefish is probably about two pounds. The average fish taken by anglers is about eleven inches in length and about a half pound in weight.

As far as I know, this is the only member of the lake whitefish family taken regularly and consistently on a fly. The stream whitefish of the Rocky Mountain region is caught by this method as easily as the trout and occasionally reports are received of its near relative, the Menominee whitefish, being caught on flies. In Lake Medora, however, fly fishing seems to be the only method generally employed although some of the residents of the area state that they are sometimes taken by fishing with small worms.

I have never seen any caught this way, and in one attempt by a party of which I was a member we caught only perch and smallmouth bass although different depths and different parts of the lake were persistently fished. Fly fishing is not especially productive at least in late August and early September but it is said to be much better earlier in the summer. The fish are taken by using a No. 10 or No. 12 dry fly fished on or just below the surface. The whitefish generally travel in schools which can be located by the surface feeding. Our fishing has usually been done during the hour before dark as little activity is noted before this time. The emergence of burrowing mayflies appears to stimulate the fish to surface feeding and during late summer occurs only at this time. Probably one could take whitefish at any time of day that flies are emerging in numbers.

The Medora whitefish gives a strong, fast fight generally near the surface, not jumping as does a trout but often splashing at the top. The speed of swimming when hooked is characteristic of this fish. The <sup>line</sup> literally hisses through the water and larger fish will force an angler to yield line if he is fishing with light tackle. The few anglers who have sampled this unusual fishing are invariably intrigued by it and return as often as they can even though their catch for an evening seldom exceeds two or three fish. Medora whitefish are fine eating. The flesh is very rich and sweet.

Little is known of the feeding or breeding habits of this fish. Good series of scale samples and weights and lengths have been taken but have not been studied yet. Whitefish are very abundant in this lake. Every set of an experimental gill net in any part of the lake has taken at least one whitefish. Repeated attempts to catch them by the use of Illinois type hoop nets and the Wisconsin perch net were complete failures. Apparently these fish will not "lead" readily at least in late summer when the netting was done. Possibly when spawning they could be taken by some type of impounding net.

Because of their unique sport and food value and because their distribution was limited to Lake Medora, it seemed desirable to attempt to establish them in other similar waters where their presence would be an asset to the existing fishing. Two other nearby lakes in Keweenaw County (Lake Fanny Hooe and Manganese Lake) were selected. Both have physical and biological conditions quite similar to those of Lake Medora.

Mr. O. H. Clark and Mr. Roy Johnstone, both of the Fish Division, assisted in this transfer. A stake-body truck, driver and an assistant were provided by the Division of Field Administration during the evening of September 17, 1940, when the major transfer operations were carried out. As mentioned earlier, hoop nets of different sized mesh with leads failed to take whitefish. The bottom along most of the shoreline is too rocky and rough for seining. Gill nets of about 2 1/2 inch stretched measure had proven very effective in previous netting. As we had about 400 feet of old, confiscated netting of this size we decided to use it in taking the fish for transfer, running the nets about every hour and releasing the fish by cutting the threads. Operations were confined to the southeast part of the lake since the road is close to the lake at this point and preliminary netting had shown good numbers of whitefish there. A live crate was set in shallow water and fish were held there when transportation was not immediately available. Large milk cans were taken in the boat and fish were released into them as fast as removed from the nets. We attempted to run the nets just before the arrival of the truck to avoid additional handling and generally the cans could be loaded directly on to the truck. Only five or six fish were placed in each can.

In the preliminary netting one set was made from 8 to 11 p.m. on the 16th and about 50 whitefish were taken. One rainbow trout (about 8 inches) presumably from the planting made in 1939 was caught and released.

Also a lake trout (about 6-8 pounds) tangled in the net by the teeth was also put back in good condition. This was one of the 73 adult lake trout transferred to Lake Medora from Lake Superior on October 7, 1939. Eleven of these fifty whitefish were taken in milk cans in a touring car to Lake Fanny Hooe that night and apparently carried well. The air temperature was 56°; the surface water 59° at 8 p.m. About 40 whitefish were placed in the live crate to be held over night. The next morning several were dead and in a number of others the bases of the fins were heavily bloodshot. The larger fish seemed to be injured most by capture even though they were generally not gilled but only caught by the snout. Three more trips were made to Lake Fanny Hooe that morning transferring 9, 14 and 12 fish per trip. The total number of whitefish moved from Lake Medora to Lake Fanny Hooe was therefore 46. The fish ranged in size from 10 to 20 inches total length. Of 33 whitefish killed during all transfer operations, 20 were males and 13 were females. Testes of the males were enlarging and turning white. Eggs of the females were of almost mature size. From the condition of these fish I judge that the Medora whitefish may spawn during October or early November. The majority of the fish planted in Lake Fanny Hooe appeared to be in fair condition and swam away from shore actively upon release but a few of the larger ones apparently were unable to leave the surface. Presumably the hydrostatic function of the air bladder had been affected by capture or transfer. Of the 46 fish released, one was later picked up dead along the shore and one was seen captured by a gull. Both were large fish. The total effective plant in Lake Fanny Hooe was therefore 44 fish.

