

BOX 126
BAY CITY, OREGON

*Oregon Fish Commission
Bay City, Oregon*

REPORT

OF

CARL D. SHOEMAKER

Master Fish Warden of Oregon

AND

R. E. CLANTON

Director of Hatcheries of Oregon

FOR

1921 and 1922



BIENNIAL REPORT
 OF THE
FISH COMMISSION
 of the State of Oregon
 TO THE
 GOVERNOR AND THE THIRTY-SECOND
 LEGISLATIVE ASSEMBLY
 1923



FISH COMMISSION OF THE STATE OF OREGON

HON. F. P. KENDALL, *Chairman*.....Portland
 HON. CHRIS. SCHMIDT.....Astoria
 HON. A. H. POWERS.....Powers

CARL D. SHOEMAKER.....*Master Fish Warden*
 R. E. CLANTON.....*Director of Hatcheries*

LETTER OF TRANSMITTAL

Portland, Oregon, December 31, 1922.

Fish Commission of the State of Oregon,
Portland, Oregon.

Gentlemen:

I herewith submit to you the financial statement of the Master Fish Warden of Oregon for the years 1921 and 1922. As the fiscal year ends on November 30th, all figures and tables are brought up to that date only, except in the case of appropriations which are for the biennial period ending December 31, 1922.

The Master Fish Warden is charged with the collection of all the revenues of the Commission, but controls only the expenditures for the patrol service and office. All hatchery disbursements are made through the Director of Hatcheries.

Respectfully submitted,

CARL D. SHOEMAKER,
Master Fish Warden.

REPORT OF MASTER FISH WARDEN

HATCHERY FUND, DISTRICT NO. 1

RECEIPTS

	Dec. 1, 1920, to Nov. 30, 1921.		Balance	Dec. 1, 1921, to Nov. 30, 1922.		Balance
	No.	Amount		No.	Amount	
December 1, deficit			\$ 5,590.21	Balance		\$ 15,277.96
Gill-net licenses	1041	\$ 7,807.50		1042	\$ 7,815.00	
Set-net licenses	258	967.50		145	543.75	
Trap or pound nets	44	920.00		49	905.00	
Stationery wheels	20	700.00		19	665.00	
Scow fish wheels	9	225.00		8	200.00	
Drag seines	41	1,894.32		46	2,080.32	
Purse seines	5	125.00				
Fish dealers	475	5,354.16		429	4,753.06	
Salmon cannery	12	18,046.08		18	11,009.09	
Crawfish license	30	30.00		28	28.00	
Brokers license	3	150.00		2	100.00	
Boat license	5	103.00		9	205.00	
Bag-net licenses	3	3.00		14	14.00	
Troll licenses	193	482.50		181	452.50	
Transfers	33	33.00		14	14.00	
Additional fees		31,296.14	\$ 68,137.20		33,840.61	\$ 62,625.33
			\$ 62,546.99			\$ 77,903.29
Fines collected			\$ 1,278.00			\$ 1,348.80
Sale of confiscated property			632.22			340.62
Donations			4,015.13			.00
Sundries			136.78			1,321.57
Legislative appropriation			25,000.00			21,000.00
			\$ 93,609.12			\$ 101,914.28

HATCHERY FUND, DISTRICT NO. 1

DISBURSEMENTS

	Dec. 1, 1920, to Nov. 30, 1921	Dec. 1, 1921, to Nov. 30, 1922
Office expense	\$ 4,102.82	\$ 4,229.40
Commissioners—Salary and expenses	373.55	483.31
Patrol Service—Salaries, expenses, equipment, etc.	12,055.07	18,677.66
Director of Hatcheries account	1,789.07	2,919.08
Fishways	140.63	1,387.05
Industrial insurance	165.00	
Bonneville Central Hatchery	28,093.84	25,687.60
Klaskanine Hatchery	6,388.80	9,553.11
McKenzie River Hatchery	5,618.10	5,025.06
Willamette River Hatchery	1,194.47	1,834.28
Santiam River Hatchery	2,296.59	3,490.97
Herman Creek feeding station	10,939.07	3,919.16
Lower Santiam River Hatchery	816.26	
Oakridge Hatchery	1,532.89	3,662.87
Eagle Creek	100.00	
Salmon, Idaho	2,500.00	
Wallowa feeding ponds		9,722.67
Government co-operative work	225.00	1,537.50
	\$78,331.16	\$92,129.72

