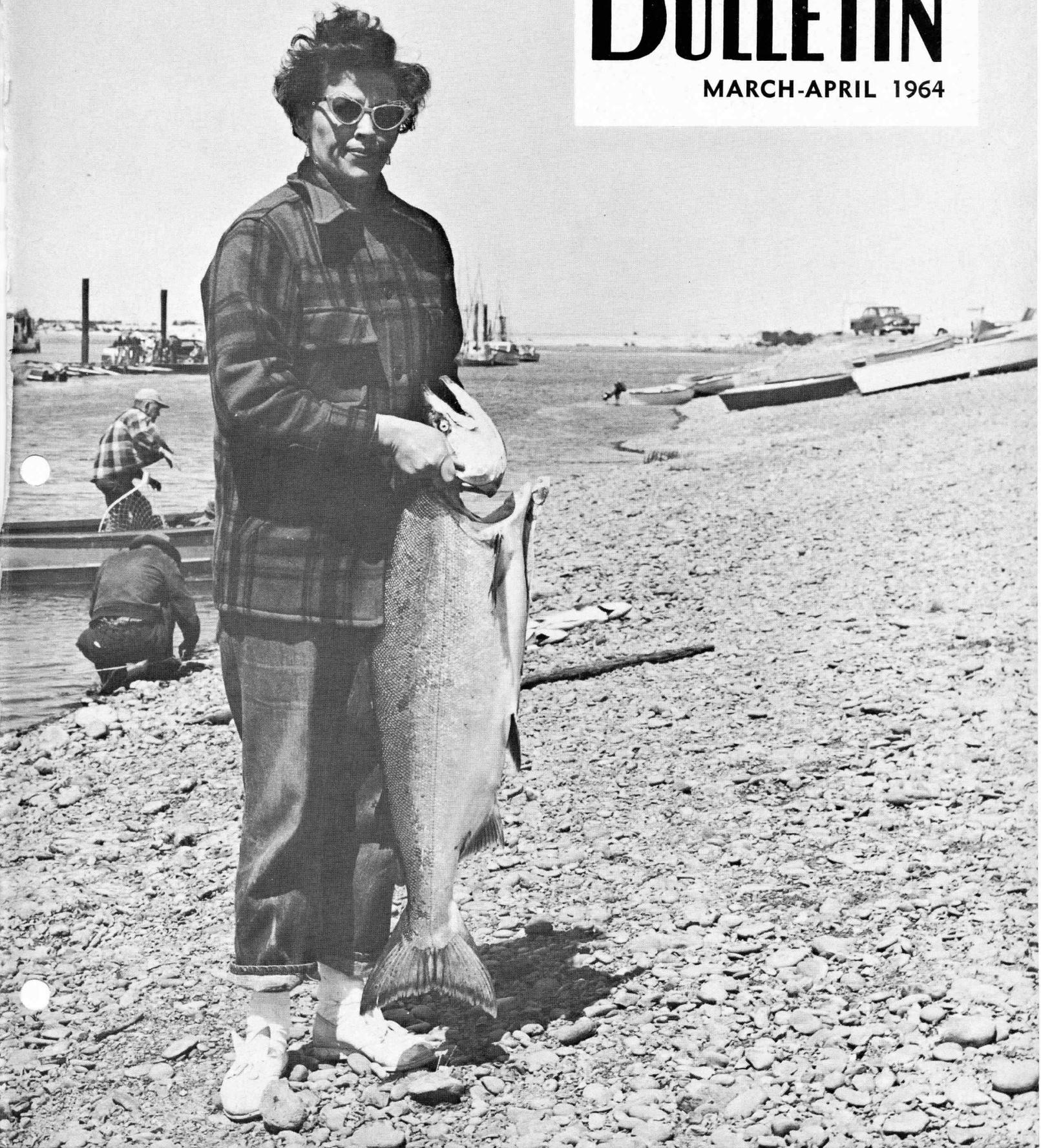


OREGON STATE
GAME COMMISSION

BULLETIN

MARCH-APRIL 1964



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Diamond Lake Hatchery

March-April, 1964
Number 2, Volume 19

Published Bimonthly by the
OREGON STATE GAME COMMISSION
1634 S.W. Alder Street—P.O. Box 3503
Portland, Oregon 97208

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Second-class postage paid at Portland, Oregon.

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The Cover

Proud lady angler with fine specimen of a spring chinook at the mouth of the Umpqua River. Photo by Ron Shay.

BULLETIN HUNTER SAFETY TRAINING PROGRAM

Instructors Approved

Month of December.....	4
Month of January.....	9
Total to Date.....	3,090

Students Trained

Month of December.....	453
Month of January.....	159
Total to Date.....	64,292

Total Firearms Accidents Reported, 1963

Fatal.....	10
Nonfatal.....	62

No Firearms Accidents Reported in 1964

BIG GAME HEARING SET FOR MAY 22

The Game Commission's hearing on big game regulations for 1964 will be held Friday, May 22, in Portland.

Seasons, bag limits, and methods of taking big game animals—deer, elk, antelope, and bear—will be considered.

