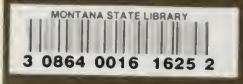
MONTANA

STATE FISH

and

GAME DEPARTMENT

1931-1932



MONTANA

STATE FISH and GAME DEPARTMENT

1931 -- BIENNIAL REPORT -- 1932

THE MONARCH OF MONTANA'S FORESTS

For Fish and Game

By Edgar A. Guest

For fish and birds I make this plea,
May they be here long after me.
May those who follow hear the call
Of old Bobwhite in spring and fall;
And may they share the joy that's mine
When there's a trout upon the line.
I found the world a wondrous place,
A cold wind blowing in my face
Has brought the wild ducks in from sea.
God grant the day shall never be
When youth upon November's shore
Shall see the mallards come no more!
I found the world a garden spot,
God grant the desolating shot
And barbed hook shall not destroy
Some future generations' joy!
Too barren were the earth for words
If gone were all the fish and birds.
Fancy an age that sees no more
The mallards winging in to shore:
Fancy a youth with all its dreams
That finds no fish within the streams.
Our world with life is wondrous fair,
God grant we do not strip it bare!

To His Excellency,
The Hon. J. E. Erickson,
Governor of Montana,
Helena.

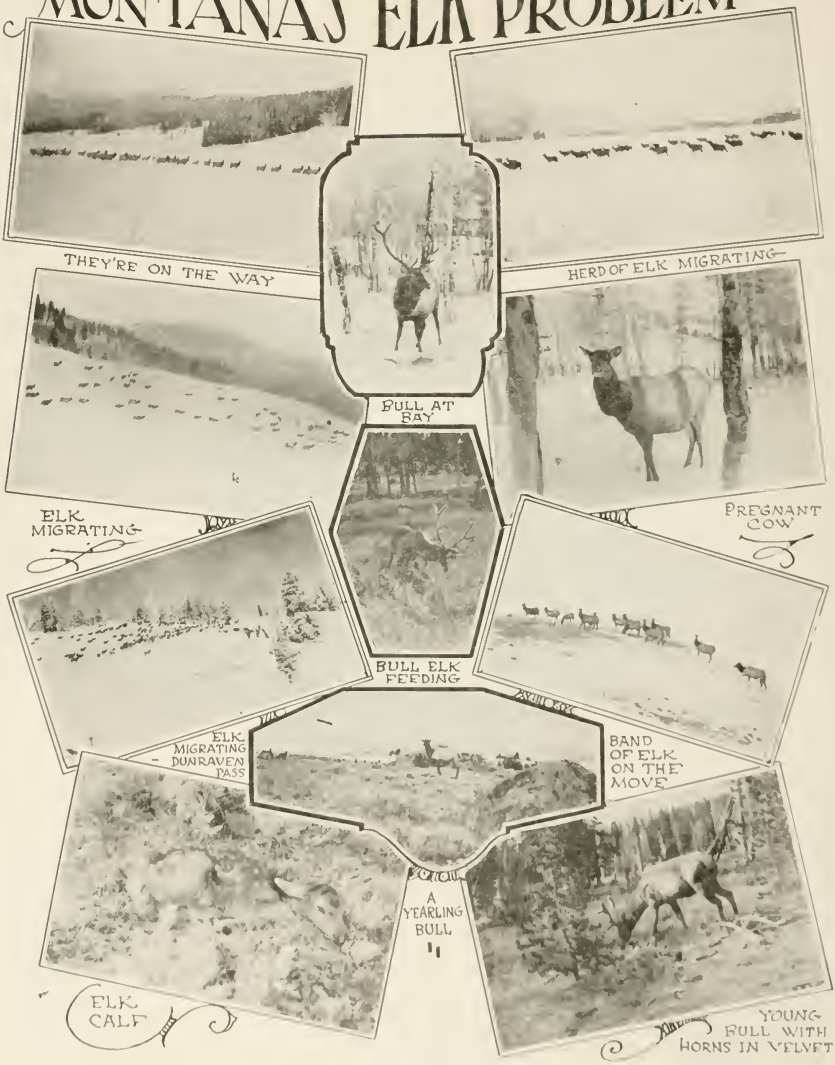
The State Fish and Game Commission herewith respectfully submits the biennial report of activities of the department, setting forth achievements during the years 1931 and 1932.

MONTANA STATE FISH AND GAME COMMISSION
W. P. Sullivan, Chairman

William Steinbrenner — William F. Flynn
Harry P. Stanford — B. L. Price

Charles B. Marrs, *State Fish and Game Warden and Secretary of the Commission*

MONTANA'S ELK PROBLEM



Montana's Fish and Game Problems

By W. P. Sullivan, Square Butte, Chairman State Fish and Game Commission

MONTANA'S miles of crystal mountain streams, her magnificent forests, thousands of acres of hill and dale where furred and feathered game flourish, and the ever-increasing demands being made upon this great national playground by sportsmen of America, provide a problem of magnitude which must ever be given conscientious consideration by the State Fish and Game Department. Since the days of the fur traders, trappers and pioneers, fish and game have constituted an asset of rare value as part and parcel of the upbuilding and development of the Treasure State. With the inroads of civilization, the wild life has in great measure been diverted from a source of food supply to an influence that takes men and women, boys and girls into the out-of-doors in search of health, happiness and wholesome recreation. To maintain Montana's supply of fish and game and to keep step with progress, is the great task that confronts the commission, acting as representatives of Montana residents.

Consideration of geographical conditions, which vary in Montana to an unusual degree, the equalizing of the fish and game situation, the maintaining of the balance of nature through utilization of artificial means and the incessant effort to meet demands with limited funds available, provides sportsmen of the state with an objective that means much to future welfare.

