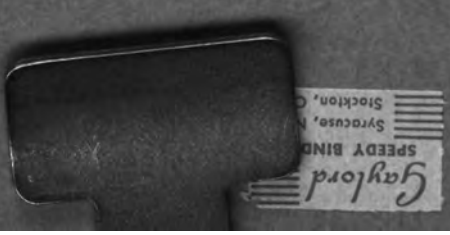
Reports.
Washington (State).
Olympia [etc.]



STATE OF WASHINGTON

DEPARTMENT OF FISHERIES
AND GAME

Sixteenth and Seventeenth Annual Reports

OF THE

STATE FISH COMMISSIONER

AND

GAME WARDEN

TO THE

GOVERNOR OF THE STATE OF WASHINGTON

JNO. L. RISELAND
COMMISSIONER AND GAME WARDEN
BELLINGHAM, WASHINGTON

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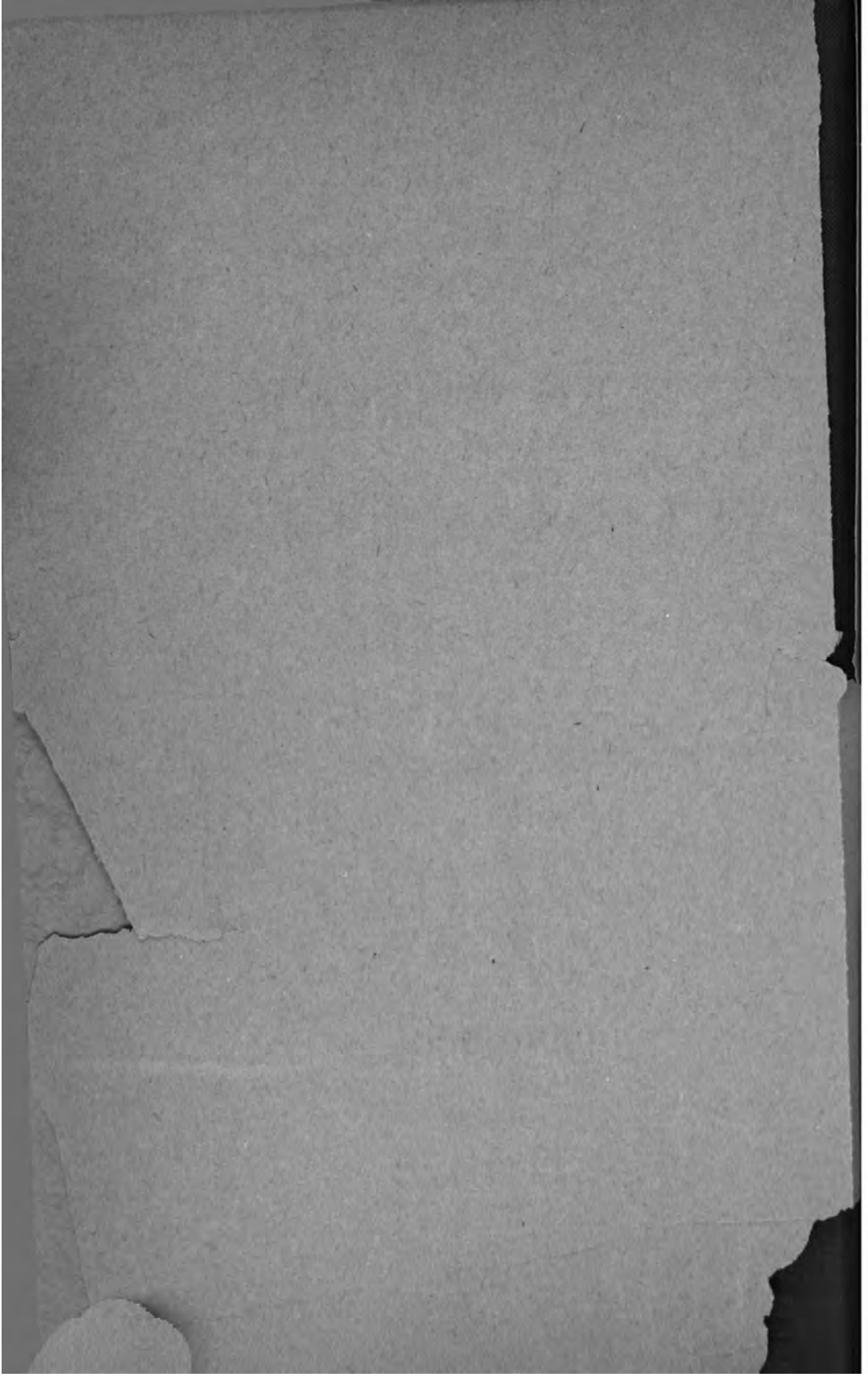

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BELLINGHAM, WASHINGTON, December 1, 1906

To His Excellency, Albert E. Mead, Governor of Washington:

Sir—In compliance with the provisions of law requiring the same, I have the honor to submit herewith the sixteenth and seventeenth annual reports of the Department of Fisheries and Game, for the years ending November 30, 1905, and November 30, 1906, respectively.

Respectfully submitted,

JNO. L. RISELAND,
State Fish Commissioner and Game Warden.

REPORT.

Shortly after assuming the duties of Fish Commissioner and Game Warden I discontinued the miniature hatchery and aquarium which had been maintained in connection with the department during the preceding year or longer. For this act I was quite severely criticised by a few local persons. I discontinued this hatchery and aquarium for the following reasons:

Because it was established and maintained without authority in law or otherwise, and consequently any warrant drawn and cashed for its maintenance was illegal.

Because conditions were so unfavorable that from a scientific point of view I considered it worthless.

Because every canneryman I have talked with (and it is the cannerymen who principally pay the money for the operation of the state fish hatcheries and maintenance of this department) thought the $3,000 which it cost annually to maintain this annex, could be used for a better purpose, and for what the funds were really intended. Any trout or salmon hatched out here might better have been propagated at any one of our salmon hatcheries where natural conditions prevail and without any extra expense. I desire to quote from an article on this subject in the August number of the "Pacific Fisherman," a monthly journal issued in Seattle solely in the interests of the fishing industry of the Pacific Coast.

"In Bellingham considerable criticism has been given Fish Commissioner J. L. Riseland, of Washington, for removing his office to new quarters and doing away with the exhibit which has been maintained by the office for the past year or more, including a miniature hatchery and aquarium, and other things interesting to look upon. From the State's point of view, important and significant reasons why it should be discontinued existed. The principal one of these reasons—and this is sufficient enough—was that it cost about three thousand dollars a year to maintain this exhibit, and Commissioner Riseland, knowing that the revenue at the disposal of the Fish Commissioner's office is limited enough as it is, considering

the many good uses to which it can be placed, decided that this three thousand dollars could be used every year to better advantage in propagating spring salmon at the Skagit River hatchery, or in any other of the various ways offered which give direct benefit to the industry which yields the state many millions of dollars in wealth every year. This was the reason that the state fisheries exhibit at the Commissioner's office was largely done away with, and why now, in its place, there remains only those choice specimens which are valuable and inexpensive of maintenance."

It was said at the time that this hatchery had been of great value in arriving at new methods of propagating fish. There is no doubt about that statement; when ice, the bill of which amounted to as high as $64.13 for a single month, had to be used to lower the temperature of the water to keep a certain percentage of the eggs from spoiling, and when an electric air pump had to be used for some time to aerate the water to keep the fry alive. This is certainly a new method, but whether it would be a method of leading a person astray or a method of arriving at true facts which might be of benefit in guiding a person engaged in the artificial propagation of fish is another question. I venture the statement, and I believe that every true fish culturist will bear me out when I say, that in order to carry on a successful experiment, or in order to successfully propagate fish artificially in a way to be of the greatest benefit to the industry, it is of the utmost importance and absolutely necessary that we are in full touch and harmony with nature and natural conditions. There is no disposition on my part to criticise or find fault with any one, and there was a question in my mind whether or not this matter was of sufficient importance to touch on in my report, but owing to the fact that all criticism has been inspired by misleading statements I thought I would be justified in making an explanation and giving my reasons why I could no longer maintain this personal advertising bureau at the expense of the state.

If the state will appropriate a suffieicnt amount of money out of the general fund for the preparation and maintenance of an exhibit of preserved specimens (exclusive of hatchery and aquarium), in connection with this department, it will be a pleasure to me to prepare, not only a fish exhibit, but game as well.

FISHING INDUSTRY.

Puget Sound District.

While the run of sockeye salmon was very light this season it did not fall far short of expectation. The cannerymen figured on a small run, made their preparations accordingly, and got, practically, the pack they expected.

The sockeye pack for the last five years has been as follows:

	Cases.
1902	270,000
1903	167,000
1904	108,000
1905	825,000
1906	178,748

A comparison of the whole pack for the same number of years is as follows:

	Cases.
1902	509,659
1903	500,481
1904	296,274
1905	1,018,641
1906	430,602

Four years ago a dam was built at the outlet of Quesnel lake and maintained across this important tributary of the Fraser river without having a proper fishway constructed or without providing any other means whereby the salmon might ascend above the same, thereby preventing them from reaching their natural spawning grounds. It being fairly well known that sockeye return to spawn every fourth year, this, no doubt, had a very evil influence on the sockeye run this season. Besides it is realized and generally admitted by every one familiar with the industry that excessive fishing has been carried on for years, that little or no protection has been afforded it, and that the laws on our statute books for its protection have been very poorly enforced. Fully realizing this I have put forth every effort and used all the power at my command to enforce the law during this, my first season in office, in order that the industry might be given the protection which the law contemplates, and I do not say it in a boastful way, nor have I any selfish motive in making the statement, but I can emphatically say that it is not only my belief, but it is my

positive knowledge that the laws affecting the fishing industry in this state have been more strictly enforced, and more protection has been afforded the industry than ever before, and I believe that every fair-minded person engaged in the industry, or familiar with the same, will bear me out in this statement. In this connection I desire to quote from the British Columbia Fisheries Commissioner John P. Babcock's interview in the "Vancouver Province," the early part of October, touching on existing conditions of the spawning beds in the headwaters of the Fraser river this season. Mr. Babcock is perhaps better qualified to talk on this subject touching the Fraser river spawning beds than any other person. Mr. Babcock says:

"More spawn sockeye reached the headwaters this season than in any years of a poor run of which I have personal knowledge. The hatchery collection and output of eggs and fry will probably exceed that of any year since the hatcheries were built, save that of last year."

1901 and 1905 each being what is commonly known as the big year.

"There was a good run to the Shuswap Lake section in August. David Mitchell, superintendent of the hatcheries there, has collected six and one-half million sockeye eggs from this year's run. That hatchery was built in 1901, and has been operated since then, but only in 1901 and 1905 have any considerable number of eggs been taken from the tributaries of the Shuswap. This is the first off-year in which he has been able to secure any number of eggs from Shuswap streams. In 1903 and 1904 the combined collection did not exceed a million, because there were no fish there. I have already told you that we had a good off-year run at Seaton Lake this year, but lost our fish because a flood washed out our weirs before we had taken their eggs. We had just begun operations when we were wiped out. We had taken only one and a quarter million eggs. We should have taken eight or ten millions, as we had enough fish. We may get a million or two of spring and cohoe eggs later, but do not look for any more sockeye this year. While the heavy rainfall damaged the weirs in the Birkenhead River, at the head of Lillooet Lake, it did not destroy them altogether. Mr. Robertson, the superintendent, had at last accounts over fifteen million eggs, and the prospects of getting many more were good. The run to that section has been very consistent during the six seasons I have been studying the spawning-grounds of the Fraser. Whether it is a natural condition or the result of the years of propagation of Harrison-Lillooet-running sockeye cannot be said. That the Birkenhead location is a good place

to operate is demonstrated by this year's work. I selected that site in 1902 and had the lands declared a hatchery reserve in 1904, and built a cabin there for the use of my field observers, had my plans all drawn for a large hatchery and ready for use when the provincial government arranged with the Dominion government to build and operate a hatchery there and gave it the reserve. The hatchery is a good one, but should be enlarged. Under normal water conditions, eggs enough to have filled all the Fraser River hatcheries could have been obtained there this year. Heretofore our great difficulty in the off years has been to obtain eggs. In 1903 we did not have 25 per cent. of our hatchery room filled, and in 1904 not over 10 per cent. It's in the poor years that our greatest efforts should be made."

In the following pages of this report will be found a report from the Joint Fisheries Commission appointed by the government of Canada and yourself to investigate conditions touching upon the sockeye industry of the Sound and Fraser river and to report its findings and conclusions as agreed upon, with a view of enacting laws which would better protect the industry. If its findings and recommendations are enacted into law and strictly enforced, it will go far and may prove adequate and sufficient to re-establish the sockeye industry on Puget Sound and the Fraser river.

While the run of sockeye has been rather disappointing, it is very gratifying to report that the run of our spring salmon has been fully up to the average and that the run of fall salmon has been one of the most phenomenal ever known, and what appeared at the close of the sockeye season to be disappointing and a failure has been turned into one of the most prosperous off years ever known. This is very gratifying. First, because prices on the raw product have been very good and will leave a good deal of money in the hands of the individual fishermen. Second, because the price of the canned product is such that we hope it will leave a fair margin to the packer. Third, because when the money derived from the industry as a whole begins to circulate and go into trade it will assist largely in augmenting the general prosperity of the state. And, lastly, because it demonstrates beyond the shadow of a doubt the great benefit resulting from artificial propagation, as we are just fairly beginning to get returns from our hatcheries in this district.

Columbia River District.

The output from the Columbia river district for this season, taken as a whole, has been very satisfactory and compares favorably with former years. The pack for the last five years has been as follows:

	Cases.
1902	96,833
1903	95,440
1904	179,813
1905	157,666
1906	148,264

While the industry in this district has not shown any special feature with reference to the number of cases packed, or the marketable product, yet, at the same time, considering it from a commercial standpoint, having special reference to and being mindful of the best interests of the people of our own state, it has been one of the most, if not the most successful season on the Columbia river. This is due to the fact that prices obtained for the raw product have been higher than at any time before and the men directly engaged in catching and disposing of this raw product will profit most largely therefrom.

I fully realize the difficulty of changing or enacting new laws on the Columbia river which would be of great benefit to the salmon industry, owing to the feud which exists between conflicting interests in the industry and the fact that we have concurrent jurisdiction with other states. Realizing this as I do I do not believe it well to make an outright recommendation as to what changes should be made, but I desire to sound a note of warning and make a few suggestions in case the Legislature and the people directly engaged in the industry should think it wise to act on the same. Ever since the commencement of the catching and packing of the Columbia river salmon we have had an open season during the latter part of the spring and the early part of the summer without any protection or cessation of fishing whatever. This has caused the decline and decrease of the best of our royal chinook salmon, which frequent the river during this period, and as the salmon decreased for want of protection and because of over-fishing there has been a constant demand at every legislative session for a shorter closed season in the spring and an extension of

the open season in the fall in order to get up the usual pack. It is well for the state to encourage as large a catch as can be permitted consistent with maintenance of the supply, to impose no unnecessary restrictions upon the fishermen; yet, at the same time, to insist upon such protective regulations as may be found necessary to prevent impairing an industry so important. The fishermen who have such valuable interests at stake, and the security and profits of whose large investments depend upon the maintenance of the industry, should not only be willing but prompt to propose and co-operate in measures which will be of permanent benefit, even though such measures would require a temporary curtailment of operations, for certain it is we shall have to face the conditions sooner or later. If the present statute governing operations now in vogue on the Columbia river is continued it will not be long before we will be up against conditions which will compel us to reverse the open and closed seasons on the Columbia river; that is, change our laws so as to fish in the spring and fall for the fish we have protected in the past. Rather than resort to such extreme measures I would suggest the adoption of a weekly closed season. There are only two points which can be raised in opposition to a weekly closed season. First, that such a law is difficult to enforce; second, that it might perhaps cause a little inconvenience on the part of some fishermen, especially trapmen, to cease fishing for such a short period. On the other hand, a weekly closed season would give equal protection to all kinds of salmon throughout the year. There would be no occasion for the packers and fishermen to clamor to the Fish Commissioner for suspension of the closed season law, nor to apply to the Legislature for frequent changes of the open and closed season law in a wild effort to keep abreast of climatic and other conditions above and beneath the surface of the water, which vary from time to time and from year to year and which cause the salmon to appear in the river early or late, according to these conditions. I would suggest that so far as the closed season law is concerned, the Columbia river be divided into two districts, the closed season commencing in the lower district first and at the expiration of the closed period in this district let it begin in the upper district. This would give a continuous closed season of sixty hours or more

according to whatever length of time the Legislature may deem wise and best to make it. This would confine the closed season period to a limited district and would enable the Fish Commissioners and the deputies to more thoroughly patrol and cover the territory and see to the enforcement of the law during this time.

I desire to quote from articles in the "Portland Oregonian" of November 1st, 4th and 5th, regarding the situation on the Columbia river, and I believe the "Oregonian" presents the situation fairly.

[NOVEMBER 1ST.]

"Perhaps the best thing that could be done would be to repeal all fishery laws and let the fishermen and packers destroy the industry if they want to. A law cannot be enforced unless it has public sentiment back of it, and fishing laws won't have the support of those most interested until they realize the necessity for such laws and their enforcement. One or two seasons of fishing without any restrictions whatever would bring the fishermen to Salem clamoring for legislation, and they would then see that the laws are obeyed.—Oregon Fish Commission."

"The Commission is alarmed for the salmon industry. And it may well be. The supply of spring salmon grows less each year, and the pack is kept up by the late fish, the accumulated product of hatcheries, and of the August closed season. On this supply fishermen and canners have been encroaching by extension of the open season from August 5th, then August 10th, then to the 15th, and now to the 25th. More alarming still, the hatcheries cannot obtain enough eggs to keep them busy."

[NOVEMBER 4TH.]

"Despite hatchery output of millions of chinook salmon fry in waters of the Columbia River in the last decade, the supply of adult fish does not increase, and there are even signs that it is diminishing. This is unquestionably the fact as to the April, May and June salmon, which made the reputation of the Columbia River pack in years past, and which has fallen off alarmingly in the last decade, due to overfishing.

"The July supply has been maintained and the August supply has been increased by hatcheries, or as some persons aver, by the growing tardiness of the salmon in entering the river from the sea. But it is evident that this increase is due—in a large part at least, if not wholly—to artificial propagation. Such propagation in former years has been aided greatly by the closed August season, or, as some authorities assert, has been made wholly possible by the stoppage of fishing after August 1st, then after August 10th, then after August 15th, and now finally after August 25th.

But the open season has been extended so far that it is feared that the supply of August seed fish, for hatcheries, is jeopardized. It is asserted on good authority, that half of the pack in the last few seasons has been made out of August fish, which are inferior to spring salmon, and a greater part of the rest out of July fish, and that the April, May and June fish, which used to be the mainstay of the industry, are threatened with extinction, unless laws shall be enacted to establish a closed season in those months.

