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BIENNIAL REPORT

MAR 27 1961



1958 - 1960



FISH COMMISSION
OF THE
STATE OF OREGON

On the Cover . . .

Among commercial fishermen and sportsmen alike, the salmon occupies a special niche in the galaxy of Oregon's fishes.

The gillnetter shown on the cover took his prime chinook from the Columbia River near Corbett, above Portland. The rod and reeler with a salmon hookup found action from the Yaquina Bay jetty near Newport.

BIENNIAL REPORT

TO THE
Governor and the Fifty First
Legislative Assembly

FISH COMMISSION OF THE STATE OF OREGON

HERMAN P. MEIERJURGEN, Chairman, Beaverton

EDW. G. HUFFSCHMIDT, Portland

LEONARD D. HALL, Charleston

ROBERT W. SCHONING, State Fisheries Director

COMMISSIONERS:
HERMAN P. MEIERJURGEN, CHAIRMAN, BEAVERTON
EDW. G. HUFFSCHMIDT, PORTLAND
LEONARD N. HALL, CHARLESTON



STATE OF OREGON
FISH COMMISSION OF OREGON
307 STATE OFFICE BLDG., 1400 S. W. 5TH AVENUE
PORTLAND 1

LETTERS OF TRANSMITTAL

Portland, Oregon

To His Excellency, THE GOVERNOR,
and the Members of the Fifty-
First Legislative Assembly

Gentlemen:

Herewith is transmitted the biennial report of the
Fish Commission of the State of Oregon for the period
from July 1, 1958 to June 30, 1960.

FISH COMMISSION OF THE STATE OF OREGON

Herman P. Meierjorgen, Chairman
Edw. G. Huffschnidt
Leonard N. Hall

Portland, Oregon

FISH COMMISSION OF THE STATE OF OREGON
Portland, Oregon

Gentlemen:

In accordance with the provisions of statute, I herewith
submit for your consideration the report of the operation of
the department together with financial statement for the
biennial period July 1, 1958 to June 30, 1960.

Respectfully submitted,

Robert W. Schoning
State Fisheries Director

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"The many Commission activities are equally beneficial to sportsmen and commercial fishermen alike."

Introduction...

The 1958 - 60 biennium was a period of continued progress in the management of the food fish resources of Oregon. Salmon, the most highly valued of the state's fishes, quite naturally came in for a major share of the Fish Commission's attention. Beset by an oppressive array of obstacles presented by the advance of civilization with its accompanying dams, road construction, stepped up logging operations, increasing demand for water, growing industrial and residential waste disposal problems and the continued removal of spawning gravel for construction, the future would appear far from bright for this keystone of Oregon's renewable resources.

The Fish Commission, however, continues to forge ahead in a concerted effort to preserve the salmon runs for the benefit of the people of the state. In the field of hatchery operations, for example, an outstanding contribution was climaxed with the refinement of the Oregon moist pellet. Now being obtained in quantity lots, this nutritionally complete ration has enabled the Commission to bolster faltering natural production by producing more and healthier fish at reduced cost.

Strides have been made in the exploration of the possibilities of utilizing both natural lakes and artificially created bodies of water for low cost rearing of large numbers of young salmon. The Tenmile Lake system and other coastal waters are among those being thoroughly investigated as possible salmon rearing areas. Miles of spawning stream along the coast as well as elsewhere in the state have long been blocked by the debris of early logging operations. Steps have been taken by Commission crews to remove some of these obstructions putting idle stream sections back into salmon production.

Natural obstacles, such as the falls on Looking-glass Creek, a Grand Ronde River tributary near La-Grande, have been studied in detail for ladder construction to make more readily available to salmon and steelhead the upstream spawning areas.

The construction of artificial spawning channels, in cooperation with private organizations as well as various public agencies, is a new approach to the replacement of spawning and holding areas lost through dam construction.



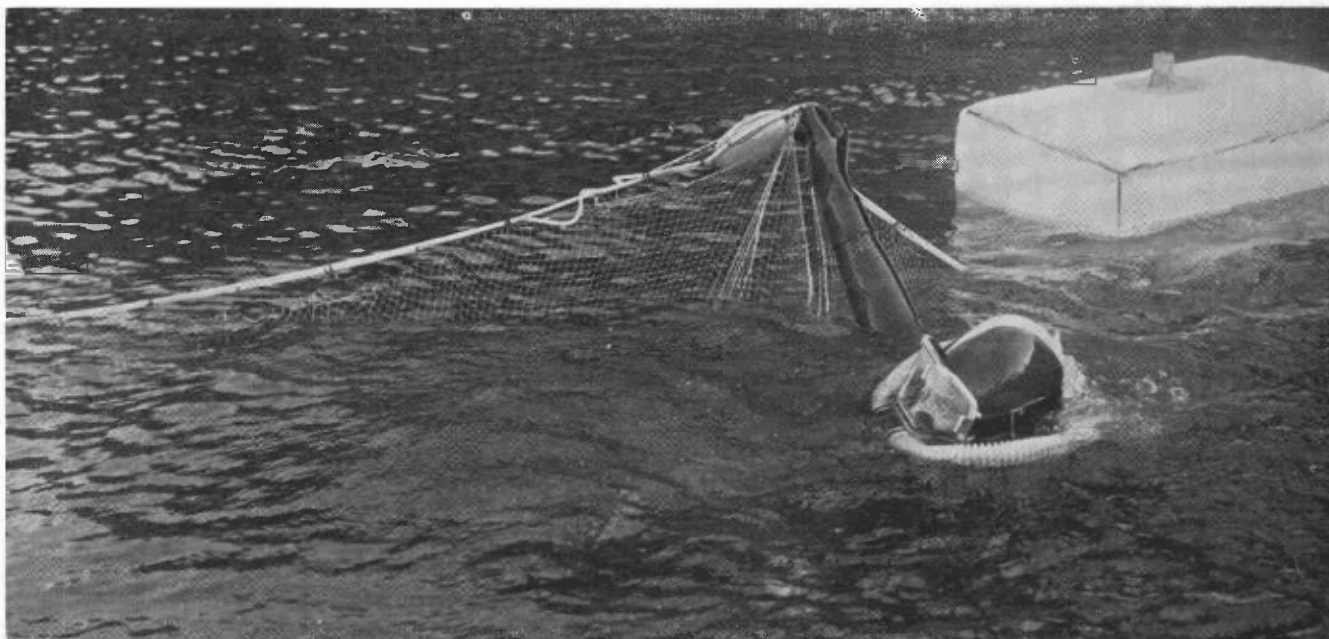
The shoulder patch shown above is worn by Fish Commission field personnel. It identifies many of the men who are devoting their lives to the conservation of an important segment of Oregon's natural resources.

The problem of safe passage of anadromous fish over dams constitutes a major stumbling block in the efforts to maintain the runs. Progress has been made in the struggle with this titanic problem, but it will require continuous concerted effort on the part of the Fish Commission to resolve any significant portion of the problem.

In recognition of the increased interstate and international competition for salmon and other fishery stocks that do not recognize state or federal boundaries and are fished upon by Oregon fishermen or are spawned in Oregon waters, the Commission and staff has been active in discussion of mutual fishery problems before the Pacific Marine Fisheries Commission and the International North Pacific Fisheries Commission. Close liaison is also maintained with other state and federal resource agencies on matters of common interest.

Important though the salmon stocks of the state may be, the other food fish resources have not gone neglected. Research, the basis for any sound management program, continues on Oregon's coastal waters. Pink shrimp, sole, and albacore tuna are among the species which received considerable attention during the biennium. Shellfish investigations, including abalone explorations on the southern Oregon coast, continue at an accelerated pace.

Much progress has been made in the management of Oregon's food fish resources during the past biennium. Fishery problems both new and old will continue to be attacked with vigor. Continuing progress is in prospect for the Fish Commission in the years ahead.



SCUBA diver checks experimental gill net being used in study of the behavior of young salmon in impounded waters, in this case, in Lake Simtustus behind Pelton Dam on the Deschutes River.

*--- facts to insure wise use
of Oregon's fishery
resources.*

Research Division

The Research Division is responsible for finding the solution to the biological problems with which the Fish Commission is confronted in the management of the state's fisheries resource. Seven laboratories are spotted at strategic locations in the state with headquarters at Clackamas. The Astoria location is the center of marine fisheries investigations. Coastal rivers work is conducted from Newport and from Charleston on Coos Bay. The shellfish investigations are carried out from both the Newport and the Astoria locations. Small but efficient hatchery biology laboratories are maintained at the Sandy and Willamette Hatcheries. Stream inventory investigations in eastern Oregon have been conducted from the LaGrande station.

Salmon receive a considerable share of attention from the Fish Commission's research division because of their importance in the state's economy. A great

variety of other fish and shellfish also receive the same quality of attention.

Columbia River management research is conducted jointly with the Washington Department of Fisheries. Studies on the identification, age composition, and productivity of individual races of salmon and steelhead have been intensified. A new program of test fishing to determine the timing of the spring run of chinook was begun. This race of salmon is irregular in its time of entrance and passage up the Columbia River, posing a difficult problem in properly regulating each season's opening and closing dates.

Vast numbers of fingerling salmon are marked each year by the Commission and other fishery agencies of the Pacific Coast to determine the value of various hatchery techniques and to evaluate efforts to rebuild runs through release of hatchery-produced fingerlings. The studies also include investigations of movements of salmon in the ocean, mortality rates of the fish at dams, and related problems.

Through the use of IBM equipment the mark analysis section is well on its way toward refinement of the technique required for detailed analysis and evaluation of returns from fish fin-clipped for identification.

The coastal river investigations section has inaugurated studies to determine the salmon rearing potential of natural lakes. Some of these bodies of water are

presently very productive for salmon rearing while others are under-utilized. In a step toward increasing fish production, a pilot study has begun on Hall and Schuttpelz Lakes in the Tenmile Lakes system. Activities thus far have included a comprehensive biological survey of the system followed by a planting of 120,000 silver salmon fry. Traps have been constructed to monitor migration to the ocean and the return of adults to the system.