Millions of dollars are rolling through Montana on rubber tires annually. These eastern tourists, who in many cases return to cast their lot with residents of the state as eventual farmers, stockmen and businessmen, are attracted to the state in their motor travels, largely through pleasures offered through unequalled fishing, unparalleled hunting, the magnificent panoramas, pure air, sparkling waters and all the other attributes that go to make Montana the gem of the Rocky mountains. If this interest is to be maintained for resident and visitor alike, sportsmen cooperating with the State Fish and Game Department must be ever alert.

We must be ever mindful of the interests of all Montana residents while we are building. Sincere cooperation between sportsmen, stockmen, the forestry department, bureau of biological survey, the dude ranchers, railroads, hotel owners, automobile associations and all the other agencies interested in maintaining the state's supply of wild life, should be the goal attained and maintained if we are to reach a proper solution of our re-stocking programs. All are equally interested, all are mindful of the ever-pressing need for conscientious propagation and protection of wild life, yet in carrying forward this program of magnitude, the rights and privileges of all concerned should be given honest and fair consideration.

Montana has attained a merited position of national esteem because of its miles of trout streams, the manner in which these waters have been kept stocked with fighting fish and the wholesome surroundings which constitute the environment of the sportsman and angler when afield or knee deep in his fishing boots.

In order that streams and lakes of the state may be properly stocked, it is the desire of the State Fish and Game Commission to build more rearing ponds. The department is now operating a battery of 14 hatcheries which last year produced more than 30,000,000 game fish fingerlings for liberation. It is the eventual plan to construct additional rearing ponds where fingerlings produced in the hatcheries may be fed until they attain sufficient size before liberation in order that they may be better qualified to protect themselves against their cannibalistic brothers when they are planted.

It is the plan of the commission to encourage the building of dams and bring about the re-creation of some of the old lakes of the prairies where conditions are favorable and the cost is not excessive. These re-created prairie lakes, such as the Half Way lake project near Havre, which is now being prepared to receive the excess waters of the Beaver creek drainage basin through recently constructed ditches, can be made splendid fishing waters when stocked with the variety of fish best suited to water and climatic conditions. Lake fishing for farmers and other sportsmen of dry land areas will thereby be provided and the over-fishing of many of the trout streams will be materially relieved. These lakes, meanwhile, will provide ideal nesting places and havens for migratory waterfowl.

The big game ranges of the state should be given close study and careful attention every year in an effort definitely to ascertain the safe and sane carrying capacity, summer and winter. The carrying capacity of any range in Montana, whether mountain or prairie, will vary from year to year, according to the seasons. Should any range be stocked to capacity in what is known as a good year in Montana, the same approximate number of domestic stock or big game will tremendously and dangerously overstock that same area in what might be called a poor year.

Both extremes in range conditions are regularly encountered in any given five or ten-year period in this state. In the grazing of livestock it is absolutely necessary to know the number grazing on any given area, if they are to be cared for with intelligence and safety.

The elk ranges of the state are well-known and defined. The seasons, good or bad, can be ascertained each year by mid-July. The only other element necessary in order to manage the elk herds of the state intelligently, is to know the aproximate number of elk inhabitating the several ranges within the state.

The only "counts" of Montana elk herds that are available have been supplied by the splendid men associated with the national forest service. This is the only agency in Montana possessing the personnel and equipment capable of even closely approximating the total number of elk in the state. These counts have been criticized and ridiculed in some parts of Montana. I would like to ask the most vociferous critics to inform us who, outside of men in the forest service, can supply any information regarding the number of elk in Montana that would rate much above an average guess.

It is our desire to favor a program of whole-hearted cooperation with the federal bureau of fisheries, the bureau of biological survey, the forestry department, sportsmen's associations and the stockmen of Montana. Within the year I have met all the gentlemen in charge of federal agencies interested in fish and game in Montana. They are all well informed, courteous and most anxious to work with the State Fish and Game Commission in order that we may attain the goal we all desire—the improvement and perpetuation of fish and game resources of the Treasure State.

The Hungarian

Feathered Fox of the Fields

Sportsmen Support the Department

By Charles B. Marrs, State Fish and Game Warden

MONTANA'S State Fish and Game Department, in presenting this biennial report, covering activities during 1931 and 1932, places before sportsmen of the state outstanding facts and figures picturing progress over a two-year period that has tried the mettle and commercial stamina of every resident. It has been no small task to work out ways and means of keeping step with the times during the latter part of the biennium, yet the commission, working in harmony with sportsmen of the state, with federal department and other agencies with a common goal, is striving diligently to keep Montana in the forefront as a paradise for the angler and devotee of the rifle and shotgun.

Figures for 1932 completed for publication in this report reflect the trend of the times. Receipts of the department have fallen thousands of dollars below those of 1931 and as a result, reductions have become mandatory within the organization. These reductions have been made with reluctance, yet because of financial conditions, they have been imperative in order that the network of the structure might be preserved. Sound business judgment has been necessary and members of the commission have acted only after mature consideration, at all times keeping in mind the welfare of sportsmen whose license fees go to make up the fund that sustains the department.

Montana's department relies solely upon license fees, returns from the sale of confiscated furs and firearms and fines collected for fish and game law violations. The department is self-sustaining. There are no legislative appropriations available to maintain it, nor are the people of the state taxed to support it. Hence, when receipts slump to a point where it becomes necessary to balance the budget, expenditures must be kept within the deadline marked by the amount received. In taking steps to keep within the income, the commission has ever been mindful to preserve the utmost efficiency at the lowest possible cost, and it is with the knowledge that sportsmen conversant with commercial and industrial affairs prevailing in state and nation during the last two years will keep these conditions in mind, that these figures are presented. Totals in each division have been arranged in this report. More detailed figures are available at department headquarters at Helena where they will be cheerfully furnished on request.

Hunting and fishing license sales have dropped materially during the last year and the loss of this needed revenue has been the principal factor in bringing about staff reductions. In revising the roster of deputy game wardens, however, care has been utilized in leaving favored hunting grounds protected as well as possible. During the big game season, with thousands of hunters in the hills after deer and elk, the services of experienced deputies is necessary.

