

# MAINE STATE LEGISLATURE

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# Public Documents of Maine :

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## ANNUAL REPORTS

OF THE VARIOUS

# Public Officers Institutions

FOR THE YEAR

1895

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VOLUME I.

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AUGUSTA :

BURLEIGH & FLYNT, PRINTERS TO THE STATE.

1895.

REPORT

OF THE

Commissioners of Fisheries and Game

OF THE

STATE OF MAINE

FOR THE YEARS

1893-94

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AUGUSTA

BURLEIGH & FLYNT, PRINTERS TO THE STATE

1894



STATE OF MAINE.

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*To His Excellency, Henry B. Cleaves, Governor of Maine:*

The Commissioners of Inland Fisheries and Game have the honor to present to your Excellency their biennial report for the years 1893 and 1894, as required by section 33, chapter 40 of the Revised Statutes.

THOMAS H. WENTWORTH,

HENRY O. STANLEY,

*Commissioners of Inland Fisheries and Game.*



# REPORT.

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## FISH AND FISH CULTURE—LANDLOCKED SALMON.

In the fall of 1892, three hundred and forty-five thousand Sebago salmon eggs were taken at Crooked river in Naples. These eggs were hatched the following spring and one-half of all the young fish from said eggs were returned to the water from which the parent fish were taken, the other half were distributed, through the different hatcheries, and liberated in other waters of the State.

In the fall of 1893, four hundred thousand eggs were taken at the same point, at Naples. One-half of these eggs were hatched and fed at the hatchery at Edes' Falls and when the young fish were four months old, being about three inches in length, they were liberated in the waters of Sebago lake; the other half were fed at Auburn and other hatcheries in the State and liberated in State waters.

There are now in the hatchery at Edes' Falls nearly one million Sebago salmon eggs, taken at the weir on Crooked river in the fall of 1894. One-half of these will be shipped in February, 1895, to different hatcheries in the State, where they can be hatched and the young fish fed four months before liberating in waters that are to be stocked with this desirable fish. The balance will be fed and turned back into the waters of Sebago lake.

The result of fish culture, applied to landlocked salmon, has been successful and show very satisfactory results. In proof of this, it will only be necessary to state here that the number of parent fish entering upon the spawning grounds and coming into the weirs on Crooked river have doubled

during the last three years, as shown by the number of eggs taken. In all waters of the State where these fish have been planted for a term of years sufficient for natural development, they have appeared in large numbers, compared with the amount of original stock, and in many places are propagating themselves by natural processes.

Twenty-five lakes and ponds in the State were stocked with these fish, hatched and fed at the Lake Auburn hatchery and of a size measuring from three to four inches in length, during the fall of 1893; and in the fall of 1894, forty-five lakes and ponds were stocked. See tables 1 and 2.

It has been the policy of the commissioners in planting these fish, to do it in systems of lakes and ponds, rather than at exclusive local points, so that by natural propagation they would distribute themselves through these entire systems; and also to place them near the head waters of our great rivers and lakes, even large distances interior from the settled portions of the State, thus securing them not only better protection but larger natural facilities for propagation.

#### TROUT.

In the spring of 1893, from seven hundred and fifty thousand and eggs, taken at Lake Auburn in 1892, there were hatched at the different stations and distributed and liberated in the waters of the State, trout fry and fed fish, one-half being returned to Lake Auburn from which all the eggs were taken.

In the fall of the same year and at the same point, there were taken eight hundred and fifty thousand trout eggs. With the exception of one hundred and twenty-five thousand eggs sent to Enfield and Caribou hatcheries, these eggs were hatched and the young fish fed at Auburn, Sebago, Rangeley and Kineo hatcheries. Four hundred thousand of these fed fish were returned to the waters from which the parent fish were taken, and the remainder distributed by the commissioners with reference, not only to just claims of different localities, but also having in view the best facilities for taking



parent fish in the future years at different points in the State. There were also two hundred and fifty thousand trout eggs taken at Swan lake at Swanville in Waldo county; the major portion of these were returned to Swan lake and the balance of about seventy-five thousand planted at other points. The season for taking fish eggs in 1894, which is just closing, results in the product of eleven hundred thousand trout eggs at Lake Auburn which will be managed and disposed of in accordance with the policy already indicated.

#### SEA SALMON.

All the sea salmon eggs for Maine are taken by the United States at their hatchery at Orland. The parent fish are purchased by the United States from the weirs along the lower Penobscot river and are kept in pounds at said United States station until fall when the eggs are taken. The expense of taking these fish or purchasing them is paid by the United States, and Maine, Massachusetts, New Hampshire and Connecticut, Maine paying five hundred dollars annually into this fund. The distribution of eggs is made to each contributing state and the United States according to the contributions to the expense of taking the same.

In 1893, our proportion of eggs was three hundred thousand; and in 1894, three hundred and twenty-five thousand. These eggs were hatched at our State hatcheries and liberated as fry. In 1894, one hundred thousand were put into Presumpscot waters, one hundred thousand into Penobscot river, one hundred thousand into Aroostook river and twenty-five thousand into the St. Croix. In addition to the young fish liberated by the State, the United States turned into the Penobscot river from said hatchery at Orland, in 1893, two hundred and fifty thousand fed fish, and in 1894, about the same number.

The result of sea salmon culture, applied to the Penobscot river, has proved successful. This is the best salmon river in the State, because it is freest from natural or artificial

obstructions and is kept free from refuse wood and other matter from the lumber mills and factories along its banks, resulting from the enforcement of special law which, while it was intended to be in the interest of navigation and the ice business, indirectly fosters the fishery industry.

