

**20.—RESULTS OF PLANTING YOUNG WHITEFISH IN LAKE ERIE.—  
WHAT THE FISHERMEN THINK OF WHITEFISH PROPAGATION.****By FRANK N. CLARK.**

After the close of the fishing season of 1884 in Lake Erie, I began an inquiry to ascertain whether there had been an increase or decrease in the catch of whitefish as compared with that of former seasons. The investigation was conducted by personal interviews, through a representative, a practical fisherman, with the leading fishermen and dealers, and covers most of the important fisheries of that part of the lake from Erie, Pa., westward to Toledo, Ohio. The results are most gratifying, as it is conceded by all and shown by the reports that the aggregate catch of whitefish was considerably in excess of that of any season for several years. The results are also especially encouraging to fish-culturists, as all the facts and statements point to but one conclusion; namely, that the increase is due to the planting of young fish from the hatcheries.

No disappointment would have been felt had there been no perceptible increase, as much was required to offset the extensive and exhaustive fishing carried on all over the lake, on both the spawning and feeding grounds, which was causing a gradual decrease of the catch. For many years every spawning ground had been literally covered with nets during the spawning season, while hundreds of gill-nets have been employed on the feeding grounds in deeper waters and thrown across the path of the runs toward the spawning grounds. In no other of the great lakes has the fishing industry been pursued with greater persistence and skill than in Lake Erie. Notwithstanding this, however, we find that not only has the decrease been arrested, but that there is a tangible and satisfactory increase.

The figures given below show in round numbers the aggregate plantings of whitefish fry in Lake Erie, from the beginning of the work, by the United States and Ohio and Michigan Fish Commissions. Some plants were also made by the Canadian Commission during the years mentioned, but I am unable to give the figures:

Spring of 1875.....	150,000
Spring of 1876.....	300,000
Spring of 1877.....	450,000
Spring of 1878.....	12,000,000
Spring of 1879.....	7,000,000
Spring of 1880.....	7,000,000
Spring of 1881.....	13,000,000
Spring of 1882.....	42,000,000

These figures include the latest plantings that could possibly be called due in the fall of 1884. Under the current method of computing the numbers of young fish in tanks and cans, there is no doubt that the estimates shown in the above figures are much too large.

Following are a number of statements from fishermen and dealers, in substantially the exact language of the parties making them, with regard to the catch and the value of fish propagation and planting:

L. Streuber, Erie, Pa., says: "Am a dealer and shipper of frozen fish, and fish considerable twine. Can give you the figures of my catch for only the past two seasons, which is as follows: Catch of whitefish for 1883, 110 tons; 1884, 150 tons. I believe the propagation of whitefish to be a great help toward keeping up a stock in the lakes; so much so that I am doing all I can to get a hatchery started here, believing it will pay."

C. D. Carter, another dealer and fisherman in the same city, says: "My catch of whitefish for the past two years is as follows: 1883, 175 tons; 1884, 225 tons. I think that the planting of young whitefish in Lake Erie has already done a great good toward keeping up and increasing the stock of whitefish in its waters. I hope to see the hatcheries kept up, and would like to see one here in Erie, believing we have a good location for one, and that it is a good point to plant fish from, as there are no carnivorous fish caught at the season of the year when the young fish would be put in."

John Harlow & Co., of Erie, make the following statement: "For the past five years our annual catch of whitefish has been about 150 tons, until 1884, when it was 200 tons. The increase of 50 tons I attribute to the planting of young whitefish from the hatcheries. I am very much in favor of the planting, and hope it will be kept up, as I am satisfied that it is of great benefit to the fishing interest of the lake. A few seasons since we commenced catching very small whitefish—so small that we had to get smaller-meshed nets, and now we are getting a larger class of fish again."

H. Divel, fish dealer and practical fisherman, also of Erie, says: "I have been fishing for some time, and think the whitefish for the past three years have been increasing. I can give the figures of my catch only for the past two seasons, as follows: 1883, 30 tons; 1884, 50 tons. I think the business of hatching and planting is of great benefit in keeping up the stock; for, with the increase of twine, the whitefish must soon be caught off if nothing is done to keep the stock good. There can be no reasonable doubt about the young fish living and becoming full grown. They stand just as good a chance as those hatched naturally, their danger from carnivorous fishes being no greater than those hatched on the reefs."

B. Divel, of Erie, gives similar testimony: "My catch of whitefish has improved for two or three years. The figures for the last two seasons are: 1883, 30 tons; 1884, 50 tons. From the fact that whitefish are

steadily increasing in numbers, I believe the hatching and planting of the young is a success, and the cause of the increase."