The downstream migration pattern of juvenile salmon in the Trask and Yaquina Rivers was studied in anticipation of fish passage problems that will be presented if proposed dams are constructed on these streams.

Studies concerned with safeguarding the salmon spawning and rearing areas that would be effected by Pacific Power and Light Company's proposed Eden Ridge hydroelectric developments on the upper South Fork of the Coquille River were cooperatively undertaken by biologists of the Fish Commission and the power company. A plan for the release of adequate quantities of impounded waters to downstream areas during critical spawning and rearing periods is being developed as a result of the studies.

The Fish Commission's hatchery biology investigations have made notable gains in developing a better and cheaper diet for hatchery fish and in improving techniques for diagnosis and treatment of hatchery diseases. Substantial progress has been made in evaluating past activities at all Fish Commission hatcheries. The hatcheries are visited regularly by skilled biologists assigned to monitor the health of the fish. Treatment and preventive measures are recommended on the basis of these regular examinations.

The division's ocean studies of salmon included determination of age composition of the catches, and the incidence of fin-marked (hatchery-reared) salmon in offshore stocks. Studies of this type are of major importance in gaining the necessary information for sound management of the resource. The ocean studies, conducted in cooperation with the Washington Department of Fisheries, resulted in the tagging of several hundred chinook salmon in the offshore area between the Columbia River and Grays Harbor, Washington. The tagging was done during March and April of 1959 and 1960 to evaluate the effectiveness of a seasonal closure.

In cooperative tours aboard the U. S. Bureau of Commercial Fisheries vessel John N. Cobb, Fish Commission technicians tagged 4,600 English sole and 5,000 petrale sole during the biennium. Good re-

turns on the tags are already being realized. Determination of sole migrations is important in formulating management plans for this important species. In addition, the otter-trawl investigations continued its studies on the new pink shrimp fishery.

Albacore tuna investigations continued size composition studies of the commercial catch. During both years, exploratory cruises were made in cooperation with the Department of Oceanography at Oregon State College. Valuable oceanographic data were collected during the cruises. The 1959 cruise, discovering albacore off Coos Bay in advance of the usual season, alerted the commercial fleet with the result that above average landings were made during July.

The shellfish investigation included further exploratory work on abalone and rock scallop resources off southern Oregon, studies on escape rings for undersized Dungeness crabs in crab pots, rehabilitation of the soft-shell clam resource in Siuslaw Bay, and studies of the sport and commercial fisheries for razor clams on Clatsop County beaches. The skin diving training received by two of the staff members has proven to be of considerable value in extending various phases of the investigations.

The federally-financed Columbia River Fishery Development Program activities included completion of two river basin reports consisting of a total of 1,152 pages of detailed observations on salmon habitat. One report deals with eastern Oregon streams, Umatilla to the Owyhee River, while the other covers the Willamette River basin. Information recorded in these reports includes observations on obstructions to fish passage, water diversions, pollution, stream bottom composition, impoundment and hatchery sites, temperature and flow data, anadromous fish populations, and salmon spawning areas. The reports will be used as a basis for a comprehensive program of salmon restoration and watershed rehabilitation. The detailed information collected will be of value to many water-use agencies. Other important studies conducted under this program included evaluation of salmon transplantations into the Willamette basin above Willamette Falls and in the Hood River, Gnat Creek weir studies, and analysis of fin-marking experiments.

The contract research section presently is carrying out research contracts with the U. S. Army Corps of Engineers, the U. S. Bureau of Commercial Fisheries under the Saltonstall-Kennedy Act, and private power companies. The work deals almost exclusively with fish passage problems at dams.

*--- propagation for food
and recreation.*

Fish Culture

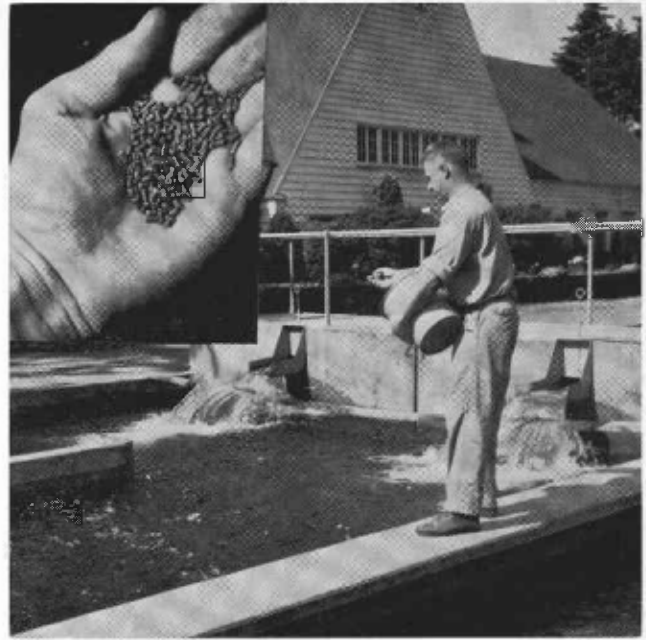
The Commission's activities in fish culture become increasingly vital as natural spawning and rearing areas for salmon and steelhead are subjected to the onslaughts of an ever-expanding civilization with its attendant dams, water pollution, gravel dredging, irrigation, and road building.

The Fish Commission manages sixteen hatcheries for the production of salmon and steelhead. Six of these are located on short tributaries of the Columbia River, one on a Deschutes River tributary, four on Willamette Valley streams, and five on coastal rivers. Hatchery production is used essentially to supplement the reduced natural production of anadromous fishes or to replace that wiped out by the activities of civilization's advance.

Accumulated results of research, both by the Commission as well as that conducted by other fishery agencies in the Northwest, coupled with practical experience in fish culture are invaluable in the constant effort to reduce costs of producing salmon and steelhead in the hatcheries. Improvement in both the quality of the fish produced as well as in the quantity is also of prime consideration in hatchery operations.

Among the most important advances in the hatchery biology field in recent years has been the development of the nutritionally balanced Oregon moist pellet. This highly efficient fish ration is essentially a combination of fish by-products obtained from the commercial fishing industry. It is bolstered with cottonseed meal, wheat germ, and vitamin products. The pellet was developed by the Fish Commission in cooperation with the Oregon State College Seafoods Laboratory at Astoria. Pellet feeding of salmon and steelhead results in a substantial savings in fish rearing costs and produces healthier fish. A relatively recent refinement, pasteurization of certain fish by-products in the ration, appears to have greatly reduced the incidence of kidney disease and other afflictions transmitted through untreated ingredients.

During 1958, 91,000 pounds of Oregon pellets were fed a limited number of hatchery silvers. The following year, 365,000 pounds were fed. By the close



Development of the Oregon moist pellet, a nutritionally complete fish ration, represents an outstanding advance in the field of fish culture.

of the biennium, pellets were being fed at the rate of 800,000 pounds for the year. In 1960 pellets were fed to all silver salmon and about one half of the spring chinook reared in Commission hatcheries. Because of the very encouraging results, all spring chinook as well as silvers will be fed these pellets in 1961.

Economy-wise, the use of the Oregon moist pellet has been an outstanding success. Within the past two years, through its use, hatchery food costs have been pared from 46 to 28 cents per pound of fish produced, a cut in food cost of nearly 40 per cent.

A wet diet consisting of beef and fish by-products is fed to all newly hatched fish for about 12 weeks, until the fry are large enough to eat pellets. Substantial savings have been realized by the new practice of quantity purchase through advertised bids.

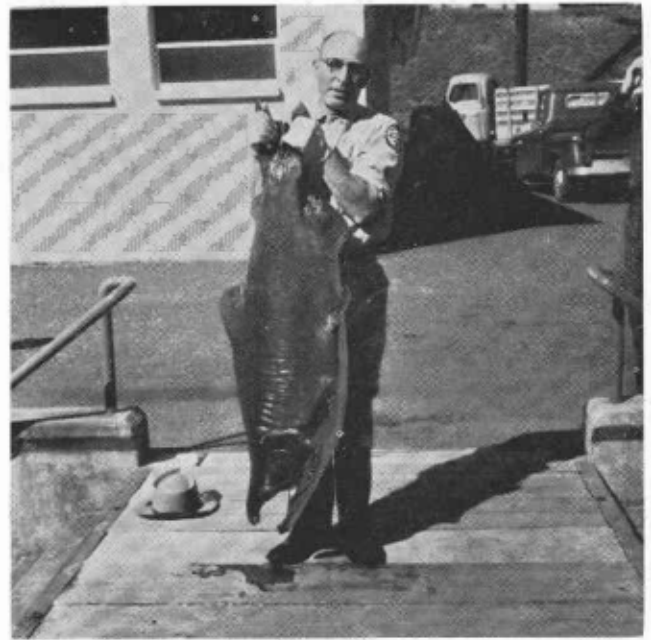
Constant general health surveillance of hatchery fingerlings is given by skilled technicians, and periodic detailed examinations are made to assure early detection of disease. As a result most outbreaks have been quickly brought under control. During the spring of 1960, sulfa-methazine was added to the wet diet of all silvers, successfully controlling the formerly prevalent cold water disease.

In 1959 over 16 million fall chinook eggs were hatched. In accordance with recognized practice, these were reared 60 to 90 days and released as healthy fingerlings with a loss of only 7 per cent, including eggs, fry, and fingerlings. This is just one example of the success being met in the Commission's new feeding and disease control program.

During the biennium Oregon waters received from Fish Commission hatcheries 90 million salmon and steelhead fingerlings, 37 million more than during the previous two-year period.

The 843,000 pounds of fish (90 million) required a little more than 3 million pounds of food compared with 3.5 million pounds required to produce 800,000 pounds during 1956 - 58. This represents a 19 per cent gain in the efficiency of converting food to fish.