Twelve thousand sea salmon were taken in the weirs of the Penobscot river and bay and in its pools during the season of 1894. These fish sold in the markets of our Atlantic cities for a price ranging from twenty cents to one dollar per pound. At the average price of twenty-five cents per pound, this fish product would be worth forty-five thousand dollars. The cost to the State of keeping up this industry is six hundred dollars per annum, or less than one and one-half per cent of the selling price in the market. No business enterprise that may be entered into by any person or corporation, would yield so large results from so small an investment.

The former method, of putting out the young fry, seems to be a waste, when they can be fed for a few months, to a growth of four inches in length, for a very small sum, compared with their increased value.

We think we are under-estimating those fed at ten times the worth of the fry just beginning to feed. But to do this successfully, it is necessary to have plenty of pure water that does not get too warm in summer, safe from freshets, and secure from droughts. There are few such places to be found. We have one at Auburn with all these conditions, with grounds admirably situated to construct all the ponds necessary to feed a very large number of fish, easy of access to railroad transportation, with plenty of very large trout running up the stream to the hatching house to spawn.

Over one thousand trout of from two to four and one-half pounds came into our weirs this fall, within fifty feet of our hatchery. Over one million eggs were collected. Some six years ago, Sebago salmon were planted in this lake. Last year quite a number were caught with hook and line, one weighing thirteen pounds. This fall, for the first time, they came into the inlet at North Auburn to spawn. They were

not discovered till too late to secure their eggs, as nearly all had already deposited them in the stream. Mr. Arthur Merrill, our very competent superintendent, took ten of these fish that had not deposited all their eggs, from which he secured a few thousand. He estimated the number of salmon that came into the stream at one hundred and fifty fish, some of them ten pounds weight and over.

We think it safe to say that within five years we can get all the trout and salmon eggs at Auburn lake that we can take care of at that place, and furnish many thousand four months old fish to stock other waters in the State. The trout and salmon at this lake can be easily protected. The streams they run up are small. We have built a dam at the hatchery, about one-half mile from the lake, which they cannot pass.

Below that they are safe from the poacher. Originally they could run up the brook for miles, where the banks were wooded and the poacher could get in his work unseen. The brook is so small that they could easily catch them in their hands, and but few ever returned to the lake alive. We have been taking these trout about four years. One-half the product of the eggs have been returned to the lake, the balance distributed in the State. The increase of fish has been very marked each year. The lake is admirably adapted to grow large trout and salmon, and can be made of great value to the State as a preserve from which to procure stock for other waters. The lake is well stocked with fresh water smelts.

The State should have about three hatching houses located at convenient points for distribution, adjacent to railroad transportation, where cheap food for feeding the fry can be obtained. There are now so many railroads running to nearly every part of the State that three hatcheries, situated in the right localities, could reach nearly all the waters in the State.

There is a large demand for the Sebago salmon, they are to be the coming fish. Stocking the ponds and lakes with this desirable variety will be the means of drawing many anglers to the State, who spend their money freely. These

fish not only add wealth to the State, but will also afford recreation and food to its residents. They are the king of fresh water fishes, both as game and for the table. They cannot be caught so readily as the trout, apparently being on their feed periodically. For that reason the waters cannot be so easily depleted by over fishing. They grow very rapidly and will thrive with the pickerel. We have known them to grow to thirteen pounds in six years, but to obtain that size they must have plenty of fresh water smelts for food, deep, pure water, and large lakes or ponds, with large, quick running streams and gravelly bottom for spawning ground. Without these streams, they never will multiply and be abundant. We consider it of very great importance to have our lakes and ponds stocked with the fresh water smelt. It is the favorite food of the trout and salmon. In lakes where you find the largest and finest salmon there are also plenty of smelts.

This can be easily done. The smelt deposits its eggs about the time the ice leaves the lakes in the spring. They run up the brooks to spawn, the eggs adhere to the grass, sticks and stones, and can be easily gathered by thousands, packed in wet moss or sphagnum, and safely transported to any part of the State, placed in the brooks in running water where they will hatch in a few days.

To do this successfully, grass or small twigs should be placed in the brook before the smelt comes. The eggs, being adhesive, will stick to these and can be easily gathered. Pack in wet moss, not too wet, laying wet mosquito bar on top on which lay the eggs, double the mosquito bar over the eggs, then another layer of moss, mosquito bar and eggs. Can put three to four layers in box. If the eggs are to be transported a long distance, the box should be placed inside of another with hay or straw to serve as a cushion to prevent jarring the eggs. Lift out the eggs carefully on the mosquito bar, place in running water near the lake where there is a gentle current. They will hatch in a few days. You can easily tell whether the eggs are good; the bad ones will be white, the good ones,

colorless and transparent. They should be gathered within ten days after they are deposited. The smelt hatches about the time the young salmon and trout begin to feed, and are just what they require at this period of their lives for food. We believe many young fry die for want of proper food at this time. We shall make it a point the coming spring to stock as many ponds with the smelt as we are able, but the season is so short in which this can be done that we can attend to only a small number of those required. Anybody can do this. We hope that any person interested in any lake or pond will see that this is done the coming spring. The smelt never should be caught in the streams when they run up in the spring to spawn. They are of much more value as food to grow other more valuable fish.

#### SEBAGO LAKE.

The run of salmon into Crooked river from this lake in the fall of 1894 was the largest we have ever known. About one million eggs were secured. One-half of these will be hatched, fed, and returned; the balance will be distributed to other waters of the State. The young fry at Sebago were fed for the first time this year. About one hundred and fifty thousand salmon three inches long were returned to the lake; they were strong, healthy fish. We believe they will be of more value in stocking the lake than the product of any two previous years. We shall pursue the same method hereafter.