OPEN SEASON RECENTLY LENGTHENED.

"In the last Legislatures of Oregon and Washington, the early closed season, instead of being lengthened, as competent authorities insist it should have been, was shortened fourteen days, so that it now lasts between March 15 and April 15. At the same time the August closed season was shortened also, so as to begin August 25, instead of August 15, against the protest that the extension would diminish the supply of August salmon for the hatcheries at Chinook, Kalama, Wind River, and Big and Little White Salmon, which have been propagating that season fish and to which the salvation of the industry appears due. These hatcheries have done poorly since that time.

What is needed in Oregon and Washington is, shorter open seasons, regulation of the several kinds of fishing gear, retaining stations for the hatchery fry, and aggressive, fearless fish wardens to enforce the law. Add to this the closed Sunday, together with brains in hatchery work, and benefits cannot fail. There has been so much greed and grab and so little conscience and intelligence that the present plight is not to be wondered at."

[NOVEMBER 5TH.]

REMEDIES FOR SALMON INDUSTRY.

"The plight of the salmon industry on the Columbia River makes plain to the Legislatures of Oregon and Washington that remedial laws must be enacted, of different sort than heretofore. That the fishing season lasts too long, from April 15 to August 25, and from September 10 to March 15, is indicated, if not proved, by the small number of surviving seed fish at the hatcheries, and by the fast waining catch of April, May and June fish, which have declined in fifteen years from more than 50 per cent. of the annual pack to 15 or 20 per cent.

"These facts suggest two simple remedies—curtailment of open season, and longer retention of hatchery fry."

In my opinion the "Oregonian" has struck the key note of the true situation and the remedies to be applied. A revision of the present law and the enactment of a law which will afford the salmon more protection throughout the year; the retention of the fry in nursery ponds to as large an extent as

possible and wherever conditions at the hatcheries will permit until they are more able to take care of themselves; the abandonment of a policy of building fifteen, twenty-five and fifty million capacity hatcheries on streams where only three or four million eggs can be obtained, thus necessitating a wild scramble and chase over mountains and into tributary streams in an effort to obtain additional eggs to make a showing at these great and elaborate wooden structures. Such a policy is not only expensive, but the inevitable result is a great loss in the number of eggs thus obtained. Hatcheries should never be constructed until all conditions have been thoroughly investigated and found favorable—in fact, the very best. If the state ever builds more hatcheries I would say build smaller ones and more of them.

Grays Harbor and Willapa Harbor Districts.

All the salmon canneries in these two districts were operated, excepting one small cannery in Grays Harbor district, and up to two weeks before the end of the fall canning season, when the closed period set in, there was every indication and prospect for a successful season in both of these districts, but the freshets and high water, in the early and middle part of November, brought down such an immense number of logs, driftwood and other refuse that nearly every trap in the district was swept out and operation with any other kind of gear was prevented for several days. Had this condition not been brought about I believe that the pack in both of these districts would have exceeded that of any previous year.

The following comparison shows the pack in these districts for the past nine years:

Year.	G. H. Dist.	W. H. Dist.
1898	12,000 cases	21,420 cases
1899	18,200 "	23,230 "
1900	30,800 "	26,300 "
1901	41,500 "	34,000 "
1902	31,500 "	39,492 "
1903	None	5,890 "
1904	26,000 "	25,500 "
1905	22,050 "	14,950 "
1906	22,000 "	14,440 "

The same specie of salmon runs in these districts, and they

make their appearance in the harbors and rivers at the same time. I would therefore recommend that the fall closed season be made uniform the same as the spring season. The present closed season for the fall is as follows: Grays Harbor, from November 15th to December 15th; Willapa Harbor, from November 25th to December 25th.

The fall closed season in both districts should be from November 15th to December 15th.

REVIEW OF THE INDUSTRY, INCLUDING ALL DISTRICTS.

Taking into consideration the fact that this was an off year for sockeye and that the run of this specie of salmon was about thirty per cent. short of what it was during a comparative period of four years ago, it has been one of the most successful seasons, for an off year, brought to a close in the history of the salmon industry in this state, as we have put up a larger pack of fall salmon on the Sound than ever before, and the run was simply phenomenal. The pack on the Columbia River is a trifle short, but the pack on both Grays Harbor and Willapa Harbor exceeds that of any previous year in the history of the industry. This is not only true when we consider the size of the pack, but can be applied with a great deal more force when we consider the industry from a commercial point of view.

The fishermen directly engaged in catching and disposing of the salmon have profited most on account of the high prices obtained for the raw product. Millions of dollars have been placed in the hands of local citizens, and it would be impossible to estimate, even approximately, how many times the daily earnings of fishermen are turned over in their ramifications through the different avenues of trade and commerce, but it is certain they were kept moving with sufficient speed to swell the purchasing power many times over. Our fishermen, as a general rule, have become more sober and industrious, and the money earned is not as often wasted in riotous living, but, instead, is invested in homes in the cities and farms in the country adjacent to the fishing industry.

In speaking before an industrial convention, J. J. Hill made the following statement:

"On the new lands of the West, where the wheat yield was from twenty to thirty bushels per acre, it is now from twelve to eighteen. Frankly and without shame, this is attributed to the 'wearing out' of the soil, as if the earth were a garment that must be destroyed by the wearing.

"If the earth, the mother of humanity, is to 'wear out,' what is to become of the race? The fact is, that soils, properly treated, maintain their productiveness indefinitely under cultivation."

The above statement might be applied with equal force to the salmon industry. With proper care and protection its productiveness can be maintained indefinitely. It is true we have difficulties to contend with. Waters once free from commercial industries and given over entirely to the salmon, are now being extensively used for irrigating, mining, milling and other similar purposes, which are all detrimental to the natural habits of fish. These industries are all very essential to the great future of our state and must not be hampered or held back for the salmon industry; neither should the salmon industry be lost entirely to us on account of them, but on the contrary, due and proper consideration should be given them all.

We give below a record of the number of licenses issued from this department for the last ten years:

Year.	No. of licenses issued.
1897	1,675
1898	1,960
1899	2,560
1900	2,815
1901	2,473
1902	2,356
1903	2,463
1904	2,727
1905	2,593
1906	2,848

As will be noticed by the above record, we have issued more licenses during the past eight months—that is, from April 1st, 1906, up to the present time—than for any previous year since this Department was established. During the last legislative session the license law was changed so as to make all licenses expire on the thirty-first day of March in each

year. This made the license period for last year extend over fifteen months—that is, from the first day of January, 1905, to the 31st day of March, 1906. At the expiration of the present license period, March 31st, 1907, we hope to reach the three thousand mark.

For further statistical figures, we refer you to the tabulated statements in the following pages of this report.

—2

THE HATCHERIES.

Kalama Hatchery.

In former years the eyeing station on the Kalama River, operated in conjunction with the hatchery, used steam pumps to obtain a water supply. This required the employing of two engineers, one in the daytime and the other at night, and cost quite a sum of money for fuel each year. When the first spawn taken was far enough advanced to be moved, it was shipped to the hatchery about two and one-half miles up the river and hatched there. The hatchery is supplied with water by a gravity system. The first spawn taken in September would be in shape to move about November 1st, and that taken later would not be ready to ship until the first part of December. It cost considerable to move this spawn, and there was always more or less loss of eggs resulting from the shipping. The inside of the hatchery is dark, and a large amount of oil was used, as it was necessary to keep lamps burning all day in order to see to handle the eggs and young fish. If more spawn was taken than could be handled at the hatchery, the remainder was hatched at the eyeing station. This necessitated the keeping of engineers for at least seven months, and would more than double the amount of fuel and lights used. This season the Department made arrangements with the Kalama Power & Light Company to install an electric pump at the eyeing station to furnish the same with water and lights. This arrangement has proven very satisfactory and has resulted in quite a saving to the Department. Below is given a comparison of the cost of handling the spawn for the first three months in former years and the cost of handling the same under the new arrangement for the same length of time.

Cost of getting engine, pumps and pipes in shape for season's work	$ 80.00
Salary of two engineers for three months	360.00
Wood burned	250.00
Lights	10.00
Supplies and repairs	40.00
Cost of moving spawn	60.00
Total	$800.00
Cost of light and water under new arrangement for three months	180.00
This makes a saving to the department of	$620.00

It will be understood that this is not the cost of securing and taking care of the spawn, just the cost of the water, lights, etc., for the period of three months.

In addition to the improvements made in light and water, we have built strong cribs and placed heavy booms in front of the eyeing station to prevent injury from drift logs, etc. These booms are fastened with heavy steel cables and will last for years. The freshets last season brought down logs, piling, etc., against the racks. The racks stood the pressure, but the logging company used dynamite to free their logs, thereby destroying our racks and causing us to lose two-thirds of our breeding salmon. We were put to considerable expense this season, as everything had to be constructed anew.

Chinook Hatchery.

This hatchery differs from any other hatchery in the state as the breeding fish are caught in the traps in the vicinity of Chinook Beach and are placed in crates and towed to the mouth of the Chinook River. There is a dyke built across this river. The fish are turned into the river above the dyke, where they stay until ripe. When ready to spawn they ascend the river and are caught in a trap near the hatchery. This season a new waste box was constructed in the dyke, at a cost of $600, and other improvements were made that cost $100. The plant is in good shape at present, and will need no improvements, except some nursery ponds, for some time. We have been fortunate in securing a good supply of breeding fish this year and the hatchery is doing good work.

Wind River Hatchery.

Last season the racks, etc., at this hatchery were washed out by the freshet and everything had to be constructed anew. While not securing as much spawn as during some seasons in the past, this plant has done very well under the circumstances. This hatchery has one rearing pond, but needs about two more. This season the young fish will be kept and fed until they are large enough to take care of themselves.

Methow Hatchery.

This hatchery is the only plant in this state, tributary to the Columbia River, that propagates Silverside salmon. The

hatchery is situated about 700 miles from the mouth of the Columbia River. When the freshets are large on the Columbia River in the summer time this plant does well, but if the season is dry and the waters of the Columbia River low, it does not do so well. It is a cheap hatchery to operate, however, and usually we get good returns.

Chehalis Hatchery.

This hatchery never accomplished much of anything until the season of 1902, when racks were built in the Satsop River, about five miles from the hatchery. Since that year the hatchery has done well. This year the Department has established an eyeing station on a branch of the Satsop River, about sixteen miles from the hatchery. This has been done with but very little expense, as we simply moved one-half of the hatchery troughs from the hatchery and set them up in an old shed near the branch of the Satsop River referred to. We also constructed racks in another stream nearby. The heavy freshets during the month of November caused us a great deal of trouble, but, taking everything into consideration, we have done well this season. The reason we moved our racks so far up the river was that the logging industry on the Satsop River interfered seriously with our racks at the lower site.

Skokomish Hatchery.

This is a first-class fall salmon hatchery, and when operated to its full capacity will turn out as many young salmon as any hatchery in the state. It has the best water system of any plant in the state, and is well equipped. It handles the spawn of the silverside and dog salmon. During the season of 1904 this hatchery was not operated, and during the seasons of 1903 and 1905 only partially so. The cost of operating this hatchery is not more than that of any other hatchery in the state that turns out the same amount of young salmon.

Willapa Hatchery.

This hatchery has done good work since 1902, and has this year again demonstrated that it is a good steelhead and chinook plant, besides handling a large amount of silverside spawn. There is good land for building ponds here and quite an improvement can be made at this place by constructing

a number of rearing ponds. This is one of the hatcheries that is in operation the year around.

Dungeness Hatchery.

This hatchery has also done good work since 1902, and is operated all the year. The output of chinook fry was smaller than usual this year, but the steelhead catch was good. The freshets during November have interfered to a great extent with the taking of silverside spawn, but as a usual thing a large amount of this spawn is taken at this plant. The cost of operating this plant is small compared with that of other hatcheries turning out the same amount of young salmon. This is the best steelhead hatchery in the state, and usually turns out a large amount of chinook and silverside fry.

White River Hatchery.

For the better taking of spawn at this hatchery we have placed double racks in the Green River near by, and the wisdom of this improvement has been made clear by the fact that we have already taken a large amount of chinook and silverside spawn and will have all the young fish that the rearing ponds can accommodate. We have a good system of ponds at this plant, some new ones being constructed this year. There has been a new dam built and more hatching troughs constructed, and at present the plant is in shape to handle a much larger amount of spawn than usual, the young fry can also be taken care of and fed until they are large enough to take care of themselves. At this plant we also take a large number of steelhead eggs.

Samish Hatchery.

At this hatchery a new rack has been constructed across the Samish River just above the mouth of Friday Creek. The hatchery is situated about a mile and a quarter from the mouth of the creek. The rack across the Samish River turns the fish up Friday Creek, and they make their way to the racks at the hatchery. The ponds have been put in shape to handle all the young fry hatched at the plant this season. About five years ago a dam was constructed across Friday Creek to supply the hatchery with water. This dam proved so faulty of construction that

part of it washed out the first season, thereby causing quite a loss of young fish. This year the dam again gave way, but fortunately we were able to save all the spawn in the hatchery. Pumps were put in commission and the water kept running through the hatching troughs until a temporary dam could be constructed in the creek. The dam was then repaired, and everything went well until another freshet caused it to give way in another place. This place was repaired, but during the heavy freshet in November another place in the dam gave way. It has again been repaired, and as the silverside salmon run in this stream until February we will be able to take all the spawn that can be handled here. This hatchery takes silversides exclusively and is a good plant.

Snohomish Hatchery.

At this hatchery we have made a few changes in the system of management. Formerly there was a crew put to work in August to build racks, etc., in a slough near the hatchery. Every year this work would be carried away by the freshets, and would have to be replaced. This year we did not build racks in the slough and only hired one man to help in making repairs around the hatchery. As this plant depends largely upon the eyeing station at Startup, about four miles further up the river, for most of the spawn taken, we concluded that the racks at the hatchery were a useless expense, and that there was no use of having a crew at the hatchery until October 15th at the earliest. This will cut down the expense, and the same results will be obtained as if a crew were put to work in the hatchery in August.

Nisqually Hatchery.

This hatchery has always been a good one, and it takes the spawn of the steelhead, silver and dog salmon. The plant has never been large enough to handle the amount of spawn that could have been secured at this place. There are five rearing ponds at this plant, a large one being constructed this fall. The water system has also been changed. Formerly the water was carried to the hatchery by a pipe. This pipe did not furnish sufficient water, and this fall we have had a flume built, which supplies all the water necessary. Besides these

improvements there has been a new filter tank built, twenty-four new hatching troughs constructed, the hatchery floor repaired and a new shed built. The hatchery is now in shape to handle all the spawn that can be taken. It costs less to operate this hatchery than any other hatchery in the state that takes the same amount of spawn.

Nooksack Hatchery.

This plant is one of the best fall salmon hatcheries in the state. About sixty per cent. of the spawn taken is that of dog salmon and the remainder that of silverside, with a small amount of steelhead spawn. This hatchery was not operated during the season of 1904, and was only partially operated during the seasons of 1903 and 1905. This season it is being operated to its full capacity. The plant is in a fair condition, and with a few repairs would be in good shape for some years.

Sauk River Hatchery.

This is the only state hatchery tributary to the Skagit River. The plant was built solely for the taking of the spawn of the chinook salmon and the steelhead. The river is swift and hard to control at this point and the racks cannot be constructed strong enough to withstand the freshets in the fall long enough to take the spawn of the silverside salmon. In the Sauk River the chinook salmon begin to spawn about the 28th of July and finish spawning about the 15th of September. The steelhead spawn from the first part of February until the 15th of June. This year this plant secured 1,027,000 steelhead eggs and 1,350,500 chinook eggs. This plant has been seriously interfered with during the past season by having to open the gates in the racks to allow shingle bolts to pass through. The take of steelhead spawn would have been much greater if it were not for this interference, as would also have been that of the chinook. Taking into consideration that locations for taking chinook spawn are very scarce on streams tributary to the Skagit River and that this specie of salmon ranks very high, a hatchery taking 2,000,000 chinook eggs is better for the fishing industry than a plant that takes 5,000,000 fall salmon. We expect to reach some understanding with the mill companies here that will prevent us being interfered with in the future.

Stillaguamish Hatchery.

This hatchery was first located on Jim Creek, a tributary of the south branch of the Stillaguamish River. This location did not prove a good one, and the hatchery was abandoned. This year, however, we decided to move the hatchery six miles up the creek, and a site was procured from the Jim Creek Water, Light & Power Company. During the big freshet in November the dam of the aforesaid company gave way, and as we depended on this dam for our water supply, and as the dam will not be rebuilt until spring, we were compelled to suspend operations for this season.

Wenatchee Hatchery.

This hatchery is situated in the Cascade Mountains at the head of the Tumwater Canon on the Wenatchee River. The principal output of the hatchery is the silverside salmon. The Wenatchee River is the largest stream in the state upon which a hatchery is operated. It is also a wild, swift river, and the cost of controlling it with racks for the taking of breeding salmon is great. The isolation of the plant makes it a very expensive one to operate. Everything used at the hatchery in the way of supplies, hardware, etc., must be shipped across the Cascade Mountains, and lumber must be shipped in by rail. The cost of freight, express and hauling is excessive. The snowfall is heavy and the winters long and cold, which makes it necessary to burn a large quantity of wood to keep the water from freezing in the hatchery troughs. It is by far the most expensive hatchery in the state. There are locations on the west side of the mountains, tributary to the Columbia River, where just as much spawn could be taken for one-half what it costs to take it in the Wenatchee River. The country tributary to the Wenatchee River is full of irrigating ditches, into which the young salmon find their way and are carried out on the fields and lost. Taking the extreme cost of operating the plant into consideration, the quality of the salmon propagated there, the loss of young fish by being carried into the irrigating ditches, and the fact that we can secure the same amount of spawn on the west side of the mountains cheaper, the Department is convinced that it is not good policy to operate this plant in the future.

Colville Hatchery.

This hatchery was operated only one season, 1901. The best that could be done in the way of gathering spawn was about 90,000 silverside salmon eggs. The superintendent reported that he had taken all of the breeding salmon that came into the stream. The conditions at this place are not very favorable for a hatchery. Mr. D. M. Richards, of Kettle Falls, was placed in charge of the plant at the time it was closed, and about forty salmon are the most that he has reported having seen during any season since the plant has been closed. It would require at least 800 salmon to make any kind of a success. As nothing like this amount of salmon could be secured, it was deemed best not to operate this plant.

Klickitat Hatchery.

This hatchery was never completed. After the building had been erected, it was found that very few, if any, salmon spawned in the Klickitat River in the vicinity of the hatchery site. There was nothing to warrant locating a hatchery at this site. No hatchery troughs were ever built, and no water was ever taken into the house. The site was abandoned in 1902.

Chelan Trout Hatchery.

