

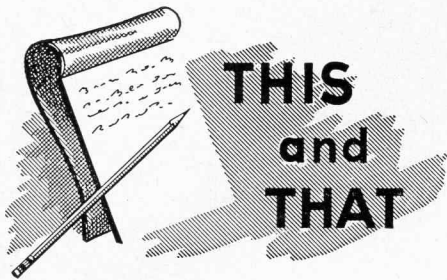
OREGON STATE

# GAME COMMISSION BULLETIN

APRIL, 1955







To help prevent salmon poisoning of dogs, anglers are urged to be careful about disposing of trout and salmon offal when cleaning their catches.

\* \* \*

The 1954 waterfowl season report for the Game Commission's four public shooting grounds shows that in 19,367 hunter days, 37,038 birds were killed, of which slightly more than two-thirds were ducks.

Summer Lake led the group in the number of birds taken, 8,440 ducks and 8,709 geese. The 6,905 permits issued was the highest in the 11 years the Summer Lake shooting ground has been in operation.

At Sauvies Island, the number of permits issued was 9,957. Kill totalled 15,778, of which 303 were geese and the rest ducks. This was a success ratio of 1.59 compared to 2.49 for Summer Lake.

Warner Valley's 1,615 permittees killed a total of 2,734 birds, of which 2,220 were geese. At the Malheur refuge, 990 permits were issued and the total kill was 1,377. Of this number, 1,104 were ducks.

\* \* \*

Hunting and angling continues to increase in popularity according to recent statistics issued by the U. S. Fish and Wildlife Service on national license sales. During the 1954 fiscal year, 32,654,199 individuals spent almost \$85,000,000 for hunting and angling licenses and duck stamps. Fishing licensees totalled 18,580,813 and hunting, 14,073,386. Oregon ranked 24th in the nation in hunting license sales (251,415) and 21st in sale of fishing licenses (320,135).

\* \* \*

Some reports have been received from trappers that the illegal killing of furbearing animals along streams by .22 shooters increases after the opening of the angling season. At that time the season is closed for protected furbearers. Wild furbearers constitute a valuable cash crop and such killing in addition to being a game law violation is sheer waste of a valuable resource.

## CONSERVATION WEEK

Oregon's first Conservation Week, expected to be an annual event, has been set for the week of May 1 through 7 by Governor Paul Patterson.

Emphasis is to be given to the need for the protection and wise use of the natural resources of the state—soil, water, forests, fish, wildlife, and minerals. As these resources are the foundation of the state's economy, their conservation is important to present and future generations.

A conservation chairman has been named by the Governor for each county of the state to arrange appropriate programs, in which all organizations and citizens of the state are urged to participate. Schools also will have special events scheduled in keeping with the objectives of Conservation Week.

## MARCH MEETING OF THE GAME COMMISSION

The Game Commission met March 11 at Withycombe Hall on the campus of Oregon State College. This was in accordance with the Commission's policy to hold a meeting there every other year for the benefit of the students of the Department of Fish and Game Management.

Business acted upon included:

**Capital Outlay.** Expenditures were authorized as follows: \$4,479 for pond improvement at Alsea hatchery; \$1,866.40 for pond improvement at Roaring River hatchery; \$1,700 for improvements at headquarters of Wenaha Management Area; \$1,334.70 for addition to residence at Oak Springs hatchery; \$1,200 for water development work at Rogue Valley Management Area.

Low bids accepted as follows for work previously authorized: Barger & Howard, \$1,363.18 for concrete work at Willamette Hatchery; and Hampton C. Platt, \$5,700 for pond covers at Wallowa.

**South Umpqua Fishway.** Filing of a Dingell-Johnson project authorized in the amount of \$42,900 for installation of a fishway at the South Umpqua Falls.

**Surplus Pheasant Eggs.** A policy was adopted providing that surplus pheasant eggs be disposed of in the following order of priority: (1) 4-H Clubs, (2) Sales to game breeders and individuals (price to be increased to 12 cents an egg), (3) Share producers.

**Signs.** A policy was adopted prohibiting the posting of any signs on Game Commission properties except official state signs.

**Tenmile and Devils Lakes.** Several delegations were heard for and against the poisoning of fish in Tenmile and Devils lakes. No decision was made at this time in regard to rehabilitation work in these and other lakes.