REPORT OF MASTER FISH WARDEN

HATCHERY FUND, DISTRICT NO. 2

RECEIPTS

	Dec. 1, 1920, to Nov. 30, 1921.		Balance	Dec. 1, 1921, to Nov. 30, 1922.		Balance
	No.	Amount		No.	Amount	
December 1, deficit			\$ 1,789.92	Balance		\$ 6,124.93
Gill-net licenses	395	\$ 2,962.50		424	\$ 3,180.00	
Set-net licenses	728	2,730.00		959	3,596.25	
Seine licenses	12	198.00		12	229.50	
Fish dealers' licenses	191	1,966.04		183	2,767.24	
Salmon cannery	3	966.04		5	927.62	
Crawfish	2	2.00		5	5.00	
Boat licenses	6	6.00		10	10.00	
Bag-net licenses	1	1.00		0	.....
Troll licenses	15	37.50		37	92.50	
Clam licenses	216	216.00		275	275.00	
Crab licenses	165	165.00		162	162.00	
Transfers	44	44.00		92	92.00	
Additional fees		7,680.53	\$ 16,974.61		13,662.91	\$ 25,000.02
			\$ 15,184.69			\$ 31,124.95
Fines collected			1,083.00			735.00
Sale confiscated property			13.91			50.00
Sundries			17.71			1.17
Legislative appropriation			30,000.00			43,500.00
			\$ 46,299.31			\$ 75,411.12

HATCHERY FUND, DISTRICT NO. 2

DISBURSEMENTS

	Dec. 1, 1920, to	Dec. 1, 1921, to
	Nov. 30, 1921	Nov. 30, 1922
Office expense	\$ 4,133.44	\$ 2,640.53
Commissioners—Salary and expenses	417.69	228.79
Patrol Service—Salaries, expenses, equipment, etc	4,099.70	3,175.22
Director of Hatcheries account	1,595.49	2,756.19
Fishways	277.49	.....
Industrial insurance	108.67	.....
Nehalem Hatchery	1,964.69	742.63
Gold Creek Hatchery	2,621.11	271.55
Tillamook Hatchery	721.87	.....
Alsea Hatchery	6,056.87	6,180.16
Siuslaw River Hatchery	1,423.08	1,496.33
Umpqua River Hatchery	9,719.12	26,418.03
South Coos River Hatchery	4,900.50	4,266.83
Coquille River Hatchery	2,134.66	300.00
	\$40,174.38	\$48,476.26

REPORT OF MASTER FISH WARDEN

**FINANCIAL STATEMENT, YEAR ENDING
NOVEMBER 30, 1921**

District No. 1

RECEIPTS

Deficit, December 1, 1920.....		\$ 5,590.21
Licenses issued	\$36,808.06	
Additional fees	31,296.14	
Fines	1,278.00	
Donations	4,015.13	
Sundries	136.78	
Transfer fees	33.00	
Sale confiscated property	632.22	
Legislative appropriation	25,000.00	\$99,199.33
		<hr/>
		\$93,609.12

DISBURSEMENTS

Office	\$ 4,102.82	
Commissioners	373.55	
Patrol Service	12,055.07	
Director of Hatcheries	1,789.07	
Fishways	140.63	
Industrial Insurance	165.00	
Government Co-operative Work	225.00	
Salmon Propagation—		
Operation	48,924.19	
Construction	8,934.75	
Equipment	1,621.08	\$78,331.16
		<hr/>
Balance November 30, 1921.....		\$15,277.96

SALMON PROPAGATION

District No. 1

Station	Operation	Construction	Equipment	Total
Bonneville	\$24,545.44	\$2,061.05	\$1,487.35	\$28,093.84
Klaskanine	5,903.04	485.76	.....	6,388.80
McKenzie	5,342.50	158.00	117.60	5,618.10
Willamette	1,168.14	26.33	.....	1,194.47
Santiam	2,296.59	.....	.....	2,296.59
Herman Creek	8,219.47	2,711.95	7.65	10,939.07
Lower Santiam .....	.....	816.26	.....	816.26
Oakridge	1,449.01	75.40	8.48	1,532.89
Eagle Creek .....	.....	100.00	.....	100.00
Salmon, Idaho .....	.....	2,500.00	.....	2,500.00
	<hr/>	<hr/>	<hr/>	<hr/>
	\$48,924.19	\$8,934.75	\$1,621.08	\$59,480.02

REPORT OF MASTER FISH WARDEN
FINANCIAL STATEMENT, YEAR ENDING
NOVEMBER 30, 1922

District No. 1

RECEIPTS

Balance, November 30, 1921.....		\$ 15,277.96
Licenses issued	\$28,770.72	
Additional fees	33,840.61	
Fines	1,348.80	
Sundries	1,321.57	
Transfer fees	14.00	
Sale of confiscated property.....	340.62	
Legislative appropriation	21,000.00	\$ 86,636.32
		\$101,914.28

DISBURSEMENTS

Office	\$ 4,229.40	
Commissioners	483.31	
Patrol Service	*18,677.66	
Director of Hatcheries	2,919.08	
Fishways	1,387.05	
Government Cooperative Work	1,537.50	
Salmon Propagation—		
Operation	44,105.61	
Construction	17,832.55	
Equipment	957.56	\$ 92,129.72
		\$ 9,784.56
Balance November 30, 1922.....		\$ 9,784.56

SALMON PROPAGATION

District No. 1

Station	Operation	Construction	Equipment	Total
Bonneville	†\$19,716.22	\$ 5,706.79	\$264.59	\$25,687.60
Klaskanine	7,145.08	2,275.52	132.51	9,553.11
McKenzie	4,862.59	114.24	48.23	5,025.06
Willamette	1,721.27	113.01	.....	1,834.28
Santiam	3,490.97	.....	.....	3,490.97
Herman Creek	2,300.49	1,567.09	51.58	3,919.16
Oakridge	1,771.06	1,843.57	48.24	3,662.87
Wallowa Feeding Pond..	3,097.93	6,212.33	412.41	9,722.67
	\$44,105.61	\$17,832.55	\$957.56	\$62,895.72

*Includes special ocean patrol service against purse seiners, costing over \$5000.00.