The weir where we take our salmon on Crooked river is some eight miles from the lake, via river. A large number of salmon did not come up as far as our weir, spawning on the shoals below. We believe there were as many fish left to occupy the spawning ground as were beneficial for natural propagation, as other fish following the first occupants, going on to the same ground, and working the same beds over and over again, sometimes destroy as many or more eggs than they deposit. The salmon of Sebago is the largest and hand-

somest variety of this species in the world, attaining a growth of over twenty pounds; ten pound fish being quite common.

This lake should, and can be made one of the finest fishing resorts in Maine. It is a beautiful lake, fifteen miles long by seven broad, clear, pure water, being fed by mountain brooks well stocked with trout, and affording good breeding grounds for salmon. From time immemorial, till within six years, the salmon have been speared and netted on their breeding grounds and had dwindled to a mere remnant of what they formerly were. The ground where they spawned was so large, it was not possible for us to protect them with the small means at our command.

Since we have commenced to take them in our weir when they come into the river in the fall, the poaching has been mostly stopped. When they were in the weir, they were safe from the net and spear. The salmon have gradually increased in numbers and many more are caught than formerly. It is a large lake and requires more time to stock it, but with the method of feeding the fish till four months old as we are now doing, and the better feeling there now is for protection, we confidently look for a marked increase of salmon in Sebago in a very few years.

There is no doubt but more has got to be done in the way of artificial propagation and cultivation, to even keep up the present stock of trout and salmon. The large increase of anglers from abroad as well as at home, is now more than sufficient to capture all the natural product of these fish, and is lessening the parent stock year by year. This can be done at comparatively light expense to the State, compared to the benefits received from the summer travel brought here by our fish and game. The game only needs protection to keep up its present abundance; no artificial propagation being possible. With the fish it is different, without artificial propagation the trout and salmon are doomed to dwindle so there will not be enough left to draw tourists and anglers from abroad. When the fish and game are gone in Maine, the inland summer travel goes with it. Our inland villages,

our pleasant cottages upon the shores of our many inland lakes, will also disappear. We have them with us now, let us be wise and keep them. A few thousand dollars expended for the protection and propagation of fish will be returned to the State many fold.

There seems to be a craze in Maine to get special laws passed to protect, or prohibit, fishing in many trout brooks or streams. We believe that every brook or stream containing trout or landlocked salmon, which is a tributary of any good trout pond or lake, should be closed, and no fishing should be allowed on it at any time. It is just as easy to grow trout to two pounds as to as many ounces. Allow fishing in the lakes and ponds but close the brooks leading to them, this being the natural home of the young trout and salmon.

There are many petitions asking the legislature to close streams which are not tributary to lakes and ponds and from which the trout have no access to any other waters except rivers running to the sea. There can be nothing gained by doing this. It would be expensive and almost impossible to enforce such laws and in the end would be of no benefit. If closed for five years and the law enforced, with the large number of anglers we now have, in as many weeks of open time they would be fished down to where they were at the start, and no lasting good would be obtained. We believe the best results can be obtained by closing the streams above named, i. e., those that feed ponds and lakes, and stop all fishing for trout till May 1st; cut down the number of pounds of these fish the angler may have at one time; stop the market for trout and landlocked salmon, and, with the facilities we now have for stocking our lakes and ponds, we will always have them with us in good numbers.

#### HATCHERIES.

In this connection, we desire to state, that Maine owns no fish hatcheries, nor is there any law authorizing their purchase or erection or improvement or even leasing of such

plants from private corporations and associations beyond the term of a single year, or during the existence of current appropriations made from session to session by the legislature, for fish culture. We control and operate, by the sufferance of said associations, several hatcheries in the State, and we have no fear, at present, of being ejected from their occupancy; nevertheless, we believe it would be a wise policy on the part of the State to purchase or perpetually lease such plants as may be necessary for our work in this behalf; and some law should be enacted authorizing the commissioners, in behalf of the State, to purchase or lease them for a term of years.

#### FISHWAYS.

During the time covered by this report, fishways have been built, improved or repaired on the following rivers:—Presumpscot, Georges, Penobscot, Orange and Aroostook. Fishways have been asked for and are required in other localities. But something more than fishways are necessary for the successful stocking of rivers and streams, and for the passage of migrating fish. On any given river or stream where the fishways are not kept open and free from floating debris, and cannot be guarded during the passage of fish through them, they not only do not serve the purpose designed, but are used by the poachers as traps for the destruction of the fish they are intended to protect and help.

But the want of fishways is not the only obstacle in the way of restocking our rivers with migratory fish. Almost all of the rivers and streams of Maine flowing into the Atlantic ocean, have been and are being filled and polluted by sawdust and other refuse from lumber mills, and chemicals and other substances from the factories along their banks. The bottom and edges of these water courses are being filled with a foul and decaying mass of vegetable matter from which poisonous gasses are exhaled which destroy insect life upon which young fish feed, and hence these rivers and streams, once frequented by our noble fish like the trout and salmon, cease to be their inviting home and breeding ground.



We have in the State some dozen rivers that were originally good sea salmon rivers and might be made so again; but in order to reach that desired result, a complete system of fishways must be constructed and all natural and artificial obstructions in this way overcome; and also a law enacted and enforced which will keep the rivers free from all corrupting agencies from mills and manufacturing establishments, so that the fish will not only have easy passage up the river but will find pure water, and spawning grounds unmixed with saw-dust or other matter destructive of fish life.

