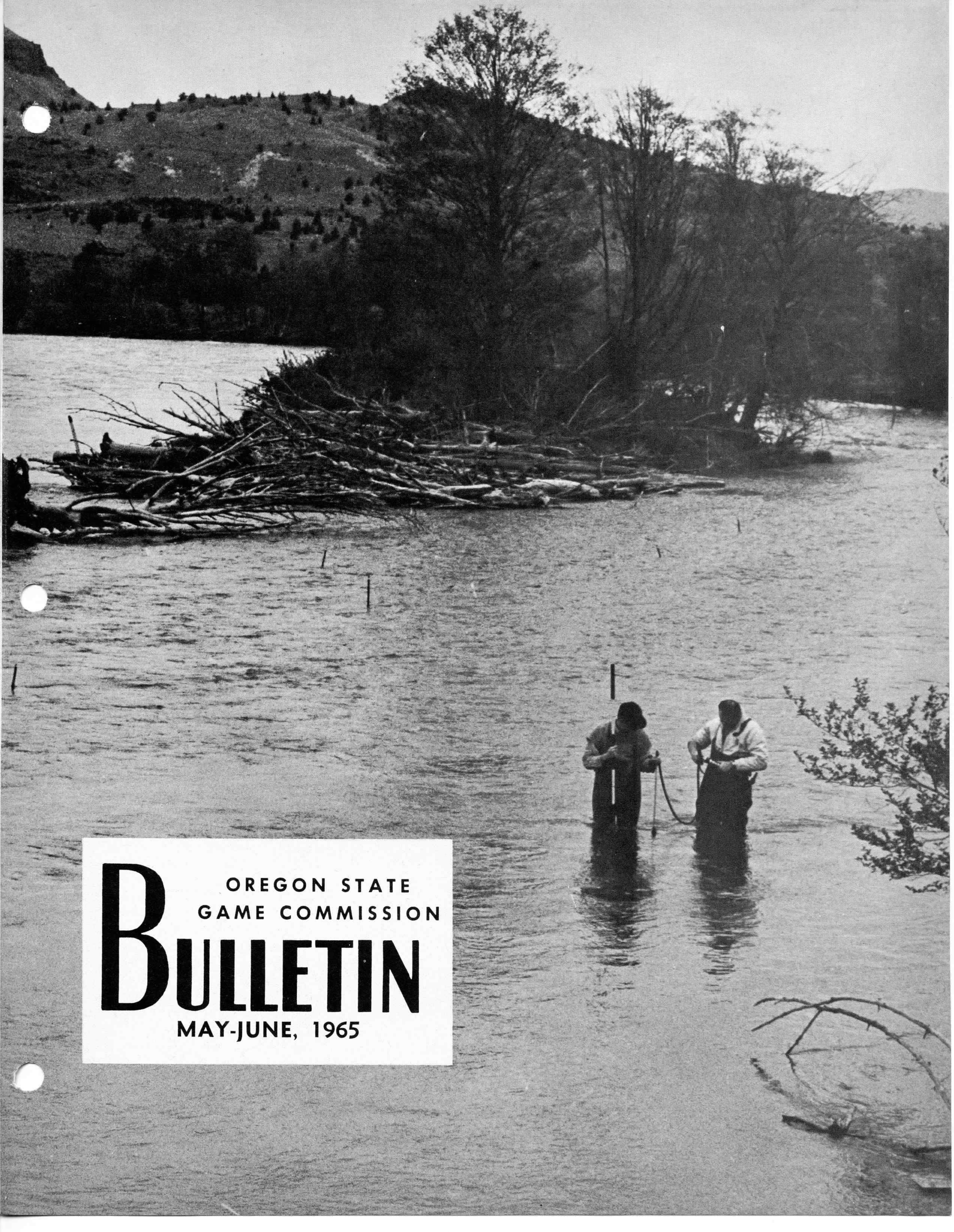

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MAY-JUNE, 1965

B**ULLETIN**
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May-June 1965
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The Cover

Spawning bed study station No. 19 near the mouth of Trout Creek. A water flow measurement cross section was set up here in 1961 and eight gravel standpipes were placed in April of 1963. Here biologists are collecting water samples from the standpipes. (Photo by Warren Aney)

BULLETIN HUNTER SAFETY TRAINING PROGRAM

Instructors Approved	
Months of March and April	52
Total to Date	3,409
Students Trained	
Months of March and April	1,470
Total to Date	79,354
Firearms Casualties Reported in 1965	
Fatal	0
Nonfatal	6