Charles Joles, of Erie, a gill-net fisherman, says: "I fish gill-nets off Elk Creek. Cannot say how many whitefish I caught in the different years, but know I caught more in 1884 than in any season for several years. I attribute the gain to the planting of young fish at the upper end of the lake. I am satisfied that were it not for this whitefish would become so scarce that it would not pay to fish for them."

Rudolph Sifield, of North Bass Island, says: "I fish with pound-nets and own some gill-nets, but would willingly put the latter in a pile and burn them if gill-net fishing could be prohibited. Gill-nets are a great detriment to natural propagation, as they are set on the reefs in spawning time, right where the fish go to breed, and the schools are broken up or driven off entirely, and the eggs are then deposited in the mud and never hatch. Good results may now be seen from fish planting, but the business has not been carried on long enough nor on a sufficient scale to tell what it will do in the long run."

Simon Fox, of North Bass, gives his opinion thus: "Have been in the fishing business for years, and until the past season never believed there would be any results from the planting of young fish. Now I am fully convinced that good results are to be seen, and if it is continued great results will follow."

Jasper Snide, of North Bass, says: "Our twine caught a few more whitefish in 1884 than in 1883, and I think we should have done still better but for the unfavorable fishing weather, it being so still that the fish remained on the reefs beyond our nets continuously until we got those heavy blows, which drove them off entirely. Formerly I did not have any faith in the planting of young whitefish, but am now sure we can see good results. We now catch a great many of a smaller class of fish which we never did before the planting was commenced; and if the stock had not been kept up in some other than the natural way they must have decreased in numbers, and we cannot see that they have for a few years."

George Axtell, of North Bass, states: "Whitefish are increasing in numbers all the time, at least this is true of my own nets, and I feel certain that it is owing to the planting of young fish from the hatcheries. Last fall I caught numbers of small whitefish, such as I never before saw caught in gill-nets."

William Axtell, practical fisherman, of North Bass, says: "I know that the planting of young fish is a great help to the fishing industry. Would like to see more hatcheries put up—enough to take care of all the eggs that could be taken."

Eugene McFall, clerk of the steamer Jay Cooke, freight and passenger boat plying between the islands and Sandusky, says: "I think there is an increase in the catch of whitefish, and I suppose the planting must account for it. We carried from the islands in 1883 about 132,000

pounds of whitefish, and in 1884, 170,000 pounds; an increase of 19 tons for 1884."

George Winne, of Locust Point, says: "I fish gill-nets on the reefs off Toussaint Point. In 1883 I caught 2 tons of whitefish from 60 nets, and in 1884, 6 tons from 36 nets. A few years ago it got so it did not pay to go out on the reefs to fish, and I quit and went sailing. Since the planting of young whitefish has been carried on fish have become more numerous and I have done very well fishing, but best this last fall. Think if the planting is not kept up whitefish will soon become scarce again. Think a much greater percentage of eggs put into hatcheries will live to become mature fish than those deposited on the reefs by the fish themselves, for the reason that the former are protected from their enemies while hatching, and after the young fish are planted their chances are just as good."

M. Shepherd, also of Locust Point, states: "Am fishing 15 pound-nets off Locust Point. My catch the past season was about as usual—no material difference. Think the hatching business a good thing, but the proper place for a hatchery is on one of the islands; then the eggs would have the natural water, and when the fish are planted there would be no change from the water they were hatched into that which they are planted in."

Nelson Parsons, a practical fisherman of Vermillion, says: "I have watched the fishing interests very closely for a number of years, and noticed that whitefish were steadily decreasing in numbers, until the supply was replenished by the planting of young fish from the hatcheries. If something of the kind had not been done, I think that whitefish would, ere this, have become so scarce that it would not pay to fish for them. Formerly, we used to catch whitefish of all sizes at the same time, but this season at Cleveland, where I was, the fish were nearly all of one size—looked as if they were all of the same age, and I believe they were a school of the planted fish. I think if fishing is continued it must be done in this way."

Edson & Nichols, of Vermillion, caught one ton less of whitefish in 1884 than in 1883, but say: "We do not attribute the falling off to a growing scarcity, but to the direction and amount of wind, which is everything to us here in the fishing season. We think the hatching business of great importance, and the only way of keeping up the fishing industry."

Bert Parsons, also of Vermillion, caught no more whitefish in his pound-nets off Vermillion in 1884 than in 1883, but caught double the number in his gill-nets near the islands. He says: "I think, if there had been favorable winds for pound-net fishing we would have caught more than double the amount of whitefish in our pound-nets last fall. I know the business of planting has been of great benefit, for in my gill-nets fished about the islands I caught double the quantity last fall that I did the year before. The figures are: 1883, 5 tons; 1884, 10 tons."

Leidheiser, of Vermillion, says: "I cannot give the amount of my catch, but it was rather light, owing to the unfavorable winds we had for our coast. I think the hatcheries are all right, and do a great deal toward keeping up the stock, and that the business should be continued and extended beyond where it now is."

