DEPARTMENT OF GAME
STATE OF WASHINGTON

FIFTH
BIENNIAL REPORT
1940-1942

Washington State Game Commission

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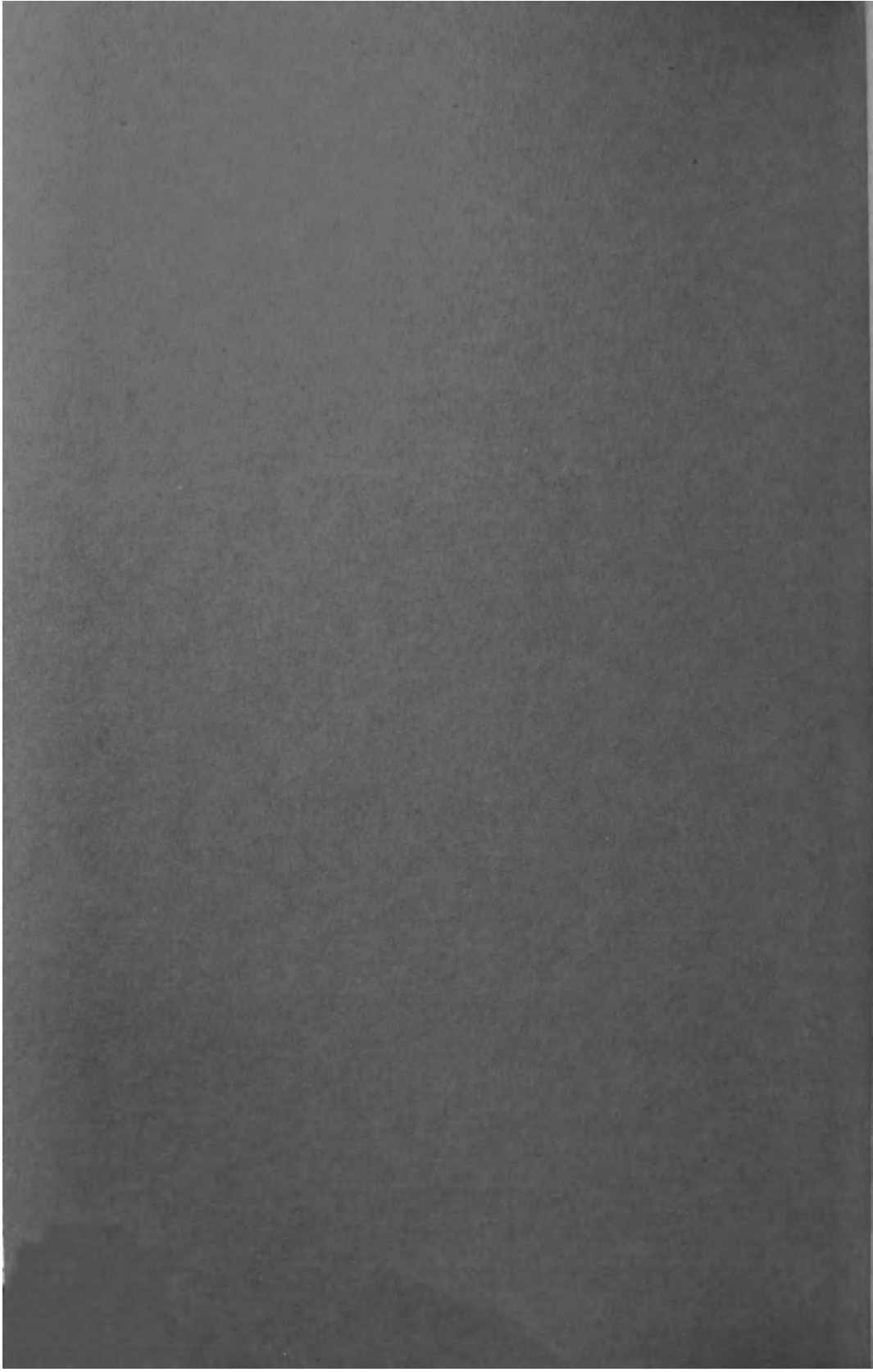

FIFTH BIENNIAL REPORT

OF THE

WASHINGTON STATE GAME COMMISSION

April 1, 1940, to March 31, 1942

GAME COMMISSION

Virgil B. Bennington, Chairman.....Walla Walla
Claude C. Snider.....Vancouver
Thomas A. E. Lally.....Spokane
J. S. Thomas.....Seattle
Lou Ovenden .....Wenatchee
C. A. Peterson.....Monroe

Director of Game
Bernard T. McCauley

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LETTER OF TRANSMITTAL

To His Excellency,
Arthur B. Langlie,
Governor of the State of Washington,
Olympia, Washington.

Dear Sir:

In accordance with law we herewith submit the "Fifth Biennial Report of the Washington State Game Commission," covering the period of April 1, 1940, to and including, March 31, 1942.

Respectfully submitted.

WASHINGTON STATE GAME COMMISSION
Virgil B. Bennington, Chairman,
Thomas A. E. Lally
Claude C. Snider
J. S. Thomas
Lou Ovenden
C. A. Peterson

FOREWORD

In line with the present policy of conservation for war effort, the State Game Commission presents this report considerably reduced from previous issues, and covering only the most important phases of the past two years' activities. However, this reflects only as a curtailment of minor activity and does not represent any lowering of game conservation standards.

For the duration of the war it is the Commission's policy to assist the military authorities in as many ways as possible to maintain and continue to build up the state's supply of game, and to maintain as much area as possible open to hunting and fishing for recreational purposes. This is in line with the general policy of greater production and better utilization of our game resources. Preservation and protection alone are not complete management if they do not also include the regular production and harvesting of a reasonable surplus. It is this harvested surplus, the fish in the basket and the game in the bag, that the Commission recognizes as the true measure of the success of its game management program.

This would appear to disregard the aesthetic values of wildlife, but it actually does not, as the greater the quantity available for harvest, the larger must be the number held for breeding purposes, with the result that both aspects point to the one objective—more wildlife in the forest and field.

GAME

Since the quantity and quality of the yearly harvest of fish and game are the measures of a successful program, it is appropriate that we discuss some of the game and its management by the Game Department, which is the administrative unit of the State Game Commission.

Deer:

Deer are the most plentiful and widely hunted big game animals in the State of Washington. They are found in all forested regions of the state and are of three principal varieties or kinds. Those of the densely forested coastal region are the Columbia black-tailed; the dryer, open forests east of the Cascades have the mule deer; and white-tailed deer are found in an intermediate type of range in the extreme northeastern part of the state, north from Spokane. A small population of coast white-tailed deer is found along the lower Columbia River.

All these varieties have increased rapidly in recent years and there are indications that populations have doubled during the last four years. This tremendous increase is attributed chiefly to strict law enforcement, predator control, and well managed hunting. At the same time, the number of hunters pursuing deer each season has increased in proportions almost as large. As shown by the sale of big game seals, there were 71,061 big game hunters in 1938 compared to 108,127 in 1941. This was a 50% increase since 1938, and a 130% increase over the 1935 figure when seals for big game hunting were first required. The increase in hunters as shown by the sale of big game seals is tabulated below:

YEAR	"BIG GAME SEALS" SOLD
1935	47,253
1936	57,818
1937	70,407
1938	71,061
1939	80,270
1940	88,021
1941	108,127

As would be expected with an enlarging deer population and an increasing number of hunters, the annual kill of big game animals has risen rapidly. This rise in kill has been even more rapid than the increase in hunters, so that the success ratio has improved from about one deer bagged to every seven or eight hunters in 1935 to about one deer to every five hunters in 1941. However, these increased kills have not been out of line as they directly reflect general deer population changes throughout the state. This increased production is due largely to the expansion of deer herds into new ranges that were formerly devoid of big game animals.

The exact figure for each year's kill is not known as about one-half the hunters still fail to return their "report of hunt" cards. However, the use of checking stations has made it possible to determine what percent of the hunters who make kills actually send in cards. These sample figures have shown that the percent of kills reported varies between 60% and 80% of the actual total kill. By the application of the percentage to the reported kill

it is possible to get a fairly accurate total yearly kill for the state. The table below shows yearly deer kills computed in this manner:

YEAR	COMPUTED KILL
1936	6,000
1937	8,700
1938	8,780
1939	12,290
1940	18,000
1941	22,000

The kill for the biennium makes a total of 40,000 deer and figured at only 125 pounds per animal it amounts to the harvesting of 5,000,000 pounds of deer meat.

Deer Damage:

Wherever game populations have increased materially, game damage to private property may be expected, and as populations continue to increase, the problem will become more severe. Deer can cause damage to growing farm crops, gardens, orchards, and hay stacks. Each problem must be studied, and controls applicable to the specific problem worked out to suit that region or district. In areas that are primarily farming districts and not game ranges, it has become necessary to halt any further increase in deer by reducing hunting restrictions. This was first started on Whidby Island in 1937 where the season limit was changed to one deer of either sex, and it has continued that way each succeeding season. Damage to crops has been almost entirely eliminated, and at the same time a good annual yield of deer is secured. Similar seasons were held in areas in Thurston and Mason counties in 1939, and again in 1940 a portion of Mason county only, with good results. The dense brush cover of western Washington serves as a guard against any extremely heavy kill.

Similar doe areas of limited size were opened in eastern Washington in 1939, but here it was found that scarcity of cover made it possible for the hunters to clean out all deer in a short time. This was a desirable result in the small, overpopulated areas but it precluded the use of unlimited doe seasons over any extensive regions of eastern Washington.

To solve this problem and make it possible to remove a limited number of animals from certain problem areas, the 1941 State Legislature passed a controlled hunt law, which gave the Game Commission authority to issue a certain number of permits for the taking of animals from these areas. These are actually corrective measures and are not to be regarded as hunts from the sporting standpoint. The distribution of the permits is by lot drawing from those making application to the Game Department. Two such controlled hunt areas were established for deer in the fall of 1941, one in the Entiat Valley in Chelan county, and the other on Camano Island in Island county. Their management proved to be quite successful, although they fell somewhat short of taking the number of animals desired. However, they will serve as valuable guides for the establishment of more such corrective measures in the future.

Winter Range Acquisition:

With the greatly expanded deer population, problems of range and feed shortages have appeared in some areas. This is especially true in mountainous mule deer ranges of eastern Washington where population numbers are

directly limited by the amount of winter range and winter feed. In some regions the ratio is as much as twenty square miles of summer range for each square mile of winter range available. Under such conditions it is imperative that the carrying capacity of this winter range be maintained at a maximum, in order to hold a good herd and adequately utilize the summer range. This is being accomplished by the acquisition of the most critical winter ranges with the aid of Federal funds secured through the Federal Aid to Wildlife Restoration Act. This act, known as the Pittman-Robertson bill, and the work accomplished under it, will be discussed in detail in a later section of this report. The three projects now being acquired and developed primarily for the benefit of deer are all winter ranges and include the Methow and Sinlahekin projects in Okanogan county and the Tucannon project in Columbia and Garfield counties. Placing these lands under state ownership makes possible the complete elimination of domestic stock competition and reserves all food for the exclusive use of deer. Incidentally, this also solves some serious damage complaints, since nearly all private holdings situated in deer winter ranges will have game damage problems.

Trapping and transplanting of some deer has been done each winter for the past three years. This was first undertaken as an experiment to determine the feasibility of trapping as a means of reducing overpopulations, and was continued the last two years to secure stock for some underpopulated deer ranges, principally in Klickitat county. The numbers transferred were as follows:

1939-40	winter	129
1940-41	winter	148
1941-42	winter	58

The deer were captured in the 25 Mile Creek district of Chelan county and the Methow district of Okanogan county. Of the total number taken, 164 were released in eastern Klickitat county where deer populations are rather low. From this work it was concluded that trapping is economically sound only where there is a definite need for animals for restocking purposes. It is not a practical method of eliminating damage, or reducing populations.

On the whole, deer hunting in Washington has improved materially in the past biennium and the prospects for the future are very bright. It is reasonable to assume that harvests of 50,000 to 60,000 deer yearly will not be unusual within a few years. This is in line with the Commission's policy of building for maximum harvest. There will be a continuation of damage and range problems, but they can be solved by study and application of knowledge already secured.

Washington Elk Herds:

Elk are second in importance as big game animals in the state. There are two varieties or sub-species, namely: the native Roosevelt elk of western Washington, and the introduced Rocky Mountain variety found principally in eastern Washington. Their distribution is not continuous like that of deer, in that they are limited to herds or regional groups. Roosevelt elk are found in all of the Olympic Mountain regions, in Pacific county, and parts of neighboring Wahkiakum and Lewis counties of southwestern Washington, and a small herd ranges in the Mount St. Helens District of Cowlitz and Skamania counties. Rocky Mountain elk are found chiefly in Yakima and Kittitas counties and in the Blue Mountain region of southeastern Washington.

Recent annual elk kills for the state have ranged from 1,500 to 2,000 animals, with Yakima, Kittitas, Blue Mountain, and Pacific county herds producing the bulk of the harvest.

The number of sportsmen hunting elk is increasing steadily as shown by sales of Supplementary Elk Hunting Licenses given in the table below:

YEAR	NUMBER
1936	2,365
1937	4,106
1938	4,044
1939	5,430
1940	5,310
1941	8,245

The large size of elk and their habit of ranging in herds makes them potentially capable of doing serious damage to farm crops and fences. This has been borne out by experience where elk damage occurs, and it is usually more severe than that done by deer. Kittitas and Yakima herds have caused the most trouble, as they have been responsible for some damage to haystacks, range, and fences. Nearly all herds create some problems, but the others are less extensive.

The Kittitas county problem was considerably relieved by a special two-day season in 1940 which resulted in the taking of 180 elk, mostly cows and calves, from the Manastash-Taneum district. This season was not all that could be desired as a hunt, since the number of hunters was excessive, but it was the only means then available for the reduction of female animals. The passage of the controlled hunt law in 1941 corrected this situation so that reductions necessary for subsequent seasons can be accomplished with the limited permit system which controls the number of hunters. Three such controlled areas for elk hunting were established in 1941 and the results of all were very satisfactory. Two areas were in the Blue Mountains of Asotin county and one was in the Wenas valley of Yakima county.

Federal Aid to Wildlife Restoration funds are also being used to benefit elk herds of the state. The Oak Creek Project in Yakima county, already more than one-half acquired, comprises 26,284 acres of the winter range of the Rattlesnake elk herd. The management of this range primarily for elk production will guarantee a continuous food supply for a good herd in this region, and it will also help to control damage by elk. The Tucannon Project in Columbia county, although primarily for deer, will also serve to benefit the elk population of that region.