The hearing convenes at 10 a.m. and the public is invited.

Tentative regulations will be set by the Commission and publicized. Final rules will be adopted when the Commission reconvenes its hearing on June 5.

THE DIAMOND LAKE HATCHERY is located at the northwest corner of Diamond Lake. Diamond Lake lies in the eastern corner of Douglas County just west of the summit of the Cascades in a beautiful setting, with Mt. Scott to the south and east, Diamond Peak to the north and west, Mt. Thielsen on the east, and Mt. Bailey on the west. The lake is at an elevation of 5,195 feet, has approximately 3,000 surface acres, and is considered a shallow lake with a maximum depth of 52 feet.

Diamond Lake was first stocked in the early 1900s. A rainbow trout egg collecting station was established at the lake in 1919. An open-air building was utilized as a hatchery until 1948 when the present hatchery building was constructed. At this same time a concrete dam and filter were built and an eight-inch pipeline installed to divert water from Lake Creek into the hatchery building. The most recent construction was the enlargement of the holding and egg-taking facilities in Lake Creek. In addition to the hatchery building along Lake Creek, there are a cabin, bunkhouse, and equipment shed located on the lake shore line.

The spawning crew goes in to the lake at approximately the time the ice goes off. Because of the varying weather conditions at this time of year, the method of getting to the station varies from automobile, to snow cat, to snowshoes.

The eggs collected prior to 1954 and the chemical treatment of Diamond Lake were from the original rainbow stocks.

The lake was restocked in 1955 with Kamloops, or Canadian rainbow, and during the period 1957 through 1963 the eggs collected have all been from the Kamloops stock. In 1962 it was decided to replace the Kamloops strain of rainbow with either fall or spring spawning rainbow of our own hatchery stocks. As a result, no Kamloops were stocked back into the lake in 1962, but instead rainbow from Oak Springs and Willamette stocks were marked and released into the lake. In the egg-take of 1964, eggs will be obtained from all three stocks.

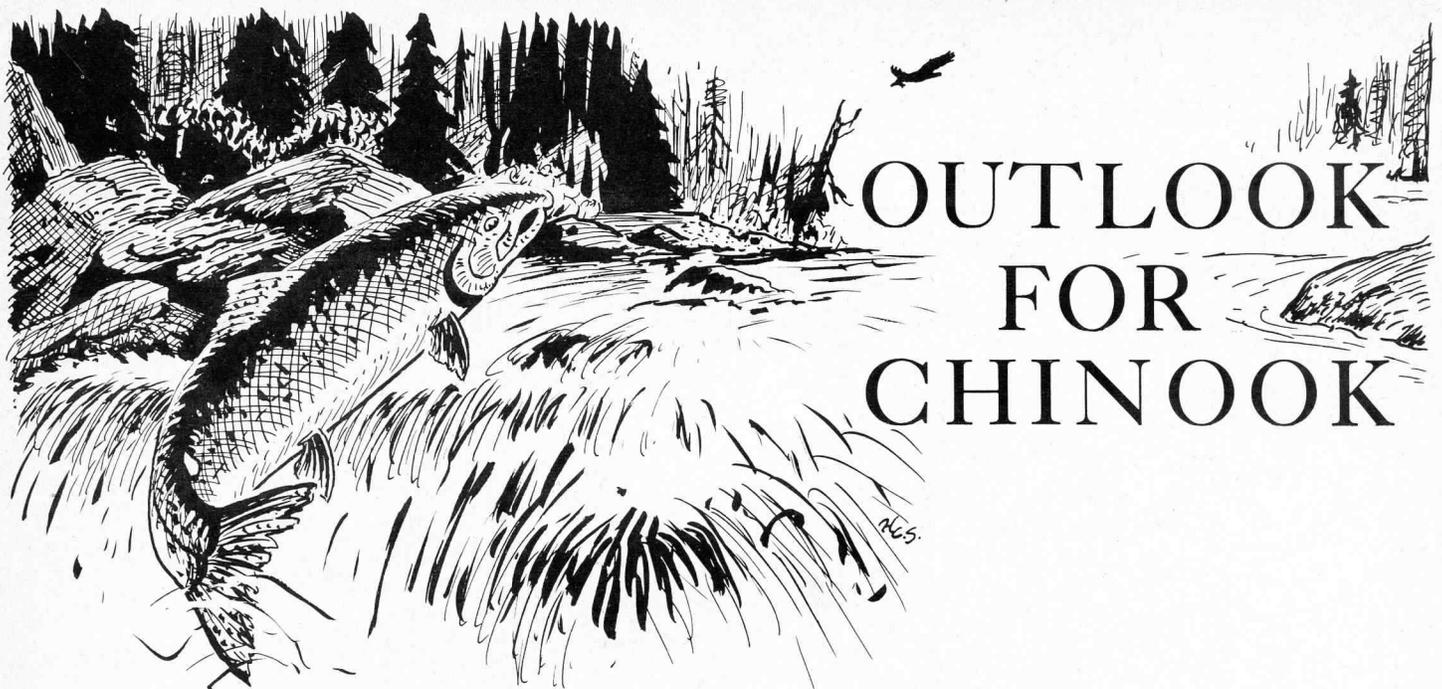
Brood fish are collected in traps installed in Short, Silent, and Lake Creeks. In addition, trap nets have been utilized in the shore line areas the past three years. A take of nineteen million trout eggs was recorded for one year of the thirty-three years the station was operated prior to 1954. The Kamloops egg-takes since 1957 have ranged from four million to slightly over twenty-one million in 1962.