BIG GAME REGULATIONS HEARING MAY 21

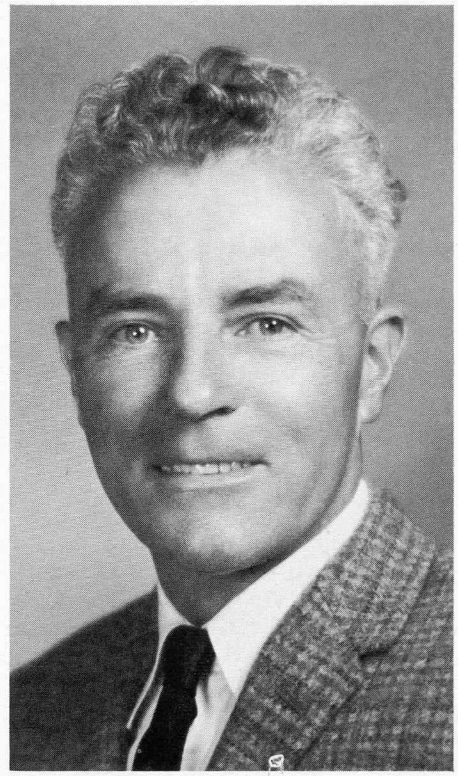
The 1965 big game hunting regulations will be the subject of a public hearing by the Oregon State Game Commission on Friday, May 21, at its Portland office, 1634 S.W. Alder Street. The hearing will convene at 10 a.m.

Tentative regulations will be formulated and final action will be taken when the hearing reconvenes on Friday, June 4.

During April and May the Commission held five regional meetings to discuss big game management. The public was invited to meetings held at Corvallis, Roseburg, Bend, Burns, and La Grande.

Batterson Receives Kiwanis Award In Conservation

Wes Batterson, district game biologist at Nehalem, on April 20 was acclaimed "Conservation Man of the Year" by the South Riverside Kiwanis Club of Portland. He received the Club's first annual award as the most outstanding biologist in Oregon in the field of fish and wildlife conservation from Gene Schuck, club president.



Batterson was selected by a judges panel composed of Tom McAllister, chairman, outdoor editor for the Oregon Journal; George Eicher, fishery resource analyst for Portland General Electric; and Dr. Thomas Scott, head of the department of fisheries and wildlife at Oregon State University.

Keynote speaker for the event was R. S. Alexander, assistant director of the Agricultural Experiment Station at OSU. Warne Nunn, representing Governor Hatfield, briefed the group on Batterson's accomplishments during his more than 20 years with the Oregon Game Commission.

Batterson was the first person in the world to propagate in captivity the band-tailed pigeon, sharp-tailed grouse, and the blue grouse. His work with waterfowl is no less outstanding and he is one of the foremost authorities on the black brant. He accomplished the first artificial rearing of Ross's geese in this country. His aerial trip to the Alaska breeding grounds to secure eggs of Emperor geese and subsequent hatching of them is a classic in itself.

The U. S. Fish and Wildlife Service "borrowed" him from the Game Commission during the winter of 1960-61 and flew him to Hawaii to study a floundering Nene goose project on the Island. Batterson completely revamped the methods and procedures, resulting in a very successful nesting and rearing season of this rare species of goose.

Batterson has worked for the Game Commission since 1941. His primary function is that of district game biologist in the Clatsop area. Deer and elk management occupy much of his time. He is a native Oregonian, being born and reared in the vicinity of Nehalem in Tillamook County.

Batterson is 56 years of age, married to Wanda Eleanore, and has one son, Leroy, age 20.

APRIL MEETING OF THE GAME COMMISSION

The Oregon State Game Commission met in Portland on April 7 and took the following actions:

Keep Oregon Green. Authorized annual contribution of $250.

Trout Allocation. Approved 1965 allocation for 2,150,000 catchable trout.

Rock Creek Road. Accepted low bid of $2,325 for construction of a temporary access road into Rock Creek Hatchery.

Central Point Screen Plant. Decided to advertise for sale the Central Point screen plant exclusive of the land.

Ladd Marsh. Authorized disposal of land outside the Ladd Marsh Management Area in exchange for tract of land inside the area owned by George Simonis, plus cash payment.

Bradley Lake Ramp. Authorized $2,000 for repair of ramp contingent upon contribution of $1,000 by Coos County.

Land Classification. Re Corps of Engineers proposed hearing on reclassification of lands in the John Day Dam area, reaffirmed its original recommendation regarding lands to be set aside for wildlife and recreational purposes.

Service Awards. Presented 25-year service awards to P. W. Schneider, director; Chester E. Kebbe, chief biologist, waterfowl and furbearers; and W. H. Brown, regional supervisor.

Lower Deschutes Study

By Warren W. Aney, Biologist
Basin Investigations Section

Tuesday, October 22nd 1805 ". . . I proceeded on to the river and struck it at the foot of a verry Considerable rapid, here I beheld an emence body of water compressd in a narrow chanel of about 200 yds. in width, fomeing over rocks maney of which presented their tops above the water. . . ."

This journal entry was Captain Clark's graphic report of the discovery of the Deschutes River by the Lewis and Clark expedition nearly 160 years ago. This river has made similar vivid impressions on many who have viewed its untamed course since then—explorers, adventurous fur trappers, hard-working homesteaders, solitary sheepherders, as well as today's hunters, anglers, river boaters, and tourists.