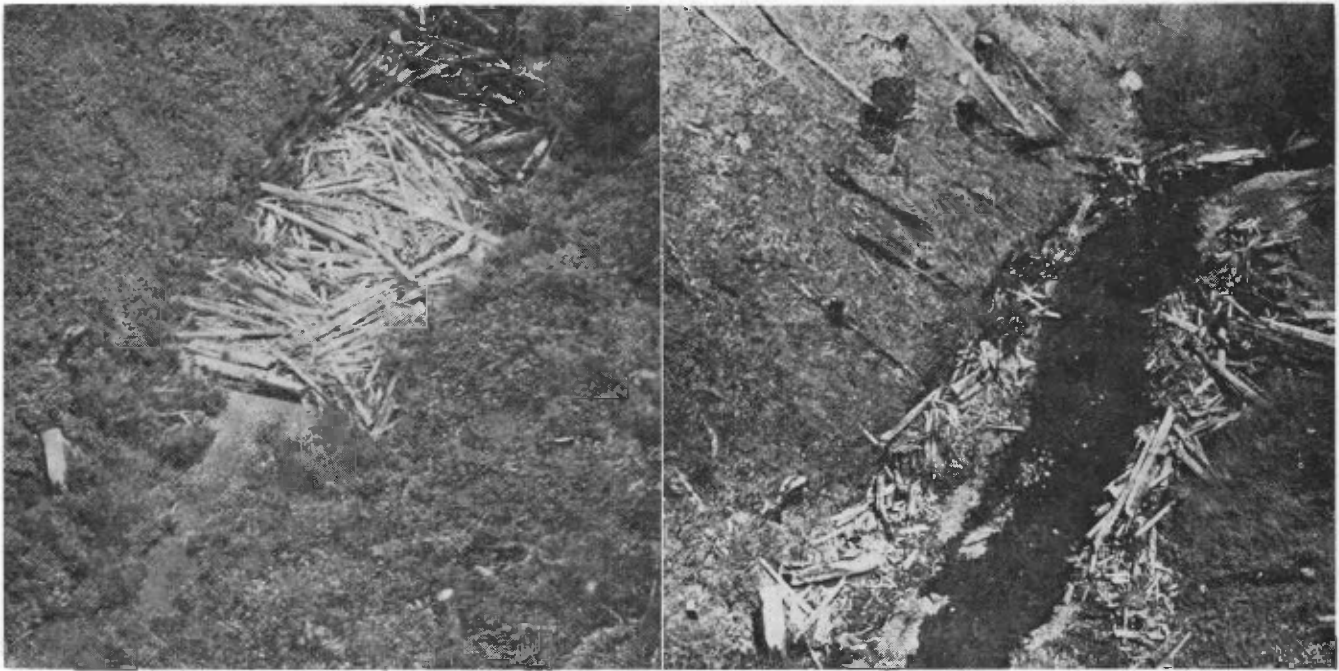
The Cascade Hatchery located just off the Columbia River highway near the mouth of Eagle Creek was completed and began operations during the biennium. This hatchery incorporates modern equipment and facilities with the latest proven artificial hatching and rearing techniques to assure high production of quality fish at the lowest possible cost. The facility was financed by Columbia River Fishery Development Program funds. The annual production capacity of the Cascade Hatchery is 11 million salmon.



Above: T. C. Harrison, Oxbow Springs Hatchery superintendent, displays a large fall chinook male weighing 50 lbs. from the 1960 run. This group was characterized by a higher than usual percentage of large fish.

Below: Off to a good start are these Oregon pellet-fed salmon fingerlings.





Log jams remove much upstream spawning area from production by blocking runs of anadromous fish. At the left above is shown a large log jam on Carcus Creek, a tributary of the Clatskanie River in Columbia County. At the right, a view of the same section of stream after a Fish Commission crew removed the jam.

*--- plans and machines for
conservation.*

Engineering

It is the responsibility of the Engineering Division to give reality to ideas and programs conceived after thorough study by the Commission's biologists, hatchery personnel, and administrators. The division is charged with engineering surveys, plans, design, construction, inspection, and maintenance of all building projects undertaken by the Fish Commission. Removal of stream obstructions, erection of hatchery dwellings, and construction of fish passage facilities are typical of the division's varied assignments.

Construction of new and major upstream migrant fish passage and protection facilities at Willamette Falls near Oregon City was recommended in a detailed report following a two year study by two technical consultants under contract with the Commission.

Completion of this report provides an important step toward the solution of a long-standing fish pass-

age problem on the Willamette. Monies for the study were furnished by the federally financed Columbia River Fishery Development project. Neutralization of the adverse effects of the falls is of primary concern in developing the Willamette's salmonid fishery potential, especially in the establishment of populations of fall chinook and silver salmon.

Planning has been completed for the construction of Wahkeena Lake, a 20-acre salmon rearing pond adjacent to the Columbia River highway close to Benson State Park, 20 miles east of Portland. Wahkeena will be the Commission's largest rearing impoundment to date. Actual construction of this Columbia River Fishery Development project is scheduled to begin shortly after the close of this biennium.

An 8-acre experimental rearing pond was constructed on the Millicoma River in cooperation with the Weyerhaeuser Timber Company and plantings of silver salmon fry made.

A pond for holding adult salmon was completed at the Sandy Hatchery east of Portland. The holding pond improves efficiency of egg taking operations by keeping spawners on hand until the eggs have reached the proper degree of ripeness for maximum results. By greatly minimizing handling of adults there is less injury to the spawners prior to egg taking. It also makes possible treatment of fish afflicted with

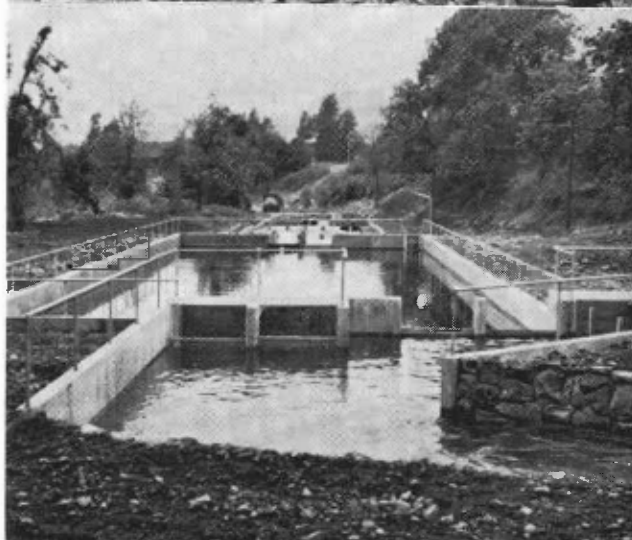
fungus diseases resulting, mainly, from migration injuries.

Houses were built for hatchery personnel at Cascade and Klaskanine Hatcheries. The dwelling at Oxbow Hatchery was remodelled. The two six-unit garages are currently under construction at the Clackamas Laboratory, eliminating a serious fire hazard presented by the old accomodations.

Safety devices have been designed and installed at hatcheries in accordance with State Industrial Accident Commission requirements. This program included such activities as placing gratings over drain trenches and installing handrails at head boxes, water intake structures, and ponds. Safety inspections of all hatchery electrical equipment was conducted by a staff electrician. As a result, all electrical facilities have been brought up to the proper standards.

An additional ten miles of spawning area was made accessible to salmonids by the removal of forty log jams plus scattered timber debris from the Calapooya River in Linn County. Several large boulders and potential log jam sites were removed by blasting. The project, financed under the Columbia River Fishery Development Program, cost over \$23,000.

Planning was completed for fish passage facilities on Lookingglass Creek, a tributary of the Grande Ronde River near LaGrande. The ladder will utilize a denil baffle design permitting salmon and steelhead to swim rather than jump over the falls. Construction, scheduled to begin shortly after the close of this biennium, will cost approximately \$20,000. During the biennium many obstructions to fish passage, water diversions, and pollution problems located by Commission surveys were examined by engineering personnel. Estimates of the cost of corrective measures were completed for inclusion in a comprehensive report to be submitted to the U. S. Fish and Wildlife Service for approval and funds.



Above: Checking adult salmon holding pond plans are Ed Neubauer (left) and Virgil Summers of the engineering staff.

Center: Construction in progress on holding pond at Bonneville Hatchery.

Below: Completed holding pond makes possible improved fish-handling procedures.

*--- to assure continuing
fishery benefits from
Oregon's waters.*

Water Resources

Providing the solution to fisheries problems resulting from multiple-use development of Oregon's waters, particularly in relation to food fish and shellfish, are the primary responsibility of the water resources division. Demands on the available water for industrial, agricultural, and domestic use continues to grow at an accelerated pace. Corresponding developments for the spawning and rearing of salmon, steelhead, and other food fish are needed to counterbalance the effects of other water demands.

Thirty-five major Oregon dam projects required consideration during the biennium. Over one hundred meetings, conferences, and workshops were attended to participate in the development of plans for fish passage and, insofar as possible, to provide for compensation and enhancement for fish production lost at each project.

From an investigation of the few existing artificial spawning channels for salmonids, recommendations were advanced to the Eugene Water and Electric Board to guide their construction of the initial facility for spring chinook at their Carmen-Smith hydroelectric project on the McKenzie River. No fish passage facilities were required at the project because of the relatively small number of fish involved. This recently completed facility consists of a channel 100 yards long by 8 yards wide capable of accommodating about 100 spawning female salmon. Additional features include a graded gravel channel bottom, holding pond for adult salmon, controlled-flow water supply, trap and weirs, and a main stream velocity barrier to facilitate fish handling operations.