Eggs from this station are used to restock Diamond Lake and for distribution to other hatcheries throughout the state. In years when large numbers of eggs have been collected, the excess eggs have been traded to other states and federal agencies for stocks of eggs that have been in short supply in Oregon.

The calculated catch for Diamond Lake in 1963 was 256,000 trout. This is the largest catch ever recorded for Diamond Lake and represents a harvest of approximately 243,000 pounds of trout. Over 93,000 anglers fished this body of water in 1963.—JERRY BAUER.

A cold miserable job! Eggtaking operation at Lake Creek, outlet of Diamond Lake.





OUTLOOK FOR CHINOOK

Rogue and Umpqua Spring Chinook Population Trends Going Up

By Fred E. Locke, Chief, Lake & Stream Management

THE SPRING CHINOOK, king of salmon, a delight to the angler, and a prized delicacy of the gourmet, has always been of great interest to the fishery biologist. Each year the major Oregon runs of this fine fish in the Columbia and some of its tributaries and on the Rogue and Umpqua are watched to see how it is surviving the hazards of civilization.

It is a fish of tremendous interest and importance to sportsmen and this is no more evident anywhere than on the Rogue and Umpqua Rivers. Whenever good numbers of spring chinook start showing up at Gold Beach, the word is out and many anglers head for this coastal town. The hot line from there is how the fishermen, including business executives, military brass, and politicians, get word to meet the chinook as they head in from the sea. The importance of chinook salmon was emphasized by the state legislature in 1961 when it voted to designate the great chinook as the state fish of Oregon.

In past years, spring chinook were taken commercially in both the Rogue and Umpqua. Packs of 10,000 to 16,000 cases were recorded for the lower Rogue in the 1880s. Following an all-time record of 24,000 cases in 1917, the trend was downward. By the early 1930s there was

obviously a serious decline in the number of spring chinook in the Rogue River. In the year prior to the closure of the Rogue to commercial fishing in 1935, the pack had fallen off to only 1,145 cases representing approximately 4,000 fish. In contrast the present-day sport catch on the Rogue is more than double this figure.

Although the commercial catch of spring chinook in the Umpqua ranged as high as 11,000 fish in 1924, the catch in the early 1940s prior to the commercial fishing closure in 1947 was less than 1,000 fish. The sport catch for all salmon (including springs, falls, and silvers) on the Umpqua has usually exceeded 10,000 fish in the past five years.

How do biologists determine the magnitude of the runs of spring chinook on these two streams? Counting stations are operated, similar to but on a smaller scale than those on the Columbia River dams. Counts have been made on the Rogue since 1942 and on the Umpqua since 1946. The numbers of spring chinook passing over these stations are shown in Table 1. It is encouraging to note the remarkable increase in the past four years. The 1963 count on the Rogue was almost triple that of the parent run in 1959. Although total numbers are less,

a similar picture is beginning to develop on the Umpqua.

Since adult spring chinook spend so much time in fresh water, they are subject to predation, disease, and mechanical injuries. Concentration of these fish in resting holes on Rock Creek, tributary to the North Umpqua River, and in the upper Rogue in 1963 resulted in a serious poaching loss. Practically every known means of poaching other than poisons were found in 1963. The photograph accompanying this article shows some of the illegal fishing gear used to take spring chinook. The illegal gear was recovered from the bottom of resting holes in the river by skin divers.

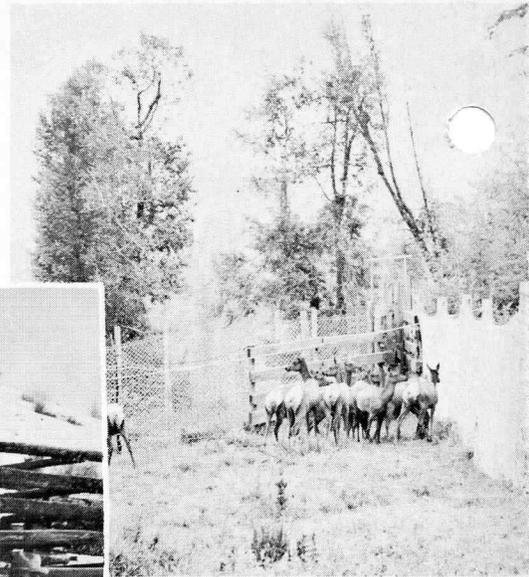
Although both streams have numerous dams, fish losses on the Rogue are more critical because a number of barriers are located on the main stem of the river. In recent years, losses of downstream migrating fish in the Rogue have been much reduced through screening and regulating turbine operations to times when small fish are not moving downstream.