From its junction with its two most important tributaries, the Metolius and Crooked Rivers, the Deschutes descends nearly 1,500 feet through a steep-sided, narrow, basalt-rimmed canyon and tumbles through dozens of powerful white-water rapids or "chutes" on the way to its mouth on the Columbia River. This exuberant section of over 100 miles is commonly called the lower Deschutes River and is one of the most famous sport fishing waters on the continent. It offers angling to suit nearly anyone's appetite: easily accessible water heavily stocked with hatchery-produced trout; miles of lonely, roadless canyon where the river is rich with wild native trout; steelhead angling of nationwide reputation in the late summer; and chinook salmon fishing in the spring. This river stretch must be scored as an important part of Oregon's recreational wealth.

For many years the Game Commission staff has been actively involved in the survey and management of the Deschutes system's fish resource, and since early 1963 thorough studies have been under way covering the entire lower section below river mile 100. Because of the wide interest in the Deschutes River, we want to describe what the Game Commission people are doing on the lower river and what the results of their work might be. Since the studies are still basically incomplete, no conclusions have yet been reached. But answers are being found to several perplexing and complicated questions dealing with Deschutes River fish life.

Deschutes Dam Construction

Following historic U. S. Supreme Court and Federal Power Commission decisions, Portland General Electric Company began construction of the Pelton Dam and hydroelectric plant in February 1956. This project is located 103 river miles above the mouth. More recently PGE constructed a second dam just upstream from Pelton—the Round Butte project. In its applications for this project, the Company proposed operations that would make important changes in normal river flow patterns. In permitting construction of this dam, the Federal Power Commission and the Oregon State Water Resources Board determined that the following river conditions had to be maintained downstream from the two dams:

1. A minimum flow of at least 3,500 cfs during the critical steelhead and rainbow spawning months of March, April, May, and June.
2. A minimum flow of at least 3,000 cfs during the remaining months.
3. Appropriation of the waters of the lower 100 miles of river only for domestic and livestock use (in effect preventing further appropriation for irrigation, mining, hydroelectric, industrial, and other similar uses and reserving the river for fish life, wildlife, and recreation).

At the time of the Round Butte proposal, the Commission's biologists felt that flows of 3,000 and 3,500 cubic feet per second (cfs) were not enough to maintain the river's well-known sport fish resources. Since they did not have enough concrete information to justify specific minimum flow recommendations, the Federal Power Commission also provided

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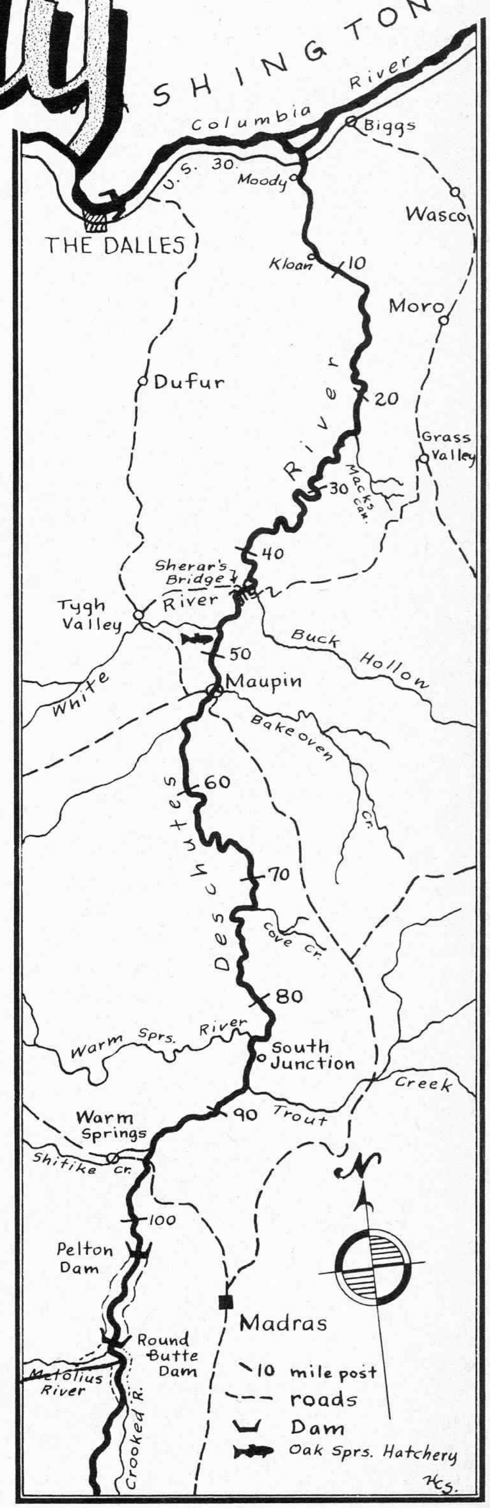
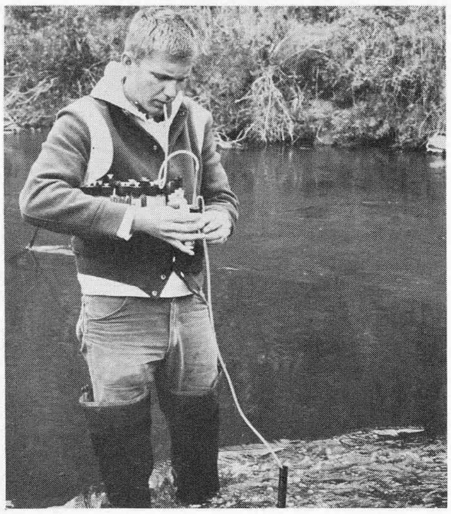
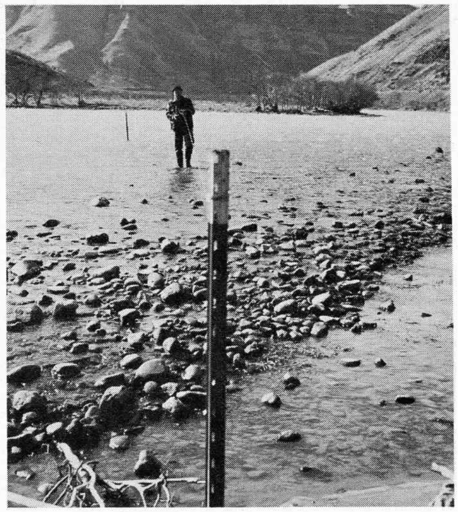




