



Vol. VI

PORTLAND, OREGON, APRIL, 1951

No. 4

TROUT ANGLERS OPEN SEASON THIS MONTH

The summer trout season starts this month, April 14 in Zones 1 and 2 and April 28 in Zones 3, 4, 5, 6, 7, 8 and 9. The earlier opening applies to the Willamette Valley and coastal areas with the exception of the Rogue and Umpqua watersheds. Anglers, however, are advised to consult the official 1951 angling regulations now available at all license agencies for exceptions as some waters have special seasons.

The general bag limit has been changed this year to eliminate the poundage limit. Trout anglers will be allowed to take 10 fish a day not more than 5 of which may be 12 inches or over. Two such limits may be taken in any 7 consecutive days or kept in possession.

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The Salmon Problem of The Rogue River Basin

By H. J. Rayner, Chief of Operations
Fisheries Division

The story of the salmon of the Rogue and of the screens which will protect them in that river is of interest to every true sportsman. A device for the passage of fish over dams on the Rogue and other rivers has been developed which is as far reaching in its effects as the fish ladder.

It is the general policy of all organizations charged with the preservation of steelhead, other trout, and salmon on the western coast of North America to endeavor to protect downstream migrant fish from losses resulting from the action of pumps, turbines, and diversion ditches. That endeavor has been discouraged by the lack of a good method for screening narrow channels of deep water and of large volume.

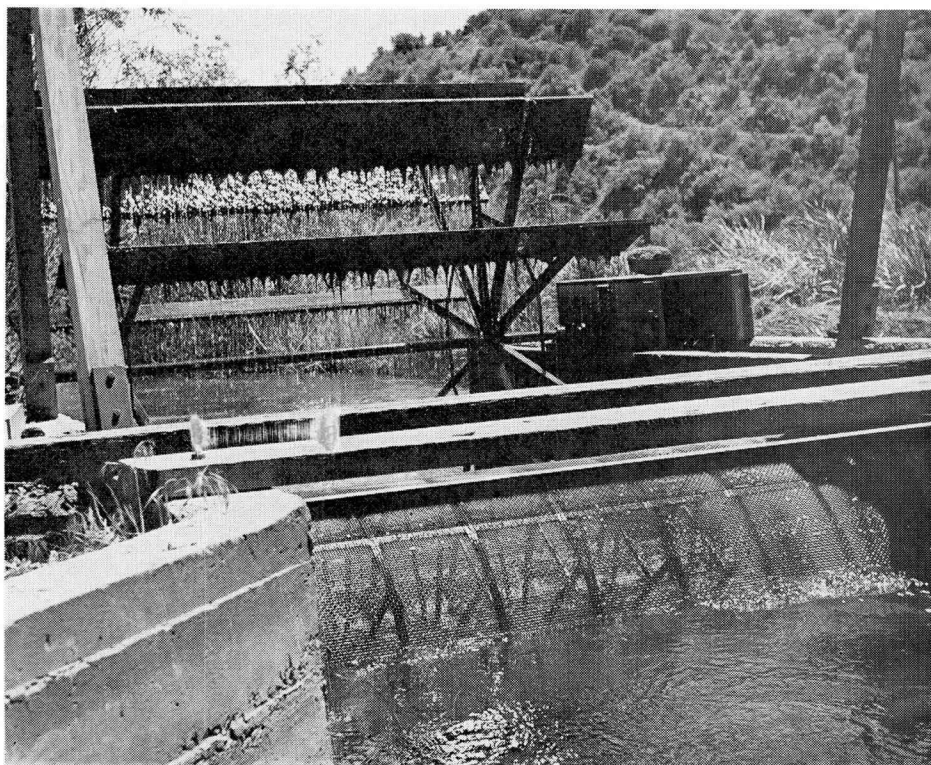
Correspondence carried on in 1949 with fishery workers in Great Britain, New Zealand, Australia and other parts

of the world revealed no satisfactory screening method that could be used in the rivers of Oregon for large volumes of water. In use in Scotland on a tributary of the Tay River is a stationary screen designed to pass five thousand cubic feet of water per second. The screen plans were sent to us, but the type was not suited to our use because of the difficulties involved in cleaning, and the attendant excessive maintenance.

Patent rights to a rugged and efficient rotary screen are owned by the Game Commission. Other governmental agencies have availed themselves of Oregon's policy of allowing free use of the screen. Conservation groups of several states have visited Oregon's screen factory and have even used it as a school for the training of personnel in screen construction and maintenance.

