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No. 5

The Story of South Twin Lake

By H. R. NEWCOMB, Senior Biologist

"It shall be unlawful for any person to transport any fish from any stream, lake or body of water in the state of Oregon to another stream, lake or body of water within said state without first having obtained a permit from the Oregon State Game Commission that the same may be done." This is the wording of the law in the Oregon Game Code that prevents indiscriminate transportation of fish from one water to another. As an illustration of what may happen, and often does, here is the story of South Twin Lake.

Forty miles south and a little west of Bend, in the Deschutes National Forest, lies a lovely, tiny lake. On most maps it is shown as a small dot, for it is only 130 acres in extent. Fifteen years ago, even less, South Twin Lake was known far and wide for its large and plentiful trout. All kinds of lures were used to catch them, and, as it turned out, the most infamous of them was the "live minnow." One can visualize some anglers after a successful trip, emptying what remained in the bait pail with a distinct feeling of satisfaction, perhaps even saying to themselves, "Well, the fish should be a little

bigger next time we return." Unfortunately, some of the minnow, chubs, roach, or whatever one wishes to call them, escaped the trout at least long enough to spawn. To give some idea as to their spawning propensities, a twoinch chub can put down 500 eggs without half trying.

South Twin Lake is one of the richest, most productive lakes in the region. Just why it differs from its near neighbors, it is difficult to say, but chemical examination, as well as the history of the lake bears out the statement. The point is that our "friends" the chubs, once they got started, really took over the lake in a big way. They ate everything in sight and when the lake was first examined by the State Game Commission's original lake survey party,

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1946 Game Outlook

By JOHN McKEAN, Chief Biologist

The 1946 hunting regulations, as established by the Game Commission on July 27, provide for a wide variety of seasons and bag limits throughout the state and reinstatement of the tagging regulations as delegated by the state legislature. In view of the fact that many of the seasons and regulations may be confusing to sportsmen, this opportunity is taken to discuss some of the reasons for these regulations as found by the Commission.

During the past ten years, hunting license sales have more than doubled, totalling over 140,000 in 1945. This rapidly increasing demand for hunting makes it imperative that all of the available game habitat be utilized to produce as many game animals and birds as possible without seriously conflicting with other land

Oregon has a wide variety of habitat types some of which are much more productive of game than others. For this reason general statewide seasons are not very efficient and areas may become depleted or overstocked if their productive capacity is not given detailed consider-

In studying the 1946 hunting regulations it will be noticed that the opening date of most seasons is the same throughout the state so that the heavy initial hunting pressure will be absorbed by all of the available habitat and not concentrated in specific areas. It will also be noticed that there are a number of small seasons for the harvesting of antlerless deer and elk in problem areas and that the

upland game bird seasons are more conservative than usual.

BIG GAME SEASONS:

The regular season for buck deer is scheduled to open on September 28 and close on October 25. Forest protective agencies object to the opening of deer seasons earlier than October first because of the probable fire hazard, which may make closure of the forests mandatory.

A series of staggered special antlerless deer seasons are scheduled to follow the regular deer season. With the exception of the late season in the Devils Garden Lava Beds in northern Lake county, all of these special seasons have been devised to control excessive game damage on private lands. A previous article on game damage explained the need for some method of con-

SUMMARY OF HUNTING SEASONS AND BAG LIMIT ON PAGES 7 AND 8



Antelope kid two days old. No antelope hunting to be allowed this year.

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The Supervisor's Column

The control of predatory animals is a subject that interests not only the sportsman but the rancher and stockman as well. Not only have bounties been paid but for a good many years various counties, state agencies and the federal government have appropriated money to be expended by the Fish and Wildlife Service in the trapping and poisoning of predators. As many trappers as funds would allow have been employed and a sizable number of predators taken throughout the years, but the predator population, particularly coyotes, seems to maintain itself regardless of the efforts of these agencies and of stockmen, hunters and trappers.

Over a period of years the coyotes more or less follow economic trends. When times are hard more people trap, both for bounty and for fur. When labor is in demand and wages are high, as has been the case during the war, and ammunition is scarce, then the coyotes thrive. This likewise can be said of other predators such as cats, cougar and wolves.

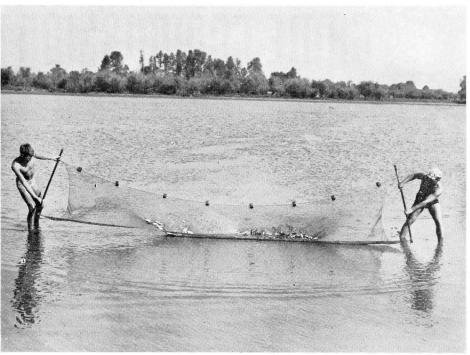
The payment of bounties has always presented difficulties. Counties have different requirements for collection of bounties and this also is true in adjoining states, and it, therefore, is possible for an individual to collect several bounties on the same animal. For example, Washington requires that the hind leg bones from the knee down be removed in a coyote; in Utah all the feet are severed from the skin; while in Idaho the scalp with the upper jaw attached must be presented when applying for bounty. A coyote pelt bountied in Washington or in Utah also could be bountied in Idaho without detection.