†Includes purchase of canned salmon for fish food of which about 25,000 cases are still on hand from 1921 and 1922 purchases having a value of 50 cents per case. This gives a carry over of \$12,500.00 in food.

REPORT OF MASTER FISH WARDEN

FINANCIAL STATEMENT, YEAR ENDING NOVEMBER 30, 1921

District No. 2

RECEIPTS

Deficit, December 1, 1920.....		\$ 1,789.92
Licenses issued	\$ 9,250.08	
Additional fees	7,680.53	
Fines	1,083.00	
Sale confiscated property	13.91	
Transfer fee	44.00	
Sundries	17.71	
Legislative appropriation	30,000.00	\$48,089.23

\$46,299.31

DISBURSEMENTS

Office	\$ 4,133.44	
Commissioners	417.69	
Patrol Service	4,099.70	
Industrial insurance	108.67	
Director of Hatcheries	1,595.49	
Fishways	277.49	
Salmon Propagation—		
Operation	21,385.06	
Construction	7,940.97	
Equipment	215.87	\$40,174.38
Balance November 30, 1921.....		<u>\$ 6,124.93</u>

SALMON PROPAGATION

District No. 2

Station	Operation	Construction	Equipment	Total
Tillamook	\$ 685.44	\$ 36.43	\$	\$ 721.87
Alesea	5,676.50	360.83	19.54	6,056.87
Siuslaw	1,423.08	.....	.....	1,423.08
Umpqua	3,192.10	6,392.17	134.85	9,719.12
South Coos	3,959.99	922.51	18.00	4,900.50
Coquille	2,046.66	88.00	.....	2,134.66
Nehalem	1,941.78	6.00	16.91	1,964.69
Gold Creek	2,459.51	135.03	26.57	2,621.11
	<u>\$21,385.06</u>	<u>\$7,940.97</u>	<u>\$215.87</u>	<u>\$29,541.90</u>

REPORT OF MASTER FISH WARDEN

FINANCIAL STATEMENT, YEAR ENDING NOVEMBER 30, 1922

District No. 2

RECEIPTS

Balance, November 30, 1921.....		\$ 6,124.93
Licenses issued	\$11,245.11	
Additional fees	13,662.91	
Fines	735.00	
Sale confiscated property	50.00	
Transfer fee	92.00	
Sundries	1.17	
Legislative appropriation	43,500.00	\$69,286.19

\$75,411.12

DISBURSEMENTS

Office	\$ 2,640.53	
Commissioners	228.79	
Patrol Service	3,175.22	
Director of Hatcheries	2,756.19	
Salmon Propagation—		
Operation	13,882.63	
Construction	25,755.90	
Equipment	37.00	\$48,476.26
Balance November 30, 1922.....		\$26,934.86

SALMON PROPAGATION

District No. 2

Station	Operation	Construction	Equipment	Total
Nehalem	\$ 598.04	\$ 144.59	.....	\$ 742.63
Gold Creek	271.55	.....	.....	271.55
Alsea	4,942.36	1,202.80	\$35.00	6,180.16
Siuslaw	541.38	952.95	2.00	1,496.33
Umpqua	2,962.47	23,455.56	.....	26,418.03
South Coos	4,266.83	.....	.....	4,266.83
Coquille	300.00	.....	.....	300.00
	\$13,882.63	\$25,755.90	\$37.00	\$39,675.53

REPORT OF MASTER FISH WARDEN

GENERAL FUND, SALARIES AND EXPENSES OF MASTER FISH WARDEN AND DEPUTY FISH WARDENS.

January 1, 1921, to December 31, 1922

Appropriation for two years ending December 31, 1922.....	\$27,400.00
Master Fish Warden, salary.....	\$7,200.00
Master Fish Warden, traveling expense.....	3,527.57
Office Expense—	
Postage	\$373.39
Telephone and telegraph	934.02
Office supplies	656.81
	1,964.22
Patrol Service—	
Equipment and expense.....	3,761.77
Insurance, rent and sundries	1,229.35
Deputy Fish Warden, District No. 1, salary.....	4,141.67
Deputy Fish Warden, District No. 1, expense.....	1,243.34
Deputy Fish Warden, District No. 2, salary.....	3,300.00
Deputy Fish Warden, District No. 2, expense....	1,032.08
	\$27,400.00
Balance in fund .....	.00