For small diversions rotary screens have been used successfully and in 1950 there were 485 in operation in Oregon. Most of them were in the Rogue River valley where ninety per cent of the diversions are effectively screened. More than \$250,000 has been expended on the Rogue in the protection of salmonoids through screening.

Our experience with circular screens
(Continued on Page 4)



Standard type of rotary screen effective in small diversions.

☆ THIS AND THAT ☆

The Pacific Waterfowl Flyway Committee, composed of representatives of State Game Departments in this flyway and the U.S. Fish and Wildlife Service, held their quarterly meeting in Portland and latter part of February to discuss progress and results of their waterfowl investigations. The Committee was organized a few years ago when the states concerned decided it would be well to coordinate their studies and pool their information in order to have a better basis for making recommendations on waterfowl management in this area.

* * *

The Audubon Society has issued a centennial stamp set consisting of 24 miniatures of Audubon paintings in honor of the 100th anniversary of Audubon's death. Two sets of the stamps are being sold for one dollar and the proceeds will be used to further the conservation education program of the Society. Stamps may be procured directly from the Audubon Society.

* * *

Stealing livestock while on a hunting trip does not pay financially two hunters have discovered. One deer hunter was recently fined by the Lakeview justice of peace to the extent of \$750 for stealing a pig.

The second larceny of livestock case in Lake County during the 1950 deer season resulted in a fine of \$300 for the killing and taking of a sheep.

* * *

Aerial sampling of antelope herds was started in the middle of February although the work was slowed up by the February storms. Lake, Malheur, Harney and Deschutes counties will be covered in this survey.

* * *

Rehabilitation of Fern Ridge Reservoir, in which trash fish were poisoned last fall, was started with the release of 1,000 three and one-half inch bass and 500 bluegill fingerlings which had to be salvaged from a Willamette Valley pond on account of an early drawdown.

* * *

Clearing of coastal streams continues to receive attention from fieldmen of the Fish and Game Commissions. Log jams and other obstructions are being removed and logging operators being contacted to obtain their cooperation in keeping the streams clear.



Trout Anglers Open Season This Month

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The minimum length limit for trout is six inches except that in Zone 1 and the lower part of the Umpqua and Rogue systems the eight-inch limit prevails.

The regulation on live bait has been made more restrictive. The use of live fish for bait is prohibited entirely except for striped bass fishing. In the past the careless use and disposal of live minnows has ruined many fine trout fishing waters, many of which can be rehabilitated only at tremendous cost.

BULLETIN BEGINS SIXTH YEAR

Five years ago the Game Commission Bulletin was started on its way with a press run of 5,000 copies. This month's issue has a press run ten times that and a direct mailing list of 31,000 names.

The size of the Bulletin has not been expanded in keeping with the policy to use the funds available to increase the circulation instead.

Different species of marked fish are being released again this year by the Game Commission and anglers catching such fish are urged to report to the nearest field agent or Game Commission office.

* * *

In swimming downstream a fish must swim faster than the current or be suffocated by water entering its gills and remaining stationary.

APRIL-MAY CALENDAR

Salmon and Steelhead over 20", open both months inland waters.

Salmon and Steelhead over 20", open April 14 in coastal waters.

Trout Summer Season—

Opens April 14 in Zones 1 and 2;

Opens April 28 in Zones 3, 4, 5, 6, 7, 8 and 9.

Warm Water game fish, open both months.

Predatory animals, open both months.

NOTE: For exceptions, consult official angling regulations.

Oregon State Game Commission Bulletin

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OREGON STATE GAME COMMISSION

1634 S. W. Alder Street—P. O. Box 4136

Portland 8, Oregon

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MARCH MEETING OF GAME COMMISSION

Resignation of C. A. Lockwood as state game director because of ill health was submitted to the Game Commission when it met on March 5, in Portland. Mr. Lockwood had been in the employ of the Commission since 1933 serving in various capacities, including that of assistant game supervisor from 1937 until September, 1947, when he was appointed state game supervisor, which title was later changed to state game director.

The Commission named P. W. Schneider, assistant game director, to serve as acting state game director until a permanent appointment is decided upon. Mr. Schneider has been assistant director since July, 1949 and immediately prior to that was chief of the game division. He is a graduate of the fish and game management department of Oregon State College and has worked for the Game Commission continuously since 1938 except for a leave of absence to serve with the U.S. Navy during World War II.