Black Bear:

Bear are found throughout all of the forested sections of the state and are hunted considerably for sport in eastern Washington. Western Washington bear are of poorer quality since their meat is sometimes tainted from feeding upon salmon. Thus very few are killed by hunters in spite of the fact that seasons and bag limits are very liberal. This limited hunting has allowed for substantial increases of western Washington bear and has resulted in serious bear damage problems. Increased kills will be necessary to relieve these damaged sections.

Other Big Game Animals:

According to latest estimates, the state of Washington has more mountain goats than any other state in the Union. These animals are not hunted, but they are a valuable part of the fauna. The Goat Study being conducted by this Department was continued throughout the biennium and much valuable information was secured. It was found that they made substantial increases in the past mild winter seasons.

Antelope, introduced by this department on the state-owned Squaw Creek refuge, produced the first young born in Washington in the spring of 1941. The six fawns, added to the introduced stock of 38 animals, makes a total of 44 antelope in the state at the present time. Substantial increases are to be expected each year from now on. The refuge on which they roam is situated between the Yakima and Columbia Rivers in Kittitas county, and comprises 10,582 acres of semi-arid range, all of which is fenced to exclude domestic stock. The land was acquired and development completed as a Wildlife Restoration Project.

Small Game and Fur Bearers:

Washington rabbits of game status include the snowshoe of the mountainous territory, the Washington hare or brush rabbit of western Washington, which is also a snowshoe, and both native and introduced cottontail rabbits. Native cottontails are limited to eastern Washington. The introduced forms were brought in a number of years ago, chiefly by interested individuals, and their prolific increase has created serious problems in some areas. One such problem now exists on Whidby Island, and one is also developing in Clark county. To assist in reducing the number of rabbits in these two areas the Game Commission has granted a year around season and unlimited bag. Incidentally, these rabbits supply considerable sport and a good quantity of meat to those who hunt them.

Squirrels of game status include only the grey squirrel and a black phase of the same species known as the black squirrel. There is a considerable population of these animals in the southern Cascade region, limited chiefly to the oak-producing areas. There is an open season on them annually, but they are not given much consideration by hunters.

Reports from trappers indicate that fur-bearing animals have increased slightly in the last few seasons. The table below shows the number of trappers, catch, and estimated values for past seasons for which records are available:

Year	Licensed Trappers	Animals taken†	Estimated Value*
1938-1939	1,888	75,194	$119,035.00
1939-1940	1,871	102,774	$137,450.00
1940-1941	1,605	88,326	$173,937.00
1941-1942	2,105	92,652	$195,150.00

† Based on returns varying from 86% to 95% of trappers.
* Computed from average prices for that season.

Three species of fur-bearers that have been protected through the biennium were beaver, fisher, and marten.

Marten have been protected for five years, and have shown a remarkable increase from the exremely low population of 1937. It is hoped that some type of controlled trapping can be put into effect when the season is again opened so that a well sustained annual yield can be assured.

The beaver trapping season has been officially closed for nearly 25 years, but it has only been within late years that control of illegal trapping has been adequate to really protect them. During this late period the increase in the beaver population has been unbelievably rapid. Live trapping and transplanting has been carried on by this Department until some counties already have all available areas stocked.

Beaver are economically very important in many regions because of their efforts toward water conservation and the accompanying improvement of habitat of other wildlife.

Beaver cause damage in many low areas where they must be removed by trapping. This is done by state trappers who operate only where there are damage complaints. Due to the good quality of the fur and excellent care by trappers, Washington's beaver pelts have commanded top prices on world beaver markets. The revenue received from the sale of pelts helps to pay for live trapping and other beaver management activities.

UPLAND GAME BIRDS

Chinese Pheasants:

Pheasants were first introduced into Washington about 1870 and the first open hunting season was established by legislative act in 1905. Since their introduction these birds have increased by natural means or by transplanting and artificial propagation until they now occupy all ranges that are suited to their survival. These birds constitute the staple or "bread and butter" of upland bird hunting.

A recent survey has shown that 11.5% of the land area of the state is suitable for maintenance and production of Chinese pheasants. Some such range is found in every county of the state, but the best habitat regions are in eastern Washington. Some of the larger areas of upland game bird range are in the irrigated districts of Kittitas, Yakima, and Walla Walla counties, and in the wheat growing regions of Whitman county. Other counties have equally good, or even better range, but it is less extensive.

The Commission follows a threefold program in its work to maintain the best possible production of pheasants. It includes: 1. Restocking and maintenance of brood supply by artificial propagation. 2. Regulation of kills by management of seasons and bag limits. 3. Range and habitat improvement for the betterment of natural propagation. Biological studies furnish the basic information upon which all of these management phases are planned.

During the past biennium 214,606 pheasants were liberated into the bird areas of the state. Of these, 195,093 were produced on state game farms and the balance of 19,513 were raised by cooperating 4-H Club members and interested sportsmen. The game farms and 4-H program will be discussed in detail in a later section of this report.

All liberations of birds are made with the idea of replenishing districts depleted by hunting. About 60% of them are released at twelve weeks of age, and the remaining 40%, chiefly hens, are held through to the following spring and are liberated in areas where conditions are most favorable for natural propagation.

Hunting seasons and bag limits are established annually by the Game Commission and are governed by the number of available birds. The 1940 season was similar to the seasons for several years previous with eleven open days and a bag limit of two cocks and one hen. Data secured during the 1940 season and the following spring made it apparent that the number harvested by hunters did not leave adequate breeding stock in some districts and the kill went as high as 70% of the total population in some checked areas. It was also apparent that in spite of the one hen limit, the season kill of hens was almost equal to that of cocks. To remedy this situation, the season for 1941 was set for cocks only with a three bird limit and eleven open days of hunting. There was very little difficulty encountered in the administration of this season. As would be expected, the kill was somewhat reduced, but the holdover of breeding birds was very good. As a result there are good prospects for improved pheasant hunting conditions.

One phase of the work on aids to natural propagation of pheasants consists of a Federal Wildlife Restoration Project to acquire and develop small plots of pheasant range throughout the state as breeder areas. Another phase, the inauguration of which started late in the biennium, consisted of a program to advise and encourage interested individuals who wish to improve their lands for wildlife. Some similar work is also being done through cooperation with the Soil Conservation Service. All of these projects will be discussed more fully in a later section of the report.

While over the major part of the state the emphasis is on producing more pheasants for hunting, there are a few areas limited to the suburbs of the larger cities where game birds are a problem. These are in reserves that are kept closed to hunting for the protection of the residential areas. Such conditions exist in the outskirts of Spokane, Tacoma, and Seattle. Pheasants in these areas have become a serious menace to vegetable gardens, destroying sprouting peas and corn and some leafy vegetables. All attempts to trap the birds have been futile and there seems to be no other practical solution. Although it is for no game conservation reason that these areas are closed, the resulting problem falls directly on the game administrators who are practically powerless to relieve it.

Other upland game birds that are pursued by Washington hunters include quail, Hungarian partridge, and grouse.

Quail:

Species of quail found in the state include valley, bob-white, scaled and mountain quail, but the one of major importance is the valley quail. It has been transplanted until it is now found over most of the state.

As a result of the past three mild winter seasons valley quail have become very abundant over most of eastern Washington and the increase has been most phenomenal in some areas such as the Okanogan Valley. This abundance of birds made possible extended seasons and increased bag limits for these districts in both the 1940 and 1941 seasons, and yet the hunting has not appreciably lessened the populations.

This plentiful supply of birds also made it possible to continue the State's winter quail-trapping program with very successful results. Those captured were used for stocking areas where quail were not found, or to restock areas where populations had suffered setbacks. Most of them were

moved to western Washington where there has been a less rapid increase of these birds. Trapping was all done in Okanogan and Douglas counties, and the numbers moved were 4,571 in the 1940-41 winter and 5,075 in 1941-42.

Hungarian Partridge:

Hungarian partridge, or "huns" as they are commonly known, are distributed over a large part of the state, chiefly east of the summit of the Cascade Mountains. From an extreme low, reached some time between 1930 and 1935, they have shown gradual improvement with considerable acceleration of increase in the past two years. In fact, the increase has been so good that it was possible to grant an extended season in 1941 in Okanogan, Chelan, and Douglas counties.

Studies conducted on huns have shown that the percentage taken by hunters is usually rather low and indicate that any great changes in population density are due to natural conditions rather than from the effects of hunting.

Grouse:

Grouse, upon which there is an open season in Washington, include the blue, or sooty grouse, ruffed grouse, and the Franklin's grouse, or fool hen. The seasons for the past two years have been four days in extent, with a limit of three birds, not more than one of which could be a ruffed or Franklin grouse. Although the grouse populations are not large it has been found that they are subject to natural "die offs", so that a small harvest can be taken annually without materially affecting the general population levels. Sage grouse and sharptailed grouse are also found in Washington but they are protected by a continued closed season.

Chukar Partridge:

The chukar partridge, a game bird recently introduced from southern Asia, has been propagated by the Game Department for four years. Substantial releases have been made for three seasons with a total of 1,706 planted during the past biennium.

They seem to be doing well in some of the semi-arid waste lands of eastern Washington, but conclusive evidence of their success is not yet available. Future propagation will be dependent on the success shown by present liberations.

Migratory Game Birds:

Band-tailed pigeons are found throughout western Washington and have been hunted in a September season as established by Federal regulation. Migratory waterfowl seasons are also set by Federal order.

The 1941 Legislature passed two bills setting aside state tide lands in certain areas in Mason and Skagit counties and specifying that they shall be public shooting grounds. The Mason county area was deeded to the Game Department and the other was placed under Game Department management as long as it is utilized as a "Public Shooting Grounds". The Skagit area is now under court litigation to determine what lands were owned by the state. Hunting on these areas is entirely for migratory waterfowl.

GAME FISH

The term "game fish" often confuses anglers. The Game Code of the State of Washington specifically names each species of game fish. Generally speaking, this includes the true trout, some charrs, whitefish, and silver trout. Warm water fish, such as bass, crappie, sunfish, perch, and catfish are also classed as game fish. Salmon, except for the silver trout, are classified as food fish and are subject to regulations of the State Fisheries Department.

Among other duties, the State Game Commission is given authority to regulate the protection and propagation of game fish. To accomplish this, definite management programs have been set up for the various groups of game fish. Such programs result from the combination of applied biological facts and the practical knowledge of the game protectors. Life history and habitat requirements of fishes vary tremendously, even within the same species. For this reason it is necessary to manage the fishery resources in such a way as to provide the best sustained yield with as little confusion as possible in the regulations governing fishing.

Rainbow Trout:

This fish is native to the state of Washington, is widely distributed, and rates as a favorite with sportsmen. It ranks second to silver trout in numbers propagated in state trout hatcheries. A total of 26,070,640 rainbow fry and fingerlings was released during the past biennium. Fingerlings are planted in lakes and streams where the larger sized fish are needed to meet competition with other species. Many of the lakes receiving fingerlings have no natural reproduction, and fishing is maintained only by planted fish. Rainbow fry are packed into high lakes and high stream systems where they have a chance to grow under natural conditions before dropping down into the larger streams. Rainbow eggs placed in the hatcheries are from selected strains of fast growing, hardy fish. Since growth rates are known at the different hatcheries, the Department is able to plan egg allotments assuring optimum planting conditions. This has been worked out to a point where some of the warmer water hatcheries are now able to produce a double output each year of three-inch to five-inch fish.

Steelhead Trout:

In managing game fish resources, the State Game Department combines artificial propagation with protection of natural stocks. Hatchery-reared steelhead are used to rebuild depleted runs or year groups. As a result of this management, plantings are localized in areas of greatest necessity. With increasing industrialization in Washington, the problem of maintaining habitable stream systems becomes more acute. This problem is met by working on the control of pollution, by making recommendations on water right permits, the removal of stream barriers, the screening of diversions, and by maintenance of fish ladders. During the past biennium 6,310,192 fry and fingerling steelhead were planted in Washington streams.

Through the application of life history studies, steelhead seasons were set with two primary objectives in mind. First, the escapement of adequate spawning adults. Second, the escapement of sufficient immature steelhead

to assure future returns of adult fish. Steelhead are planted only in streams where the fish have access to salt water.

Silver Trout:

The silver trout is without doubt the most intensively fished lake species in Washington. It depends almost entirely on artificial propagation for its maintenance. During the past biennium 60,877,672 silver trout were planted in Washington lakes. The requirements of this fish differ greatly from other species, and it is most practical to plant them as newly-healed fry. It will be noted from the table of fish liberated, that there were 21,000,000 more silvers planted in 1941 than in 1940. This is one example where numbers may be confusing, and actually hide the real trend of a program. The 1941 rainbow planting increase was over 2,500,000 fish, a number relatively small, compared with the silver trout increase. The enlarged rainbow program was mainly the result of expanded rearing facilities, and in actual poundage means much more than the silver trout expansion. Twelve six-inch rainbows weigh a pound, while it takes about 3,000 silver trout fry to weigh the same. To further illustrate the economical nature of a silver trout program, it should be pointed out that silver trout eggs are secured by the Department at an average cost of about one-fourth the purchase price of rainbow eggs.

Feeding mainly on microscopic forms, silver trout are considered non-competitive with other species. They require lakes with thermal stratification and sufficient oxygen in the lower, cooler depths. Only lakes of this nature are planted. The number planted depends directly upon the number of eggs collected at spawning stations. The runs of mature fish vary from year to year, hence the prorated plantings fluctuate accordingly in the recognized silver trout lakes.

Often overlooked is the fact that silver trout fishing takes a great deal of pressure off streams and other types of waters in which it is more difficult and more expensive to maintain good fishing. This fish ranks as a favorite for food, is gamey, and provides sport for the family and those unable to stand the rigors of harder types of fishing.

Through actual catch records maintained at Lake Cushman in Mason County and Rimrock Lake in Yakima County, it was found that in one season over 101,000 silvers were taken from these two lakes alone. When one stops to consider the many excellent silver trout lakes in the state, some idea may be gained as to the importance of this fishery. In addition to supplying fishing for vast numbers of sportsmen, the silver trout have aided general fish-management work by allowing full utilization of all waters and by spreading fishing intensity, rather than concentrating it on the streams and a few true trout lakes.

The majority of silver trout lakes are readily accessible to the public. Now, more than ever before, it is necessary to build them to their utmost production, and in order that war workers and the general fishing public may continue to enjoy this fine type of recreation, the Game Department plans to continue the expansion of its silver trout program. It is indeed fortunate that the silver trout is a fall spawner and may be handled economically without unduly conflicting with the spring spawning rainbow, cutthroat, and steelhead.