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## Oregon State Game Commission Bulletin

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Please report promptly any change of address. Send in both the old and new address with notice of change.

At the present time the Bulletin is circulated free of charge to anyone forwarding a written request.

### COVER

Preliminary survey being made for proposed fishway over South Umpqua Falls of the Umpqua River in Douglas County. Game Commission is applying for a Dingell-Johnson federal-aid project to finance construction. Estimated cost is \$42,900, three-fourths of which would be paid by federal funds and one-fourth by the state. Fishway will open up 22 miles of potential spawning and resting areas for spring chinook salmon and other migratory species. (Photo by Ron Shay.)

# WHAT'S COOKIN'?

Harold G. Smith

By P. W. SCHNEIDER, *Director*

ONE out of every three citizens of the state is a direct consumer of Oregon's fish and game resources. Nearly a half-million Oregonians from all walks of life and of all age groups secured a license to hunt or fish in 1954. At no time in the history of the state has as high a ratio of our total population participated in the direct utilization of these natural resources. In addition, each year there are nearly a thousand more people from outside of the state coming to Oregon to enjoy the use of these same resources than were here the preceding year. Such a trend, which has continued with little change since World War II, is an important factor to any agency which is responsible for sustained and maximum utilization of renewable resources such as fish and game. As this use has continued to increase, the land and water area upon which fish and game must be produced has declined through more intensive development and alteration for other purposes. Such a paradox then is the challenge confronting the Oregon State Game Commission in fulfilling its trust of stewardship of this important segment of the natural resource wealth.

It is regrettable that fish and game affairs cannot be discussed primarily in relation to the intangible and social values which most individuals rightfully regard as their highest value. Current problems and concepts, however, require that other analyses occasionally be made. The purpose of this article is to review very briefly a few phases of the Game Commission's activities of the past two years directed at meeting some of the problems.

The designing and execution of a program for fish and game, a resource unlike other natural resources by virtue of its singular legal and physical nature, involves activities highly diversified and complex. Of the varied activities now engaged in by the Commission, greater emphasis has been directed upon habitat improvement, land acquisition and development, more direct interest in planning and policy deliberations regarding land and water development programs, a diversification of adaptable species of both fish and game by careful introductions from outside of the state and transplantations of existing species within the state, a stepped-up program of information and education, and continued perfection of inventories of not only the stocks of fish and game but of the level and distribution of the harvest.

Since the basic key to abundance of either aquatic or terrestrial species is suitable habitat for reproduction and maximum distribution, a positive and extensive program of improvement of both water and land environment has been carried out.

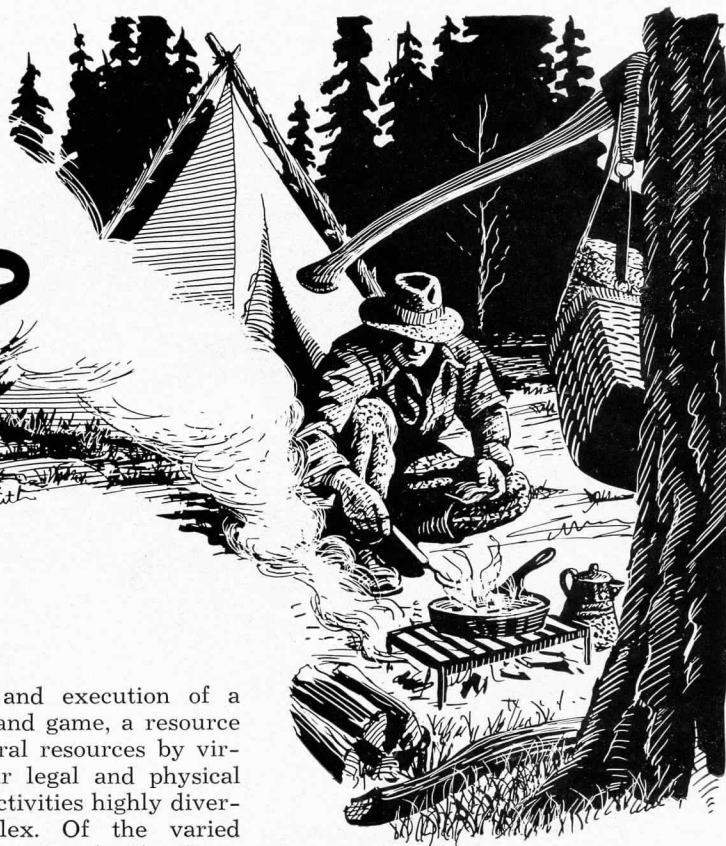
Stream and lake environment, the basic element upon which a fish population is sustained or enhanced, has received and will continue to receive, increasing attention. There are at present over 600 screen units protecting the loss of fish in diversions and a planned program calling for completion of the major river systems in the state as soon as funds and programming permit. This has been implemented by increased construction and maintenance facilities necessary in a continuing program of this nature. Negotiations have either been completed or are well advanced