The difference in the amount of bounties paid in adjoining states presents the temptation to collect the highest bounty regardless of the location of the kill. For instance, California pays \$30 for cougar and Oregon \$50. The chances are that a cougar killed in California near the boundary line will be brought to Oregon for bounty. This likewise can happen in the case of Utah and Montana, who pay bounties of \$15 and \$25, respectively.

There is a need for a uniform system covering bounties and methods of marking in the western states, which could be accomplished best by federal regulation.

Spring upland game census work has been conducted throughout the state by the district game biologists in addition to seasonal big game work. Sample sites, preliminary mapping and liberation sites have been established. Data is now being assembled from which recommendations can be made to the Commission for use in setting the 1946 regulations.

Very few people know that the lion has an extra claw. It is concealed in the hair near the tip of his tail.



Seining Spiny-Ray fish at Sauvies Island.

Spiny-ray Fish Salvage Started

The Sauvies Island fish salvaging crew of eight men started work early in July. This fertile island, lying between the Williamette and Columbia rivers, is one of the finest natural warm water fish hatcheries and spiny-rayed fish—catfish, black bass, crappies, perch—spawn by the millions in the sloughs, lake and overflow waters of the two rivers. When the spring high water recedes, however, thousands of young fish are left stranded in potholes all over the island and every summer it is necessary for the game department to carry on its rescue work.

While most of the fish are turned back into deeper waters in the immediate area, before the war many lakes and streams in other parts of the state were stocked with spiny-rayed fish from Sauvies Island. Waters which were not suitable for trout or salmon have been developed to furnish good fishing for catfish, bass, crappies and perch.

While during the war years salvaging activities, like other operations, had to be curtailed to a certain extent, in the past as many as 18,000,000 fish have been salvaged in a season by game department personnel. Every effort will be made this summer to save as many fish as possible, some of which will be used to stock other waters that have been neglected during the war.

It is quite doubtful that camels, as many suppose, can go without water for a week without great discomfort or physical danger. Two or three days is believed to be the limit.

Fish Salvage in Tillamook County

A total of 38,282 fish were rescued from ten Tillamook county streams during fish salvaging operations carried on in cooperation with the Tillamook county court from May 13 to June 7. The County Court provided a truck and two men on a full-time basis while the Game Commission furnished a biologist to supervise the work and all other necessary equipment.

The total included 33,153 silver salmon fry, 170 silver yearlings, 28 chinook fry, 1869 chum fry, 2757 trout fry and 305 trout from $3\frac{1}{2}$ " to 9". Approximately 75 per cent of all fish salvaged were taken from Moss creek, a tributary of the Miami river, which stream was found to be in a much more critical condition than any of the other streams in the Tillamook Bay area.

The expense involved in these operations was about \$760. The cost per thousand of salvaged fish was roughly \$20 although this figure does not take into consideration the difference in value between fry and yearlings.

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The Story of South Twin Lake

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they were eating each other. The available food for the 640,000 small trout and salmon which had been planted from 1935 through 1940 was nil. Even the vegetation had been clipped off, and what was not eaten fell to the bottom and decomposed. As it decayed it robbed the water of its dissolved oxygen, rendering it incapable of sustaining trout life below the seventeen-foot level.

The situation looked rather bad—to put it mildly. There were two measures which could be taken. One method was to plant only trout large enough to feed on the chubs with hope that the latter could be so controlled. The alternative was to eliminate all the fish and start anew. The second plan was adopted. Never before had such a large and deep body of water been handled in such a fashion so the whole effort was regarded as an experiment.

On April 1, 1941, just after the ice went out, a large crew of men assembled at the lake and operations commenced. The job consisted of securing adequate distribution throughout the lake of a poison which prevents gill action and causes eventual suffocation. This material was placed in sacks and dragged behind outboard motors. It was mixed into a dilute solution and sprayed by means of Forest Service back-pack pumps into the rushes along the edge of the lake. It was sunk and exploded with dynamite. It was mixed to a putty-like consistency and thrown into the water. And lastly it was spread dry on the surface of the lake. Late in the afternoon, when it seemed that the most strenuous efforts could not possibly finish the task, Providence took a hand in the form of a hail storm which pounded the dry material into the water, dissolving it completely. The water temperature was a uniform 42°F. from the top to a depth of 40 feet. This meant that the lake was "turning over." This phenomenon of spring turnover had been counted on to insure as complete distribution as possible.

Shortly after operations started, fish (chubs) began hitting the surface as though bewitched. It looked as if it were raining upside down. The death struggle continued all day long as additional fish entered the treated waters. Great windrows of chubs piled up along the lee shore. A conservative estimate indicated that over 5,000,000 chubs, weighing in the neighborood of 35 tons, were destroyed that day. Careful searching revealed only six game fish—four silver salmon, one rainbow and one eastern brook trout.

The lake was permitted to "rest" for 17 months. On May 22, 1941, the toxicity of the water was checked by holding in a live box, eight eastern brook trout from 6 to 10 inches long. These fish were just as happy at the end of two hours as when first put in.

Mr. Fay Robideaux, owner of a resort on South Twin, made a sizable planting of Deschutes River "shrimp" as well as a few snails, crayfish and fresh-water clams, but otherwise the lake was left to the devices of old Mother Nature who seems to have a pretty good idea as to what constitutes a proper insect population in her waters.