P. W. Schneider, acting state game director, and C. A. Lockwood, retiring game director.

WINDBREAKS

In a recent article in "News of Soil Conservation District of Oregon" Dr. F. L. Ballard, Associate Director, Oregon State College Extension Service, refers to some sound advice appearing in the experiment station circular "Hints For Eastern Farmers," published in 1908. Among practices for conserving soil moisture in Eastern Oregon the bulletin suggested:

"Leave the surface rough plowed during the rainy and winter seasons, cross furrow on slopes in order that all of the rainfall might be quickly absorbed and snow be held from flowing. In regions of high winds, low windbreaks of hedges or native shrubs or even high ridges should be run crosswise to a prevailing wind and located at frequent intervals."

The current Extension Service bulletin, "Windbreaks For Eastern Oregon" discusses the establishment of field windbreaks to help control soil blowing and to protect crops, orchards or cattle.

The State Game Commission's Habitat Improvement program has been actively participating in field plantings of selected shrub and tree species in Eastern Oregon. Field windbreaks are an example of the type of projects beneficial to both wildlife and farm landowners.

TROUT AND SALMON LIBERATED

State hatcheries have produced 2,000,-000 yearling trout for release in Oregon waters this spring. Western Oregon waters received prior to the opening of the angling season on April 14, 225,000 trout ranging from 6 to 10 inches in length.

Growth of fall spawning rainbow at Cedar Creek, Alsea and Bandon hatcheries on the coast has been excellent. Trout hatched from eggs taken in January, 1950, average 8 inches in length. All cutthroat reared at the hatcheries are the coastal strain of fish and they will be released only in coastal waters and streams on the west side of the Willamette valley where they are native.

Most of the fish are being transported by six large fish tankers but to supplement them the Commission has five portable fish tanks which may be readily mounted on the bed of a pick-up truck. Each tank is insulated to maintain low water temperatures and equipped with an aeration system. Fish quickly use up the oxygen in the water if it is not replenished. With the large fish liberation trucks, 400-mile trips have been made without loss of trout.

Liberation of 200,000 yearling Chinook and silver salmon from Game Commission fish hatcheries will be completed this month.

In the Rogue River basin 50,000 silver salmon and 40,000 spring Chinook salmon reared at the Butte Falls hatchery have been released below Grants Pass. The Umpqua River has received 51,000 spring Chinook salmon from the Rock Creek hatchery, and 20,000 silver salmon from the Alsea hatchery are slated for the Umpqua.

The Big Nestucca, Salmon, Alsea, Yachats, Sixes, Elk, Pistol and Chetco rivers, Tenmile Lake, and Beaver, Floras, and Pistol creeks are being stocked from the Cedar Creek, Alsea, and Bandon hatcheries with 61,000 silver salmon.

The Commission's rehabilitation program for the Umpqua and Rogue rivers is based on the planting of yearling silver and Chinook salmon. Although millions of salmon fry were stocked in these rivers, the runs continued to decline. Recent experimental plants by the Oregon Fish Commission have shown the planting of yearling silvers to be successful and the Game Commission hopes similar success will attend its plants of yearling silver and Chinook salmon.

All the salmon being released by the Game Commission have been marked by fin-clipping so that returns and migrations for these yearling salmon plants may be determined.

The Salmon Problem of The Rogue River Basin

(Continued from Page 1)

of large diameter has been unsatisfactory because a tight seal is difficult to maintain. Then too, the large circular screen can be used only under limited conditions and usually not at all where turbines are to be screened. Batteries of small circular screens can be used only where a large area of shallow water is present.

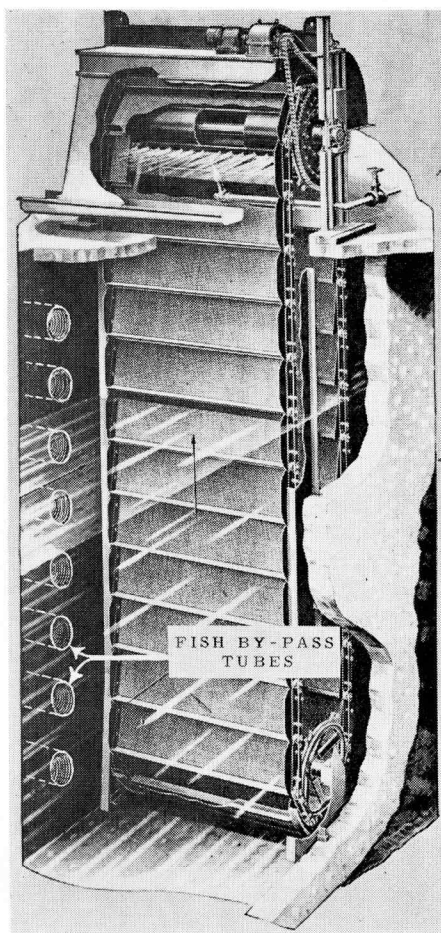
In 1949 the writer began a study of industry's use of travelling screens with emphasis on the screens used to process cannery products. George Kernan, Game Commission chief engineer, was consulted concerning the adaption of the flexible endless belt type of screen to our needs and the problem seemed to be one of repair rather than efficiency. Further exploration brought to light travelling screens manufactured by the Link-Belt Company and the Chain Belt Company which overcame the problem of repair by a division of the screen into panels, any one of which could be replaced without undue interference with the screen's operation. Such screens have been used for many years to remove debris from water and a change-over to their use as fish screens was found to be simple.