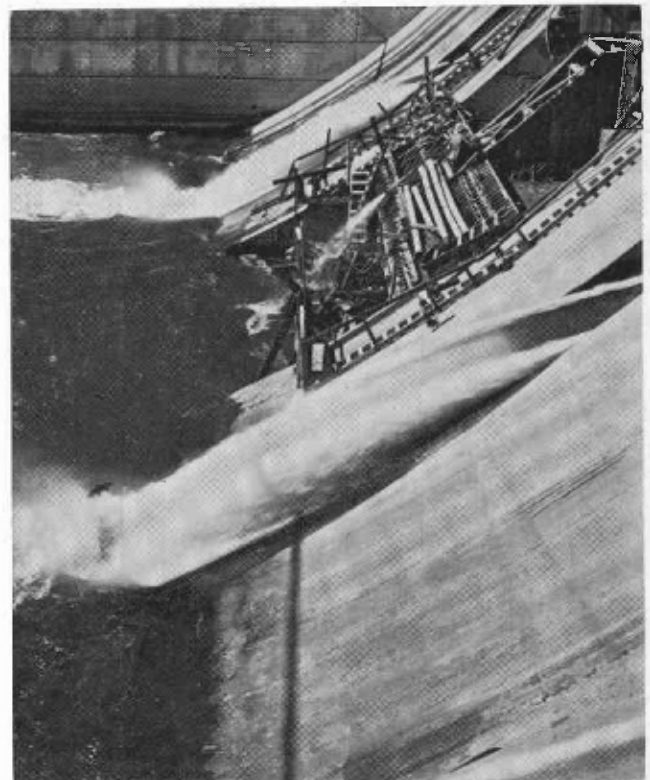
Salvage of 160 adult chinook salmon with the aid of Game Commission SCUBA divers in the Eugene Water and Electric Board's Waterville Canal was successfully planned and executed in 1960. The rescued fish were held for ripening and eventually yielded a quantity of eggs.

Another emergency program assigned to the Water Resources section was that involving the 1958 "Oxbow Incident" on the Middle Snake River. Here thousands

of fall chinook salmon and steelhead trout failed to reach historic spawning grounds due to the failure of fish passage facilities, dealing a serious blow to future production. Commission staff members at the site studied the situation and recommended salvage procedures throughout the critical September-October period.

Water use of Portland General Electric Company, Crown-Zellerbach Corporation, and Publishers' Paper Company facilities at Willamette Falls near Oregon City was temporarily curtailed so that water would flow over fish ladders in sufficient volume to attract salmon up and over the falls. This resulted in substantial numbers of spring chinook passing safely upstream. In all instances excellent cooperation was afforded the Commission staff by the industries involved.

Legal interventions were filed for three major proposed hydroelectric developments after careful study indicated that fishery resources would be effected. Two are coastal projects located on the Trask and Coquille Rivers, and the third a Willamette River project located on the North Santiam River. Testimony and statements in the interest of fish preservation



The problem of the safe passage of anadromous fish over dams constitutes a major obstacle in the efforts to maintain runs of salmon and steelhead in Oregon.



Artificial spawning channel at the Eugene Water and Electric Board's Carmen-Smith hydroelectric project on the upper McKenzie River. This 100-yard long channel is capable of accomodating about 200 spawning spring chinook salmon.

were prepared and presented at twelve state and federal hearings. These involved Idaho Power Company's Brownlee, Oxbow and Hells Canyon projects on the Snake River; the Corps of Engineers' Foster Dam on the Santiam River; the U. S. Army Corps of Engineers "308" hearing on plans for comprehensive development of the Columbia River Basin; High Mountain Sheep Dam on the Snake River; Round Butte Dam on the Deschutes River; the Niagara project on the North Santiam River; Thorn Hollow Dam on the Umatilla River; gravel removal legislation; and a hearing before the State Sanitary Authority on removal of spawning gravel from Drift Creek, tributary to Alsea Bay.

Much effort was given to the basin studies of the State Water Resources Board in which information on fishery requirements was developed for the Rogue, Grand Ronde, and upper Willamette River basins. The Commission participated also in a comprehensive, joint state-federal water temperature study program on the Rogue River; and in the development of an evaluation program of upstream and downstream fish passage at Pelton Dam on the Deschutes River.

Numerous road construction plans of the Bureau of Public Roads, State Highway Commission, and U. S. Forest Service were reviewed by the Water Resources Division with an eye toward potential fisheries damage. Reports of stream damage resulting from private road building programs also received attention. Many projects necessitated field surveys of the streams crossed prior to the preparation of recommendations for fish protection. Channel chang-

ing, fish passage, destruction of spawning grounds, and siltation are among the factors that must be considered when reviewing a road construction project.

The Georgia-Pacific Corporation's paper and plywood mills at Toledo, on the Yaquina River, required periodic attention during the biennium in respect to the handling of toxic wastes and to encourage utilization of adequate safeguards for fish life. A similar mill is under construction at Coos Bay. Mills are also planned for the Umpqua, Siuslaw, Rogue, and other Oregon river sites. The probable effect of these mills on anadromous fish and shellfish production must be determined and proper action taken.

Some 90 notices of application for permission to construct various water projects have been received by the Water Resources Section from the Corps of Engineers. The effect of these projects on fish populations were examined. Recommendations relative to project timing, disposal of wastes, and other measures to reduce damage to fish life and habitat were prepared.

The issuance of permits for underwater blasting handled by the Fish Commission through the Water Resources Section totaled 26 during the biennium. Investigation of each situation was required before a permit was issued. This was to assure proper safeguards for fish.

Applications for water use permits throughout the state are received from the State Engineer's office. Lists containing an average of about 15 applications are received each week. These are reviewed to determine whether serious hazards to fish life may be involved.

Several stream damage and obstruction problems caused by logging and local construction projects were investigated to establish responsibility for damages incurred and to encourage corrective action. Many of the hazards to fish life could have been prevented from developing by proper timing of contractors' work schedules or advance recognition of potentially destructive on-the-job procedures. Greater familiarization on the part of planners of water projects with the kinds of fish or shellfish in a work area and with the special environmental requirements of each species is needed to help in the prevention of fishery resource damage and to preserve critical production areas.

STATEMENTS OF RECEIPTS AND DISBURSEMENTS

Biennium July 1, 1958 to June 30, 1960

RECEIPTS — APPROPRIATIONS — ALLOTMENTS

		Fiscal Year Ending June 30, 1959	Fiscal Year Ending June 30, 1960
APPROPRIATIONS FROM STATE GENERAL FUNDS:			
Unexpended Balance 1955 - 1957	\$ 15,011.26		
Transferred to State General Fund	<u>14,418.35</u>	\$ 592.91	
Unexpended Balance 1957 - 1959	916,418.41		
Emergency Board — Salary Revisions	<u>3,536.00</u>	<u>919,954.41</u>	\$ 136,277.14
Appropriation 1959 - 1961	1,646,861.00		
Emergency Board — Salary Revisions	<u>41,461.00</u>		<u>1,688,322.00</u>
Total Appropriations		\$ 920,547.32	\$ 1,824,599.14
License Fee Receipts:			
Fishing Licenses		\$ 48,187.50	\$ 42,385.50
Dealers and Processor Licenses		<u>40,056.50</u>	<u>40,247.00</u>
Total License Fees		\$ 88,244.00	\$ 82,632.50
Poundage Fee Receipts		\$ 125,494.41	\$ 112,500.14
Fines and Confiscated Property Sales		863.24	158.77
Miscellaneous State General Fund Receipts		<u>12,261.80</u>	<u>5,345.76</u>
Total State General Fund Revenue		\$ 226,863.45	\$ 200,637.17
Miscellaneous Receipts Account—Surplus Property Sales, and other		\$ 23,624.48	\$ 4,609.21
(1959 includes \$17,000 from Spaulding Pulp and Paper Company — Trask Hatchery Damage.)			
Total Appropriations, Revenues, and Miscellaneous Receipts		\$1,171,035.25	\$2,029,845.52
Less: Revenues Transferred to State General Fund	\$ 226,863.45		
Transferred to Department of State Police	<u>59,737.00</u>	<u>286,600.45</u>	<u>\$ 200,637.17</u>
Available for Expenditure from General Fund		\$ 884,434.80	\$1,829,208.35
UNITED STATES GOVERNMENT:			
Columbia River Fishery Development Program		\$ 623,190.06	\$ 751,958.93
Marion Forks Hatchery — North Santiam River		81,924.95	80,594.65
Willamette River Hatchery — Oakridge		\$ 98,336.88	\$ 84,011.20
Saltonstall-Kennedy Studies on Salmon Behavior in Forebays			40,000.00
Bureau of Sport Fisheries and Wildlife Disease Studies		29,351.46	7,015.08
Army Engineers: Cougar Dam Fish Passage			251.89
Migrant Salmon Studies — Lookout Point Dam		10,020.14	
Fish Passage Studies — Bonneville Dam and Dalles Site		4,429.76	
Fish and Wildlife Service — Snake River Investigations		<u>14,779.30</u>	
Total United States Government (*)		\$ 862,032.55	\$ 963,831.75

	Fiscal Year Ending June 30, 1959	Fiscal Year Ending June 30, 1960
DONATIONS:		
Portland General Electric Company Evaluation Pelton Dam Fish Facilities.....	\$ 8,770.00	\$ 19,897.63
Pacific Northwest Power Company — Equipment for Salmon Disease Studies.....		2,500.00
Total Donations	\$ 8,770.00	\$ 22,397.63
TOTAL AVAILABLE FOR DISBURSEMENT FROM FOREGOING SOURCES	\$1,755,237.35	\$2,815,437.73

(*) Totals include balance from previous year.

