

Oregon State GAME COMMISSION BULLETIN

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No. 10

Waterfowl Management

By WILLIAM B. MORSE, Biologist

Management of waterfowl in Oregon, as in all other states, presents a unique problem in game management. Most ducks and geese have a tremendous annual range, which requires true management on a continental scale rather than by nations or states. However, the gigantic geographic requirements for the task of gathering information are outside the scope of any one agency. The large northern breeding ranges are logically the responsibility of the national agencies. However, the task of collecting all essential information on migratory waterfowl is so large that all state and federal agencies and interested private organizations must cooperate to secure adequate information to preserve and increase waterfowl populations. This is especially true with the greatly increased hunting pressure of the present.

The activities of the Game Commission with regards to waterfowl management fall under several broad headings which will be discussed in detail. These are:

1. District fact finding.
2. Waterfowl area surveying.
3. Habitat Improvement.
4. Game Management Areas.
5. Public Shooting grounds.
6. Cooperation and management.

District Fact Finding

Each of the 12 Game Commission district agents has been allotted approximately two weeks per year to devote to waterfowl in his area. This time is divided among the various phases of waterfowl work as local conditions indicate.

The first activity of the year is participation in the nation-wide waterfowl population census in January. Each agent estimates waterfowl populations on several of the more important wintering areas in his district. Data are compiled and utilized by the state and the U. S. Fish and Wildlife Service. This program will be completely under way the coming year. Last January the district plan had not been in operation long

enough to warrant complete participation in the winter census. This census data
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Wire Resigns as Game Supervisor

Frank B. Wire has resigned as State Game Supervisor and Charles A. Lockwood has been appointed his successor. Wire's term of office did not expire until April of next year but because of poor health he presented his resignation to the Game Commission at its September meeting. He was first appointed Supervisor in 1932, a position he has held continuously since that time.

Charles A. Lockwood joined the staff of the Game Department in 1933 as game officer at Diamond Lake. Later he was transferred to the Portland office of the Commission and in 1937 appointed Assistant Supervisor, which position he has held since that time.

Of the resignation of Wire and the appointment of Lockwood the Oregonian newspaper says editorially:

"Frank Wire Steps Down

For more than fifteen years Frank B. Wire has been state game supervisor — and this protracted period of office itself attests a high degree of ability. In our state the game supervisor not only must be a practical sportsman of experience in wildlife problems, with a natural love for the work, but a public relations expert of extreme diplomatic finesse. We say this no more than half jestingly.

"But we are wholly in earnest when we declare, on the occasion of Mr. Wire's retirement, indicated by ill health, that our anglers and hunters are fortunate indeed, to have had Frank Wire as their employe. They are a difficult clientele to please, maybe, but when they take stock of their blessings we think they will agree that they owe a good deal to the toil, fidelity and understanding of Frank Wire, who himself is an admirable balance between zealous conservationist and ardent sportsman. A good shot, with either scatter-gun or rifle, and an almost incomparable fly fisherman, Mr. Wire has been

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Male Pintail Duck at Water's Edge

(Photo by W. L. Finley)

October the Month For Hunters

October is the first choice as a vacation month for the many who live from one hunting season to the next as all of the important small and large game seasons open sometime during this month.

First of all, the season for deer, black-tail and mule, extends from October 1 to 20, inclusive. The elk season opens on October 25 in the entire state, extending to November 2 in western Oregon and November 16 in eastern Oregon.

The pheasant and valley quail season opens on October 22, extending until November 2 with the exception that the Malheur county pheasant season remains open until November 9. Blue grouse season in coastal counties runs concurrently with the deer season, October 1 to 20.

The first of the two seasons for migratory waterfowl opens on noon, October 21 and closes November 3. The second season extends from noon, December 23 to January 5.

So whether it be small game or big game one is after, this is the month to do it, and a happy hunting expedition is insured by giving heed to

The 10 Commandments of Safety

1. Treat every gun with the respect due a loaded gun. This is the cardinal rule of gun safety.
2. Carry only empty guns, taken down or with the action open, into your automobile, camp, and home.
3. Always be sure that the barrel and action are clear of obstructions.
4. Always carry your gun so that you can control the direction of the muzzle even if you stumble.
5. Be sure of your target before you pull the trigger.
6. Never point a gun at anything you do not want to shoot.
7. Never leave your gun unattended unless you unload it first.
8. Never climb a tree or a fence with a loaded gun.
9. Never shoot at a flat, hard surface or the surface of water.
10. Do not mix gunpowder and alcohol.

Aerial Patrol

With the cooperation of the Oregon State Board of Forestry and the Oregon State Police the Game Commission has installed two-way radio equipment in airplanes and cars to supplement enforcement of the game laws.

It is recognized that the airplane can be used to good advantage in spotting hunters inside closed areas and apprehending pre-season violators of the game laws.

It has been found that one airplane and two cars make a very satisfactory work unit and it is anticipated that this method will be used throughout the state this year to aid in the enforcement of closed areas and closed seasons.