Subsequently the Portland General Electric Company abandoned their plans for the placement of a rotary screen at the Marmot diversion on the Sandy River and installed a travelling screen, a move which spelled the initiation of the biggest advance in salmonoid protection on large diversions since the advent of the fish ladder. History is being made on the Sandy River. The excellent manifestation of this company's recognition of public responsibility is encouraging.

Other diversions are to be tested in 1951 in order that their degree of harm to migrating fish may be determined and, if necessary, the travelling screen will be recommended for installation. Such diversions include the pulp mill water use at Oregon City, the hydroelectric diversions at Hood River, Leaburg and Walterville on the McKenzie, Winchester on the Umpqua, the Clackamas River power plants, and others.

The travelling screen has been designed into the structure known as the Savage Rapids dam on the Rogue River. No known device will do the job there in such an efficient manner.

Most persons interested in the welfare of salmon of the Rogue have been aware of the need for a screen at Savage Rapids. The knowledge that the pumps and



A typical travelling water screen installation.
(Compliments of Link Belt Company)

turbines destroyed fish came to light in the early twenties shortly after the dam was built and an attempt was made to screen the turbines for the purpose of fish protection. Officials of the irrigation district kindly aided. The screen proved to be a failure and was removed. No efficient method for remedying the situation was available until the advent of the travelling screen.

Because we have positive evidence of fish destruction in the turbines and pumps and because of our determination that the travelling fish screen is a satisfactory device for the protection of downstream migrant fish, the Game Commission has proceeded to obtain action in the installation of fish protective devices at the Savage Rapids dam. Dr. Harlan B. Holmes of the U.S. Fish and Wildlife Service and engineers of the Game Commission, Oregon State College, and the Link-Belt Company developed the plans for screening the Savage Rapids turbines and the pumps. The plans were completed in November 1949.

The Pacific Portland Cement Company also has been asked to screen its turbines, utilizing travelling screens at its hydroelectric plant at Gold Hill. Two new ladders, changes in an already existing one, and channel modifications have also been requested at the Gold Hill plant.

Value of the Rogue Fishery

When the Game Commission confers with power, irrigation, and flood control interests concerning the preservation of salmon or trout, little is said about aesthetics or recreation. "Money talks" is a catch phrase for such meetings and dollars must be met with dollars in coming to an understanding that a given fishery must be protected and considered in water use plans.

It is little realized that the Rogue fishery is of considerable value. Fishermen spent \$3,500,000 in the valley in 1949 of which \$1,300,000 was spent in the lower river in the pursuit of salmon. These figures are the result of a great amount of effort by the Game Commission and the Fish and Wildlife Service in interviewing large numbers of anglers and businessmen. If the figures are inaccurate, it is because they are not large enough since the people who would harm the fisheries have admitted the conservative nature of the values used.

Counts of Salmon

Evidence exists indicating that the Rogue River spring salmon was able to at least hold its own during the "thirties" following the commercial fishing ban. Such declines as have occurred may have begun approximately in 1944. Support for these remarks lies in a census made in 1930 at Savage Rapids dam of the Chinook salmon ascending the ladders. Up to July 1, approximately 24,000 salmon had been counted. Since 1942 when we began the counts at Gold Ray dam the July 1 figure for any year amounts to about 78 per cent of the total for the run. In 1930, then, with consideration given to the commercial catch, the spring Chinook total must have approached 35,000 fish. A uniform decline in the spring salmon runs indicates no great fluctuation in the runs from year to year. It can be assumed, therefore, that the fish increased slightly following 1930 and began their present decline with a count of 31,940 in 1944. In spite of or perhaps in part "because of" an average plant of more than 2,000,000 spring Chinook fry and fingerling salmon in the Rogue River by the Game Commission from 1933 to 1947

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The Salmon Problem of The Rogue River Basin

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the fishery was not able to maintain itself and showed a drop in 1950 to 16,767 fish.