Other Trout:

During the past biennium considerable progress has been made in building up brood stocks of local cutthroat strains. It has been found that there is a great variation in kinds of cutthroat, and the best success from artificially propagated fish is obtained by using the local strains. Six west side hatcheries are rearing either native or locally related types of cutthroat, while many of the higher waters of the Cascades are stocked with cutthroat native to Twin Lakes in Chelan county. During the biennium, King's lake in Pend Oreille county, was poisoned to rid it of a large population of coarse fish and was later replanted with native cutthroat. This lake has been closed to fishing, and the Commission plans to maintain it as a permanent source of cutthroat spawn, native to northeastern Washington.

Few changes have been made in methods of handling other game fish. During the past biennium 6,607,277 eastern brook trout were planted. This species finds optimum conditions in certain waters of northeastern and north-central Washington, and is found there in greatest abundance. Being a fall spawner, the eastern brook trout is best protected by early fall closures.

Whitefish have become increasingly popular with Washington sportsmen. During the biennium steps were taken to assure a future abundance of this fish by establishing closures during their spawning season. Five hundred and fifty yearling whitefish were released from a small lot being raised experimentally to determine their response to hatchery diets.

Spiney-Rayed Fish:

Spiney-rayed fish in Washington include bass, crappie, perch, and sunfish groups. Catfish are usually associated with spiney-rayed fishes. This group of fish is recognized as being very important to a large number of anglers.

In an effort to obtain necessary life history information on these groups, a research program was inaugurated during the biennium. Studies were started on age and growth, food habits, environmental factors, relationships between the various species, etc. In connection with this work, forty experimental brush shelters were built in eight lakes for protection of young spiney-rayed fish. This study gave further justification to the reduction of size limit on bass and the removal of size limit on sunfish, which regulations were put into effect by the Game Commission in 1941. This has proved very successful, as anglers have utilized the fish from overstocked lakes, thus relieving the pressure of excessive competition for food.

Bass and perch were also transplanted in suitable waters, where they add to the local fishing. In order to fully utilize our spiney-rayed resources, considerable work is needed on environmental problems and food utilization.

GAME PROTECTION

Game protection is fundamental to any game program, and it is well to remember that there is no halfway point in law enforcement; it must be strict enforcement or respect for law breaks down to where there is practically no protection. If law enforcement were inadequate to protect the stock produced, the development of range, planting of game, and providing feed would be of little value.

Law enforcement does not necessarily mean arrests and convictions. The prevention of a violation is equally as important as apprehending the violator after the act has been committed. The best protector is the one who saves the most game to be harvested in the legal manner. Thus educational game protection is a very important part of the work. Courtesy and absolute fairness are demanded of all Game Department officers, and they are instructed to take into consideration the intent behind the violation when making an arrest.

Revenue from fines is divided equally between the county in which the arrest was made and the state game fund. In 1941 the amount credited to the state from fines amounted to slightly less than 1½% of the total game fund receipts for that year. Thus it is plain that fines as a source of revenue, are of insignificant importance. In fact, this source is never considered from the revenue standpoint but merely as a necessary corrective measure.

Washington's game protection force averages about sixty full time officers who are stationed in districts throughout the state. During the latter part of the biennium the supervision of this force was somewhat de-centralized from the Seattle office by the appointment of regional "Game Protectors in Charge" to direct all the department activities for specific areas. In this way, the state will be divided into eight regions and administration can be accomplished more efficiently.

An additional force of about fifty special deputy protectors is employed each year during the hunting seasons only. They are chosen for their qualifications and character, and usually work in the district in which they reside. The assignment of other regular employees of the Department to protection work during the open season also increases the patrol force.

The fact that law enforcement is the primary function of the protection force does not mean that patrol is their only activity. In reality, time spent exclusively for law enforcement patrol amounts to less than half of the protector's working hours. However, other activities that take the protector around his district also serve the function of patrol, as he is continually on the lookout for law violations. This multiple use of time adds greatly to the efficiency of the work.

The protector is the Game Department's representative in his district and he is in reality the game management agent for that region. All of the many management activities are assigned to the local protector or require his assistance. Some of the more important of these varied activities are enumerated and discussed below:

1. Predator control is an important function of the protection force. During the past biennium they accounted for 6 cougars, 1,407 coyotes, 88 bobcats, 1,731 crows and 6,374 magpies.
2. The work of planting the State's annual output of about 100,000 game birds and 50,000,000 game fish also falls largely to the protectors.

3. Winter feeding of game, chiefly upland and migratory game birds, is an important duty when weather conditions are severe.
4. Beaver management and damage control occupy a considerable part of the time of many officers. One or two members of the force are usually employed continuously on this work. In the past two years a total of 806 beaver were live-trapped and transplanted to new habitat where they will benefit the state.
5. Damage to private property by game animals or game birds is a problem that has increased in importance in recent years and it can be expected to continue as long as game builds up. Work to relieve this problem requires much effort by the field force.
6. In some regions, streams and ponds dry up during the summer months and many game fish would be trapped and die if not removed. It is the protector's work to salvage such fish and transport them to waters where they may grow and produce fishing.
7 Bountying of predatory animals as provided by the Bounty Act of 1935 is another duty of the district game protector. There are many more activities, too numerous to mention here, but altogether they keep the protector's time very full and make his work interesting.

Annual Meeting:

The Game Department annually calls in all of the protection force for a three days' meeting or training school. At this time all problems are discussed and new advancements or changes are explained. This serves to keep the force abreast of scientific advancements that are rapidly developing in this field.

ARTIFICIAL PROPAGATION

The game program of the state may be divided into three principal phases or procedures which are: game protection, artificial propagation, and aids to natural propagation. All phases are necessary to a complete program and should be balanced. Too much emphasis on any one phase is not desirable.

The artificial propagation of the state includes the operation of hatcheries for game fish production and game farms for the rearing of game birds.

GAME FISH PROPAGATION

Washington's modern hatchery system plays a major role in maintaining sport fishing. Not only has it been used to augment the wild stocks of fish, but many new waters have been made productive. Continued expansion and increased efficiency have combined to make the past biennium particularly successful. In looking to the future, the Commission feels that it can best serve the public during the present war emergency by continuing its large propagation program, and by distributing the output in areas most accessible to the public. It is felt that such a policy fits best with present war needs, which call for reduced travel and a greater demand for healthy, close-in, outdoor recreation.

During the past biennium two new hatcheries were built and put into operation, while a third hatchery, started in the previous biennium, was completed. Major improvements were finished at two hatcheries and renovation of the Spokane Hatchery was begun late in the biennium.

New Construction and Hatchery Improvements:

Arlington Hatchery—This unit, located in Snohomish county, was started during the previous biennium and was completed in December, 1940. Facilities include a 96 trough hatchery building with ten intermediate concrete raceways; a battery of twelve circular rearing ponds, forty feet in diameter and six concrete raceways, 10 feet by 120 feet. These may be used either for brood stock or rearing purposes. The Hatchery building is equipped with refrigeration, feed room, office and cold room. Living quarters consist of a superintendent's house, assistant's apartment, and bachelor quarters. A three-car garage, workshop, and considerable storage space complete the building plan.

Ford Hatchery—This hatchery, located in southern Stevens county, was built by the Federal Government, and is operated under lease by the State Game Department. Its function is to provide game fish for Empire Lake and the nearby areas. The hatchery building contains 96 troughs, ten intermediate raceways, refrigeration and cold storage, and an office. In addition, the hatchery building is provided with air conditioning to eliminate ceiling condensation. Rearing facilities include a battery of twelve circular ponds, fifty feet in diameter, and ten cement raceways, 12 feet by 120 feet. The latter are suitable for rearing of fingerlings or for brood stock purposes. Living quarters consist of two houses and one apartment. A three-car garage and storage space complete this large addition to the propagation facilities.

Mossyrock Hatchery—This unit, situated in central Lewis county, was completed this past spring. The 96 trough hatchery building contains the supplementary ten intermediate raceways, cold room and freezing room, feed room, and office. The hatchery building has been insulated to prevent ceiling condensation. A battery of twelve circular forty foot ponds has been completed, and future plans call for the addition of a battery of raceway-type ponds. Living quarters include a superintendent's house and an assistant's apartment. In addition there is garage and storage space.

REPORT OF THE PROTECTION DIVISION

Fines, Arrests, Convictions, etc.

	April 1, 1940, to March 31, 1941	April 1, 1941, to March 31, 1942
Total number of arrests	1,682	1,443
Total number of acquittals	34	35
Total number of convictions	1,630	1,408
Total number of appeals	18	8
Food fish cases included	24	6
Big game cases included	252	187
Jail sentences imposed	5,533	5,350
Jail sentences suspended	4,121	3,447
Fines assessed	$05,218 25	$20,357 00
Fines suspended	22,925 50	23,645 75
Fines collected	12,182 75*	15,520 25*
Fines served out in jail	15,985 50	6,976 00
Fines unpaid	14,121 50	23,215 00
Bail forfeitures	800 50	142 50

* Note—One-half of the fines collected go to the State Game Fund, and one-half to the county in which the arrest is made.

PROTECTION DIVISION

ADMINISTRATION AND GENERAL EXPENDITURES
April 1, 1940, to March 31, 1941—April 1, 1941, to March 31, 1942

	Fiscal Year April 1, 1940, to March 31, 1941		Fiscal Year April 1, 1941, to March 31, 1942*	
Salaries	$88,433 18		$83,075 65	
Private mileage	21,022 80		19,918 05	
State car expense	14,809 90		10,065 23	
Fares	327 20		333 00	
Meals and rooms	6,920 59		6,508 20	
Telephone and telegraph	551 56		543 02	
Postage, freight and express	110 03		104 02	
Ammunition	470 89		432 98	
Boat expense	1,852 14		757 50	
Miscellaneous	1,843 73		2,350 05	
Medical aid	244 92		558 35	
Equipment	365 37		3,208 30	
Purchase new cars	4,413 24		6,470 34	
Totals	$141,475 91	$141,475 91	$134,355 84	$134,355 84
TEMPORARY PROTECTORS				
Salaries	$13,703 14		$7,424 70	
Private mileage	2,183 03		1,241 24	
State car expense	307 63		135 36	
Fares	30 20		40	
Meals and rooms	918 21		414 20	
Telephone and telegraph	2 00		.....	
Postage, freight and express	4 03		.....	
Boat expense	1 20		1 00	
Miscellaneous	27 30		7 30	
Medical aid	.....		18 20	
Totals	$17,364 21	17,364 21	$9,242 78	9,242 78
	.....	$158,840 12	.....	$143,598 62

* Figures cover eleven months only as March expenditures appear as April business.

STATE TROUT HATCHERIES

	HATCHERY	Troughs	Intermediate Troughs	Ponds 40′ Circular	Ponds Raceways	Ponds Brood	Supt. House	Asst. House	Garage	Store-room	Refrig-eration
1	Aberdeen	48		10			1	1	1	1	
2	Arlington	96	10-9′×32′	12	9-10′×100′		1	1	1	1	35 ton
3	Bellingham	48		10			1		1	1	
4	Chelan	96	10	10			1		1	1	5 ton
5	Colville	68			2-4′×30′		1		1	1	
6	Chiwaukum	72	12-2′×16′ wood	1			1		1		
7	Ford	96	10	12	10-12′×120′		1	1	1	1	35 ton
8	Goldendale	48	24-2′×16′ wood		6-15′×140′		1			1	30 ton
9	Lake Crescent	45		2			1		1	1	
10	Lake Whatcom	80					1		1	1	
11	Mossyrock	96	10	12			1	1	1	1	35 ton
12	Naches	34			6-4′×120′ (11 rock wall raceways)		1		1		
13	Pend Oreille	54			4-4′×20′ 1-6′×20′	1 dirt	1		1	1	30 ton
14	San Poil	48			2-6′×10′		1		1	1	
15	Seward Park			20			1	1	2	1	
16	Spokane	96	10	16 10-20′ circular		1 dirt	1	2	2	2	30 ton
17	South Tacoma	102	12	12	6-6′×40′ 2-12′×125′	1 dirt	1	1	1	1	5 ton
18	Tokul Creek	96	2-2′×16′wood	2	5 concrete	2 rock	1	2	1	1	1 sm. box
19	Vancouver	96	2-2′×16′wood	12		1 dirt 1 concrete	1	1	1	1	40 ton
20	Walla Walla	48	4-4′×45′	3-28′circular			1		1	1	
21	Yakima	96		10		3 dirt	1	1	1	1	40 ton

Egg Sources:

Roughly there are two sources of available eggs. Spawn is obtained either from wild stock or domestic stock. The Game Department relies on wild stock for silver trout, eastern brook, and steelhead trout eggs.

Cutthroat eggs are obtained from both wild and domestic stocks. At the present time considerable work is being done in building brood stock strains of cutthroat that are faster growing and more adaptable for hatchery purposes. Such work is necessarily slow, but progress has been shown by substantial plantings of domestic cutthroat made during the past year.

Rainbow eggs are obtained chiefly from domestic stocks which have proved hardier, faster growing, and more adaptable in the varied types of waters in which they are planted. Seventy-one per cent of the 1941 rainbow eggs were purchased from dealers.

Following is a list of permanent spawn-taking stations operated during the biennium for the purpose of collecting wild eggs:

Chelan Twin Lakes	Cutthroat
Dompka Lake	Rainbow
Owhi Lake	Eastern Brook
Packwood Lake	Rainbow
Walupt Lake	Rainbow

The following hatcheries operated temporary wild trout egg collecting stations during the biennium:

Arlington	Silver Trout
Bellingham	Cutthroat and Silver Trout
Chelan	Silver Trout
Colville	Silver Trout
Lake Crescent	Cutthroat and Crescentii
Lake Whatcom	Silver Trout and Cutthroat
Pend Oreille	Silver Trout, Eastern Brook and Rainbow
San Poil	Rainbow
South Tacoma	Steelhead and Cutthroat
Tokul Creek	Steelhead and Silver Trout

Outstanding among these were Lake Chelan, which in the fall of 1941 furnished 18,307,444 silver trout eggs, and Lake Whatcom, which furnished 20,315,290.