Montana's big game kill during the winter of 1932 has been smaller than that of the preceding year, according to authoritative reports received at headquarters. The kill of 1931 marked the first year in the history of the department when an official count was made possible by act of the legislature. The return cards attached to all big game licenses make it mandatory that a report of the kill, sex, condition, location of kill and range conditions be made to the department. Failure to comply with the law is a misdemeanor. Figures showing the total kill for 1932 will not be available until after Jan. 1, when the law requires that all report cards be at fish and game headquarters.

Tabulation of these cards for 1931 shows that a total of 10,023 deer and 1,883 elk were legally taken within the state. Of the deer, 7,452 were bucks and 2,571 were females. Of the elk, 1,038 were bulls and 845 were cows. Statistics show that 7,688 big game animals were killed on forest reserves and 3,298 outside the federal areas. In hundreds of cases the hunters were unable to designate the exact location of the kill, hence failed to fill out the blank. The killing of female deer is permitted in six Montana counties, Flathead, Lake, Lincoln, Mineral, Ravalli and Sanders.

The heaviest kill of 1931 was made in Lincoln county, following an unusually heavy snowfall. In that county alone 1,576 buck deer were reported killed and 768 does likewise went into the bag of hunters.

The accompanying table, showing the total number of deer and elk killed during 1931, is significant. The figures provide food for thought. Despite the fact that Montana has an area of approximately three times that of Pennsylvania, the deer kill in Montana in 1931 was but 10,000 while the report issued by the Pennsylvania department shows a kill of close to 100,000. Intensive cultivation of deer in Pennsylvania has wrought wonders.

Efforts have been made in the compilation of this biennial report to portray in brief manner the achievements of the department during the last two years.

The state game farm at Warm Springs has been a success from the start and has been the means of liberating some 20,000 game birds during the last three years. The large majority liberated have been Chinese pheasants.

The work of deputy game wardens, although hampered in many cases because of taking law violators before sympathetic courts, is outlined in the tabulation of arrests which appears elsewhere in this report.

Work of the fisheries division, under the leadership of Kenneth F. MacDonald, state superintendent, is likewise outlined.

Figures denoting receipts and expenditures cover the spread of two years, covering one of the most trying biennium in the history of the department. With the upturn of business generally, however, departmental receipts will inevitably increase and greater activity will be made possible.

Montana Antelope

Protected by State Law

Big Game Kill in Montana, 1931

	Deer		Elk	
Counties	Bucks	Does	Bulls	Cows
Beaverhead	153	.....	.....	.....
Big Horn	9	.....	.....	.....
Broadwater	61	.....	.....	.....
Cascade	189	.....	.....	.....
Deer Lodge	83	.....	.....	.....
Flathead	788	772	240	193
Gallatin	214	.....	151	89
Granite	275	.....	35	52
Jefferson	172	.....	.....	.....
Judith Basin	268	.....	.....	.....
Lake	234	161	.....	.....
Lewis & Clark	238	.....	153	110
Lincoln	1576	768	.....	.....
Madison	179	.....	11	14
Meagher	394	.....	3	13
Mineral	538	418	10	11
Missoula	553	.....	23	19
Park	183	.....	181	137
Powell	252	.....	72	56
Ravalli	380	152	79	57
Sanders	579	300	39	46
Silver Bow	46	.....	.....	.....
Stillwater	55	.....	.....	.....
Sweet Grass	94	.....	.....	.....
Teton	.....	.....	41	48
Wheatland	42	.....	.....	.....
Glacier	4	.....	.....	.....
Golden Valley	3	.....	.....	.....
Totals	7452	2571	1038	845

Montana's State Game Farm

By Joe F. Hendricks, Superintendent

COMPLETION OF the game bird distribution of 1932 from the state game farm at Warm Springs, the modern plant established and operated by the state fish and game department, marked its third year of production. During the three years it has been operated, a total of approximately 20,000 Chinese pheasants and other birds reared in captivity have been liberated throughout the state to provide sport for thousands of welders of shotguns and to supplement the supply of diminishing upland game birds which are gradually nearing extinction. Chinese pheasants have taken the place of the great coveys of prairie chickens that once nested and thrived in Montana valleys and with plans well in hand for the work of 1933, indications are that the production of the plant at Warm Springs will keep step with demands.

Figures showing birds liberated in 1932, all of which were hatched and reared at the state farm, total 4,856 Chinese pheasants with 97 beautiful game birds of several varieties liberated in desired portions of the state for experimental purposes.

The last year was not a desirable period for the successful rearing of game birds. Climatic conditions during the spring, as well as highway construction on the road running past the breeding pens, brought about a condition that upset brooding. Cold, damp weather interfered with early laying and dust and noise that accompanied necessary road work brought further complications. These conditions, it is hoped, will be eliminated during 1933.

In 1931 the production of the farm reached the peak when 8,720 Chinese pheasants were liberated. In 1930, when the farm was established, 6,146 birds were reared and liberated, this figure establishing something of a record in the history of game bird production in the west.

In 1932 the brood stock retained after birds were liberated totaled as follows: 360 Chinese pheasant hens and 72 Chinese pheasant roosters; 10 pairs of Hungarian partridges; seven pairs of California quail; three Melanistic Mutants; three Golden pheasants; three Lady Amherst pheasants, and three Silver pheasants.

The brood stock for 1933 has been amplified, anticipating greater production and the total number of birds now on hand at the game farm, being held in readiness for the 1933 season follows: 420 Chinese pheasant hens and 80 Chinese pheasant roosters; 12 Melanistic Mutants; 15 pairs of California quail; 10 pairs of Hungarian partridges; five pairs of Chukar partridges; three Golden pheasants; three Lady Amhersts and three Silver pheasants.