In 1947 the rack-site at Rogue Elk was abandoned and no attempt has been made since to take eggs there owing to the loss of adult fish before spawning.

A review of the history of artificial propagation on the Rogue failed to show that the egg-taking and planting carried on by the Game Commission was beneficial. A change in policy in 1949 was aimed at the rearing of spring Chinooks to the age of yearlings followed by their release as marked fish with a plan to enumerate the returning adults.

The Oregon Fish Commission has had excellent returns from some plantings of yearling silver salmon and it is their results which prompted the release by the Game Commission of yearling spring Chinooks in the Rogue and, incidentally, in the Umpqua. Nearly 37,000 spring fish were planted in the Rogue in March 1950. Half of them were placed below Savage Rapids near Grants Pass and the remainder were planted near the mouth of Lobster Creek. When and if the fish return, the merits of the two planting sites may be assessed.

Nearly 50,000 silver salmon yearlings have been planted in the Rogue this year. The silver is comparatively easy to rear in our hatcheries and except for one year, we have not experienced difficulty at the Butte Falls hatchery which is located on the South Fork of Big Butte Creek, tributary to the Rogue. The silvers were stocked during the last three days of February of 1951 and they will be well on their way to sea before the trout season opens.

Attempts at obtaining spring salmon eggs in the Rogue in 1950 were unsuccessful even though a crew worked for three weeks on the river. The loss of fish at our racks in previous years forbade further effort in that direction. The holding of the adults has been very detrimental to their welfare. Another river furnished 17,000 eggs for the Rogue for rearing to yearling size and planting in 1952.

Within the past three years there has been developed a method for the holding of spring salmon for the taking of eggs which promises to solve the problem for us. A special type of pond with a unique water supply arrangement is the secret. The method is to be placed in operation at the Butte Falls hatchery in 1951 if at all possible under conditions of national emergency.

Hovering over the whole Rogue River is the spectre of fish diseases. First noticed in 1945, bacterial infection has destroyed countless thousands of resident trout, silver salmon, steelhead and Chinooks, not only as fry and fingerlings, but in the instance of spring salmon, summer salmon, and the summer steelhead, many of the adults were killed before they could reach the colder waters of the spawning grounds and before the cooler fall temperatures arrived. Water temperatures as high as eighty degrees have occurred over many miles of the river.

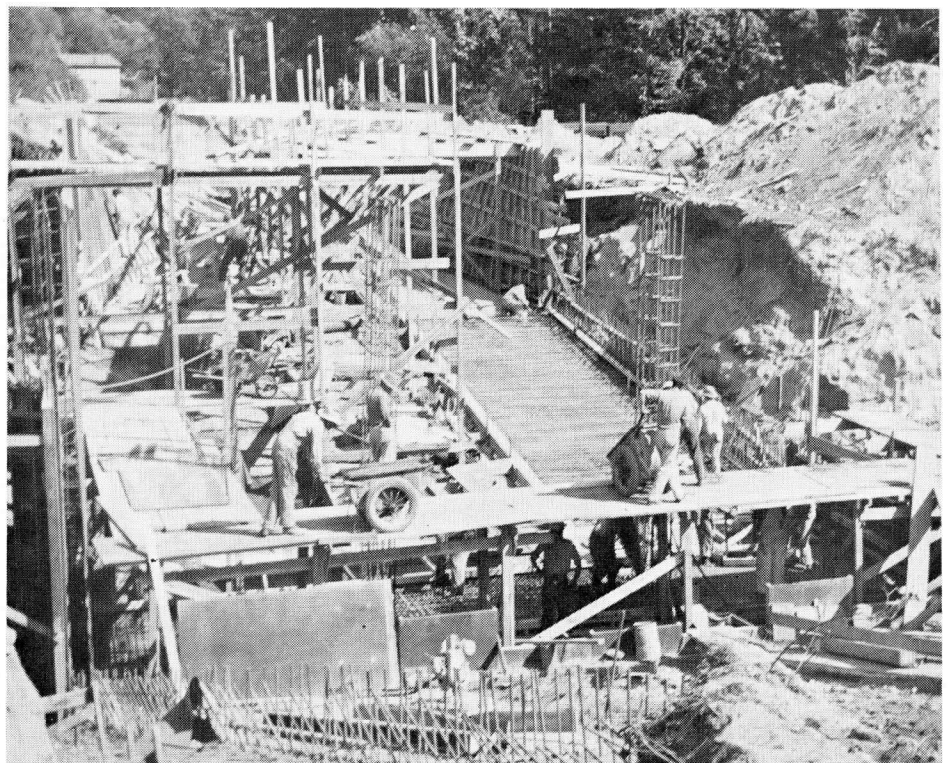
An increase in river temperatures is correlated to water use practices in the valley. The Savage Rapids and Gold Ray dams alone raise the river temperatures six to eight degrees during critical periods, an increase which could mean the difference between the survival or death of salmon and steelhead since the onset of bacterial infection is closely correlated with temperature.