These three-foot plastic standpipes, like miniature wells, permit access to the water flowing through spawning bed gravels. Biologist Ken Witty is drawing out a small sample of this gravel water for chemical testing. This water is the only source of oxygen for fish embryos developing under the gravel nests.



Spawning gravel bar cross section near Kloan. Water velocities and depths are measured along the line between these two permanent steel posts. Since fish require certain minimum conditions for spawning, these measurements determine the effect of different river flows on fish use of gravel beds. Low flow has exposed some of this gravel.

Lower Deschutes Study

Continued from Page 3

that sufficient time would be allowed to make a detailed study and request any needed changes to the original decisions.

Preliminary Investigations

Even though the Commission staff had the benefit of many years of management experience and biological information on the lower Deschutes, only an intense study could provide specific facts about the river's fish resources and environment. The district fishery biologists responsible, Monty Montgomery (formerly of Bend) and Al Lichens (Hood River), began preliminary work in early 1961 by expanding partial surveys started over five years before.

As a first step they began a complete survey of the spawning gravels of the lower river. Scores of man-days were spent up and down the river. Intimately familiar with the river and skilled at white-water boating, Montgomery and Lichens located, mapped, measured, and photographed the spawning gravel beds in the 100 miles of the lower Deschutes River. Over 150 such beds were identified during this initial work and 21 of these were selected for more complete study.

On each of these 21 selected beds a permanently marked cross section line was established along which water measurements could be made. Since early 1961 periodic measurements of water velocity and depth have provided important information on how changes in river flow can affect spawning conditions.

Spawning Surveys

Deschutes River steelhead and rainbow trout spawn during the months of March through June, and chinook salmon spawn in October and November. During the spring and fall, spawning fish and their redds (egg nests) were observed, measured, and counted. These spawning surveys were conducted by the biologists on foot and in river drift boats, helicopters, and light airplanes.

Heaviest steelhead and rainbow spawning use was found on the gravel bars immediately downstream from the Pelton project. As an example, on June 13, 1963, Montgomery located 579 fresh trout redds on gravel bars in the 3.1 river miles immediately below the reregulating dam of the Pelton project. Chinook salmon were found to make extensive use of the spawning bars farther downstream. A survey on October 15, 1964, showed 32 fresh chinook redds in 29 river miles near the mouth of the Deschutes.

Spawning and Intragravel Conditions

Certain trout and salmon spawning requirements are more or less obvious: water flow (water depth and velocity), suitable water temperatures, water free of pollution, and so forth. However, these requirements have little direct effect on the survival of the eggs after they have been buried under 6 to 12 inches of gravel by the spawning parents. Instead, the survival of these eggs depends on the quality of their intragravel (within the gravel) environment.

Of great importance to the growing fish embryo is the dissolved oxygen content of the intragravel water surrounding it. Water flows through the porous gravel bed just as it does in the river above but at a very slow rate. This intragravel water carries oxygen just as the surface water does but usually at lower concentrations. The amount of oxygen available for fish egg development depends on many factors such as:

1. **Rate of mixing.** Intragravel water gets its oxygen by mixing with surface water. Due to streambed irregularities and surface water pressure changes, there is a constant transfer of water between the gravel bed and the stream itself. Obviously, water deeper in the gravel bed is less affected by this mixing than water nearer the top.

2. **Intragravel life.** As mentioned before, the developing trout or salmon eggs are buried under several inches of gravel. Also living in this gravel are literally millions of small organisms: one-celled animals, flatworms, roundworms, insect larvae, bacteria, fungi, and many others. All of these "critters" also use oxygen and compete with the growing fish embryos for the available supply.