Preparations have been completed to handle the eggs of small game birds in 1933 with the purchase of 30 bantam hens. These wee biddies will be utilized in hatching the eggs of the Hungarians, California quail and Chukar partridges. The larger brood hens are used in hatching the pheasant eggs but because of their size they have proved undesirable for hatching the smaller eggs.

Experiments with California valley quail have demonstrated their adaptibility to climatic conditions in Montana. Many have been liberated on Warm Springs creek at an elevation of 4,700 feet and they are thriving. Other test plants have been made in selected parts of the state. They are a wonderful game bird and will be protected until such time as they attain such numbers as to justify opening the season. The California quail are not sought by "meat" hunters but provide sportsmen with good shooting. They are able to care for themselves in more thorough manner than the Bobwhite quail because they roost in trees and brush away from the reach of predatory animals. The Bobwhite roosts on the ground.

Late spring weather and cold rains caused birds in the field to get a poor start in 1932, yet the number liberated and permitted to nest in the wild state in preceding years, provided sportsmen with excellent shooting. Hungarian partridges, however, were given a better start because they start laying later in the spring than the Orientals and miss the cold rains and chilly weather of early spring.

Expectations are that the first eggs from pheasant hens will be laid, under normal conditions, the forepart of April and the average season's egg collection from each hen is estimated at from 45 to 50 eggs. To secure this number of fertile eggs, however, requires strict care and study of diet with preparation of especially mixed food daily, varying with weather conditions and other influences.

Wheat is kept before the birds at all times. Twice each week they are given Spratt's game meal with 8 per cent Crissel, a meat preparation. Lettuce trimmings are fed twice a week when weather permits. Grit and charcoal is constantly before them. When gloomy days cause dispositions of pheasants to droop, they are given internal sun baths by the feeding of cod liver oil meal.

HOW MANY BIRDS DO YOU KNOW?

According to lists of the American Ornithological Union, there are 768 species of birds in the United States. This figure does not include the subspecies of which there are many. How many birds can you name that are common to your locality in Montana?

Pheasants Liberated In Counties

County:	1931	1932
Beaverhead	204	144
Big Horn	144	90
Blaine	144	90
Broadwater	192	90
Carbon	168	90
Carter	144	90
Cascade	408	90
Chouteau	144	90
Custer	168	90
Daniels	120	90
Dawson	144	120
Deer Lodge	212	122
Fallon	144	96
Fergus	217	90
Flathead	216	106
Gallatin	144	72
Garfield	120	90
Glacier	....	....
Golden Valley	144	90
Granite	96	72
Hill	168	90
Jefferson	120	90
Judith Basin	168	96
Lake	360	96
Lewis and Clark	324	144
Liberty	144	90
Lincoln	48	....
Madison	180	84
McCone	....	....
Meagher	144	90
Mineral	....	....
Missoula	144	72
Musselshell	144	90
Park	216	90
Petroleum	144	72
Phillips	144	96
Pondera	144	90
Powder River	144	90
Powell	173	90
Prairie	144	90
Ravalli	216	120
Richland	120	90
Roosevelt	144	96
Rosebud	144	90
Sanders	240	96
Sheridan	144	96
Silver Bow	....	98
Stillwater	168	90
Sweet Grass	144	90
Teton	144	90
Toole	168	90
Treasure	144	90
Valley	120	96
Wheatland	144	90
Wibaux	144	72
Yellowstone	210	90
TOTAL	8,720	4,856

There were 97 miscellaneous birds liberated in 1932, as follows: Golden pheasants: 8 in Missoula county, 6 in Yellowstone county, 2 in Silver Bow county, and 2 in Lewis and Clark county. Quail: 38 in Deer Lodge county, 12 in Richland county. Hungarian partridges: 25 in Powell county. Amherst pheasants: 2 in Silver Bow county, 2 in Lewis and Clark county.

Migratory Water Fowl of Montana

By Kenneth F. Roahen, U. S. Game Protector, Billings

EVERY time sportsmen gather to talk of hunting expeditions, whether for big game or birds, it is always noted that their enthusiasm reaches greatest heights when the talk drifts to our national sport, "duck shooting," and it is therefore necessary that we give this subject serious thought if we are to preserve and prolong this great sport for future years.

During the last few years, and including the season of 1931, the drought throughout the United States and Canada, with the drainage of large marsh areas for commercial purposes, has taken the majority of the breeding grounds away from our waterfowl, and in addition to this menace, the ever-increasing number of hunters, equipped with automobiles, automatic and pump guns with higher powered ammunition, has taken added toll of birds, until today it is really a miracle that any birds have been able to survive.

Approximately 90 per cent of the water areas of Montana were dry during the past summer, all of which were formerly great breeding centers, although in the early spring a number of these lakes contained a limited amount of water for a short period, to which birds flocked and hatched their young, only to have the ponds dry up before the birds were feathered, and the entire hatch of young birds was lost.

Because of these conditions, it was necessary to limit the shooting season of 1931 to 30 days, to try and save a breeding stock for the following year, if possible. On account of the general conditions that followed after the season had been declared, the principal flight did not take place until well after the season opened, and it naturally followed that the ducks were late in arriving in their travels to the southward, the result being that the number killed was not as heavy as otherwise expected, and an untold number of birds were saved for the start of the 1932 season.

General conditions for the 1932 season were much better than in previous years, as many lakes and potholes contained water which held out until the young birds had reached maturity. Food conditions were also much better. Throughout the early spring and summer months, government investigations were being made in all the breeding centers, the result of the investigations showing a much larger hatch of birds in all localities, and accordingly an open season of 60 days was declared.

On account of the improved water and food condition, the loss of birds from duck sickness was much smaller than in former years.

In a great number of water areas in northern Montana, owing to the former dry years, the rushes and other vegetation had died out, therefore making it necessary for the birds to build nests on practically open ground, with no protection, therefore, in many places the first early nests were destroyed by vermin and other natural enemies of the waterfowl.