Tagging Regulations

Prior to the 1947 session of the Oregon legislature, the Oregon Game Code provided that all game birds, game animals and fish or parts thereof in possession during the closed season for such must be tagged with a metal seal of the Game Commission at a charge of 5c for each seal issued. Recognizing the fact that this law was not practical and could not be effectively enforced, the Legislature repealed this law at its last session and replaced it with the following.

"The state game commission hereby is authorized to enact and promulgate such tagging and sealing regulations as in its judgment are deemed necessary or expedient to the proper enforcement of any of the statutes or regulations relating to fish and game or to obtaining information for game management purposes; and said game commission hereby is further authorized to regulate the procedure, manner and time of such tagging and sealing."

Recognizing that some means of identifying legal game which might be in possession in the field during closed season was necessary for the enforcement of the game laws and for the protection of hunters the Commission has provided the following regulation for the 1947 hunting season.

"All game animals and birds taken during special seasons, which include the Ukiah elk season, Baker post-season for elk and the Summer Lake pheasant season and special archery seasons must be tagged with a metal seal of the Game Commission.

"All big game animals in possession in the field or forest or in transit more than 48 hours after the close of the open

season for such animals must be tagged with the metal seal of the Game Commission.

"Metal seals will be available without charge at all State Police offices and designated checking stations."

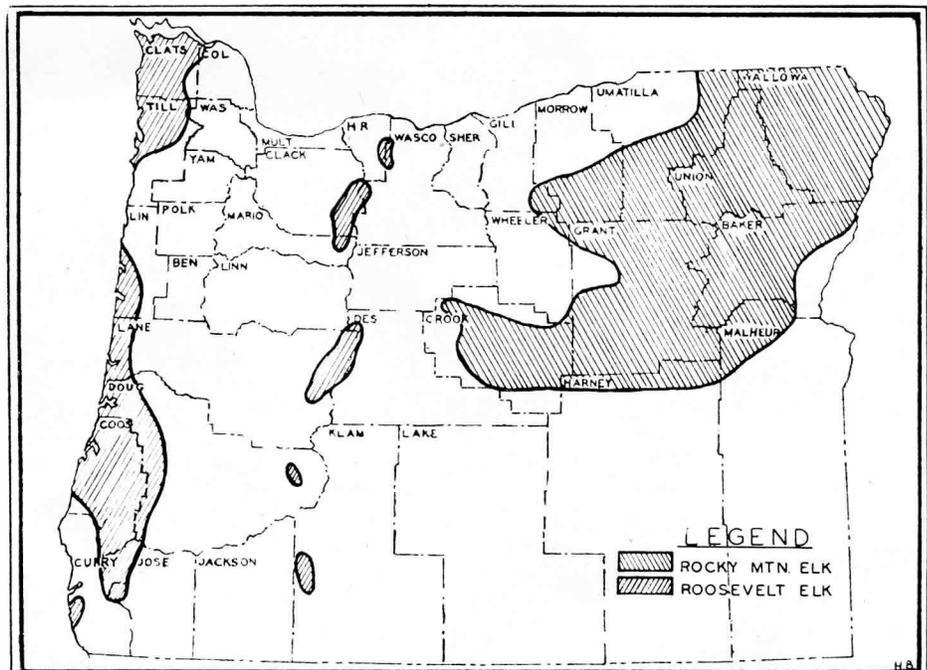
Big game animals taken during the regular open seasons this fall will not need to be tagged with a metal seal if they are stored or disposed of before the regular season closes. However, any big game animals or parts thereof that are in possession in the field or in transit more than 48 hours after the close of the regular season must be tagged. For example, it will be unlawful to possess any untagged portion of a deer while in the field during elk season or transport any untagged big game animal more than 48 hours after close of the regular big game season.

Tags will be available at all State Police patrol offices during the regular hunting seasons and designated checking stations during all special hunting seasons.

Veterans!

All war souvenirs are potentially dangerous. Guns firing more than one shot with one pull of the trigger must be registered under the National Firearms Act. All other trophies should be inspected for safety.

Get in touch with the Alcohol Tax Unit, 711 United States Courthouse, Portland, Oregon.



This map shows the main areas of the state populated by elk.

This and That

Reports received during the last two winters when open seasons were held on marten reveal only one of these furbearers caught in Clatsop county. This animal was taken in a set made for mink at an elevation of less than 100 feet above sea level. Its pelt was of very poor quality. Seldom are marten found at this low elevation as it is an animal of the higher forested mountains.

Using their new scoopmobile, the screening crew in Wallowa county helped back fill around the new ponds at the Wallowa hatchery and moved more than 1,500 yards of gravel in August.

