

The Commonwealth of Massachusetts. *Commissioner*
= *on fisheries and game*

A REPORT

UPON

THE MOLLUSK FISHERIES

OF

MASSACHUSETTS.



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The oyster (*Ostrea*), formerly abundant, is no longer living, and, from what indications I have been able to gather, probably became extinct within twenty-five years. Their dead shells are brought up by dredging operations. Their peculiar elongated shape is the result of growth being concentrated at the upper end, as a result of their closely crowded position in the bed, or of an attempt to keep the opening above the accumulating mud, and thus avoid being smothered. The fact that there are few signs of small "seed oysters" tends to prove that the bottom was so muddy that they found few places to "set." From the elongated shape of the shells may be inferred that the amount of sedimentation going on in that particular region was rapid during the life of the group of oysters whose shells are to be found in quantities in the material dredged between Harvard and Brookline bridges. This sediment need not necessarily have been sand or clay, or any material which is persistent, but it might have been flocculent organic débris, which remained but a short time and left little or no evidence, beyond its effect upon the shape of the oyster shells.

In the above account Dr. Field not only locates the original oyster beds of Charles River, but also furnishes evidence which indicates the cause of their extinction, *i.e.*, the débris and sewage, or waste poisonous, polluting materials, of a large city emptying into the river. This is not only true of the Charles, but also of the Mystic and Taunton river beds, which have been destroyed in like manner.

(3) Mr. Ernest Ingersoll, in his report on the "Oyster Industry of the United States," in 1880 mentions that natural oyster beds were once at Weymouth, Ipswich, Barnstable and Rowley. Nothing further can be learned concerning these places.

(4) *Wellfleet*. — An extensive oyster bed was found at Wellfleet Bay, which not only furnished a sufficient supply for the first settlers, but enabled the inhabitants of Wellfleet to carry on a considerable trade by shipping them to Boston and other ports, until it was finally destroyed

in 1775. Its destruction was due to overfishing and the utilization of the shells for lime, which soon destroyed the natural bar.

(5) *Chatham*.—A natural oyster bed once existed in the Oyster Pond, but no trace of it now remains.

(6) *Harwich*.—Herring River in the town of Harwich still possesses the remnants of a natural oyster bed, as occasionally a few oysters can be gathered along its banks. This bed once comprised a stretch of three-quarters of a mile along the river.

(7) *Yarmouth*.—The town of Yarmouth once possessed a natural oyster bed in Mill Creek, but this was fished out by 1895 and then granted for oyster culture.

(8) *Barnstable*.—There is a natural oyster bed at Centreville.

(9) *Martha's Vineyard*.—Native oysters are said to have existed in the brackish ponds on the south side of the island; a few are found there at the present time.

(10) *Falmouth*.—A few native oysters are to be found in the salt ponds on the south coast of the town. In Squeteague Pond and Wild Harbor oysters were once native.

Buzzards Bay comprises the best natural oyster territory in the State. At the present time the natural oyster industry has been supplanted by oyster culture, which gradually took the place of the declining natural oyster fishery. While natural beds still exist to some extent, they are, to all practical purposes, extinct. Where once there were extensive areas, now there are only scattering oysters. In many cases the beds have been so completely destroyed that the ground has been granted for oyster culture. That Buzzards Bay is a "natural set area" can be readily seen by the amount of "seed oysters" that are caught by the oystermen who plant shells for the purpose.

(11) *Bourne*.—(a) *Red Brook Harbor*.—In 1879 Ernest Ingersoll says:—

On the southern shore of this harbor, about a mile from its head, exists a living bed of natural oysters some 7 acres in extent, under the protection of the town for public benefit. The oysters growing on it are reported to be large, but not of extraordinary size, scalloped and roundish, differing in no respect from aged oysters grown after transplanting to another part of the bay.

In 1907 this natural bed had been reduced to 3 acres, and the unproductive part granted.

(b) *Barlow River*.—In 1873 an act was passed to protect the oyster fishery in Barlow River, by ordering a closed season of one and one-half years. The passage of this act shows that a natural bed of importance existed in this river, and that even in 1873 the effects of overfishing were apparent. At the present time there are but few native oysters in Barlow River, or, as it is sometimes called, Pocasset River.

(c) *Monument River*.—A natural bed also existed in Monument

River, which became so depleted that about 1875 the river was surveyed and divided into small grants.

(12) *Wareham*.—(a) *Wareham River*.—Natural oysters are found in the Wareham or Agawam River, which has been one of the most productive natural beds in the State, and still furnishes a scant living for two or three men. In view of the overfishing, it is surprising that any of the natural oysters have survived, except on reserved areas of the town, which are opened every three or seven years for the capture of "seed."

(b) *Weweantit River*.—The Weweantit River, which lies between the towns of Wareham and Marion, has a larger and better natural oyster bed than the Wareham River, but this has also been depleted by overfishing, except on the reserved areas of the town of Wareham.

(13) *Dartmouth*.—A few oysters are found in Slocum's River.

(14) *Westport*.—Westport River has also a few oysters.