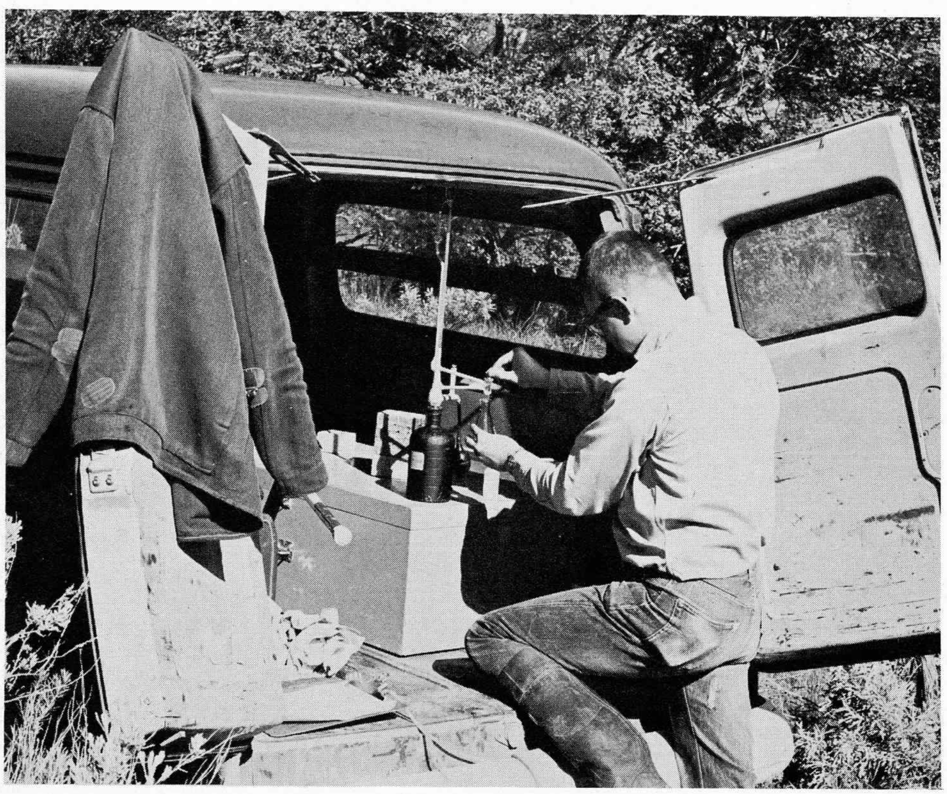
3. **Water temperature.** Since warmer water cannot hold as much oxygen as cold water (just as warm soda pop goes "flat" because it loses dissolved gases), rising water temperatures reduce the

Continued on Page 5

Known Trout and Salmon Spawning Requirements

Item	Factor	Requirement
Surface water	Depth	At least 6 inches
	Velocity	At least 1½ feet per second
	Temperature	No warmer than 68° F.
	Purity	Nontoxic, little silt
	Dissolved oxygen	Well over 5 ppm
Spawning gravel	Particle size	Resident trout—¼ to 3 inches Steelhead—¼ to 6 inches Chinook salmon—up to 10 inches
	Depth	At least 15 inches
	Condition	Free of silt and organic debris Loose and not "cemented"
Intragravel environment	Oxygen	Over 6 ppm
	Water flow	Adequate to maintain eggs' oxygen supply

Several rainbow trout and steelhead redds were dug up to check on egg and embryo health. Biologist Don King shovels gravel out of the redd while Trainee Ron Sloan holds a net-like screen to catch the washed out eggs and embryos. In this particular rainbow redd, 196 dead eggs and fry were found and only 14 live fry.



Chemical testing of gravel water samples to measure oxygen content. Here the author, using portable field laboratory equipment, chemically determines the amount of oxygen present in water samples drawn from the gravel standpipes.

Lower Deschutes Study

Continued from Page 4

supply of oxygen to developing embryos. Also, warmer water stimulates the "critters," which as they grow and multiply, use up more of the available oxygen.

4. **Gravel porosity.** Spawning gravel is made up of a wide range of particle sizes from microscopic grains of sand and clay to small boulders and "cobblestones." Ideal spawning gravel contains mostly particles ranging between one-fourth and six inches in diameter. When the gravel becomes clogged with particles less than one-fourth inch in diameter, water can no longer move freely through the streambed, there is less mixing with surface water, and the rate of oxygen supply to growing fish embryos slows down. Silt, sand, mud, and plant and animal debris can all accumulate in the gravel so as to reduce its porosity.

Intragravel Environment Study

In early 1963 it was decided that a study of these conditions within the gravel itself was needed to help determine how the proposed river flow changes will affect the sport fish production. Study methods and devices were adopted from those used in basic salmon and trout research in southeastern Alaska, British Columbia, and on Oregon coastal streams.