As there was no appropriation allowed for this hatchery by the Legislature of 1905, there have been no funds to operate the plant. This hatchery has been an unqualified success from the first, and is a first-class trout hatchery. The hatchery building is not large enough to accommodate all of the spawn that could be taken at this place, and operations always have to be brought to a close before the spawning season is over for the want of space in the hatchery. We have taken part of the spawn for the Little Spokane Trout Hatchery at this plant and held them here until ready to ship. It would be hard to find a better location than this for a trout hatchery.

Little Spokane Trout Hatchery.

For the past two seasons the salmon hatchery at Dartford, on the Little Spokane River, has been operated as a trout hatchery. A part of the spawn has been secured at Lake Chelan and shipped to Dartford. This fall we have taken a num-

ber of eastern brook trout eggs from a private hatchery at Penrith, and another lot of the same kind of spawn from Cook's Lake. Applications from all parts of the country east of the mountains have been filled, and trout have been planted in a great many of the different streams in that part of the state. This place will prove a good location for a trout hatchery, as it is located within easy reach of the different railroad stations and is convenient to ship from. This season the Department has constructed racks across the Little Spokane River to ascertain if there are enough salmon in this vicinity to warrant operating the plant as a salmon hatchery in conjunction with the trout hatchery.

REVIEW OF THE HATCHERIES.

Puget Sound District.

At the Dungeness Hatchery, situated near Dungeness, the take of chinook salmon spawn this season was not as large as usual. This is the first season, since 1902, that there has not been a good run of these fish at this place. The irrigating ditches on the Sequin prairie that take their water from the Dungeness River have in the past destroyed large numbers of young salmon. Everything looked favorable for a good run of chinook this season, but they failed to materialize. A heavy freshet caused a washout of a part of the fish racks, but this happened late in the season, and the loss of breeding fish was small. The steelhead catch was the largest of any in the state, and the take of silverside spawn promises to be fair. We have built better racks at this place and have taken steps to enforce the law with regard to the irrigating ditches, and in all probability will do better work at this hatchery in the future. The hatchery is operated the year around and is a good plant.

The Skokomish Hatchery has done good work this season, and if given a fair chance will continue to do so. This is also a plant that has had its output curtailed in the past. It was not operated during the season of 1904, and only partially so during the seasons of 1903 and 1905. There are no good reasons for not operating this plant to its full capacity, and as the run of fall fish is always good at this place we will hereafter operate this plant to its full extent. There are quite a few re-

pairs to be made here, and we expect to have it in first-class shape by next season. The conditions here are good, as we are not interfered with by logging operations.

The Nisqually Hatchery is a plant where conditions are always good and the take of the fall salmon and steelhead spawn is equal to that of most of our large hatcheries. The take of steelhead spawn is particularly good, and the silverside salmon are always plentiful. There is also a good run of dog salmon. The dog salmon have not been propagated at this plant during the past four years, but this season we are taking all of the spawn of the different varieties of salmon that frequent this stream. New rearing ponds have been built and more hatching troughs have been installed. The plant is now in shape to handle all the spawn that can be taken. The water system at the hatchery was a very poor one, and a new one has been installed. At this plant we are not interfered with by logging operations, and the cost of operating the plant is very reasonable.

At the White River Hatchery, to take all of the chinook spawn possible, we have placed double racks in the Green River near the mouth of Soose Creek. A good supply of this spawn was taken, but the extreme high water brought down logs to such an extent that our racks were carried away. It will be understood that the racks in the Green River are placed there only for the purpose of taking chinook salmon, as these fish do not come in Soose Creek to any extent. At the hatchery on Soose Creek there are racks for the purpose of taking silversides and steelheads, and these racks were not injured by the freshet. It is the practice of this Department to remove the racks from the Green River when they are through taking chinook spawn, about October 15th, but the freshets this year came too quick for us. The racks have never been able to withstand the fall freshets in Green River.

The silverside run at this hatchery is very large, and enough spawn can be taken every year to fill the troughs and ponds. We have a good system of rearing ponds here, without which we would be unable to handle the spawn taken, as the hatchery building is altogether too small to handle the fry after hatching. There are two good streams near by beside the one that is used for hatchery purposes, and if we could control

these streams and lead the water to the hatchery grounds, splendid ponds could be built, and enough pond room could be had to handle all of the fish hatched out here. We have, at present, a good system of rearing ponds here, but if the hatchery handles more spawn in the future we will have to have more pond room. Quite a lot of improvements can be made at this plant, and the money used for the same would be well invested. This is unodubtedly one of the best plants in the state, and this is the first year that logging operations have interfered with us.

The floods during the month of November wrecked the dam at the Samish Hatchery, and, although it was repaired so that it would last the remainder of the season, a new one will have to be built next summer. The logging company which has been operating on the Samish River in this vicinity for the past six years, has sold out their belongings to another company owning a mill on Lake Whatcom. In the future the river near the hatchery will not be used for logging operations, which will give us a clear field, and this plant will undoubtedly be able to take more spawn than ever before.

Careful management with regard to the expenses of operating hatcheries cuts quite a figure. Sometimes money is used to a disadvantage, and work done that is not necessary. This is noticeable at some of our fall salmon hatcheries. At hatcheries situated like the Snohomish it is unnecessary to begin any work, except making some of the repairs, until October. Formerly work would begin in August. At the eyeing station, on which place the hatchery depends for most of its spawn, only two men are required to build the racks, make repairs, etc., and take all the spawn necessary to fill the lower plant.

At the Nooksack Hatchery there is no advantage gained by starting operations before October 1st. The run of fish does not begin before October 15th, and two weeks gives plenty of time to get the hatchery in shape for operation.

Had it not been for the accident to the dam of the Jim Creek Water, Light & Power Company, from which the Stillaguamish Hatchery procures water for hatching purposes, this plant would have done well, as quite a number of fall salmon frequent the stream on which the hatchery is located, and there

is no question but that a fair amount of spawn could have been taken. Next year we hope to have this plant in operation early, and will, in all probability, take some of the chinook salmon spawn during September, and perhaps some steelhead spawn earlier in the season.

Columbia River District.

The Kalama Hatchery has, in the past, demonstrated that it is the best state hatchery for the chinook salmon tributary to the Columbia River. This year the take of spawn has been a disappointment. The management, however, is in no way to blame, as everything was done to secure all the spawn possible. A heavy freshet, coming at the time when there was plenty of breeding fish between the racks, made it necessary to open one of the gates to allow the logs and piling to pass through. This caused a loss of many of these fish. The fact that the traps for fall salmon that used to be put in the Columbia River during the month of August and fished when the fall season opened, September 10th, are now put in during the latter part of July, and fished from the first of August until the 25th of the same month, for chinook salmon, has caused a great many of the breeding fish that used to supply this hatchery with spawn to be caught before they have a chance to come into the Kalama River. When the chinook season ends, August 25th, there are very few salmon in the upper river, and when it opens, September 10th, the chinook are again cut off from their spawning grounds. There is only a closed season of fifteen days for these salmon, and in every available place, from Astoria and Bakers Bay up the river, there are traps, seines and gill nets operating for the fall salmon, and chinook salmon, that would find their way to the Kalama River after August 25th, are caught by these contrivances. Heavy logging operations on the Kalama River also interfere with the hatchery work, and under the present circumstances we are very fortunate to be able to take as much spawn at the Kalama Hatchery as has been taken this season. Under favorable conditions this plant should take at least 10,000,000 chinook salmon eggs every year.

At the Wind River Hatchery the same effects are felt as at the Kalama Hatchery. The talk about the railroad work

on the north bank of the Columbia River scaring the fish away, is rank nonsense. If the fish were in the Columbia River and ready to spawn, they would go into Wind River, and all the blasting along the railroad right-of-way would not stop them. The fact of this matter is that the fish are caught before they reach the Wind River. Our relations with the Wind River Logging Company, on the Wind River, are very pleasant. When we are ready to put in our fish racks, we notify the company, and they flood the river, carrying all their logs out into the Columbia, where they have a large boom. The logs are held in this boom and used from there for their mill at the Cascade Locks, until we are through taking spawn. When we are about to finish with our spawn-taking, we notify the company, and they again resume operations on the Wind River. We use the river about seven weeks in each year, and they use it the remainder of the time.

At the Chinook Hatchery everything depends on the breeding salmon taken from the traps near Chinook and placed in the Chinook River. The trapmen have been very liberal during the past season in allowing us to take fish from their traps for breeding purposes. They used to allow us to use their piling, etc., on which to put our own web. The closed season is so short, however, that we have not time to make the changes, and consequently we cannot use our gear on their locations. If we had a couple of good locations of our own we could secure much better results. At this hatchery, as at the Kalama River and Wind River Hatcheries, more rearing ponds are needed, and the fish should be kept and fed until they are able to take care of themselves before being turned into the streams.

In view of the fact that the Wenatchee Hatchery is not operated and that the Colville, Little Spokane and Klickitat Hatcheries have been failures, so far as salmon are concerned, it would be a wise thing to build another hatchery on some tributary of the Columbia, and, if possible, build one that would handle both chinook and silverside spawn.

With a better understanding with the logging industry, and both industries working in harmony, if the breeding fish have a chance to come into the hatchery streams it would only be a few years until the Columbia River would be in good shape with regard to both chinook and fall salmon.

As a rule this department is not in favor of hatcheries located on streams that feed irrigating ditches, unless such ditches are screened. It seems worse than useless to hatch spawn and take care of young salmon and then have them carried out onto the fields and lost.

No matter how economically a hatchery is managed, it takes a large amount of money to operate it. The Methow Hatchery is the only salmon hatchery operated by this Department on the east side of the mountains, and is the only silverside hatchery operated by this Department that is tributary to the Columbia River. As there has been an effort made to screen the ditches in this locality, we have continued operating this plant, and the work done has given satisfaction.

Grays Harbor District.

On the Chehalis River, about four miles from Montesano, is located the only hatchery tributary to Grays Harbor. This hatchery was a failure until the year 1902. In former years there would be about 500,000 chinook eggs shipped from the Kalama Hatchery, on the Columbia River, and hatched out at this hatchery. During the summer of 1902 a change, in the way of getting the spawn for this hatchery, was made. Formerly the breeding fish were caught in the Chehalis River with gill nets, when green, and impounded in a small pond, where they were expected to ripen. However, this plan was a failure, as ninety-eight per cent. would die before they were ready to spawn, causing the loss of a great many eggs. In the summer of 1902 racks were built in the Satsop River, about five miles from the hatchery, and that year all the spawn was taken that the hatchery could accommodate, and thousands of breeding salmon were turned loose to ascend the Satsop River and spawn naturally. This season being the fourth year since the first good turnout of young fish was made from this hatchery, has proven a banner year for fish on Grays Harbor, and if we can increase the output in the future, Grays Harbor will not suffer for want of salmon. We have moved our fish racks farther up the Satsop River this season, to be out of the way of the logging operations, and have installed a temporary eyeing station. There is no question but that it would be wise to move the hatchery to a site near the fishing grounds, and if

this is done there will never be a failure at this plant, and the cost of operating will be materially lessened.

Willapa Harbor District.

Tributary to Willapa Harbor, near the Willapa River, is situated the Willapa Hatchery. This plant has always been very successful and is not an expensive one to operate. There are two canneries on the Harbor, one located at South Bend, and the other at North River. The increased activity in the lumbering industry in this part of the state makes necessary the building of dams across some of the best spawning streams tributary to the Harbor, and it behooves this Department to see that the law in regard to fishways in these dams is enforced. In most instances the parties building the dam neglect to notify the Department before the dam is finished. This makes it very difficult to install a fishway in the proper place. If the parties building dams would notify this Department before the dams are constructed they could be furnished with plans for a fishway, and it would be much easier for them to place a fishway in the proper position in the dam. As fast as this Department obtains information that parties have failed to place fishways in their dams we have sent them plans and notified them to install a fishway at once. That our hatchery on the Harbor is doing good work is proved by the fact that there is no falling off in the run of salmon, despite the fact that fishing is carried on to its full extent.

There are eight state hatcheries tributary to Puget Sound from which the fall salmon (silverside and dog salmon) are the main fish propagated. Four years ago (1902) there was turned out of these hatcheries 45,028,285 young fry. Ninety per cent. of these young salmon were dog and silversides. This season there has been more salmon of this kind caught in the Puget Sound than there has been in a great many years previous. The U. S. Government Stations at Baker Lake and Phinney Creek, tributary to the Skagit River, are now turning out a great many young silversides, and these, in addition to those turned out by the state hatcheries mentioned, will undoubtedly keep up the supply of this variety of salmon on the Puget Sound.

The Sauk River Hatchery, located near Darrington, on

the Sauk River, tributary to the Skagit River, is the only hatchery tributary to Puget Sound which takes the spawn of the chinook salmon and steelhead exclusively. While it could be wished that more chinook spawn was taken at this plant, yet, with good management, it should turn out at least 2,000,000 chinook fry and the same amount of young steelheads every year. This can be accomplished if hatchery operations are not interfered with by the running of shingle bolts at the time of year when we are taking the spawn. This would make the Sauk River Hatchery a better plant for the Puget Sound than if it were a fall fish hatchery that turned out 8,000,000 silversides and dog salmon. If the racks are removed every season, just as soon as the chinook have finished spawning, it would save the expense of building new racks every year, and, as there is nothing to be gained by taking silversides at this plant the hatchery can be operated by two men during the winter months. However, some agreement must be arrived at with the shingle mill companies, as the racks must be kept closed during the chinook season.

The fact that the closed season for chinook salmon on the Columbia River is so short, and that there are so many traps, seines, nets, etc., for fall salmon between Bakers Bay and the Kalama River, and that the logging on hatchery streams interferes seriously with the work of gathering spawn at the chinook salmon hatcheries, are the only reasons why the Columbia River hatcheries do not turn out the amount of young chinook salmon that they did in former years, and if something is not done to remedy these evils it will be only a short time until the chinook salmon will be as scarce in the Columbia River as the bluebacks are at present. There is no use trying to conceal this fact, and steps should be taken to allow the hatcheries to receive enough breeding salmon to keep up the supply. This Department is strongly in favor of nursery ponds, where the young salmon can be retained and fed until they are large enough to take care of themselves and escape the ravages of trout and other fish that prey upon them. It must be understood, however, that ponds, to be satisfactory, and to accommodate the amount of salmon turned out of the hatcheries, must be large enough to allow plenty of room, must be so con-

structed as to allow a perfect circulation of water, and must be so built as to allow them to be easily cleaned. Ponds that are not large enough, and in which the circulation is not good and where the food that is given the young fish is allowed to gather fungus will create disease and will prove more destructive to the fry than if they were turned out into the streams at the time the yolk sack is absorbed. To construct ponds large enough to accommodate all of the salmon turned out of each hatchery every year would cost a great deal, but the result would justify the expense. The marked salmon turned out of the different hatcheries were all kept in ponds and fed a few months. From the percentage of these fish caught it would seem that if all of the young fish turned out of the hatcheries had been retained and fed for a few months the returns would have been much larger. If the state hatcheries for chinook salmon on the Columbia River are able to secure all the spawn they are able to handle, and if the U. S. hatcheries located in Washington and Oregon, together with the Oregon hatcheries tributary to the Columbia River, secure all the spawn they are able to handle, and the young salmon kept in rearing ponds and fed, this Department can see no reason why there should not be just as many salmon in this river in the future as there has been in the past. There is not a fish stream in the world as well supplied with hatcheries as is the Columbia River.

At all the hatcheries where we have rearing ponds the superintendents have been instructed to take a supply of the best salmon, after spawning, and mild cure them for the purpose of feeding the fry in the nursing ponds. When the salt is extracted from the mild cured salmon it makes a good food for the young fish, and is cheaper than anything that can be procured for this purpose.

This Department has arranged for the marking of a certain percentage of the young salmon turned out of the different state hatcheries where nursery ponds are used and where the conditions are such that nursery ponds can be constructed. We will keep the young salmon in the ponds until they are about three inches in length, when they will be marked and returned to the ponds and kept there for a couple of weeks longer. They will then be turned out into the different streams

and a complete record kept in the office of the number marked, the date of marking, the age of the fish marked, the kind of mark used at each hatchery and when and where each lot of marked salmon were turned into the streams. In this way we will be able to keep fairly well informed as to when the majority of young salmon return from the sea, and about what percentage do return. We will also be able to keep some track of their movements in fresh water before they go to sea.

MOVING AND REBUILDING OF STILLAGUAMISH HATCHERY.

I herewith append the most important part of the correspondence with reference to the removal of the Stillaguamish Hatchery:

"Olympia, June 13, 1906.

Capt. J. L. Riseland, State Fish Commissioner, Bellingham, Wash.:

My Dear Captain—Herewith you will find a letter which I have received from Mr. L. N. Jones, an attorney residing in Arlington, in relation to the fish hatchery in Jim Creek. I enclose you copy of a letter which I have addressed to Mr. Jones today. Please set forth in a letter to me your views on the subject, attach it to the letter sent herewith, and return to me. Yours very truly,

A. E. MEAD,
Governor."

"Bellingham, June 15, 1906.

Honorable A. E. Mead, Olympia, Washington:

My Dear Governor—I am in receipt of your favor of the 13th instant, with enclosures from L. N. Jones, in regard to the Jim Creek hatchery.

Mr. L. N. Jones, an attorney for the Jim Creek Water, Light & Power Company, of Arlington, and Mr. Thomas Moran, president of the same company, came to Bellingham to confer with me in regard to the eerction of a dam across Jim Creek, and the construction of a fishway in accordance with law. They desire to erect a dam sixty feet high, and as it would be very expensive to construct a fishway that would be adequate to allow the fish to ascend above the same, they made me the proposition set forth in their letter to you: namely, to donate a site for our hatchery at their dam, to furnish us with a gravity system of water therefrom, to furnish and supply our hatchery with electric light free of charge and to haul all the material of the hatchery from the old site to the new, and any other material for its construction free of charge.

The moving of the hatchery would obviate the building of a fishway, as we would want to use all the fish coming up there for

spawning purposes. This hatchery, like a few others we have in this state, is located where natural conditions are against us, which militates against the successful operation, and hence makes it much more expensive to operate. During the two seasons this hatchery was operated the water supply was obtained from a swamp near by, which went entirely dry in the summer time, leaving us short of water, and, worst of all, a poor result from the hatchery output on account of the water being poor, impure and temperature too high. Pumping stations and others means—aside from gravity system—of supplying the hatcheries with water are very expensive and unsatisfactory.

There is not a large number of salmon running up Jim Creek, and we may not be able to fill the hatchery at any season, but it could be operated on a small scale very cheaply, and all natural conditions which go to make up the successful operation of a hatchery would be with us; therefore I cannot help but look upon their proposition with favor.