toward installation of properly designed protective facilities at several long-standing hydro-power or irrigation installations. These are the responsibility of the operating agency but require extensive planning and design covering technical problems. An outstanding example of an installation of this type is represented by the new screen installed in 1954 by the Pacific Power and Light Company at their Powerdale Plant on Hood River following extensive study and negotiations between company officials and the Game Commission.

The presence of log jams and other barriers, either artificial or natural, have received increased attention in the biennium. Over 50 streams had from one to several log jams removed and an operating program was inaugurated whereby a continuous surveillance of this problem is a routine function. Plans have been completed for the construction of a major fishway installation and numerous smaller fish passage facilities received attention.

Lake rehabilitation through complete or partial removal of unbalanced or undesirable species of fish was expanded with gratifying results already manifest through remarkably increased production and return to the angler. For example, McKay Reservoir in Umatilla county returned to the angler approximately 30,000 pounds of trout the first angling season following treat-

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One of several quail roosts constructed in eastern Oregon by the game habitat improvement division.

## WHAT'S COOKIN'?

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ment. Although not all waters respond in such spectacular fashion, the net result is more efficient utilization of existing fish habitat and an increase in angling success, the end product of fishery management investments.

A very similar pattern of habitat improvement for game species was prosecuted statewide on selected areas in cooperation with landowners and land management agencies. Cover, food and water developments for upland birds, represented by shrub and tree plantings, fencing, water developments and artificial quail roosts, were installed in key areas. About 465,000 seedlings of 17 species were planted for cover, nearly 100 artificial watering devices and about 50 roosts were installed. Food plantings for waterfowl were expanded on lands primarily located in the broad migratory flight patterns. In connection with the extensive and important big game resources, two important activities were reseeding of burned over areas and the construction of watering facilities on selected dry ranges. These activities, all directed at increasing the productive capacity of existing habitat, are particularly important on a long-range basis since our land and water area is not going to increase in size yet will receive a more intensive utilization for all purposes.

The fundamental relationship of land and water use practices to fish and game resources imposes upon this Commission the responsibility of knowing the trends and plans in regard to such

programs at all times. This is essential both with respect to current problems and in the necessary planning for the future program. Because of this, a great deal of time has been spent in consultation with both state and federal agencies and with local, national and international organizations who are engaged in one way or another with resource work.

Of outstanding significance during recent months is the opportunity afforded this Commission to review and study plans relating to several potential industrial developments which, if installed without adequate planning from a fishery standpoint, could pose serious problems. The desire on the part of several industries to seek early consultation on these matters is encouraging and helpful. As population, agricultural and industrial development continues, the need for such activity grows in direct proportion. The very helpful cooperation received in numerous aspects of resource activity where possible dangers to fish and wildlife values exist has made it possible for this Commission to pursue a program of maximum effectiveness and one which on occasion has avoided serious damage to fish or wildlife.

The activity of land acquisition and development received emphasis during the past two years through the initiation of two key winter ranges, the Wenaha Elk Range in Wallowa county and the White River Deer Range in Wasco county. In addition, negotiations for the Rogue Valley Game Management Area, consisting of a portion of the

abandoned Camp White grounds in Jackson county, were completed, the first of the fishing access sites were acquired and the completion of acquisition on previously activated projects continued.