By mid-April 1963 strange-looking dark-colored pipes began appearing, sticking up out of the water over gravel bars scattered up and down the lower 100 miles of the Deschutes River. These were intragravel standpipes placed so as to provide ready access, as in a miniature well, to the water flowing through the gravel 6 to 12 inches below the riverbed. The standpipes were made of three-fourths inch standard plastic water pipe cut into three- and five-foot lengths.

These standpipes probe areas where fish are known to spawn, even the redds themselves, as well as other gravel areas apparently not in use for spawning. Usually 5 to 10 standpipes are driven into each gravel bar studied and 19 gravel bar stations have been more or less continuously studied to date.

By use of a small rubber suction tube assembly leading down to the bottom of the standpipe, small (about one fluid ounce) samples are drawn of the water flowing through the gravel. The samples are chemically treated to determine precisely the amount of oxygen contained in the intragravel water. Great variations in the amount of oxygen available to growing fish embryos are being found. Generally, the most oxygen is available during the winter and early spring, the spawning season for steelhead and rain-

Salmon and trout have very critical water requirements for spawning. Water depth should be at least six inches and water velocity should be no less than $1\frac{1}{2}$ feet per second.

Lower Deschutes Study

Continued from Page 5

bow trout. At this time the intragravel population of oxygen-using life is lowest and the rate of mixing between surface and intragravel water is the highest.

Since gravel porosity and compactness also affect the rate of oxygen supply to the eggs, methods were examined that would provide some measurement of these qualities. Researchers in British Columbia had developed a device called the **Mark VI Groundwater Standpipe** for measuring permeability, the rate at which water could flow through streambed gravel. This standpipe is made of 30-inch lengths of heavy metal tubing 2¼ inches in diameter with an attached driving point. In the lower two inches of the standpipe, 48 carefully placed holes are drilled.

By driving the groundwater standpipe into the spawning bed to the desired depth, usually between seven and nine inches, it is possible to measure the porosity of the gravel. A hand-operated suction pump is used to draw out a volume of water over a brief timed period. The amount that can be sucked out of the standpipe during this period depends on how rapidly the water can flow through the gravel and into the small holes in the lower part of the standpipe.

Deschutes gravels have been found to vary in permeability from 0 to over 17,000 centimeters (about 550 feet) per hour. Higher permeability exists when the gravel particles are mostly large enough and loose enough so water can pass through the spawning bed at a fast rate. Permeability can be reduced by silt deposits, by plant growth over the gravel (mainly algae or "river moss"), by plant and animal growth in the gravel, and by settling or compaction of gravel materials. In the Deschutes, measurements made to date show that permeability in any one location tends to be highest in late winter and lowest in late summer. This illustrates the probable roles played by plant and animal life and low-flow siltation in affecting the porosity of spawning bed gravels. Additional work is being planned to relate permeability to fish spawning success and river flows.

Other Aspects of the Study

Since game fish survival and production are related to the goals of this study, it is interesting to try to peek in on the development of the young fish in the gravel. In order to do this a few natural rainbow and steelhead redds were sacrificed in order to study embryo survival. The redds were dug up, and by use of a net-like screen the eggs and embryos were collected for examination. From this, information was obtained on natural fry production, on egg and embryo mortality, and on how the health of fish embryos is affected by gravel conditions such as permeability and oxygen supply.

Many aspects of the study started in 1961 have continued to date. Additional water measurements are being made over gravel bars at flow levels not previously studied. Work is also being done to increase the information on size, location, and use of the river spawning gravels.

A project is now under way to measure fish production by placing hatchery-produced trout eggs in artificial redds. A proposal is also being studied to test methods of mechanically improving the condition of gravel beds for fish spawning. As basic research and fertile imaginations develop other new techniques, these, too, may be made a part of the Deschutes study if they seem to hold keys to further knowledge of the water requirements for maintaining fish production.

The 1964-65 Winter Floods

A person's first impression of the Deschutes as a wild river "fomeing over rocks" belies the fact that it is basically a stable and well-mannered stream. Only rarely does it burst out of its channel in spectacular floods. Prior to 1964 we have information of only four major floods occurring during the years 1825, 1862, 1923, and 1961. Accurate flow measurements have been maintained since 1897 and these show that the previous maximum measured discharge of 43,600 cfs occurred on January 7, 1923.

On December 23, 1964, a new peak discharge measurement of 73,900 cfs was reached, exceeding all previously measured flow levels (although it probably did not exceed the unmeasured flood of 1862). This flood seriously damaged many roads and bridges that provide access to the lower river canyon besides drastically changing riverbed contours and gravel bed locations. Although nearly all study stations were destroyed, the flood has only temporarily set back the flow study. Several old study stations have been reestablished where possible, the new gravel bar areas are being surveyed and many are being used as replacements for the destroyed stations. Generally, measurements of changes caused by the flood are providing much new and valuable information on river flows and changes.