The Savage Rapids and Gold Hill dams and high temperatures are not the only factors depleting the fish runs. Heavy fishing on the spring run, the extensive offshore troll fishery, and the continued illegal take of salmon are all contributors. Sport fishermen on the lower river take nearly twenty per cent

of the run of spring fish, creating what amounts to a commercial fishery in magnitude.

The problem of supplying cooler water to the Rogue may be solved through taking advantage of the presence of cold water in the depths of storage basins. In midsummer it is a common phenomenon for lakes in excess of fifty to one hundred feet in depth in these latitudes to contain large volumes of water approaching 40 degrees F. In some lakes and impoundments all water below fifty feet is near that temperature. The drawing off of water from the depths and its addition to the stream bed below the dam results in cold summer temperatures. If sufficient water is released a dangerously warm stretch of river may be cooled to an optimum temperature. There is nothing unusual about the phenomenon and it is being used to spectacular advantage on at least two western rivers. If tributary dams as advocated for the Rogue by fishery interests are built there is every likelihood that temperature conditions could be vastly improved. The Game Commission is not opposed to tributary storage in the Rogue River basin since it is felt that needs of the area might well be served with such planning. Structures which

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General view of the Marmot dam travelling screen under construction by the Portland General Electric Company on the Sandy River.

The Salmon Problem of The Rogue River Basin

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sit astride the main stem of the river blocking salmon and steelhead from their spawning grounds are quite another side of the story.

License sales in Josephine, Jackson and Curry counties amounted to 10.3 per cent of the state total in 1948. The valley is getting much more than 10 per cent of the Game Commission's fishing license revenues. As a matter of fact, expenditures in the Rogue River Valley since 1940 are an amount equal to any and in excess of most watersheds in the state. It is not important that licenses are bought in greater amounts here or there in the state. More important is the need for doing fish conservation work wherever it is needed. A Rogue River program of salmon rehabilitation has included the expenditure of one quarter million dollars for fish ladders and screens and the spending of more money is planned or funds have already been allocated. The strong stand taken by the Game Commission concerning the Bureau of Reclamation dams in the Rogue River Valley created a new realization of the value of the salmon and steelhead in the river.

The salvage of young fish, watershed protection, regulations, the destruction of predators, and the establishment of studies concerning them are another phase of Game Commission activities in the vicinity.

There are three species of fish of the Rogue which are reported to be more abundant now than in the "thirties." They are the cutthroat, winter steelhead and the fall Chinook salmon. Screening practices in tributaries of the lower river have no doubt contributed heavily to the increase in fish and they are not exposed to the hazards that affect the spring and summer fish. Silver salmon do not show a decline and there is little doubt that the species can be increased in numbers by the management methods now in effect.

Other rivers have been depleted of the spring salmon at the same time that the Rogue has been showing a decline. The Umpqua population is at a low ebb and may not even be maintaining itself. The decline of the Willamette River fish is even stronger than that of the Rogue and shows greater depletion even though several hatcheries have been in operation on the stream for many years with effort concentrated on the rearing of spring salmon.

We cannot ignore the effect of the offshore troll fishery upon the salmon of the Rogue. A suggestion has been made that commercial fishermen be taxed for the maintenance of hatcheries on that river. Such would be only aggravating an already sad situation in that the offshore trollers who are contributing to the decline of the salmon would continue to do so since their revenues would be necessary to maintain the hatcheries and the vicious circle would become tighter. What then, if the spring salmon hatcheries were found to be ineffective when marked fish were used to test efficiencies?