GENERAL FUND, SALARY OF CLERK TO DIRECTOR OF HATCHERIES

January 1, 1921, to December 31, 1922

Appropriation for two years ending December 31, 1922.....	\$2,400.00
Clerk to the Director of Hatcheries, salary.....	2,400.00
Balance in fund .....	.00

SPECIAL APPROPRIATION FOR THE PURCHASE OF COLUMBIA RIVER PATROL BOAT

Appropriation, 1921-1922	\$6,500.00
Boat	\$3,229.60
Engine	3,150.00
Freight	120.40
	\$6,500.00
Balance in fund .....	.00

SPECIAL APPROPRIATION CONSTRUCTION AND MAINTENANCE OF FISH LADDERS IN DESCHUTES RIVER

Appropriation, 1921-1922	\$15,000.00
Labor	\$8,473.74
Tools and supplies	4,721.26
Employees' expenses	303.57
Freight, cartage and express	569.75
Lumber	113.10
Contractor	818.58
	\$15,000.00
Construction	\$15,000.00
Balance in fund .....	.00

REPORT OF MASTER FISH WARDEN

SPECIAL APPROPRIATION, RECONSTRUCTION, MAINTENANCE AND WATER SUPPLY SYSTEM, UMPQUA HATCHERY

(Expended by Director of Hatcheries)

Appropriation, 1921-1922		\$15,000.00
Labor	\$3,601.75	
Tools and supplies	1,959.56	
Employees' expenses	166.69	
Contractor	9,000.00	
Cartage	272.00	\$15,000.00
Construction		<u>\$15,000.00</u>
Balance in fund .....		.00

SPECIAL APPROPRIATION, CONSTRUCTION, MAINTENANCE AND OPERATION OF FEEDING PONDS ON WALLOWA RIVER

(Expended by Director of Hatcheries)

Appropriation, 1921-1922		\$10,000.00
Labor	\$1,075.33	
Tools and supplies	72.22	
Employees' expenses	69.95	
Lumber	9.46	
Land	1,130.00	
Contractor's fee	7,571.04	
Abstract	72.00	\$10,000.00
Construction		<u>\$10,000.00</u>
Balance in fund .....		.00

SPECIAL APPROPRIATION, CONSTRUCTION AND OPERATION, FEEDING PONDS, KLASKANINE HATCHERY

(Expended by Director of Hatcheries)

Appropriation, 1921-1922		\$10,000.00
Labor	\$4,948.21	
Tools and supplies	2,417.28	
Employees' expenses	37.30	
Freight, cartage and express	1,270.81	
Lumber	1,321.93	
Office expense	4.47	\$10,000.00
Construction		<u>\$10,000.00</u>
Balance in fund .....		.00

REPORT OF MASTER FISH WARDEN

**SPECIAL APPROPRIATION, WATER SUPPLY SYSTEM FOR
SANTIAM HATCHERY**

(Expended by Director of Hatcheries)

Appropriation, 1921-1922			\$ 8,000.00
Labor	\$4,747.44		
Tools and supplies	987.51		
Lumber	432.59		
Lease of land	36.00		
Employees' expenses	357.63		
Freight, cartage and express	96.98		
Office expense	35.70		
Right-of-Way	660.00		
Survey	39.65		
Abstracts	125.00		
Land	481.50	\$ 8,000.00	
<hr/>			
Operation	\$ 87.52		
Construction	7,889.48		
Equipment	23.00	\$ 8,000.00	
<hr/>			
Balance in fund .....			.00

**SPECIAL APPROPRIATION, CONSTRUCTION AND OPERA-
TION, UPPER WILLAMETTE RIVER HATCHERY**

(Expended by Director of Hatcheries)

Appropriation, 1921-1922			\$10,000.00
Labor	\$6,261.80		
Tools and supplies	1,762.86		
Employees' expenses	77.59		
Freight, cartage and express	87.65		
Lumber	759.42		
Boots and coats	42.44		

Game Commission

Lumber	\$635.74		
Labor	372.50	1,008.24	\$10,000.00
<hr/>			
Operation		2,018.53	
Construction		7,974.97	
Equipment		6.50	\$10,000.00
<hr/>			
Balance in fund .....			.00

REPORT OF MASTER FISH WARDEN

SEALION FUND

RECEIPTS

April 1, 1921, to November 30, 1921

1406 gill-net certificates	\$3,515.00	
342 set-net certificates	855.00	
208 troll certificates	520.00	
44 trap certificates	440.00	
57 seine certificates	1,140.00	
15 canner certificates	750.00	
	<u> </u>	\$ 7,220.00

December 1, 1921, to November 30, 1922

1466 gill-net certificates	\$3,665.00	
436 set-net certificates	1,090.00	
210 troll certificates	525.00	
49 trap certificates	490.00	
57 seine certificates	1,140.00	
20 canner certificates	1,000.00	\$7 910.00
	<u> </u>	
Total		\$15,130.00

DISBURSEMENTS

April 1, 1921, to November 30, 1922

On account of bounty	\$13,923.92	
Office expense	500.00	\$14,423.92
	<u> </u>	
Balance on hand November 30, 1922		\$ 706.08

Total number Seal and Sealion Scalps taken in 1921	1863
Total number Seal and Sealion Scalps taken in 1922	1595

LETTER OF TRANSMITTAL

Bonneville, Oregon, December 31, 1921.