In September of 1942, a planting of the so-called fall spawning or Utah rainbow was made, totalling 34,800 four-inch fish. The next year, 35,000 two-inch rainbows were liberated and in 1944, 10,375 three-inch fish were stocked. This was a total of 80,175 fish in three years. It was planned to re-open the lake in 1944, but because drastic reductions in Game Commission personnel left no one available to check the results of the experiment, the lake was kept closed. This did not hurt the lake or anybody except a few persons who had hoped to fish the lake as soon as possible.

SEASON OPENED

Eventually, "Opening Day" was set for May 30, 1945. Everybody and his brothers and sisters and his cousins and his uncles and his aunts were there. Nine hundred and eighty-nine fish were brought in by 217 anglers the first day. Many of the fishermen were children. However, many a five-year old youngster really had the fishing bug bite him on that and subsequent days when he actually hooked, brought in and netted his own fifteen-inch rainbow. Impossible as it may seem, there was at least one adult angler who fished from early morning till dark without landing a fish. Unfortunately, it must be recorded that a few selfish individuals tried, and some succeeded, in taking out more than the limit of 5 fish which was established for this experiment and designed for their ultimate benefit. For the most part everyone was extremely cooperative and helpful in making the undertaking a success.

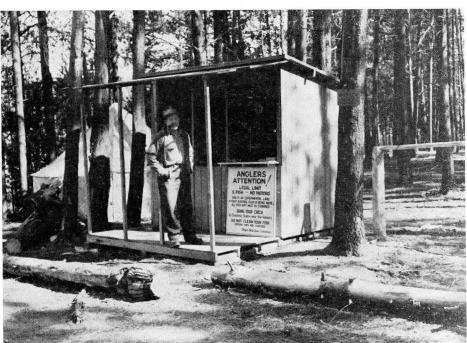
Of course, opening day was the big day. Otherwise, the rate of catch was fairly uniform until the last week of the sixty-three-day season. Then the moon, or the weather, or possibly the local unit of the Brotherhood for the Preservation of Rainbow Trout intervened, and the catch took a nose dive. There were plenty of fish left. They would be seen rising to the surface in the evening but they refused to bite.

During the 1945 season, 9,352 fish were brought into the checking station by persons representing 3,149 anglers' trips on the lake. The total catch weighed 9,693 pounds or slightly over one pound per fish. This was a creel return of 74.6 pounds per surface acre of the lake. It required 11,989 man hours to make the catch, or a seasonal average of 1.28 hours per fish. These figures are based on the total fishing effort of everyone who reported their catch, including children and novices as well as experienced anglers. There were very few anglers who caught no fish. Since these individuals did not report, their effort was not recorded.

The time required to catch fish rose at a reasonably uniform rate during the first five weeks. It dropped slightly during the next two weeks but rose abruptly during the last two weeks of the season. At this time there were plenty of fish remaining in the lake as could be easily observed in the evening when considerable numbers were surface feeding.

The bulk of the fish were caught by anglers "still fishing" with cluster eggs. With this type of lure, 41.9 per cent were taken. The percentages of fish taken by

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GAME COMMISSION CHECKING STATION AT SOUTH TWIN LAKE

Here and There in the Field

When the reported loss of twelve elk in western Douglas county was investigated by the Game Commission's district biologist, it was revealed that it apparently was caused by the eating of dynamite and sawdust left by a salvage crew that had carried explosives to destroy motors of an airplane that had crashed in that inaccessible area.

The Tillamook Burn area is making a good recovery in vegetation, important plant species showing a growth up to 6 feet in height, studies by the game biologist reveal.

Willamette River sports fishermen took 12,250 adult salmon between Oregon City and St .Helens this spring, according to the joint survey made by the Fish and Game Commissions.

At Diamond Lake during the first two weeks of the open season beginning June 8, anglers caught 1803 rainbow trout of which 7 per cent were fish marked by the Game Commission during the spring eggtaking operations. Chubs, the biologist reports, are becoming an increasing menace and seining operations are being conducted in an effort to control their numbers since derris root could not be obtained for "spot" poisoning in areas where minnows are concentrated.

Although pheasant broods observed in the Willamette Valley average 9 birds, the bird population is low and relatively few broods have been seen in the fields by game department field men.

The known migratory tendency of beaver was demonstrated again when a beaver was seen for the second time in the domestic water supply pond on the Ralph Bates ranch at Fields, the nearest possible source of beaver being a stream eight miles away.

The fire at the Bend airport that destroyed 7 planes owned by Al Tilse took also his coyote hunting cruiser. While all the other planes are being replaced, Tilse is having difficulty finding another one for coyote hunting since the new planes are not as satisfactory for this work as the rebuilt old-type cruiser.

Fish Packing in the Mountains

By horse pack and back pack the high lakes of the Cascades from the Mt. Hood area in the north down south to Klamath county are being stocked this summer with more than 1,000,000 rainbow fry from the Klamath, Hood River and Fall River hatcheries.

The fish are being hauled by tank trucks to the beginning of the pack trails. Then they are transferred to live boxes and held until loaded onto the pack horses. At the present time two pack strings are in operation. First releases were made in the Marion Fork area by one outfit and the second worked in Klamath county.