STATEMENT OF RECEIPTS AND DISBURSEMENTS

Biennium July 1, 1958 to June 30, 1960

DISBURSEMENTS

	Fiscal Year Ending June 30, 1959	Fiscal Year Ending June 30, 1960
STATE GENERAL FUND		
Division of Administration:		
Direction, Policy and General Supervision.....	\$ 39,097.45	\$ 38,708.48
Business Management	106,526.89	112,708.48
Information and Education.....	18,481.77	17,828.35
Water Resources	18,373.22	19,616.76
Pacific Marine Fisheries Commission.....	2,000.00	2,100.00
Total	\$ 184,479.33	\$ 190,962.07
Division of Fish Culture:		
Supervision	\$ 21,662.28	\$ 25,927.72
Hatchery Operation and Maintenance		
Lower Columbia River.....	70,707.22	78,801.18
*Willamette Basin	64,954.00	67,088.97
Coastal Rivers	113,946.31	124,245.76
Total	\$ 271,269.81	\$ 296,063.63
Division of Research:		
Supervision	\$ 47,754.33	\$ 62,989.03
Coastal Salmon Investigations.....	31,452.18	33,550.71
Columbia River Investigations.....	40,716.85	43,055.43
Hatchery Biology, Nutrition and Disease Studies.....	22,811.19	26,927.99
Marine Fisheries Investigations.....	26,717.32	29,682.30
Shell Fisheries Investigations.....	44,395.64	52,228.62
Marking Analysis	5,855.58	7,955.86
Total	\$ 219,703.09	\$ 256,389.94
Division of Engineering:		
Supervision and General Services.....	\$ 31,225.80	\$ 36,998.01
Stream Improvement and Maintenance.....	25,279.18	27,911.05
Total	\$ 56,504.98	\$ 64,909.06
Miscellaneous Receipts Account — Equipment (All Divisions)	7,533.48	4,917.19
TOTAL STATE GENERAL FUND DISBURSEMENTS	\$ 739,490.69	\$ 813,240.99
BALANCE AVAILABLE FROM STATE GENERAL FUND END OF PERIOD	\$ 89,048.59	\$ 916,287.78

	Fiscal Year Ending June 30, 1959	Fiscal Year Ending June 30, 1960
UNITED STATES GOVERNMENT:		
Columbia River Fishery Development Program —		
Division of Fish Culture:		
Hatchery Operation and Maintenance		
Lower Columbia River	\$ 244,841.88	\$ 247,677.71
Division of Research:		
Hatchery Biology, Nutrition and Disease Studies		
Appraisal of Project Results, including Mark Analysis,		
River and Ocean Sampling, and Weir Operation	\$ 74,579.37	\$ 81,468.66
Stream Improvement Surveys, Columbia River Tribu-	\$ 42,980.61	\$ 43,828.64
taries — Biological		
Division of Engineering:		
Stream Improvement and Maintenance	\$ 36,473.27	\$ 16,501.52
Fishway Planning and Construction	16,394.94	3,038.34
Hatchery Planning and Construction	104,256.40	52,349.83
Stream Improvement Surveys—Columbia River Tribu-		
taries — Engineering	34,803.83	35,143.09
TOTAL DISBURSEMENTS — Columbia River Fishery		
Development Program	\$ 554,330.30	\$ 480,007.79
Marion Forks and Willamette River Hatcheries —		
Division of Fish Culture:		
Operation and Maintenance	\$ 168,651.75	\$ 151,670.73
Division of Research:		
Hatchery Biology, Nutrition and Disease Studies	11,610.08	12,935.12
Saltonstall-Kennedy Funds —		
Division of Research:		
Studies on Salmon Behavior in Forebays		\$ 7,964.33
Bureau of Sport Fisheries and Wildlife —		
Division of Research:		
Disease Studies	13,984.92	6,145.00
Army Engineers —		
Division of Administration:		
Supervising Fish Passage at Cougar Dam		\$ 251.89
Division of Research:		
Migrant Salmon Studies, Lookout Point Dam	\$ 3,826.63	
Fish Passage Studies, Bonneville Dam and		
The Dalles Site	676.96	
Fish and Wildlife Service —		
Division of Research:		
Investigations on Proposed Snake River Dams	\$ 6,158.59	\$ 2,353.68
TOTAL FEDERAL AID FUND DISBURSEMENTS	\$ 759,239.23	\$ 661,328.54
BALANCE AVAILABLE FROM FEDERAL AID FUNDS		
AT END OF PERIOD	\$ 91,783.93	\$ 255,488.13
DONATION FUNDS:		
Division of Research:		
Evaluation of Pelton Dam Fish Facilities	\$ 1,274.37	\$ 13,071.07
Equipment for Salmon Disease Studies		
TOTAL DONATION FUND DISBURSEMENTS	\$ 1,274.37	\$ 13,071.07
BALANCE AVAILABLE FROM DONATION FUND		
AT END OF PERIOD	\$ 7,495.63	6,826.56

BUILDING APPROPRIATION (Chapter 622, O.L. 1955)

Fiscal Year Ending June 30, 1959

	Balance From Previous Year	Disbursed	Balance
Utility Building—Alsea Hatchery	\$ 64.24	\$	\$ 64.24
Rearing Ponds—Alsea Hatchery	349.90	342.55	7.35
Remodeling Buildings and Grounds—Research Labor- atory—Clackamas	564.05	538.14	25.91
Total	\$ 978.19	\$ 880.69	\$ 97.50
BALANCE REVERTED TO STATE GENERAL FUND			<u>97.50</u>

BUILDING APPROPRIATION (Chapter 493, O.L. 1957)

Biennium July 1, 1958 to June 30, 1960

Elk River Hatchery Construction	\$ 186,701.46	\$ 4,407.71	\$ 182,293.75
BALANCE REVERTED TO STATE GENERAL FUND			<u>\$ 182,293.75</u>

SEAL FUND ACCOUNT

Biennium July 1, 1958 to June 30, 1960

			Fiscal Year Ending June 30, 1959		Fiscal Year Ending June 30, 1960
Fund Balance at Beginning of Period			\$ 24,638.99		\$ 23,625.57
	Rate	Number Issued		Number Issued	
Receipts—Sale of Seal Certificates:					
Gillnet	\$ 2.50	645	\$ 1,612.50	638	\$ 1,595.00
Canner	\$ 50.00	8	400.00	7	350.00
TOTAL RECEIPTS			\$ 2,012.50		\$ 1,945.00
Less 10% Tithing to State General Fund ..			201.25		194.50
TOTAL, Beginning Balance and Net Receipts			\$ 26,450.24		\$ 25,376.07
Disbursements:					
Bounties Paid for Seals					
Destroyed (39 at \$25.00)			\$ 975.00	(46 at \$25)	\$ 1,150.00
Seal Hunting			1,849.67		3,153.01
TOTAL Disbursements			\$ 2,824.67		\$ 4,303.01
BALANCE AVAILABLE FROM SEAL FUND					
AT END OF PERIOD			\$ 23,625.57		\$ 21,073.06

ARRESTS FOR VIOLATION OF COMMERCIAL FISHERIES LAW

	Fiscal Year Ending June 30, 1960	Fiscal Year Ending June 30, 1959
Fishing and delivering fish without a license.....	17	16
Fishing prohibited methods	14	12
Fishing closed season and closed waters.....	21	13
Dealing in food or shellfish without a license.....	35	74
Possession of overlimit of clams.....	132	126
Unlawful possession of food or shellfish.....	49	49
Failure to file dealer's reports.....	6	16
Molesting spawning salmon	5	--
Failure to identify commercial fishing boat.....	10	13
Miscellaneous violations	6	3
TOTAL ARRESTS	295	322
Nnumber of Convictions	273	302
Number Pending, dismissed or not guilty.....	22	20
Amount of fines imposed	\$ 7,352.25	\$10,778.00
Amount of fines suspended or remitted.....	\$ 1,109.00	\$ 2,549.50

BIENNIAL REPORT

Fiscal Year Ending June 30, 1959

NUMBER OF SALMON AND STEELHEAD LIBERATED INTO WATERS OF THE STATE OF OREGON BY THE FISH COMMISSION

Hatchery	Spring Chinook	Fall Chinook	Silver Salmon	Blueback	Chum Salmon	Steelhead Trout	Total	Where Liberated
Alsea	-----	4,406	775,000	-----	-----	33,021	812,427	Fall Cr., Alsea R.
Big Creek	-----	1,306,868	1,912,042	-----	2,526,495	-----	5,745,405	Big Cr. Tribs.
	-----	-----	203,640	-----	-----	-----	203,640	Lower Columbia Tribs.
Bonneville	-----	-----	92,478	-----	-----	-----	92,478	John Day R. Tribs.
	-----	11,885,427	306,281	-----	-----	-----	12,191,708	Tanner Cr.
	-----	-----	180,000	-----	-----	-----	180,000	Trask R. Tribs.
	-----	200,880	-----	-----	-----	-----	200,880	McLalla R.
	-----	-----	165,000	-----	-----	-----	165,000	Wilson R. Tribs.
	-----	-----	60,000	-----	-----	-----	60,000	Kilchis R.
	-----	-----	42,750	-----	-----	-----	42,750	Tillamook R.
Cascade	-----	5,352,092	-----	-----	-----	-----	5,352,092	Eagle Cr.
Coos	-----	-----	266,939	-----	-----	-----	266,939	South Coos R. Tribs.
Klaskine	-----	965,428	1,283,958	-----	-----	-----	2,249,386	Klaskanine R.
Marion Forks	894,624	-----	-----	-----	-----	1,542,258	2,436,882	North Santiam R.
McKenzie	768,664	-----	-----	-----	-----	-----	768,664	McKenzie R.
Metolius	141,077	-----	-----	101,846	-----	-----	242,923	Metolius R.
	18,314	-----	-----	-----	-----	-----	18,314	Deschutes R.
Nehalem	-----	-----	602,457	602,457	8,773	-----	611,230	Nehalem R. Tribs.
Ox Bow	-----	7,420,681	146,120	-----	-----	-----	7,566,801	Herman Cr.
Sandy	179,769	2,245,612	571,671	-----	-----	2,000	2,999,052	Sandy R. Tribs.
	-----	-----	435,051	-----	-----	-----	435,051	Willamette R. Tribs.
	-----	-----	99,782	-----	-----	-----	99,782	Hood R.
Siletz	-----	-----	200,176	-----	-----	-----	200,176	Rock Cr., Siletz R.
South Santiam	39,907	-----	-----	-----	-----	-----	39,907	South Santiam R.
Trask	-----	250,712	215,171	-----	-----	33,198	499,081	Trask R.
	-----	106,560	-----	-----	-----	-----	106,560	South Coos R.
	-----	-----	-----	-----	158,120	-----	158,120	Miami R.
Willamette	650,342	-----	132,258	267,618	-----	344,352	1,394,570	Middle Willamette R.
Research	-----	-----	4,546	-----	-----	3,162	7,708	Sandy R.
	6,500	-----	-----	-----	-----	-----	6,500	Clackamas R.
TOTALS	2,699,197	29,738,666	7,695,350	369,464	2,693,388	1,957,991	45,154,056	