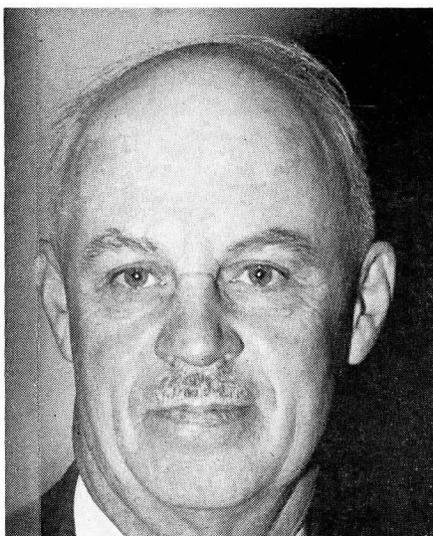
Two natural falls on Fifteen Mile Creek, one above The Dalles and other near Dufur, have been dynamited by the Game Commission's stream improvement crew to provide passage upstream for the fish, and a good run of steelheads is looked for next spring.

An increasing amount of fish food is being used at the hatcheries all over the state. During the month of July, 247,000 pounds were fed, the largest amount in any one month in the history of the state's hatchery system. The 1947 fish food budget is \$138,394.84.

Two reports emanating from the northeast district during the month of August sound like something out of Bob Ripley's "Believe It Or Not" stories.

One came from Mr. Clayton Vawter, a rancher who lives on Joseph Creek in Wallowa county. On August 1, while riding horseback below Buck Creek Com. Camp, Vawter observed an adult coyote, which had lost its right front foot, and an adult badger traveling along together. They seemed the best of friends—could it be that some sort of partnership had been arranged between the two? Both the coyote and badger are fond of ground squirrels, pocket gophers and mice with the badger being the best digger of the two.

Jack Titus, livestockman with headquarters on the Snake River, told about an incident which occurred on the trail to Lightning Creek. His herder, Wendell Stickney, was astonished to see a cougar herding 35 head of sheep down the trail towards the spot where Stickney was standing. The cougar seemed to be herding the sheep and would make a pass at the sheep in the rear of the flock but was apparently not hurting them. Stickney stepped out of sight in the shadows of some pines when the sheep passed and the cougar was within 15 feet of Stickney. He stepped out and as the cougar sat back in surprise shot him between the eyes with one bullet from a .22 pistol.



FRANK B. WIRE

Wire Resigns

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no mere theoretician in his approach to the problems of stream, forest and field. Ill news is tempered with good when we learn that, for a while at least, the game commission will retain his services in an advisory capacity.

"Appointment of Charles A. Lockwood, assistant supervisor for ten years past, to succeed Mr. Wire, seems sound policy on the part of the commission. The new supervisor is familiar with the program of the commission and his predecessor and is well qualified to assume the post of promotion. On his behalf, and wholly without prompting, this page would suggest to hunters, anglers, conservationists, nature lovers and sundry, that they make some small endeavor, in their discussions with Supervisor Lockwood, to realize that at best his job is a difficult one—and that it is alike humanly and technically impossible so to administer it that everybody will applaud."

The Oregon Journal, in its column, "Back Lashes & Pot Shots," writes as follows:

"Wire's Insight on Game Problems Still Valuable Department Asset

"We, for one, are glad that Frank B. Wire, who Saturday night resigned his post of state game supervisor, remains with the department in a consultatory capacity.

"Always an interesting talker, whether in an ordinary conversation or on a speaker's platform, Wire has a knowledge of the vastness of the state few men possess.

"He also is a fine sportsman and conservationist, a fellow who likes to take an annual deer-hunting trip, cast a fly on the Deschutes for the big redsides or take a boat ride down the Nestucca.

"Wire, too, is always ready to talk



CHARLES A. LOCKWOOD

with sportsmen concerning the multiplying problems of a department and commission plagued by continual howls about more fish and more game. He speaks with a biologist's insight built upon study, a wealth of experience and a fine memory.

"Wire first became supervisor in 1932 when the department listed only 75 employees. Since that time it has grown to 250, and even this number doesn't seem sufficient to care for the interests of a fishing and hunting public that has tripled in those 15 years.

"Much of what can be said about Wire, however, can also be brought out in connection with his successor, Charley Lockwood.

"Lockwood is alert to game problems and is the man who fathered Oregon's fish screen program that now has been copied by many states as well as, to a degree, by the U. S. Fish and Wildlife Service.

"He also is favorably known throughout the state, having dipped into virtually all areas as assistant supervisor and as field man for the commission prior to becoming Wire's helper in 1935. As assistant supervisor, he also has had charge of trout liberations.

"As we said before, we're glad that Wire's broad grin will still be a feature of any visit we pay the game department, and we're also confident Lockwood will slip both shoulders under his new responsibilities."

Dr. Davis Leaves

Dr. H. S. Davis recently resigned from his position with the Game Commission as technical consultant in fish disease and nutrition and has departed for Maryland to make his future home. Before coming to Oregon, Dr. Davis had been connected for many years with the U. S. Fish and Wildlife Service.

Waterfowl Management

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will enable the Game Commission to evaluate the waterfowl wintering value of the various locations in Oregon and to lay plans to provide water and food conditions that will hold more birds in Oregon.

