

Oregon State GAME COMMISSION BULLETIN

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No. 6

NEW FIELD ORGANIZATION PLANS ACTIVATED

In connection with the Commission's expanded operations, additional field headquarters and personnel changes have been made recently. The activation of the La Grande and Bend field offices and the appointment of district supervisors for the Northeastern and Central District were announced in the April issue. Three additional districts are now being established and supervisors and headquarters have been designated as follows: W. C. Lightfoot, Southeastern District, Burns; James Vaughn, Southwestern District, Roseburg; and Leslie Zumwalt, Northwestern District, Albany. Lightfoot, district game agent in the Lake-Klamath area, is a native of California and a 1941 graduate of the fish and game course at Oregon State College. Prior to joining the Oregon State Game Commission staff, he worked for the Oregon Cooperative Wildlife Research Unit at Protection Island and for the U. S. Fish and Wildlife Service at Tule Lake. James Vaughn has been superintendent of the Rock Creek trout hatchery for fifteen years and prior to that time was at the Oak Springs hatchery for eight years. Leslie Zumwalt,

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Harvesting Oregon's Big Game Crops

By R. U. MACE, Chief Biologist

Wildlife is the one natural resource that Oregon's citizens have chosen to retain in public ownership and equal opportunities are enjoyed by all in sharing the benefits to be derived from this resource. The Game Commission's objective in managing Oregon's big game is to provide a maximum of recreation and continue to maintain satisfactory densities of animals.

Big game are produced on land owned or controlled by other than the Game Commission. Although most of the summer range is administered by public land management agencies, much of the winter range is privately owned. The manager of big game, therefore, has little direct control over food supplies. Any programs initiated by those who control such forage resources necessarily affect big game crops. Only limited control is possible over the distribution and movements of wild animals, as well as weather and other environmental conditions which affect production and harvest.

Big game surpluses are subject to har-

vest by all interested persons who purchase licenses. Consequently, the annual kill varies with the number of hunters and may bear little relationship with the crop available.

In order to maintain and harvest maximum compatible numbers of big game animals, it is necessary to have reliable information on each herd in the state. Such information is secured throughout Oregon at all seasons of the year by trained and experienced personnel.

Information pertinent to management of big game resources includes data on the condition of the various herds and factors affecting production and survival; measurements of annual kill by hunters; and the balances between big game, available food supplies, and competing interests.

An understanding of the various factors affecting big game crops must serve as a guide in regulating the annual harvests. Although the task is difficult, practical hunting regulations can be imposed on the basis of reliable facts concerning all big game herds.

History of Big Game Harvests

The history of big game in Oregon has progressed from depletion through restoration, and finally to over-abundance on some ranges.

At the turn of the century, big game numbers were generally at a low point throughout the state. Unregulated and excessive hunting during the period of settlement was partially responsible for this condition. Conservation in the form of restrictive hunting regulations was necessary in order to re-establish and increase big game. It was necessary to close the season on some big game species, particularly elk, pronghorn antelope, and white-tailed deer, in order to preserve the

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Prompt and careful dressing insures prime antelope meat.

☆ THIS AND THAT ☆

The Game Commission has received notice that its applications for federal surplus lands for wildlife use at Camp Adair, Benton county, and Fort Stevens, Clatsop county, have been approved and title to the lands would soon be transferred to the State. Development plans are not completed for the Fort Stevens area but the Camp Adair area will be used for pheasant propagation purposes, eventually taking the place of the Eugene and Corvallis game farms. Application for lands at Camp White, Jackson county, is still pending.

* * *

The Game Commission's habitat improvement program in eastern Oregon is well underway. Approximately 40,000 plants have been set out in Lake and Klamath counties, 29,370 in Baker county and a similar number is planned for Union county. The 50,000 multiflora rose plantings for nursery stock at Camp Adair have been completed. Total plants of multiflora rose for the state this year should reach approximately 4,000,000.

* * *

The Burns Chapter of the Izaak Walton League of America has financed the planting of 2,000 multiflora rose bushes in their area.

* * *

Hunters during the 1949 waterfowl season bagged 420,000 ducks and geese in Oregon, according to data computed by the game department. In addition, about 9,000 birds went unretrieved. These figures are based on the number of duck stamps sold in the state and surveys conducted by game personnel throughout the state. Although duck stamp sales totaled 52,049 in 1949, about 14 per cent represented stamp collectors or hunters who did no hunting, making the total of participating hunters 44,700. The survey showed that the average hunter made four or five hunting trips during the season, with an average kill of two birds per hunt.

* * *

The legal duck kill for the United States is estimated at 18.5 million by the Fish and Wildlife Service, the figure being based on an analysis of data gathered from bag checks and post season hunter contacts. The Pacific Flyway had 21 per cent of the hunters and 23 per cent of the kill; Central Flyway, 24 per cent of the hunters and 18 per cent of the kill; Mississippi Flyway, 42 per cent of the hunters and 46 per cent of the kill; and the Atlantic Flyway, 12 per cent of the hunters and 12 per cent of the kill.