Two gill nets were set at 9:45 p.m. the evening of September 17 and six lifts were made taking a total of 89 whitefish which were transferred to Manganese Lake by five trips with the truck. Previous experience

suggested that best results would be obtained by moving the fish as rapidly as possible after they were taken and with as little handling as possible. The nets were therefore run just before the arrival of the truck was expected and the cans of fish transferred directly from the boat to the truck. In this way not over thirty minutes elapsed from the time the fish were taken out of the nets to the time of actual planting and they were handled only when being cut out of the net. In spite of these precautions however, some loss occurred. Three fish were picked up dead by the planting crew on one of their last trips to the lake. Also one large dead whitefish was found on the shore of Manganese Lake the morning of September 18 and one other large whitefish was observed in distress near the surface and probably died. The total number of whitefish presumably reaching Lake Manganese in good condition was therefore 84.

No netting was done in either of these lakes in 1941 but in 1942 Paul Eschmeyer and Clarence Flaten checked for the presence of small whitefish which might have resulted from any successful spawning of the transferred fish in the fall of 1940 or 1941. A total of four overnight sets was made in Manganese Lake with gill nets each 125 to 150 feet in length, 5 feet in depth and with stretched mesh of 1 1/2 or 2 inches (two nets of each size mesh). No whitefish were taken.

In 1943, Mr. Clark and I set a graded size experimental gill net in Manganese Lake. The net was placed in water from 10 to 20 feet deep about one hundred yards out from the old dam. It fished from 9 a.m. on September 6 till 8 a.m. the following day. One Medora whitefish about 16 inches in length was lightly caught in the net and was returned to the water in good condition. This fish was fat and healthy. In fact, it appeared to be heavier for its length than whitefish generally taken in Lake Medora. A graded size experimental gill net was also set overnight in Lake Fanny Hooe on September 5 but no whitefish were taken.

In 1944, an experimental gill net (graded size) was set overnight on September 28 in Manganese Lake at the southwest end of the lake parallel to the principal weed bed along this shore. From August 25 to August 29 six overnight net sets were made at various depths and locations in Lake Fanny Hooe. No whitefish were taken in either lake in the netting operations in 1944.

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The checks on this transfer of Medora whitefish indicate failure to establish this species in Lake Fanny Hooe or Manganese Lake. Recovery of a single whitefish in 1943 in Manganese is proof that at least one fish survived the transfer and lived for a year in the new environment but failure to take any young whitefish in either lake suggests that there has been no successful natural reproduction. However, it is possible that whitefish have been established by the planting since very few small fish (under six inches) of this species have been taken in netting Lake Medora although they must be very numerous in the lake.

Mr. Dow, Superintendent of the state park at Fort Wilkins, reported seeing a number of silvery fish jumping at the surface of Lake Fanny Hooe on calm evenings in summer and he thought these might be whitefish. I observed this same phenomenon last August and attempted to take some using a fly but was unsuccessful. A gill net set in the area where the fish were jumping yielded 4 ciscoes which are native to the lake and which are known to feed on the surface at times and which also have a silvery appearance.

Further netting will be done in the next few years to be sure whether or not Medora whitefish were established by the transfer in 1940. If the results are negative another attempt to transfer adult fish could be made possibly taking them by seine in a cleaned area or by the use of a small pound net. Mr. Stanley Shust, Regional Fisheries Supervisor, has suggested that spawn might be taken and hatched and the fry planted. This might

prove to be the most effective method for introduction especially if in the future it were considered desirable to establish this gamey fish in a number of other trout lakes remote from the Keweenaw area.

INSTITUTE FOR FISHERIES RESEARCH

By A. S. Hazzard  
Director

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