Pollution has also been a factor in reducing the stocks of fish in both streams. Industrial and domestic pollutants have at times adversely affected

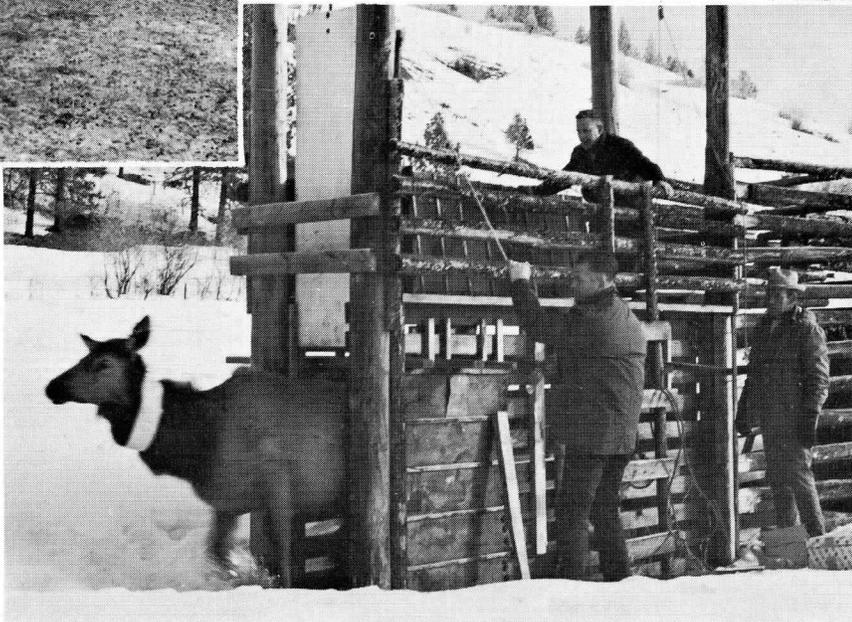
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In an effort to learn more about the seasonal distribution and movement of elk in the Wenaha Unit, elk are collected in corral type trap. Here elk are shown going into squeeze chute to receive ear tags and plastic collars.



Corral type trap made of nylon net has been used to trap elk in Coos County. Elk were transplanted to another location.

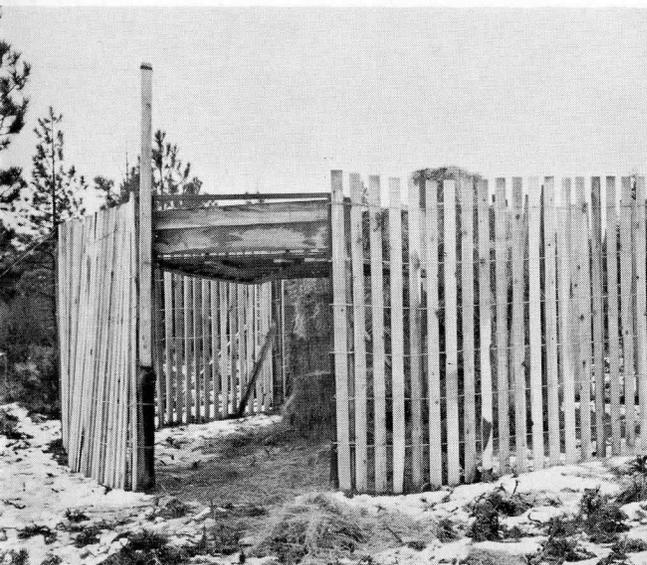


A tagged and collared elk being released from the squeeze chute. Over 150 elk have been trapped on the Wenaha area this winter.

This V-type trap also is used as a variation of the panel type. Maw, Game Commission employee project. Nearly 1,000 deer have been trapped at Silver Lake and Fort Rock.

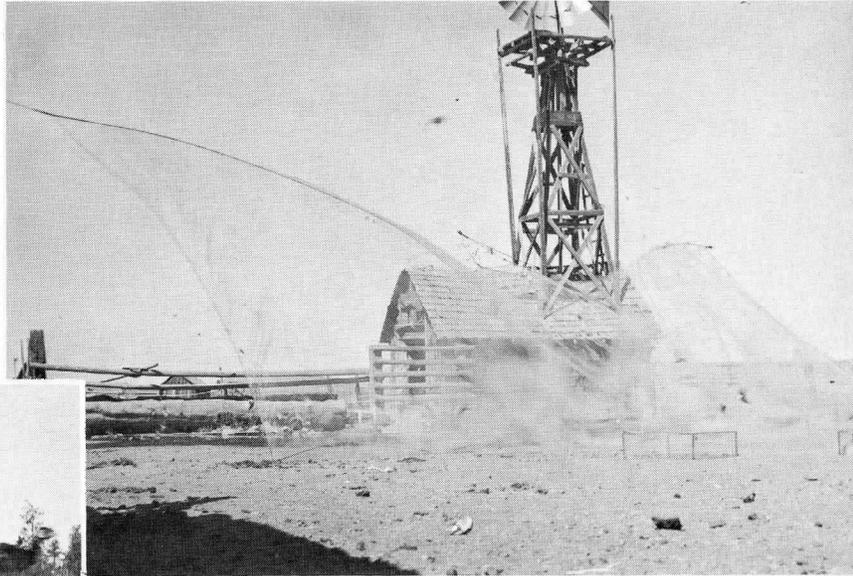
Panel deer trap is one type used to capture deer at the Silver Lake deer study area. Ear tags, bells and streamers are used to mark the deer for later identification when seen in the field or taken by hunter.