Brood stock is maintained by the State Game Department for definite purposes. Primary consideration is given to production of quality fish. This necessitates strict culling, thereby reducing the total quantity of eggs produced. Should commercial egg markets be cut off, the total output could be greatly increased, and the fingerling production could be continued. The maintenance of brood stock by the State assists in stabilizing market prices at fair levels, and eliminates much of the danger of price control on domestic strains. The following table lists the species of brood stock and number of eggs handled at state trout hatcheries:

HATCHERIES MAINTAINING BROOD STOCK AND NUMBER OF EGGS TAKEN

HATCHERY	Date	Number of Rainbow Eggs	Number of Cutthroat Eggs
Arlington	1940	.....	.....
	1941	7,122	.....
Goldendale	1940	80,270	.....
	1941	566,780	.....
Naches	1940	.....	.....
	1941	.....	180,792
Pend Oreille	1940	.....	77,997
	1941	.....	21,891
South Tacoma	1940	541,464	.....
	1941	1,395,197	.....
Spokane	1940	129,522	.....
	1941	219,674	.....
Tokul Creek	1940	334,285	.....
	1941	775,125	.....
Vancouver	1940	.....	922,135
	1941	.....	839,282
Yakima	1940	1,862,488	110,352
	1941	1,649,402	.....*

* Note—Cutthroat brood stock transferred to Naches.

RECAPITULATION OF EGGS HANDLED AT STATE TROUT HATCHERIES

Fiscal Year 1940-1941

YEAR	Cutthroat	Rainbow	Silver Trout	Steelhead*	Eastern Brook	Crescentli	Black Spotted
1940	2,607,852	23,000,205	30,004,041	4,800,335	16,646,100	26,136	.....
1941	3,705,209	23,484,517	55,864,614	2,250,662	2,803,176	9,500	250,008

* Includes steelhead taken for the Game Department by the State Fisheries Department.

Note—This table includes the following eggs, which were purchased:
1,755,570 Cutthroat
35,337,538 Rainbow
10,621,922 Silver Trout

The general technique of hatching and rearing trout varies but little with different species. Fish eggs, like chicken eggs, require a definite number of heat units to hatch. At a fifty degree temperature most trout eggs hatch in about fifty days. At this temperature the eggs are in a critical formative period for about the first three weeks, and should be disturbed as little as possible. When the eyes are clearly visible in the eggs, they may be transported with little loss. After hatching, the fry remain on the bottom of the troughs, and depend for food on the yolk sac with which they are born. Once this is absorbed, the fry begin actively swimming and feeding. As they grow very rapidly, it is necessary to keep thinning them to prevent overcrowding. After they have become accustomed to hatchery feeding, they are placed in the larger intermediate troughs. This gives them more room, and they usually remain here until they are about two inches in length. They are then removed to the rearing ponds, where they remain until planted.

Three fundamentals stressed in connection with the operation of state trout hatcheries are:

1. Sanitation
2. Feed, kinds and amounts
3. Sorting of fish

Sanitation is particularly important, as the large numbers of fish in close confinement increase the possibilities of epidemic diseases.

Feed is carefully watched to insure proper amounts of balanced diets. Fish, like other animals, have definite vitamin requirements which must be met. At the same time food costs are carefully watched. In order to utilize feeds in the most efficient manner, tests must be continued to develop new and better diets. Sharply increased prices of meat ingredients during the biennium have been due to a greater demand for these products by an increasing number of consumers.

Too much emphasis cannot be placed on the importance of continuous sizing and sorting of fish. This work comprises a major hatchery activity, and does much to eliminate expensive cannibalism, thus providing for more efficient food utilization. The following table gives a summary of food costs in recent years and shows the great volume required for the hatchery program:

FISH FEED DATA

YEAR	Poundage Fed	Cost of Feed	Cost Per Pound
1932	199,000	$9,320.00	9.3¢
1934	119,467	10,700.00	10.5¢
1935	206,172	14,200.00	7.0¢
1936	417,741	20,100.00	5.0¢
1937	297,250	13,800.00	4.5¢
1938	423,085	15,900.00	3.8¢
1939	328,000	12,200.00	4.0¢
1940	525,505	19,815.00	3.8¢
1941	585,427	22,723.00	3.9¢

NOTE: In spite of rising meat prices, food costs per pound were kept low through the use of spawned-out silver trout and condemned fish. In 1941, 115,993 pounds of such feed were used, the cost of which consisted mainly of handling and storage fees.

DIVERSIFIED PLANTING METHODS

The planting of fish represents the final step before they begin their existence in public fishing waters. It is the culmination of months of effort, and its degree of success may either make or break a propagation program. Fully aware of this, the Game Department has made every effort to have the most modern and well-balanced type of planting equipment available.

Pack String Plantings and Equipment:

A step in achieving this balance was made in the spring of 1940 when twelve young mules, acquired by the Game Department, were first used in the planting of fish in more remote areas. The twenty gallon cans used by the mule string were specially designed by the Game Department and built by National Youth Administration students. During 1940 the mules were operated as two strings, working in different areas. In 1941 the number was increased to eighteen mules. During the two seasons 6,480,071 fry and finger-

lings were planted by this method. Liberations were made both in streams and lakes and waters were stocked which had previously received only occasional spot plants. In planting streams, the pack strings were able to scatter the fish at various points rather than bunching them in one spot. This procedure is very advantageous, as the fish are given a better opportunity to secure food and shelter. Large plantings in one area draw all of the natural enemies in the vicinity, thereby greatly reducing the survival.

The importance of stream plantings of this nature may be overlooked by the casual observer, who seldom visits this type of stream—small, remote, and hard to reach. Nevertheless, it is this water that mature trout seek for spawning purposes. Depletion of mature fish means fewer young ones coming up to replace them. Plantings of small trout directly into larger streams have not proved very successful, as the fish are put into an unnatural environment. Thus the pack plantings duplicate natural conditions and provide for a more complete utilization of the water systems.

MULE STRING PACK PLANTS

Year	*Rainbow*	*Cutthroat*	*Steelhead*
1940	2,107,833	159,746	
1941	3,681,159	486,023	45,310

REPORT OF GAME FISH LIBERATED BY DEPARTMENT OF GAME
April 1, 1940, to March 31, 1941

COUNTY	Black Spotted	Crescentil	Cutthroat	Eastern Brook	Rainbow	Silver	Steelhead*	Total
Adams				49,980	7,981			57,970
Asotin					98,788			98,788
Benton								
Chelan			201,053	69,450	911,337	2,506,452		3,718,292
Clallam		17,580	36,400	24,980	482,193	237,704	394,063	1,192,920
Clark			10,000		368,580	1,296,281	21,135	1,695,996
Columbia					200,097			200,097
Cowlitz			12,995		386,406			399,401
Douglas					23,939			23,939
Ferry				1,434,289	439,171	205,850		2,079,310
Franklin					15,000			15,000
Garfield					67,109			67,109
Grant				24,995	108,505	349,980		483,480
Grays Harbor					210,307		360,484	570,791
Island					40,000	75,000		115,000
Jefferson				8,200	104,580			112,780
King			13,021	113,304	1,097,743	806,510	1,057,459	3,088,037
Kitsap				12,727	18,550			31,277
Kittitas			96,750	146,979	895,470	99,800		1,238,999
Klickitat					238,640	505,363		744,003
Lewis				15,264	885,920		14,563	915,747
Lincoln				74,945	61,918			136,863
Mason			13,031	29,082	281,535	896,497		1,221,645
Okanogan			29,800	1,141,606	902,034	549,565		2,213,215
Pacific					54,971		366,935	421,906
Pend Oreille			5,210	608,295	500,891	1,656,865		2,870,201
Pierce					129,760	1,208,641	523,799	1,862,200
San Juan					30,075	387,905		419,980
Skagit				103,000	245,106	80,650	882,475	2,100,231
Skamania			180,9330	41,025	632,994		72,948	876,966
Snohomish				180,053	764,457	1,833,425	26,038	2,804,013
Spokane	1,507			274,853	204,600			481,959
Stevens				177,080	660,431	1,651,915		2,489,426
Thurston					61,570	499,575		561,145
Wahkiakum					134,539			134,539
Walla Walla					81,478			81,478
Whatcom			78,280	58,800	466,585	2,965,485	12,400	3,581,550
Whitman				50,000				50,000
Yakima			57,470	149,982	354,255	1,207,710		1,769,417
Totals	1,507	17,580	745,359	4,879,028	11,765,567	19,805,743	3,643,199	40,948,973

* Includes steelhead reared by the State Fisheries Department and planted by the State Game Department.
† Includes 23,300 eyed eggs.

REPORT OF GAME FISH LIBERATED BY DEPARTMENT OF GAME
April 1, 1941, to March 31, 1942

COUNTY	Black Spotted	Crescentii	Cutthroat	Eastern Brook	Rainbow	Silvers	Steelhead*	White Fish	Total
Adams					14,807				14,807
Asotin					208,120				208,120
Benton									
Chelan	12,470		572,661	223,681	856,057	5,092,451			6,697,320
Clallam		17,990	50,500	35,940	444,338	482,642	150,855		1,182,350
Clark			34,189		294,288	701,884	47,189		1,077,550
Columbia					559,427				559,427
Cowlitz			8,000		316,836		25,921		350,757
Douglas				9,002	32,998				42,000
Ferry			55,715	102,224	110,226	1,095,705			1,423,870
Franklin					12,495				12,495
Garfield					93,119				93,119
Grant					85,500	99,965			185,565
Grays Harbor					181,521		38,204		219,725
Island			2,702						2,702
Jefferson				57,100	216,130				273,530
King			40,109	10,700	1,432,064	5,306,146	885,786		7,684,805
Kitsap					173,256				173,256
Kittitas			151,398	175,745	1,064,121	1,644,575			3,035,841
Klickitat					325,773	285,680			609,453
Lewis			24,980		940,478		90,244		1,055,702
Lincoln					47,909				47,909
Mason			22,012	104,183	318,944	1,032,847			1,477,986
Okanogan	188,730		22,700	267,626	654,316	1,068,075			2,201,447
Pacific					96,319				96,319
Pend Oreille	17,910		287,350	227,270	396,117	2,481,065			3,409,721
Pierce			25,000		254,140	2,380,800	237,918		2,906,858
San Juan					10,123	186,500			196,623
Skagit			162,190		515,210	1,185,330	714,021		2,577,521
Skamania			85,781		599,661				685,442
Snohomish			50,405		1,427,390	2,317,190	182,984		3,977,915
Spokane					156,888	3,100,034			3,256,922
Stevens			181,808	191,500	263,853	2,006,100			2,743,441
Thurston			15,894		243,027	408,750	22,405		750,076
Wahkiakum					70,067				70,067
Walla Walla					198,757				198,757
Whatcom			81,567	85,698	452,892	5,282,035	270,376		6,172,568
Whitman					4,325				4,325
Yakima			54,650	95,300	1,175,518	4,725,145		550	6,051,163
Totals	219,110	17,990	1,839,510	1,727,349	14,395,073	40,981,929	2,666,993	550	61,788,504

* Includes steelhead reared by The Department of Fisheries and planted by The State Game Department.

High lakes are included in the pack string planting program, but due to shorter growing seasons at the higher elevations and less fishing intensity, this work must be considered of secondary importance, and only occasional plantings are needed to maintain fishing in these lakes. In managing these waters care must be used to avoid overstocking, a condition which occasionally occurs. Problems connected with high lake management are secondary to stream problems, and to date have not proved very serious.

Increased Fleet of Planting Trucks:

During the biennium three 500 gallon planting tanks, complete with circulating equipment, were added to the fleet being operated by the Game Department. Fundamentally these tanks are the same as previous ones built by the Department, although they have several improvements in design and construction, such as flat pump intake screens, self-priming pumps, all metal covers, pressure gauges, etc.

The increase in planting equipment was necessitated by the greatly expanded fingerling output of the hatcheries. This equipment is kept at the major hatcheries, eliminating extra mileage between stations.

By far the largest percentage of fingerling fish is planted by means of tank trucks. In planting streams the protector or biologist first tempers the fish if the haul has been long with a heavy load. This assures the fish a gradual acclimation to their new water conditions. If temperature differences are extreme, the fish are tempered even on short trips. As the planting truck travels along the stream course, fish are dipped out of the tank and placed in desirable locations, thus giving all possible advantages to the fish.

In planting large lakes where roads follow the shore line, much the same technique is used. Small trout are usually planted in the lake's tributaries. Small accessible lakes are often planted by means of hose connections with the tank. This is fast and experience has shown that the fish are soon distributed over the entire lake.

At the present time the Game Department's planting tanks that are equipped with motors and circulating pumps, consist of:

1—800 gal. tank truck
8—500 gal. tanks
1—200 gal. tank

Miscellaneous Planting Equipment:

In 1941 a 200 gallon tank was designed by one of the game protectors and was built for handling plants of fry and small fingerlings. This tank can readily be slipped in and out of pickup trucks, and is equipped with an electrically driven pump which circulates the water. Its operations were considered quite successful and more will be built when materials are available.

A special boat planting tank was put into use on Lake Chelan. This was built to meet the problem of a large lake with only a small part of the shore line accessible to planting trucks.

The importance of silver trout has already been discussed, but because of their habits and small size when liberated, special planting methods must be used. During the biennium a planting boat was built and operated. This is collapsible and can be carried easily. The sides are screened, which allows a good circulation of water and prevents the fry from "balling up." The planting boat is towed to the desired areas where the fish are released by dipping or by unhinging a side.

It should be pointed out that there was a large increase in the number of fingerlings planted during the past season. The three principal species reared to fingerling size are rainbow, cutthroat and steelhead, although some eastern brook are also handled as fingerlings. The 1941 rainbow program was increased by more than two and one-half million fish over the previous year, and the cutthroat program was more than doubled. The steelhead fry program was reduced as it is felt that optimum utilization of this species is obtained from large fingerlings which have a highly increased survival rate. It is planned to continue the expansion of the steelhead rearing program. Eastern brook trout are mainly handled as fry. This program was materially reduced in 1941, the fish being utilized in local areas where they have shown the best returns. Holding eastern brook trout for better size and planting conditions has necessitated a reduction in the number handled. It is felt that this will be more than offset by the increased survival of the larger fish.

In line with conservation measures, planting policies will emphasize liberating the hatchery products in areas most accessible to the public, and every effort will be made to maintain the propagation program along the above lines.

BIOLOGICAL ASPECTS OF GAME FISH MANAGEMENT

Prior to the application of scientific facts to game fish management, conservation was of necessity limited to trial and error methods. This relatively new field of applied science has been rapidly displacing many of the older procedures. The biologist's work covers the study of all phases of artificial and natural propagation.

Hatchery work of biologists pertains to nutrition, diseases, economy of operation, brood stock studies, and the many related problems.

The biologist's field work is too diversified to be fully covered in this report. A few of the major studies carried on during the biennium involved lake and stream surveys, life history studies, catch statistics, survival studies, fishway and diversion problems, population studies, lake and stream improvement, food studies and many others.

As a result of these studies, information is being acquired which is incorporated into management policies. Dividends are paid in the form of better utilization of resources for the sportsmen of today and the assurance of a supply for the sportsmen of tomorrow.