* * *

Conservation education will be on the program of many summer camps this season. The educational staff of the Game Commission is working out a heavy schedule covering 4-H, Boy Scout and Y.M.C.A. summer camps.



"Doesn't look as if they're biting so well here."

Oregon State Game Commission Bulletin

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Do you want to receive this BULLETIN each month? If so, send in your name and address and you will be placed on the mailing list free of charge.

Hunting Regulation Hearing in July

The annual hearing on hunting regulations will be held by the Oregon State Game Commission at 10 o'clock, July 14, the time prescribed by statute.

The meeting will be at the Portland headquarters of the Commission and all persons interested in regulations pertaining to seasons, bag limits, and methods of taking game animals, game birds and furbearing animals are invited to attend.

New Field Organization Plans Activated

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native of Curry county, graduated from the Oregon State College fish and game course in 1939 and has worked for the Oregon State Game Commission since that time with the exception of several years spent with the armed services during the war. Prior to his appointment as district game agent for Coos, Curry and western Lane and Douglas counties, his work included pheasant liberations, fish liberations and lake and stream surveys.

At the same time the Department of Fisheries Research is being further developed by the appointment of H. R. Newcomb as chief fisheries research biologist. This action strengthens the administrative policy of operating the basic research activities as a distinct and separate function from the management activities now being carried out in the fisheries management field throughout the state. This procedure parallels the policy with the basic research activities for some time carried out in the game division. A similar arrangement for the fishery research activities will be developed and through such a coordinated program the facts developed through research may be channeled into application in the practical management field. Newcomb, a graduate of the University of Maine, came to Oregon in 1938 and obtained his master's degree at Oregon State College. He started to work for the Oregon State Game Commission in 1940 as leader of the first lake survey crew, whose findings resulted in the South Twin Lake restoration program. He then was assigned to start the Rogue River study and left this to serve in the Coast Guard during the war. Upon his return in 1945 he was placed in charge of the Umpqua River project.

Attendant with the changes in personnel to fill the district positions, Henry Reed, at present superintendent at the Fall River hatchery, is being transferred to the Rock Creek hatchery on the north fork of the Umpqua to fill the position vacated by the appointment of Mr. Vaughn to district supervisor. C. C. Green will assume the superintendency of the Fall River hatchery to replace Henry Reed. William Pitney, fisheries biologist on the coast, will replace Newcomb on the upper Umpqua river.

Into Diamond Lake Via Sno-Cat

While many Oregon residents were observing the emergence of spring with May Day programs a group of Oregon State Game Commission employees were making their way through a snow storm deep into the Cascades. It was the egg-taking crew going in to Diamond Lake.

For many years the Game Commission has operated a trout hatchery at Diamond Lake, and to be on hand for the annual rainbow trout egg-take the crew must be at the lake when the ice goes out each spring. Several years ago this was a task of Herculean proportions. Although materials were stored each fall at the lake there were always many supplies of a perishable nature that had to go in with the men. This was accomplished by loading the supplies on toboggans which in turn were pulled by snowshoe-equipped men. This required a two-day trip with a stop-over at the old half-way house. In recent years this old method has been greatly improved upon. A sno-cat pulling a trailer takes seven men and more than a thousand pounds of supplies into the lake in a matter of hours instead of days.

This year the truck that brought the Commission's cat from the Fall River Hatchery was able to go six miles up the Diamond Lake road before it was stopped by a huge drift. With all hands at work it was only a few minutes until the sno-cat was off the truck, the trailer loaded and crew and supplies were again on their way. Nearly twenty-four inches of new snow had fallen during the preceding twenty-four hours and the going was slow, but at that it was many times faster and easier than the old man - power method.

With one stop to effect minor repairs the crew arrived at the Diamond Lake Hatchery in four hours and while the cook fired the range in the cook house, others dug snow away from building doors, unloaded the trailer and whetted already keen appetites.