To the Fish Commission of the State of Oregon.

Gentlemen:

Complying with the provisions of the law, I hereby submit for your consideration, the Annual Report of the Department of Hatcheries and Fish Culture, for the year 1921.

As can be seen by the following figures, there were liberated in the various streams of the state, more than 50 millions of young salmon, a larger per cent of which had attained the sizes, from 3 to 5 inches in length.

No serious trouble was experienced at any of the stations, until after the young fish, held in the ponds during the summer were released, but during the middle of November an unusual snow storm, followed by high water, caused a serious loss of young fish and eggs, which was to supply the crop in 1922.

Almost every station was affected, but the greatest loss was experienced at Bonneville, where the so-called tapioco snow ran down in the canyon, from which our water supply is secured, cutting off the same for a period of 26 hours. Notwithstanding these disastrous conditions, several millions of young fish and eggs were saved.

Following the breaking up of the storm, a pumping plant was installed at Bonneville, taking the water from a well, which will prevent such losses in the future.

The storm conditions not only hampered the department by causing the loss of fish and eggs but it did a great deal of damage to almost all of the hatchery plants.

More or less temporary repairs have been made at the stations affected, and if the flood and storm conditions are not repeated, no further loss should be experienced during the balance of the winter.

Respectfully submitted,

R. E. CLANTON,
Director of Hatcheries and Fish Culture.

**REPORT OF SALMON LIBERATED—SHOWING STATIONS
AND STREAMS**

SPRING CHINOOKS

District No. 1

Bonneville Central, into Tanner Creek, and Columbia River.....	8,402,015	
(53,429 of these were marked.)		
Herman Creek, into Columbia River....	3,306,112	
Klaskanine River.....	4,025,765	
Oakridge	920,000	
	<hr/>	16,653,892

District No. 2

Nehalem	579,300	
Siuslaw	614,735	
Umpqua River.....	2,715,075	
	<hr/>	3,909,110
Total, Spring Chinooks.....		<hr/> 20,563,002

FALL CHINOOKS

District No. 1

Bonneville Central.....	260,810	
	<hr/>	260,810

District No. 2

Gold Creek.....	783,480	
Alsea River.....	3,019,870	
So. Coos River.....	1,316,780	
Coquille River.....	890,630	
	<hr/>	6,010,760
Total, Fall Chinooks.....		<hr/> 6,271,570

SILVERSIDES

District No. 1

Bonneville Central.....	786,700	
McKenzie River.....	981,660	
Klaskanine River.....	922,525	
Oakridge	1,540,000	
	<hr/>	4,230,885

Carried Forward, Total Silversides, District No. 1.....	4,230,885
Carried Forward, Total Spring and Fall Chinooks.....	26,834,572
Total, Spring and Fall Chinook, brought forward.....	26,834,572
Total, Silversides, brought forward and continued	4,230,885

District No. 2

Gold Creek.....	1,375,260		
Nehalem	410,225		
Alsea River.....	6,859,321		
Siuslaw	574,620		
So. Coos River.....	2,423,530		
Coquille River.....	1,340,880		
		<u>12,983,836</u>	
Total, Silversides.....			<u>17,214,721</u>

SOCKEYES

District No. 1

Herman Creek, Liberated in April, 1921, 18 months old, 4 inches long.....	1,986,985		
Herman Creek, marked.....	25,600		
Liberated by escaping during the month of October, 1921.....	400,000		
Escaped during the month of November, 1921, during snowstorm and flood, at Herman Creek.....	1,651,385		
		<u>4,063,970</u>	
Total, Sockeyes.....			<u>4,063,970</u>

STEELHEADS

District No. 1

Bonneville Central, liberated into Tanner Creek	392,000		
Liberated into Eagle Creek.....	358,100		
		<u>750,100</u>	

District No. 2

Gold Creek.....	1,051,150		
Alsea River.....	913,719		
		<u>1,964,869</u>	
Total, Steelheads.....			<u>2,714,969</u>
Total, all species liberated.....			<u>50,828,232</u>

NOTE—Chinook Salmon, liberated, were from eggs taken in Fall of 1920.