Arrangements are also being made to obtain pack stock to take care of the lakes in the Mt. Hood area. However, four of the lakes in the area, North, Rainey, Black and Warren were taken care of when, taking the place of pack horses, seven Forest Service men packed on their backs for distances up to 11/4 miles 105,-428 fry to these lakes. Men doing the packing were H. K. Fifer, Geo. Casebeer, R. H. Nicolai, V. M. Howard, Roland R. Primo, Al Marvin, and C. R. Fink, all of the Columbia Gorge Ranger Station which is in charge of Andy Weisdanger. The fish were hauled to the point of packing by the Game Commission's men, Reino Koski, biologist, and Ted Howell, driver.

It is planned also to do some packing in the high lakes of eastern Oregon. ern Oregon.

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(Continued From Page 3) other methods were as follows: Trolling with spinners, etc., 16.6 per cent; single eggs, 13.4 per cent; any combination of lures, 9.2 per cent; worms, 5.7 per cent; trolling with flatfish, plugs, etc., 2.8 per cent; flies, 1.3 per cent; cluster and single eggs equally, 9.1 per cent.

The fish ranged in size from a fork length of 7 to 18 inches. Two (2) or 0.02 per cent were 6-8 inches; 476 or 4.54 per cent were 8-10 inches; 421 or 4.49 per cent were 10-12 inches; 3,089 or 33.0 per cent were 12-14 inches, 5,408 or 57.7 per cent were 14-16 inches; and 19 or 0.2 per cent were 16-18 inches. There were a few fish weighing over 2 pounds. The largest fish brought in weighed 2 pounds and 14 ounces.

1946 PROGRAM

No fish were planted in 1945. Instead they were held over the winter and released in the spring of 1946 when they averaged around 8 inches. Some were as long as 14 inches. The little fin on the back, near the tail, known as the adipose fin, was removed from each fish of the 1946 planting to facilitate the recognition of individuals from this stocking.

Interest in the lake was evidenced by the rush of anglers to open the 1946 season on June 29. During the first six days, 3,299 trout were brought into the checking station by persons representing 1,468 anglers' trips to the lake. Of these fish, 2,599 were trout marked this spring. The approximate total weight of the fish was 1,995 pounds while the average length was 10 inches and weight 10.7 ounces. The maximum size was 18 inches in length and 2 pounds, 5 ounces in weight.

This experimental study is being continued. Subsequent plantings will be made with different fins removed for identification. The checking station will be operated with the same end in mind, namely, to secure basic information relative to management of the lake to enable the State Game Commission to maintain properly and improve fishing in the waters of Oregon.



Fish being loaded into back pack cans from Game Commission tank truck.



Arrival of men at lake after back packing fish up the trail.

Oregon's Marsupial

The opossum that originally inhabited the southeastern United States has taken Horace Greeley's advise and "gone west" —but not of his own choosing.

In September, 1928, an opossum was sent to the U. S. Biological Survey from Umatilla county for identification. An investigation brought to light that at least four opossums had been brought into the Birch and McKay Creek area of Umatilla county between 1910 and 1921. The species is very prolific and this stock could have grown into a dense population by this time if the habitat had been in its favor. Occasional opossum "signs" have been found along the several streams of Umatilla county for many years but they never increased beyond the "rare" stage.

Reports of other opossum having been brought in as pets or for novelty show purposes are so persistent that they cannot be denied.

A few years ago they were discovered in Clatsop county near Warrenton. Rumors from that vicinity indicate that when the Warrenton C.C.C. camp was in operation, a number were brought or shipped in for pets by the southern boys who then manned the camp. No doubt they deired a bit of southern wildlife to accompany them to a strange land. When these boys were moved out, the opossums were released. Apparently they found the climate and environment to their liking and are thriving. Opossum signs have become common along the lower Columbia, Young's River and are occasionally found along the Nehalem River. The first opossum reported taken by trappers in the Astoria district was in 1942. Since that time the following opossum "take" has been reported from there: 1943-44, 2; 1944-45, 11; 1945-46, 20.

Many trappers will not bother with this species because of the low pelt value (average price, 30c) but release any accidentally caught in sets made for other animals so the take is not representative of the existing population.

This is the only Oregon marsupial—that is a species that carries its small embryonic young in an abdominal pouch and nurses them there until large enough to survive openly. Although exotic to this state, it seems to have become established.

It is questionable whether this introduction was wise. It is true they have some value for fur food and sport as well as an an antangible aesthetic value to wildlife lovers but they also offer a threat to our native quail, pheasants, grouse and domestic poultry should their numbers increase rapidly.

Time will tell.

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trol in areas where small herds of deer or elk build up on ranges adjacent to agricultural lands and become habitual offenders by feeding and bedding in grain and forage crops during the summer months and molesting hay stacks in the winter. All of the areas to be treated this fall are small and include comparatively few animals; however, immediate control is essential and it is believed that these animals can be removed most efficiently by the sportsmen, rather than by issuing permits to landowners or removing the animals by Game Commission employees.

The Devils Garden Lava Beds area was included in a similar special season last year, but because the area was not easily accessible and deer were abundant on adjacent open ranges, few hunters penetrated the rough lava beds and consequently very few animals were harvested. In the winter of 1945, census data indicated a deer population of approximately 3,750 deer in the vicinity of these lava beds, and during the past season, a winter population of 4,100 deer was indicated. A total of 124 antlerless deer were harvested on that range during the special season held the first five days of last December but this harvest did not offset the fawn crop of this herd. However, the season demonstrated a very practical and efficient method of controlling specific game problems. Of 592 hunters checked out of the hunting area, 584 or 98 per cent bagged a deer and every deer taken was definitely a part of the problem. The greatest fault of this type of season is that the hunting is too easy to provide good sport; however the rough lava beds which are included in this year's season may not be so easily hunted.