(15) *Taunton River, Coles River and Lee's River*.—These rivers once had extensive beds of natural oysters, but now are wholly devoted to growing oysters. Old records and laws show how important these natural beds were, and also furnish an excellent illustration of the effects of overfishing combined with water pollution from manufacturing sources.

II. *Decline of the Natural Oyster Beds*.—The above-mentioned examples furnish abundant proof that the natural oyster beds of the State, which once were sufficient to supply the wants of our forefathers, have declined to such an extent that at the present time but few natural oysters are tonged for the market. Where there were formerly many acres of excellent native oysters, to-day there is scarcely an acre that can be called good oyster fishing, except in a few cases where the towns maintain a nearly perpetual closed season. No proof of the decline is necessary; it is an established fact.

There have been two principal causes which have ruined the natural oyster beds; besides these two,—(1) water pollution and (2) overfishing,—certain geographical changes have doubtless occurred, which have accelerated the decline.

(1) *Water Pollution*.—The effect of water pollution through the sediment deposited by sewage and manufacturing waste on the natural oyster beds is well illustrated by the destruction of the Charles River beds. This is also shown in a less degree in the Taunton River.

(2) *Overfishing*.—The primary cause of the decline of the natural oyster beds was overfishing. This is particularly true of the beds south of Cape Cod and in Buzzards Bay, which were of large extent, and unpolluted by manufacturing wastes or sewage. This overfishing has not been the result of the last few years, since records show that as early as 1824 Harwich passed an act to preserve the oyster fishery of the town; and that Sandwich, in the part which is now the town of Bourne, in 1832 passed regulations protecting the natural oyster

fishery in Monument River; while at Wellfleet the natural oyster bed was completely exterminated by the year 1775. Overfishing has affected the natural beds in several ways, all of which have worked toward the general decline of the native oyster.

(a) The first settlers took the large oysters from the natural beds, which under normal conditions had all they could do to keep up the supply. In this way the beds were deprived of the spawning oysters, with the result that in spite of the closed seasons, which gave little if any benefit, a gradual decline set in.

(b) At the same time that the oysters were being taken from the beds, the early oystermen through ignorance were making an economic blunder by not returning the shells to the waters. The oyster shells furnish naturally the best surfaces for the collection of "seed," as spat will set only on clean surfaces. By taking the large oysters and with them the shells and other débris from the bed, the natural oyster bars were destroyed and less space given for the spat to catch. So both the taking of the large oysters in excessive amounts and the destruction of the natural spat collectors, either for lime, as was done at Wellfleet, or for other purposes, were sufficient in the early days to cause the decline of the natural oyster beds.

(c) In more recent times the destruction of the natural beds has been hastened by the taking of the small oysters. This practice was due to two reasons: (1) the supply of large oysters was exhausted; (2) oyster culture became important, and the natural beds were raked clean for "seed" which the oystermen obtained for planting on their grants. Thus the oyster grant system has been the chief cause of the destruction of the natural beds in the last forty years. It was only when the natural beds failed that grants were given, and so oyster culture cannot be considered the primary cause of the destruction of the natural beds, but only a later agency in their total extermination. The natural beds in Buzzards Bay all bear testimony to these three means of overfishing, and in recent years particularly to the last.

It has been a most fortunate thing for Massachusetts that the oyster grant system was inaugurated as soon as the decline of the natural fishery became manifest, else at the present time there would be no oysters in the State, for it is recognized that the present natural beds are perpetuated by the spawn which comes from the various oyster grants. Foresight has indeed provided an excellent oyster industry, which is rapidly improving. It is only necessary to apply similar methods of culture to the other shellfish industries of the State to insure their future also; otherwise the decline, which is following the same steps as the destruction of the natural oyster beds, will lead to the commercial extinction of these valuable fisheries.

Results of the Survey.

The survey of the oyster industry has shown several interesting facts which should be brought to the attention of the fishermen and consumers. In the first place, it has shown that the oyster fishery is a larger and more important industry than it has been commonly considered, and that the welfare of the shore fisheries of southern Massachusetts depends upon its maintenance. Secondly, the oyster industry is to-day in a position where it cannot reach its full development for the reason merely that the present laws do not encourage the expansion of the industry. Thirdly, the oyster industry is trammelled by certain abuses, chiefly of a legal nature, which hinder its development, and upon the abolition of which depends its future success. Fourthly, the oyster industry under present conditions encroaches to some extent upon the other shellfish rights, especially in relation to the quahaug fishery, and has caused much jealous feeling; but if properly regulated there should be room for both industries.

In order to obtain the opinion of the oystermen concerning the present abuses of the oyster industry, and how these could be best remedied, the following question was asked of the individual planters: "What measures or laws would, in your opinion, be best adapted for the improvement of the oyster industry?" Although many neglected to answer this question, forty-three opinions were offered, dealing with the problems which the oystermen consider as needing attention and upon which the welfare of the industry depends. These answers have been arranged in tabular form, showing the number of oystermen who advocate certain measures.