I have just received, through Mr. Jones, from Albert Johnson, a contractor, the cost of tearing down and rebuilding and the amount of new material required, which is as follows:

Cost of tearing down and rebuilding	$198.00
Cost of new shingles	50.00
Cost of nails	15.00
Total	$263.00

If we could, without a legislative act, sell the land the hatchery is now located on, together with a small dwelling and woodshed, I think we could get more than sufficient to cover the expenses of tearing down and rebuilding. I do not think it advisable to move the house and woodshed, as sufficient room could be partitioned off upstairs in the hatchery for the men to live in who might operate the hatchery.

I enclose you herewith Mr. Jones' letter, as per your request, and will take this matter up with you the first time I am in Olympia, as these parties are very desirous of having a definite answer as early as possible, as they desire to begin the erection of their dam at once.

Yours truly,
JNO. L. RISELAND,
State Fish Commissioner."

"Bellingham, August 16, 1906.

Mr. L. N. Jones, Arlington, Washington:

Dear Sir—I herewith return you agreement between the Jim Creek Water, Light & Power Company and myself in behalf of the state, and also the minutes of the Fish Commission relative to this matter.

Yours truly,
JNO. L. RISELAND,
State Fish Commissioner.

"Arlington, October 1, 1906.

Honorable Jno. L. Riseland, State Fish Commissioner, Bellingham, Washington:

My Dear Mr. Riseland—A party here has offered $325.00 cash for the fish hatchery site from which the plant was moved at the mouth of Jim Creek. That includes the buildings that were not moved, however. I am inclined to think that the offer is a very good one, and that it should be taken, and believe that you would be justified in recommending the acceptance of the offer. I have advised these parties, however, that it was my opinion that the Commission would not feel like making a sale as I was not certain that the law gave them that right, but that if an offer was made you that you thought advantageous, a recommendation from your office to the Governor and conveyed by him to the Legislature would without a doubt result in their passing an act authorizing the Commission to make the sale.

Now, if in your opinion the offer is a good one, I would suggest that a contract be made with the party who wishes to purchase, and that he deposit the money in the bank here in Arlington or anywhere agreeable to you, on condition that if the Legislature authorizes the sale the money be delivered to the proper parties when the conveyance was made, and that if, for any reason, the Legislature did not authorize the execution of a deed, that the money be refunded or revert back to the purchaser and give the purchaser possession of the property pending the action of the Legislature, free of charge, that is, make the contract provide that rent for the property be accepted by the purchaser as liquidated damages.

I would be pleased to hear from you at your earliest convenience.

Yours very truly,

L. N. JONES."

Bellingham, October 2, 1906.

Mr. L. N. Jones, Arlington, Washington:

Dear Sir—Yours of the 1st instant just at hand, and I am very grateful for the same. It is exactly what I want to include in my recommendations to the Legislature in my report, and I think the offer is a very good one and that we will certainly accept the same. However, I do not believe that we have the authority to sell this hatchery site unless the Legislature will and does pass an act giving the Fish Commissioner authority to dispose of the same, and you will remember that was the attitude of the Governor and State Treasurer when we visited them in Olympia regarding the removal of the hatchery.

I would be quite willing to enter into a contract with the parties conditional on the event that the Legislature should pass an act authorizing us to dispose of the same and in accordance with the conditions and suggestions contained in your letter.

If the party who desires to purchase this site would pay you for any trouble in connection with drawing up this contract I should be glad to sign it with the proper reservations and conditions mentioned before.

Thanking you for the interest you have taken and the assistance you have given us in this matter all through, I remain,

Yours truly,
JNO. L. RISELAND,
State Fish Commissioner."

"Arlington, October 22, 1906.

Hon. Jno. L. Riseland, State Fish Commissioner, Bellingham, Wash.:

My Dear Mr. Riseland—I am handing you herewith an agreement between yourself and Mrs. Karolina Henderson, the party desiring to purchase the fish hatchery ground at the mouth of Jim Creek, which I have prepared along the lines suggested by me in my letter to you and which I believe entirely protects the state against any possible miscarriage.

This lady has deposited the $325.00 with me, as you will see, as trustee, to be paid over immediately upon the properly executed conveyance.

I do not think that you would in any way be complicating the State by signing this agreement and returning the copy to me to be delivered to her.

If this contract meets with your approval I wish you would sign it and return to me as soon as possible.

Yours very truly,
L. N. JONES."

"Bellingham, October 23, 1906.

Mr. L. N. Jones, Arlington, Washington:

My Dear Mr. Jones—In replying to yours of the 22nd instant, enclosing agreements with reference to the old site of the Stillaguamish hatchery, I return you herewith one of the copies signed by myself.

You will notice that I have made a little addition to the agreement specifying the time when Mrs. Karolina Henderson, the proposed purchaser of this site, should occupy the dwelling there free of charge, awaiting the action of the Legislature regarding this matter.

I believe that this addition will secure the State more fully in the event that the Legislature should fail to take action; it will, at a certain date, terminate the occupancy of this dwelling by the aforesaid Mrs. Karolina Henderson, the proposed purchaser.

Hoping this will be satisfactory and agreeable to you, we hope for favorable action by the Legislature on the same.

Yours truly,
JNO. L. RISELAND,
State Fish Commissioner."

If we sell this old site for $325 we will be $62 ahead on the deal, after having paid all the expenses for moving and rebuilding, besides having the hatchery located where natural conditions prevail and where it can be operated very cheaply in the future. I would therefore recommend and very strongly urge that the Legislature pass an act authorizing the Fish Commissioner, or the Board, composed of the Governor, Treasurer and Commissioner, to dispose of this hatchery site, and that the money derived therefrom be placed in the Fish Hatchery Fund.

(NOTE—Just after finishing the above report I received notice that the dam just completed by the Jim Creek Water, Light & Power Company had given way before the recent freshet under the heavy pressure caused by the same. This will necessitate the closing down of this station for the present season until the dam is rebuilt. Fortunately we did not lose anything, as we were just in shape ready to begin taking eggs and did not have any in the house as yet.)

I would also recommend that the Legislature pass an act authorizing the Board to dispose of the Wenatchee, Colville and Klickitat hatcheries, and that the amount derived therefrom be placed in the Fish Hatchery Fund. The conditions at these stations are so unfavorable that it would be a waste of money to again operate the same. I quote from my predecessor's fourteenth and fifteenth annual reports on the conditions at the above named plants, and the conditions have not changed since:

"KLICKITAT HATCHERY—This hatchery was built in 1900, but has never been fully completed, and never has been operated. I visited the hatchery in May and fully investigated the condition of the station, and if salmon ever did inhabit this stream, they have long since ceased to make it their spawning ground. The river empties its waters into the Columbia up-stream, making it a very unfavorable condition for the salmon to ascend. I talked with many old settlers and Indians living along the river, and they all informed me that salmon had not been plentiful for years, and for the last few seasons they had become almost extinct. Upon investigation, I found that the state had no title to this property, and that it was government land. I immediately notified the Land Commissioner of this fact, and requesetd him to reserve it as state land, and lease it to this Department for hatchery purposes, but before this was done someone filed a homestead on the same and cut us off from our good

intentions. The state, therefore, has no title to the site upon which this hatchery is located. Early in the season I learned that the Columbia River & Northern Railway Company had located their line through the land and directly across our water line. After considerable correspondence, I perfected a settlement with the railroad company for $250 as damages to our water right, but, acting under the advice of the Attorney General, he questioned the advisability of my right to accept the same, and it is doubtful if the state now will ever receive anything, directly or indirectly, from this hatchery investment. It is located on the Klickitat River, in Klickitat County, about four miles from the village of Lyle.

"COLVILLE HATCHERY.—This hatchery was constructed in 1900. It is erected on state land, of which this Department has a lease for five years. It is located about one mile from Kettle Falls, on the Colville River, in Stevens County. It was operated in 1901, but only took about 90,000 spawn, and I concluded that the expense of operation would not justify the results obtained, and closed the plant down for the last two seasons. I placed Mr. D. M. Richard in charge, at a nominal salary, with instructions to closely watch the river and report to me the number of salmon that ascended the stream each season, and he reports no salmon so far. I have no doubt that at one time this was a fine salmon stream, but a freshet they had a few years ago changed the entire condition of the river. Instead of emptying its waters down the Columbia, as in former years, it now discharges its waters upstream. The channel of the Columbia River has changed from the east side to the west side, and this, together with the freshet in the Colville River, has left the spawning grounds in the river covered with large boulders. and has completely destroyed whatever natural conditions favorable for spawning existed.

"WENATCHEE HATCHERY.—The Wenatchee hatchery is another one of the hatcheries that is closed this season. It was built in 1899, and is located on the Wenatchee River, a tributary of the Columbia River in Chelan County, near the summit of the Cascade Mountains. The extreme cold in winter, heavy snows, difficulty in controlling the river and the isolation of the plant makes it a very expensive one to operate, and it is located so far up the river that we cannot secure the best variety of fish. Had it been located below the Tumwater Canon, further down the river, it would have been less expensive to operate and would enable us to secure the early run of Chinook salmon and fulfill the purposes for which it was originally intended, but, located where it is at present, we can only get an inferior run of silversides, and as it costs over $6,000 per year to operate it, the Department did not think the expense attached to its operation justified the results obtained."

In making a recommendation for the disposal of these hatcheries we do not wish to be understood as criticising or

deprecating the work of any former Commissioner. We are simply in a position to profit by the past experience of others.

With these hatcheries disposed of, I have also had in view the establishing of one or more new hatcheries on tributaries of the Columbia River where natural conditions exist, and where the work could be carried on more economically and better results obtained. Accordingly, I would recommend that a hatchery be established on the Lewis River where I have caused the conditions to be investigated, and I embody herewith the report of Mr. John M. Crawford relative to existing conditions in regard to the same:

"Bellingham, October 10, 1906.

Honorable Jno. L. Riseland, State Fish Commissioner, Bellingham, Washington:

Dear Sir—In compliance with your orders to investigate the Lewis River in Cowlitz County with a view of ascertaining whether or not a suitable site for the location of a salmon hatchery could be found in that vicinity, I beg to submit the following:

On August 29th I left Bellingham for Kalama, from which point I expected to start for the Lewis River. While in Kalama I met Senator A. L. Watson, who, besides having a knowledge of the fishing industry, was well acquainted with the country in the vicinity of the Lewis River. Senator Watson being much interested in the propagation of salmon, volunteered to accompany me on my trip of investigation. On September 3rd we left Kalama and arrived at the little city of Woodland, situated on the Lewis River, in Cowlitz County, the same day. In Woodland we secured a team, and, accompanied by Mr. H. Bozart of that place, proceeded up the Lewis River. We found good hatchery sites about seven or eight miles from Woodland, but the river at these points was deep and swift and I was convinced that it would take a great deal of money to control the river with racks for holding the green fish. One site was found, however, that could be racked and would make a good place to hold the salmon until ripe. When I had finished my investigations here I returned to Woodland. I would state that at this time it was a little too early for the chinook salmon to be on their spawning beds and none could be seen there. The farmers living along the Lewis River informed me that numbers of the chinook salmon frequent the river every season, although the run has fallen off greatly in the past few years.

Before leaving Woodland for Bellingham, I determined to again visit that part of the country a little later in the season, and, on

October 2nd, in company with Senator Watson, I again visited the river. This time we went farther up the Lewis River, but did not find any better hatchery site than on our former visit. I ascertained, however, that a great many silverside salmon ascended the river in the fall and some steelheads in the spring. We visited all the riffles in the river for a distance of about ten miles from Woodland, but did not see any spawning salmon. However, there had been a freshet in the river a few days previous, and if any fish had been on the riffles they had gone farther up the river. The Lewis River is a large, swift stream, and a great deal of logging is being done along the banks for a distance of about twenty miles above Woodland. If a freshet should come on any time during the month of September, or early in October, it would cause a loss of the racks and what breeding fish they contained. Taking this into consideration, and also the fact that there is no hatchery on the west side of the mountains tributary to the Columbia River that handles the spawn of either the silverside or steelhead, I came to the conclusion that the best place to locate a hatchery on the Lewis River is about twenty-five miles from Woodland. At this point the spawn of the silversides can be taken, and I think some steelhead spawn, and the chances for securing the spawn of the chinook are just as good, if not better, than if the plant was located farther down the river. There are plenty of good hatchery sites in the vicinity mentioned, and lumber for building can be secured close by. The cost of construction would not be any greater than if the hatchery should be built lower down the river; besides the racks will be safer in case of a freshet, and the taking of the silverside and steelhead spawn, in addition to that of the chinook, would be a great help to the fishermen and cannerymen of the Columbia River. If the plant was erected on one of the lower sites it would be impossible to hold the racks for the purpose of taking the silverside salmon, as they ascend the river during November, and at that time of year there are always heavy freshets.

Having concluded my investigations here, I returned to Bellingham.

I wish to take this opportunity to thank Senator Watson for the interest taken and the help given during this investigation.

Respectfully submitted. JOHN M. CRAWFORD,

Superintendent Washington State Fish Hatcheries."

OYSTER INDUSTRY.

So far as the eastern oysters are concerned, this has been the banner year on the Pacific Coast. Ninety-five carloads of eastern oysters have been transplanted in the Willapa Harbor, and eight carloads in the Puget Sound District. Nearly all of these were one year old seedlings, and when full grown will be the means of supplying the large demand for this kind of oyster on the Pacific Coast and in the western states.

The outlook for our native oysters is exceedingly good, as a large number of seed oysters are being planted on private beds and the ground is being prepared and improved from year to year. The native oysters placed on the market have been in excellent condition, and the indication is that we will have as good a set of spat as ever before. It is true that the market for our oysters this season has been temporarily curtailed owing to the great catastrophe in San Francisco, the destruction of that city by earthquake and fire, the inhabitants of San Francisco prior to its destruction probably consuming one-third of the oysters produced and marketed on this coast. This market was practically destroyed for the time being, and it will take some time before it is fully restored, but with the immense increase in our population which has occurred during a number of years past and which seems to be ever increasing, there need be no apprehension on the part of oystermen as to the future of their product. The price obtained will depend largely on the judicious management of those engaged in the industry. In my opinion the question will be—can we supply and keep pace with the ever-increasing demand?

State Oyster Reserves.

When the state tide lands were surveyed and platted, a large area of oyster land reserves were established. These reserves were all supposed to contain natural oyster beds, and were made for the purpose of retaining a seed supply for those engaged in the business of oyster culture. The Tide Land Commissioners, making these reserves, selected in many places land which did not contain natural oyster beds. Quite a large

portion of these reserves, however, are really natural beds, and would be very productive if protected and improved, but the state has such a number of reserves scattered over such a large area that I predict the state will never furnish sufficient means and assistance to properly protect and improve these beds, and the consequences are that Indians, and white citizens as well, pick and gather oysters off these beds for their own use, and I believe, in some instances, even for sale and market purposes; besides, starfish and other pests are constantly preying upon them. This is especially true when the reserves are left with little or no care and protection. It will take at least $250,000 to put these reserves under a proper state of cultivation, and I do not think the state will ever appropriate such an amount of money for this purpose, nor do I think it would be wise for the state to launch into an enterprise of this kind. Under present conditions, neither the people of the state, nor any individual engaged in the oyster industry or otherwise, derive any benefit from these reserves, excepting from a very few beds, and a very small percentage of the reserves which are now producing seed oysters and which make it an object for the state to protect and supervise the same, and for men engaged in the business to gather the seed oysters for stocking their private beds which have been prepared for them. For these reasons, and others which will follow, I deem it wise, and would therefore recommend to the State Legislature, that the most of these reserves be disposed of and sold to the highest bidder in tracts not to exceed fifty acres to any individual, firm or corporation. One of the most serious objections raised by the oystermen to the sale of these reserves has been that the Legislature, in introducing bills for the sale of a part of these reserves, has failed to designate which reserves they intended to sell and which should be reserved, hence the oystermen feared that all would be sold, leaving them in a state where they would be unable to obtain their seed supply. In order to overcome this objection, I give below a list of the oyster reserves in this state, the number in which they are given, the number of plat, name of reserve, county in which reserve is situated, number of acres in each reserve, and class under which the reserves have been classified.

No.	Plat.	Name.	County.	Acres.	Class.
1	139	Hammersley's Inlet	Mason	284.691	First.
2	138½	Case's Inlet	Mason	193.030	First.
3	138	Clifton Reserve (Hoods Canal)	Mason	503.699	First.
4	137	Dewatto Bay (Hoods Canal)	Mason	62.409	Second.
5	133	Lilliwaup (Hoods Canal)	Mason	164.816	Second.
6	98	Cases Inlet (Oak Island)	Mason	23.130	Second.
7	135	Tuhayeh Bay (Hoods Canal)	Mason	31.689	Second.
8	136	Hummaumma River (Hoods Canal)	Mason	44.058	Second.
9	131	Chinion Pt. (Hoods Canal)	Mason	21.046	Second.
10	132	Tuhayeh Bay (Hoods Canal)	Mason	14.530	Third.
11	134	Skokomish River (Hoods Canal)	Mason	22.080	Third.
12	135	Union City (Hoods Canal)	Mason	193.130	Third.
13	90	Dog Fish Bay	Kitsap	92.930	First.
14	87	Pt Orchard (St. Clairs Inlet)	Kitsap	107.300	First.
15	89	Dog Fish Bay	Kitsap	81.490	Second.
16	99½	Ostrich Bay (Dyes Inlet)	Kitsap	214.821	Second.
17	86	Ostrich Bay (Dyes Inlet)	Kitsap		Second.
18	88	Ostrich Bay (Dyes Inlet)	Kitsap		Second.
19	93	Dogwallips River (Hoods Canal)	Jefferson	296.486	First.
20	93	Duckabush River (Hoods Canal)	Jefferson	159.372	Second.
21	93	Jackson Cove (Hoods Canal)	Jefferson	15.250	Second.
22	58	Quilicene Bay (Hoods Canal)	Jefferson	557.860	Second.
23	93	Fulton Creek (Hoods Canal)	Jefferson	80.787	Second.
24	61	Discovery Bay	Jefferson	145.140	Third.
25	58	Dabop Bay (Hoods Canal)	Jefferson	85.450	Third.
26	99	Totem Inlet (Oyster Bay)	Thurston	951.780	First.
27	102	Eld Inlet (Mud Bay)	Thurston	133.170	Third.
28	...	Long Island Slough	Pacific	778.830	Second.
29	...	Bay Center	Pacific	254.520	Second.
30	...	Willapa River	Pacific	476.500	Second.
31	...	Long Island	Pacific	7,046.350	First.
32		Netmah	Pacific	2,677.090	First.
		Total		15,713.944	

I would recommend that reserves Nos. 1, 2, 3, 14, 26 and 31 be retained as state reserves, and that the remaining 6,597.094 acres be disposed of. This I believe ought to sell at an average price of $50.00 per acre, which would amount to $329,854.70. If a certain per cent. of the proceeds from the sale of these beds were set aside for the improvement and protection of the remainder of the beds, they would become a great source of revenue to the state, and would supply all demands which the oystermen might make on them for their seed. The lands thus disposed of would be placed under a high state of cultivation, and would become a source of taxation to the state, as well as creating a great industry which would employ a large number of men throughout the entire year at good wages.