Men baiting a clover type deer trap at Silver Lake. It is used to trap individual deer.



WILDLIFE TRAPPING

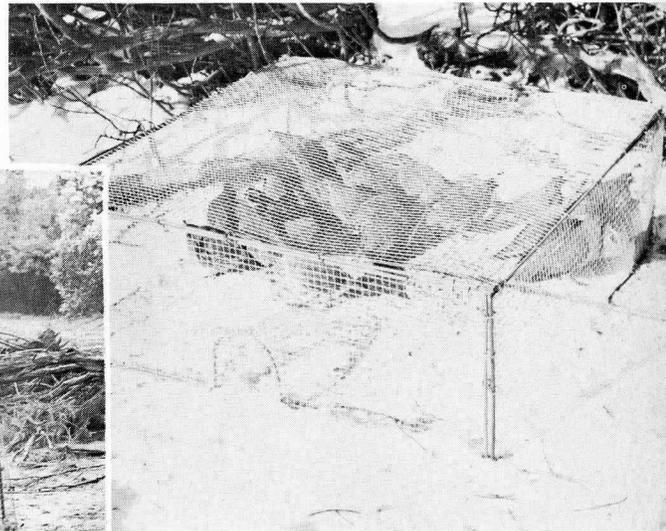
Turkeys being released in Pokegama area of Klamath County. Birds were trapped in the White River area, which was originally stocked with turkeys in 1961.



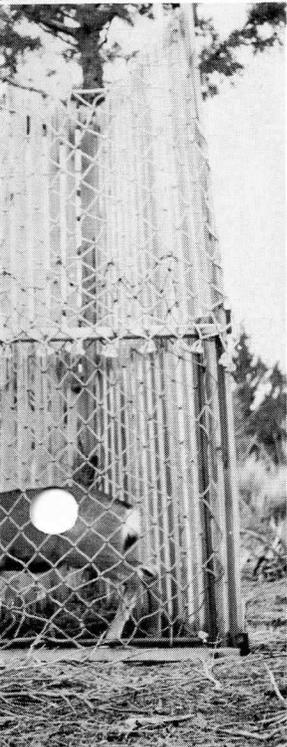
Cannon type trap being used to collect doves for banding purposes. This kind of trap is used also for turkeys and other birds.

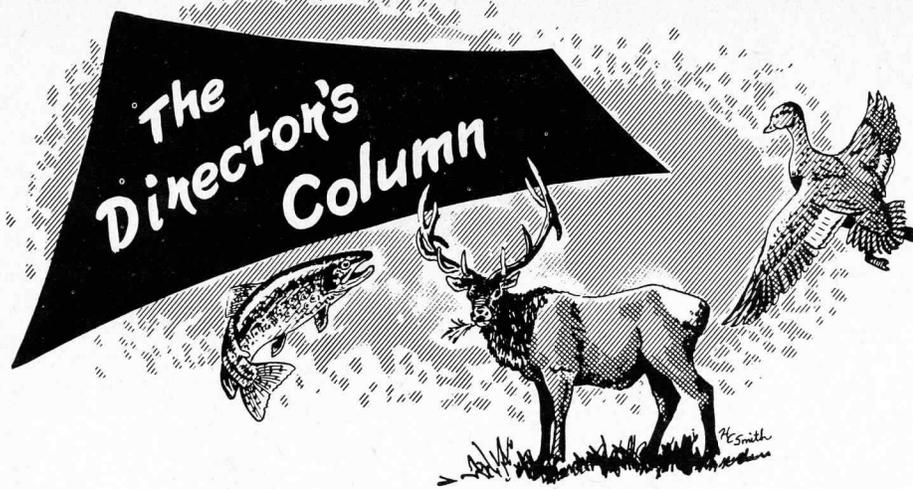
...d for single deer. It is developed by Vernon Joyee at the Silver Lake... have been tagged on the... black winter ranges.

Trapping and banding waterfowl at the Savie Island game management area is an annual operation. Bands returned by hunters provide valuable information for management purposes.



Funnel type trap used for quail. Birds are redistributed in other areas.





THE MANAGEMENT of Oregon's fish and wildlife resources becomes more complicated as our state develops. Many factors of land and water use must today be recognized which a half century ago were not considered to any significant degree in a fish and wildlife program.

The numerous sincere inquiries and suggestions being received by us attest to the deep interest Oregonians have in their fish and wildlife resource. At times they also indicate an oversimplification of the average person's concept of the myriad of considerations which must be employed in sustaining these resources. There is an almost universal desire for an abundance of fish and wildlife. At the same time there are many serious justified complaints on local problems as the result of conflicts caused by the presence of some species. There are likewise formidable problems which arise when proposed plans for an unrelated development may be retarded, made more costly, or may be confronted with the need for major modification in order to accommodate the needs of a fish or wildlife species.