District Agents locate and record nesting success data and brood counts. These figures indicate the trends of local breeding success from year to year and are another piece to be fitted into the continental picture. Data collected in 1947 show that brood sizes averaged 6.68 for ducks and 5.4 for Canada geese.

The measurement of hunter success provides the best index of migratory bird population fluctuations. Agents check as many hunters' bags as possible during the waterfowl season. Figures gathered during 1946 show a success ratio of 1.97 birds per man day in eastern Oregon and 1.21 birds per day in western Oregon. The state-wide success ratio was 1.53 birds per day. When compared from year to year these figures will show the trend of waterfowl populations, both resident and migrants, and also indicate the population trends of each of the various species harvested.

At the present time only one year's data has been accumulated so no comparison can be made. However, it is believed that a reasonable cross section of the kill was measured during 1946. Table I shows the make-up of the kill by species. This tabulation does not include the hunting data at Summer Lake. Past experience indicates that the importance of the Black Brant kill is too high on the tables which can be accounted for the poor geo-

graphic distribution of hunters checked along the coast.

Table I
1946 WATERFOWL KILL
BY SPECIES AND PERCENT

	East of Cascades % of Total	West of Cascades % of Total	State- wide % of Total
Duck Kill:			
Mallard	53.9	32.2	44.1
Wigeon	8.5	11.4	9.8
Pintail	9.5	5.3	7.6
Green Winged			
Teal	4.7	9.4	6.9
Scaup	0.7	9.8	4.8
Wood-duck		4.1	1.9
Buffle head .. .		3.3	1.5
Gadwall	1.7	..	0.9
Showeller	0.7	1.2	0.9
Canvas Back ..	0.7	0.4	0.61
Golden Eye	1.0	...	0.61
Scoter		0.4	0.02
Goose Kill:			
Snow Goose	6.8	...	3.7
Cackling Goose.	5.4	0.8	3.3
Black Brant		10.2	4.6
White Fronted			
Goose	3.4	...	1.9
Canada Goose ..	2.7	0.4	1.66
Lesser Canada			
Goose	0.4	2.9	1.5
Other:			
Coot		8.2	3.7
TOTAL	100%	100%	100%

In addition to these special measurements each district agent collects data on food and water conditions, migrations, drainage and flooding, general water conditions, migrations, private hunting preserves and other matters directly affecting waterfowl in Oregon.

Waterfowl Area Surveying

True waterfowl management as true management evolves to the management of specific units of habitat. Selection of the best potential habitat units for management requires a large amount of data too detailed and time consuming for district agents to collect. A special agent gathers this data on the areas involved and makes a complete evaluation of the area. In general the following procedure is used: A preliminary inspection is made of the area and if it is found to be promising, a detailed survey is made to gather data on land values and trends, land use, economic involvements, game use and potential, possible developments and their approximate cost, water sources, and other factors that might affect the specific area involved. This phase generally requires a year or more in order that the annual cycle may be completely evaluated.

This data is used by the Game Commission in deciding on land acquisition projects and habitat development projects. Preliminary inspections have been made on 49 waterfowl areas. Intensive surveys have been made on 12 areas. Four of these are still under close surveillance, while action has been deferred on 8 because of some specific involvement, usually high land costs or poor development possibilities. Expansion of this program has been approved and will start this fall.

Habitat Improvement

Closely allied with waterfowl area surveys is habitat improvement. At present this is a phase of the program that has been authorized but not activated. Area surveys often show that acquisition is not desirable, but that small feeding and resting areas may be developed by contract or easement with the present owners. Brush can be cleared, food planted, water maintained or increased and refuges established. Data on such areas are being gathered and evaluated under the waterfowl area survey plan.

Every addition and improvement to waterfowl habitat is of direct benefit not only to the birds but to hunters in surrounding areas as more birds are attracted to remain in the locality.

Game Management Areas

Game Management areas are a major subject in themselves and have been presented in detail in past bulletin articles. Two such areas are owned by the Game Commission at present: Summer Lake and Camas Swale. Summer Lake has been in operation for the past three years and Camas Swale is 85 per cent acquired and will be developed as soon as acquisition is completed.

Public hunting is allowed on portions of these areas. Intensive water control, food plantings, predator control and other management techniques are practiced in order that the full potential game value of the units may be realized.

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Wild rice growing at Sand Point Lake, Coos county.



Why Call Them Sportsmen?

Waterfowl Management

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Public Shooting Grounds

A new phase of waterfowl activities consist of making hunting areas available to the public on lands not owned by the Game Commission. This fall a public shooting ground is being established on private land in the Chewaucan Marsh in Lake county and the transaction was completely described in the September issue of the bulletin. This shooting ground is an experiment, and if successful presents an opportunity to set up similar units in other parts of the state and open lands previously closed to hunting. It is necessary to charge a daily hunting fee in order to partially defray operating expenses on areas operated as public shooting grounds.

Still another method of maintaining hunting areas for the public is by negotiating and reserving hunting rights on certain key tracts of public lands controlled by other government agencies. There are three such transactions pending at the present time. This will not increase the present hunting area, but will prevent selfish private interests from gaining control of good hunting areas and restricting or commercializing the hunting.