While the water supply is greatly increased over previous years, yet the fact remains that we have no assurance that this condition will continue for any great length of time, therefore the only solution of this condition is to acquire suitable refuge and breeding grounds for our waterfowl if we are to insure their future production. Every sportsman should take it upon himself to assist in every possible manner the establishment of such resting grounds, whether in Montana or in other parts of the United States, as such refuges are necessary in every state to insure a future supply of waterfowl.

Red Rock Lake When Ducks Were Plentiful

This picture of the shore line of Red Rock lake in Southern Montana was taken during the days when migratory waterfowl were abundant. Water birds of many varieties may be viewed, including swan, mallards, shore birds and quackers fond to the heart of sportsmen. Under the water conservation program now of statewide interest, nesting and breeding grounds will be provided that the supply may be brought back

The American Boy

"I'd far rather have a son able to climb a mountain and outwit the wary creatures of the wilderness than be able to dance the Brazilian Busybody or be able to decide whether a lavender tie will match mauve socks. These little lisping men, these modern ruins, these lazy effeminates who could not tell you the difference between a bull and a bullet—it is not in these that the hope of America, that the hope of humanity lies," writes Archibold Rutledge in Field and Stream.

"If the sentimentalist were right, hunting would develop in men a cruelty of character. But, I have found that it inculcates patience, demands discipline and iron nerve, and develops a serenity of spirit that makes for long life and a long love of life. And it is my fixed conviction that if a parent can give his children a passionate and wholesome devotion to the outdoors, the fact that he can not leave each of them a fortune does not really matter so much. They will always enjoy life in its nobler aspects without money and without price. They will worship the Creator in His mighty works. And because they know and love the natural world they will always feel at home in the wide, sweet habitations of the Ancient Mother.

"I think the rod and the gun better for boys than the saxophone and the fudge sundae. In the first place, there is something inherently manly and home-bred and truly American in that expression "shooting straight." The hunter learns that reward comes from hard work, he learns from dealing with nature that a man must have a deep respect for the great natural laws. He learns also, I think, in a far higher degree than any form of standardized amateur athletics can give him to play the game fairly."

The Elk Situation In Montana

By W. M. Rush, Missoula, Game Specialist, Forest Service

W. M. Rush

ELK increased in Montana for the period 1927-1930, inclusive, at an annual rate of about 14 per cent from a total number of about 13,000, with an average annual kill of 1,144.

The estimate for 1931 was 15,255 elk and the kill was about 1,850. Among the National Forests, the Lewis and Clark forest supports the largest number of elk, the herds on this forest being estimated at 5,200, distributed from Glacier Park to the Blackfoot divide and in the various divisions of the old Jefferson Forest.

The other forests support elk as follows: Lolo, 2,220; Flathead, 1,590; Deer Lodge, 1,420; Bitter Root, 1,100; Helena 855; Beaverhead, 865; Gallatin, 720; Absaroka, 385; Blackfeet, 185; Cabinet, 290; Custer, 95, and Kootenai, 310.

The Absaroka and Gallatin carry much larger numbers during the winter season—these are elk which migrate out of Yellowstone Park during severe winters. Also along the Idaho boundary on the Lolo and Bitter Root forests at certain times of the year considerable numbers of Idaho elk are to be found. These migrate back into Idaho for the winter.

Montana ranks second in the nation in number of elk; Wyoming has 31,0075, Colorado, 12,215; Oregon, 10,160; Washington, 9,430, and Idaho, 9,250, the total for all the National Forests in the United States being about 97,000. The National Parks bring the total to well over 100,000. Twenty-two of our states have elk outside of zoological gardens and eight states have open seasons for hunting elk. Plants of elk from the Yellowstone region and Montana Bison Range have been made in 15 states.

The great herds of Arizona, now numbering 5,150 elk, are the progeny of a shipment in 1913 from Gardiner, Montana. Utah's 2,725 elk are the descendants of 150 shipped from Jackson, Wyoming, and Gardiner, Montana, in 1913, and New Mexico's 760 has increased from shipments made prior to 1915 from Gardiner. The last native elk was killed in New Mexico in 1900.

Of the many shipments of elk from the Yellowstone region to other parts of the country practically all have been successful insofar as increases are concerned. In a few instances introduced elk have caused some damage to fences, farm and garden crops.

The food habits of elk are somewhat similar to cattle. Elk prefer much the same species of grasses, weeds and browse, tending perhaps to eat more browse than do cattle. Of course on the winter ranges where forage is scarce the elk eat anything available whether or not it is good forage, and some observers have concluded that certain plants were eaten from choice when as a matter of fact they were taken from necessity, there being no choice, as all other plants were buried under too much snow for the elk to get them.

This deep snow at high altitudes in Montana is the limiting factor in the size of elk herds.

There is an abundance of summer range for many more elk than we have at present, but even now the winter range is sadly deficient. Notable examples of this are the Yellowstone and Sun River herds.

The Yellowstone herd has not been in a thrifty condition since the extremely severe winter of 1919-20 when about one-half the herd succumbed to starvation and exposure.

The winter range has deteriorated greatly since about 1912 so that now while the winter loss of adult animals is small, the mortality of calves is sufficient to keep the herd at a standstill. This is because it is too difficult for the calves to secure enough forage just following a severe winter, because of the mother's run-down condition when the calf is born.

The Sun River herd has shown a consistent net annual increase of about 10 per cent since the preserve was created. From a small band of native elk this herd has increased since 1913 to an estimated number of 5,000 and the herd is thrifty and extending its range northward, westward and southward. East of the mountains is the great prairie country of north central Montana which is now devoted entirely to farming and stockraising.

Some trouble has been reported by these stockgrowers from the elk coming on to their property damaging fences and eating hay and pasture. A dozen or so elk do but little damage to a rancher's pastures, but increase the number to 700 or 800 or 1,000 and it is readily seen that the amount of forage they will consume is too great for one man to be expected to furnish. In the late winter of 1930 some 3,000 elk left their mountain range on the Lewis and Clark forest and trespassed on the ranches for several weeks.