**TABLE SHOWING SPECIE, AGE AND NUMBER OF SALMON
LIBERATED, BY DISTRICT**

SPRING CHINOOKS

District No. 1		
4 months.....	3,136,845	
6 months.....	1,588,920	
7 months.....	1,000,000	
8 months.....	132,840	
9 months.....	302,390	
11 months.....	2,446,246	
12 months.....	655,410	
13 months.....	60,781	
Total		16,653,892

(53,429 of these were marked at Bonneville)

District No. 2		
3 months.....	614,735	
4 months.....	2,125,000	
6 months.....	341,260	
8 months.....	579,300	
9 months.....	248,815	
Total		3,909,110

FALL CHINOOKS

District No. 1		
10 months.....	260,810	
Total		260,810

District No. 2		
7 months.....	105,150	
*7 months.....	785,480	
8 months.....	3,019,870	
9 months.....	1,316,780	
12 months.....	783,480	
Total		6,010,760

*Escaped when pond overflowed, high water, 1921.

SILVERSIDES

District No. 1		
4 months.....	981,660	
5 months.....	922,525	
6 months.....	786,700	
10 months.....	1,540,000	
Total		4,230,885

District No. 2		
4 months.....	1,340,880	
5 months.....	1,987,000	
6 months.....	1,800,000	
7 months.....	3,333,755	
8 months.....	1,675,260	
9 months.....	2,272,321	
10 months.....	574,620	
Total		12,983,836

Total, Spring and Fall Chinooks and Silversides	44,049,293
--	-------------------

NOTE—The 3,136,845 Spring Chinooks reported liberated at 4 months old, escaped from the Creek Ponds, at the Klaskanine Hatchery, during high water.

Total, Spring and Fall Chinooks, and Silversides, R. F.....44,049,293

SOCKEYES

District No. 1

10 months (marked).....	25,600	
18 months.....	1,986,985	
Escaped at 11 months of age.....	400,000	
Escaped by cause of high water in Herman Creek, in November, 1921, at the age of 12 months....	1,651,385	
Total	<u>4,063,970</u>	4,063,970

STEELHEADS

District No. 1

3 months.....	178,100	
4 months.....	560,000	
8 months.....	12,000	
Total	<u>750,100</u>	750,100

District No. 2

4 months.....	1,964,869	
Total	<u>1,964,869</u>	1,964,869
Total, all species.....		<u>50,828,232</u>

REPORT OF EGG-TAKE FOR 1921

SPRING CHINOOKS

District No. 1	
Reserve	5,280,780
McKenzie	7,063,985
Santiam	4,000,884
	16,345,649

SPRING CHINOOKS

District No. 2	
Umpqua	2,598,855
	2,598,855
Total, Spring Chinooks.....	18,944,504

FALL CHINOOKS

District No. 1	
Bonneville	895,000
	895,000

FALL CHINOOKS

District No. 2	
So. Coos River.....	2,366,500
Tillamook	875,000
Alsea	1,324,015
	4,565,515
Total, Fall Chinooks.....	5,460,515

SILVERSIDES

District No. 2	
Alsea	12,112,000
So. Coos.....	2,734,500
Tillamook	1,378,000
Nehalem	490,000
Coquille	1,450,000
	18,164,500
Total, Silversides.....	18,164,500

STEELHEADS

District No. 2	
Alsea	1,500,000
Tillamook	1,056,345
	2,556,345
Total, Steelheads.....	2,556,345
Sockeye eggs, received from the U. S. Bureau of Fisheries, Afognak, Alaska	5,387,500
Total, all salmon egg-take, for 1921	50,513,364

NOTE.—All fish resulting from Chinook eggs reported above, except 785,480, will be liberated in 1922.

Fish resulting from Sockeye eggs reported will be held and liberated in 1923.

All fish resulting from Steelhead and Silverside eggs planted same year eggs taken.

LETTER OF TRANSMITTAL

Bonneville, Oregon, December 31, 1922.

To the Fish Commission of the State of Oregon.

Gentlemen:

Complying with the provisions of the law, I herewith submit for your consideration, my annual report covering the operations of the department of Hatcheries and Fish Culture, for the year 1922.

The unusual severe weather conditions prevailing during the early part of the winter, seriously affected the work of the department. The losses occurring during the snow storm and flood during November last, reduced the number of fish planted this season, considerably below that of the last year, but having a smaller number of fish to care for, we were enabled to hold all of them for a longer period, and a larger size before liberating.

While we lost a number of parent fish on account of the break in the "stop racks", in the Willamette and McKenzie rivers, during the first part of June, repairs were made in time to stop enough adult fish, to bring our take of spring chinook salmon eggs, nearly up to normal takes. These, with the eggs secured elsewhere, brought the egg take up to date, to better than 45 millions. This number, with the eggs that will be secured during the early part of the coming year, should give us a supply to assure an output of fish for 1923, equal to that of 1921.

As the members of your board know, the securing of sufficient food for the young fish, at a price within the funds available, has been one of our greatest problems, the amount used varying from 200 to 250 tons annually. I am pleased to say that we have on hand about 25,000 cases of condemned salmon, or 1,200,00 lbs., 46,400 lbs. of rejected mild cured salmon, 112,000 lbs. of salmon eggs and 15,000 lbs. of spent salmon, making a total of 1,373,400 lbs. This with the smelt and salmon eggs, which we can reasonably expect to take, will assure us a food supply for the next three years. The food on hand is paid for, having been practically all charged up to the operation of the Bonneville hatchery, during the past 2 years.