BIENNIAL REPORT

Fiscal Year Ending June 30, 1960

NUMBER OF SALMON AND STEELHEAD LIBERATED INTO WATERS OF THE STATE OF OREGON BY THE FISH COMMISSION

Hatchery	Spring Chinook	Fall Chinook	Silver Salmon	Blueback	Chum Salmon	Steelhead Trout	Total	Where Liberated
Alsea	---	4,979	387,876	---	---	92,744	485,599	Fall Cr., Alsea R.
Big Creek	---	1,864,346	887,070	---	1,229,994	86,505	4,067,915	Big Cr.
Bonneville	---	11,873,957	494,852	---	---	---	12,368,808	Tanner Cr.
	---	200,978	54,724	---	---	---	54,724	Hood R.
	---	---	---	---	---	---	200,978	Willamette R. Tribs.
Cascade	---	5,560,532	304,070	---	---	---	5,864,602	Eagle Cr.
	---	---	46,034	---	---	---	46,034	Hood R.
	21,216	---	---	---	---	24,570	45,786	North Santiam R.
Coos	---	---	116,480	---	---	---	116,480	Coos R.
	---	---	99,438	---	---	---	99,438	Hall and Schultze Lakes
Klaskanine	---	1,425,508	407,730	---	---	---	1,833,238	Klaskanine R.
Marion Forks	2,570,809	---	---	---	---	424,508	2,995,317	North Santiam R.
McKenzie	413,604	---	---	---	---	---	413,604	McKenzie R.
Metolius	25,515	---	---	26,438	---	---	51,953	Metolius R.
	74,046	---	---	---	---	16,976	16,976	Deschutes R.
Nehalem	---	---	259,618	---	12,084	19,104	290,806	South Santiam R.
	---	---	25,004	---	---	---	25,004	Nehalem R. Tribs.
Ox Bow	---	8,051,847	205,266	---	---	---	8,257,113	Devil's Lake
Sandy	91,839	2,919,481	1,136,926	---	---	---	4,148,246	Herman Cr.
	---	---	277,199	---	---	---	277,199	Sandy R. Tribs.
Siletz	---	---	167,486	---	---	---	167,486	Willamette R. Tribs.
South Santiam	144,892	---	---	---	---	---	144,892	Siletz R. Tribs.
Trask	---	304,486	157,850	---	96,145	---	558,481	South Santiam R.
	---	---	15,428	---	---	---	15,428	Trask R.
	---	---	---	---	117,599	---	117,599	Netarts Bay Tribs.
Willamette	1,605,950	---	---	142,161	---	99,597	1,847,708	Miami R.
Research	1,500	---	---	---	---	---	1,500	Middle Willamette R.
	5,596	---	---	---	---	---	5,596	Clackamas R.
	---	---	---	---	---	---	---	Middle Willamette R.
TOTALS	4,954,967	32,206,114	5,043,051	168,599	1,455,822	764,004	44,592,557	

EGG TAKE
NUMBER OF EGGS TAKEN AT THE FISH COMMISSION HATCHERIES
Fiscal Year Ending June 30, 1959

HATCHERY	Spring Chinook	Fall Chinook	Silver Salmon	Chum Salmon	Steelhead Trout	Total Eggs
Alsea		5,460	256,934		115,840	378,234
Big Creek		420,090	2,601,584	2,520,906	113,760	5,656,340
Bonneville		3,359,000	260,540			3,619,540
Cascade		8,791,000				8,791,000
Coos			376,420			376,420
Klaskanine			346,771			346,771
Marion Forks	4,087,842				545,532	4,633,374
McKenzie	772,979					772,979
Metolius						0
Nehalem			1,266,666	8,780	21,227	1,296,673
Ox Bow		18,739,973	714,950			19,454,923
Sandy		126,872	1,275,159			1,402,031
Sandy-Oswego Cr.			32,250			32,250
Siletz			103,886			103,886
South Santiam	305,473					305,473
Trask		353,054	408,070	172,838		933,962
Willamette	2,167,071				122,372	2,289,443
Total	7,333,365	31,795,449	7,643,230	2,702,524	918,731	50,393,299

EGG TAKE
NUMBER OF EGGS TAKEN AT THE FISH COMMISSION HATCHERIES
Fiscal Year Ending June 30, 1960

HATCHERY	Spring Chinook	Fall Chinook	Silver Salmon	Chum Salmon	Steelhead Trout	Total Eggs
Alsea		7,588	119,672		15,299	142,559
Big Creek		474,106	1,360,010	1,302,921	109,867	3,246,904
Bonneville		3,318,636	237,088			3,555,724
Cascade		2,907,180				2,907,180
Coos			180,242			180,242
Coos-Tenmile			109,416			109,416
Klaskanine		32,547	1,004,788			1,037,335
Marion Forks	2,206,483				590,892	2,797,375
McKenzie	1,454,422					1,454,422
Metolius						0
Nehalem			283,726	12,304		296,030
Ox Bow		8,758,137	59,240			8,817,377
Sandy	81,256	184,237	2,009,692		29,000	2,304,185
Sandy-Oswego Cr.			449,954			449,954
Siletz			325,860			325,860
South Santiam						0
Trask		362,553	760,837	238,325		1,361,715
Willamette	1,784,789				130,400	1,915,189
Total	5,526,950	16,044,984	6,900,525	1,553,550	875,458	30,901,467

COMPARATIVE STATEMENT OF LICENSES ISSUED

License Year Ending On March 31st

	1960	1959	1958	1957	1956	1955
Alsea Bay and River						
Fishing Licenses	---	---	6	52	52	53
Dealers & Processors	58	73	82	79	74	75
TOTAL, Alsea Bay & River	58	73	88	131	126	128
Chetco Bay						
Fishing Licenses	16	13	9	8	7	6
Dealers & Processors	1	---	1	---	---	---
TOTAL, Chetco Bay	17	13	10	8	7	6
Clatsop Beaches						
Fishing Licenses	---	---	4	14	23	54
Dealers & Processors	---	1	3	4	3	2
TOTAL, Clatsop Beaches	---	1	7	18	26	56
Columbia River & Tributaries						
Fishing Licenses	679	656	600	674	634	725
Dealers & Processors	1,036	1,071	1,070	1,129	1,159	1,146
TOTAL, Columbia River	1,715	1,727	1,670	1,803	1,793	1,871
Coos Bay & River						
Fishing Licenses	45	51	62	67	81	90
Dealers & Processors	77	96	115	101	108	99
TOTAL, Coos Bay & River	122	147	177	178	189	189
Coquille River						
Fishing Licenses	26	23	12	22	34	41
Dealers & Processors	8	11	10	13	16	22
TOTAL, Coquille River	34	34	22	35	50	63
Depoe Bay						
Fishing Licenses	---	---	---	---	---	---
Dealers & Processors	9	8	9	8	9	11
TOTAL, Depoe Bay	9	8	9	8	9	11
Nehalem River						
Fishing Licenses	---	---	2	47	45	55
Dealers & Processors	14	16	15	17	18	20
TOTAL, Nehalem River	14	16	17	64	63	75
Nestusca River						
Fishing Licenses	---	---	---	---	---	---
Dealers & Processors	10	11	12	10	9	6
TOTAL, Nestusca River	10	11	12	10	9	6
Netarts Bay						
Fishing Licenses	---	---	4	17	13	19
Dealers & Processors	6	7	5	6	6	7
TOTAL, Netarts Bay	6	7	9	23	19	26
Pacific Ocean & Beaches						
Fishing Licenses	1,086	1,255	1,263	1,192	1,041	846
Dealers & Processors	---	---	---	---	---	1
TOTAL, Pacific Ocean & Beaches	1,086	1,255	1,263	1,192	1,041	847
Port Orford						
Fishing Licenses	6	11	12	11	10	1
Dealers & Processors	---	---	---	---	---	14
TOTAL, Port Orford	6	11	12	11	10	15
Sand Lake						
Fishing Licenses	---	---	---	6	8	5
Dealers & Processors	---	---	---	---	1	---
TOTAL, Sand Lake	---	---	---	6	9	5
Sandy River						
Fishing Licenses	---	---	---	---	---	---
Dealers & Processors	---	---	5	10	5	4
TOTAL, Sandy River	---	---	5	10	5	4
Siletz River						
Fishing Licenses	---	---	---	24	26	27
Dealers & Processors	10	11	10	24	24	22
TOTAL, Siletz River	10	11	10	48	50	49

COMPARATIVE STATEMENT OF LICENSES ISSUED—Continued

License Year Ending On March 31st

	1960	1959	1958	1957	1956	1955
Siuslaw River						
Fishing Licenses	30	24	33	45	46	41
Dealers & Processors	38	28	28	32	26	27
TOTAL, Siuslaw River	68	52	61	77	72	68
Tillamook Bay						
Fishing Licenses	84	82	114	157	166	216
Dealers & Processors	48	40	44	47	53	14
TOTAL, Tillamook Bay	132	122	158	204	219	230
Umpqua River						
Fishing Licenses	59	58	50	93	111	134
Dealers & Processors	41	47	53	46	45	37
TOTAL, Umpqua River	100	105	103	139	156	171
Yaquina Bay & River						
Fishing Licenses	1	5	14	24	16	56
Dealers & Processors	116	107	91	94	115	100
TOTAL, Yaquina Bay & River	117	112	105	118	131	156
Miscellaneous						
Fishing Licenses	1,104	1,263	3,619	688	504	659
Dealers & Processors	3,983	4,294	1,209	4,153	3,536	3,239
TOTAL, Miscellaneous	5,087	5,557	4,828	4,841	4,040	3,898
GRAND TOTALS	8,591	9,264	8,566	8,924	8,024	7,874
Recapitulation						
Gillnet	699	678	594	675	719	789
Setnet	169	161	152	193	248	259
Troll	706	874	941	970	585	341
Retail Fish Dealer and Peddler	1,281	1,333	1,353	1,383	1,410	1,415
Wholesale Fish Dealer	141	148	150	165	166	170
Broker	2	2	4	4	4	3
Salmon Canner	13	11	14	15	15	16
Shellfish Canner	7	10	6	7	8	8
Reduction Plant	2	3	3	3	3	3
Bagnet	10	7	35	117	39	82
(Issued for Sandy River Smelt)	1	1	1	2	1	2
Clam	347	373	345	396	469	596
Crab	215	192	151	161	170	161
Shrimp	1	1	1	1	1	1
Crawfish	19	18	19	25	24	15
Setline	1	4	6	5	18	26
Delivery	902	1,067	673	543	500	644
Supplemental to Delivery	4	3	6	---	11	7
Personal	2,734	3,046	2,799	2,942	2,316	2,203
Buyer	53	51	53	63	67	55
Baitnet	7	12	10	6	6	7
Carp Permit	5	5	6	6	5	5
Longline	---	2	1	---	---	---
Otter Trawl	4	6	7	---	---	---
Lost License	10	31	8	---	---	---
Oyster Tonger	1	---	---	---	---	---
Retail Dealer Package Frozen Food Fish	1,167	1,163	1,146	1,142	1,144	967
Wholesale Distributor	54	44	49	52	56	49
Indian Gillnet	11	7	4	3	5	5
Indian Bagnet	---	---	4	3	3	3
Indian Personal	17	8	13	16	20	19
Indian Wholesale Fish Dealer	---	---	1	2	---	---
Indian Clam	9	1	8	13	15	16
Indian Setline	---	---	---	3	2	2
Indian Troll	---	---	3	3	4	1
Indian Crab	---	1	---	1	1	---
TOTAL	8,591	9,262	8,566	8,924	8,024	7,874