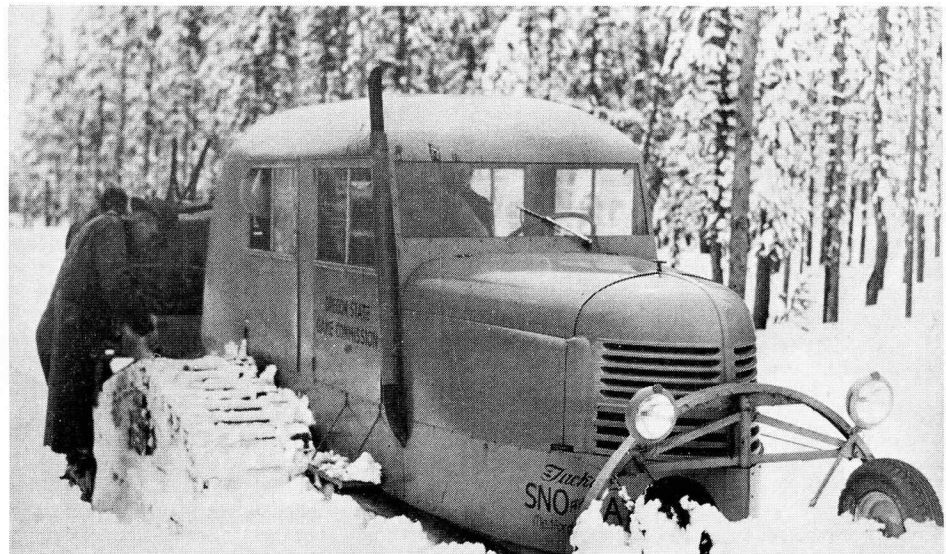
All buildings had come through the winter in excellent shape and the condition of the ice on the lake showed that by the time equipment was readied it would be time to start spawning the rainbow trout as they made their annual trip into the streams adjacent to the lake, and one more season's operations would be under way.

Crane Prairie Will Close June 19

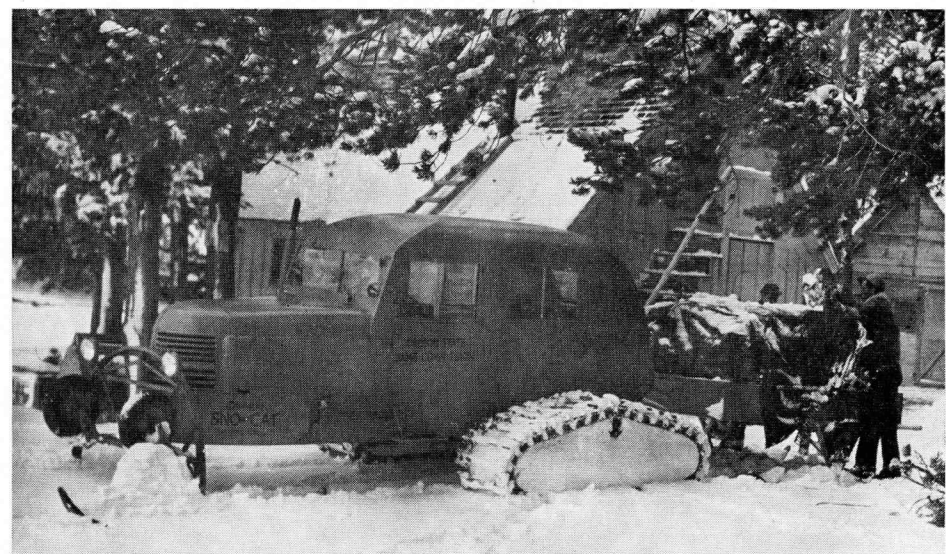
Crane Prairie Reservoir in Deschutes county will be closed to angling beginning June 19 under an emergency order passed by the Game Commission because of the draw-down of the water level to such a low point that the fish needed protection. The order is effective until rescinded.



At journey's end for the truck, equipment is transferred to the sno-cat.



Sno-cat travels straight through except for one stop for minor repairs.



Destination reached, supplies are unloaded in front of hatchery bunkhouse.

Recreational Areas Acquired By Douglas County

By CHARLES V. STANTON
Editor, Roseburg News-Review

Winchester Bay will forever be open to the public. The Douglas county court, as a part of its recreational lands acquisition program, has negotiated purchase of riparian rights around the entire waterfront of the bay at the mouth of the Umpqua river. Public dedication will be made of the 25-foot strip above high water, thus preserving public access and preventing closure of any portion of the water front in the future.

The unique program adopted by the Douglas county court and county budget committee, upon request from the Umpqua Basin Conservation Council, is receiving widespread attention. Already negotiations have been completed for land of far more value than the modest sum of money expended. Indications point to a greatly enlarged program, involving a county-wide public park department, and donation of several memorial parks.

In addition to purchase of land at Winchester Bay, the county has bought a four-acre grove overlooking Calapooya river gorge, five miles east of Sutherlin; has negotiated purchase of a picnic and recreational site adjoining the Living War Memorial at Drain; is buying right of way for an access road to Cow Creek bar on the South Umpqua river near Canyonville, one of the favorite winter steelhead fishing spots in southern Douglas county, and is negotiating for additional picnic spots and access roads.

Perturbed by increasing population and the accompanying danger of losses of picnic areas, access to fishing streams and destruction of recreational facilities, the Umpqua Basin Conservation Council, composed of representatives from the various sportsmen's organizations of

Douglas county, petitioned the budget board for money in the 1949-50 budget to be used in acquiring lands for public recreational use. The sum of \$10,000 was earmarked. At the request of the county court, the conservation council set up a committee, representative of all geographical sections, to act as an advisory group. This committee recommended to the court that \$5,000 be used at Winchester Bay to protect the right of public access.