Although some evidence of indiscriminate shooting and wanton waste was found during and after the special season last fall, the crippling loss was not excessive and probably less than during the regular buck season on the high brushy ranges. A total of 30 dead and crippled deer were reported or found during the season and nearly all of the hunters were asked for such information when they were checked out. The fact that game may be abundant provides no excuse for crippling or wanton waste. Some sportsmen were selective in their hunting and looked over a large number of animals before making their choice and then stalked the animal desired for a sure kill.

The reason for this special season is to hold this winter herd within the carrying capacity of the winter range. The lava beds have a very low carrying capacity and the forage available has been consistently overused for the last three years resulting in a further decline in carrying capacity.

Deer hunting on a part of the Canyon Creek refuge will be restricted to archers, and in addition a small summer deer concentration area on the Deschutes refuge will be open to hunting with long bow and broad arrow.

The 1945 Tillamook burn will remain closed to all hunting again this year. Although several deer were lost in the fire and an unexplained loss occurred in the burn area during the past winter, a fair breeding stock is intact and it is anticipated that by the time the vegetation is high enough to provide cover, deer will again be abundant on this most productive habitat. The Trask river drainage, most of which was closed to hunting last year, will not be included in this year's closure. Deer are abundant in that area.

A block of logged off land between the Siletz river and the coast highway has been closed in an attempt to build up the blacktail population.

A small closure on the north slope of Rudio Mountain in Grant county has been made to protect a remnant of white-tailed deer in that area.

The elk seasons provided by the Commission for eastern Oregon ranges may appear a trifle generous in the eyes of many sportsmen but in view of the many damage problems which occurred in eastern Oregon last winter, it is obvious that some control must be applied.

Although elk are the largest and many believe the finest game animal in the state, the demand for elk hunting is not great. License sales indicate that less than 15,000 or 10% of the 140,000 licensed hunters are elk hunters. In view of this and the fact that an elk will consume as much forage as five deer, and forage is the principal limiting factor of our deer herds, the Game Commission in 1943 adopted a policy of controlling elk numbers on the problem deer ranges south of the John Day highway by allowing the harvesting of an elk of either sex on those ranges. This generous season has been applied for three years and although numbers have been controlled, no drastic reduction has resulted.

In view of the fact that many ranges north of the John Day highway can be utilized more efficiently by deer than by elk, the line has been extended northward to include all of Grant and Baker counties. The open grass breaks of Umatilla, Union and Wallowa counties provide very little browse for deer in winter but provide excellent winter range for elk. Although elk damage problems are common in these counties, winter range is available for the present number of animals and a reduction in these herds is not recognized as desirable. Therefore, only bulls may be legally harvested during the regular season. Short special seasons have been authorized for small damage problem areas in the vicinity of Troy and Ukiah, where small herds have caused excessive damage to private lands.

The steep east slope of the Blue Mountains in Baker county and southern Union county will remain open to hunting for an elk of either sex until December 22. This extended open season is designed to discourage elk from wintering along this

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steep timbered slope where little open range land is available for winter use and the animals have become habitual hay feeders at the expense of local ranchers, who have suffered damage during the past winter.

The season for Roosevelt elk in northwestern Oregon closes on November 14, one week earlier than in eastern Oregon, and provides that only bull elk with forked antlers or over may be harvested. This western Oregon elk season is more conservative because the scattered herds present are not utilizing a large part of the abundance of habitat and forage available and an increase in numbers and distribution is considered desirable. Being located close to the centers of population, these herds are subjected to heavy hunting pressure and past experience indicates that by including spikes in the bag limit, frequent closed seasons are necessary to maintain a balanced sex ratio. The forked-horn law was invoked last year and although the success ratio of hunters was low and some evidence of wanton waste was found, this type of season is considered biologically sound and with the cooperation of the sportsmen it can be enforced to provide more elk and better hunting on a sustained yield basis.

Antelope, which have been hunted every year since 1938, will be protected by a closed season this year. The Game Commission has been aware of a gradual decline in antelope numbers during the past three years. Last year only 800 licenses were authorized and only bucks could be legally taken.

An aerial census of the major antelope ranges last September accounted for less than 6,000 antelope on ranges for which an antelope population estimate of 20,000 was considered conservative in 1940.

For the past three years very few kids have been present in the herds by fall but no definite cause of their loss has been determined. Observations this spring indicate that nearly all of the kids were dropped between the 15th and 29th of May, a high percentage of the does were pregnant, and all of the families observed immediately after birth had twin kids. No evidence of disease or weakness was observed in either the does or the kids but by the first of July over half of the kids had disappeared. Although this study has not been completed, it appears probable that the coyote is a major factor in the decline of antelope numbers.

Adjacent states report a similar trend and it is obvious that the remaining herds must be protected until this limiting factor can be controlled.

UPLAND GAME:

The upland game bird seasons may appear ultra conservative to many sportsmen; however, the measurements obtained during the past year indicate that in the spring of 1945 cold rains destroyed

a large part of the upland game crop and this factor is now being reflected in our adult populations. For example, in the Willamette Valley during the 1944 hunting season, 81 per cent of the pheasant cocks inspected were birds of the year and only 19 per cent were older, but in 1945 only 53 per cent of the birds checked were of the current year and 47 per cent were older.