Cooperation and Management

In order that regulations may be made for the long time benefit of all the people, the pertinent data on waterfowl gathered by the Oregon State Game Commission are made available to the U. S. Fish and Wildlife Service. In turn the Fish and Wildlife Service is allowing the states to set their own seasons within specified limits in order that the waterfowl harvest

Summer Lake Valley Pheasant Season

In 1946 a study of the survival and habits of artificially propagated pheasants was initiated in the Summer Lake Valley, and an attempt was made to harvest as many as possible of the pheasants in the Valley during the 1946 hunting season which allowed a bag limit of 6 pheasants of either sex and a season from October 26 through December 31. Much valuable information on the survival and spread of different age classes of liberated pheasants was obtained during the season but the pheasant population in the valley was not completely harvested because of the abundance of escape cover.

This study is being continued through 1947. However, the open season this year will be concurrent with the waterfowl season, from noon October 21 to November 3, and from noon December 23 to January 5, with shooting hours limited from sunrise to one hour before sunset, as for waterfowl, and only cock pheasants can be legally harvested. All hunters are required to check in and out of the study area, which includes all of the Summer Lake Valley. Checking stations will be situated at Paisley and the headquarters of the Summer Lake Management Area.

All pheasants taken during this special season must be tagged before leaving the area.

A total of 875 banded pheasants have been released on the study area this year, 475 of which were mature birds released in March some of which successfully reared broods. Of the remaining 400, which were released in August, 200 were 6 weeks old and 200 were 8 weeks old.

A knowledge of the survival of artificially propagated pheasants of different age classes and methods of rearing is needed to serve as a guide for future management, and the cooperation of all participants in this year's special season is urgently requested.

Pheasants are not as abundant in the Summer Lake Valley as in most other counties open to hunting and hunters are not advised to make a trip to the Summer Lake area for the exclusive purpose of hunting pheasants.

may be more equitably divided among all the hunters in the entire state.

Waterfowl management is as the name suggests, the management of water and its accompanying food supplies with a constant effort to increase and improve these habitat areas; coupled with setting rules and times for the annual harvest to fit game population conditions as ascertained from routine measurements.

The Kamloops Rainbow Trout

By CHARLES M. MOTTLEY,

Aquatic Biologist

Division of Fishery Biology, U. S. Fish and Wildlife Service

Ed. Note: The following information is reprinted from Fishery Leaflet No. 235 in view of the many inquiries regarding the Kamloops trout.

During the past three years some spectacular fishing has developed at Lake Pend Oreille, Idaho. Apparently these fish resulted from a planting in 1941 of Kamloops trout received from Kootenay Lake in British Columbia. Questions are frequently asked regarding them. Where did they come from? Why do they grow to such a large size? What are their habits? The following notes are intended to answer some of these questions.

The Kamloops trout is really the variety of rainbow trout that is native to Central British Columbia. David Starr Jordan of Stanford University was the first to describe it scientifically from specimens sent to him in 1892 from Kamloops Lake, B. C. Actually it is not very different from the other varieties of rainbow trout which have been described from Oregon, Washington, Idaho and Montana. The fish has long enjoyed a great popularity as a game fish. The Dominion Department of Fisheries began to stock it in barren lakes about 40 years ago. These lakes, as far as can be determined, contained no fish of any kind but they abounded in natural food for trout. This type of water is very favorable for an initial planting. The trout thrived to such an extent in one of these lakes near Kamloops that the Department of Fisheries was able to establish a hatchery there, and millions of eggs and fry have been distributed all over the world. The propagation of these fish has now been taken over by the British Columbia Game Commission. A hatchery was also established in 1914 at Gerrard on the Lardeau River which is a tributary of Kootenay Lake. The native trout in Kootenay Lake are extremely large and produce big eggs which in turn result in large, healthy fry that are easy to propagate in hatcheries. This stock has been in great demand, and is the one from which the Pend Oreille fish have been produced.

The size of mature Kamloops trout may vary from a few ounces to over 40 pounds depending on the amount of food available. In 1931, a 48-pound Kamloops was caught at Jewel Lake, not far from Grand Forks, B. C., which is just over the border from the Grand Coulee region. The reason that barren lakes produce such large trout at first is undoubtedly the presence of a great abundance of food. Trout seem to have the capacity for taking advantage of such conditions, soon after stocking, by storing up large quantities of fat and attaining an enormous overgrowth in size. If there are poor spawning grounds in connection with the barren lake, only a few large trout may be

produced, as was the case at Jewel Lake. If the spawning grounds are good, the trout will increase in numbers but will not attain a very large size because of competition among themselves for the food.