OREGON LANDINGS OF FOOD FISH AND SHELLFISH

For License Year April 1 - March 31

(All figures in pounds)

FISH	1954	1955	1956	1957	1958	1959
Cod	736,159	259,073	190,642	562,121	472,582	367,655
Flounders	620,189	803,907	383,721	406,680	468,774	283,647
Halibut	829,529	393,187	472,148	414,008	583,850	211,510
Ling Cod	307,488	389,395	301,249	584,627	293,766	445,102
Mink Feed	226,630	1,873,150	11,500,903	9,829,844	8,139,744	6,171,908
Pacific Ocean Perch (Rosefish)	4,234,829	2,717,038	3,275,695	2,801,857	2,415,720	2,089,553
Rockfish	3,458,156	3,443,175	2,805,212	3,635,047	2,930,578	4,956,168
Sable	376,658	213,865	401,826	436,172	172,154	202,969
Salmon & Steelhead						
Blueback	162,445	56,996	159,818	189,708	533,841	473,106
Chinook	5,775,577	9,420,667	10,025,882	6,914,125	6,012,747	3,596,499
Chum	518,657	182,216	138,770	153,420	165,206	95,916
Humpback		7,115		100,154		6,436
Silver	2,289,498	2,766,746	3,952,546	4,129,279	1,472,319	887,312
Steelhead	1,004,040	900,770	620,653	539,953	463,617	730,628
Shad	643,028	592,644	516,095	341,490	448,803	329,752
Smelt	522,985	662,072	571,630	222,070	466,606	127,037
Sole						
Dover	3,519,538	3,189,219	2,749,206	3,548,789	3,376,352	4,653,528
English	1,476,343	1,292,672	1,252,435	1,760,726	1,568,616	1,862,868
Petrale	1,457,282	1,120,295	1,603,285	1,880,334	981,940	1,394,760
Other	3,432,765	5,092,639	1,313,075	613,579	591,059	977,864
Striped Bass	23,544	26,701	42,402	13,085	22,051	20,386
Sturgeon						
White	164,656	134,460	168,237	177,455	143,860	134,079
Green	16,575	45,004	35,461	69,464	42,994	128,947
Tuna	469,440	5,422,126	4,859,493	3,309,360	10,666,324	10,574,030
Other Fish	240,244	992,011	1,266,276	1,327,253	2,316,286	1,000,647
SHELLFISH						
Clams						
Bay	135,504	115,643	122,677	110,766	79,594	66,108
Razor (Clatsop Beaches) ..	176,512	166,516	104,704	78,582	88,464	51,378
Crabs	7,449,375	6,568,625	10,263,275	13,088,755	8,516,225	7,584,525
Shrimp		22,557	6,302	496,433	1,752,663	2,473,727

**COUNTS OF SALMON AND STEELHEAD PASSING OVER BONNEVILLE DAM
YEARS 1938 TO 1960**

CHINOOK

Year	Jan.	Feb.	Mar.**	Apr.	May**	June	July	Aug.	Sept.	Oct.	Nov.**	Dec.	Total
1938	*	*	*	*	22,371	8,221	6,556	34,765	197,294	2,302	263	27	271,799
1939	6	12	121	51,410	25,159	5,602	17,828	32,909	150,851	2,197	78	16	286,189
1940			504	37,253	28,621	7,027	14,938	58,643	240,515	3,765	287	34	391,587
1941	4		1,360	51,486	19,445	7,013	9,395	12,590	351,967	7,179	866	138	461,443
1942	1	15	34	9,506	30,915	11,816	12,821	27,581	303,939	4,485	639	190	401,942
1943	11	6	43	12,172	53,268	5,440	8,044	28,985	201,414	3,354	365	21	313,123
1944	1	2	65	15,671	15,127	4,363	8,241	55,468	139,254	2,388	164	20	240,764
1945	6	4	81	17,148	26,276	11,293	16,317	32,254	189,675	4,281	137	6	297,478
1946	1	2	25	14,196	53,313	30,253	20,967	45,422	277,152	4,523	173	25	446,052
1947		2	141	83,520	49,899	25,502	13,358	43,062	260,385	3,945	526	37	480,377
1948	10		251	21,205	20,262	44,137	23,100	35,934	270,238	3,928	467	23	419,555
1949			5	5,765	44,304	24,232	22,500	41,500	137,599	1,571	215	6	277,697
1950			21	6,630	50,638	16,667	32,937	40,462	205,521	4,356	143		357,375
1951	*	*	32	28,801	86,055	54,889	24,394	33,785	97,131	6,489	212		331,788
1952	*	*	255	8,130	107,807	62,491	21,800	82,290	135,053	2,576	477		420,879
1953	*	*	1,254	126,450	42,583	27,228	30,593	27,398	75,145	1,495	333		332,479
1954		2	657	82,877	51,230	46,801	32,596	24,969	80,426	1,189	200		320,947
1955	*	*	1,391	84,436	85,769	45,502	37,437	32,833	70,558	1,803	124		359,853
1956	*	*	161	8,850	54,438	64,262	36,938	42,203	92,030	1,854	179	2	300,917
1957	*	*	328	90,984	45,128	104,243	30,790	34,829	95,457	1,352	175		403,286
1958			468	15,361	59,377	74,375	27,524	19,735	227,504	1,948	127		426,419
1959			182	26,944	34,007	39,581	49,371	24,945	168,187	1,643	168		345,028
1960			184	37,064	32,349	65,247	***	***	***	***	***	***	134,844
Monthly Averages	2	2	344	38,039	45,145	34,182	21,672	35,329	172,491	2,984	275	24	348,775

COUNTS OF SALMON AND STEELHEAD PASSING OVER BONNEVILLE DAM

YEARS 1938 TO 1960

STEELHEAD

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1938	*	*	*	*	6,622	2,382	19,455	29,231	46,618	2,264	339	92	107,003
1939	23	19	570	8,110	1,587	1,490	36,681	38,062	33,891	1,264	216	119	122,032
1940	5	96	1,688	4,125	998	4,489	61,188	46,071	64,377	1,786	292	59	185,174
1941	37	76	1,641	6,392	1,518	996	21,940	29,600	50,542	3,980	1,063	304	118,089
1942	4	37	256	3,642	4,159	1,588	19,905	41,973	77,076	2,412	566	182	151,800
1943	14	18	654	3,374	4,698	1,564	7,755	29,894	41,051	2,444	573	94	92,133
1944	50	157	1,019	6,142	2,224	1,169	21,868	24,508	35,907	6,129	1,119	226	100,518
1945	1003	1,078	3,008	4,685	1,557	1,109	24,537	40,593	40,194	1,925	302	142	120,133
1946	64	551	3,040	9,839	5,482	3,265	20,600	58,466	38,399	2,070	262	769	142,807
1947	197	321	1,968	6,889	2,025	1,595	28,134	40,819	50,025	2,905	443	123	135,444
1948	154	119	1,631	4,473	1,170	1,895	33,191	53,621	40,609	1,742	381	76	139,062
1949	1	---	1,689	3,293	1,712	1,264	34,314	54,281	20,786	1,161	686	98	119,285
1950	13	8	1,156	4,537	1,667	691	25,142	53,904	24,226	1,932	811	---	114,087
1951	---	---	375	2,338	1,568	5,187	74,980	39,712	15,357	947	225	---	140,689
1952	---	---	278	1,248	1,751	8,202	118,110	79,735	48,293	2,735	638	---	260,990
1953	---	---	1,310	5,308	1,456	5,313	106,712	64,006	36,107	2,797	905	---	223,914
1954	---	---	679	5,511	1,571	6,115	59,443	65,234	34,941	2,209	551	---	176,260
1955	---	---	1,006	2,100	1,149	2,418	79,124	84,746	24,239	3,361	268	---	198,411
1956	---	---	1,409	2,718	1,582	3,122	48,306	47,148	23,343	2,846	635	7	131,116
1957	---	---	926	2,081	760	8,434	66,738	34,915	24,029	1,069	231	---	139,183
1958	---	---	495	651	1,457	5,645	53,734	22,827	44,478	1,859	291	---	131,437
1959	---	---	219	746	1,236	2,562	60,549	38,417	23,579	1,540	178	---	129,026
1960	---	---	412	904	1,090	4,314	---	---	---	---	---	---	6,720
Monthly Averages	71	113	1,156	4,050	2,132	3,253	44,452	44,251	36,438	2,234	477	99	138,492