Observations during the past two months indicated that June and July storms have taken a heavy toll of young birds again this year and although a few early broods made a good start, the combination of inadequate breeding stock and poor nesting success will result in a poor upland game crop this year. Pheasants are in only fair abundance in most of the eastern Oregon counties with Malheur county supporting the highest population and are at a very low ebb in the Willamette Valley. In view of these facts, there will be a closed season in the Willamette Valley and one week in other counties except Malheur, with the hope that enough birds will remain to provide ample breeding stock for 1947.

Hungarian partridge, which have been prominent in many eastern Oregon counties, are far below normal in abundance. The exact cause of this decline is not known but it appears probable that poor nesting success last spring may be an important factor. In any event the remaining coveys of this most sporting game bird are certainly worthy of protection. Huns will be protected by a closed season throughout the state.

Valley quail are common throughout most of the state but are far below normal abundance in many counties. For this reason open seasons have been established for only those counties supporting the highest populations.

As an effort to determine the survival of different age classes of artificially propagated pheasants the Summer Lake Valley has been set aside as a pheasant study area, with the season extending from October 26 to December 31. Banded pheasants will be released and all hunters will be required to check in and out of the

Cottontail and brush rabbits and silver grey squirrels have long been ignored as game animals in Oregon but with the increasing demand for hunting, it appears desirable to protect and utilize every game species available. For this reason the open season for rabbits and squirrels has been restricted rather than extended throughout the year as in the past.

OTHER REGULATIONS

The Game Commission recognizes the fact that Oregon sportsmen resent intensive regimentation and restrictions such as are applied in the densely populated eastern states. However, if everyone is to get his fair share, some controls must be exercised. The controls to be applied this year are that all hunters will be required to check in and out of the special biggame hunting areas and all game, which

is to be held after the season closes or possessed in a closed area or in an area in which the bag limit is less, must be tagged with a metal seal by the Game Commission. Also all parcels of game to be shipped by common carrier must be accompanied with a shipping permit issued by the Game Commission. These regulations are necessary for enforcement of the many different seasons and bag limits and it is earnestly requested that all sportsmen comply. The metal seals and shipping permits will be available at all State Police patrol offices and at designated tagging stations as listed in the 1946 hunting laws.

These regulations are as valuable for the information they will provide, as for the assistance they will lend to enforcement of the game laws.

It is anticipated that an unprecedented number of hunters will seek recreation in the hills and valleys of Oregon this fall and many non-resident hunters will be on hand to take advantage of the good hunting available.

It is difficult to predict hunting success because weather and many other factors greatly influence the habits of game and the hunter's success, but on the basis of the information now available it appears that the best hunting will be available in the following areas:

MULE DEER:

Lake, Harney, Grant and Deschutes counties are expected to provide the best mule deer hunting. Good hunting will be available on some of the more remote ranges of northeastern Oregon such as the Snake river canyon in Wallowa county.

BLACK-TAILED DEER:

Good blacktail hunting can be expected in the burned and cut-over areas in the coast range, in parts of Jackson, Josephine and Douglas counties, and in the White River drainage east of Mt. Hood.

ELK:

The either sex season which includes a large part of the eastern Oregon elk habitat will provide an excellent opportunity for many hunters to bag an elk. Grant and Baker counties will provide the best hunting in the either sex area. The extended season in Baker county should provide good hunting but the rugged terrain of the area open will probably eliminate all but the hardiest of elk hunters.

The early elk season in Baker county is designed to haze the few offending elk from the agricultural areas. The area is small and only a few bull elk are present. This season, therefore, is not recommended to hunters who would have to travel a long distance as there will be more local hunters than can be safely accommodated and a small harvest is anticipated.

It is probable that elk hunters will be much more successful on the eastern Oregon ranges than on the brushy Coastal ranges, where elk are not abundant and hunting is difficult.

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1946 Hunting Regulations

FOR COMPLETE DESCRIPTION OF SPECIAL HUNTING AREAS, CONSULT 1946 SYNOPSIS OF HUNTING REGULATIONS

DEER

Open season, September 28 to October 25, inclusive, in all counties for black-tail and mule deer having not less than forked antlers with exception of specified closed areas and special open seasons. Bag limit, one deer having not less than forked antlers.

Special Deer Seasons Deschutes Game Refuge; Archery Season:

Open season, September 28 through October 6.

Bag limit, one deer of either sex, provided that all animals must be taken by means of long bow and broad arrow only.

Open area: Approximately 15 sections south of Paulina creek.

Canyon Creek Archery Season:

Open season, October 9 to October 25, inclusive.

Bag limit, one deer of either sex provided that said animals may be taken by long bow and broad arrow only.

Open area: That portion of the Canyon Creek refuge lying north and east of Canyon Creek and west of the Middle Fork of Canyon Creek.

Summer Lake (Lake County):

Open season, October 26 to November 2, nclusive.

Number of permits, 500.

Bag limit, one deer of either sex.

Open area: The steep east slope of Summer Lake rim .

Crooked Creek (Lake county):

Open season, November 4 to November 10, inclusive.

Number of permits, 500.

Bag limit, one antlerless deer.

Open area: Small area along Crooked Creek south of Valley Falls.

Cove Area (Union county):

Open season, November 16 to November 20, inclusive.