In the large, deep lakes of southern British Columbia like Shuswap, Okanagan, and Kootenay, which resemble Pend Oreille, there is a variety of Pacific salmon which is said to be "landlocked". These fish are variously known as kokanee, redbfish, silver trout, or landlocked sockeye salmon. In freshwater they feed on microscopic, floating animals, such as water-fleas, just as they do in the ocean. In the spring and fall they live over the deepest parts of the lake, but near the surface. In the warm summer months they retire to depths of 40 feet or more. In freshwater the kokanee seldom reaches a size greater than half a pound. They provide the main source of food for the large Kamloops trout. When the trout are small they feed on water-fleas, freshwater shrimps, aquatic terrestrial insects, but after they reach a length of 12 to 14 inches, they begin to turn to a fish diet. In Kootenay Lake, it is not uncommon to find a half dozen full-grown kokanees in a single Kamloops trout stomach.

The Kamloops trout under natural conditions may reach maturity at varying ages. For example, some of the males may mature at two years, whereas others may be four or five years old before they mature for the first time. Likewise, many of the females mature at three years of age but some may be 5 years old before their first spawning. The attainment of a large size in rainbow trout is usually a race between feeding and maturity. Once they mature they do not grow as fast as before. Consequently, if a fish matures as a four-year-old, and there is a plentiful supply of food, then it is likely to be quite large. Kamloops trout may spawn several times before they die. If the food supply is poor, however, very few survive after the first spawning.

Kamloops trout spawn in the spring after the ice has left the lakes. When the water temperature of the in-flowing streams reaches a temperature of 40° F. the mature trout begin to move upstream. The Kootenay Lake Kamloops migrate up the Lardeau River 32 miles to the hatchery traps at Gerrard. The large fish usually choose the main rivers, but the small fish seek out the tributaries. The choice of different streams seems to be guided by the temperature of the water and the volume of flow.

Their natural habit is to sweep out nests in the stones by fanning with their tails. The eggs are deposited in the depressions and buried with gravel. A female Kamloops trout produces about 800 to 1000 eggs per pound of fish. A ten-pound Kamloops may lay over 8,000 eggs.

The young hatch in a few weeks and emerge from the gravel nests in the summer. Many of them drift downstream at

night, apparently losing their way in the dark. On bright moonlight nights the downstream movement is much less. Some of the young remain in the streams for a year or two before dropping down to the lakes. Others may spend their whole lives near the place where they were hatched. These stream residents often feed on the eggs that fail to get buried in the gravel at spawning time and also prey on the young fry.

In the case of coastal rainbows the tendency to drop downstream is quite pronounced and, if the body of water happens to be the ocean, then the returning fish, three or four years later are known as "steelheads." Actually there is very little difference between the steelhead and the Kamloops. Frequently they can be distinguished only by a trained biologist and sometimes even he has difficulty.

Not all of the Kamloops trout in a population spawn in a given year. While a part of the adult population is spawning, the immatures and the non-spawners remain in the lakes. Two-thirds of the population may stay in the lake; they provide the excellent spring fishing in the lakes of the northwest. The spawning fish are usually darker and display the rainbow colors in their breeding dress. The fish that remain in the lake, however, have a bright silvery dress with a steel-blue head and back. The marked difference in appearance between the mature and immature fish has often led people to believe that they are distinct species, but they are really different stages of the same variety.

The Kamloops trout is perhaps the gamiest of all our trout. It provides excellent sport for fly-fishermen and trollers, provided that they know something about the right time, the right place and the right tackle. The small fish congregate where the in-flowing streams meet the still water of the lake. There they feed on in-washed insects in the spring of the year and are excellent for wet-fly fishing. In the so-called "barren" lakes Kamloops up to 16 pounds have been taken on the dry fly. In the large lakes the Kamloops follow the schools of kokanee and, although an occasional one may provide a lucky fly-fisherman with the thrill of a lifetime, they are usually caught by trolling. No doubt the flashing spoons resemble the silvery flashes of the kokanee. In the spring and fall when the kokanee are near the surface the Kamloops may be found closely associated with them. The kokanee is a fall-spawner seeking out streams and wave-washed beaches. The Kamloops trout fishing is good in the late fall because they follow the kokanees into shallow water. In the summer as the surface of the lake warms up the kokanees go down to cooler water and the Kamloops follow. By experimenting at different depths it is possible to find these summer haunts. Such secrets, however, are often closely guarded by the successful angler.

September Meeting of The Game Commission

The Oregon State Game Commission held its regular monthly meeting on Saturday, September 6, at Portland.

It was ordered that the matter of the sale of Eel Lake be deferred until the October meeting and that all interested parties be notified to that effect.

The department was instructed to investigate at all points of the McKenzie River the minimum flow necessary to sustain fish life and submit report at the next meeting.

The Supervisor was instructed to obtain over the period of at least ten years the date copy for fish and hunting synopses was submitted to the State Printer and, if possible, the date upon which the last copies were received together with the annual cost per 100 thereof of the cost of printing.

Application of Warren H. Berkner, Cave Junction, for membership in the game division of the State Police was approved.

Execution was authorized of a bargain and sale deed conveying to the Oregon State Highway Commission 1.52 acres of land in Lake county.

Superintendent of Hatcheries E. W. Goff was instructed to make a survey of the coastal area to determine stream flow of possible hatchery sites and report to the Commission.