Recent yearly catches in the offshore troll salmon fishery have been as much as the following quantities, but the figures do not represent maximum takes:

California	7,000,000 pounds	1946
Oregon	3,800,000 pounds	1946
Washington	4,700,000 pounds	1946
Alaska	10,000,000 pounds	1950

Tagging experiments have indicated that the Alaskan fishery is largely dependent upon fish from Canada, Washington and Oregon.

ABOUT THE AUTHOR

Dr. H. John Rayner is a native of Washington and has spent nearly ten years in each of the Pacific Coast states. His Bachelor's and Master's Degrees were obtained at the University of California where he graduated with honors in agriculture. The degree of Doctor of Philosophy was obtained at Cornell University in the fields of limnology and fisheries. His thesis was concerned with a management policy for the rainbow trout of the Finger Lakes of central New York.

His experience has been as scientific assistant in the California Trout Investigations program, as aquatic biologist with the State of New York Conservation Department and the Connecticut State Board of Fisheries and Game, and as aquatic biologist with the Oregon State Game Commission. He has been with Oregon since 1942 except for naval duties in the Philippines and China in malaria and epidemic control during World War II.



ATLANTIC SALMON EGGS RECEIVED

The Quebec Department of Game and Fisheries has presented the Oregon Game Commission with 10,000 Atlantic salmon eggs from Gaspé Peninsula in eastern Canada. These eggs are now at the Game Commission's Klamath fish hatchery.

The Commission plans to rear the salmon for a year or more at the Klamath hatchery and then release the young fish in lakes of the Central Oregon area. The Atlantic salmon require a long period of stream life before they enter a lake. This period of development will be substituted for in the hatchery, explains Dr. John Rayner, chief of the Game Commission's fishery department.

Davis Lake is under consideration for the first planting of Atlantic salmon as their growth in this lake should be rapid and the main tributary, Odell Creek, provides ideal spawning conditions. Once established in Davis Lake the spawning salmon would provide the Game Commission with a permanent supply of eggs for stocking other inland waters. These salmon could also move up Odell Creek to nearby Odell Lake.

Rayner explains there are two types of Atlantic salmon, the landlocked and the sea-run form, and the eggs sent from Quebec are of the sea-run type. The New York conservation department has been planting the sea-run form in landlocked lakes with excellent results and their method is being followed by the Oregon Game Commission. Unlike the five races of Pacific salmon, the Atlantic salmon does not die after spawning.

In the east, the landlocked Atlantic salmon is renowned for its fighting qualities and its tendency to strike artificial flies more freely than most species of trout. Average weight of mature fish approaches ten pounds.

The 17th Cooperative Wildlife Research unit was established recently at the University of Arizona at Tucson. The first of these units, which are sponsored by the State Game Commission, State College or University, Wildlife Management Institute and U.S. Fish and Wildlife Service were started in 1935 and the Oregon unit at Corvallis is one of the original groups.

SIXTEENTH NORTH AMERICAN WILDLIFE CONFERENCE HELD IN MILWAUKEE

Representing the Oregon State Game Commission at the Sixteenth North American Wildlife Conference in Milwaukee last month was P. W. Schneider, Acting State Game Director. Mr. Schneider also attended the meeting of the personnel Cooperative Wildlife Research Units held immediately prior to the other conference.

"What is Wildlife Worth to You?" was the North American Conference theme, for three general and six technical sessions.

One of the outstanding sessions was entitled "Needed—A Natural Resources Policy." Water resources was discussed by Leland Olds, Member of the President's Water Resources Policy Commission. The fish and wildlife angle was covered in a paper by M. O. Steen, of the Missouri Conservation Commission. The subjects of crop and pasture lands, and forest and range were also included in the session.

"Wildlife in Today's Economy" was the title of another general session. The panel discussion was centered around the various aspects and types of values the nation derives from the fisheries and wildlife resources, including legal and political aspects, aesthetic and recreational values, economic aspects, biological and ecological values and social aspects.

"The Future of Waterfowl" was the subject for the third general session.

One technical session was devoted to conservation education and application of conservation knowledge. New techniques and developments in the field of fisheries and wildlife management were covered in the other five technical sessions. Of particular interest was a paper on "Game Introduction—When, Where and How" by Gardiner Bump of the United States Fish and Wildlife Service who had spent the past year or so abroad investigating different species of game birds from the standpoint of suitability for introduction in this country. Mr. Bump stated that over 1,000,000 forms of birds and mammals have been introduced in the United States. He pointed out some of the pitfalls involved if introductions are made promiscuously without thorough investigation.