Perhaps the greatest extension the Sun River herd has made is to the westward. More elk were killed in Flathead county last year than any other county in the state. Elk are now being hunted all the way from Sun River west to the Mission Range. More hunting should be done east of the Continental Divide on Sun River as the winter range has been seriously damaged by over-grazing and the numbers of elk using this area should be greatly reduced.

Under favorable conditions such as: good year-long range, protection from hunting and protection from predators, elk will show about a 35 per cent annual increase, so it can readily be seen that it is possible to increase the size of our elk herds whenever it is desirable to do so.

The limited license system, which is in effect in some states, is an admirable way to control the size of the elk herds in the various parts of a state. Under this system, only enough elk licenses are issued each year to trim the herd down to the number their winter range will support. Each license specifies the sex and approximate age of the elk to be killed and the locality from which it may be taken.

Experience has proved that under the present system of hunting such a great percentage of the cows and calves are killed that it is only by closing large areas to hunting that any elk are kept at all.

Under the limited license system no closed areas are necessary and but very little restrictions on the length of season during which the elk may be shot because the total number and the number of each sex to be killed will be regulated. With the same number of elk as we now have at least twice the number could be taken each year under a system of regulated kill.

Real mountain elk hunting calls for more hardihood than any other kind of hunting—the pack trip to the mountains—the long hikes through the snow—the steep climbs over logs and through thickets of brush—the final shooting—dressing—getting the meat to camp—these things do not appeal to any but those who really enjoy going up against something hard and getting dog tired. I think, though, that the big kick an elk hunter gets is telling his fellow hunters all about it in camp at night.

With intelligent management we will always have sizeable herds of elk in Montana from which the hunters can kill the increase above that which the winter range will support.

STANDING ROOM ONLY

It happened that two men bearing the same name, one a clergyman and the other a business man, both lived in the same city. The clergyman died, and about the same time his neighbor went to Southern California. When the business man arrived there, he sent his wife a telegram informing her of his safe journey, but unfortunately it was delivered to the widow of the late preacher. Imagine the surprise of the good woman when she read, "Arrived safely—heat terrific."

Antelope Increase on Game Preserves

By James A. Weaver, Deputy State Game Warden, Lewistown.

J. A. Weaver

ANTELOPE are increasing to such an extent on limited space provided within the boundaries of Montana game preserves that remedial steps have become necessary in order that the burden on ranchers be lightened. For years these fleet little creatures that once bounded in great herds over Montana's prairies have been protected by state law. During early days the antelope provided food for Indians, fur traders, miners, and railroad construction camps and they were ruthlessly slaughtered. They were on the verge of extinction when laws were passed protecting them. Tracts of native pasture land were set aside as havens and the increase in the herds in central and northern Montana has been gratifying from the standpoint of preserving the animals, but disastrous when the preservation of adequate range for livestock is given consideration.

The antelope is a game animal without a home. The natural habitat on the prairies has been taken over by dry land farmers. They roam from place to place where they find grazing the best. They miss the open fields that were once the habitat of thousands. Barbed wire fences now enclose much of the territory where the herds once grazed before civilization and intensive cultivation of the soil entered into the scheme of things.

The largest herd of antelope in the west grazes on the Sullivan game preserve at Square Butte. More than 700 constitute this herd and they are graciously given the privilege of thriving on lands owned and leased by W. P. Sullivan, chairman of the State Fish and Game Commission. For years Mr. Sullivan has taken pride in protecting this herd, but the increase has become so great that the animals now threaten to require grazing ground needed by livestock and sportsmen of the vicinity are attempting to work out ways and means of scattering them or moving them to other desired localities.

It is a striking sight to view herds of from 100 to 300 antelope grazing in the rolling hills in the Sullivan game preserve. Passengers on trains are able to catch glimpses of these herds from Pullman car windows and many letters have been received from eastern visitors by Mr. Sullivan, commenting on the thrill provided.

While this growing herd has been given protection, other herds have been decimated by ruthless Indians. For years the state fish and game department has attempted to secure some action through the Indian department at Washington, D. C., looking toward checking the slaughter of antelope when they wander over the boundary lines of Indian reservations. The redskin in the majority of cases feels himself secure when on the reservation, and hunts and fishes during all seasons, regardless of fish and game laws. Deputy game wardens are without authority on the reservations, and deer, elk and antelope which are so unfortunate as to cross into the red man's reserve fall before the guns of Indians regardless of seasons. Reports are to the effect that this situation is particularly annoying in the Glacier park country in the vicinity of Browning and Cut Bank.

Suggestions regarding handling the antelope problem have been made by sportsmen and ranchers alike. Some have ventured the suggestion that an open season be declared but this idea is opposed because of the realization that such a move would mean wiping out the herds. Another suggestion has been made that an open season be declared on male antelope. Another is that special antelope licenses be sold, while another group maintains that the little animals should be rounded up and transported to other localities where they will thrive and increase.

While efforts are being made to cope with the problem, the antelope continue making it tough on ranchers who must depend on their grazing lands to fatten their cattle.

At the bison range at Moiese, where the federal government is in charge, the surplus buffalo and elk are annually moved off the range so that adequate feed remains for the desired number. If the buffalo and elk are not sold alive, they are killed and the meat distributed among needy Indians. To the sentimental opponent of this method of keeping the herds within check, the killing may appear uncalled for, yet when the welfare of the entire herd is considered, sane control demands that the number be kept within the feeding capacity of the range, lest the entire herd suffer winter privations and eventual starvation.

RECOMMENDATIONS

A farmer was asked what he thought of the two candidates for the legislature.

He replied "When I look at them I am thankful only one of them can get elected."

Antelope Present Striking Picture on Montana Skyline

Under protection of state law, the antelope are increasing to such an extent in game preserve areas, as to become of concern to farmers and stockmen.