Number of permits, 300.

Bag limit, one antlerless deer.

Open area: A portion of the west slope of the Minam divide near Cove.

Devils Garden Lava Beds (Lake county):

Open season, November 30 to December 4, inclusive.

Number of permits, 500.

Bag limit, one antlerless deer.

Open area: Confined to lava beds.

Burnt River Area (Baker county):

Open season, September 22 to September 27, inclusive.

Number of permits, 100.

Bag limit, one deer of either sex.

Open area: Portion of the north slope of the Eldorado Mountains adjacent to Burnt River Valley.

ELK

Rocky Mountain Elk (Eastern Oregon):

Open season, October 29 to November 20, inclusive, in the area east of The Dalles-California Highway, U. S. No. 97.

Number of permits, unlimited.

Bag limit, one elk of either sex except in the following described area, in which the bag limit shall be one bull elk having antlers.

Bull area: That portion lying east of Highway 19 and north of the North Fork of the John Day River and of the north line of Baker County.

Roosevelt Elk:

Open season, October 29 to November 14, inclusive.

Number of permits, unlimited.

Bag limit, one bull elk having not less than forked antlers in the area west of U. S. Highway 97 with the exception of the following counties which shall remain closed: Jackson, Josephine, Curry, Coos, Douglas, Tillamook, Wasco and Hood River.

Special Elk Seasons

Troy Area (Wallowa county):

Open season, October 24 to October 28, inclusive.

Number of permits, 100.

Bag limit, one elk of either sex.

Open area: Approximately 60 sections west of Troy and north of the Grande Ronde River.

Baker county:

Open season, November 18 to December 22, inclusive.

Bag limit, one elk of either sex. May be taken with general elk tag.

Open area: The east slope of the Blue Mountains from Shaw Mountain south to Powder River.

Muddy Creek (Baker county):

Open season, August 31 to September 2, inclusive.

Bag limit, one bull elk with antlers. May be taken with general elk tag.

Open area: Beginning at the intersection of Muddy Creek with U. S. Highway No. 30; thence south along said highway to intersection with Pine Creek; thence west along Pine Creek to the National Forest boundary, thence west and north to the Paisley mine, continuing along the old road to Eilertson Meadows, thence northerly to the top of the ridge above the Killamacue drainage, thence westerly to the headwaters of Muddy creek, thence east along Muddy creek to the point of beginning.

Ukiah Area (Umatilla county):

Open season, December 16 to December 22, inclusive.

Number of permits, 200.

Bag limit, one elk of either sex.

Open area: A portion of the Camas creek drainage east of Ukiah.

ANTELOPE

No open season.

Areas Closed to All Hunting

Tillamook Burn area: Same area closed as in 1945 except southern boundary will be the Willamette Base Line.

Siletz area (Lincoln county): Includes small area between the Siletz River highway and U. S. Highway 101.

Rudio Mountain (Grant county): Includes a small area on the north slope of Rudio Mountain.

All public parks and federal refuges closed to hunting; also state refuges that are not specifically declared open to hunting.

Game Reserves Open to Hunting

The following game reserves will be open to hunting during the regular open seasons for game birds and game animals: Salt Creek game refuge; Mule Deer game reservation, except 8 sections along state line; Mt. Emily game reservation; Myrtle Park game reservation; Steens Mountain game refuge; Cow Creek game reservation; Ochoco game refuge; that part of Warner game refuge lying outside of the boundaries of the federal Hart Mountain Antelope Reserve; and Canyon Creek game refuge; provided, however, that that part of the Canyon Creek game refuge lying east and north of Canyon Creek and west of the Middle Fork of Canyon creek is reserved for hunting by use of the long bow and broad

The Wallowa Mountain Sheep refuge will be open to the hunting of migratory waterfowl during the regular open season therefor

The Oregon Cave game refuge will be open except that no hunting will be allowed in that area included in the Oregon Caves National Monument and the entire Cave Creek Drainage which extends to the summits north, east and south of the Oregon Caves Highway and National Monument.

UPLAND GAME

Ringneck Pheasants:

Coos, Lake, Crook, Deschutes, Klamath, Harney, Grant, Wheeler, Wasco, Sherman, Hood River, Gilliam, Jackson, Morrow, Douglas, Josephine, Union, Baker, Umatilla and Wallowa counties:

Open season, October 19 to October 27, inclusive.

Bag limit, 3 cocks per day but not over 6 in any 7 consecutive days or in possession.

Malheur county:

Open season, October 19 to November 3, inclusive.

Bag limit, 4 cocks per day but not over 8 in any 7 consecutive days or in possession.

NO OPEN SEASON:

Clatsop, Tillamook, Lincoln, Curry and Jefferson counties.

Summer Lake Valley (specified area)

Open season for pheasants of either sex from October 26 to December 31.

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Oregon State Game Commission Bulletin

1634 S. W. ALDER STREET P. O. BOX 4136 PORTLAND 8, OREGON

RETURN OR FORWARDING POSTAGE
GUARANTEED

POSTMASTER: IF ADDRESSEE HAS REMOVED AND NEW ADDRESS IS KNOWN, NOTIFY SENDER ON FORM 3547, POSTAGE FOR WHICH IS GUARANTEED.

1946 Hunting Regulations

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Bag limit, 3 birds a day but not more than 6 in any 7 consecutive days.