#### GAME.

The large game of the State, by which we mean the moose, caribou and deer, is, without doubt, increasingly abundant. From the most reliable information, gathered from statistics furnished by express companies and common carriers at important points in our State, and from personal inquiry and observation, we think it a conservative statement that for the open time of 1894, four thousand of these animals will be taken. During the fifty days ending November 21st, eight hundred were shipped by express over the Bangor & Aroostook Railroad in cars running from Houlton to Bangor.

Moosehead lake regions and west over the Canadian Pacific to the Canadian line, furnish as many more. Hancock and Washington counties, two of the best deer counties in the State, are not far behind these figures. Then, going west through Somerset, Franklin and Oxford counties, we have another equally large supply of this game. Outside of these principal sections, there are scores of towns in the State, which, while they are thickly populated, are, at the same time, well stocked with deer.

These estimates represent what have been taken and brought out of the forests, and no account is here made of the large number of deer that have been killed and consumed by parties while on hunting trips. There have been taken in the State this year, about one hundred moose and two hun-

dred caribou ; of these probably one-third, at least, have been cows. The number of those who hunt and kill our large game is increasing from year to year at the rate of twenty-five per cent annually.

What is the value to the State of its fish and game interests?

Various estimates have been made, ranging from three to four million dollars per annum. We think the smaller is a conservative statement as to the amount. We reason from the known to the unknown. We know that each year there go to the Rangeley lake region, five thousand sportsmen and hunters. They tarry there on an average of ten days each. The average expense to each person from the time he enters the State until he departs from it, including railroad and other traveling expenses ; hotel bills at the lakes ; cost of guides, canoes, boats, and other incidental expenses, to say nothing of the luxuries, is seventy-five dollars ; aggregating three hundred and seventy-five thousand dollars.

We next take the regions east of the Rangeleys, south of the Canadian Pacific Railroad, crossing the northern section of Somerset county ; we then take the Moosehead lake region, which is by far the most important section of the State, both as to fish and game, with larger territory, better equipments and greater attractions ; then taking the lower lakes on the west branch of the Penobscot, the east branch of said river and Aroostook county north of the European and North American Railroad, including Aroostook and Fish rivers, as the fourth section ; and then the territory which lies south of the said last mentioned railroad and east of the lower Penobscot river, and we have divided the game section of the State into five parts.

Then applying our best knowledge which in the main is supported by actual calculation based upon facts furnished from the sources hereinbefore mentioned, we find that the result brings us two and one-half million dollars. Outside of the sections already mentioned are all of the sea coast

counties west of the Penobscot river, and Kennebec, Androscoggin, and Oxford. In Kennebec, is a system of lakes resorted to especially by fishermen both from without and within the State, and what is true of Kennebec is true of all the counties last mentioned; the Sebago system of lakes whose waters touch one-half of all the towns in Cumberland county furnishes large attractions to the sporting public.

Growing out of this interest as a legitimate result, is the building, furnishing and maintaining of rural hotels, sporting camps, club houses and cottages, which are to be found along the shores of our lakes and ponds and rivers by the hundreds in our great fish and game regions. The material from which these are constructed and the labor which puts them in complete readiness for occupancy, is furnished by citizens of the State and paid for largely from foreign capital. The agriculturalist finds, during our fish and game seasons, a ready and profitable market for many thousands of dollars worth of farm produce.

There are, upon the inland lakes of our State, one hundred and thirty-eight boats propelled by steam which are licensed by the steamboat inspectors. These boats are worth on an average, eighteen hundred dollars each, the aggregate of all being two hundred and forty-eight thousand four hundred dollars. These boats are operated almost exclusively in carrying sportsmen to and from their projective points and in conveying supplies, baggage and other material required in this business. It costs to operate one of these boats for the period of one hundred and fifty days, including wages of crew; fuel and supplies, nine hundred and sixty dollars; multiplying this by the number of boats, we have one hundred and thirty-two thousand four hundred and forty dollars as the cost of operating this means of travel. But this does not cover all our inland water transportation, for we have a large number of boats propelled by oil, naphtha and sails, and an almost innumerable host of row boats and canoes in all this fish and

game region. We are unable to give any definite figures as yet, of the the cost of providing these boats and canoes but it is very considerable.

Another industry of our State which grows out of this interest, is the work done by taxidermists. A leading taxidermist, and one who has several branches of his business at different points in the State, informs us that fifty thousand dollars per annum is paid to members of his trade, and this is largely paid by non-residents.

There is hardly a department of industry or trade that is not touched and benefited by these important resources of our people. Sportsmen come from abroad and from the large cities of our State and spend their money freely. They buy not only the labor of five hundred professional guides and as many cooks, servants and helpers, but they also enter our marts of trade and purchase arms, ammunition, fishing tackle and every convenience for hunting and fishing outfits. They also purchase strong, coarse clothing, underwear, boots and shoes, blankets and every article of convenience and often of luxury to make their stay in our State pleasant and comfortable and their trip successful. Their stay in Maine is their gala-day of the whole year and they make everything gay about them. On their return home, they take with them large numbers of boats, canoes, and in some instances, horses and dogs. For all these things they leave money which circulates among our people. The commissioner of industrial and labor statistics in his report for 1893 estimated that our summer visitors from out of the State left within it every year, as the cost of their living here the sum of ten million dollars. We think that that portion of it which is attracted by our fish and game is reasonably and very modestly stated at three millions or less than one-third of the total estimate. It is thought by some that what is spent by citizens of our own State should not be taken into account, and yet this is paid by our wealthy citizens to the poorer and laboring classes. It is unlocked and put into circulation, seeks invest-

ment and reaches such forms as are valued by the tax assessor, and cannot be wholly excluded from the account.