The Dude Rancher and the Sportsman

By A. H. Croonquist, Executive Secretary, Dude Ranchers' Association.

A. H. Croonquist

YOU hear that we, as a nation, produce too much—too much of everything—wheat, sheep, cattle, lumber, copper, oil, and what-not. Even the lowly hen has been forced to overproduction by the installation of electric lights in the henhouse to produce a longer working day. But there is one crop of which we need an overproduction, that is fish in our streams. All streams in Montana should be stocked with some kind of fish. Even the dusty Powder river is navigable to mud cats.

Fish propagation and distribution is not alone the problem of our State Fish and Game Commission, the U. S. Bureau of Fisheries, the Sportsman's organizations, the Forest Service and the Dude Ranchers', but a problem of every citizen and taxpayer living in these western states.

Good trout fishing is one of the best advertising mediums to induce people to come west, to stay a while when they come and to continue to come back year after year for their vacations and enjoy fishing, which should be the west's best paying cash crop.

With 25 years active association and work with fish and game organizations, conservation movements, state and federal bureaus and the dude ranch industry here in the west, the executive secretary of the Dude Ranchers' Association is now working to bring about coordination of game and fish activities in the ranch territory and we feel that our fish and game program is one of the most constructive things the Dude Ranchers' Association has yet undertaken.

Lack of information or the casual conversation of the man on the street is often the cause of much misunderstanding and criticism, while the facts and figures often tell a different story. The Dude Ranchers are proud of their cooperation record and stand ready at all times to work with clubs, departments and commissions to carry out the fish and game programs.

The easterner does not catch all of our fish, but easterners who come to fish have made possible the dude ranch, a $6,250,000 industry in Montana and Wyoming, and these people spend annually with Montana merchants about $200,000. We might add that 214 of these eastern fishermen liked this country so well that they bought places and are now residents of our states with nearly $4,500,000 invested.

Quoting from interviews and the questionaires returned from 80 member ranches in Montana and Wyoming, they own and control 555,700 acres of land. If every acre of this land were lakes and streams and every foot posted it would not make a good-sized pond on the map of these two states. But all this land owned and controlled by member ranches is not posted. Our figures show that of 68 ranches reporting on this question, only 20 of them are posted. Public fishing is promised on the other 48, so you can not charge all these "no fishing" signs to member dude ranches.

Possibly your own Rod and Gun Club or League Chapter asked the fish and game commission to close these streams as a spawning ground or rearing pond or stream. Then, too, the posted lake or stream may belong to some farmer who has had livestock shot, crops destroyed or buildings burned by some fisherman, camper or hunter.

Dude ranchers are interested in the public shooting and fishing grounds and are working with the existing agencies to have congress pass such bills as they come up.

During 1931, a total of 60 of the 80 reporting ranches planted 2,762,000 fish without assistance from any organization, while 56 ranchers cooperated with Montana and Wyoming fish and game commissions and 32 assisted the U. S. Bureau of Fisheries and the Forest Service in stocking the lakes and streams wth several million fish.

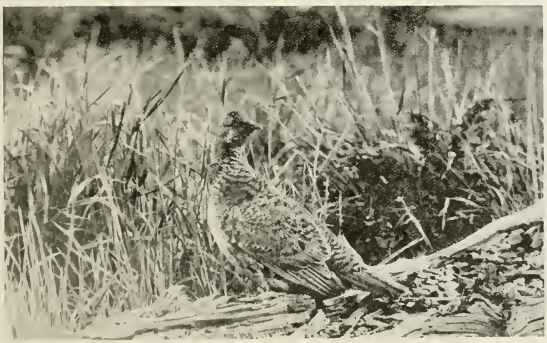
Twenty of these cooperating ranches furnished transportation and labor, packed and planted fish in lakes and streams from one to five miles from their ranches, 32 of them packed fish to new homes 5 to 30 miles away and 8 ranchers furnished trucks, pack horses and man power to plant lakes and streams 30 to 60 miles from their ranches, also 60 of the 80 members reporting helped or planted fish on the forest reserves or other public land where they could not post the lakes and streams if they wanted to.

This survey also shows that 47 ranchers make allowance in their budgets for fish planting and annually spend in cash, transportation and hired labor sums from $1 to $500 a year. This is more than most rod and gun clubs spend for this work.

In most cases the rancher has not a chance for direct return on the time and money invested, but they are real sportsmen, willing and anxious to work with everybody for more and better fishing.

The dude ranchers are strong and active supporters of Rod and Gun clubs, 76 of the 80 reporting belong to some sportsman's club.

Montana Blue Grouse are Coming Back



After several years of protection by action of the State Fish and Game Department, blue grouse are multiplying in Montana's mountains. Some strange malady, whether disease or other scourge, caused them to disappear in peculiar manner for a number of years. The open season in 1932 was the first since protection was afforded them.

Predatory Animal Control

By R. E. Bateman, Lender, Billings

R. E. Bateman

IN 1915 the Bureau of Biological Survey was requested to organize a small group in Montana for the purpose principally of controlling the depredations of wolves that were destroying thousands of dolalrs worth of livestock each year. At that time the appropriation was small and only $9,000 was allotted for this work in Montana. The method in which the Biological Survey decided would be the best to obtain quick results was to employ hunters on a salary basis. This work was started October 1, 1915.

At that time there were several places in the state where there were as many as 20 wolves running in a pack. The various places were Highwood mountains, Red Lodge, Beaverhead county, head of Ruby, in the bad lands near Miles City, Sweet Grass Hills north of Chester and many other places over the state. Within four years the Department had the wolves under control. In controlling the depredations of the wolves the hunters spent considerable time in controlling the depredations of coyotes, mountain lions and bobcats that were numerous on the range and doing considerable damage to game, sheep and poultry and in some sections killing calves.

The results obtained by these hunters have been the results of an increase in appropriations and state cooperation.