Of particular significance to an agency

responsible for a given resource such as fish and wildlife is the fact that more often than not these resources must be fitted into a plan of land or water area being used for other and usually primary purposes. It is not simply a matter of regulating the harvest through a set of annually adopted rules for angling and hunting. Along with this important tool of management are innumerable day-to-day considerations which require immediate attention. Fundamental to any sustained program is the necessity of correlating regulations and programs with other activities. It is not enough to consider exclusively the fish and animals involved. These resources depend, in the final analysis, upon suitable environment not only in quantity but in quality as well.

This is why the department devotes an ever-increasing amount of time and effort in working with all interests engaged in land and water use activities. This is why a program of management of these species is in one way or another of necessity concerned with all other significant activities of land and water use.

—P. W. Schneider

SUMMER TROUT SEASON OPENS APRIL 25

Trout anglers are preparing for the opening of the general season on April 25 in most waters of the state.

Major exceptions to this opening are streams in Zone 1 (coast area) and the lakes, reservoirs, and their tributaries within the national forest boundaries in the Cascades. General opening date for these waters is May 23. Individual exceptions are listed by zone in the angling regulation synopsis.

In the Umpqua watershed (Zone 3) and the Rogue (Zone 4) the May 23 opening date applies generally except that some of the upper reaches of the

streams will open on April 25. For specific information anglers should consult the regulation tables for these two watersheds in the angling synopsis.

Early this winter an unusual tag recovery from a female steelhead was made at the North Fork Alsea trap in Benton County. The fish had been tagged in 1962 and transported, ready to spawn, to a tributary of Triangle Lake in Lake County. It apparently spawned successfully, migrated downstream through Lake Creek and the Siuslaw River to the ocean. There it spent the summer and then returned to its home base, the North Fork of the Alsea. It was a little bigger and again in spawning condition.

PHYLLIS CLAYTON RETIRES

January 31 marked the end of over 31 years of continuous service with the Oregon State Game Commission for Mrs.



Phyllis Clayton, who was feted on that date with a farewell banquet by her fellow workers.

Beginning as a receptionist in September 1932, she witnessed through the years the steady expansion in the Commission's activities. As the department grew, she handled various assignments and her last position was as property clerk. This called for a lot of travelling taking inventory at the various fixed facilities of the Commission throughout the state. Continued travelling is included in her retirement plans but this time beyond state boundaries.

Mrs. Clayton resides in Lake Oswego and has been active in the Marine Corps Auxiliary, Daughters of Scotia and the Order of Eastern Star. She is a native of Scotland.

Fish Stocking Record Set for 1963

A new record for weight of fish stocked in Oregon waters was set in 1963 when 1,093,532 pounds of trout and salmon were distributed by the Game Commission.

Over 2,000 separate liberations were necessary to stock the 21,339,046 fish involved. Distribution was made to all areas of the state with 277 streams and 546 lakes receiving fish.

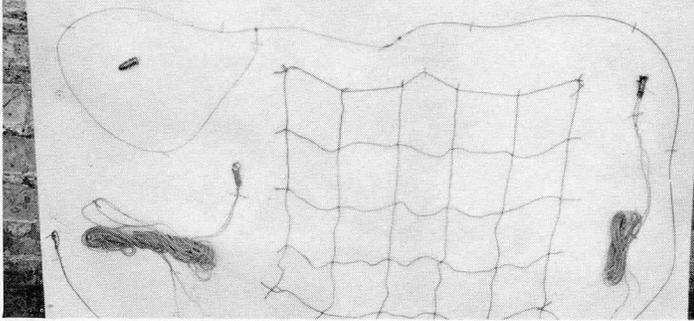
Catchable trout, averaging eight or more inches, numbered approximately 2,700,000. Other large fish released were migrant-sized steelhead, numbering nearly 900,000, and 240,000 chinook and silver salmon. The remainder of the fish stocked were fingerling and fry of seven different trout species, used mainly in the many lakes and reservoirs.

The stocking program will be curtailed somewhat in the present biennium, so it is doubtful if any new records will be set soon.

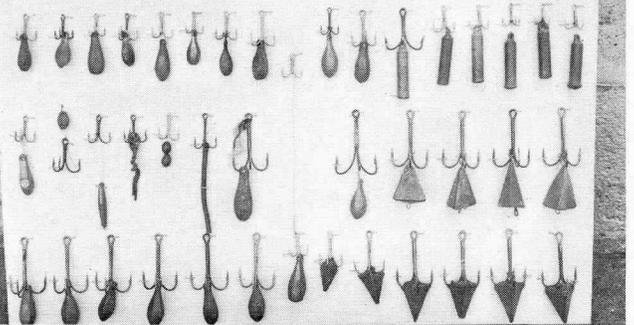
1964 GAME BULLETIN TO BE BIMONTHLY

The Game Commission Bulletin will appear only 6 times in 1964 instead of the usual 12 because of a lack of funds.