In contrast to previous acquisition activities, emphasis in recent months has been directed at development. On existing projects acquisition has progressed to a point where major development can now take place. Leases were renewed with the Corps of Engineers on flood control projects and other suitable lands providing for suitable seeding sites which have been planted to waterfowl foods for winter use. The above areas were selected after several years of careful study and represent significantly key areas in relation to wildlife needs. It is not the policy of this Commission to engage in land acquisition beyond very limited areas which, by virtue of either their acute relation to a general geographical area or an essential key habitat type must be so managed that the Commission can discharge its responsibility in the maintenance of the resource.

The introduction of several species from outside areas as well as transplantations of species now occurring within the state was accomplished. It is unlikely that there is a more popular management activity which can be engaged in than introductions or transplantations of different species of game or fish. At the same time, such activities are fraught with dangers to existing forms of either fish or game and much unwise expenditures of funds can be made without achieving any measurable results. Several of the serious contemporary fishery problems are a direct result of introductions of non-native or undesirable species. As a result, neither a transplantation or introduction is attempted without careful evaluation of all of the numerous factors related to such an enterprise.

However, the wide diversification of habitat types, both in our waters and the land areas, plus the constant change which is being brought about through other activities, presents the need to constantly evaluate these in relation to species adaptation.

Specific introductions have been reported in individual Bulletin articles. The re-introduction of a stock of big-horn sheep, a once native species, through the cooperation of the British Columbia Game Commission and a re-introduction of a stock of bobwhite quail through the cooperation of the Kansas Forestry, Fish and Game Com-

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## WHAT'S COOKIN'?

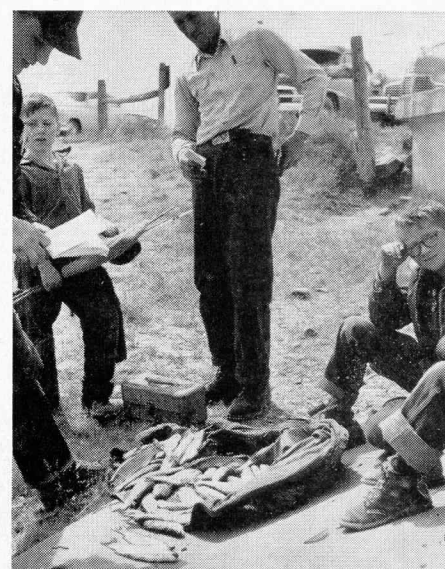
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mission are examples of game species brought into the state within the last year. A stock of the Kamloops trout, again through the help and cooperation of British Columbia, and a small introduction of large-mouth bass for stocking some limited artificial impoundments through the cooperation of the Fish and Wildlife Service are examples of this type of activity in the fishery field.

For several years the Commission has received numerous requests for a stepped-up program in Information and Education. In recognition of this desire on the part of various interests and the even more important fact that the proper management and utilization of a resource so economically important to the state depends upon a better understanding of the program and problems, this activity has been substantially increased. The Division of Information and Education has organized a comprehensive program aimed at providing all interested citizens with information regarding the hunting and angling laws, management programs and the year to year condition of the resource. The youth education program was presented to 40 different youth organizations with about 10,000 youngsters during the summer months and to over 120,000 students in 416 schools of the state during the last two years. Additional assistance has been made available to the schools through the development of visual aids, literature and assistance in the study of specific conservation problems and activities.



McKay Reservoir proved to be one of the most spectacularly successful of the Commission's lake rehabilitation projects. At the left is the anglers' line-up on opening day of last year. At the right a field agent checks some of the day's catches of rainbow trout.



Field personnel throughout the state assist and participate in various educational activities.

The film library, informational leaflets, bulletins and posters have been increased both in diversification of subject material and in distribution.

A number of inspection trips to specific management problems have been organized and carried out in cooperation with interested individuals and organizations.

A continued expansion of this activity for the immediate future is planned.

Essential elements in managing any resource include both a running inven-

tory of available stocks as to composition, density and distribution and the relationship of the annual harvest to the basic reproductive stock. Although this function is less spectacular because it is carried on routinely from year to year and does not present visible evidence of accomplishment, without such information regulations providing for safe yet maximum allowable cropping would be difficult under present-day levels of hunting or angling pressure.