Goals

Rarely does a situation arise in which one natural resource can be fully developed without somehow harming another natural resource. Metal industries may pollute water and air to a degree requiring special attention, extensive logging can affect the soil and certain forms of wildlife, and farming has reduced several wild animal populations such as the prairie grouse.

In the case of the lower Deschutes, it was foreseen that damming the river for electric power production could seriously affect its famous sport fishery. One of the goals of this study, then, is to determine what the requirements of these game fish are: what water conditions they need to live, grow, and multiply; and how the operation of these power projects will influence these requirements.

It was also foreseen that these power projects could be of great economic benefit to the people of the State of Oregon. Therefore, methods should be found to permit development of this power resource while maintaining full production of another natural asset possessing a different type of value—the fish resource. Finding such methods is a second goal of this study.

Distribution of

Special Hunting Tags and Permits

By John W. McKean, Chief, Game Operations

OREGON LAWS AND THE GAME Commission's policies rigidly adhere to the principle that the wildlife resources are the property of all the people and that every person shall have an equal opportunity to enjoy or utilize those resources.

With the rapidly growing demand for a relatively stable supply of wildlife, it is frequently necessary for the Commission to limit the number of persons that may take certain kinds of animals to assure an adequate supply for the future.

Authority for this type of regulation was granted by the legislature in 1937 and has been employed in some manner every year since that date. The law, ORS 497.510 and related statutes, has been amended many times since 1937, but the principles have not been changed. It provides that the Commission shall by regulation establish a closing date for applications; and if the number of applications received by that date is greater than the number of tags or permits authorized, a public drawing shall be held to determine the successful applicants.

The objective of this article is to review briefly the evolution of methods of distributing limited hunting opportunities and explain the current procedures.

History

In the initial application of the controlled season statute, the demand for the extra tags or permits was no problem. For example, in 1938 the Commission authorized 1,250 antlerless deer tags for the Murderer's Creek area in Grant County, but Oregon's sportsmen applied for only 270 of the authorized tags.

The 1939 legislature considered the Commission's failure and declared an unlimited open season for deer of either sex with a two-deer bag limit in most of Grant and part of Harney County. This season extended from September 20 to October 25, and 10,881 deer were reported taken. This action caused so much public concern that the legislature, in 1941, delegated broad regulatory authority to the Commission.

As long as the supply of controlled season tags was greater than the demand, tags were issued in the order applications were received, and everyone that applied received the requested privilege.

The problem of "how to determine successful applicants" was first encountered in 1940. The Commission had authorized 2,000 antlerless elk tags, but the applications for them exceeded the supply. The law provided that tags were to be issued in the order that applications were received; but when hundreds of applications would arrive in one day's mail, this mandate was difficult to follow. It also gave persons living in the Portland area some advantage over upstate residents.

The Commission appealed to the Attorney General's office for advice on how to distribute the limited hunting privileges. The Attorney General recommended that a public drawing be held to determine the successful applicants. This procedure was later incorporated into the law. The Commission is required to establish a closing date for applications. If on the closing date there are more applicants than authorized permits or tags, a public drawing is held.

By the late 1940s the demand for antelope and antlerless elk tags was consistently greater than the supply. In 1947 the Commission adopted the policy that no member of the Commission or employee of the department could participate in drawing for controlled season tags or antlerless elk permits. In 1949 the legislature again amended the controlled season law by eliminating participation by nonresidents.

In 1951 the law was again amended to provide that persons receiving an antelope tag would not be eligible to receive one on the following year.

In 1959 the legislature directed the Commission to regulate the frequency that persons may receive special big game tags and permits. With this responsibility, the Commission immediately (in 1959) increased the interval between antelope tags to two years. In 1961 the regulations provided for a three-year waiting period between either antelope tags or antlerless elk permits. In 1962 the period was increased to five years for antelope, and in 1963 a five-year interval was applied to antlerless elk permits.

All of these manipulations have been made in an effort to assure every interested person an equal opportunity. In spite of these efforts, it would be possible for a person to apply repeatedly and never be successful. For this reason the 1965 legislature passed an alternative proposal which directs the Commission to stamp and return all unsuccessful applications. By saving five consecutive rejection notices and submitting them with an application, the individual would be given a preference. This system is used in Arizona and it appears to have much merit.

Drawing Procedures

In processing the 100,000 to 150,000 applications for big game tags and permits, the Commission has searched for methods that are most convenient and equitable for the public and reasonable in cost and time requirement.

The application issued with the deer and elk tags is an example. Every purchaser receives one. All he has to do is mark the card and mail it to the Commission.

The applications are sorted by area and serial number when received by the Commission. At the drawing, members of the audience are asked to draw the numbers 0 through 9 from a container. The order in which these numbers are drawn determines the order in which permits or tags will be issued. The last digit of the serial number on the application card is the drawing number. For example, the sequence drawn for elk permits in 1964 was 0-1-6-9-8-2-4-7-3-5. With the exception of one area, all of the persons submitting applications with serial numbers ending in 0 received a permit. Four areas filled before all of the 1's were placed. Five areas accommodated all of the 0's, 1's, and part of the 6's, and three areas did not fill by the closing date.