The beds which I would retain as reserves are now producing oysters, and are situated in various parts of the state, as follows: Willapa Harbor, 7,046.350 acres; Shelton, 284.691;

Oyster Bay, 951.780; North Bay, 193.030; Port Orchard, 107,300, and Clifton (Hoods Canal), 503,699 acres. This would supply all localities with seed oysters, with very little expense of transportation.

Another objection which the oystermen interpose against the sale of these lands is that private individuals would improve them and place them in such a high state of cultivation that they would produce such a large number of oysters that it would have a tendency to lower the price of this product. This objection and apprehension is, in my opinion, entirely unfounded, and, as I have pointed out before, any possible increase in production will fall short of keeping pace with the additional demand which will be made on this product by the ever-increasing population.

The receipts from licenses issued and seed oysters tonged on the state reserves during the year of 1906 have been as follows:

Willapa Harbor District	$2,719.70
Puget Sound District	1,049.00

The amount of money in the State Treasury to the credit of the oyster fund is $4,954.30.

REPORT OF JOINT CONFERENCE COMMISSION.

Hon. A. E. Mead, Governor of the State of Washington, Olympia, Washington:

Dear Sir—On the 24th of June, 1905, the undersigned were appointed respectively members of a Commission representing the State of Washington, to act with a Commission representing the Dominion of Canada and like Commissions from various northern boundary states of the United States, to confer with the view of agreeing upon regulations governing fishing in international waters. In October, 1905, we effected an organization, and Mr. T. J. Gorman was elected president of the Washington Commission.

In the month of September or October, 1905, the proper authorities in the Dominion of Canada commissioned Professor E. E. Prince, Rev. G. W. Taylor and Messrs. J. C. Brown, Campbell Sweeney, Richard Hall and Hon. J. P. Babcock as the Commissioners for British Columbia, to be known as the British Columbia Fisheries Commission.

The conferences of your Commission have been wholly with this British Columbia Fisheries Commission. There has been no joint meeting of the International Commission in so far as they represent

the different states or provinces along the international boundary line. On November 10th, 1905, the British Columbia Fisheries Commission and the Washington Fisheries Commission held a joint session in the City of Seattle. This meeting was preliminary and held for the purpose of exchanging courtesies and ideas as to the work to be performed by these two Commissions.

The British Columbia Fisheries Commission held a great many meetings at different places in British Columbia and invited before it all of the interests to be affected by their actions and took a large volume of testimony pertaining to the fisheries in the Province of British Columbia.

The Washington Commission, in the month of December, 1905, held a meeting at Seattle, at which they invited the various interests of Puget Sound to appear and confer with them with reference particularly to the sockeye industry in Puget Sound. Subsequently and on the 19th day of September, 1906, the joint commission met at the City of Vancouver, British Columbia, the British Columbia Fisheries Commission having then practically completed its work. At the first meeting of the joint Commission, Hon. T. R. Kershaw, Fish Commissioner of the State of Washington, was ex-officio a member of our Commission. He has been succeeded by Captain Riseland, who was ex-officio a member of our Commission at the joint meeting above referred to. As a result of the joint meeting at Vancouver, and a very careful consideration of the fishing interests of both jurisdictions, an agreement was reached as to the recommendations to be made by these Commissions to their respective governments. It is the belief of both Commissions that if the recommendations made are carried out, the sockeye salmon industry, which has been rapidly declining, will be rehabilitated. The British Columbia Fisheries Commission will make the following recommendations to the Dominion Government.

First: The gill nets in the Fraser River and in the waters and the straits inside shall not exceed sixty meshes in depth.

Second: The gill nets in all British Columbia waters shall not exceed a maximum length of one hundred fifty fathoms.

Third: Fishing on the Fraser River above New Westminster bridge shall be limited to bona fide resident white settlers along the river above the bridge during the sockeye season, or from July 1st to August 25th of each year.

Fourth: That in the off years—that is, the three years following the big run, a weekly close season shall be maintained on the Fraser River, beginning at six a. m. Saturday and ending at six p. m. on the following Monday, from July 1st to August 25th.

Fifth: The existing absolute close season in British Columbia in the Fraser River for sockeye salmon from August 25th to September 15th shall be maintained.

Sixth: The establishment and maintenance of a largely increased staff of fisheries officers on the British Columbia spawning grounds, and the prevention of abuses by Indian tribes, who have heretofore destroyed large numbers of salmon upon the spawning grounds.

Seventh: The annual operation to capacity, if possible, of the hatcheries on the Fraser River, having a minimum capacity of one hundred and ten millions and a maximum capacity of approximately one hundred and sixty millions of young fry per annum.

The Washington Commission in turn to make the following recommendations to the Governor and the Legislature of this state:

First: That a close season shall be maintained in the waters of Puget Sound commencing at six p. m. Friday and ending at six a. m. the following Sunday of each week from July 1st to August 25th of each year, and that the existing statute be modified to conform therewith.

Second: That it shall be unlawful to fish for sockeye salmon in the waters of Puget Sound between August 25th and September 15th of each year, and that any salmon of that specie taken in the traps operated on the Sound between said dates shall be liberated.

Third: That during the weekly close season, as above specified, all pound nets or traps operated on Puget Sound shall be closed by an apron placed across the entrance to the heart of the trap or pound net, which apron shall extend from above the surface of the water to the bottom of the Sound at the place where the trap is maintained and be connected securely to the webbing or piles on either side of the entrance to the heart, so as to effectually prevent any salmon from entering the heart or pot of the trap.

Fourth: That the minimum penalty for violation of the fisheries laws of the State of Washington shall be two hundred and fifty dollars and the maximum penalty at one thousand dollars.

Fifth: That of the resources derived from the sockeye salmon industry, under the statutes of the State of Washington, a sufficient sum of money shall be set aside in an appropriate fund to enable the Fish Commissioner of the state to maintain an effective patrol of the sockeye fishing ground from July 1st to August 25th each year.

T. J. GORMAN,
E. E. AINSWORTH,
A. E. WOOLARD,
E. B. DEMING,
JAMES A. KERR,
FRANK WRIGHT,
JNO. L. RISELAND,
Commissioners.

CHANGE IN LAW LICENSING CANNERIES.

The present law licensing canneries reads as follows:

"Every person, firm or corporation engaged in canning salmon shall procure a license before commencing the season's packing, as follows:

For each cannery packing less than ten thousand cases per annum	$ 100
For each cannery packing from ten thousand cases to fifteen thousand cases per annum	150
For each cannery packing from fifteen thousand to twenty thousand cases per annum	200
For each cannery packing from twenty thousand to twenty-five thousand cases per annum	250
For each cannery packing from twenty-five thousand to thirty thousand cases per annum	300
For each cannery packing from thirty thousand to forty thousand cases per annum	400
For each cannery packing from forty thousand to fifty thousand cases per annum	500
For each cannery packing from fifty thousand to sixty thousand cases per annum	600
For each cannery packing from sixty thousand to seventy thousand cases per annum	700
For each cannery packing from seventy thousand to eighty thousand cases per annum	800
For each cannery packing from eighty thousand to ninety thousand cases per annum	900
For each cannery packing from ninety thousand to one hundred thousand cases per annum	1,000

Rates on all canneries to be based upon pack of preceding year. New canneries shall pay a license of $250 until their pack is definitely known."

This cannery law is very unsatisfactory and operates very unjustly. For instance, the fee on a cannery packing 9,999 cases would be $100, while a cannery packing 10,000 cases would be compelled to pay $150, and so on down the line. Examining the law further, we come to "rates on all canneries to be based upon pack of preceding year." If the ownership of canneries remained in the same hands always, there would not, necessarily, be any fault to find with this part of the law, but owing to the transfer of ownership, or temporary lease, which has occurred quite frequently of late, it operates to the injustice of a great many. To illustrate, Tom Jones operates

the Gulf Cannery this season and packs 100,000 cases. The pack in this plant last season was 24,000 cases. Tom Jones pays $250, while in all justice he should pay $1,000. Tom Jones leases or transfers his plant to John Brown, who operates it next year and packs 5,000 cases. Under the present law Mr. Brown would be compelled to pay $1,000, while in all fairness he should pay only $50.

Quoting again from the present cannery law, "new canneries shall pay a license of $250 until their pack is definitely known." New canneries have paid this fee, and in certain instances packed less than 1,000 cases.

The glaring injustice of the present cannery law is apparent to anyone without going into further detail. I would therefore recommend that the present law be repealed and a new law enacted, to read as follows:

Canneries shall pay their license at the end of each season, as soon as the pack is completed and the exact number of cases determined; they shall pay on every case they pack at a given rate to be established by the Legislature, the license to be made a lien on the pack until the same has been paid.

TO CHANGE DATE OF FILING REPORT WITH GOVERNOR.

Under the present law, our report is to be ready and filed with the Governor on the 1st of December of each year. My experience in this Department during the past five years has proven to me that, under this law, we are forced to issue a very incomplete report, as we are unable to obtain complete data from the cannerymen who are not all-through canning, from the trapmen who have not all completed their season's catch, from the fish dealers who are in the midst of their busiest season, from our hatcheries where we have only taken about two-thirds of what is taken during the season, and from the office as to the number of licenses issued, as all licenses expire on the 31st day of March each year.

I would therefore strongly recommend that this law be changed to the first day of April. This would enable us to get a complete report along every line; the men engaged in the industry would have more time to get out a carefully prepared

and complete report; and it being the most slack period of the year in the fishing industry, it would give us more time to gather data for our report and for preparing the same. It would also afford us ample time for the printing of our report and the distribution of the same among the members of the Legislature, who, in turn, would have an opportunity of familiarizing themselves with its contents. To have it circulated in this way it would be necessary that we skip the short period from December 1st to April 1st of the present year, making our first annual report on April 1st of the year 1908. This would be turned over to the Legislature meeting in 1909, and ever after that a complete biennial report would be printed and distributed before the legislative session.

DEFINING LENGTH OF SET NETS AND THE WAY THAT THEY SHOULD BE OPERATED.

Considerable trouble has arisen in the past among set-net fishermen over the length of their nets and the way they should be operated. This laxity of the law in not describing the length of set nets, or the way they should be operated, has led set-netters to drive poles, or small piles, for a lead, hearts and pot, and to hang their gear on the same, making a trap in every sense of the word, except that there was no bottom to the net. In some instances, where conditions would permit, this kind of a contrivance has been constructed, having a maximum length of two thousand feet or more, and all for the small license fee of $2.50 per annum, and this Department has been unable to rectify the abuse, owing to the fact that there was no law touching on the subject, and fearing an adverse decision if the matter was brought into court.

I would therefore recommend that the maximum length of any set net be 300 feet, and that the construction of pots or hearts in connection with the operation of set nets be prohibited by law.

TABULATED REPORT OF FISHING INDUSTRY, PUGET SOUND DISTRICT, YEAR ENDING NOVEMBER 30, 1906.

VALUE OF CANNERIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries operated	16	$900,000 00
Salmon canneries not operated	9	48,000 00
Cold storage operated	9	75,000 00
Cold storage not operated	1	7,000 00
Fertilizer factories operated	3	30,000 00
Fertilizer factories not operated	1	10,000 00
Cod fish plants operated	5	45,000 00
Clam canneries operated	2	7,000 00
Sardine and herring canneries not operated	2	3,000 00
Capital used in operating	.....	3,300,000 00
Steamboats	27	205,000 00
Launches	22	88,000 00
Pile drivers	18	60,000 00
Scows	250	125,000 00
Fishing boats and dories	575	28,000 00
Pound nets operated	119	650,000 00
Pound nets not operated	158	65,000 00
Purse seines	80	80,000 00
Drag seines	123	35,000 00
Set nets	618	18,000 00
Gill nets	310	35,000 00
Total	.....	$5,764,000 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

	Number of men.	Average seasons earnings.	Total.
White labor	1,200	$215 00	$258,000 00
Chinese and Japanese	1,700	200 00	344,000 00
Indians	40	150 00	6,000 00
Steamboats	160	375 00	60,000 00
Launches	45	300 00	13,500 00
Pile drivers	190	225 00	42,750 00
Scows	165	225 00	37,125 00
Fishing boats and dories	210	300 00	63,000 00
Pound nets	500	300 00	150,000 00
Purse seines	580	300 00	174,000 00
Drag seines	350	300 00	105,000 00
Gill nets	650	300 00	159,000 00
Set nets	450	325 00	146,250 00
Fresh fish dealers and peddlers	510	600 00	306,000 00
Clam and mussel fishing	100	300 00	30,000 00
Crab and shrimp fishing	200	275 00	55,000 00
Oyster industry	500	500 00	250,000 00
Totals	7,550	.....	$2,199,625 00

SALMON PACKED.

VARIETY.	Number of cases.	Value.
Sockeye or bluebacks	178,748	$1,251,236 00
Chinook or springs	8,139	48,834 00
Silversides	94,497	472,485 00
Chums	149,218	708,785 50
Totals	430,602	$2,481,340 50

CRABS AND CLAMS PACKED.

	No.	Value.
Clams (cases)	8,850	$35,400 00
Crabs	1,250	8,750 00
Totals	10,100	$44,150 00

FRESH, SALTED AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

VARIETY.	Number of pounds.	Value.
Salmon, fresh, salted and smoked	14,500,000	$1,450,000 00
Sturgeon	9,000	720 00
Smelt, fresh	500,000	30,000 00
Halibut	11,000,000	990,000 00
Cod, salt and fresh	5,500,000	220,000 00
Sole	20,000	2,000 00
Flounders	50,000	3,500 00
Salmon trout	20,000	3,000 00
Herring, salt, smoked and fresh	500,000	25,000 00
Shad	5,000	250 00
Cat fish	1,000	50 00
Totals	32,105,000	$2,724,520 00

SHELL FISH OUTPUT.

VARIETY.	Output.	Value.
Clams (boxes)	28,000	$28,000 00
Crabs (dozen)	50,000	50,000 00
Shrimps (pounds)	225,000	33,750 00
Total		$111,750 00

GUANO, OIL AND GLUE OUTPUT.

	Output.	Value.
Oil (gallons)	12,500	$3,125 00
Guano (tons)	365	11,430 00
Glue (bbls.)	533	5,330 00
Total		$19,885 00

OYSTER INDUSTRY, 1906, PUGET SOUND DISTRICT.

OUTPUT OF SEED OYSTERS.

	Value.
Number of sacks tonged 1906.....3,796 at $ .25.....	$949 00
Number of licenses issued 1906. ..... 20 at 5.00.....	100 00
Total receipts Puget Sound District.....	$1,049 00

NATIVE AND EASTERN OYSTERS MARKETED, PUGET SOUND DISTRICT.

	Output.	Value.
Native (sacks).....	45,000	$180,000 00
Eastern (boxes).....	450	3,150 00
Total		$183,150 00

EASTERN OYSTERS PLANTED, PUGET SOUND DISTRICT.

8 Car Loads	1,250.00	$10,000 00

CAPITAL INVESTED.

35 Plungers.....	$28,000 00
20 Launches.....	30,000 00
Total	$58,000 00

NUMBER OF MEN EMPLOYED.

	Seasons earnings	Total
800 Men.....	$500.00	$400,000 00

NUMBER OF ACRES CULTIVATED.

550 acres (native).....	$137,500 00
40 acres (eastern).....	80,000 00
Total.....	$217,500 00

TOTAL VALUE OF OUTPUT FOR 1906 PUGET SOUND DISTRICT.

Salmon packed.....	$2,481,340 50
Crabs and clams packed.....	44,150 00
Fresh, salt and smoked fish.....	2,744,520 00
Shell fish.....	111,750 00
Guano, oil and glue.....	19,885 00
Oysters.....	183,150 00
Total.....	$5,584,795 50

TABULATED REPORT OF FISHING INDUSTRY, COLUMBIA RIVER DISTRICT, YEAR ENDING NOVEMBER 30, 1906.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries operated	8	$176,000 00
Salmon canneries not operated	3	85,000 00
Cold storage	2	40,000 00
Cold storage not operated	1	20,000 00
Capital used in operating	.....	565,000 00
Launches	25	53,500 00
Pile drivers	8	9,600 00
Scows	24	14,400 00
Fishing boats and dories	666	65,000 00
Pound nets operated	380	325,000 00
Pound nets not operated	10	10,000 00
Wheels	17	12,000 00
Purse seines	1	500 00
Drag seines and grounds	53	175,500 00
Gill nets	666	95,000 00
Set nets	120	4,800 00
Total	.....	$1,601,300 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

	Number of men.	Average seasons earnings.	Total.
White labor	61	$400 00	$24,400 00
Chinese and Japanese	200	160 00	32,000 00
Launches	50	300 00	15,000 00
Pile drivers	32	150 00	4,800 00
Scows	24	300 00	7,200 00
Pound nets	380	275 00	104,500 00
Wheels	17	250 00	4,250 00
Drag seines	530	200 00	106,000 00
Gill nets	1,000	300 00	300,000 00
Set nets	80	150 00	12,000 00
Totals	2,374	.....	$610,150 00

SALMON PACKED.

VARIETY.	Number of cases.	Value.
Sockeye or blueback	316	$2,212 00
Chinook or springs	103,272	619,632 00
Silvers	25,262	75,786 00
Chums	19,414	48,535 00
Totals	148,264	$746,165 00

FRESH, SALTED AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

VARIETY.	Pounds.	Value.
Salmon, fresh	4,472,000	$447,200 00
Salmon, salted and smoked	550,000	55,000 00
Salmon, frozen	320,000	32,000 00
Smelt	340,000	20,400 00
Sturgeon	100,000	9,000 00
Shad	45,000	1,800 00
Cod	10,000	700 00
Cat fish	4,000	320 00
Totals	5,841,000	$566,420 00

TOTAL VALUE OF OUTPUT FOR 1906, COLUMBIA RIVER DISTRICT.

Salmon packed	$744,901 00
Fresh, salt and smoked fish	566,420 00
Total	$1,311,321 00

TABULATED REPORT OF FISHING INDUSTRY. WILLAPA HARBOR DISTRICT, YEAR ENDING NOVEMBER 30, 1906.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries operated	2	$30,000 00
Oyster and clam canneries and factories operated	2	5,000 00
Capital used in operating		174,200 00
Launches	3	7,500 00
Pile drivers	2	1,000 00
Scows	1	400 00
Fishing boats and dories	2	100 00
Pound nets operated	72	21,600 00
Pound net locations not operated	2	600 00
Gill nets	2	100 00
Set nets	52	1,300 00
Total		$241,800 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

HOW EMPLOYED.	Number Men.	Average season's earnings.	Total.
Salmon canneries, white labor	8	$300 00	$2,400 00
Salmon canneries, Chinese and Japanese Oyster and clam canneries and factories, white and Chinese labor	60	160 00	9,600 00
Launches	6	260 00	1,560 00
Pile drivers	6	100 00	600 00
Scows	1	300 00	300 00
Fishing boats and dories	4	150 00	600 00
Pound nets	60	200 00	12,000 00
Gill nets	4	300 00	1,200 00
Set nets	26	150 00	3,900 00
Oysters and clams	270	500 00	135,000 00
Total	445		$167,160 00

SALMON PACKED.