Valley Quail:

Coos, Douglas, Josephine, Jackson, Crook, Deschutes, Klamath, Grant and Wasco counties:

Open season, October 19 to October 27, inclusive.

Bag limit, 5 valley quail per day but not over 10 in any 7 consecutive days or in possession.

Blue or Sooty Grouse:

Open season, October 12 to October 20, inclusive.

Bag limit, 2 grouse per day but not over 4 during entire season.

Area open, Clatsop, Columbia, Tillamook (except in burn closure), Curry, Lincoln, Coos and that part of Douglas and Lane counties lying west of Highway No. 99.

Hungarian Partridge:

No open season.

MISCELLANEOUS

Silver Grey Squirrels:

Open season, September 28 to October 25, inclusive.

Bag limit, 5 in any 7 consecutive days or in possession at any time.

Area: Entire state except that the season shall extend throughout the year on cultivated lands and except that Hood River county shall be closed the entire year.

Cottontail and Brush Rabbits:

Open season, November 15 to February 15, inclusive.

Bag limit, 5 in possession at any one time

Area: Entire state.

Furbearing Animals:

Open season, November 15 to February 15, for marten, mink, muskrat, otter and raccoon.

No open season for fisher, beaver and ringtail cat.

Migratory Waterfowl:

Open seasons will be as set by the federal government. (There will be no split season in Gilliam, Sherman and Wasco counties.)

Gun Regulations:

Use prohibited in hunting of machine guns, M-1 carbines and Garands. Other gun regulations remain the same.

1946 Game Outlook

(Continued from Page 6)

PHEASANT AND QUAIL:

Although most upland game species are not in normal abundance this year, it is anticipated that hunters will be quite successful during the short period the season will be open.

As in the past, Malheur county supports the highest pheasant population and will probably draw hunters from all over the northwest.

Umatilla, Union, Wallowa, Baker, Morrow and Jackson counties are expected to provide fair pheasant hunting but other counties do not have more than enough pheasants to meet the local demand.

Oregon Deer

Interest among the many newcomers to the state, as well as some of the regular residents, in knowing the different kinds of Oregon deer prompts the following brief explanation for the layman's benefit.

At the present there are three species (or two species and one subspecies as contended by some biologists on account of crossbreeding), the Rocky Mountain mule deer of eastern Oregon, the Columbian black-tailed deer of western Oregon and the Columbia white-tailed deer. An extinctstrain is the yellow-tailed deer, which has not been positively reported since the early 1900's.

The most common deer are the Rocky Mountain mule deer and the Columbian black-tailed deer. The summit of the Cascade Mountains is the theoretical dividing line between these two species (sub-species) but considerably intermingling occurs on the east slope of the Cascades. There are many cases of crossbreeding evident in this area. It has been proved that mule deer and black-tails will cross readily in captivity and that black-tail characteristics genetically speaking are predominant. In the first generation after crossing the animals will vary from typical blacktail to typical mule deer with varying in-between characteristics. In the second and third generations they revert to the blacktail type almost completely. The only mule deer characteristic showing any tendency towards being predominant is size as crosses of a few generations will frequently be larger than typical blacktails. This undoubtedly accounts for the large blacktails taken by hunters along the summit of the Cascades.

It has been frequently recommended that mule deer be transplanted to the blacktaïl range in western Oregon to develop a larger specimen for hunters. This would obviously be useless, even if the transplanted animals could stand the environmental change, because the breeding stock thus introduced, being recessive in genitic characteristics, would soon revert to blacktail types.

The Columbian white-tailed is a true species in that it does not cross with the other deer. In early days these whitetails —flagtails or fantails as they are frequently called — were very abundant in the Willamette. Rogue and Umpqua river valleys and from The Dalles along the Columbia river to the ocean, but now have dwindled to a few hundred. These deer are by habit a brush and thicket species, hiding in dense vegetation for protection. At the present time the largest herd is in Douglas county near Roseburg. There is a small herd in the lowlands along the Columbia river near Clatskanie and occasionally a few are seen at scattered points around Mt. Hood and in the Three Sisters area near Bend.

The yellow-tailed deer or, as it is sometimes called, the Idaho whitetail, is a strain of the white-tailed deer that originally inhabited the valleys of the Blue Mountains in eastern Oregon. Now exinct, the last known individuals of this species were seen in the Cottonwood Creek and Fox Valley section of Grant county.

The common bench-leg deer, (those short-legged, blocky deer frequently found in various parts of the state) is not a strain or subspecies as frequently thought but is only a variation that may occur within the species, subspecies or strains already described. This characteristic does not have a tendency to breed true and, therefore, falls perfectly in the variation category.

The mule deer and the blacktail deer are so common that their identifying characteristics do not warrant mention. The whitetails and yellowtails can be positively identified by a single trait. They have a long white-fringed, black-tipped tail that droops when the animal is standing but flashes erect and waves noticeably as the animal moves, which gives the species the descriptive and commonly applied name of flagtail.

"GAME FOODS," a pamphlet prepared by A. S. Einarsen, director of the Oregon Cooperative Wildlife Research Unit at Corvallis, gives the sportsman concise directions for not only taking the proper care of fish and game but also includes a number of recipes for preparing the food for the table. Copies of the bulletin may be obtained free of charge from the Extension Service, Oregon State College, Corvallis.

The skins of rats are used to make pocketbooks and tobacco pouches.