The Port of Umpqua Commission has become thoroughly interested in sports use of the bay and has volunteered co-operation with the county court, earmarking \$10,000 to be used jointly with a like sum from the county to improve facilities.

Proposals include dredging of a small boat mooring channel and dike adjoining the existing county wharf, construction of a concrete ramp, where skiffs may be unloaded or loaded, and provision for additional parking space.

Some of the improvement work will include building up the shore line by disposal of dredged material, and it is here that the acquisition program is expected to be particularly effective. Without public ownership of riparian rights, title to made land would revert to adjoining property. If this property, in turn, should pass into the hands of commercial resort operators, public access might be adversely affected.

Negotiations now being completed will place in the hands of the county, for dedication to public use, a 25-foot strip of land above high water level around the entire bay front. All accretions, by dredg-

ing or natural means, within the tideland area, will be included in the dedication.

The county court is arranging, through agreement with the state park department, which controls a section of the bay front, to build roadways and parking spot for the current season. Parking hundreds of vehicles daily in the small Winchester Bay area is one of the major problems at present. A check of registrations last year revealed that about one-half the automobiles carry out-of-state licenses.

The Lower Umpqua Chamber of Commerce reported that the bay area at present is critically lacking in accommodations to serve properly the anglers enjoying the summer fishery.

Although concentrating upon the Winchester Bay project, the county's land acquisition program is expected to extend into every section.

Recommendations prepared for this year's budget meeting, urge continued appropriation for Winchester Bay, together with money to enlarge land purchases in interior sections, establishment of a county park department, employment of a supervisor, and provisions for improvement and maintenance of recreational lands.

The first year's experience has shown exceptional public acceptance and co-operation.

Calapooya Gorge park, for instance, was obtained at very low cost. The picnic site being purchased at Drain actually is about one-half donation, considering land of comparative value. One memorial park is to be given to the county by actual donation as soon as title is cleared, transfer papers already having been drawn. Several other memorial parks are known to be under consideration as possible gifts.

Continuation of this program, it is believed, will preserve for public use hundreds of miles of narrow strips of land between county roads and fishing streams, the acquisition of many small groves and scenic spots which may be used for picnic purposes, opening of fishing areas to which access now is restricted, provision for boat moorages, etc.

Members of the county court have entered enthusiastically into the program. The Port of Umpqua commission has been giving much help. Douglas county Lions club have adopted a county-wide project in providing equipment for such picnic spots as may be obtained. The Fair Oaks Grange, located east of Sutherlin, has made specific request that it be permitted to improve and maintain the Calapooya Gorge park.

The interest demonstrated in the project leads the Umpqua Basin Conservation Council to believe that it will be possible to advance greatly the acquisition program ahead of the major influx of population expected in Douglas county within the next few years, says John P. Amacher, president. By gaining public title to recreational lands now, Amacher contends, ample sports facilities can be maintained for the public in the future.



Calapooya Park, a popular recreational area in Douglas county.

Salmon Fishing at Winchester Bay

By L. M. MATHISEN, Field Agent*

One of the most recently "discovered" Oregon sport fishing localities is the Winchester Bay area at the mouth of the Umpqua River on the central Oregon coast. Within the last few years sport fishermen by the thousands have found that the summer salmon fishing in this area is second to none. Over 20,000 angler trips, roughly ten times the number of anglers fishing in 1946, were made for salmon in this area during the three-month period from June 15 to September 15, 1949. More than 5,000 chinook and silver salmon, weighing almost 60,000 pounds were caught during this time.

Intensive survey of the 1949 fishery was conducted by Game Commission field personnel. Daily boat counts provided by the Umpqua Lighthouse Station, U. S. Coast Guard, were of vast assistance in determining the number of anglers utilizing the area. Not included in the survey were guided charter boat parties or shore anglers.

History

The summer sport fishery at Winchester Bay has developed rapidly over the past several years into one of the state's major salmon fishing areas. Local commercial fishermen and some salmon anglers have known for years that salmon enter the lower Umpqua estuary in the summer feeding on pilchards, herring, and other fishes. The movement in and out of the river for this purpose occurs mainly during July and August. Prior to the closure of the Umpqua River to commercial fishing in 1947, a limited gill-net fishery for chinook salmon was carried on during these two months by a small number of commercial fishermen who netted in the lower portion of the river. Records show that the average landings during July from 1923 to 1940 were 16,000 pounds of chinook salmon and had dropped to less than 1,000 pounds in 1946. The records thus indicate the presence of the salmon in the past, and the fact that they were present in even greater quantities in earlier years. A successful sport fishing season took place at Winchester Bay in 1949 in spite of one of the poorest ocean troll commercial seasons on record. The sport fishery took over 13,000 pounds of chinook salmon during July, 1949, alone, almost equivalent to the total July river commercial fishery landings from 1940 through 1946.