If these great interests are to be maintained and put in condition for the best results to the State, it will be necessary to make much larger appropriations than have ever been allowed to this department. We shall ask for thirty thousand dollars per annum for the next two years for the propagation of fish and the enforcement of law for the protection of fish and game. This would be but one per cent of the three million dollars which comes to the State from these resources.

The present appropriation, if equally divided among the sixteen counties of the State, would give to each, less than eight hundred dollars. If one faithful, competent man were employed as warden for each county during the entire year, this sum would be no more than sufficient to pay him for his services and travel and expenses. In order to command good ability and faithful service in any department of our activities we must be able to pay for it. When that can be done, we shall hear less complaint about inefficient and unfaithful wardens. The city of Bangor with twenty thousand inhabitants, paid, for the year 1893, twelve thousand seven hundred dollars to its police force. We think that it is unreasonable to ask the Commissioners to police the whole State and protect our fish and game and enforce all laws relating to the same for two hundred dollars less than is paid by a single city for preserving the peace and restraining crime. But we have not that sum for the purpose mentioned. Four or five thousand dollars are necessary in fish culture, maintaining the hatcheries we occupy and improving the same to keep pace with the needs of that part of our work; so that really we have left only about five hundred dollars for each county to maintain its police force.

Another thing would seem to be just and right, and that is the increase of the salary of the commissioners. The business of the department has now reached such proportions and is of such importance to the State that it requires, not only

their best ability, but their entire time. Five hundred dollars was probably a fair compensation for the work done at the time it was fixed at that sum, twenty-two years ago, but with the constantly growing demand for services in every feature of the work, it has outgrown these figures beyond reasonable comparison. The office ought to be suitably dignified and compensated in a manner which would show that its services are appreciated by the State. We think that we ought to have at least the salary of a first rate department clerk, which is fifteen hundred dollars a year. We have come to that point in the history of this department when almost the entire time of the commissioners is required in detail office work. Our correspondence is very large and extends not only over the entire State, but into half of the states of the Union. Questions are constantly being asked and matters presented that require deliberate thought and decision, and answer as well. They cannot be neglected. Common courtesy and official honor compel this. The supervision of one hundred and twenty-five wardens, the auditing of their claims and accounts, receiving their weekly reports and issuing orders directing their movements and action are matters of every day labor. The oversight and management of our hatcheries, the culture and liberation of fish, and the hearings, determinations, superintending the construction of fishways and accepting the same, issuing orders relative to their care and operation, are a few of the other duties which are constantly recurring. There have been, during the past year, some fifty cases in court against violators of fish and game laws; and while the commissioners do not attempt to carry the details of all these cases, they cannot wholly shirk their responsibility upon others. They must give general direction in the management of each case, thus not only insuring systematic action but prudent expenditure of money.

**GAME BIRDS.**

The ruffed grouse or partridge and the woodcock are our native game birds, and notwithstanding the rigor of our winters, and the persistency of the shot gun war for their extermination, they still survive. The ruffed grouse is still found quite plentiful in our forest regions; but in our populated towns they are so constantly and persistently hunted during the open season that they are being rapidly depleted. The open time on these birds should commence not earlier than September fifteenth. Until the young birds are fully fledged they remain in flocks with the parent bird, and when flushed, they perch upon the nearest bush or tree, instead of making long flights, and the whole flock may be easily exterminated by the hunter. The close time should extend to a period in the development of these birds when they are fully fledged, and the flocks break up, and its members go in pairs or by single birds; for, at this period they are more on the alert for their enemies, and can make long flights, thus eluding their pursuer.

**AMENDMENTS.**

The teaching of experience, changed conditions, the improved methods of hunting, the constantly increasing number of those, both resident and non-resident who seek, for different reasons, our fish and game, render necessary several important changes and amendments of our fish and game laws. We do not now and here indicate precisely what these should be. They will, in due time and by the best ability, be presented to the legislature, and should be fully discussed and understood and intelligent action had. However, in the present feeble financial condition of the department, it will be quite useless to make many important changes unless, while they strengthen the code, will also facilitate its enforcement upon a less expensive basis.

In closing this report we are reminded that the absence of the signature of Hon. Elias M. Stilwell to it, who, for twenty

consecutive years served the State as one of the commissioners of the fisheries and game, will be quickly noticed by the citizens of this State as well as by sportsmen and others interested in the propagation and protection of fish and game residing in other states by whom he was known and respected.

Appointed to the office in 1872, soon after the legislature had realized the fact that the woods and waters of our State were fast being depopulated of their natural inhabitants by persons employed in furnishing home and foreign markets with their products, he entered upon the duties with the fervor of an enthusiast, and by his personal, earnest efforts with prominent, influential men, by the annual reports of himself and his colleague and his persistent pressing upon the legislature the need of more stringent laws and larger appropriations for their enforcement, he lived to see an almost complete reversal of public sentiment in regard to the object sought and the policy pursued. A great lover of the rod and gun himself, he devoted his entire time to making the vast wild lands of the State, dotted all over by innumerable lakes and ponds, an attractive park in which home and foreign sportsmen might seek health, rest and pleasure.

Mr. Stilwell was a gentleman of the old school; cultivated, refined, conscientious, honest; companionable to his friends, distant and reticent to those with whom he was not familiar. In the performance of his official duties the letter of the law, as enacted by the legislature, was his only guide. His name became synonymous with the history of the fish and game laws of this State, and our citizens will hold him in lasting remembrance for his successful labors, the results of which are now so generally appreciated.