Continued perfection of inventory methods and careful adjustments of various regulations in relation to this information have permitted a safe increase in allowable harvest and provided a basis for affording additional protection where needed for a given stock. Oregon's deer crop, for example, in 1953 exceeded 105,000 head. This was the highest kill in the United States for that year and the first time such a level of harvest has been enjoyed by the Oregon hunter. It is likely that the 1954 season figures will reveal a very similar kill. Such seasons can only be employed where sufficient information of herd ranges permits the Commission to so regulate. It has likewise been necessary to give the antelope greater protection as a result of increased knowledge on the condition of our stocks of this species. Similar adjustments of fisheries regulations have been made as a result of careful surveillance of the populations of various runs or stocks of fish.

Never in the history of fish and game affairs of Oregon has there been available as comprehensive knowledge  
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Annual field day at Sauvie Island Management Area for Boy Scouts, sponsored by the Information and Education division.





Test planting of lindane treated seed at the E. E. Wilson Management Area. Corn in foreground is from the treated seed. Untreated seed was planted in the area in the back where no corn appears.

## Lindane Saves Seeds

FOLKS that anticipate pheasant damage to their gardens or farm crops, particularly peas and corn, will be interested in a study being conducted by the Oregon Cooperative Wildlife Research Station.

The product being studied is "Lindane" which has been marketed for several years as an insecticide. The repellent effect of this product upon pheasants was discovered quite by accident when farmers in Idaho and Oregon, using it for control of wireworm damage, noted a corresponding decrease in loss of seed to pheasants.

The Game Commission, alert to this problem, wanted to test further the reliability of lindane as a pheasant repellent before recommending its widespread use. It also wanted to know what effect this substance had on the birds that did eat some of the treated seed. Consequently a series of test plantings were made at the E. E. Wilson Game Management area north of Corvallis which is being utilized in part by the Commission as an outdoor research laboratory. In conjunction with the test plantings, toxicity trials were conducted using penned male pheasants as the experimental subjects. This work was conducted by the Oregon Cooperative Wildlife Research Unit which handles basic research for the Commission.

As a follow up of the test plantings and toxicity studies, the Game Commission requested the cooperative seed testing laboratory at Oregon State College to conduct germination tests on various seeds treated with lindane. These experiments are designed to accurately determine any damage to the treated seed or growth pattern of the seedling under recommended dosages.

The test plantings at the Wilson Management Area consisted of 24 plots of peas and 24 plots of corn. Half of the plots utilized lindane treated seed while the other half were left untreated. At the end of the test period, peas treated with lindane produced a stand approximately three times heavier than did those that were left untreated. The corn plantings were even more spectacular. The plots utilizing untreated seed were completely destroyed while those with the lindane treated seed, although sustaining measurable loss, produced quite uniform stands. It was obvious that the losses were the result of sporadic sampling by pheasants. The normal pattern of proceeding along a row to feed was not in evidence.

In the final analysis, several factors should be considered concerning these tests. The Wilson area undoubtedly has higher densities of pheasants than any other place in the entire country. It supports populations varying from 80 to

250 birds per hundred habitat acres. Weather conditions were extremely unfavorable for the growing seedlings and prolonged their vulnerability to approximately twice the normal period. Finally, the location of each plot, when in a tilled field was placed in the corner of such a field to reduce the interference with the normal use of that particular field. This automatically increased the pressure from pheasants on the trial plots. When the above mentioned factors are given full consideration, the results of research to date are even more encouraging.

These results, however, do not guarantee absolute security against some loss. The use of compounds containing lindane to treat seeds such as peas and corn does show considerable promise, indicating that losses will be reduced to a minimum. Pheasants apparently must first taste the treated seed to be repelled. One bird may sample and in the process destroy 4 or 5 treated seeds before being discouraged. In the case of a very small planting and where considerable numbers of birds are involved damage may still remain a problem.

The results from the toxicity study, where penned male pheasants were fed known dosages of lindane, indicate that it is very unlikely that under field conditions any pheasants could be killed from eating lindane treated seed.

Results from the germination tests completed thus far show very little damage to germination or seedling growth when used at recommended strength. An insecticide consisting of 75 per cent lindane is used at a rate of 1½ ounces per 100 pounds of grain. Further tests are being conducted to check other phases of this problem.