Post & Co., of Sandusky, give some excellent testimony: "Yes, sir; I know that the business of propagating whitefish is a great benefit. In fact, if the United States and State hatcheries were to cease working I believe it would pay the fishermen and dealers to continue it themselves. I would be willing to be taxed my share for supporting it. I understand that at Erie and Dunkirk a great many small whitefish were taken weighing a pound to a pound and a half, which was never done until the last two or three years, and they increase year by year, which is good proof that they are some of the planted fish.

"I received the fish from 100 pound-nets last year (1883) and from 110 this year (1884), with the following results: 1883, 40 tons whitefish; 1884, 80 tons whitefish.

"Whitefish are not now decreasing; but from the number of pound and gill-nets in use to catch them, a decrease is sure to follow unless the artificial hatching is continued to keep up the supply.

"I am opposed to fishing such long strings of pound-nets, and think the gill-netting needs regulating. The gill-netters commence away down below, off Buffalo and Erie, in deep water, and fish all summer; then, as the fish move up toward the head of the lake to the spawning grounds, the nets are moved right along with the runs, so that they are hunted almost the year round, which is done with no other kind of fish."

Harry Molyneux, of Sandusky, gives some valuable testimony: "Am a practical gill-net fisherman. A few years ago fishing on the island reefs got so poor that I gave up going there; but in the fall of 1882 I tried it again and did very well. In the fall of 1883 I caught double the amount of whitefish I did the fall before; and this last fall I caught almost twice as many as in 1883.

"I credit all the increase to hatching and planting, and would like to see more hatcheries."

William Rehberg, pound-net fisherman, of Middle Bass Island, says: "Think the hatching a good thing, but the planting has not been properly done long enough to tell really how much benefit it is toward keeping up the supply of whitefish. Think the supply could be kept up in Lake Erie by prohibiting gill-net fishing west of Kelly's Island, which would give the fish a chance to breed on the natural spawning reefs, where the gill-nets are now placed."

Caspar Voight, of Sandusky, says: "My catch of whitefish in the past two seasons was as follows: 1883, from 35 pound-nets, 37 tons; 1884, from 35 pound-nets, 45 tons.

"I have not thought much about the hatching business, but it must

do some good; at least, there seems to be an increase in whitefish the past two or three years."

Simon Schact, of Sandusky, says: "My catch for the past two seasons is as follows: 1883, 42 pound-nets, 40 tons whitefish; 1884, 48 pound-nets, 50 tons whitefish.

"I believe the planting of fry to be a good thing, and the only way the fishing can be kept up. I fear, however, that the way the gill-nets are catching them, and going on the breeding grounds and disturbing them while spawning, will do more harm than the hatcheries can do good. The fishermen down at Erie and Dunkirk receive the most benefit from the planting, as they fish with gill-nets all summer, and are using smaller-meshed nets every season on purpose to catch the small whitefish."

Lay Brothers, of Sandusky, say: "Our catch of whitefish for the past two seasons was as follows: 1883, from 20 pound-nets, 16 tons; 1884, from 30 pound-nets, 26 tons.

"We think it is plain to see that there is a benefit to be derived from the hatcheries, and would like to see as many in operation as there are eggs to fill."

Dewey & Co., of Toledo, say: "Our catch the past season was rather light. We do not attribute this to a scarcity of whitefish, but to the unfavorable winds that prevailed on our Monroe coast grounds all the fall until a late date; then, just as the fish began to come on, we had two severe blows from the west, which drove the fish from the shore, and they did not come back, or, if they did, we did not get them, as our twine was out.

"We think the business of planting young fish an excellent thing; can see no reason why it should not be, as every fish planted in that way is a clear gain. We see no reason why planted fish should not stand as good a chance to live and become grown fish as those that hatch on the reefs."

Wm. St. John & Co., also of Toledo, say: "Our receipts of whitefish for the past two seasons are as follows: 1883, from 20 pound-nets, 6,000 pounds; 1884, from 45 pound-nets, 18,000 pounds.

"We do not see that fish-planting has been of much benefit to this end of the lake, but I am informed that great benefits have been realized farther down.

"We would like to see Congress take hold of the matter and enact a law to control and restrict the fishing with gill-nets; also with such long strings of twine. Although we ourselves are fishing 20 and 21 pounds in a string, we would like to see them cut down to six at most on main shore, and not more than three off the islands, or any place where there is a narrow channel. Then the whitefish would have a better chance to get through to the coast and reef spawning grounds at the head of the lake, which they would do if they were not turned back by the long strings of twine."

J. C. and J. H. Davis, of Toledo, say: "Our catch of whitefish for the past two seasons was as follows: 1883, 6 tons, and 1884, from the same number of nets, 6½ tons.