STATE TROUT HATCHERIES

ADMINISTRATION AND GENERAL EXPENDITURES

April 1, 1940, to March 31, 1941—April 1, 1941, to March 31, 1942

	April 1, 1940, to March 31, 1941	April 1, 1941, to March 31, 1942*
Salaries—Egg taking	$1,451 59	$1,143 23
Salaries	55,732 46	58,388 41
State car expense	4,386 13	3,205 99
Private mileage	746 52	1,103 06
Fares	129 02	86 80
Meals and rooms	1,298 87	916 32
Telephone and telegraph	587 70	544 77
Freight and express	178 65	280 33
Light, heat and water	2,904 39	3,296 52
Slicker coats, pants and boots	267 57	475 24
Equipment and small tools	1,552 01	2,779 94
Repairs—Hatcheries	1,502 22	2,741 70
Medical aid	116 30	91 83
Medicine	41 71	68 39
Feed†	25,397 57	28,725 08
Expenses incidental to feed storage	403 56	376 34
Purchase eggs	19,781 62	19,198 47
Seeds and lawn expense	206 01	250 13
Miscellaneous	823 49	1,270 84
New equipment	1,010 87	2,456 24
Purchase horses and mules	1,229 10	125 00
Purchase new trucks	4,874 79	5,073 85
Totals	$124,512 24	$132,568 37

† Includes storage on feed, and feed in hatchery cold storage units.
* Figures cover eleven months only as March expenditures appear as April business.

STATE GAME FARMS—ADMINISTRATION AND GENERAL EXPENDITURES

April 1, 1940, to March 31, 1941—April 1, 1941, to March 31, 1942

	Fiscal Year April 1, 1940, to March 31, 1941		Fiscal Year April 1, 1941, to March 31, 1942*	
Salaries and wages	$23,675 91		$23,220 95	
State car expense	2,880 11		2,211 69	
Purchase new cars	2,544 30		1,467 60	
Private mileage	321 06		335 84	
Fares—Railroad, boat and stage	106 95		78 49	
Meals and rooms	964 88		837 86	
Telephone and telegraph	410 29		342 94	
Postage, freight and express	160 47		81 15	
Rent of land	1,275 00		375 00	
Medical aid	200 56		458 11	
Light, heat and water	2,287 20		2,097 69	
Groceries and kitchen supplies	1,560 41		1,324 83	
Repairs pens and buildings	846 29		2,100 69	
Ammunition for vermin control	137 21		46 36	
Feed for birds	32,756 60		22,757 84	
Feed for animals	518 55		683 46	
Purchase birds 4-H Club	7,184 25		7,395 00	
Purchase game bird eggs	171 97		394 04	
Purchase hens	7,472 75		6,358 00	
Seeds and plowing	1,298 90		577 20	
Drugs and chemicals	717 37		200 74	
Small tools and equipment	924 18		944 30	
Brails	717 66		146 93	
Purchase new equipment	1,431 23		120 62	
Miscellaneous	508 57		1,115 74	
Totals		$101,853 72		$85,593 47
Less credit for broody hens sold at close of rearing season		$3,657 16		$3,901 28
Less credit for sale of sacks		$200 05		$110 00

* Figures cover eleven months only as March expenditures appear as April business.

ARTIFICIAL PROPAGATION OF GAME BIRDS

The Game Department operates nine game farms for raising Chinese pheasants. They are distributed about the state as follows:

STATE GAME BIRD FARMS

Auburn	King county
Colville	Stevens county
Ellensburg	Kittitas county
Kennewick	Benton county
Okanogan	Okanogan county
South Tacoma	Pierce county
Spokane	Spokane county
Walla Walla	Walla Walla county
Yakima	Yakima county
Chukar	Yakima county

From these farms there were liberated 99,357 pheasants in 1940, and 95,736 in 1941, making a total of 195,093 for the biennium, all these birds being more than ten weeks of age.

The farms are all of the "range" or "open field" type, the birds being held and reared in large fields fenced only on the sides with eight foot wire netting. They are kept from flying out of these fields by attaching a small strap, known as a "brail," to one wing which limits their flight. The birds are rebrailed at intervals of three to four months when the strap is moved to the opposite wing to eliminate any possibility of unequal muscular development.

Four of the farms are completely electrified, using only incubators and brooders for hatching and rearing. The other five farms employ the older method of using domestic chickens as foster mothers for hatching and during the early rearing period. Both systems have their advantages but recent trends have been toward the mechanical method. However, there are still a number of problems in this system that will have to be overcome before the hens are entirely replaced.

The majority of the cocks are planted in late July and August at the age of from ten to twelve weeks to make room for the holding of a maximum number of hens. In 1940 another planting, consisting chiefly of hens, was made in November, after the hunting season, which reduced the number of birds to the winter carrying capacity of the farms. With the straight cock season in 1941 the November plant was eliminated and these birds were added to the regular summer planting. This amounted to a liberation of about 60% of the birds in the summer and about 40% being held until the following spring. Those retained through the winter are held at a ratio of one cock to five hens. Brood stock, numbering approximately 13,000, is selected from this 40% and the birds remaining are released in March. When the required number of eggs is obtained, the brood stock is planted out. The hens are still laying heavily when released and some of them are able to rear a small brood in the wild.

Game farms have ten regular employees, the superintendents, who are augmented with a force of about forty part time employees during the hatching and rearing season.

Feed and labor costs amount to about 60¢ each for twelve weeks old birds but over all costs of farm maintenance, brood stock, and winter holding bring the average cost to approximately $1.00 each for all birds liberated.

4-H Club Cooperative Program:

The Game Commission's program of cooperation with 4-H Clubs in the rearing of Chinese pheasants was continued during the biennium. The Game Department furnishes eggs to club members and pays 75¢ for each healthy bird raised to ten weeks of age. The entire program is supervised by the State College Extension Service and their County Agricultural Agents. The Extension Service representative requests all eggs for the state and designates the counties to which they are to be sent. The County Agents of these counties distribute the eggs among the club members and give advice on the care of the birds. The excellent work of County Agents has resulted in a steady rise in the percentage of returns secured from eggs delivered. When the birds are ten weeks of age they are released under the supervision of the local game protector.

Although the cost of these birds is slightly higher than those of a similar age produced on the State Game Farms, the educational value to the young people of the state more than makes up the difference. There were 9,579 birds delivered by this program in 1940 and 9,740 in 1941, or a total of 19,319.

Sportsmen Cooperation

The 4-H Club members are the only individuals paid for raising pheasants and the state does not purchase any birds from private breeders. However, sportsmen or other interested individuals who wish to raise pheasants for pleasure and release them may secure eggs from the Game Department. Birds raised in this way numbered 177 during the biennium.

Chukar Partridge Farm

One state farm located adjacent to the Yakima game farm was operated entirely for the production of the chukar partridge. In the past two years 1706 of these birds were reared and released within the state.

AIDS TO NATURAL PROPAGATION

Game reproduced in the wild, or naturally propagated game, originally was the only type present and must still furnish much of the sportsman's bag. Any program of artificial propagation must be considered only as a supplement to natural propagation. With this idea in mind, a coordinated program is being developed whereby field conditions will be made more favorable for the wild game and at the same time increase the survival of artificially propagated species that have been released to supplement native stocks.

The two programs must be balanced with the emphasis so placed that the greatest possible amount of game and fish can be provided at the most economical cost per unit.

Pheasant Management

A study of the wild propagation of pheasants and the development of means to improve their reproduction have received major consideration during the past biennium. It has consisted of a three years' study which started late in 1939 and is about completed at the present time. This study has thrown much light on what actually happens to birds in the wild, why they do not reproduce faster, and what happens to many planted birds. Most of the work was done in Whitman County, with a lesser amount in Yakima

county for comparisons. It was found that nest loss and juvenile mortality resulting from poor habitat were the greatest factors in holding down any increase. Over 50% of all nests started were destroyed before hatching, and almost 50% of the birds hatched died before reaching maturity. Average production did not exceed 3.5 young raised in a season for each adult female bird. Many factors were found to be responsible for this poor production, but they center chiefly around farming activities and land use, mowing, burning, plowing and grazing taking the heaviest toll, both of nests and young birds.

To bolster natural production and get value from birds planted, it was necessary that something be done to remedy this situation. Planting of brood stock is of no avail, if it cannot reproduce successfully in the wild. The program inaugurated to aid natural propagation of pheasants is of two phases. One is the state-wide wildlife restoration project to acquire small plots of land to be developed exclusively for pheasant production. They are called "seed stock refuges" and are designed to furnish a safe winter and nesting area for many wild birds and planted brood stock birds. Similar results are expected from cooperative projects with the Soil Conservation Service. The other program for improving conditions for birds is one of advice and cooperation with all land holders who are interested in improving habitat for game. All this work was inaugurated very late in the biennium and very little in the way of actual accomplishments can be shown at this time.

Refuges and Reserves

Another phase of the improvement of natural propagation of game is found in the establishment of refuges and game reserves. The term "refuge" applies to the areas being acquired under the cooperative Federal Wildlife Restoration program, such as deer and elk refuges and pheasant areas. On these lands habitat is being improved to make living conditions better for all types of wildlife.

Game reserves are merely areas closed to hunting and are not owned by the state. Thus there is very little that the Game Department can do to increase the carrying capacity of these areas. However, their function is to protect birds and animals during the open hunting season. They are established in heavily hunted areas to assure that sufficient seed stock will be left after the season to spread and to supply the surrounding ranges. The reserves for deer guarantee that there will be sufficient bucks left after the season to breed the does. Both refuges and reserves have their places in assisting the wild propagation of game.

Predator Control

Under primitive conditions, predators harvested the entire surplus from the game crop and a very delicate balance existed between the two. With man now managing the game populations, harvesting the surplus and keeping stocks at high levels, it is absolutely necessary that predators be controlled. Such control in Washington is carried on by the state game protection force, U. S. Fish and Wildlife Service predatory animal hunters, and a state bounty system.

Bounty was established by an act of the 1935 Legislature which placed a 50¢ Big Game Seal fee on the hunting of large game animals in the state. The money collected is paid out in bounties on coyotes, bobcats, and cougar. Strict rules, including a clause requiring a permit for each bounty hunter.

are set up in the act to prevent fraud, and the entire administration is delegated to the Director of Game. The amount of bounty paid has been changed several times by the Legislature and now stands at $50 for each cougar, $5 for each bobcat, $5 for each adult coyote and $1 for each coyote pup. Bounty payments for the biennium are shown in tables on pages 39 and 40.

Aids to Natural Propagation of Fish

There are many phases of aids to natural propagation. Some are better known than others, but all are important. Primary consideration must be given to keeping our lakes and streams suitable for the production of fish and related forms. Natural propagation would fail and artificial propagation would be of no avail, if suitable habitat could not be provided.

The mild winters of 1940 and 1941 left very little snow in the mountain areas to provide run-off water during the summer months and as a result many streams reached critical points in regard to low flows and high temperatures. Lowering water tables created a greater demand for water diversions. Applications for such diversions were carefully checked by the Game Department in cooperation with the Fisheries Department, and recommendations were made in accordance with the best interests of fish and other aquatic forms. Such recommendations were based on measurements of stream flows, and the types of screening necessary to prevent the loss of fish. When diversions necessitated the building of dams, fishways were specified.

Screening Program

The past biennium has seen a continuation of the cooperative screening program of the State Department of Fisheries and the State Department of Game. This highly valuable aid to natural propagation has resulted in the saving of untold numbers of salmon and game fish.

Largest single installation completed was the Tumwater fish screening and fish ladder project in Chelan county. The two power driven screens are twenty-two feet deep, have internal sprays, and surface and bottom by-pass returns. At this same point, a modern multiple entrance fishway was constructed of natural stone, thus opening the upper Wenatchee River for the first time in many years to the unhampered migration of both upstream and downstream fish.

All the Entiat River screens in Chelan county were placed in operation and a new fishway was nearly completed at the Harris Mill Dam. Fishways were built into the low head dams of the Entiat Irrigation District and the Puget Sound Power & Light diversion. These projects have opened the entire Entiat River to free upstream and downstream migration.

In Southeastern Washington ten units in the Walla Walla River have been installed and operated throughout the year.

The Tucannon Valley project in Columbia county was carried on, and all screens and sections were completed and ready for installation during the summer of 1942.

In the Methow River in Okanogan county twenty screens were completed and operated for the first time. Additional screens for the remaining ditches have been built but not installed, as Works Progress Administration laborers used in this construction have not been available in sufficient numbers.

Early in 1942, all W. P. A. projects used in stream improvement were withdrawn, owing to the need of labor in war industry. The Chewack Fork and main river have been completed, as screening diversions and part of the South Fork diversions have been screened.

In the Yakima area work has gone forward with the use of National Youth Administration assistance in the fabrication of the screens for the Southeastern area. Three new fishways were constructed by W. P. A. assistance, and placed in operation in 1940 on the Horn Rapids Dam below Prosser. These will be of material assistance in the passing of upstream migratory fish.

Due to the curtailment of W. P. A. labor, an entirely new cooperative agreement was entered into between the State Game Commission and the Department of Fisheries, under the terms of which the Game Commission appropriated $7,500.00 for the continuation of the stream improvement program generally throughout the state without the assistance of W. P. A. labor.

The scarcity of steel required in making screens, and to some extent a shortage of other strategic materials, will curtail the stream improvement program materially, but the program will proceed as rapidly as possible under present war restrictions.

The Game Department is continuing its work in abolishing obsolete dams, which constitute a menace to migratory fish. Of utmost importance to sportsmen was the removal of the Cottrell dam on the lower Washougal River in Clark county late in the biennium, and the securing of a court order for the maintenance of adequate ladders on the upper dam. At the present time, natural and man-made barriers are being listed as part of a stream survey being conducted by the Biological Division, as it is believed this work will be of great assistance in maintaining and increasing our runs of migratory fish.

During the biennium, 806 beaver were live trapped in areas where they had become a nuisance, and were moved into carefully selected districts, where they could cause no damage, but instead would be very beneficial. These animals are aiding natural propagation by checking run-off flows and erosion, and are generally providing a better habitat for both fish and game.

Brush shelters were built in several lakes by the Game Department, and were designed for the protection of small spiney-rayed fish. In several cases, men who operate camps and resorts, have cooperated by building shelters. Such type of work contributes greatly to the success of natural propagation, but should be done only under the supervision of trained men acquainted with local problems.

BIOLOGICAL RESEARCH

Scientific research is a necessary and very important part of the present game program. Many problems are still unsolved and new problems are steadily being presented as a result of changing conditions. Actual facts and figures are necessary to keep the guess work out of game administration.