In summary it can be stated that the insecticide containing lindane in heavy concentration is easily secured and applied and offers considerable aid to the agriculturist in reducing damage to sprouting corn and peas. It appears that pheasants must eat several treated seeds before being repelled. This sampling may be more harmful to the small gardener than the person operating on a larger scale to whom such small losses would be unimportant. The home gardener can help protect his crop by establishing his garden plot away from heavy cover if possible.

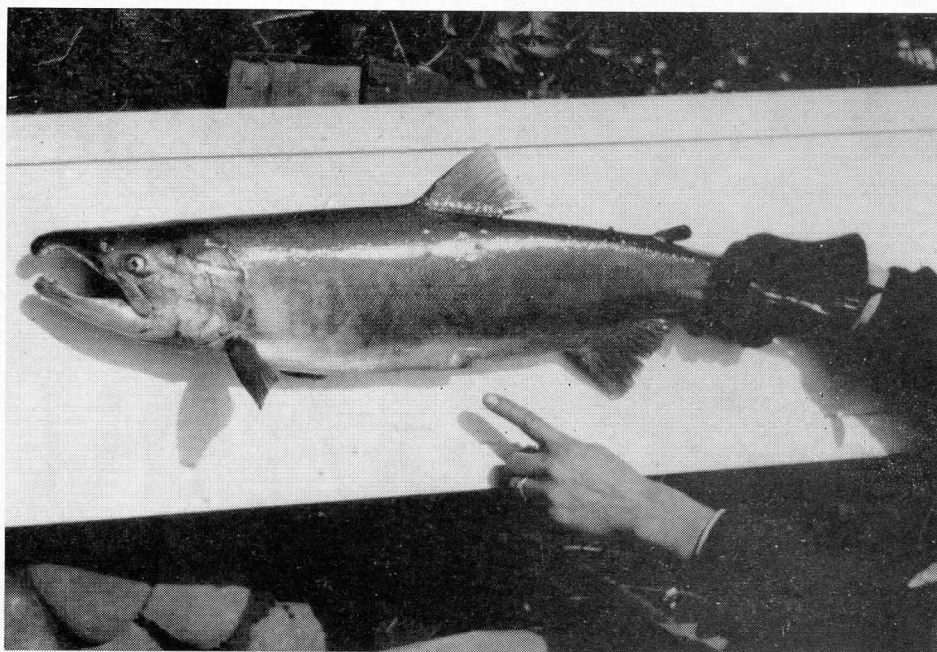
Research indicated there is little danger of killing pheasants by treating seed with lindane. The amount used varies with the strength of the compound. That containing 75 per cent lindane is applied at the rate of 1½ ounces to 100 pounds of seed. Recent

(Continued on page 7)

## ANGLERS AWAY

Anglers!! General trout season opens April 30 in all zones of the state. As you catch your fish throughout the season, please check to see whether any are marked. If so, report the marking, and the date and place of catch to the Game Commission. Considerable time and effort is being spent in marking by fin clipping large lots of fish before liberation in order to obtain much needed information about fish movements, both trout and salmon.

Angling regulations have not been changed greatly from last year. The bag limit remains the same for trout, 10 fish per day (not more than five 12 inches or over) with double the daily limit allowed in possession or in 7 consecutive days. Lakes and reservoirs within boundaries of the Cascade national forests open on May 28. Exceptions to general seasons and closed waters are listed in the 1955 angling synopsis now available at all license agencies.



The Game Commission marks a large number of fish each year and asks anglers to report any they catch. This male silver salmon was marked by clipping the ventral fin and released at the Alsea hatchery in April, 1952. It returned there two years later.

## MARCH MINUTES

(Continued from page 2)

**Access.** Expenditure of \$4,500 for purchase and improvement of access site on Little Nestucca River was approved.

**License Agency Policy.** Paul Bonelli of Gresham and Andy Maxim of Eugene presented a request to change existing policy regarding establishment of game license agencies. No action taken at this time.

## NEW EMBLEM

Depicting the three major resources under jurisdiction of the Game Commission—small game, large game and game fish—this is the emblem recently adopted by the Commission. It will be used wherever such an insignia is considered appropriate such as uniforms, department publications and signs.



When reproduced in color, the background will be in green and the design in brown.

## WHAT'S COOKIN'?

(Continued from page 5)

of these important resources as we now have. Such essential information comes about only through planned and careful application of available tools of management by competent and experienced personnel. It constitutes the best assurance that these resources can be so managed that Oregon will continue to enjoy their significant social and economic values.