"Do not know that planting of young fish has been of much benefit to us at this end of the lake, but can see no reason why it should not benefit somebody. Certainly, every young fish put in makes one more chance for a whitefish, as the eggs would be lost if not taken."

E. Alvord & Son, of Sandusky, say: "Our receipts of whitefish for the past two seasons were: 1883, from 52 pound-nets, 23 tons; 1884, from the same number of nets, 30½ tons.

"Yes, we think that propagation is a good thing, and a great help in adding to the supply of fish in the lake. We think the young fry stand just as good a chance of becoming full-grown fish as those hatched in the lake.

"But there ought to be a law to stop fishing with gill-nets, for the reason that down below here, in deep water, where they fish through the summer, it is estimated that at least one-third of those caught in hot weather are unfit for market, and are thrown away, which is an outrage. And then in the fall the gill-nets are set on the spawning reefs, just when and where the fish should be left undisturbed."

Bear & Ruth, of Sandusky, state that in 1883 their catch of whitefish from 9 pound-nets was 7½ tons, and in 1884, from 11 pound-nets, 10 tons.

"The planting of young fish is undoubtedly of great benefit to the the fishing interests. Were it not for this the stock in the lake would rapidly decrease."

A. Bremiller, of Sandusky, gives the following figures: Catch of whitefish in 40 pound-nets, in 1883, 66 tons; in 1884, 69 tons.

"I think there is positive proof of the benefit of the hatcheries, from the fact that during late years, say the last two or three, there have been a great many small fish caught—smaller than ever were caught before the planting was commenced in the lake. Another fact to be taken into account is that the facilities for catching are becoming greater every year, and if the supply had not been kept up in some way, the stock must certainly have decreased, which is not now the case."

A. J. Gustavus, pound-net fisherman, of Huron, puts it in this light: "For every million fry planted there are a million more chances for whitefish. I think the greatest results are to come, as the business is not yet old enough for us to expect much benefit."

E. D. Smith, of Marblehead, says: "I know the fish-hatching to be a grand thing, for the reason that I have caught thousands of whitefish this season not weighing over a pound to a pound and a half each, and formerly I never caught them. I believe these small fish are some of those planted from the hatcheries."

Fred Motrie, of Port Clinton, says: "I fished 6 pounds in the fall of 1883, and 5 in the fall of 1884. Have no record of my whitefish catch

for either fall, but know I caught more in 1884 than in 1883, perhaps 20 per cent. more. The hatcheries are undoubtedly a good thing and should be kept up. While the eggs are in the jars they are out of the way of sturgeon, suckers, and all fish that live mostly by sucking up spawn; and when the young fish are turned loose they will look out for themselves."

Felix Courchaine, also of Port Clinton, says: "I did very well the past fall, in fact the fishing was the best it has been for years. I caught 6 tons with 26 gill-nets. I have every reason to believe that we are getting results of the plantings from the hatcheries; and why shouldn't we? The fry planted in this way stand an equal chance with those hatched in the lakes, and as for taking care of themselves, I think nature will look out for that. I should be sorry indeed to see the hatching of whitefish discontinued."

F. Perry, a practical gill-netter, of Port Clinton, says: "In the fall of 1883 my catch of whitefish from 19 nets was 1 ton, and in the fall of 1884, from 37 nets, 6 tons—six times the catch of the year previous, with double the nets, on the same grounds. I think we are getting great results from the planting of young fish, for before it was commenced whitefish were fast playing out. But now they are becoming more plentiful again, and I know of no cause for it except the planting of the young in large numbers from the hatcheries."

From all the places named above, as well as other points on the lake, much more evidence of the same kind might be offered; but it would be merely a repetition of what has already been given. Accurate data showing the total whitefish catch of the lake for a term of years, or even for one season, would be almost impossible to obtain, from the fact that many fishermen classify their entire catch simply as "hard fish," "soft fish," &c., whitefish, of course, being included in the former. The statements, however, cover sufficient grounds to form a reliable basis for conclusions. They show that while there was no perceptible increase the past season in the whitefish runs at the extreme west end of the lake, there was a decided increase on the coast and island reefs farther down, and a very marked increase in numbers still farther down, on the feeding-grounds, in deeper water, where gill-nets are operated. On the whole, sufficient is shown to prove beyond a doubt that the aggregate catch was greater than for several years, that whitefish are decidedly on the increase in Lake Erie, and that the increase is simply the legitimate result of the work of the hatcheries. The removal from the lake every year of thousands and hundreds of thousands of adult fish, whether taken directly from the breeding-grounds or not (the results are the same), must certainly ere this have caused a very material decrease in the stock but for the compensation of young from the hatcheries.

NORTHVILLE, MICH., February 18, 1885.