Permanent improvements have been made at Bonneville, and the power plant dam has been reconstructed. A large flume and a new pumping plant have been installed, with sufficient capacity to assure a water supply, if the gravity system should again be stopped by snow or floods. Other necessary repairs and improvements have been completed.

The feeding lakes at Wallowa have been completed, and more than 6 million young sockeye salmon are now being held there. A hatchery building 48x100 ft. is being erected, water pipes have been installed, and other necessary improvements made. The success of this plant is made possible by adjacent springs which furnish the winter's water supply. During 25 degrees below zero weather, the ponds did not freeze over. Plans are made for additional ponds to hold several millions of chinook fry. The cost of these improvements will not be great.

The new pond system at the Klaskanine hatchery has been completed, and the grounds filled in, roadways laid out, shrubbery and trees planted, which greatly improves the appearances of the station.

The new hatchery and feeding ponds at Oakridge, on the Willamette river, have been completed, 4 million young salmon are now being held there.

The work on additional water supply, at the Santiam hatchery, has been completed. The new feeding pond system is well under way, and other necessary improvements have been made.

A new flume and feeding pond system has been installed at the Siuslaw hatchery, 1 million chinook eggs and salmon are on hand for the coming season's work.

Repairs have been made upon the dam at the Umpqua hatchery, and additional feeding ponds will be provided during the early part of the summer.

One million young chinook salmon are now in the troughs of this hatchery.

The Nehalem hatchery has been opened up, and 1 million chinook salmon eggs received there from the Columbia river. Some very necessary improvements should be made at this station, the coming year.

Five hundred thousand chinook eggs have been shipped in from the Columbia river to the Gold Creek hatchery, and arrangements have been made with the Game commission to hatch and care for the young fish, until liberated during the coming summer.

With the new improvements and additions made to our feeding pond systems in District No. 1, the capacity for holding and feeding young fry, have been materially increased, and the department will be enabled to properly care for a much larger number of fish if the eggs can be secured.

With the balance of funds carried over to the credit of District No. 2, together with the additional revenue provided by the tonnage tax, the department will be enabled to increase and enlarge the feeding pond systems at the coast stream hatcheries, and make other improvements, which will add to the efficiency of the plants.

Respectfully submitted,

R. E. CLANTON,
Director of Hatcheries and Fish Culture.

**REPORT OF SALMON LIBERATED, SHOWING STATIONS
AND STREAMS 1922**

SPRING CHINOOKS

District No. 1

Bonneville Central.....	3,312,327	
McKenzie River.....	532,313	
Klaskanine River.....	3,012,741	
Herman Creek.....	1,265,741	
Oakridge	2,712,775	
	<hr/>	10,835,545

District No. 2

Umpqua River.....	2,088,590	
	<hr/>	2,088,590
Total Spring Chinook.....		<hr/>
		12,924,135

FALL CHINOOKS

District No. 1

Bonneville Central.....	401,980	
	<hr/>	401,980

District No. 2

Alsea River.....	1,311,305	
So. Coos.....	2,174,290	
	<hr/>	3,485,595
Total, Fall Chinooks.....		<hr/>
		3,485,595

SILVERSIDES

District No. 1

Bonneville Central.....	1,504,290	
Klaskanine River.....	2,702,650	
	<hr/>	4,206,940

District No. 2

Alsea River.....	4,783,435	
So. Coos River.....	1,636,420	
	<hr/>	6,419,855
Total Silversides.....		<hr/>
		10,626,795

STEELHEADS

District No. 1

Herman Creek.....	750,555	
	<hr/>	750,555

District No. 2

Alsea River.....	2,397,869	
	<hr/>	2,397,869
Total, Steelheads.....		<hr/>
		3,148,424

SOCKEYES

District No. 1

Wallowa,—(Liberated into Wallowa River by escaping. Due to the breaking of dike of lake).....	467,000 (7 mos. old)	
	<hr/>	467,000
Retained in Wallowa Feeding Lakes.	952,261 (13 mos. old)	
	<hr/>	

Total, all species, liberated, (both dis- tricts).....		<hr/>
		31,053,929

NOTE.—The apparent discrepancy between the egg take of chinook eggs in 1921 and the release of young chinook salmon in 1922 is explained by the very heavy loss of eggs and young fish at different stations during the severe snow and sleet storms which occurred in November, 1921, and heavy floods immediately thereafter.