A committee consisting of the Chairman, Controller and Director of Game and Fisheries was instructed to go over the postwar budget, listing the items that have been allocated and submit the remaining to the Commission for re-allocation.

Renewal of the REA lease on the house at Oak Springs hatchery was authorized.

Director of Game P. W. Schneider and Chief Biologist John McKean were authorized to attend hearing to be held September 20 in Redding, California, by Sub-Committee of the House Committee on Public Lands to investigate administration of grazing lands by the United States Forest Service.

The Engineer was instructed to issue a call for bids for a hydro-electric plant to be located at Wizard Falls.

The application of the Meadow Lake Club for creation of a game reserve on their property was disapproved, this action being in accordance with the general policy of the Commission not to approve reserves unless a specific conservation purpose would be served.

A letter was read from the Clatsop County Rod and Gun Club giving four suggestions for possible hatchery sites. These were referred to Mr. Goff for investigation and report.

The Director of Fisheries was instructed to send a representative to the hearing to be held in John Day on September 8 by a legislative committee to discuss the effect of dredging operations.

The application of Paul Daly Hess, Grants Pass, for a guide's license was disapproved.

The department was authorized to prepare its usual exhibit at the Pacific International Livestock Exposition in exchange for payment of \$500.

In regard to complaint of stream pollution by the City of Rogue River, the Supervisor was instructed to write to the city authorities and advise them of the law regulating pollution of streams.

The following expenditures were authorized:

Repair of floor at Roaring River hatchery, \$50.

Repair of assistant foreman's dwelling at Willamette hatchery, \$100.

Construction of fish trap and the taking of eggs at Paulina and East lakes, \$2,000.

Adjustment in fish food budget to provide for purchase of \$60,000 worth of fish food during balance of year.

The next meeting of the Commission will be held on October 11 at Portland.

Cascade Lakes Yield Fish

Anglers' catches at Diamond lake indicate that over 30,000 rainbow trout were caught there this season or more than twice as many fish as were taken out the previous season. It is estimated that in June alone over 13,500 trout were removed from the lake with the balance being taken in July, August and September. The effect on the fish population has been to reduce the average size of the rainbow being taken, but the number of pounds per acre caught in 1947 will be considerably greater than in 1946.

Field Agent Bob Borovicka reports that this year East Lake will produce a total of somewhere over 12,300 trout which is about the same number as were taken in East Lake last year. Fishing greatly improved at Paulina Lake this season and the total catch will be somewhere around 15,000 trout which is about twice what it was in the 1946 season. While the number of trout taken from Paulina Lake will be much higher than East Lake, the latter will undoubtedly show greater poundage once the final figures are summarized.

For those sportsmen who have been following the catch of fish in South Twin Lake near Bend this season, this lake produced approximately 8,500 trout weighing around 7000 pounds. It will be recalled that a trash fish population had taken over South Twin Lake and the lake was rejuvenated by poisoning and restocking with the result that today it is producing fine catches year after year. The figures given above for 1947 are purely tentative and subject to revision once the final catch analysis has been made.

Conservation Education and Publicity Personnel Meet

Personnel engaged in conservation education and publicity work from twenty-two state conservation and fish and game departments were in attendance at the annual meeting of the National Conference on Conservation Education and Publicity held at the headquarters of the Illinois Conservation Department's Training School, Fox Lake, Illinois, on September 4-5-6-7. The Pacific Coast was represented by delegates from California and Oregon.

Featured speakers were Dr. Ira N. Gabrielson, president of the Wildlife Management Institute, and Bob Becker, outdoor editor of the Chicago Tribune.

Emphasis at the meeting was placed on the increasing importance of conservation education programs, particularly in schools, and the part that state conservation agencies can play in carrying on such work.

New officers elected for the coming year were: President: James R. Harlan, Superintendent of Public Relations, Iowa Conservation Commission; Vice President: M. M. Pittman, Supervisor, Division of Public Relations, Illinois Department of Conservation; Secretary - Treasurer: Juanita Mahaffey, Director of Public Relations, Oklahoma Game and Fish Commission.

Ohio was selected as the meeting place for the 1948 conference.

Fish Salvaging in Tillamook County

Fish salvaging operations carried on this summer by members of the Tillamook Izaak Walton League resulted in the rescue of approximately 53,640 fish. This included 500 trout, 2,240 steelhead, and 50,900 salmon. Members of the League devoted 171 man hours to this project.

Work was done in the Tillamook river, Killiam creek, Trask river, Wilson river, Kilchis river, Miami river and Mossey creek.

OCTOBER CALENDAR

Species	Season
Trout	Apr. 26-Oct. 15
Salmon & Steelhead over 20"	Entire year
Jack Salmon under 20"	Entire year
Spiny-rayed fish	Entire year
Deer	Oct. 1-20
Elk, western Oregon	Oct. 25-Nov. 2
Elk, eastern Oregon	Oct. 25-Nov. 16
Pheasants	Oct. 22-Nov. 2
Pheasants, Malheur County	Oct. 22-Nov. 9
Valley Quail	Oct. 22-Nov. 2
Bear	Entire year
Predatory Animals	Entire year

Note: For exceptions, consult official hunting or angling synopsis for 1947.