METHODS USED BY OUTLAW ANGLERS



ILLEGAL ANGLING GEAR



Outlook for Salmon

(Continued from Page 3)

the quality of water for fish life. Silt from mining operations has reduced the quantity of fish food organisms in some tributaries and may have serious effects on the survival of salmon and steelhead eggs in the gravel.

High water temperatures, resulting from impoundments and water diversion, have resulted in a serious loss of fish through disease. In addition, migrations of fish, both up and down the river, have undoubtedly been curtailed as the result of high water temperatures.

In addition to providing water of good quality, there are two phases of fishery management which are vital to continued runs of chinook in the Rogue and Umpqua: First, adequate numbers of adult salmon must be allowed to reach the spawning beds; second, small migrant-sized fish must be provided free and uninterrupted access to the ocean.

Fish hatcheries have been used on both rivers to help maintain spring chinook runs. A substantial contribution to the runs on the Umpqua has been made by artificial propagation. In the past few years, from 15 to 20 per cent of spring chinook passing over Winchester Dam on the North Umpqua have been marked hatchery returns. An examination of the spring chinook in a cannery on the lower Rogue in recent years revealed that marked hatchery fish made up 1.5 to 3.5 per cent of the catch. Releases of spring chinook in both streams have been made on an experimental basis. Large numbers of eggs will not be taken from the spring chinook runs in either river until we are assured of getting good returns from hatchery reared fish.

Since both the Rogue and Umpqua Rivers contain no less than six races of anadromous salmon, steelhead, and trout reproducing in their waters, it has been necessary to develop somewhat complex

angling regulations. In order to perpetuate these runs, regulations have been adopted to protect adults in resting holes and spawning riffles and to prevent excessive numbers of downstream migrating fish from being taken in the trout fishery.

Through the efforts of many fishery organizations, refinements have been made in the technical field of fishery biology. Fish screens have been made more efficient, fish ladders have been improved, better quality hatchery fish have resulted from improved feeds and the use of medicinal drugs. Much has been learned regarding the survival of eggs in spawning riffles and the migration of immature fish to the ocean. In addition, the value of anadromous species has become apparent to many public and industrial organizations. The lumbering industry in general is concerned with

improving logging practices and road building with the thought of conserving salmon and steelhead. Some improvement has been made in the control of domestic and industrial pollution. Finally, anglers themselves are becoming more aware of the value of salmon and steelhead. The recent concern over the loss of spring chinook on the upper Rogue is an example. Sportsmen requested and received a special one-hook regulation for a portion of the Rogue which was designed to prevent adult spring chinook from being taken by snaggers using large treble hooks.

The run of spring chinook on the Rogue River is considered to be in a healthy state. The Umpqua run, although not as spectacular in regard to numbers, has shown a substantial increase since counts were first started in 1946.

Biologists hesitate to predict the size of future runs. Too many factors beyond their control are involved in the life cycle of spring chinook, both in fresh water and the ocean. However, it would seem that runs in both the Rogue and Umpqua can be developed to a fairly high level providing these fish continue to receive the support of the many people and organizations concerned in maintaining a desirable habitat.

TABLE I
Counts of Spring Chinook Runs
Over Gold Ray and Winchester Dams

Year	Rogue River Gold Ray Dam	Umpqua River Winchester Dam
1942	43,429	
1943	38,052	
1944	31,940	
1945	33,718	
1946	30,065	1,974
1947	34,740	2,994
1948	27,742	2,245
1949	20,028	2,109
1950	16,767	2,044
1951	21,111	2,940
1952	18,488	4,702
1953	33,558	4,310
1954	25,785	6,613
1955	16,550	6,266
1956	29,952	7,881
1957	18,770	4,285
1958	15,716	3,856
1959	14,707	3,460
1960	26,217	3,594
1961	33,035	4,711
1962	32,651	5,626
1963	41,527	9,222