Facilities

The enormous increase in angling pressure caught the area short of moorage, boat launching, boat and motor rental, cabin accommodation, and parking space facilities in 1949. However, lower Umpqua citizens have cooperatively organized to carry out a program of development (see story page 4).

Last summer there were four guided charter boats operating at Winchester Bay, fishing both in the bay and ocean, and this summer more will be available. In 1946 no such boats operated in the area. Similarly, in 1946 only six rental boats were available, while last summer the number had increased to about 60.

During the past several years, the increased sport fishery has stimulated the development of many local business enterprises, including cabin accommodations, eating establishments, fishing tackle and equipment concerns, a custom fish cannery, fresh and frozen bait business, and guided charter boat operations.

1949 Fishing Results

The tremendously increased popularity of the Winchester Bay area can be easily explained by the angling results during the 1949 summer season. One thousand two hundred chinook salmon, averaging 21 pounds and 3,800 silver salmon, averaging 9 pounds apiece, were caught. The largest chinook salmon weighed during the survey was a 43-pound fish, while the heaviest silver salmon equalled 17½ pounds. Commission field personnel found that the seasonal average catch equalled 3½ pounds of salmon per angler trip, or roughly 9 pounds per boat. On one phenomenal day, the catch averaged 27 pounds of salmon per boat. The survey included anglers fishing on the bay and the ocean, but did not involve the shore angling or guided charter boat fishing. Like any other fishery, the angling success varies with the whims of the fish, fishermen's luck, and wind, weather, and water conditions.

Economic Evaluation of the Fishery

Referring to the Winchester Bay fishery, Charles V. Stanton, Editor, Roseburg

News-Review, wrote in an editorial February 7, 1950, "Many people perhaps do not realize the value of our recreational asset. We've been living too close to the finest recreation in the world to appreciate its worth." Placing the actual value upon fishing and hunting is a most difficult problem. There are, however, some methods of indicating the minimum value of a fishery, such as that under discussion. New construction in the Winchester Bay area, for instance, resulting from the increased sport fishery amounted to \$231,000 in 1949, Mr. Stanton reported. Unofficial estimates by some lower Umpqua area businessmen were that the bay area profitted to the extent of \$2,500,000 from sports angling last year.

Assigning a value to each fishing trip is another method of evaluating the sport fishery. It would have cost the average Winchester Bay angling party \$14.00 per trip to rent the necessary essential equipment — including boat, outboard motor, fishing poles, reels, bait, lures, and gasoline — to conduct a fishing trip. Over 1,500 interviewed Oregon parties, averaging 2½ fishermen per party, traveled 158 miles round-trip from origination point to Winchester Bay and return. By adding the round-trip mileage cost at 6 cents per mile to the cost per trip, at least \$23.48 can be set as the minimum cost per party, or \$9.40 per angler for a day's salmon fishing trip on the bay. Thus the minimum estimated cost to 1949 Winchester Bay summer season salmon anglers equals \$188,000, including mileage.

Arthur Carhart reported in the August 1947 Sports Afield magazine that Fish and Wildlife Service national surveys showed that less than one-fourth of every dollar expended as a result of the fish or game resource was spent on items of equipment, such as fishing poles, reel, lures, guns, ammunition and other such gear. For instance, the Fish and Wildlife

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Fishing boats moored at public county dock at Winchester Bay.

*Now District Supervisor, Central District

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remaining animals. During the period of total protection from hunting, elk were trapped and transplanted to re-establish breeding herds.

The hunting of mule and black-tailed deer was never completely prohibited, but restrictive regulations became necessary to preserve the species. Prior to 1923, antlerless deer were lawfully harvested in Oregon, although the seasons and bag limits became more restrictive in nature.

In 1923 the buck law was initiated and only male animals with at least forked antlers were legal. Subsequent to establishment of the buck law for deer, large refuges were created by the Legislature to prevent hunting over large areas of range.

Restrictive hunting regulations in the form of closed seasons, buck laws, and refuges were effective in increasing big game. Elk in eastern Oregon responded so well to protection that a hunting season on bulls was possible in 1933 and a like season was first held in western Oregon in 1938.

Mule deer numbers eventually increased on some ranges beyond the ability of winter food supplies to support them. One of the most spectacular areas from the standpoint of over-population was on the Murderer's Creek refuge in Grant county. By 1934 the herd had increased to the extent that important shrub species were seriously over-utilized and losses by malnutrition occurred. At that time, hunting regulations were established by the Oregon legislature at two-year intervals and such a system proved inflexible in meeting the problem.