COUNTS OF SALMON AND STEELHEAD PASSING OVER BONNEVILLE DAM

YEARS 1938 TO 1960

BLUEBACK

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
1938	*	*	*	*	1,025	17,811	53,864	2,097	235	6	2	---	75,040
1939	---	---	---	48	189	29,386	43,124	616	19	---	---	---	73,382
1940	---	---	---	---	206	59,639	85,885	3,063	13	1	---	---	148,807
1941	---	---	---	299	1,052	23,536	39,193	1,615	46	---	---	---	65,741
1942	---	---	---	---	13	12,624	41,301	1,477	49	---	---	---	55,464
1943	---	---	---	---	9	4,525	33,613	1,697	1	---	---	---	39,845
1944	---	---	1	---	16	3,099	11,171	659	126	---	---	---	15,072
1945	---	---	10	51	521	1,507	6,903	498	10	1	---	---	9,501
1946	---	---	---	9	67	7,815	64,715	1,747	21	2	---	---	74,376
1947	---	---	---	---	5	59,378	108,175	3,564	15	1	---	1	171,139
1948	---	---	---	---	---	12,023	117,652	1,849	13	4	---	---	131,541
1949	---	---	---	---	151	9,013	41,619	655	6	---	---	---	51,444
1950	---	---	---	---	---	341	75,784	1,826	42	---	---	---	77,993
1951	---	---	---	---	25	81,045	87,104	1,214	40	---	---	---	169,428
1952	---	---	7	1	3	136,939	47,188	467	30	2	8	---	184,645
1953	---	---	57	27	663	45,711	186,933	1,774	50	---	---	---	235,215
1954	---	---	1	---	13	52,359	76,505	1,212	17	---	---	---	130,107
1955	---	---	---	---	79	21,923	214,860	866	11	9	---	---	237,748
1956	---	---	---	---	10	29,649	125,185	1,564	7	3	---	---	156,418
1957	---	---	---	---	21	38,616	43,938	323	14	3	---	---	82,915
1958	---	---	---	---	25	38,736	82,719	878	23	8	---	---	122,389
1959	---	---	---	2	153	10,155	75,325	906	14	5	---	---	86,560
1960	---	---	---	---	4	41,758	***	***	***	***	***	***	41,762
Monthly Averages	---	---	4	20	185	32,069	72,294	1,329	35	2	1	---	105,936

**COUNTS OF SALMON AND STEELHEAD PASSING OVER BONNEVILLE DAM
YEARS 1938 TO 1960**

SILVERS

Year	Jan.	Feb.	Mar.**	Apr.	May**	June	July	Aug.	Sept.	Oct.	Nov.**	Dec.	Total
1938	*	*	*	*	---	---	---	3,070	10,995	972	141	7	15,185
1939	3	---	---	---	---	---	---	1,811	12,226	310	15	18	14,383
1940	3	---	---	---	---	---	---	1,451	10,212	213	33	5	11,917
1941	2	---	---	---	---	---	---	1,317	16,061	369	160	2	17,911
1942	---	---	---	---	---	---	---	1,193	11,062	147	---	---	12,402
1943	---	---	---	---	---	---	---	762	1,676	89	20	---	2,547
1944	---	---	---	---	---	---	---	1,052	3,021	103	29	2	4,207
1945	---	---	---	---	---	---	2	239	533	15	---	1	790
1946	---	10	4	---	---	---	22	228	3,609	1	---	24	3,898
1947	12	2	1	---	---	---	---	217	10,928	10	3	1	11,174
1948	1	---	---	---	---	---	11	158	3,893	10	3	5	4,081
1949	---	---	---	---	---	---	17	270	703	5	8	1	1,004
1950	---	---	---	---	---	---	---	1,570	8,545	36	---	---	10,151
1951	---	---	---	---	---	---	---	197	4,773	225	6	---	5,201
1952	---	---	---	---	---	---	10	2,581	5,131	22	24	---	7,768
1953	---	---	---	---	---	---	1	7,094	5,890	22	11	---	13,018
1954	---	---	---	---	---	---	---	668	3,319	74	1	---	4,062
1955	---	---	---	---	---	---	---	443	3,188	94	---	---	3,725
1956	---	---	---	---	---	---	7	1,158	4,879	83	---	---	6,127
1957	---	---	---	---	---	---	---	1,564	3,046	63	2	---	4,675
1958	---	---	---	---	---	---	---	341	3,220	99	13	---	3,673
1959	---	---	---	---	---	---	---	122	2,551	22	---	---	2,695
1960	---	---	---	---	---	---	---	---	---	---	---	---	---
Monthly Averages	1	1	---	---	---	---	3	1,196	5,629	130	20	3	6,982

**COUNTS OF SALMON AND STEELHEAD PASSING OVER BONNEVILLE DAM
YEARS 1938 TO 1960**

CHUMS

Year	Jan.	Feb.	Mar.**	Apr.	May**	June	July	Aug.	Sept.	Oct.	Nov.**	Dec.	Total
1938	*	*	*	*	---	---	---	---	---	1,245	799	73	2,117
1939	2	---	---	---	---	---	---	---	6	700	411	49	1,168
1940	---	---	---	---	---	---	---	---	---	860	835	34	1,729
1941	---	---	---	---	---	---	---	---	---	1,116	4,130	23	5,269
1942	---	---	---	---	---	---	---	---	---	700	1,149	16	1,865
1943	---	---	---	---	---	---	---	---	---	125	623	40	788
1944	1	---	---	---	---	---	---	---	---	191	666	96	954
1945	2	---	---	---	---	---	---	---	2	119	585	20	728
1946	---	---	---	---	---	---	---	---	1	306	808	63	1,178
1947	---	---	---	---	---	---	---	1	---	59	110	29	199
1948	---	---	---	---	---	---	---	---	---	192	2,966	478	3,636
1949	---	---	---	---	---	---	---	---	---	215	1,719	94	2,028
1950	1	---	---	---	---	---	---	---	---	298	770	---	1,069
1951	---	---	---	---	---	---	---	---	---	60	984	---	1,044
1952	---	---	---	---	---	---	---	---	2	163	1,340	---	1,505
1953	---	---	---	---	---	---	---	---	---	373	1,355	---	1,728
1954	---	---	---	---	---	---	---	---	6	193	1,370	---	1,569
1955	---	---	---	---	---	---	---	---	---	66	252	---	318
1956	---	---	---	---	---	---	---	---	2	135	547	9	693
1957	---	---	---	---	---	---	---	---	3	38	528	---	559
1958	---	---	---	---	---	---	---	---	---	147	308	---	455
1959	---	---	---	---	---	---	---	---	8	130	768	---	906
1960	---	---	---	---	---	---	---	---	---	---	---	---	---
Monthly Averages	---	---	---	---	---	---	---	---	1	323	1,001	45	1,370

COUNTS OF SALMON AND STEELHEAD PASSING OVER BONNEVILLE DAM

YEARS 1938 TO 1960

TOTAL COUNTS ALL SPECIES

Year	Jan.	Feb.	Mar.**	Apr.	May**	June	July	Aug.	Sept.	Oct.	Nov.**	Dec.	Total
1938	*	*	*	*	30,018	28,414	79,875	69,163	255,142	6,789	1,544	199	471,144
1939	34	31	691	59,568	26,935	36,478	97,633	73,398	196,993	4,471	720	202	497,154
1940	8	96	2,192	41,378	29,825	71,155	162,011	109,228	315,117	6,625	1,447	132	739,214
1941	43	76	3,001	58,177	22,015	31,545	70,528	45,122	418,616	12,644	6,219	467	668,453
1942	5	52	290	13,148	35,087	26,028	74,027	72,224	392,126	7,744	2,354	388	623,473
1943	25	24	697	15,546	57,975	11,529	49,412	61,338	244,142	6,012	1,581	155	448,436
1944	52	159	1,085	21,813	17,367	8,631	41,280	81,687	178,308	8,811	1,978	344	361,515
1945	1,011	1,082	3,099	21,884	28,354	13,909	47,759	73,584	230,414	6,341	1,024	169	428,630
1946	65	563	3,069	24,044	58,862	41,333	106,304	105,863	319,182	6,902	1,243	881	668,311
1947	209	325	2,110	90,409	51,929	86,475	149,667	87,663	321,353	6,920	1,082	191	798,333
1948	165	119	1,882	25,678	21,432	58,055	173,954	91,562	314,753	5,876	3,817	582	697,875
1949	1	---	1,694	9,058	46,167	34,509	98,450	96,706	159,094	2,952	2,628	199	451,458
1950	14	8	1,177	11,167	52,305	17,699	133,863	97,762	238,334	6,622	1,724	---	560,675
1951	---	---	407	31,139	87,648	141,121	186,478	74,908	117,301	7,721	1,427	---	648,150
1952	---	---	540	9,379	109,561	207,632	187,108	165,073	188,509	5,498	2,487	---	875,787
1953	---	---	2,621	131,785	44,702	78,252	324,239	100,272	117,192	4,687	2,604	---	806,354
1954	---	8	1,337	88,388	52,814	105,275	168,544	92,083	118,709	3,665	2,122	---	632,945
1955	---	---	2,397	86,536	86,997	69,843	331,421	118,888	97,996	5,333	644	---	800,055
1956	---	---	1,570	11,568	56,030	97,033	210,436	92,073	120,261	4,921	1,361	18	595,271
1957	---	---	1,254	93,065	45,909	151,293	141,466	71,631	122,549	2,525	936	---	630,628
1958	---	---	963	16,012	60,859	118,756	163,977	43,781	275,225	4,061	739	---	684,373
1959	---	---	401	27,692	35,396	52,298	185,245	64,390	194,339	3,340	1,114	---	564,215
1960	---	---	596	37,968	33,443	111,319	---	---	---	---	---	---	183,326
Monthly Averages	74	115	1,503	42,064	47,462	69,503	138,421	82,104	214,594	5,672	1,774	171	601,556

*No Count. (Figures for 1938 are from May 7 to December 31, inclusive.)

**Fish-counting initiated on May 7, 1938; discontinued for annual winter maintenance November 29, 1950 to 1952 inclusive; November 28, 1953; November 27, 1954; November 29, 1955; December 1, 1956 and November 30, 1957. Fish-counting initiated on March 2 and discontinued for annual winter maintenance November 30, 1958; initiated March 1, 1959 and discontinued for annual winter maintenance November 28, 1959; initiated on March 1, 1960.

***Not available at publication.