**TABLE I—Showing Name and Location of Waters Stocked with Landlocked Salmon in 1893.**

Where Planted.	County.	Where Planted.	County.
Parmachern lake .....	Oxford.	Pennesewassee lake ..	Oxford.
Range ponds .....	Oxford.	Big Island lake .....	Franklin.
China pond .....	Kennebec.	Richmond pond.....	Kennebec.
Cobbossee pond .. ...	Kennebec.	Unity pond.....	Waldo.
Meddybemps.....	Washington.	Moose pond .....	Somerset.
Attean lake.....	Somerset.	Wilson pond ....	Piscataquis.
Donnell's pond... ..	Hancock.	Hatcase pond .....	Hancock.
Etna pond.....	Penobscot.	Newport pond ..	Penobscot.
Parker pond .....	Penobscot.	Brewer pond .....	Penobscot.
Auburn lake.....	Androscoggin.	Phillips pond.....	Hancock.
Lincoln pond.....	Penobscot.		

From Oakland hatchery, ponds in Belgrade and Winthrop were stocked.  
 From Caribou hatchery, ponds in Aroostook county were stocked.  
 From Rangeley hatchery, Rangeley waters were stocked.  
 From Edes' Falls hatchery, Sebago lake and adjoining ponds were stocked.  
 From Swanville hatchery, Swan lake was stocked.

**TABLE II—Showing Name and Location of Waters Stocked with Landlocked Salmon in 1894.**

Where Planted.	County.	Where Planted.	County.
Worthy pond .....	Oxford.	Maranocook lake .....	Kennebec.
Whitney pond .. ...	Oxford.	Cobbossee contee.....	Kennebec.
Jennec pond.....	Oxford.	Annabestacook .....	Kennebec.
Marshall pond .....	Oxford.	Taylor's lake .....	Kennebec.
Pennesewassee.....	Oxford.	Richmond lake .....	Kennebec.
Moose pond .....	Somerset.	Madaseunk .....	Aroostook.
Wood pond .....	Somerset.	Cathance.....	Washington.
Embden pond.....	Somerset.	Forest lake .....	Washington.
George pond.....	Somerset.	Grand lake .....	Washington.
Clear Water pond .....	Franklin.	Pond on Township 32..	Hancock.
North pond .....	Franklin.	Shin pond.....	Penobscot.
Varnum's pond .....	Franklin.	Morrison pond .....	Hancock.
Big Island pond .....	Franklin.	Waterboro .....	Cumberland.
King and Bartlet pond	Franklin.	Long pond .....	Cumberland.
Sibley pond.....	Franklin.	Sabbath Day pond....	Cumberland.
Seven Tree pond.....	Knox.	Little Sebago pond....	Cumberland.
Alford's lake.....	Knox.	Hayden lake.....	Somerset.
Little Wilson pond ...	Androscoggin.	Sebago lake .....	Cumberland.
Bear pond .....	Androscoggin.	Anonamous pond.....	Cumberland.
Range pond .....	Androscoggin.	Hopkins pond.....	Hancock.
Taylor pond .....	Androscoggin.	Houston pond .....	Piscataquis.
Holway pond .....	Androscoggin.	Hebron pond .....	Piscataquis.
Auburn lake .....	Androscoggin.	Etna pond.....	Penobscot.

## List of Commissioners of Fisheries and Game and Fishery Officers.

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Col. Marshall McDonald, Commissioner, Washington, D. C.  
Capt. J. W. Collins, Assistant in Charge of Fisheries Division.  
Richard Rathburn, Assistant in Charge of Scientific Inquiry.

### DOMINION OF CANADA.

Hon. C. H. Tupper, Minister of Marine and Fisheries, Ottawa.

### ARIZONA.

T. W. Otis ..... Prescott.  
Walter Hill ..... Flag Staff.

### ARKANSAS.

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H. L. MacNeil ..... Los Angeles.

### COLORADO.

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MAINE.

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Ernest Harris, Deputy.....	Carson City.

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Elliot B. Hodge, Superintendent of Plymouth and Sun- pee Hatcheries.....	Plymouth.

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## NORTH DAKOTA.

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S. E. Land.....Laramie.

## WASHINGTON.

James Cramford .....Vancouver.

**SEA AND SHORE FISHERIES**





## REPORT.

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*To His Excellency, Hon. Henry B. Cleaves, Governor of the State of Maine:*

On the 13th day of April, 1894, I entered upon the duties of Commissioner of Sea and Shore Fisheries. It was my purpose then to make provision for the collection and arrangement of statistics and thus give for your Excellency's consideration full and complete statistical information relative to one of the greatest industries of the State. Upon full consideration, however, I was forced to conclude that as this report must be presented not later than the 31st of December, the few intervening months would afford too brief a time to gather statistics such as I had contemplated. Consequently this report will be confined to giving general information as to the sea and shore fisheries of the State.

The fisheries classed as sea and shore fisheries furnish not merely a business for a day or for a few months, but give employment to many of the citizens on our coast every week in the month and every month in the year. Nature has placed at our feet a mighty and fruitful ocean and has most liberally distributed along our coast in time and season various species of the finny tribe in countless numbers. The great sea is a reservoir of riches but the value of the fishes in the sea like the minerals hidden in mother earth can never be realized or attained except by the hardy hand of industry.

Maine has reason to boast of its numerous and popular summer resorts, of its forests and streams and it can point with equal pride to its extensive and unrivalled coast of twenty-one hundred and forty miles, one continuous fishing ground, from which many thousands of its citizens obtain an entire livelihood.