An average of about eight biologists have been working on special problems during the biennium. Fish research is largely carried on at the Game Department's laboratory at the University of Washington in Seattle, while the game bird work centers around the laboratory at the State College of Washington at Pullman. Both the State College and the University have

cooperated generously and members of the faculty and administration have taken a keen interest in the work. Valuable assistance has also been received from the Soil Conservation Service and the Fish and Wildlife Service disease laboratory at Pullman.

Much of the biological work has already been discussed under Game, Fish, and Aids to Natural Propagation, but it is presented here briefly to show the extent of the program.

Big Game Surveys

Winter deer and elk surveys were continued during the biennium. They are considered a regular part of the yearly activities since they make it possible for the Game Commission to keep a very close check on ever changing conditions. Any shortage of buck deer can thus be anticipated in advance and hunting restrictions adjusted accordingly. Winter counts to determine herd make-up, or percentages of bucks, does, and fawns, were secured on 7,382 deer in the 1940-1941 winter and 6,241 deer in the 1941-1942 winter. These surveys also checked the condition of the ranges and the general health of the animals.

Steelhead Studies

During the biennium, research has been continued on the life history and management problems of steelhead trout. In addition to life history data, information was obtained in regard to the sportsmen's catch and spawning rack figures.

Scale studies verified that immature steelhead from the Green River in King county become "legal trout" during their second summer—a fact that emphasizes the necessity of protection for the young fish prior to their seaward migration.

Life history information obtained from returns of marked fish and from scale studies, showed that about one-half of the steelhead spent two years in fresh water and two years in salt water before ascending the rivers to spawn. The other one-half were fish that spent either a shorter or longer time in fresh or salt water. The various combinations of the latter group were enough to ascertain that a run of steelhead could not be eliminated by any one year's adverse conditions.

The total 1941 sport catch was found to be more than double that of 1940, due to a greater abundance of fish and an extension of fifteen days to the winter steelhead season. In spite of the greatly increased sport catch, spawning rack figures showed a 20% increase in escapement over 1940. These facts verify the soundness of the Commission's policy of protecting the immature steelhead migrants by late trout stream openings, and by regulating the winter season to allow a sufficient escapement of mature fish for seeding purposes.

Stream Surveys and Their Application

Late in the biennium, a series of studies was begun with the idea of assembling all possible information in regard to the original populations of game fish in coastal streams. Old trap and hatchery sites are being charted and original egg takes and the extent of commercial fishing is being compiled.

There has long been felt the need of some measuring stick whereby we could compare populations of game fish under primitive conditions with

modern populations. By listing known factors such as dams, diversions, pollution, Indian fishing, sport fishing, intensity, etc., it is thought that specific local problems of the watersheds will be made clearer, and that corrective measures may be applied to return the streams as nearly as possible to their original status.

When first exploited, the commercial steelhead take in Puget Sound averaged about 40,000 adult fish per year, which steadily declined to 4,640 fish in 1933. In late years the popularity of sport steelhead fishing has risen rapidly and has been an important factor in holding back any rapid population increase. Data secured indicates they are steadily increasing but it is difficult to detect since populations had been reduced to such low levels. As the run increases in size, the results of proper management will become increasingly apparent.

This survey will also give data on problems pertaining to resident populations of fish. To date, the stocking of rainbow trout in shorter coastal streams has generally proved disappointing. This is in contrast to excellent results obtained in the larger streams, such as the upper Chehalis River system, the South Fork of the Nooksack River, the three forks of the Snoqualmie River, etc. It is hoped that by breaking down factors responsible for these variable returns, a better usage of our streams can be obtained.

It has been determined that in many respects the life history of steelhead trout and sea-run cutthroat are very similar. Immature fish of the same size of both species migrate seaward at about the same time. Therefore, it is felt that both species will benefit equally by protective measures now in effect. Mature cutthroat differ from mature steelhead, as their spawning migrations are less centralized. Mature cutthroat have been trapped during every month of the year in coastal waters, though the peak in numbers is reached during the spring, as in the case of steelhead.

While the greatest emphasis is usually given to steelhead when mentioning management of coastal waters, it should be remembered that cutthroat are not being overlooked, and they are benefiting greatly by the seasons protecting steelhead.

Upland Game Bird Studies

The study of the Chinese pheasant and Hungarian partridge was carried on chiefly from the Game Department's laboratory at Pullman in Whitman county. Two full time biologists worked on this study with helpers during some periods. Two plots, each four square miles in extent, were established for special intensive study. They were surveyed, censused several times, and completely checked during two hunting seasons and the data secured is being prepared as a biological report at the present time. Conclusions have already been incorporated into the State's bird management program and are covered in discussions under "aids to natural propagation".

A biologist also worked for four months on a study of pheasants in Yakima county to serve as a check or comparison for conclusions reached in Whitman county. The results showed that natural reproduction in Yakima was even poorer than it was in the Whitman region.

FEDERAL AID IN WILDLIFE RESTORATION

Through the Pittman Robertson or Federal Aid in Wildlife Restoration Act the Federal government assists the states in a program to aid wildlife. Funds are secured through an excise tax on sporting arms and ammunitions, which are distributed to the participating states according to areas and hunting license sales. The money must be matched by the state at a ratio of 75% Federal to 25% state funds, and it can be expended only for projects that have been approved by the Federal authorities. The act designates only three general types of projects that will be accepted. They are: acquisition of range for wildlife, development of range for wildlife, and wildlife research.

To date, all of the funds for this state have been put to the solution of the range problem or the development of "board and room" for game. Research has been continued with the regular state funds. The first five projects started were Sinlahekin, Squaw Creek, Oak Creek, Methow, and Tucannon, and all were for the acquisition of big game ranges. Oak Creek is an elk range area, Squaw Creek was acquired for introduced antelope, while all the remainder were deer range problem areas. The lands acquired are nearly all situated just outside of the National Forests and are sub-marginal from an agricultural standpoint. Development by the state will improve and actually make them more productive than they were when being farmed. All the projects are listed below with short discussions as to their present status:

Sinlahekin Project—Okanogan County

This is a very important deer winter range area that was set up as the state's first wildlife project. It consists of 18,812 acres all of which have been acquired except about 500 acres of private land. A development project consisting of fencing, cattle guard construction, and seeding is now about two-thirds completed.

Oak Creek Project—Yakima County

This elk wintering area of major importance is situated between the Tieton and Naches Rivers above the town of Naches. It is established to include 26,284 acres, all of which has been acquired except about 2,000 acres of private land. The department is negotiating to secure control of about 11,000 acres of state land within the area.

Squaw Creek Project—Kittitas County

This area was established as a home for antelope introduced into this state from Nevada and Oregon. It consists of 10,582 acres, the acquisition of which has been almost completed. The entire area has been fenced under a development project.

Tucannon Project—Columbia and Garfield Counties

Large herds of deer and elk feed in this area each winter. The portion included in the refuge comprises 11,562 acres, of which 6,917 acres of private land have been acquired.

Methow Project—Okanogan County

The portion in this area marked for acquisition includes 16,319 acres of winter range for the extensive mule deer herds of this region. A little less than one-half of this has been purchased at this time.

State Wide Pheasant Areas Project

In August of 1941 this program was approved by the Federal government and negotiations are now in progress for the purchase of the first plots.

Douglas Soil Conservation District Wildlife Project—Douglas County

This is a cooperative project with the Soil Conservation Service to develop small game areas, feeding stations, and watering places for birds. It was approved in January, 1942, and the work is now being started.

RECAPITULATION OF BOUNTIES BY COUNTIES
April 1, 1940, to March 31, 1941

COUNTIES	Coyotes @ $1.00	Amount	Coyotes @ $5.00	Amount	Total Amount Coyotes	Bobcats @ $5.00	Amount	Cougars @ $50.00	GRAND TOTAL Amount	Number Animals	Bounty
Adams	69	$69 00	92	$460 00	$529 00					161	$529 00
Asotin	6	6 00	108	540 00	546 00	9	$45 00			123	591 00
Benton	71	71 00	139	695 00	766 00					210	766 00
Chelan	6	6 00	145	725 00	731 00	13	65 00			164	796 00
Clallam			3	15 00	15 00	43	215 00			46	230 00
Clark			17	85 00	85 00	4	20 00			21	105 00
Columbia	40	40 00	95	475 00	515 00	5	25 00			140	540 00
Cowlitz			22	110 00	110 00	31	155 00	8	$100 00	61	965 00
Douglas	25	25 00	211	1,055 00	1,080 00	4	20 00			240	1,100 00
Ferry	12	12 00	189	945 00	957 00	4	20 00	2	100 00	207	1,077 00
Franklin	40	40 00	139	695 00	735 00					179	735 00
Garfield	57	57 00	82	410 00	467 00	1	5 00			140	472 00
Grant	136	136 00	529	2,645 00	2,781 00	2	10 00			667	2,791 00
Grays Harbor			32	160 00	160 00	56	280 00	1	50 00	89	490 00
Island											
Jefferson			4	20 00	20 00	42	210 00	14	700 00	60	930 00
King			50	250 00	250 00	32	160 00	1	50 00	83	460 00
Kitsap			1	5 00	5 00					1	5 00
Kittitas	3	3 00	119	595 00	598 00	13	65 00			135	663 00
Klickitat	22	22 00	167	835 00	857 00	12	60 00			201	917 00
Lewis			71	355 00	355 00	79	395 00	1	50 00	151	800 00
Lincoln	48	48 00	203	1,015 00	1,063 00	2	10 00			253	1,073 00
Mason			16	80 00	80 00	6	30 00			22	110 00
Okanogan	3	3 00	682	3,410 00*	3,413 00	18	90 00	9	450 00	712	3,953 00*
Pacific			13	65 00	65 00	67	335 00			80	400 00
Pend Oreille			187	935 00	935 00	9	45 00			196	980 00
Pierce	2	2 00	24	120 00	122 00	23	115 00	2	100 00	51	337 00
San Juan											
Skagit			26	130 00	130 00	19	95 00			45	225 00
Skamania			7	35 00	35 00	7	35 00			14	70 00
Snohomish	5	5 00	38	190 00	195 00	25	125 00			68	320 00
Spokane	34	34 00	109	545 00	579 00	1	5 00			144	584 00
Stevens	4	4 00	350	1,750 00	1,754 00	24	120 00			378	1,874 00
Thurston			9	45 00	45 00	5	25 00			14	70 00
Wahkiakum			2	10 00	10 00	11	55 00			13	65 00
Walla Walla	30	30 00	20	100 00	130 00					50	130 00
Whatcom			3	15 00	15 00	12	60 00	5	250 00	20	325 00
Whitman	108	108 00	137	685 00	793 00					245	793 00
Yakima	50	50 00	284	1,420 00	1,479 00	11	55 00			354	1,534 00
Totals	780	$780 00	4,325	$21,625 00*	$22,405 00	590	$2,950 00	43	$2,150 00	5,738	$27,505 00*
									Balance to pay		6 50
											$27,498 50

* Four coyotes @ $5.00 each paid $13.50—Balance due $6.50.

RECAPITULATION OF BOUNTIES BY COUNTIES

April 1, 1941, to March 31, 1942

COUNTIES	Coyotes @ $5.00	Amount	Coyote Pups @ $1.00	Amount	Total Amount Coyotes	Bobcats @ $5.00	Amount	Cougar @ $50.00	GRAND TOTAL Amount	Number Animals	Bounty
Adams	269	$1,345 00	119	$119 00	$1,464 00					388	$1,464 00
Asotin	207	1,035 00	1	1 00	1,036 00	9	$45 00			217	1,081 00
Benton	265	1,325 00	118	118 00	1,443 00	1	5 00			384	1,448 00
Chelan	205	1,025 00	10	10 00	1,035 00	14	70 00	2	$100 00	231	1,205 00
Clallam	14	70 00			70 00	91	455 00	3	150 00	108	675 00
Clark	87	435 00			435 00	29	100 00	3	150 00	119	685 00
Columbia	242	1,210 00	29	29 00	1,239 00	12	60 00			253	1,299 00
Cowlitz	58	290 00			290 00	75	375 00	11	550 00	144	1,215 00
Douglas	400	2,000 00	43	43 00	2,043 00	9	45 00			452	2,088 00
Ferry	253	1,265 00			1,265 00	12	60 00	3	150 00	268	1,475 00
Franklin	361	1,805 00	41	41 00	1,846 00					402	1,846 00
Garfield	132	660 00	34	34 00	694 00	1	5 00			167	699 00
Grant	921	4,605 00	98	98 00	4,703 00	20	100 00			1,039	4,803 00
Grays Harbor	46	230 00			230 00	181	905 00	4	200 00	231	1,335 00
Island											
Jefferson	4	20 00			20 00	73	365 00	17	850 00	94	1,235 00
King	124	620 00	3	3 00	623 00	128	640 00	1	50 00	256	1,313 00
Kitsap						1	5 00			1	5 00
Kittitas	230	1,150 00			1,150 00	37	185 00			267	1,335 00
Klickitat	287	1,435 00	15	15 00	1,450 00	65	325 00	1	50 00	368	1,825 00
Lewis	134	670 00			670 00	224	1,120 00	11	550 00	369	2,340 00
Lincoln	360	1,800 00	55	55 00	1,855 00	5	25 00			420	1,880 00
Mason	27	135 00			135 00	22	110 00			49	245 00
Okanogan	1,106	5,530 00	14	14 00	5,544 00	32	160 00	6	300 00	1,178	6,104 00
Pacific	47	235 00			235 00	135	675 00			182	910 00
Pend Oreille	287	1,485 00	6	6 00	1,491 00	24	120 00			327	1,611 00
Pierce	93	465 00			465 00	30	225 00	4	200 00	150	990 00
San Juan											
Skagit	53	265 00	1	1 00	266 00	109	545 00			154	766 00
Skamania	22	110 00			110 00	19	95 00	3	150 00	44	355 00
Snohomish	113	565 00			565 00	152	760 00	6	300 00	271	1,625 00
Spokane	279	1,395 00	5	5 00	1,400 00	7	35 00			291	1,435 00
Stevens	414	2,070 00	3	3 00	2,073 00	35	175 00	1	50 00	451	2,298 00
Thurston	35	175 00			175 00	20	100 00			55	275 00
Wahkiakum	12	60 00			60 00	43	215 00			55	275 00
Walla Walla	92	460 00	13	13 00	473 00					105	473 00
Whatcom	9	45 00			45 00	27	135 00	8	400 00	44	580 00
Whitman	309	1,545 00	234	234 00	1,779 00					543	1,779 00
Yakima	727	3,635 00	89	89 00	3,724 00	26	130 00	8	400 00	849	4,254 00
Totals	8,231	$41,170 00	931	$931 00	$42,101 00	1,699	$8,495 00	92	$4,600 00	10,956	$55,196 00
											6 50*
											$55,202 50

*Amount paid from deficiency appropriation appropriated by the 1941 Session of the State Legislature.