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International Association And American Fisheries Society Meet at Denver

Dr. P. R. Needham, Director of Fisheries, attended the Thirty-Seventh Annual Convention of the International Association of Game, Fish and Conservation Commissioners and American Fisheries Society held in Denver, Colorado, from September 8 to 12, 1947.

Monday and Tuesday the International Association conducted its sessions separately from the American Fisheries Society and on Wednesday a joint session was held between the two groups followed by a series of technical papers under the auspices of the American Fisheries Society on Thursday and Friday. The program of the International Association concerned itself principally with public lands question versus livestock interests. Another major topic discussed in considerable detail was problems of law enforcement in the various states.

Wednesday morning, Lieutenant-General R. A. Wheeler, Chief of Engineers for the U. S. Army Engineers, spoke on "Fish and Wildlife in the Federal Program of Navigation and Flood Control." Lt.-Gen. Wheeler said that flood control must go ahead for the welfare of the country. He noted that they had received over \$300,000 for flood control in the next fiscal year, covering 156 projects in 35 states. After he was through talking, the point was made by various conservation officers present that they were perfectly willing to have flood control as long as it did not sacrifice natural resources such as salmon and steelhead. Pollution also received its share of the discussions with Mr. Charles T. Wright of the U. S. Public Health Service talking on municipal sewage and treatment problems, followed by Dr. Ira N. Gabrielson who spoke on the general picture of flood control and pollution in relation to wildlife.

On Thursday and Friday the bulk of the papers given under the auspices of the American Fisheries Society dealt with various technical studies having to do with stocking and management of interior waters. Mr. John L. Funk of the Missouri Conservation Department, gave an excellent paper on the application of electrical methods for collecting fish.

The Resolutions Committee of the American Fisheries Society passed a resolution demanding expert, unbiased analysis of cost-benefit ratios set up by

the federal constructing agencies in various water development projects. Many members present felt that the cost-benefit ratios presented for public consumption have appeared to be somewhat exaggerated in terms of benefits cited, and for this reason felt that experts in flood control, navigation, irrigation and power should be employed to analyze the ratios set up by the constructing agencies and that they should be paid from funds not appropriated to the agencies building the dams.

Both meetings were well attended with around 400 members being present, and the interest in different solutions for conservation problems presented will be of much help to those who are bucking up against extremely high fishing and hunting pressure; pressure which is going to demand new methods of approach and new techniques in both fish and game management.

Big Game Competitions

In an endeavor to secure more authentic information concerning the outstanding specimens of North American big game, their habitats and the size tendencies of present day big game species, the Boone and Crockett Club has announced the North American Big Game Competitions, to run until December 31, 1947.

The competitions are divided into three classes: physical trophies—heads and horns of animals killed; motion pictures; and still pictures.

All trophies of the first class—heads and horns—registered with the committee between September 1, 1938 and December 31, 1947, irrespective of when the animal was killed, are eligible for this contest.

Heads and horns must have been taken during the legal hunting season and by the methods of fair chase.

The following species are eligible: deer: whitetail, mule, Columbian black-tail, Coues; wapiti (elk); caribou: mountain, woodland, Barren Ground; moose: Canada, Alaska, Wyoming; sheep: Big-horn, Stone, White, Desert; Rocky Mountain Goat; Pronghorn; Muskox: Barren Ground, Greenland; bison; bear: Alaska Brown and Grizzly, black, Polar; puma; jaguar; walrus: Atlantic, Pacific.

A handsome booklet, outlining all details of the contest may be secured by writing the Boone and Crockett Club, American Museum of Natural History, Central Park at 79th Street, New York 24, New York.

Audubon Screen Tour Lectures

Five wild life lectures of the highest quality are being offered to members of the Oregon Museum Foundation this coming year. These lectures, given by outstanding authorities and illustrated in color stills and motion pictures, are sponsored jointly by the Oregon Audubon Society and the Museum Foundation. All the lectures will be given at the Benson High School Auditorium at 8 p.m. on the dates listed.

Admission is by Membership card only (except for School children who will be admitted free.) A Membership of \$5.00 or more in the Oregon Museum Foundation constitutes your ticket to the entire series of five lectures.

October 3, 1947 — "Fun with Birds" — Laurel Reynolds.

November 5, 1947 — "Our Living Earth" — Alexander Sprunt, Jr., has devoted his life to the study of wildlife and problems of conservation.

January 30, 1948 — "The Riddle of Migration" — Roger Tory Peterson, whose field guides to Eastern and Western birds are known to every ornithologist.

March 12, 1948 — "Happy Valley" — Tom and Arlene Hadley are a nature team.

May 10, 1948 — "Bits of Land Along the Coast" — Dr. Telford H. Work has from childhood had extensive opportunities of exploring the natural wonders of North America.

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