Numerous other aspects of the Commission's program could be discussed in an article such as this. Reference could be made to those parts of the program which have been carried out for many years as an essential activity or additional relatively new activities could be discussed in detail. A major policy change in our fisheries management program calls for increased emphasis on steelhead. A number of improved and increased hatchery production activities, an expanded waterfowl program, and others are all important to the citizens of the state. The evaluation of the Commission's program in terms of progress, organization and program must be related to indicated future demands. These demands will be primarily associated with other activities beyond the purview of this Commission where such activities affect the fisheries or game populations of part or all of the state. The correlation of the department's program with trends of development of the state will receive in-

creasing attention to the end that an important part of our economy represented in fish and game continues to be a value enjoyed by all of the citizens.

The work of the Commission has been made immeasurably more effective through the extensive and helpful cooperation of numerous groups, other agencies of the state, the state legislature, federal agencies and adjoining states. The continued enjoyment of this helpful and essential cooperation is our urgent desire in furthering the program in future years.

## LINDANE SAVES SEEDS

(Continued from page 6)

tests conducted at Oregon State College indicate that germination and seedling growth are affected very little by treatment with lindane if plantings are made soon after seed treatment.

This compound is sold under a variety of trade names at most feed and seed stores and garden supply houses. Two of the more common trade names are *Isotox 75*, a preparation containing 75 per cent lindane and 25 per cent inert ingredient, and *Lindano 25*, a preparation containing 25 per cent lindane and 75 per cent inert ingredient.

## CONSERVATION PLEDGE

I Give my  
Pledge as an Oregonian to Save and  
Faithfully to defend from Waste the  
Natural Resources of my State . . .  
Its Soil and Minerals, Its Forests,  
Waters and Wildlife.





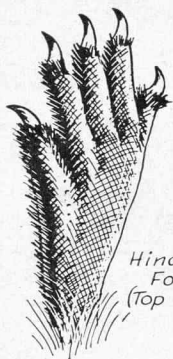
# MUSKRAT

Oregon's muskrats are found throughout most suitable regions of both eastern and western Oregon. They are seldom found in higher mountain country as weather causes ponds to freeze to the bottom making food unobtainable. They burrow in banks or have conical houses built of marsh vegetation 2 or 3 feet above water with underwater entrances.

Harold Cramer Smith



Muskrats forage nightly for food. They do not store winter supply like the beaver. Main food is rushes and cattails; supplemented with roots, tubers, bulbs, and tender basal portions of tules, grasses, and other marsh vegetation. Their favorite food is water lily roots and leaves. Small turtles, mussels, clams, and crawfish are sometimes eaten.



Hind Foot  
(Top view)



Hind Foot  
(underside)



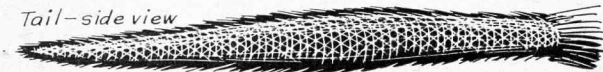
Forefoot  
(underside)

Hind feet are nearly webbed with stiff hairs which aid in swimming.

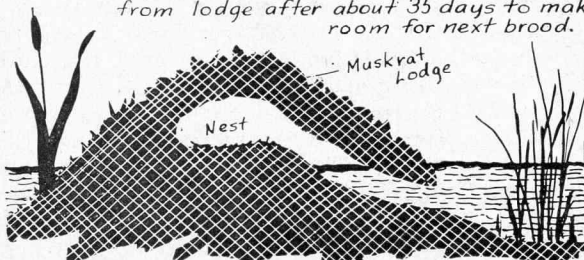
Tail - Topview



Tail - side view



Muskrats look like beaver with a long tail. They have dense, rich brown fur over laid with coarse guard hairs; belly is silvery; long naked black tail flattened from side to side. 6 to 8 young are born in May or June and second litters in July and August. Young are blind, naked, and very helpless at birth, stay in houses until they are able to be about. Mother drives young from lodge after about 35 days to make room for next brood.



Muskrat lodge

Nest



He has many enemies, the mink being the worst; dogs, bobcats, coyotes, hawks, and great-horned owls take small numbers. Extremely cold winters destroy food supply when it becomes frozen in ice and snow.

## Oregon State Game Commission Bulletin

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