To further complicate the situation, public understanding was lacking. Sportsmen were indoctrinated with the philosophy that female deer should not be hunted. After years of scarcity it was

difficult to realize that some deer ranges had become over-populated. A great deal of education was necessary before such a condition was recognized and action became possible. By the time the first antlerless deer season was authorized in 1938, a large part of the Murderer's Creek herd had succumbed to starvation.

Continued increases of mule deer created over-population problems on other ranges, necessitating a sound management program based on the controlled removal of antlerless animals in order to balance the herds and insure a sustained production.

To provide more flexible management, the Game Commission was authorized by the legislature in 1938 to establish seasons and bag limits for the harvest of game and to open and close refuges as the need became apparent.

Following an earlier period of depletion, the history of big game harvests in Oregon has evolved from complete protection of remnant herds to restrictive hunting of males only and, finally, to the controlled harvest of antlerless animals on ranges where surpluses exceeded available food supplies.

Types of Seasons

General seasons are employed to provide hunting for the vast army of interested sportsmen each fall. Such seasons are designed to insure maximum freedom to individuals in choosing a hunting area and are usually limited to the harvest of males only.

Oregon has had experience with the hunter's choice type of season when applied to elk. Hunter's choice refers to a season authorizing the taking of both sexes of big game. This method of harvest has proved practical where surplus game numbers exist over an extensive enough area to permit widespread distribution of hunters, thus limiting concentrations on vulnerable areas. Other states have employed hunter's choice seasons in recent years to harvest surplus deer. Such sea-

sons have proved most practical when held over large areas of relatively inaccessible territory. Heavy hunting pressure and the accessibility of much of Oregon's deer range to roads renders it unlikely that frequent and prolonged seasons of this type can be authorized without jeopardizing future success. However, it is probable that circumstances may justify periodic hunter's choice deer seasons for limited periods when surpluses become available over extensive areas.

In order to effect the removal of surplus animals from an individual problem range, controlled hunts are held. Such hunts, designed to harvest big game numbers in excess of winter food supplies, are held in November and December and are usually restricted to the taking of antlerless animals. The distribution and number of hunters are controlled with a view toward accomplishing the harvest of the particular animals concerned. By restricting the kill to antlerless animals, it is possible to assist in balancing sex ratios as well as preserve males for future hunting seasons. Since antlers are shed shortly after the first of the year, the period that such seasons can be held is limited to the early part of the winter concentration.

Where big game damage to agricultural crops is a problem, controlled hunts are held at the time the damage is most serious and may include both sexes. These seasons represent the most intensively controlled type of harvests and insure well-regulated hunts.

Factors Influencing the Establishment of Big Game Seasons

Many factors must be understood and considered in the establishment of big game hunting seasons.

Of paramount importance in formulating hunting regulations is the maintenance of biological balances between herd numbers and the ability of the habitat to support them. Surpluses of big game are annually produced and can be harvested under appropriate regulations which protect future breeding stocks. Big game species are polygamous, one buck being sufficient for several does, and surpluses of bucks are normally available. Such surpluses can be removed during general seasons authorizing the kill of males only by all interested sportsmen.

The protection of females during the hunting season encourages increases of big game herds and increases are desirable as long as available habitat will support the additional animals. When range carrying capacities are exceeded by continued big game increases, it becomes necessary to harvest females since the removal of males alone will not materially reduce total populations. When surpluses exist over large areas, the general season may be extended for a few days with a hunter's choice provision including antlerless animals in the bag.

Several disadvantages to general hunt-

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Stalking skill and trophy selection are important in hunting the wary pronghorn antelope.

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er's choice seasons are apparent. A uniform distribution of hunters is difficult to obtain since personal preferences dictate the choosing of hunting localities. In addition, several herds may be mixed together at the time of the general season and it is impossible to assure the removal of specific problem animals. Boundaries must be well defined to prevent confusion on the part of hunters and it is possible that limited areas which are not overstocked may be included.

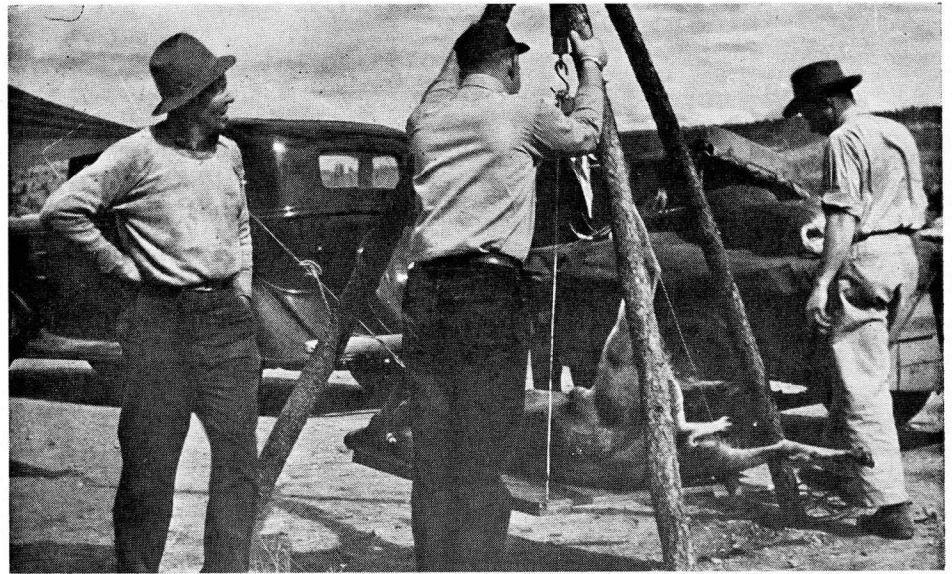
When a relatively small area is involved, the most effective means of harvesting a surplus and balancing the herd is by means of a controlled hunt limiting the number of hunters and authorizing the removal of a predetermined number of antlerless animals at a time when they are on the problem range.