	Number of cases.	Value.
Chinook or black salmon	4,000	$16,000 00
Silvers	5,340	21,360 00
Chums	5,100	13,260 00
Totals	14,440	$50,620 00

FRESH, SALTED AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

Salmon fresh, salted and smoked (pounds)	114,380	$11,439 00

OYSTER INDUSTRY 1906, WILLAPA HARBOR.

SEED OYSTERS.

Number of licenses issued 43 at $5 00	$215 00
Number of sacks tonged 25,027 at 10	2,502 70
Total receipts from Willapa Harbor	$2,717 70

NATIVE AND EASTERN OYSTERS MARKETED.

		Value.
Native (sacks)	24,000	$72,267 00
Eastern (boxes)	5,000	35,000 00
Eastern (gallons)	1,992	1,992 00
Total		$109,259 00

OYSTERS PLANTED, CAPITAL INVESTED AND OYSTER APPLIANCES USED IN OPERATION OF SAME

Eastern	95 car loads	$114,000 00
22 Plungers		10,000 00
250 Small Boats		10,000 00
20 Launches		20,000 00
Total		$154,000 00

CLAMS MARKETED

Boxes	1,110	$2,000 00

NUMBER OF MEN EMPLOYED

270 Men, season's earnings $500	$135,000 00

NUMBER OF ACRES CULTIVATED

1,000 Acres (Native)	$200,000 00
150 Acres (Eastern)	200,000 00
Total	$400,000 00

TOTAL VALUE OF OUTPUT FOR 1906, WILLAPA HARBOR DISTRICT

Salmon Packed	$ 50,620 00
Fresh, Salt and Smoked Fish	11,439 00
Oysters	109,259 00
Clams	2,000 00
Total	$173,318 00

TABULATED REPORT OF FISHING INDUSTRY, GRAYS HARBOR DISTRICT, YEAR ENDING NOVEMBER 30, 1906.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	Number.	Value.
Canneries operated	2	$45,000 00
Canneries not operated	1	4,000 00
Clam cannery	1	20,000 00
Capital used in operating		120,000 00
Steamboats	1	4,000 00
Launches	1	4,000 00
Pile drivers	1	300 00
Scows	3	300 00
Fishing boats and dories	63	3,150 00
Pound nets operated	18	12,600 00
Pound nets not operated	2	1,400 00
Gill nets	63	4,725 00
Set nets	114	4,560 00
Total		$224,035 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

	Number men.	Average seasons earnings.	Total.
Canneries, white labor	22	$400 00	$8,800 00
Canneries. Chinese and Japanese	91	160 00	14,560 00
Launches	4	250 00	1,000 00
Steamboats	3	250 00	750 00
Pile drivers	3	100 00	300 00
Scows	3	200 00	600 00
Pound nets	9	150 00	1,350 00
Gill nets	110	150 00	16,500 00
Set nets	40	100 00	4,000 00
Total	385		$47,860 00

SALMON PACKED.

	No. cases.	Value.
Chinook	2,500	$10,000 00
Silvers	11,500	43,900 00
Chums	8,000	21,500 00
Total	22,000	$75,400 00
Clams packed	10,000	$60,000 00

FRESH, SALT AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

	Pounds.	Value.
Salmon, fresh, salt and smoked	549,000	$54,900 00
Sturgeon	6,000	480 00
All other kinds	20,000	1,400 00
Total	575,000	$56,780 00

TOTAL VALUE OF OUTPUT FOR 1906, GRAYS HARBOR DISTRICT.

Salmon packed	$75,400 00
Fresh, salt and smoked fish	56,780 00
Total	$132,180 00

GENERAL SUMMARY OF THE FISHERIES OF THE STATE OF WASHINGTON, FOR THE YEAR 1906, CAPITAL AND LABOR EMPLOYED AND VALUE OF OUTPUT.

CAPITAL EMPLOYED.

Puget Sound	$3,300,000 00
Columbia River	605,000 00
Willapa Harbor	174,200 00
Grays Harbor	120,000 00
Total	$4,199,200 00

NUMBER OF PERSONS EMPLOYED.

Puggt Sound	7,550
Columbia River	2,075
Willapa Harbor	444
Grays Harbor	295
Total	10,364

EARNINGS OF LABOR EMPLOYED.

Puget Sound	$2,199,625 00
Columbia River	610,150 00
Willapa Harbor	167,160 00
Grays Harbor	47,860 00
Total	$3,024,795 00

VALUE OF OUTPUT.

Puget Sound	$5,453,160 50
Columbia River	1,311,321 00
Willapa Harbor	173,318 00
Grays Harbor	132,180 00
Total	$7,069,979 50

NUMBER OF LICENSES ISSUED DURING YEAR ENDING NOVEMBER 30, 1906.

PUGET SOUND POUND NETS.		
277 Pound nets, at $50 each	$13,850 00	$13,850 00
COLUMBIA RIVER POUND NETS.		
14 Pound nets, first-class, at $25 each	350 00	
11 Pound nets, first-class, (2 pots) at $50 each	550 00	
301 Pound nets, second-class, at $10 each	3,010 00	
64 Pound nets, second-class, (2 pots) at $20 each	1,280 00	5,190 00
WILLAPA HARBOR POUND NETS.		
74 Pound nets, at $10 each	740 00	740 00
GRAYS HARBOR POUND NETS.		
20 Pound nets, at $10 each	200 00	200 00
Total pound nets		$19,980 00

COLUMBIA RIVER FISH WHEELS.

5 Wheels, first-class, stationary, at $25 each	$125 00
5 Wheels, second-class, stationary at $10 each	50 00
7 Scow wheels, at $15 each	105 00
	$280 00

GILL NETS.

310 Gill nets, Puget Sound district, at $5.00 each	$1,550 00
666 Gill nets, Columbia River " at 5.00 "	3,330 00
2 Gill nets, Willapa Harbor " at 5 00 "	10 00
63 Gill nets, Grays Harbor " at 5.00 "	315 00
Total Gill nets	$5,205 00

SET NETS.

618 Set nets, Puget Sound district, at $2.50 each	$1,545 00
120 Set nets, Columbia River district, at $2.50 each	300 00
52 Set nets, Willapa Harbor district, at $2.50 each	130 00
114 Set nets, Grays Harbor district, at $2.50 each	285 00
Total set nets	$2,260 00

DRAG SEINES.

PUGET SOUND.		
84 Seines at $2.50 each	$210 00	
27 Seines at $7.50 each	202 50	
6 Seines at $15 each	90 00	
2 Seines at $21.75 each	43 50	
1 Seine at $22.50	22 50	
1 Seine at $22 50	27 00	
2 Seines at $30 each	60 00	
79 Purse seines at $25 each	1,955 00	
		$2,630 50
COLUMBIA RIVER.		
8 Seines at $2.50 each	$20 00	
16 Seines at $7.50 each	120 00	
1 Seine at $15	15 00	
1 Seine at $21	21 00	
1 Seine at $24	24 00	
2 Seines at $27 each	54 00	
2 Seines at $30 each	60 00	
1 Seine at $32.40	32 40	
2 Seines at $36 each	72 00	
1 Seine at $40	40 00	
14 Seines at $45 each	630 00	
4 Seines at $54 each	216 00	
1 Purse seine at $25	25 00	
		1,329 40
WILLIPA HARBOR.		
1 Seine at $2.50	$2 50	
1 Seine at $7.50	7 50	
1 Seine at $15	15 00	25 00
Total seines		$3,984 90

CANNERY LICENSES.

2 Puget Sound district, at $100 each	$200 00	
1 Puget Sound district, at $150	150 00	
1 Puget Sound district, at $200	200 00	
2 Puget Sound district, at $250 each	500 00	
1 Puget Sound district, at $300	300 00	
1 Puget Sound district, at $400	400 00	
2 Puget Sound district, at $500 each	1,000 00	
1 Puget Sound district, at $600	600 00	
1 Puget Sound district, at $800	800 00	
1 Puget Sound district, at $900	900 00	
		$5,050 00
1 Columbia River district, at $200	$200 00	
2 Columbia River district, at $300 each	600 00	
4 Columbia River district, at $400 each	1,600 00	
1 Columbia River district, at 600	600 00	
		3,000 00
1 Willapa Harbor district, at $100	$100 00	
1 Willapa Harbor district, at $150	150 00	
		250 00
1 Grays Harbor district, at $100		
1 Grays Harbor district, at $150	$100 00 150 00	250 00
Total cannery licenses		$8,550 00

FRESH FISH DEALERS' AND PEDDLERS' LICENSES.

150 Dealers' Puget Sound district, at $2.50 each	$375 00
11 Peddlers' Puget Sound district, at $2.50 each	27 50
79 Peddlers' Columbia River district, at $2.50 each	197 50
1 Peddlers' Columbia River district, at $2.50	2 50
7 Dealers' Gray's Harbor district, at $2.60 each	17 50
19 Buyers' Columbia River district, at $50 each	950 00
Total	$1,570 00

FRESH FISH DEALERS' REPORTS.
(At 90 Cents Per Ton.)

Puget Sound district	$812 15
Columbia River district	495 00
Grays Harbor district	202 50
Total	$1,509 65

REPORT OF FISH TAKEN IN POUND NETS AND WHEELS.
(At $1.00 Per Thousand Fish.)

Puget Sound district pound nets	$1,295 46
Columbia River district pound nets and wheels	98 27
Total	$1,393 73

RECAPITULATION BY DISTRICTS.

Puget Sound District	$27,134 61
Columbia River District	15,172 67
Willapa Harbor District	1,155 00
Grays Harbor District	1,270 00
Total	$44,732 28

MONEY RECEIVED FROM OTHER SOURCES.

OYSTER RECEIPTS.

Puget Sound District	$1,049 00
Willapa Harbor District	2,717 70
Total	$3,766 70

Five private hatchery licenses at $25.00	$125 00
Miscellaneous Receipts	264 62
Total	$389 62

APPROPRIATIONS FROM GENERAL FUND.—OYSTER INDUSTRY.

Survey appropriation	$4,000 00	
Expended to date		$690 35
Balance		3,309 65
	$4,000 00	$4,000 00
Miscellaneous appropriation	$3,000 00	
Expended to date		$2,973 07
Balance		26 93
	$3,000 00	$3,0000 00

LITTLE SPOKANE TROUT HATCHERY.

Appropriation	$2,500 00	
Expended to date		$1,913 30
Balance		586 70
	$2,500 00	$2,500 00

APPROPRIATIONS FOR FISHERIES DEPARTMENT FROM GENERAL FUND FOR TWO YEARS ENDING APRIL 1, 1907.

Salary of commissioner at $2,000.00 per year	$4,000 00
Traveling expenses of commissioner at $1,000 per year	2,000 00
Salary three deputies at $1,200.00 per year	7,200 00
Traveling expenses of deputies	3,600 00
Stenographer and bookkeeper at $1,000.00 per year	2,000 00
Office rent of commissioner	1,800 00
Incidental expenses,	1,000 00
Total	$21,600 00

EXPENDITURES FROM OFFICE APPROPRIATION FROM APRIL 1, 1905, TO NOVEMBER 30, 1906.

Fish Commissioner's salary, 2 years at $2,000.00 per year	$4,000 00
Expended to date	3,333 32
Balance	$666 68
Fish commissioner's traveling expenses two years	$2,000 00
Expended to date	1,592 69
Balance	$407 31
Salary of three deputies at $1,200.00 per year	$7,200 00
Expended to date	6,000 00
Balance	$1,200 00
Traveling expenses of deputies	$3,600 00
Expended to date	2,673 52
Balance	$926 48
Salary of stenographer	$2,000 00
Expended to date	1,666 66
Balance	$333 34
Office rent of commissioner	$1,800 00
Expended to date	1,500 00
Balance	$300 00
Incidental expenses	$1,000 00
Expended to date	954 36
Balance	$45 64

APPROPRIATIONS FROM FISH HATCHERY FUND, TWO YEARS.

For maintenance and construction of state fish hatcheries	$66,500 00
Engineer's salary for Puget Sound launch at $900.00 per year	1,800 00
Fuel and other expenses for launch	2,000 00
Operating expenses of Columbia river launch	3,000 00
Total	$73,300 00

EXPENDITURES FROM FISH HATCHERY FUND, FROM APRIL 1, 1905, TO NOVEMBER 30, 1906.

Engineer's salary Puget Sound launch two years	$1,800 00
Expended to date	1,628 25
Balance	$171 75
Appropriation for operating expenses and fuel Puget Sound launch	$2,000 00
Expended to date	1,712 75
Balance	$287 25
Appropriation expenses for operating Columbia river launch	$3,000 00
Expended to date	2,424 98
Balance	$575 02

AMOUNT EXPENDED FOR MAINTENANCE AND CONSTRUCTION OF HATCHERIES FROM NOVEMBER 30, 1905, TO NOVEMBER 30, 1906.

HATCHERIES.	Maintenance	Construction
Chinook	$2,119 00	
Wenatchee	28 00	
Willapa	748 34	
Snohomish	3,348 50	
White River	4,558 75	
Nisqually	1,460 37	
Dungeness	2,185 86	
Samish	1,829 51	
Kalama	2,883 82	
Chehalis	1,656 22	
Skokomisk	1,172 11	
Wind River	1,679 40	
Methow	991 07	
Colville	35 75	
Nooksack	1,718 36	
Stillaguamish	634 15	
Sauk River	4,391 54	$2,874 68
Miscellaneous	2,834 46	
Total	$34,275 42	$2,874 68
		34,275 42
Grand Total		$37,150 10

OUTPUT OF THE STATE OF WASHINGTON HATCHERIES, SEASON OF 1906.

COLUMBIA RIVER DISTRICT.

HATCHERIES.	Chinook.	Silversides.	Steelheads	Dog salmon.	Total.
Kalama	2,300,000				
Chinook	1,500,000	500,000			
Wind River	1,373,000				
Methow		1,500,000			
Little Spokane		50,000			
Klickitat (not operated)					
Colville (not operated)					
Wenatchee (not operated)					
Totals	5,173,000	2,050,000			7,223,000

PUGET SOUND DISTRICT.

Snohomish	221,400	5,800,000	577,820	2,500,000	
Nooksack		3,500,000	55,000	6,000,000	
Skokomish		3,296,000		2,000,000	
Samish		3,500,000			
White River	2,500,000	5,028,000	417,200		
Nisqually		5,000,000	218,000	3,800,000	
Dungeness	196,500	2,180,000	1,168,250		
Sauk River	1,358,000		1,027,000		
Stillaguamish (not operated)					
Totals	4,275,900	28,304,000	3,463,270	14,300,000	50,343,170

WILLAPA HARBOR DISTRICT.

Willapa	437,400	2,500,000	585,000		3,522,400

GRAYS HARBOR DISTRICT.

Chehalis	406,000	2,500,000		1,000,000	3,906,000

TROUT.

	Chelan trout.	Eastern brook trout.	Total trout.
Little Spokane	500,000	300,000	
Lake Chelan	500,000		
Totals	1,000,000	300,000	1,300,000

SUMMARY OF THE STATE HATCHERIES BY DISTRICTS

COLUMBIA RIVER DISTRICT		
Chinooks	5,173,000	
Silversides	2,050,000	
Total		7,223,000
PUGET SOUND DISTRICT		
Chinooks	4,275,900	
Silversides	28,804,000	
Steelheads	3,463,970	
Dog Salmon	14,300,000	
Total		50,343,870
WILLAPA HARBOR DISTRICT		
Chinooks	437,400	
Silversides	2,500,000	
Steelheads	585,000	
Total		3,522,400
GRAYS HARBOR DISTRICT		
Chinooks	406,000	
Silversides	2,500,000	
Dog Salmon	1,000,000	
Total		3,906,000
TOTALS		
Chinooks	10,292,300	
Silversides	35,354,000	
Steelheads	4,048,970	
Dog Salmon	15,300,000	
Total Salmon		64,995,270
Total Trout		1,300,000
Grand Total		66,295,270

GAME AND GAME FISH.

Prior to taking charge of the Department of Fisheries and Game my attention had been devoted chiefly to the propagation of food fishes. Since assuming charge of the Department I have made a careful study of the subject of game and game fish and the laws relating thereto.

The great influx of population into our state from all sections of the United States and foreign countries, and the consequent increase in hunters and fishermen, is making rapid inroads into the trout in our mountain streams, and the game animals and birds that abound in our wooded hills and fertile valleys. Realizing that heroic measures must be adopted for the enforcement of the laws for the protection of game and game fish, I have endeavored to keep in close touch with the county game wardens, as well as with the Chief Deputy State Game Warden, to the end that all the laws should be enforced and the game and fish protected.

Early in the present year a convention of all the county game wardens was called to meet in Seattle. I attended that meeting, and found nearly all of the larger counties represented. This meeting, I think, gave an impetus to game protection that has resulted in greater vigilance on the part of these officers, and the better observance of the laws.

County Game Wardens.

After a careful study of the situation and a comparison of the laws of other states with ours, I am thoroughly satisfied that the present system of county game wardens, under the advisement and direction of the Chief Deputy State Game Warden, is the best system that could be invoked, under present circumstances, for the upbuilding and preservation of game. Under this system nearly every county in the state has a game warden, who is a resident of the county, knows the woods and streams, and is better equipped to look after the protection and propagation of game than it would be looked after under any other system.

Under existing laws every person who hunts during the open season must first procure a license from the county auditor of the county in which he wishes to hunt, and if he desires to hunt in more than one county he can obtain from the state auditor a license to hunt anywhere in the state. The annual county license fee for a resident of the state is $1.00. for a non-resident of the state $5.00, and for a non-resident alien $50.00. The annual state license fee for a resident is $5.00, for a non-resident $10.00 and for a non-resident alien $50.00. The county license fees, together with all fines collected for violation of game laws, are paid to the treasurer of each county and placed by him in the game protection fund, to be used for the protection and propagation of game in said county. The state license fees are paid to the state treasurer to be placed in the state game protection fund.

Game Laws.

With few exceptions, the existing laws are sufficient to meet all requirements. The law prohibits the running of deer and other game animals with dogs, except in counties lying westward of the eastern boundary of the counties of Whatcom, Skagit, Snohomish, King, Pierce, Lewis and Skamania, where the use of dogs is permitted during the month of October. The law in this respect ought to be amended so as to prohibit the running of deer, or other game animals, with dogs in all counties of the state.