WILDLIFE RESTORATION PROJECTS

PROJECT	Area Set Up in Project (Acres)	Acres of Land Acquired	Totals Expended to April 1, 1942
SINLAHEKIN—Deer Range	18,812.01	7,703.20	$50,009 79
SINLAHEKIN DEVELOPMENT	.....	.....	7,361 74
OAK CREEK—Elk Range	26,284.16	13,014.10	42,708 23
SQUAW CREEK—Antelope Range	10,582.07	8,800.72	16,458 58
SQUAW CREEK DEVELOPMENT	.....	.....	5,735 76
TUCANNON—Deer and Elk Range	11,502.39	6,917.96	39,229 65
METHOW—Deer Winter Range	16,319.44	5,352.80	36,050 03
COORDINATION PROJECT	.....	.....	3,663 87
STATE WIDE PHEASANT AREAS (just started)	.....	.....	1 08
DOUGLAS COUNTY SOIL CONSERVATION PROJECT	.....	.....	103 64
MISCELLANEOUS	.....	.....	47 10
Totals	83,500.07	41,788.18	$201,369 47

	1938	1939	1940	1941	Total-4 yrs.
Federal Apportionment	$23,439 58	$36,871 25	$56,525 42	$63,896 62	$180,732 87
State Contribution	7,813 19	12,290 42	18,841 81	21,298 87	60,244 29
Totals	$31,252 77	$49,161 67	$75,367 23	$85,195 49	$240,977 16

Total apportionments—4 years $240,977 16
Total spent or obligated to date 221,135 17

Balance available $19,841 99

Note—Much of the land not acquired is State and Federal Land.

EDUCATION AND PUBLIC RELATIONS

The department's program of presenting moving pictures and speakers to clubs, schools and other organizations, has been continued during the biennium. In this way facts about Washington's wildlife resources and their administration have been presented to many thousands of interested individuals.

News releases and bulletins have also been issued at various intervals to keep the general public advised in regard to the more important activities of the Department.

Technical bulletins dealing with deer and steelhead trout have been issued and distributed to institutions working on similar or related problems.

LICENSE DIVISION

The license division of the State Game Department distributes all game licenses to dealers who issue them to sportsmen throughout the state. There are about 750 such agents, chiefly dealers in hardware and sporting goods. This distribution and collection work is becoming more complex as the sales of licenses increase. During the biennium, a total of 684,461 licenses and seals were distributed in this way.

LEGAL DEPARTMENT

The 1941 Legislature also altered the set-up of the State Attorney General's office, making the cost of legal services payable from the funds of the state departments which they serve. Under this system the Game Department pays a portion of the salary of one member of the Attorney General's Staff, which is a very satisfactory arrangement since the representative is situated near the Game Department's office in Seattle, and is readily available to give advice and aid on all legal problems.

GENERAL OFFICE

The steady expansion of departmental activities has placed an ever increasing load of work on the office staff. New hatcheries, expanded investigative work, and increased personnel all have combined to add many new duties to those who keep the records and statistics.

The 1941 Legislature enacted what is known as the "Pre-audit System" for all code departments of the state, which has also added materially to the work of keeping up the general office records. Under this system all expenditures are set up and passed on as quarterly budgets. Only materials budgeted may be acquired and the money not spent reverts to the Game Fund for re-appropriation. Thus it is necessary to accurately estimate all needs for a period of at least three months in advance of the time that materials must be secured. This system has a desirable effect as it makes efficient and detailed planning for the future, and it will undoubtedly run more smoothly and easily as time goes on.

SUMMARY OF RECEIPTS, CALENDAR YEARS 1940-1941

(From Records of Department of Game Office)

		Number Licenses Issued		Total Amount Collected	
		1940	1941	1940	1941
COLLECTIONS BY DEPARTMENT OF GAME—LICENSE DEPARTMENT—					
State resident hunting and fishing licenses	@ $3 00	132,702	158,337	$398,376 00	$475,011 00
State non-resident hunting and fishing licenses	@ 25 00	12	18	300 00	445 00
State alien hunting and fishing licenses	@ 25 00	20	22	500 00	550 00
State non-resident game bird hunting licenses	@ 15 00	68	81	1,020 00	1,215 00
State resident or non-resident fishing licenses	@ 5 00	2,144	2,172	10,720 00	10,860 00
State fur dealers licenses	@ 10 00	120	112	1,200 00	1,120 00
State taxidermist licenses	@ 5 00	36	39	180 00	195 00
State resident supplemental elk licenses	@ 5 00	5,308	8,244	26,540 00	41,220 00
State alien supplemental elk licenses	@ 50 00	.....	.....	.....	.....
State non-resident elk licenses	@ 25 00	2	1	50 00	25 00
County resident hunting and fishing licenses	@ 1 50	85,901	82,947	128,851 50	124,420 50
County non-resident fishing licenses	@ 3 00	1,067	1,734	4,821 00	5,202 00
County alien fishing licenses	@ 5 00	106	114	530 00	570 00
County resident trapping licenses	@ 5 00	1,405	2,105	8,027 00	10,525 00
County professional guide licenses	@ 10 00	10	11	100 00	110 00
Duplicate licenses	@ 50	1,209	1,246	633 00	621 00
		230,907	257,183	$581,846 50	$672,091 50①
Private game farm licenses (new)	@ 20 00	9	17	$180 00	$340 00
Renewal game farm licenses	@ 10 00	54	53	540 00	530 00
Private migratory game preserve licenses	@ 10 00	.....	.....	.....	.....
		231,000	257,253	$582,566 50	$672,961 50
Total receipts from sale of big game seal licenses		88,021	108,127	44,010 50	54,063 50
Total receipts from licenses		319,081	365,380	$626,577 00	$727,025 00①
Fines collected for violations of state game laws		.....	.....	②	②
Receipts from other sources and transfers		.....	.....	②	②
Reimbursement by Federal Government of 75% of money expended from appropriation "Wildlife Restoration and Research" (Pittman-Robertson Act) deposited in State Treasury and not through Department of Game office		.....	.....	③	③
MISCELLANEOUS COLLECTIONS IN DEPARTMENT OF GAME OFFICE—					
Sale of poultry		.....	.....	$3,715 25	$3,948 98
Sale of sacks and other miscellaneous items		.....	.....	428 30	264 48
Aluminum bands		.....	.....	90 25	51 10
Tagging		.....	.....	925 35	1,147 85
Game fish tags		.....	.....	162 00	206 40
Sale of Pelts		.....	.....	48,589 83	49,053 91
Miscellaneous		.....	.....	1,855 89	394 66
Grand totals		319,081	365,380	$682,349 87	$782,092 32

① Total receipts from licenses include some sales reported after January 1, 1940, and 1941, respectively, which accounts for the difference between these totals and those shown by the state treasurer.

② As collections of fines are not reported to the Department of Game Office, and this segregated information is not available from the state treasurer's office, this item is left blank. It is included in the state treasurer's reports under "county fines."

③ Calendar year 1940 this amount was $28,565.62 and calendar year 1941 it was $76,458.49.

SUMMARY OF RECEIPTS

	Calendar Year 1940	Calendar Year 1941
STATEMENT OF AMOUNT CREDITED TO STATE GAME FUND—(From Report of State Treasurer)		
Department of Game (miscellaneous collections)	$51,437 87	$50,802 81
Department of Game (hunting and fishing, etc.) licenses	578,410 62	681,633 50
Department of Game (big game seal licenses)	43,528 50	55,556 50
County fines	9,204 10	11,703 87
Sale of State property	4,150 24	4,341 52
Deposit interest	5,249 64	3,229 09
Receipts from transfers	225 90	
Miscellaneous (game fund reimbursed 75% of amount expended from appropriation "Wild Life Restoration and Research"—or for Pittman-Robertson projects)	28,565 62	76,458 49
	$720,982 49	$883,806 78
Balance on hand December 31, 1939	424,329 04	
Balance on hand December 31, 1940		460,644 70
	$1,145,191 53	$1,344,451 48
Warrants paid	684,487 71	701,895 27
Transfers	59 12	101 00
Balance on hand December 31, 1940	$460,644 70	
Balance on hand December 31, 1941		$642,545 21

	Fiscal Year 1940	Fiscal Year 1941
STATEMENT OF AMOUNT CREDITED TO STATE GAME FUND (From Report of State Treasurer)		
Department of Game (miscellaneous collections)	$51,455 13	$52,210 42
Department of Game (hunting and fishing, etc.) licenses	582,354 62	664,968 03
Department of Game (big game seal licenses)	43,675 00	54,040 00
County fines	8,564 11	12,467 52
Sale of State property	4,170 50	4,256 76
Deposit interest	3,220 09	1,710 09
Receipts from transfers	225 90	
Miscellaneous (game fund reimbursed 75% of amount expended from appropriation "Wild Life Restoration and Research"—or for Pittman-Robertson projects)	32,660 48	74,362 13
	$726,325 83	$863,984 95
Balance on hand March 31, 1940	312,160 59	
Balance on hand March 31, 1941		361,524 07
	$1,038,486 42	$1,225,509 02
Warrants paid	676,913 23	703,690 68
Transfers	49 12	101 00
Balance on hand March 31, 1941	$361,524 07	
Balance on hand March 31, 1942		$521,711 34

GENERAL ADMINISTRATION AND OFFICE EXPENDITURES

	Fiscal Year April 1, 1940, to March 31, 1941		Fiscal Year April 1, 1941, to March 31, 1942*	
Salaries and wages—Office	$22,635 39		$23,264 50	
Salaries and wages—State audit	3,519 49		.....	
State car expenses	822 41		855 19	
Private Mileage	17 28		5 04	
Fares	92 70		46 84	
Meals, rooms and berths	501 90		527 45	
Meals, rooms and berths—State audit	1,355 28		.....	
General office supplies	823 29		452 76	
Telephone and telegraph	1,915 58		1,662 40†	
Postage and envelopes	4,259 12		3,726 29	
Freight and express	23 72		15 30	
Printing	705 86		605 92	
Rent	5,455 08		6,139 92	
Surety bonds	35 25		303 92	
Purchase books, subscriptions, etc.	15 00		26 91	
Towel service	72 84		67 37	
Repairs—Furniture and equipment	178 66		43 35	
New equipment	255 08		518 89	
Press clippings	343 30		404 65	
Legal advertising	4,130 78		3,198 64	
Miscellaneous	156 50		97 75	
Purchase new cars	562 99		544 93	
Totals	.....	$47,826 90	.....	$42,546 02

† All general telephone services charged to office.

* Figures cover eleven months only as March expenditures appear as April business.

STATE GAME COMMISSION

	Fiscal Year April 1, 1940, to March 31, 1941		Fiscal Year April 1, 1941, to March 31, 1942*	
Per diem	$1,180 00		$1,320 00	
Stenographer	618 75		550 00	
Private mileage	255 04		330 14	
Fares, railroad, boat and stage	210 90		184 68	
Meals, rooms and berths	412 30		438 50	
Telephone and telegraph	127 23		119 36	
Miscellaneous	24 74		7 00	
Totals	.....	$2,828 96	.....	$3,010 68

* Figures cover eleven months only as March expenditures appear as April business.

CAPITAL OUTLAYS AND MAJOR REPAIRS

	Fiscal Year April 1, 1940, to March 31, 1941		Fiscal Year April 1, 1941, to March 31, 1942*	
Arlington hatchery	$24,707 46		.....	
Chelan hatchery	4,528 86		.....	
Goldendale hatchery—Refrigeration plant	1,613 07		.....	
Goldendale hatchery—Dam	972 20		.....	
Kennewick game farm	11,188 85		.....	
Kittitas county hatchery	.....		$7,499 00	
Mason county hatchery	.....		3,285 29	
Mossyrock hatchery	4,675 00		22,638 07	
Naches hatchery	1,566 64		2,307 71	
South Tacoma hatchery	4 34		.....	
Spokane hatchery	.....		3,769 32	
Walla Walla game farm	180 00		500 00	
Fish trap	91 50		.....	
Stream improvement and screens	6,443 73		973 65	
Totals	.....	$56,001 65	.....	$40,973 04

* Figures cover eleven months only as March expenditures appear as April business.

GENERAL EXPENSES—LICENSE DIVISION

	Fiscal Year April 1, 1940, to March 31, 1941		Fiscal Year April 1, 1941, to March 31, 1942*	
Salaries	$5,923 62		$5,129 32	
Private mileage	53 00		24 56	
Fares	6 25		40	
Meals, rooms and berths	10 00		4 35	
General office supplies	402 37		424 81	
Telephone and telegraph	.....		50	
Postage and envelopes	2,581 01		4,067 03	
Freight and express	88 29		51 99	
Printing	2,024 17		2,178 65	
Publications	3,476 01		1,086 76	
Surety bonds	2,114 00		2,007 96	
Repairs—Furniture and equipment	138 45		31 66	
New equipment	29 80		66 75	
Miscellaneous	622 01		604 89	
Totals	.....	$17,535 54	.....	$15,679 03

* Figures cover eleven months only as March expenditures appear as April business.