The fishermen of Maine are hardy, industrious and intelligent and are properly classed as professional fishermen. They follow

fishing for a livelihood, deriving from it their entire support. They take deep interest in their work and are constantly studying to devise new improvements on the present apparatus and mode of catching fish. The successful catching of fish has been reduced to a science, as the vessels, gear and other appliances will bear witness. Years ago the fishermen followed their business in chebacco boats and other small crafts and when on shore lived principally in huts and log houses. The fisheries have kept pace with other industries in improvements and inventions. The contrast is great between habitation of the fishermen of the primitive days of the shore fisheries and the fisherman's home with all its pleasant surroundings of to-day.

There are enrolled in the customs districts of this State four hundred and thirty-seven vessels which are exclusively engaged in the fisheries and in addition to these there are employed in the shore fisheries more than six thousand fishing boats with a valuation of not less than \$500,000. When we take into account the vessels, boats, weirs, pounds, traps, bag-nets, fyke-nets, seines, lines, pots and miscellaneous apparatus in connection with shore privileges which are necessary for the prosecution of the business, we find that their value in the aggregate will reach a sum that even those who are familiar with the business will be astounded. I hope in a subsequent report to be able to present with numerical exactness the magnitude and importance of the fishery industry to the State. The fisheries, as a source of immediate wealth and as a nursery of seamen, are of too much value to be neglected or abused. I do not over estimate when I say that there is invested in apparatus and cash capital in the sea and shore fisheries of the State three millions of dollars, while employment is given to ten thousand of its citizens.

The shore fisheries of Maine, as shown by the statistics furnished by the United States Fish Commission, are of more importance than those of any other New England State and the herring and lobster fisheries are of much greater consequence than in any other State of the Union. Maine surpasses the other states in the value of hake, herring, smelts, sword fish, clams and lobsters and is second only in the value of alewives, cod, haddock, halibut, mackerel and pollock.

## HERRING.

The herring fishery is an important factor in our shore fisheries and if it continues to increase (and I know of no reason why it will not) as it has during the last decade, it will soon take rank as first in importance. Herring are a prolific fish and abound in numerous quantities on our coast at all seasons of the year. Herring are now used in so many ways and have found such an extensive market that those engaged in this fishery may be sure of employment in fall and winter as well as in spring and summer. As a food fish, the herring are cheap and nutritious. Fresh herring are especially valuable for bait purposes, supplying the vessels engaged in the ground or deep sea fishing and thus saving them the expense and annoyance to which they would be subjected if they were obliged as heretofore, to seek bait in some Canadian port. It is truly remarkable that with all the different modes and modern appliances devised by man for catching herring, there appears to be no appreciable diminution of them. A great deal of valuable information can and ought to be adduced from the herring industry for the benefit of the State. Unfortunately so far as the State is concerned this business has been neglected—no provision has ever been made to acquire any knowledge in regard to it or data upon which any reliable statement could be based. The sardine business, the smoked herring, the salted and barrelled herring, and herring fresh and preserved by artificial freezing all deserve special mention. Artificial freezing of herring has developed this fact—that we are no longer dependent on Canadian waters for our bait supply and the Canadian bait question which has always assumed such extravagant proportions and been considered by our Canadian neighbors of so much importance in the negotiation of treaties affecting the fisheries need no longer be an issue.

## LOBSTERS.

The lobster fishery is the largest industry in the shore fishery. The coast of Maine seems to be particularly adapted for the habitation of lobsters as they can be found at all seasons of the year from Kittery to Eastport. It may be on account of the peculiar bottom with its sand and rocks or the numerous bays, small inlets and estuaries that indent our coast which in a degree serve as

places of safety and retreat. If the cause of the plentifulness of the lobster cannot be satisfactorily ascertained, this fact is patent that Maine produces more lobsters than any other state and that the amount and value of the production exceed that of all the other states combined. It would have been gratifying to have been able to present a full statistical report of this branch of the fisheries for it has reached such magnitude and is of so much importance to the State that it deserves to be fully represented. Then matters of legislation in the interest of this industry could be framed with a thorough knowledge of the condition of the business. A quarter of a century ago four thousand lobsters arriving in Portland in one day would have overstocked the market. Now there are fifty lobster smacks plying along this coast and thirty-seven of this fleet find a market for their lobsters in Portland, and it is estimated that they, including what arrived in boats and other shipments, landed in Portland during the last twelve months four million lobsters for which the dealers paid not less than \$320,000. It is estimated that there are two hundred thousand (200,000) lobster pots owned by the lobster fishermen on this coast and that they cost when ready for the water \$1.25 each or in the aggregate \$250,000. Warden Vinal, of Vinalhaven, reports that there are ninety-four lobster fishermen in that town and the value of the lobster gear is \$6,495 and that the boats are valued at \$9,000. The fishermen received for their catch of lobsters during the past year \$23,500. Warden W. A. Henderson informs me that in Cutler and vicinity there are two hundred and ninety-six fishermen engaged in the lobster fishery employing one hundred and forty-eight boats and one thousand four hundred and eighty lobster pots. Warden John U. Hill says that in the town of Gouldsboro there are one hundred and twenty men with families that obtain their entire support from the fishing business. Warden S. P. Cousins says that if we take into account the amount of fish sold in Sorrento, Sullivan and Hancock, the importance of the fishing industry in Frenchman's bay is apparent. Some of the lobster fishermen have become considerably alarmed at the present condition of the lobster fisheries. They represent that the lobsters are being rapidly depleted and that grounds which were once good fishing grounds have been necessarily abandoned in consequence of the scarcity of the lobsters. They further say that unless stringent measures are taken for the protection of the lobsters, in a few years they will be so scarce that it will be an

unprofitable business to follow. While statistics show that more lobsters have been caught during the last year than in any previous year, it is argued that this does not demonstrate that the lobsters are not being depleted from the fact that there are many more fishermen engaged in the business and a much larger number of pots used than ever before, the catch per fisherman or pot continuing to decrease each year.