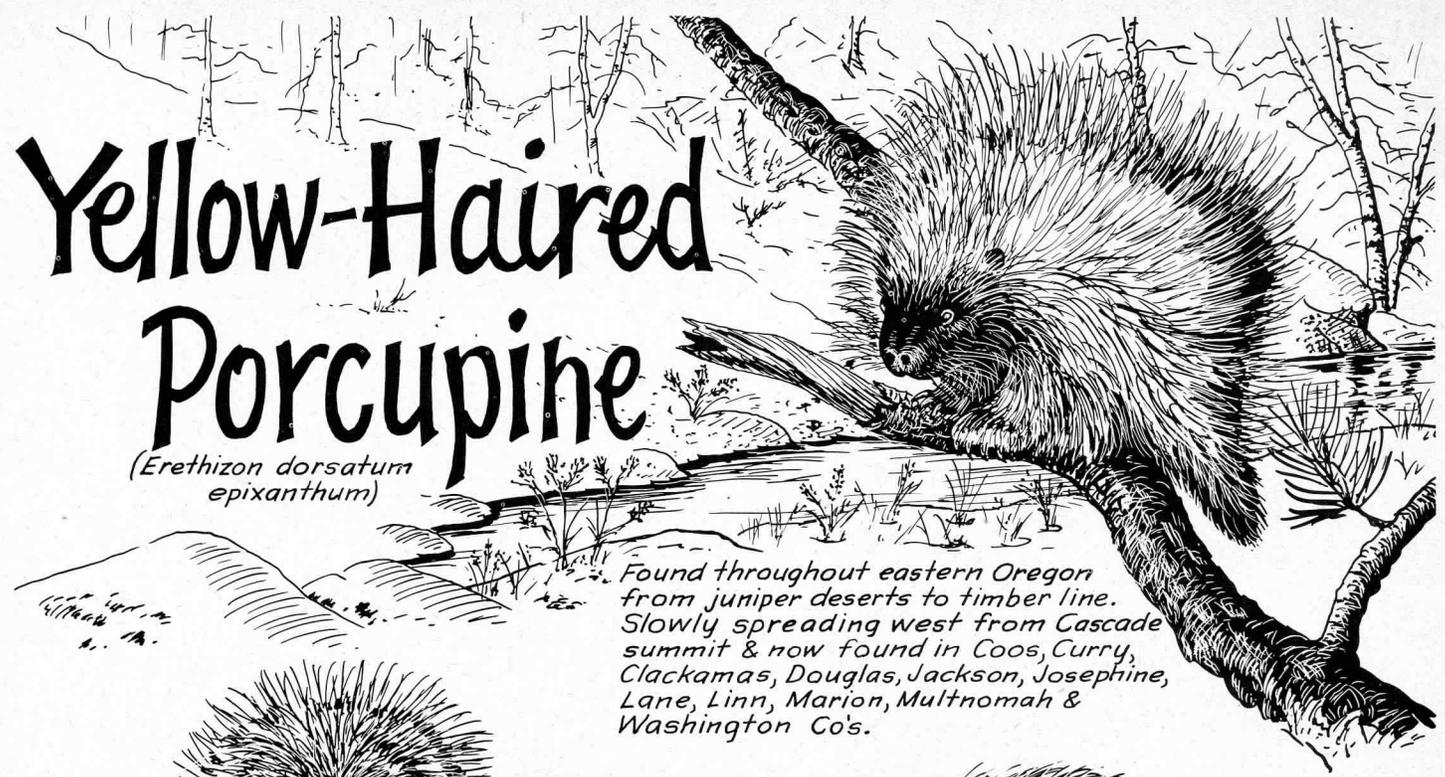
1963 SALMON-STEELHEAD PUNCH CARDS DUE

Have you turned in your salmon-steelhead punch card reporting the number of fish you caught in 1963 and the location? Even if you did not fish, return of your card is required. Collection boxes have been placed with license agents throughout the state or the expired cards may be mailed directly to the Game Commission, P.O. Box 3503, Portland.

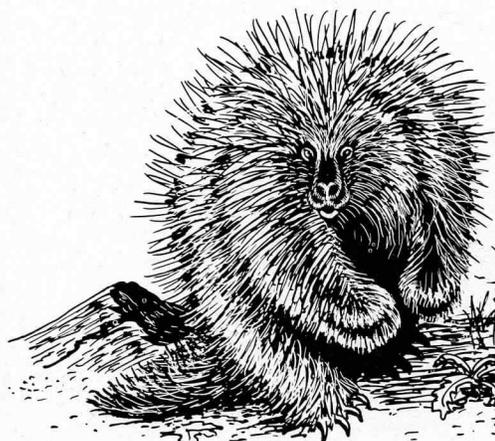
Information taken from the cards is used to estimate the total catch of salmon and steelhead as well as distribution of catch by stream.

Yellow-Haired Porcupine

(*Erethizon dorsatum epixanthum*)



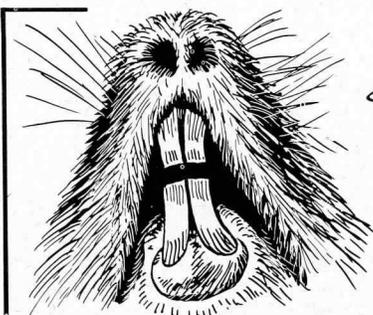
Found throughout eastern Oregon from juniper deserts to timber line. Slowly spreading west from Cascade summit & now found in Coos, Curry, Clackamas, Douglas, Jackson, Josephine, Lane, Linn, Marion, Multnomah & Washington Co's.



Hard Crane Smith

A large clumsy rodent; small head, ears & eyes, short bowed legs, heavy body, thick tail; long soft yellow & blackish-tipped fur covering yellowish-white quills. 36"-40" long; 12" at shoulder; weight, 12-30 lbs.

Eat bark & twigs from willow, hemlock, fir, pine & mahogany. Fruits & berries in season & many other items. Like salt & grease. Will ruin axe & tool handles left around camps.



Equipped with large yellow self-sharpening teeth, which grow throughout their lifetime.



Quill showing barbed point which when imbedded in skin or flesh will work its way in deeper.



Arches his back, erects quills, puts head under log or root or between forepaws for protection.

One young born in den or hollow tree in May or June. Can climb on second day after birth. Weaned after one month, on his own after six months.

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