In 1903 the Legislature passed an act prohibiting the killing of Oriental or Mongolian pheasants or quail before the 15th day of October, 1906, except in Okanogan, Chelan, Kittitas, Yakima and Klickitat counties, where it was extended to the 15th day of September, 1908. The Legislature of 1905 made it legal to kill the male birds after October 15, 1905. At present there is no law in force regulating the hunting or killing of these birds, except in the five counties mentioned above.

The matter of keeping our lakes and streams well supplied with fish, and our forests with game, is very important. Thus far we have hardly kept pace with our sister states along this line. Our lakes and streams are becoming depleted and the natural spawning grounds along the mountain creeks are being occupied by the lumber and shingle mills and are being

used for the purpose of floating the timber products of the forest to the market. These conditions will necessarily continue until the forests are removed. The one solution of this important problem is the trout hatchery. Our state trout hatcheries are doing all that is possible, under present conditions, to supply this much felt need. Everything has been done that could be with the means at our disposal. Some of the more populous counties have under consideration the building and maintenance of trout hatcheries, from which to supply local lakes and streams. Whatcom county has one already completed and equipped, and will, in a short time, be able to supply the waters of the county with an abundance of trout. The state ought to have a trout hatchery west of the Cascades with which to meet the great and growing demand in that portion of the state.

In this connection I am constrained to suggest that the fisherman, as well as the hunter, should be required to pay a license. One license fee should answer for both fishing and hunting, but it is certainly unfair that the hunter should pay into the treasury all the money used for the propagation of both game and fish. Under the system suggested, both game and fish could be protected and propagated until our mountain streams afford enjoyment for our people with rod and reel, and our wooded hills for those with gun and dog.

An act of the Legislature of 1905 prohibits the hunting or killing of any deer "on any of the islands in the State of Washington." Deer are very numerous on most of these islands, especially on Puget Sound, and of course these islands are very desirable resorts for sportsmen. I think this act should be amended so as to permit hunting of deer without the use of dogs.

Every assistance should be given to the officers whose duty it is to ferert out and prosecute violators of the game laws. Their work is arduous and oftentimes perilous. Great difficulty is often experienced in obtaining evidence. No provision is made for the compensation of special deputies. It would aid greatly in the discovery and prosecution of violators if the informant, or special deputy, could be compensated at least to the extent of one-half of the fines collected in cases

where he furnishes the evidence upon which the conviction is based.

Reports from nearly all of the counties of the state lead me to believe that game is being fairly well protected; that it is on the increase; and that the strong prevailing sentiment among the people generally is in accord with the laws in favor of their enforcement.

The Legislature of 1905 fixed a bounty on cougars, wild cats, lynx, coyotes, and wolves. Sufficient safeguards were not provided for in the payment of the bounties, and frauds to the amount of $4,075.50 have been perpetrated upon the state. The perpetrators, in some instances, have been arrested and brought to justice, and a portion of the money thus secured recovered—one of the parties now being in Whatcom county jail awaiting trial. In my judgment the bounty on these animals should be retained, and in the case of cougars and wild cats should be increased, and the laws amended so as to make fraud impossible.

From data obtained by Chief Deputy State Game Warden R. C. Beebe, I believe the following to be a very fair estimate of fraudulent peculations in animal scalps:

PIERCE COUNTY.

84 Wild Cat Scalps	$210.00	
22 Coyote Scalps	22.00	$ 232.00

OKANOGAN COUNTY.

None.

YAKIMA COUNTY.

72 Wild Cat Scalps	$180.00	
24 Coyote Scalps	24.00	204.00

DOUGLAS COUNTY.

32 Wild Cat Scalps	$80.00	
41 Coyote Scalps	41.00	121.00

MASON COUNTY.

None.

ADAMS COUNTY.

None.

WHATCOM COUNTY.

64 Wild Cat Scalps	$160.00	160.00

CHEHALIS COUNTY.

30 Wild Cat Scalps	$75.00	75.00

LEWIS COUNTY.

86 Wild Cat Scalps	$215.00	
17 Coyote Scalps	17.00	232.00

THURSTON COUNTY.

46 Wild Cat Scalps	$115.00	
6 Coyote Scalps	6.00	121.00

JEFFERSON COUNTY.

129 Wild Cat Scalps	$322.50	
11 Coyote Scalps	11.00	333.50

SNOHOMISH COUNTY.

156 Wild Cat Scalps	$390.00	
40 Coyote Scalps	40.00	
1 Cougar Scalp	5.00	435.00

CLALLAM COUNTY.

None.

SKAMANIA COUNTY.

None.

SKAGIT COUNTY.

161 Wild Cat Scalps	$402.50	
17 Coyote Scalps	17.00	419.50

GARFIELD COUNTY.

None.

KITSAP COUNTY.

None.

FRANKLIN COUNTY.

None.

KLICKITAT COUNTY.

None.

CLARKE COUNTY.

53 Wild Cat Scalps	$132.50	132.50

KITTITAS COUNTY.

74	Wild Cat Scalps	$185.00	
57	Coyote Scalps	57.00	242.00

ISLAND COUNTY.

None.

COLUMBIA COUNTY.

None.

PACIFIC COUNTY.

None.

KING COUNTY.

196	Wild Cat Scalps	$490.00	
60	Coyote Scalps	60.00	
2	Cougar Scalps	10.00	560.00

FERRY COUNTY.

30	Wild Cat Scalps	$75.00	
27	Coyote Scalps	27.00	102.00

WAHKIAKUM COUNTY.

None.

SPOKANE COUNTY.

25	Wild Cat Scalps	$62.50	
128	Coyote Scalps	128.00	190.50

LINCOLN COUNTY.

77	Wild Cat Scalps	$192.50	
12	Coyote Scalps	12.00	204.50

SAN JUAN COUNTY.

None.

WALLA WALLA COUNTY.

78	Coyote Scalps	$78.00	78.00

STEVENS COUNTY.

33	Coyote Scalps	$33.00	
38	Lynx Scalps	95.00	128.00

CHELAN COUNTY.

30	Wild Cat Scalps	$75.00	
30	Coyote Scalps	30.00	105.00

ASOTIN COUNTY.

None.

COWLITZ COUNTY.

No report.

Total $4,075.50

NUMBER OF LICENSES ISSUED IN COUNTY, AMOUNT OF FINES COLLECTED FOR VIOLATION OF GAME LAWS, ETC., FROM JUNE 1, 1905, TO NOVEMBER 1, 1906.

COUNTY.	No. of licenses.	Fines.	Money in treasury June 1, 1905.	Money in treasury Nov. 1, 1906.	Arrests from June 1, 1905, to Nov. 1, 1906.	App. for game birds.	Birds bought.
Pierce	3,927	$435 00	$1,184 33	$1,647 00	21	$99 00	9 dozen.
Thurston	1,800	1,000 00	312 75	1,500 00	35	None.	None.
Whatcom	3,550	221 00	600 00	2,000 00	9	66 00	6 dozen.
Mason	1,183	80 00	243 50	694 70	8	None.	None.
Clallam	1,118	10 00	36 56	238 46	1	"	"
Snohomish	2,590	20 00	765 93	2,446 00	20	224 50	59 dozen.
Stevens	2,220	None.	442 00	1,146 13	None.	131 25	5¼ dozen.
Asotin	58	"	80 00	118 00	"	None.	None.
Benton	567	"	None.	457 00	"	"	"
Lincoln	953	15 00	148 00	690 00	3	"	"
Garfield	81	None.	70 00	157 00	None.	"	"
Wahkiakum	56	"	44 00	108 00	"	"	"
Jefferson	800	110 00	235 00	975 00	11	150 00	18 dozen.
Douglas	1,160	None.	185 00	1,138 00	1	None.	None
Chehalis	1,765	75 00	487 22	1,000 00	1	"	"
Chelan	1,452	None.	518 00	774 42	None.	"	"
Lewis	1,932	70 00	226 00	767 00	7	"	"
Kittitas	1,602	300 00	308 79	1,339 79	20	370 00	25 dozen.
Pacific	527	None.	165 00	507 00	1	None.	None.
Adams	167	35 00	None.	None.	7	"	"
King	3,395	880 30	6,793 70	5,876 93	73	2,810 00	All expended
Skagit	2,025	87 00	313 25	858 25	6	None.	None.
Total	32,928	$3,338 30	$13,159 03	$23,988 68	224	$3,850 75	.....

STATE LICENSES:	688 at $5.00 each (resident)	$3,440 00
	3 at 10.00 each (non-resident)	30 00
	Total	$3,470 00

APPROPRIATIONS FROM THE GAME PROTECTION FUND.

Received by State Auditor	$3,624.26
Expended to date	2,475.10
Balance	$1,149.16

In conclusion will say that Chief Deputy State Game Warden R. C. Beebe has made 49 arrests and got 47 convictions to his credit, these fines ranging from $10.00 to $100.00 and costs. He has also had different mill and logging companies put in fifteen fishways, and has had several dams blown out; besides investigating some 200 written complaints which have been received at this office regarding violations of the state game and fish laws.

We have also sent out about three thousand copies of the State Game and Fish Laws.

TABULATED REPORT FOR 1905

TABULATED REPORT OF FISHING INDUSTRY, PUGET SOUND DISTRICT, YEAR ENDING NOVEMBER 30, 1905.

VALUE OF CANNERIES, FISHING APPLIANCES, AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries operated	24	$940,000 00
Salmon canneries not operated	1	8,000 00
Cold storage operated	7	70,000 00
Cold storage not operated	2	15,000 00
Fertilizer factories operated	4	45,000 00
Fertilizer factories not operated		
Cod fish plants operated	4	40,000 00
Clam canneries operated	2	7,000 00
Clam canneries not operated		
Sardine and herring canneries not operated	2	5,000 00
Sardine and herring canneries operated		
Capital used in operating		3,500,000 00
Steamboats	36	295,000 00
Launches	26	50,000 00
Pile drivers	23	80 000 00
Scows	300	140,000 00
Fishing boats and dories	625	32,000 00
Pound nets operated	141	705,000 00
Pound nets not operated	117	15,000 00
Purse seines	91	90 000 00
Drag seines	68	17,000 00
Set nets	561	16,830 00
Gill nets	347	45,110 00
Total		$6,115,940 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAM BOATS, FISHING APPLIANCES, ETC.

	Number of men.	Average seasons earnings.	Total.
White labor	1,500	$215 00	$322,500 00
Chinese and Japanese	2,300	200 00	460,000 00
Indians	50	150 00	7,500 00
Steamboats	170	375 00	63,750 00
Launches	52	300 00	15,600 00
Pile drivers	210	225 00	47,250 00
Scows	180	225 00	40,500 00
Fishing boats and dories	250	300 00	75,000 00
Pound nets	550	300 00	165,000 00
Purse seines	637	300 00	191,100 00
Drag seines	200	300 00	60,000 00
Gill nets	694	300 00	208,200 00
Set nets	375	325 00	121,875 00
Fresh fish dealers and peddlers	200	600 00	120,000 00
Clam and mussel fishing	100	300 00	30,000 00
Crab and shrimp fishing	200	275 00	55,000 00
Oyster industry	500	500 00	250,000 00
Total	8,168		$2,233,275 00

SALMON PACKED.

VARIETY.	Number of cases.	Value.
Sockeye or bluebacks	825,453	$4,952,718 00
Chinook or springs	1,804	9,922 00
Humpbacks	70,992	212,976 00
Silversides	79,335	337,173 75
Chums	41,057	102,642 50
Totals	1,018,641	$5,615,432 25

CLAMS PACKED.

Clams (boxes)	3,500	$14,000 00

FRESH, SALTED AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

VARIETY.	Number of pounds.	Value.
Salmon, fresh, salted and smoked	15,000,000	$1,400,000 00
Sturgeon	9,000	720 00
Smelt, fresh	500,000	30,000 00
Halibut	11,000,000	990,000 00
Cod, salt and fresh	4,800,000	180,500 00
Sole	20,000	2,000 00
Flounders	50,000	3,500 00
Salmon trout	20,000	3,000 00
Herring, salt, smoked and fresh	500,000	25,000 00
Shad	5,000	250 00
Cat fish	1,000	50 00
Totals	31,905,000	$2,635,020 00

SHELL FISH OUTPUT.

VARIETY.	Output.	Value.
Clams (boxes)	32,000	$32,000 00
Crabs (dozen)	35,000	35,000 00
Shrimp (pounds)	225,000	33,750 00
Totals		$100,750 00

GUANO, OIL AND GLUE OUTPUT.

	Output.	Value.
Oil (gallons)	86,480	$25,944 00
Guano (tons)	726	18,150 00
Glue (barrels)	100	500 00
Total		$44,594 00

OYSTER INDUSTRY, 1905, PUGET SOUND DISTRICT.

OUTPUT OF SEED OYSTERS.

	Value.
Number of sacks tonged 1905.....3,533 at $ .25	$883 25
Number of licenses issued 1906. ..... 19 at 5.00	95 00
Total receipts Puget Sound District	$978 25

NATIVE AND EASTERN OYSTERS MARKETED, PUGET SOUND DISTRICT.

	Output.	Value.
Native (sacks)	45,000	$180,000 00
Eastern (boxes)	130	910 00
Total		$180,910 00

CAPITAL INVESTED.

30 Plungers	$25,000 00
14 Launches	20,000 00
Total	$45,000 0

NUMBER OF MEN EMPLOYED.

	Seasons earnings	Total
500 Men	$500.00	$250,000 00

NUMBER OF ACRES CULTIVATED.

500 Acres (native)	125,000 00
30 Acres (eastern)	60,000 00
Total	$185,000 00

TOTAL VALUE OF OUTPUT FOR 1905, PUGET SOUND DISTRICT.

Salmon packed	$5,615,482 25
Clams packed	14,000 00
Fresh, salt and smoked fish	2,635,020 00
Shell fish	108,750 00
Guano, oil and glue	44,594 00
Oysters	180,910 00
Total	$8,590,706 25

TABULATED REPORT OF FISHING INDUSTRY, COLUMBIA RIVER DISTRICT, YEAR ENDING NOVEMBER 30, 1905.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries operated	9	$206,000 00
Salmon canneries not operated	2	5,000 00
Cold storage	2	40,000 00
Capital used in operating		635,000 00
Launches	24	50,000 00
Steamboats	1	3,000 00
Pile drivers	6	7,200 00
Scows	24	14,400 00
Fishing boats and dories	625	60,000 00
Pound nets operated	366	300,000 00
Pound nets not operated	8	8,000 00
Wheels	13	10,000 00
Drag seines and grounds	59	200,000 00
Gill nets	444	70,000 00
Set nets	73	3,000 00
Total		$1,611,600 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

	Number of men.	Average seasons earnings.	Total.
White labor	70	$400 00	$28,000 00
Chinese and Japanese	100	160 00	30,400 00
Steamboats	4	300 00	1,200 00
Launches	48	300 00	14,400 00
Pile drivers	24	150 00	3,600 00
Scows	24	300 00	7,200 00
Pound nets	366	275 00	100,650 00
Wheels	13	250 00	3,250 00
Drag seines	590	200 00	118,000 00
Gill nets	888	300 00	266,400 00
Set nets	35	150 00	5,250 00
Totals	2,252		$578,850 00

SALMON PACKED.

VARIETY.	Number of cases.	Value.
Sockeye or blueback	914	$5,484 00
Chinook or springs	120,598	723,588 00
Silvers	18,071	76,801 75
Chums	18,288	46,535 80
Totals	157,866	$852,409 55

NOTE 1.—6,000,000 lbs. fresh and salted salmon handled on the Washington side of the Columbia River equals 125,000 cases.

NOTE 2.—The output of the Oregon canneries on the Columbia River amounts to 250,000 cases. 1,200,000 lbs. fresh fish handled on Oregon side equals 25,000 cases.

FRESH, SALTED AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

VARIETY.	Pounds.	Value.
Salmon, fresh	5,500,000	$550,000 00
Salmon, salted and smoked	500,000	50,000 00
Smelt	340,000	20,000 00
Sturgeon	100,000	9,000 00
Shad	45,000	1,800 00
Cod	10,000	700 00
Cat fish	4,000	320 00
Totals	6,499,000	$632,220 00

TOTAL VALUE OF OUTPUT FOR 1905, COLUMBIA RIVER DISTRICT.

Salmon packed	$852,409 55
Fresh, salt and smoked fish	632,220 00
Total	$1,484,629 55

TABULATED REPORT OF FISHING INDUSTRY, WILLAPA HARBOR DISTRICT, YEAR ENDING NOVEMBER 30, 1905.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	No.	Value.
Salmon canneries operated	2	$30,000 00
Oyster and clam canneries and factories operated	2	5,000 00
Capital used in operating		170,000 00
Launches	3	7,500 00
Pile drivers	2	1,000 00
Scows	1	400 00
Fishing boats and dories	5	250 00
Pound nets operated	44	13,000 00
Pound net locations not operated	6	2,000 00
Gill nets	5	250 00
Set nets	36	800 00
Total		$230,200 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

HOW EMPLOYED.	Number of men.	Average season's earnings.	Total.
Salmon canneries, white labor	8	$300 00	$2,400 00
Salmon canneries, Chinese and Japanese Oyster and clam canneries and factories, white and Chinese labor	60	160 00	9,600 00
Launches	6	260 00	1,560 00
Pile drivers	6	100 00	600 00
Scows	1	300 00	300 00
Fishing boats and dories	10	150 00	1,500 00
Pound nets	40	200 00	8,000 00
Gill nets	7	300 00	2,100 00
Set nets	15	150 00	2,250 00
Oysters and clams	270	500 00	135,000 00
Total	423		$163,310 00

SALMON PACKED.

	Number of cases.	Value.
Chinook	4,650	$20,925 00
Silvers	4,300	17,200 00
Chums	6,000	15,000 00
Totals	14,950	$53,125 00

FRESH, SALTED AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY.

Salmon fresh, salted and smoked (pounds)	114,380	$11,439 00

OYSTER INDUSTRY 1905, WILLAPA HARBOR.

SEED OYSTERS.

Number of licenses issued	54 at $5 00	$270 00
Number of sacks tonged	32,157½ at 10	3,215 75
Total receipts from Willapa Harbor		$3,485 75

NATIVE AND EASTERN OYSTERS MARKETED.

		Value.
Native (sacks)	24,089	$72,267 00
Eastern (boxes)	3,000	9,000 00
Eastern (gallons)	1,992	1,992 00
Total		$83,259 00

OYSTERS PLANTED, CAPITAL INVESTED AND OYSTER APPLIANCES USED IN OPERATION OF SAME

Eastern	48 car loads	$57,600 00
22 Plungers		10,000 00
250 Small Boats		10,000 00
20 Launches		20,000 00
Total		$97,600 00

CLAMS MARKETED

Boxes	1,110	$2,000 00

NUMBER OF MEN EMPLOYED

270 Men, season's earnings $500	$135,000 00

NUMBER OF ACRES CULTIVATED

1,000 Acres (Native)	$200,000 00
150 Acres (Eastern)	200,000 00
Total	$400,000 00

TOTAL VALUE OF OUTPUT FOR 1905, WILLAPA HARBOR DISTRICT.