In addition to biological balances, the problem of damage must be considered in establishing big game seasons. Damage to agricultural crops is the most serious type of conflict. Although haystacks can be protected by wooden panels and high-value crops of limited acreage may be fenced against big game, such procedures cannot be applied to other types of problems. Where damage occurs on an area lacking adequate supplies of natural forage, a surplus of big game is considered to exist. Balancing the herd and limiting damage can best be accomplished by sportsmen who should be afforded every opportunity to remove surpluses. Since damage areas are confined in extent, controlled hunts can be applied most efficiently. When damage occurs during the late summer months, the season can be held early in the fall prior to the general hunting season and both sexes may be included in the bag.

The recreational values connected with hunting merit consideration when establishing seasons. Maximum recreation must be provided to as many hunters as possible.

The ultimate in recreation is afforded by archery seasons. Archers as a group are primarily interested in the sport of stalking big game rather than the end product of meat bagged. This emphasis on sport is to be encouraged as much as possible. Since archery hunting was first practiced in Oregon, the annual success average has varied from three to ten per cent as compared to the 25 to 98 per cent success experienced by rifle hunters. Crippling loss by archers is at a minimum due to the short range at which shots are attempted and the opportunity of actually observing hits. Since an arrow kills by hemorrhage, blood trails are commonly produced and assist in tracking wounded animals.

In order to insure some degree of success, it is necessary to hold archery seasons at a time of the year when the



Deer being weighed in at one of the Game Commission checking stations, which are operated for all controlled hunts.

animals are not disturbed by rifle hunters. A minimum of cover and high game densities should govern the selection of archery areas. Both sexes may be included in the legal bag since the take is so limited that big game numbers are not affected. Since archers are gregarious, preferring to camp in groups where equipment and experiences may be compared, archery areas need not be extensive in size.

In rifle hunting, general seasons with a minimum of restrictions and regulations are believed to provide substantially greater recreational values than most controlled hunts. Such seasons permit the individual a wide choice in selecting a hunting locality with a few restrictions. Since the number of legal animals represents but a fraction of the total population, stalking and trophy selection are practiced.

Controlled hunts limited to a definite number of participants and restricted to small areas provide less recreation for big game hunters. These seasons are usually held when the problem herds are concentrated and kills are easily made without a high degree of skill.

An understanding of big game life habits is extremely important in formulating hunting regulations. Oregon deer begin mating shortly after the middle of October and it is undesirable to continue hunting during the critical rutting period. Mule deer herds commence fall migrations to winter ranges concurrent with the breeding season and it is necessary to prevent hunting after the animals lose their natural wariness in response to migratory instincts.

The habits of each big game species must be considered separately in establishing hunting regulations. Pronghorn antelope begin rutting shortly after the first of September and the breeding season is very limited, usually ending by the

25th of the month. Shortly after the breeding season, the horn sheaths begin to loosen prior to shedding and the value of the bucks as trophies is diminished. It is necessary to hold the season prior to the first of September in order to insure the harvest of prime animals and eliminate the possibility of interference with the breeding period.

The rutting season of elk is during late August and September. Hence, hunting is postponed until October after the general deer season which supports the greatest pressure and must receive primary consideration when seasons are established.

Forest fire hazards during normal years remain critical until after the first of October. General hunting prior to this date would jeopardize vulnerable timber resources, the value of which must be considered in establishing hunting seasons. Opening the less hazardous areas at an earlier date would result in tremendous concentrations of hunters if the rest of the state remained closed. Although an earlier season might be desirable from the standpoint of better hunting conditions and prime meat, the effect of fire closures in concentrating hunters would seriously injure big game populations on the areas remaining open. In order to eliminate the necessity for fire closures and insure the uniform dispersal of hunters over the state as a whole, it is necessary to delay the deer season until after the first of October.