RECAPITULATION OF DISBURSEMENTS

	Fiscal Year April 1, 1940, to March 31, 1941			Fiscal Year April 1, 1941, to March 31, 1942 †		
	Salaries	Operations	Totals	Salaries	Operations	Totals
Game Commission	$1,798 75	$1,030 21	$2,828 96	$1,940 00	$1,079 68	$3,019 68
General administration	22,635 39	16,185 96	38,821 35	23,264 50	16,041 88	39,306 38
State audit of books	3,519 40	1,355 28	4,874 77	.....	.....	.....
Biennial report	443 35	2,063 99	2,507 34	.....	.....	.....
License division	5,923 62	11,611 92	17,535 54	5,129 32	10,550 31	15,679 63
Legal advertising	.....	4,130 78	4,130 78	.....	3,198 64	3,198 64
Education and publicity	1,452 98	811 36	2,264 34	869 93	564 74	1,434 67
Game surveys	4,403 26	1,624 05	6,027 31	3,664 91	1,215 32	4,880 23
Lake and stream work	6,108 99	3,829 46	9,938 45	4,686 75	2,266 56	6,953 31
Pittman Robertson	2,611 34	1,706 71	4,318 05	2,347 00	1,749 33	4,096 33
State College laboratory and pheasant survival study	3,730 91	1,312 70	5,043 61	3,986 06	1,316 29	5,302 35
Special antelope	3,357 84	2,385 72	5,743 56	32 15	68 50	100 65
Feed in the open	.....	272 08	272 08	.....	278 77	278 77
Signs and Tags	.....	937 97	937 97	.....	524 54	524 54
Predator control	4,580 96	3,064 01	7,644 97	4,508 00	2,186 97	6,495 57
Fur animal management	8,194 44	2,000 05	10,194 49	5,111 76	2,022 45	7,134 21
Live trapping Birds	1,002 92	522 34	1,525 26	379 15	418 05	797 20
Trapping deer	1,075 49	762 70	1,838 19	307 94	228 36	536 30
Pollution commission	2,062 10	1,864 94	3,927 04	1,469 43	419 17	1,888 60
Game protectors—Regular	88,433 18	53,042 73	141,475 91	83,075 05	51,280 79	134,355 84
Game protectors—Temporary	13,793 14	3,571 07	17,364 21	7,424 70	1,818 08	9,242 78
State Game Farms—						
General	33,675 91	68,177 81	101,853 72	33,230 05	52,362 52	85,592 47
Construction	1,249 01	1,504 31	2,753 32	1,039 63	751 24	1,790 87
Planting	1,883 03	1,347 88	3,230 91	2,094 84	1,466 07	3,560 91
State Trout Hatcheries—						
General	57,184 05	67,328 19	124,512 24	59,531 64	73,036 73	132,568 37
Construction	3,764 45	2,322 80	6,087 25	6,983 35	3,865 77	10,729 12
Planting	7,728 19	7,545 58	15,273 77	7,559 02	6,832 94	14,391 96
Eyeing stations and traps	5,170 27	3,408 31	8,578 58	5,825 72	2,280 71	8,106 43
Auburn warehouse	333 64	345 59	679 23	.....	.....	.....
Total "Operations"	$286,116 70	$266,066 50	$552,183 20	$264,142 40	$237,764 41	$501,906 81
Capital outlays	$8,923 80	$47,077 85	$56,001 65	$3,684 12	$37,288 92	$40,973 04
Bounties	.....	27,498 50	27,498 50	.....	55,202 50	55,202 50
Wildlife restoration *	.....	88,866 15	88,866 15	3,815 83	70,503 44	74,319 27
Legal services	.....	.....	.....	3,225 00	100 58	3,325 58

* 75% to be refunded by Federal Government.
† Figures cover eleven months only as March expenditures appear as April business.

EMPLOYEES

March 31, 1942

Office	Address	Occupation
McCauley, B. T.	2016 Miller St., Seattle	Director
Shields, C. H.	1933 W. 96th, Seattle	Asst. Director
Brewer, G. C.	3718 11th N. E., Seattle	Chief Clerk
Martens, Bertha M.	2021 4th Ave., Seattle	Secretary to Director
Arthur, Laura	6212 5th Ave. N. W., Seattle	Secretary to Commission
Redling, Valerie	1820 16th Ave., Seattle	Stenographer
Hammond, May P.	723 35th Ave., Seattle	Stenographer
Cummings, Emeline	2919 Franklin, Seattle	Stenographer
Larson, Thelma V.	8825 5th N. E., Seattle	Stenographer
Glaser, Margaret B.	1810 No. 40th, Seattle	Clerk Typist
Brown, L. May	763 Belmont Place, Seattle	Accountant
Franich, Cora	3241 15th Ave. W., Seattle	Accountant
Clarke, Hazel D.	6708 1st Ave. N. W., Seattle	Federal Aid Bookkeeper
Chatelaine, Helen M.	R. F. D. No. 1, Box 270, Kirkland	Bookkeeper
Niven, Gertrude	Frye Hotel, Seattle	Bookkeeper
Cooper, Grace M.	2245 Yale No., Seattle	Clerk
Mitchell, Geo. E.	9226 26th Ave. N. W., Seattle	License Clerk
Crowley, Lucille	Senator Hotel, Seattle	License Bookkeeper
Babcock, Janet L.	602 Pontius, Seattle	License Counter
Springer, Leonard M.	9728 Phinney, Seattle	Federal Aid Administrator
Fruit, M. M.	Lake Forest Park, Seattle	Planting
Dettmer, Herbert	4137 23rd Ave. S. W., Seattle	Statistician
Garlick, Lewis	10431 66th S., Seattle	Supervisor of Properties
Caldwell, Roy W.	Rehan Hotel, Seattle	Inventory & Stores
Kelsey, Robert W.	Seattle	Clerk
Pautzke, Clarence F.	2124 W. 99th St., Seattle	Chief Biologist
Lauckhart, Burton	2143 N. 86th, Seattle	Game Biologist
Ball, Chester	217 New Science Hall, Pullman	Game Biologist
Knott, Norman P.	810 E. Lennox, Yakima	Game Biologist
Yocom, Charles F.	217 New Science Hall, Pullman	Game Biologist
Meigs, Robert C.	7550 22nd Ave. N. E., Seattle	Fish Biologist
Earnest, Don	10727 Linden, Seattle	Fish Biologist
Protection		
Biggs, John A.	315 W. 38th St., Vancouver	State Game Protector in Charge
Eide, Ole	P. O. Box No. 102, Stanwood	State Game Protector in Charge
Neubrech, Walter	1404 Broadway, Yakima	State Game Protector in Charge
Norton, Clyde	1346 E. Bay Drive, Olympia	State Game Protector in Charge
Resner, O. L.	720 Monroe Street, Wenatchee	State Game Protector in Charge
Roundy, Fred L.	Rte. No. 7, Spokane	State Game Protector in Charge
Loughary, H.	9756 Wallingford Ave., Seattle	Chief Patrol Officer
Allen, Dale K.	Leavenworth	Protector
Allen, J. J.	1902 Park Ave., Raymond	Protector
Anderson, Niilo A.	Rte. No. 2, Box No. 320, Winlock	Protector
Apukka, James	726 Boulevard Rd., Olympia	Protector
Banta, Floyd	6716 Phinney Ave., Seattle	Protector
Bercot, Henry F.	Freeland	Protector
Beringer, R. E.	Box No. 21, Ritzville	Protector
Douglas, John W.	1754 Marion St., Enumclaw	Protector
Burnham, Guy F.	Route 1, Box 911, Longview	Protector
Drain, H. D.	Route 2, Box 79, Kirkland	Protector
Drolet, Jos. O.	No. 810 Clay St., Colfax	Protector
Erickson, A. R.	3127 Nassau Ave., Everett	Protector
Farquhar, Geo. R.	Box 271, Quilcene	Protector
Fennimore, Gene	Pomeroy	Protector
Goodman, Herman O.	Box 545, Blaine	Protector

EMPLOYEES—Continued
March 31, 1943

Protection	Address	Occupation
Guenther, Stanley E.	Cava Apt. No. 2, Cle Elum	Protector
Haley, C. H.	811 So. 25th, Tacoma	Protector
Hall, Wm. O.	Knox Hotel, Olympia	Protector
Handron, S. J.	702 Spruce St., Hoquiam	Protector
Hilderbrand, E. B.	White Salmon	Protector
Hoggatt, Carl	Eatonville	Protector
Hull, Marvin	Box 133, Stevenson	Protector
Huntley, Dennis	Kennewick	Protector
Hynes, J. M.	1936 So. "G" St., Tacoma	Protector
Johnson, Ralph	R. F. D. 3, Newport	Protector
Kanz, John R.	Okanogan	Protector
Little, William J.	Morton	Protector
Long, Chas. B.	2900 Lakeway Drive, Bellingham	Protector
Louden, J. M.	Box 325, Cathlamet	Protector
Lundgren, A. H.	710 N. Wooding, Aberdeen	Protector
Marvich, Edward	1115 N. 87th, Seattle	Protector
Mattson, Norman E.	Silverdale	Protector
McDaniel, Geo. A.	Winthrop	Protector
Murphy, J. A.	Star Route 1, Box 110, Shelton	Protector
Neil, Lloyd J.	1301 N. Walnut, Ellensburg	Protector
Palmer, N. E.	Prosser	Protector
Rasmussen, W. B.	4107 N. Howard, Spokane	Protector
Rennie, Robert	Box 151, Soap Lake	Protector
Rice, Fred	R. F. D. 2, Port Angeles	Protector
Schwindel, Ralph	Republic	Protector
Seabury, Laurence E.	11th and Section, Mt. Vernon	Protector
Snider, Donald E.	S. 13th St., Clarkston	Protector
Splane, Maurice E.	821 Ferry St., Sedro Woolley	Protector
Stark, Harry E.	Friday Harbor	Protector
Stevens, J. L.	1407 Brown Ave., Yakima	Protector
Van Arsdol, Fred W.	120 Park Ave., Yakima	Protector
Winters, C. L.	411 Park St., Walla Walla	Protector
Wooten, W. T.	205 Spring St., Dayton	Protector
Williams, Douglas	R. F. D. 5, Box 28A, Vancouver	Protector
Williams, Melvin	Box 291, Davenport	Protector

Game Farms

Faudree, J. W.	423 Terry Ave., Seattle	Supervisor Game Farms
Morrell, William	R. F. D. 3, Auburn	Auburn Supt.
Wadkins, Wm. W.	R. F. D. 3, Auburn	Auburn Asst.
Harper, Ross	Colville	Colville Supt.
Ford, Thos. D.	R. F. D. 3, Ellensburg	Ellensberg Supt.
Witham, Harold	R. F. D. 1, Kennewick	Kennewick Supt.
Johnson, Ernest	R. F. D. 1, Kennewick	Kennewick Asst.
Johnson, J. A.	R. F. D. 2, Omak	Okanogan Supt.
Coe, Dan A.	R. F. D. 2, Omak	Okanogan Asst.
Boatman, John	R. F. D. 2, Omak	Okanogan Asst.
Holbert, Carroll	R. F. D. 2, Omak	Okanogan Asst.
Hedstrom, Elerth	R. F. D. 8, Box 345, So. Tacoma	So. Tacoma Supt.
Matheson, Harold K.	R. F. D. 8, Box 345, So. Tacoma	So. Tacoma Asst.
Ford, Dave	Mead	Spokane Supt.
West, Homer L.	Mead	Spokane Asst.
Palmer, Quincy	Walla Walla	Walla Walla Supt.
Ford, Bill G.	Star Route, Wapato	Yakima and Chukar Supt.
Utter, Dave	Star Route, Wapato	Yakima and Chukar Asst.
Chinn, Dale	Star Route, Wapato	Yakima and Chukar Asst.
Graham, Glen	Star Route, Wapato	Yakima and Chukar Asst.
Scrupps, Fred A.	Care Seward Park Ponds, Seattle	Truck Driver

EMPLOYEES—Continued

March 31, 1943

Hatcheries	Address	Occupation
Millenbach, Cliff	6512 27th N. W., Seattle	Supervisor Hatcheries
Dunstan, William	Bothell	Supervisor Eyeing Stations
Lytle, Geo.	R. F. D. 1, Montesano	Aberdeen Supt.
Jones, C. A.	R. F. D. 1, Montesano	Aberdeen Asst.
Hodgeboom, K. D.	R. F. D. 3, Arlington	Arlington Supt.
Jahn, Bert J.	R. F. D. 3, Arlington	Arlington Asst.
Glenn, A. M.	R. F. D. 3, Arlington	Arlington Asst.
Loveridge, G. W.	Whatcom Falls Park, Bellingham	Bellingham Supt.
Hilsinger, L. E.	Whatcom Falls Park, Bellingham	Bellingham Asst.
Ashby, W. H.	Chelan	Chelan Supt.
Parker, Loren	Chelan	Chelan Asst.
Reichenbach, Joe	Chelan	Chelan Asst.
Wade, John	Chelan	Chelan Asst.
Johnson, Keith	Star Route, Leavenworth	Chiwaukum Supt.
Henrichsen, James J.	Colville	Colville Supt.
Underwood, Wm.	Ford	Ford Supt.
Tidyman, Wayne G.	Ford	Ford Asst.
Yorke, R. H.	Goldendale	Goldendale Supt.
Sherry, Gerald	Goldendale	Goldendale Asst.
Immenroth, A. F.	Port Angeles	Lake Crescent Supt.
MacKenzie, Daniel	R. F. D. 2, Sedro Woolley	Lake Whatcom Supt.
Welshons, C. A.	Mossyrock	Mossyrock Supt.
Rice, Lawrence H.	R. F. D. 1, Naches	Naches Supt.
DeHart, W. B.	Usk	Pend Oreille Supt.
Walters, L. W.	Seward Park, Seattle	Seward Park Ponds Supt.
Foster, C. R.	Route 8, Box 344, So. Tacoma	So. Tacoma Supt.
Luzader, G. P.	Route 8, Box 344, So. Tacoma	So. Tacoma Asst.
Leslie, R. D.	Route 8, Box 344, So. Tacoma	So. Tacoma Asst.
Kaminsky, Paul	Route 8, Box 344, So. Tacoma	So. Tacoma Asst.
Youmans, F. A.	R. F. D. 7, Spokane	Spokane Supt.
Strickland, Roy R.	R. F. D. 7, Spokane	Spokane Asst.
Vanhook, M. F.	R. F. D. 7, Spokane	Spokane Asst.
Pratt, Dick	R. F. D. 7, Spokane	Spokane Asst.
Nixon, C. J.	R. F. D. 1, North Bend	Tokul Creek Supt.
Shortred, Fred	R. F. D. 1, North Bend	Tokul Creek Asst.
Partee, L. R.	R. F. D. 1, North Bend	Tokul Creek Asst.
Ryan, Thos. E.	R. F. D. 1, Box 217A, Vancouver	Vancouver Supt.
Cromwell, James	R. F. D. 1, Box 217A, Vancouver	Vancouver Asst.
Dunstan, W. E.	R. F. D. 3, Walla Walla	Walla Walla Supt.
Hancock, W. R.	R. F. D. 7, Yakima	Yakima Supt.
Wardall, S. L.	R. F. D. 7, Yakima	Yakima Asst.
Johnston, Virgil	R. F. D. 7, Yakima	Yakima Asst.
Miner, Ed.	R. F. D. 7, Yakima	Yakima Asst.
Johansen, John M.	3444 35th W., Seattle	Misc. Hatch. Asst.
Lee, Robert E.	Sinlehekin Refuge, Loomis	Pack string
Smith, Marvin A.	3629 Burke Ave., Seattle	Newaukum Trap

Construction		
Humason, A. B.	4857 41st S. W., Seattle	Draftsman
Dederick, Frank H.	Bothell	Supervisor Construction
Westrom, Seth M.	Route 8, Box 329, So. Tacoma	Foreman
Colyar, R. E.	Route 1, Box 384, Kent	Foreman
McDaniel, Joe	Bellingham	Painter
Mullen, J. B.	Union Gap	Construction work
Rollinger, Mike	Ellensburg	Construction work