MEASURES SUGGESTED.

| | |
|---|----|
| Present laws satisfactory, | 11 |
| Direct State control of oyster industry, | 11 |
| Town control, with right of appeal to the department of fisheries and game, | 1 |
| Longer length of lease, | 4 |
| More certainty of re-leasing grants if improved, | 7 |
| More protection for industry, | 4 |
| Right to grow all kinds of shellfish, | 1 |
| More ground for cultivation, | 1 |
| State to forbid marketing of oysters from contaminated waters, | 1 |
| Provision for destruction of starfish, | 2 |
| <hr/> | |
| Total, | 43 |

While these answers show a diversity of ideas, about 75 per cent. urge that something be done to improve the present system, and, while many are in favor of placing the industry under State control, the majority is definitely of the opinion that the present system of town control is

proving a serious drawback to the oyster industry. The best interests of the oysterman and the consumer demand a better method of regulation of this industry. As long as town politics, partiality and carelessness enter into the leasing of oyster grants, and thus deprive certain people of their rights, it is safe to say that the oyster industry can never get beyond its present state of development. One solution of the difficulty might be full State control of leasing the grounds for the oyster industry. This is possibly too radical a step at present, and the system can perhaps be so adjusted as to remedy its defects without taking the control of the fishery entirely away from the hands of the town. Another solution is to continue the system of town control, but to have a State commission which would act as a board of appeal for all who felt aggrieved at the judgment of the selectmen.

The advisability of ten-year grants has caused much comment among the oystermen. Practically all grants are now given for this period of time. As a system it is deservedly unpopular, since it does not help the quahaug interest, and it checks the development of the oyster industry. The oyster business, unlike the other branches of shellfish culture, requires a considerable capital. This system of ten-year grants operates directly to discourage the outlay of capital. If the oysterman were sure of reaping the benefits of his labor and capital, it would be to his selfish interest to develop his own grant to its maximum capacity. But what far-sighted business man will invest money in a business which stands a good chance of being completely "wiped out" in a few years? Again, this system makes three years out of the ten practically worthless. The oysterman usually "seeds" his grant about three years before he expects to reap his harvest; but when his grant has run for seven years, it is evident that he will plant no more oysters because of the uncertainty of obtaining a second lease, and naturally does not desire to invest his labor and money for the benefit of an unknown successor.

The remedy for this is not difficult. If a grant were rented annually as long as the planter desired to hold it, to be forfeited if not improved to a certain standard (to be decided upon), or for non-payment of rent, the difficulties above enumerated would disappear. Much of the territory now held unimproved would either be brought up to a standard of excellence or given over to the quahaugers, and in either case direct benefits would result. If legislation were so arranged that any man might take, by the payment of a nominal rent, a small piece of ground, which he could hold as long as he improved it, the oyster industry could be put on a firmer footing; a man confident of enjoying the fruits of his labors could thus improve his grant, and, as he acquired skill and knowledge, could add other land and ultimately expect to build up a successful business.

A third important suggestion relates to the marketing of oysters in a sanitary condition. The oyster industry of the State has suffered

severely because of the scare resulting from the marketing of oysters from contaminated waters. The Cape and Buzzards Bay oysters are in general free from all sewage contamination, and should not be considered on the same basis as the impure varieties from outside the State. Naturally, the Massachusetts oystermen desire that there be some guarantee for the purity of the oysters marketed, as their interests suffer because this impure stock is often sold under the name of the Cape oyster. If laws were passed requiring the inspection and certification of marketed oysters in regard to healthful conditions under which they have been produced, both the oyster planter and the consumer would be benefited.

There is but little doubt that the oyster industry can be still further developed by opening waste territory which at this time does not appear available, since under existing conditions proper capital cannot be induced to enter the business. The oyster industry demands more attention than it has hitherto received, and must be considered an important asset of the Commonwealth.

History of the Industry.

Although the oyster laws are the mile-stones which mark the progress of the oyster industry, and any consideration of the development of these laws naturally gives many historical features, it is nevertheless necessary, at the risk of repetition, to give a separate account of the history of the oyster fishery. The Massachusetts oyster fishery can be divided historically into three distinct periods: (1) the free fishing period; (2) the period of bedding southern oysters; (3) the period of oyster grants.

(1) *The Free Native Fishery (1620-1840)*.—In the early colonial days the oyster fishery was considered in the same way as the other shellfisheries are now looked upon, *i. e.*, held to be the common property of the inhabitants of the Commonwealth. The natural supply was abundant enough to meet the needs of all the inhabitants, and for many years no signs of decline were manifest. In 1775 the natural beds of Wellfleet gave out, furnishing the first record of unmistakable decline. From that time there arose an extensive series of protective laws, with the one object of preserving the natural supply by limiting the demand. This policy of protective laws, though perhaps temporarily beneficial, was based on an erroneous principle. It was preventive, but not constructive, and did not build up the demolished fishery.

(2) *Oyster Bedding (1840-70)*.—With the decline of the natural beds, the practice of bedding southern "plants" became an important part of the oyster trade. The southern oysters were bedded on the flats in the spring and taken up for market in the fall. Salem, Wellfleet and Boston were the leading places in this new phase of the oyster industry, and many thousand bushels were annually planted.

(3) *Oyster Grants (1870-1908)*.—So successful was this summer