Salmon packed	$53,125 00
Fresh, salt and smoked fish	11,439 00
Oysters	83,259 00
Clams	2,000 00
Total	149,823 00

TABULATED REPORT OF FISHING INDUSTRY, GRAYS HARBOR DISTRICT, YEAR ENDING NOVEMBER 30, 1905.

VALUE OF CANNERIES AND FACTORIES, FISHING APPLIANCES AND CAPITAL USED IN OPERATION OF SAME.

	Number.	Value.
Canneries operated	2	$27,000 00
Canneries not operated	1	4,000 00
Capital used in operating		60,000 00
Steamboats	1	4,000 90
Launches	1	4,000 00
Pile drivers	1	300 00
Scows	3	300 00
Fishing boats and dories	66	3,000 00
Pound nets operated	16	11,200 00
Gill nets	66	5,100 00
Set nets	74	4,000 00
Total		$122,900 00

LABOR EMPLOYED IN OPERATION OF CANNERIES, FACTORIES, STEAMBOATS, FISHING APPLIANCES, ETC.

	Number of men	Average seasons earnings.	Total.
Canneries, white labor	13	$400 00	$5,200 00
Canneries, Chinese and Japanese	83	160 00	13,280 00
Launches	4	250 00	1,000 00
Steamboats	3	250 00	750 00
Pile drivers	3	100 00	300 00
Scows	3	200 00	600 00
Pound nets	8	150 00	1,200 00
Gill nets	126	150 00	18,900 00
Set nets	25	100 00	2,500 00
Total	268		$48,730 00

SALMON PACKED.

	No. cases.	Value.
Chinook	2,050	$9,225 00
Silvers	13,000	52,000 00
Chums	7,000	18,200 00
Total	22,050	$79,425 00

FRESH, SALT AND SMOKED FISH SHIPPED AND CONSUMED LOCALLY

	Pounds.	Value.
Salmon, fresh, salt and smoked	549,000	$54,900 00
Sturgeon	6,000	480 00
All other kinds	20,000	1,400 00
Total	575,000	$56,780 00

OYSTERS PLANTED.

Eastern, 2 Car Loads	$2,400 00

TOTAL VALUE OF OUTPUT FOR 1905, GRAYS HARBOR DISTRICT.

	Value.
Salmon packed	$79,425 00
Fresh, salt and smoked fish	56,780 00
Total	$136,205 00

GENERAL SUMMARY OF THE FISHERIES OF THE STATE OF WASHINGTON, FOR THE YEAR 1905, CAPITAL AND LABOR EMPLOYED AND VALUE OF OUTPUT.

CAPITAL EMPLOYED.

Puget Sound	$3,500,000 00
Columbia River	635,000 00
Willapa Harbor	170,000 00
Grays Harbor	60,000 00
Total	$4,365,000 00

NUMBER OF PERSONS EMPLOYED.

Puget Sound	8,168
Columbia River	2,252
Willapa Harbor	423
Grays Harbor	268
Total	11,111

EARNINGS OF LABOR EMPLOYED.

Puget Sound	$2,233,275 00
Columbia River	578,350 00
Willapa Harbor	163,310 00
Grays Harbor	43,730 00
Total	$3,018,665 00

VALUE OF OUTPUT.

Puget Sound	$8,590,706 25
Columbia River	1,484,629 55
Willapa Harbor	149,828 00
Grays Harbor	136,205 00
Total	$10,361,363 80

NUMBER OF LICENSES ISSUED DURING YEAR ENDING NOVEMBER 30, 1905.

PUGET SOUND POUND NETS.		
258 Pound nets, at $50 each	$12,900 00	
1 Pound net, (2 pots) at $100	100 00	$13,000 00
COLUMBIA RIVER POUND NETS.		
3 Pound nets, first-class, at $20 each	60 00	
8 Pound nets, first-class, at $25 each	200 00	
12 Pound nets, first-class, (2 pots) at $50 each	600 00	
286 Pound nets, second-class, at $10 each	2,860 00	
65 Pound nets, second-class, (2 pots) at $20 each	1,300 00	5,020 00
WILLAPA HARBOR POUND NETS.		
50 Pound nets, at $10 each	500 00	500 00
GRAYS HARBOR POUND NETS.		
16 Pound nets, at $10 each	160 00	160 00
Total pound nets		$18,680 00

COLUMBIA RIVER FISH WHEELS.

4 Wheels, first-class, stationary, at $25 each	$100 00
5 Wheels, second-class, stationary at $10 each	50 00
4 Scow wheels, at $15 each	60 00
	$210 00

GILL NETS.

30 Gill nets, Puget Sound district, at $2.50 each	$75 00
318 Gill nets, Puget Sound " at 5.00 each	1,590 00
81 Gill nets, Columbia River " at 2.50 each	202 50
363 Gill nets, Columbia River " at 5.00 each	1,815 00
2 Gill nets, Willapa Harbor " at 2 50 each	5 00
3 Gill nets, Willapa Harbor " at 5 00 each	15 00
2 Gill nets, Grays Harbor " at 2.50 each	5 00
66 Gill nets, Grays Harbor " at 5.00 each	330 00
Total Gill nets	$4,037 50

SET NETS.

574 Set nets, Puget Sound district, at $2,50 each		$1,455 00
79 Set nets, Columbia River district, at $2.50 each		197 50
36 Set nets, Willapa Harbor district, at $2.50 each		90 00
75 Set nets, Grays Harbor district, at $2.50 each		187 50
Total set nets		$1,910 00

DRAG SEINES.

PUGET SOUND.		
44 Seines at $2.50 each	$110 00	
2 Seines at $5.00 each	10 00	
18 Seines at $7.50 each	135 00	
5 Seines at $15.00 each	75 00	
91 Purse seines at $25.00 each	2,275 00	
		$2,605 00
COLUMBIA RIVER.		
14 Seines at $2.50 each	$35 00	
2 Seines at $5.00 each	10 00	
11 Seines at $7.50 each	82 50	
2 Seines at $10.00 each	20 00	
10 Seines at $15.00 each	150 00	
2 Seines at $24.00 each	48 00	
1 Seine at $25.20	25 20	
3 Seines at $27.00 each	81 00	
3 Seines at $30.00 each	90 00	
2 Seines at $30.60 each	61 20	
1 Seine at $36.00	36 00	
8 Seines at $45.00 each	360 00	
1 Seine at $28 80	28 80	
		1,027 70
INDIVIDUALS.		
19 Puget Sound district, at $1.00 each	$19 00	
3 Columbia River " at $1.00 each	3 00	
1 Willapa Harbor " at $1.00	1 00	23 00
Total seines		$3,655 70

CANNERY LICENSES.

2 Puget Sound district, at $100 each	$200 00	
5 Puget Sound district, at $150 each	750 00	
5 Puget Sound district, at $200 each	1,000 00	
7 Puget Sound district, at $250 each	1,750 00	
2 Puget Sound district, at $300 each	600 00	
2 Puget Sound district, at $400 each	800 00	
1 Puget Sound district, at $500	500 00	
		$5,600 00
1 Columbia River district, at $150	$150 00	
2 Columbia River district, at $200 each	400 00	
1 Columbia River district, at $300	300 00	
3 Columbia River district, at $400 each	1,200 00	
2 Columbia River district, at $500 each	1,000 00	
		3,050 00
1 Willapa Harbor district, at $100	$100 00	
1 Willapa Harbor district, at $200	200 00	
		300 00
2 Grays Harbor district, at $150 each	$300 00	
		300 00
Total cannery licenses		$9,250 00

FRESH FISH DEALERS' AND PEDDLERS' LICENSES.

63 Dealers' Puget Sound district, at $2.50 each	$157 50
4 Peddlers' Puget Sound district, at $2.50 each	10 00
107 Dealers' Columbia River district, at $2.50 each	267 50
1 Peddlers' Columbia River district, at $2.50	2 50
1 Dealers' Gray's Harbor district, at $2.60	2 50
26 Buyers' licenses, at $50	1,300 00
Total	$1,740 00

FRESH FISH DEALERS' REPORTS.
(At 90 Cents Per Ton.)

Puget Sound district	$1,284 45
Grays Harbor district	12 60
Total	$1,297 05

REPORT OF FISH TAKEN IN POUND NETS AND WHEELS.
(At $1.00 Per Thousand Fish.)

Puget Sound district pound nets	$9,125 95
Columbia River district pound nets and wheels	164 88
Total	$9,290 83

RECAPITULATION BY DISTRICTS.

Puget Sound District	$34,901 90
Columbia River District	13,260 58
Willapa Harbor District	911 00
Grays Harbor District	997 60
Total	$50,071 08

MONEY RECEIVED FROM OTHER SOURCES.

OYSTER RECEIPTS.

Puget Sound District	$3,978 25
Willapa Harbor District	3,485 75
Total	$4,464 00
Private hatchery	$25 00
Miscellaneous Receipts	471 95
Total	$55,032 03

APPROPRIATIONS FROM GENERAL FUND.—OYSTER INDUSTRY.

Survey appropriation	$4,000 00	
Expended to date		$585 65
Balance		3,414 35
	$4,000 00	$4,000 00
Miscellaneous appropriation	$3,000 00	
Expended to date		$1,754 35
Balance		1,255 65
	$3,000 00	$3,0000 00

LITTLE SPOKANE TROUT HATCHERY.

Appropriation	$2,500 00	
Expended to date		$727 11
Balance		1,772 89
	$2,500 00	$2,500 00

APPROPRIATIONS FOR FISHERIES DEPARTMENT FROM GENERAL FUND FOR TWO YEARS ENDING APRIL 1, 1907.

Salary of commissioner at $2,000.00 per year	$4,000 00
Traveling expenses of commissioner at $1,000 per year	2,000 00
Salary three deputies at $1,200.00 per year	7,200 00
Traveling expenses of deputies	3,600 00
Stenographer and bookkeeper at $1,000.00 per year	2,000 00
Office rent of commissioner	1,800 00
Incidental expenses	1,000 00
Total	$21,600 00

EXPENDITURES FROM OFFICE APPROPRIATION FROM APRIL 1, 1905, TO NOVEMBER 30, 1905.

Fish Commissioner's salary, 2 years at $2,000.00 per year	$4,000 00
Expended to date	1,166 66
Balance	$2,833 34
Fish Commissioner's traveling expenses, 2 years	$2,000 00
Expended to date	373 35
Balance	$1,626 65
Salary of three deputies at $1,200.00 per year	$7,200 00
Expended to date	2,100 00
Balance	$5,100 00
Traveling expenses of deputies	$3,600 00
Expended to date	1,123 92
Balance	$2,476 08

Salary of stenographer and bookkeeper, two years	$2,000 00
Expended to date	583 33
Balance	$1,416 67
Office rent of commissioner	$1,800 00
Expended to date	600 00
Balance	$1,200 00
Incidental expenses	$1,000 00
Expended to date	371 83
Balance	$628 17

APPROPRIATIONS FROM FISH HATCHERY FUND, TWO YEARS.

For maintenance and construction of state fish hatcheries	$66,500 00
Engineer's salary for Puget Sound launch at $900.00 per year	1,800 00
Fuel and other expenses for launch	2,000 00
Operating expenses of Columbia river launch	3,000 00
Total	$73,300 00

EXPENDITURES FROM FISH HATCHERY FUND, FROM APRIL 1, 1905 TO NOVEMBER 30, 1905.

Engineer's salary, Puget Sound launch, two years	$1,800 00
Expended to date	682 50
Balance	$1,117 50
Appropriation for fuel and other expenses Puget Sound launch	$2,000 00
Expended to date	898 91
Balance	$1,101 09
Appropriation for operating expenses Columbia River launch	$3,000 00
Expended to date	1,152 91
Balance	$1,847 00

AMOUNT EXPENDED FOR MAINTENANCE AND CONSTRUCTION OF HATCHERIES FROM APRIL 1, 1905 TO NOVEMBER 31, 1905.

HATCHERIES.	Maintenance	Construction
Chinook	$766 85	
Wenatchee	24 00	
Willapa	918 37	
Snohomish	2,730 61	
White River	1,690 51	
Nisqually	430 29	
Dungeness	955 02	
Samish	394 35	
Kalama	1,653 63	
Chehalis	1,560 57	
Skokomish	385 60	
Widd River	833 42	
Methow	296 67	
Colville	16 50	
Nooksack	219 85	
Sauk River	593 38	$2,874 68
Miscellaneous	3,257 32	
Total	$16,724 94	$2,874 68
Grand Total		$19,599 92

OUTPUT OF THE STATE OF WASHINGTON HATCHERIES, SEASON OF 1905.

COLUMBIA RIVER DISTRICT.

HATCHERIES.	Chinook.	Silver-sides.	Steelheads	Dog Salmon.	Total.
Kalama	4,850,000	.....	.....	.....	.....
Chinook	300,000	150,000	.....	.....	.....
Wind River	1,320,000	.....	.....	.....	.....
Methow	.....	500,000	.....	.....	.....
Total	6,470,000	650,000	.....	.....	7,120,000

PUGET SOUND DISTRICT.

	Chinook.	Silver-sides.	Steelheads	Dog Salmon.	Sockeye.
Snohomish	864,000	6,000,000	435,500	.....	.....
Nooksack	.....	2,000,000	.....	1,000,000	.....
Skokomish	.....	3,000,000	.....	1,000,000	.....
Samish	.....	2,500,000	.....	.....	.....
White River	3,000,000	4,000,000	84,426	.....	20,000
Nisqually	.....	4,500,000	962,000	.....	.....
Dungeness	782,000	2,100,000	1,384,000	.....	.....
Sauk River	425,000	1,800,000	.....	.....	.....
Aquarium	30,000	.....	21,000	.....	300,000
Total	5,101,000	25,900,000	2,886,926	2,000,000	320,000

WILLAPA HARBOR DISTRICT.

Willapa	588,500	2,400,000	189,500	.....	.....

GRAYS HARBOR DISTRICT.

Chehalis	600,000	2,848,200	.....	1,632,000	.....

TROUT.

Little Spokane	801,250
Aquarium	20,000
Total	821,250

SUMMARY OF OUTPUT OF THE STATE HATCHERIES BY DISTRICTS.

COLUMBIA RIVER DISTRICT.		
Chinooks	6,470,000	
Silversides	650,000	
Total		7,120,000
PUGET SOUND DISTRICT.		
Chinooks	5,101,000	
Silversides	25,900,000	
Steelheads	2,886,926	
Dog salmon	2,000,000	
Sockeyes	320,000	
Total		36,207,926
WILLAPA HARBOR DISTRICT.		
Chinooks	588,500	
Silversides	2,400,000	
Steelheads	189,500	
Total		3,178,000
GRAYS HARBOR DISTRICT.		
Chinooks	600,000	
Silversides	2,848,200	
Dog salmon	1,632,000	
Total		5,080,200
TOTALS.		
Chinooks	12,759,500	
Silversides	31,798,200	
Steelheads	3,076,426	
Dog salmon	3,632,000	
Sockeyes	320,000	
Total salmon		51,586,126
Total trout		821,250
Grand total		52,407,376

OUPPUT OF GOVERNMENT HATCHERIES IN STATE OF WASHINGTON.

HATCHERIES.	Chinook.	Total.
Little White Salmon	9,000,000	
Big White Salmon	13,000,000	22,000,000

OUTPUT OF OREGON HATCHERIES TRIBUTARY TO COLUMBIA RIVER.

HATCHERIES.	Chinook.	Silversides.	Steelheads.	Total.
Salmon River	1,230,000	118,000	1,066,000	2,414,000
McKenzie River	1,941,000			1,941,000
Wallowa River	2,327,000			2,327,000
Ontario River	1,024,000			1,024,000
Total	6,522,000	118,000	1,066,000	7,706,000

OUTPUT OF HATCHERIES IN BRITISH COLUMBIA.

HATCHERIES.	Sockeye.	Total.
Tappen Siding or Shuswap	9,200,000	
Seaton Lake	41,500,000	
Pemberton	22,000,000	
Bon Accord	9,500,000	
Harrison Lake	32,000,000	114,200,000

APPROPRIATION FROM THE GAME PROTECTION FUND.

Received by State Auditor	$1,375 00
Expended to date	350 70
Balance	$1,024 30

NUMBER OF LICENSES ISSUED IN COUNTY, AMOUNT OF FINES COLLECTED FOR VIOLATIONS OF GAME LAWS, NAME OF COUNTY GAME WARDENS WITH SALARY AND AMOUNT IN COUNTY TREASURY FOR FISCAL YEAR ENDING JUNE 30, 1905.

COUNTY	Number of Licenses	Fines	County Game Warden	Salary	Amount With County Treasurer June, 30, 1905
Adams	50				
Asotin	25				$ 25 00
Benton			J. H. Merwin		
Chehalis	603	$ 50 00	H. A. Livermore	$ 50 00	387 59
Chelan	257		John Teshere	50 00	168 00
Clallam	636		Freeman Snow	60 00	36 56
Clarke	24	40 00	Sheriff acts		377 00
Columbia	120		Will Hanan	50 00	
Cowlitz	269	80 00	Wm. Lampkin	25 00	90 00
Douglas	25				141 00
Ferry	156		G. F. Baizley	25 00	89 00
Franklin	1				
Garfield	30				70 00
Island	238		Joseph Sants	30 00	117 05
Jefferson	606	21 00	Munro Wyckoff	50 00	243 75
King	2,600	59 00	H. Rief	75 00	6,810 70
Kitsap	932	88 60	P. H. Seay	50 00	28 00
Kittitas	540	10 00	w. F. Beers	50 00	540 00
Klickitat	85		Robert Baliou	10 00	
Lewis	167		H. S. Hill	70 00	226 00
Lincoln	1				148 00
Mason	131		Wm. Darling	35 00	400 00
Okanogan	2				2 00
Pacific	89				165 00
Pierce	1,541	282 00	W. W. Thompson	75 00	1,401 00
San Juan	507	75 00	S. D. Robertson	25 00	546 36
Skagit	806		Curtis Bevis	50 00	313 25
Skamania	54	22 60	Sheriff acts	25 00	194 00
Snohomish	1,110	100 00	E. W. Davies	35 00	765 93
Spokane		70 00	J. A. Unlig	40 00	
Stevens			J. D. Slocum	25 00	442 00
Thurston	433	50 00	Frank Mossman	50 00	263 75
Wahkiakum	29				44 00
Walla Walla	137		W. A. Ritz	35 00	149 00
Whatcom	762		A. P. Loomis	30 00	846 00
Whitman					
Yakima	500	10 00	E. J. Barnes	50 00	194 15
	13,466	$958 20			$15,224 09