Maine holds the key to the lobster fisheries and the large and increasing demands from the South and West depend principally on Maine for the supply. It is a business of too much importance to the State to lose either by lack of interest or ill considered legislation. The question of determining the best way to protect the lobsters is difficult to solve in view of the fact that those engaged in the business differ so materially in regard to it. My opinion is that the only true, direct, and satisfactory way to solve this problem is to commence a thorough and careful investigation of the lobster fisheries under authority of the State and require every lobster fisherman to report to a proper officer the number of lobsters caught during the season and the number of pots, cars, boats and other apparatus used in connection with the lobster fisheries. From the statistics thus placed at our command the condition of the lobster fisheries from year to year could be easily and correctly determined.

#### MACKEREL.

The catch of mackerel was much smaller this season than last, although at the commencement of the mackerel fishing in early spring there was every indication that there would be a large catch on the eastern shore. Fishermen of long experience based their opinion on the fact that as there were large schools of mackerel off Cape Hatteras in April and immense quantities on the Nova Scotia coast in May, it must necessarily follow that they would surely return to the coast of Maine in the months of July, August and September. Unfortunately the hopes based upon these opinions proved delusive and from some unexplained and unaccountable cause they did not appear in large schools as anticipated. It is safe to say that man with all his wisdom, age and experience has a very limited knowledge of the habits of migratory fish.

## SMELTS.

The smelt is a food fish for which there is a large demand. They are caught in immense quantities in the coast rivers, and bays, and are shipped principally into other states. This branch of the fisheries not only gives employment to many of our worthy citizens, but there is also a large revenue derived from it. It is considered a shore fish whose value to the State is second only to the lobster, herring and clam. We have no means of determining accurately the extent and importance of the smelt fisheries to the State. The only reliable information we have of this fishery during any period is furnished by the United States Fish Commission and in the last report issued it states—"The quantity taken in 1889 was one million forty-five thousand three hundred and eighty-five (1,045,385) pounds, worth \$74,077." Subsequent to this time there are no statistics to govern us in relation to this business, whether it is on the increase or becoming less, but from a general knowledge of this business I am prepared to say that it has increased very notably during the last few years. It would, however, be a satisfaction to show to the State by actual results from year to year the true condition of this fishery.

## MENHADEN.

The menhaden fishery is an extensive and important industry. Menhaden like all migratory fish have their peculiar freaks so that it is beyond man's conception to definitely foretell their movements from year to year. This season while they were abundant yet from some unknown cause they played so near the shore and in such shallow water that it was impracticable to fish for them. There are five menhaden factories in this State—two in Boothbay and three in Bristol. I learn that the total catch of 1894 was one hundred and twenty-five thousand (125,000) barrels, producing four hundred and eleven thousand six hundred (411,600) gallons of oil worth twenty-two cents per gallon and four thousand (4,000) tons of scrap valued at fourteen dollars per ton. The factories employ two hundred and fifty men and four hundred fishermen served on the steamers, and their average wages were forty dollars (\$40) per month with board. The season continues about four months. It must be evident that from this extensive branch of

the fisheries this State must derive great benefit. There were twelve steamers employed in this fishery on the coast and they were mostly commanded and manned by Maine fishermen. Eleven of the twelve steamers were built in the State and nearly all the provisions, fittings and furnishings for the factories, employes and steamers are purchased in Maine.

#### SEALS.

The seals in Casco bay are causing an unlimited amount of trouble and destruction. They have not been disturbed for several years and consequently have largely increased in numbers and at certain times many of them can be seen stretched on the flats and rocks along the bay. They are a great injury to the bay fisheries, for they not only destroy the fishermen's nets and lines but devour untold quantities of food fish. The lobster, mackerel, cunners and all fish that frequent the shoal waters of the bay are liable to fall a prey to these ravenous aquatic animals. It would in my judgment be wise legislation to repeal the law protecting the seal in Casco bay.

The fishery laws have in my opinion been very generally observed and respected especially those laws relative to the use of purse and drag seines. No complaint has reached me charging any of the mackerel seiners with violating the laws, and save in a very few instances, no complaints have been made that the purse and drag seines have been used within forbidden limits.

That there are violations of the lobster law is evident, although the wardens are diligent and faithful and in their limited way do all that is possible to suppress the illegal traffic in short lobsters.

The geography of the coast of Maine readily determines that with few wardens and an inadequate appropriation, it is practically impossible to so thoroughly patrol the coast as to prevent all violations of the lobster law or bring all offending parties to justice.

In consequence of numerous amendments, the laws relating to the sea and shore fisheries have become difficult of interpretation and lack that homogeneity which is necessary to their successful working. It is essential that not only courts and lawyers should understand the law, but that it should be so plainly expressed and simply arranged that those who are daily required to observe

its precepts in business may find its provisions simple and easily understood. To this end, I would respectfully suggest a careful revision of these laws.

Respectfully submitted,

ORIN B. WHITTEN,

*Commissioner of Sea and Shore Fisheries.*



STATE OF MAINE.

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IN COUNCIL, }  
December 14, 1894. }

On motion of Mr. DOWNES,  
Ordered, That 3,000 copies be printed and 1,000 copies bound in cloth  
and 2,000 copies in paper.

Attest:

J. H. CHADBOURNE,  
*Deputy Secretary of State.*