Disease problems of wildlife were extensively discussed during one session.

The effect of DDT on fisheries, marshland development and utilization, the field bag check method of determining harvests, and methods of habitat improvement were some of the other topics of particular interest in the technical sessions.

WILDLIFE PROGRAM AVAILABLE FOR YOUTH CAMPS

A wildlife conservation program for youth summer camps is again being offered by the Information-Education Division of the Game Commission.

The program was initiated last year by Commission personnel in 26 youth camps. These included 4-H, Girl Scout, Campfire Girl, YMCA, and denominational camps.

An itinerary now being arranged by Austin Hamer, Game Commission education agent, calls for a two-day camp program consisting of illustrated talks on Oregon wildlife and field trips to observe wild animals and their food and cover requirements. Hamer and two seniors in Fish and Game Management from Oregon State College will conduct the wildlife sessions.

Primary purpose of the program will be to acquaint youth with the importance of Oregon's wildlife resource and to show the close relationship of wild creatures to our soil, water and forests. The program is a flexible one which can be worked into any camp schedule.

Camp directors interested in the wildlife program are urged to contact the Game Commission as the 1951 summer camp schedule is now being arranged.

The young of the opossum weigh only about 4 grains two weeks after birth, yet are quite active.

HERBERT A. SCHERZINGER

Herbert A. Scherzinger, 3805 S.E. 10th Avenue, Portland, was killed in action in Korea on February 6, 1951. He had been employed by the habitat improvement division of the Oregon State Game Commission and had worked in the Willamette Valley, Umatilla District, Klamath County and the Tillamook Burn.

He was called back into service with the Marine Corps last September. He was born January 27, 1930.

1950 LICENSE SALES LEVEL OFF

Oregon residents purchased 149,000 angling licenses, 131,000 hunting licenses, and 73,000 combination hunting and fishing licenses in 1950. The license sales for 1950 and 1949 were nearly the same. This indicates a leveling off in fishing and hunting license sales after more than doubling in the last ten years.

Non-residents purchased 19,330 fishing licenses and 1,400 hunting licenses in 1950. The Game Commission also issued 12,158 special fishing and hunting licenses to pioneers, disabled veterans, aged, and blind persons.

In addition to licenses, 24,500 elk tags, 174,500 deer tags and 1,500 antelope tags were sold last year by the Commission.

Total Game Commission receipts from the 1950 sale of licenses and tags was \$2,628,785. This money is deposited with the State Treasurer in a game fund, set aside exclusively for the management and protection of Oregon game birds, animals, and fish.



TILLAMOOK BURN SEEDED

Ten recently logged sites in the Tillamook burn have been seeded with 1,000 pounds of lotus major by a game commission habitat improvement crew to provide deer and elk food.

A similar planting of grasses, shrubs, and legumes was made on a trial basis one year ago in the burn area. Wesley Batterson, north coast game agent, reports good use of this planting by big game animals. The seeding just completed was made in foothill areas along the Wilson and Trask rivers.

All the lotus major seed for this planting was obtained from H. B. Howell, superintendent of the Jacob Astor experimental station at Astoria, who also donated seed for last year's planting.

Nature Lubbers



IF FAWNS, APPEAR
THE MOTHER'S NEAR

MICHIGAN DEPARTMENT OF CONSERVATION

THEY STILL DO IT

An example of what State Conservation Departments mean when they say to leave young wildlife alone is offered by a recent release of the United Press, the Wildlife Management Institute reports.

According to this report, Mr. and Mrs. Seaton Barker, owners of a health resort near Colusa, California, adopted a fawn four years ago and raised it on a bottle. All children in the neighborhood made a pet of "Bambi," as the deer was called, and they delighted in posing for their pictures with their arms around the sleek neck of the now full-grown buck. Bambi was their playmate until a few weeks ago when a sudden change took place in his personality.

A few days ago, the deer was seen with blood on his antlers, and one Nick Miskulin was found dead near his car, his body trampled and torn by hooves and antlers. A posse shot the buck as it tried to break into an automobile in an attempt to reach two screaming women who had barely reached safety ahead of him.

What might have happened if this instinctive, seasonal aggressiveness had over-taken the deer at one of the children's photography parties is not pleasant to contemplate.

Leave young wildlife where you find it.

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Bow and arrow hunters in the United States bag more than a thousand deer, a dozen bear, a few elk, and some puma, javelina and wild boar every year, the Fish and Wildlife Service reports.

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