**TABLE SHOWING SPECIE, AGE AND NUMBER OF SALMON
LIBERATED BY DISTRICTS**

1922

SPRING CHINOOKS

District No. 1		
7 months.....	690,855	
8 months.....	532,313	
9 months.....	4,428,871	
10 months.....	4,021,882	
11 months.....	1,161,624	
Total.....	<u>10,835,545</u>	10,835,545
(100,118 of these were marked)		
District No. 2		
4 months.....	465,353	
5 months.....	923,617	
6 months.....	124,572	
8 months.....	475,265	
9 months.....	99,783	
Total.....	<u>2,088,590</u>	2,088,590

FALL CHINOOKS

District No. 1		
9 months.....	401,980	
Total.....	<u>401,980</u>	401,980
District No. 2		
6 months.....	2,174,290	
8 months.....	1,311,305	
Total.....	<u>3,485,595</u>	3,485,595

SILVERSIDES

District No. 1		
9 months.....	4,206,940	
Total.....	<u>4,206,940</u>	4,206,940
District No. 2		
3 months.....	1,219,615	
4 months.....	3,563,820	
5 months.....	1,636,420	
Total.....	<u>6,419,855</u>	6,419,855
Total, Spring and Fall Chinooks, and Silversides		<u>27,438,505</u>

STEELHEADS

District No. 1		
4 months.....	750,555	
Total.....	<u>750,555</u>	750,555
District No. 2		
4 months.....	2,397,869	
Total.....	<u>2,397,869</u>	2,397,869

SOCKEYES

District No. 1		
7 months.....	467,000	
Total.....	<u>467,000</u>	467,000
Total, all specie.....		<u>31,053,929</u>
(467,000 Sockeyes escaped, due to break in dike of lake, 7 months old.)		

SUMMARY OF FISH LIBERATED—1921-1922

	1921	1922
Grand Total Spring Chinook Salmon.....	20,563,002	12,924,135
Grand Total Fall Chinook Salmon.....	6,271,570	3,887,575
Grand Total Silversides.....	17,214,721	10,626,795
Grand Total Sockeyes.....	4,063,970	467,000
Grand Total Steelheads.....	2,714,969	3,148,424
	<hr/>	<hr/>
Grand Total, all species.....	50,828,232	31,053,929
Grand Total for both years.....		81,882,161

REPORT OF EGG-TAKE—1922

SPRING CHINOOK

District No. 1

McKenzie	5,681,964	
Reserve	5,544,760	
Santiam	4,053,310	
	<hr/>	
Total, Spring Chinooks.....	15,280,034	15,280,034

FALL CHINOOKS

Received from other departments.....	4,500,000	
Total, Fall Chinooks.....	<hr/>	4,500,000

SOCKEYES

District No. 1

Herman Creek.....	303,800	
Received from the U. S. Bureau of Fisheries	5,140,224	
	<hr/>	
Total, Sockeyes.....	5,444,024	5,444,024

SPRING CHINOOKS

District No. 2

Alesea	1,055,064	
Total, Spring Chinooks.....	<hr/>	1,055,064

FALL CHINOOKS

District No. 2

Alesea	303,231	
So. Coos	3,200,000	
	<hr/>	
Total, Fall Chinooks.....	3,503,231	3,503,231

STEELHEADS

District No. 2

Alesea	3,431,118	
Total	<hr/>	3,431,118

SILVERSIDES

District No. 2

Alesea	9,514,715	
So. Coos	1,804,500	
	<hr/>	
Total, Silversides.....	11,319,215	11,319,215

Total, all salmon egg-take for 1922 45,532,686

Fish resulting from Chinook eggs reported above will be liberated in 1923.

Fish resulting from Sockeye eggs reported above will be liberated in 1924.

All fish resulting from Steelhead and Silverside eggs planted same year eggs taken.

**EGGS AND FISH ON HAND AT VARIOUS STATIONS
JANUARY 1, 1923**

SOCKEYES

District No. 1

Wallowa Feeding Lakes, Wallowa River	6,024,865		
Bonneville, Columbia River	300,000		
		<u>6,324,865</u>	
Total, Sockeyes			6,324,865

CHINOOKS

District No. 1

Bonneville, Columbia River	7,541,000		
Klaskanine	2,561,653		
Oakridge, Willamette River	4,000,000		
Santiam, Santiam River	1,520,473		
		<u>15,622,126</u>	
Total, Chinooks			15,622,126

CHINOOKS

District No. 2

Nehalem River	*1,000,100		
Coos River	3,145,600		
Umpqua River	* 997,291		
Gold Creek, Trask River	* 501,150		
Alsea River	1,346,944		
Siuslaw	*1,000,000		
		<u>7,991,085</u>	
Total, Chinooks			7,991,085

*Received from Columbia River.

SILVERSIDES

District No. 2

Coos River	3,123,500		
Alsea	1,307,811		
		<u>4,431,311</u>	
Total, Silversides			4,431,311
Total, all species			<u>34,369,387</u>

SALMON EGGS TRANSFERRED FROM DISTRICT No. 2 TO No. 1

1921

Alsea River	†1,016,400
Alsea River	† 492,380

1922

Alsea River	†4,504,000
Alsea River	†1,000,080

SALMON EGGS TRANSFERRED FROM DISTRICT No. 1 TO No. 2

1922

Columbia River	3,507,952 (Chinooks)
----------------	----------------------

‡Silversides.

†Steelheads.