To save time at the drawing, the applications for each area or season are sorted, counted, and bundled by ending number prior to the drawing. By this method entire bundles enter the drawing in the order called for by the drawing sequence. The final bundle is broken and manually drawn to secure the number of applica-

Continued on Page 8

Distribution of Special Hunting Tags and Permits

Continued from Page 7

tions required to issue the authorized number of permits.

In the case of controlled season tags for antelope or antlerless deer, a pre-punched IBM card is used as an application form. The number sequence is drawn by the public in the same manner as for deer and elk permits, but the IBM machine sorts and counts the applications, prints the tags, and mails the refunds.

Problems

Although the procedures applied are simple for both the hunter and the department, the processing of 100,000 to 150,000 applications each year requires a substantial expenditure of money and labor. The department is continuously seeking ways and means of doing the job more efficiently in terms of both cost and satisfaction for the public. Last fall the Commission invited a study of the distribution procedures by members of the Business Administration Department of the University of Portland. This study developed several valuable recommendations which may be implemented to improve efficiency and public confidence.

With the implementation of a five-year waiting period between antelope tags and elk permits, the screening of each successful applicant against a list of all ineligible persons is a costly job. Over 400 of the persons drawn to receive elk permits and antelope tags in 1964 were found to be ineligible, and an undetermined number received permits by modifying their name, address, or both. It was suggested that use of Social Security numbers for identification of individuals would be more accurate and permit machine screening of applications.

Another problem revealed by the study was the fact that there is no return address on the deer and elk permits which are mailed as post cards to successful applicants. Each year there is an unaccountable loss of a few applications which may have been lost in the mail. A return address would assure return of any undelivered permits.

The study also suggests that the employment of an independent firm of certified public accountants to act as attesting agents to the impartiality and legitimacy of the drawings might add public confidence.

Although the five-year waiting period is having some effect upon the number of persons applying for elk and antelope hunting privileges, last year 23,834 persons had applied for the 5,600 authorized elk permits by the closing date, and 3,916 applied for 700 antelope tags. With these ratios a person should expect to receive an antelope tag once in six years and an elk permit once in five years. However, in practice, the odds vary substantially for each season or area. In the case of deer permits and tags, drawings are frequently required for a few popular areas such as central Oregon, but to date the overall supply of permits and tags has been consistently greater than the demand as of closing dates. For this reason, it has not been necessary to impose a frequency limitation upon persons applying for deer hunting opportunities.

The above procedures apply only to distribution of special hunting privileges. Individuals that are interested only in hunting buck deer or bull elk can buy a deer tag or elk tag at any of the 1,150 license agencies and enjoy the freedom of hunting broad areas of the State with the permission of landowners.

Experience has proven that the take of antlerless animals must be judiciously regulated if the resources are to be maintained at maximum compatible levels. With the growing interest in hunting as a source of outdoor recreation, it is evident that problems associated with distribution of limited privileges will become progressively more acute.

Oregon is now on the threshold of open seasons for Merriam's turkeys, mountain sheep, and mountain goats. With sheep and goats, the frequency limitation will probably be once in a lifetime. With turkeys it is hoped that in a few years there will be an adequate supply to accommodate all interested persons.

How Far Have We Gone

"An insistent demand is coming from some sections of the state asking for a closed season on beaver. After two years of trapping, beaver are very scarce in many sections of the state and a closed season will be necessary if we are to prevent their extermination."

1925 Biennial Report of the Game Commission

". . . trappers generally directed their efforts toward the taking of mink, muskrat, otter and beaver. These four furbearers commanded fairly high prices, were fairly abundant, . . .

" . . . the catch remained high and compares favorably with the average harvest of 11,356 beaver during the previous 12-year period."

1964 Annual Report, Game Division
Oregon State Game Commission

(Ed. Note: The beaver trapping season was closed for a number of years, then re-opened and now provides trappers with over 10,000 animals each year.)

* * *

"Improved methods of transportation and a program of modern highway construction have made the American people a nation of nomads.

"Probably fifty percent of this transportation is used a portion of the year at least for recreational purposes; thus a drain upon our natural and recreational resources is occasioned. . . .

"Every section of Oregon is continuously asking for more fish, more game, more patrol service and protection."

Report of A. E. Burghduff, state game warden
1925 Biennial Report of the Game Commission
40 years ago.

* * *

"Reports indicate an increase in the elk herds in many sections of the state.

"Whether it would be possible to provide an open season on elk in such localities without encompassing their total destruction is problematical. . . "

1925 Biennial Report of the Game Commission

"The 1964 big game seasons resulted in a harvest of 160,558 big game animals. . . .

"The reported harvest of 17,157 elk by 62,898 elk tag holders exceeds all previous records for both participation and yield."

Oregon State Game Commission Bulletin, March-April 1965
1964 Big Game Harvest by Dave Luman

Oregon State Game Commission Bulletin
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