Since the sportsmen of Oregon are the consumers, the establishment of hunting seasons must consider their interests. Acceptance and tolerance by hunters is essential to the success of management programs. Most hunters will accept a general male season which allows everyone an opportunity to participate. Although the majority of Oregon's sportsmen recognize the necessity of harvesting

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HARVESTING OREGON'S BIG GAME CROPS

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antlerless big game in areas where surplus populations exist, the matter remains controversial. When it becomes necessary to remove antlerless animals on problem ranges, the most readily acceptable method is by means of a general season in which all hunters may participate. A controlled hunt, limiting the number of permits, is the least acceptable method of harvest from the hunter's standpoint since the opportunities for participation are determined by a drawing and cannot be afforded to all who might be interested. Although such seasons must necessarily be limited in scope, they remain the most effective method of managing problem ranges without hazard to adjacent herds.

Summary

The Oregon Game Commission is charged with the responsibility of regulating big game harvests and maintaining compatible numbers on all available ranges.

In order to guide the establishment of regulations for the harvests of big game crops, it is necessary to secure reliable information on the condition of the various herds and factors affecting production, the magnitude of annual harvest by hunters, and the problem of balances between big game, food supplies, and competing interests.

In the last fifty years, the history of big game in Oregon has progressed from depletion, through restoration, and finally to over-abundance on some ranges. During the period of depletion and restoration, restrictive hunting regulations were imposed and large legislative refuges established to protect remnant big game herds. Such measures were effective in increasing big game until surpluses in excess of winter food supplies, particularly in the case of mule deer, became evident by the middle 1930's, and harvests of antlerless animals were necessary.

Two major types of big game seasons are employed in Oregon. General seasons enable all interested hunters to participate and are necessarily restricted to the taking of males only unless surpluses are available over a large enough area to accommodate hunting pressure of both sexes without serious hazard to game resources. Controlled hunts are designed to harvest surpluses on individual prob-

lem ranges and are limited to a specified number of hunters.

Many factors must be considered in establishing hunting seasons. These include the maintenance of biological balances between big game numbers and habitat, the problem of game damage to agricultural crops, the importance of providing maximum recreation to hunters, the effects of hunting during critical periods of the year when big game are migrating or are breeding, the forest fire hazard problem during hunting season, and the acceptance by hunters of various harvesting methods.

A thorough understanding of all big game problems and relationships and the merits as well as short-comings of harvesting methods is essential to the perpetuation of hunting in Oregon.

SALMON FISHING AT WINCHESTER BAY

(Continued from Page 5)

Service found that 5 per cent of the expenditures went toward fishing tackle, 17 per cent for transportation, and 11 per cent for meals and lodging. Boats, clothing, and guide service made up a small portion of the total expenditure also. It is clearly indicated, then, that the 1949 summer fishing season at Winchester Bay was responsible for the expenditure of at least one-half million dollars, or approximately \$8.00 per pound of salmon caught. This equals \$168.00 for each chinook and \$72.00 for each silver salmon landed. That these figures are minimum estimates is certain since not included are the costs of extra fishing tackle and equipment, fish storage and canning, recreation and other expenditures for members of the party not fishing (wives, children, etc.), and other sizable expenditures resulting from the fishery.

During the survey, 86 angling parties were requested to estimate their investments in fishing tackle and equipment in their possession at the dock. The answers averaged \$609.00 per party, or \$240.00 per fisherman. Fifty-nine per cent of the fishermen supplied their own boats, while 41 per cent rented skiffs in the area. Investments in fishing equipment by the anglers unquestionably equals several millions of dollars.

Out-of-state fishermen comprised 5½ per cent of the 1,500 angling parties interviewed during the season.

Future

The best information available indi-

cates that the bulk of salmon, particularly chinooks, entering the Umpqua estuary in June, July, and early August, are merely feeding and moving along the coast en route to their spawning destinations in other coastal streams. Many of the chinook salmon are headed for the Columbia River. Adult chinooks, originally marked and released as fingerling far up the Columbia River, have been caught in the Winchester Bay area in July. Thus, detrimental factors, such as dams, water diversions, and pollution, which tend to decrease the supply of salmon in the Columbia and other rivers of Oregon, directly affect the future summer fishing at Winchester Bay.

As evidenced by the unsuccessful ocean commercial salmon fishery and the poor results experienced by commercial gill-net fishermen in most coastal rivers in 1949, the general trend of salmon populations unfortunately still appears to be on a decline. Without question, the intensity of the Winchester Bay sport fishery will increase substantially in the future. More and better accommodations and facilities will be available to the fishermen.

It is anticipated that the Commission's program for the rehabilitation of the Umpqua River fall chinook and silver salmon runs will afford some measure of future benefit to the summer fishery, but everyone should realize that improvement of the fishery depends largely upon recovery of salmon populations on the west coast generally.

"JOE BEAVER"

By Ed Nofziger



Forest Service, U. S. Department of Agriculture

"Please don't go to any bother—we can't stay for dinner."