Since the latter part of 1921 the Fish and Game Department started cooperating with the bureau. In 1923, the Live Stock Commission began cooperating and the three departments worked in cooperation on the predatory animal work until April, 1931, when the Fish and Game Commission discontinued cooperation through an act of the legislature. Since that time the State Live Stock Commission and the Bureau of Biological Survey have continued the cooperation.

However, the departments have not lost their interest in the control of mountain lions or coyotes that prey on game and livestock in the mountain areas. Since the Fish and Game Department has discontinued the cooperation there have been 14 mountain lions taken by hunters paid by the Biological Survey and the Live Stock Commission. Many coyotes are destroyed each winter in game countries, also on the ranges where they destroy many of the game birds each year.

It was estimated a few years ago that a mountain lion will destroy 75 deer a year. Evidence of their destructiveness is evident when the snow is on the ground. In summer this evidence is not so noticeable and many kills are never seen or reported. Mountain lions are all destructive to livestock.

The wolves are under control and seldom any are reported in the state. Coyotes and bobcats are pretty equally distributed over the state and are the greatest menace to game, game birds, livestock and poultry we have to combat in our work. The coyote may be exterminated in any county or given locality in the state but within a year or two the area will be reinfested unless they are controlled equally as well in the adjoining territories.

It will take the combined efforts of the State Live Stock Commission, Fish and Game Commission, and the Bureau of Biological Survey to keep these animals in check. The high price of furs a few years ago caused many individual hunters to trap for the value of the furs. This was an aid in keeping down their numbers in localities where the individual trappers worked, but even with the aid of the individual trappers and the efforts of the three departments the coyotes still existed. On the ranges where a hunter was kept for a reasonable length of time the losses to livestock or game was practically eliminated and thousands of dollars saved to the livestock industry and many game animals and game birds were saved.

Montana has never had a sufficient force of hunters to control the depredations of coyotes in localities where requests have been sent for hunters. The Biological Survey office at Billings is constantly receiving requests for hunters to be sent into game areas to control coyotes and mountain lions preying on the deer and elk. Similar requests are received from livestock owners and poultry raisers.

Do Your Part

Sportsmen, stockmen and farmers are mutually interested in game. The game belongs to the state; it lives on the land of the farmer and it is protected by funds contributed by the sportsman. Many thoughtless hunters create ill will on the part of farmers by hunting on the farmer's land without permission, by leaving gates open, injuring stock, trampling crops, and in many other ways disregarding the interests of the farmers. Every person who goes afield in search of game should remember that persons with whom he comes in contact, judge all hunters by his own acts. Every possible courtesy and consideration should be shown by hunters to the farmers, and every such courtesy and consideration helps the entire sportsmen's fraternity.

Hunters Clear Hills of Predatory Pests

Predatory animal hunters associated with the U. S. department with Montana headquarters at Billings, are clearing the range of Senor Yip Yap, the wily coyote, and his ilk. Foes of game and livestock, including mountain lions and killer bears, are being hunted as far as funds available are possible. The picture above shows a season's catch of coyote and other hides.

Making It Easier for the Sportsman

By Sid J. Coffee, Missoula, President Montana Automobile Association

INKED so closely as to be almost inseparable, are the sports of fishing and hunting with good roads in Montana. To thousands of tourists and a majority of home folks, smooth highways would be meaningless and valueless unless they offered accessibility to regions where fishing is unparalleled and hunting is good. During its existence, the Montana Automobile Association has been alive to this close connection between highways and wild life sports and has conducted a certain part of its work and publicity on the basis that this relation is a valuable agent for bringing tourists to this part of the northwest.

Montana, which is a state of distances, has a reputation renowned for sports found outside city limits. Her most beautiful lakes are those far up in the mountains, the best fishing is in the bubbling mountain streams and the most suitable camping and hunting grounds often lie miles from a town. Montanans are in the habit of entertaining, not only themselves, but their out-of-state guests and visitors on fishing and hunting trips to spots which, before the advent of the automobile and roads, were all but unknown and inaccessible to even the most enthusiastic of sportsmen. The combination of the automobile and good highways is a chief reason for many Montanans becoming interested in such sports. Today men speed in cars through northwestern wilderness where once they plodded patiently on foot.

During the last two years a good part of the $21,000,000 which the state has used for road development and building was devoted to bettering and building highways, mostly in the mountain and forest regions. Places reputed unexcelled as hunting and fishing paradises and known much further than the boundaries of the state are being made attainable for motorists and tourists who are wild life devotees and, as time goes on and the mileage of oiled and improved highways here adds up with the expenditure of highway funds, spots hitherto unknown to fishermen and hunters will be annexed by them.

A country, like an individual, has a personality and certain characteristics. The Treasure State has long been recognized as an unmatched part of the northwest for out-of-doors recreation. Waterways here offer superb fishing and hundreds of well-stocked streams lie within the radius of the state while certain areas of Montana are abundant with a profusion of game life for deer, elk, bear and feathered hunting. Equalling this lavish gift is the natural beauty of the earth and sky—no country offers a more ideal setting for these sports. A combination like this, conforming to a standard of perfection, should draw a full share of tourists and travellers who seek thrills with beauty or beauty with thrills.

Bolstering Nature's lavishness are Montana's highways and roads. Latent sport possibilities are being opened by the annually increasing development of the state's roads and one now motors freely to hidden haunts of fish and game.

The true spirit of the west, that of hospitality, is genuinely exemplified in the ever-mounting mileage of improved roads being added to the state's highway system. Tourists' enthusiasm and desire for good hunting and fishing are irresistible only when roads to equal the degree of excellence in these sports are offered.

Good roads, now approaching modernization, traverse the state east to west and north to south. Access to the forests and mountains, which constitute about a third of Montana's large area, is a realization now that development within the last two and three years of an entire modern highway system has been approximated.

Good Roads, Good Sport

The Montana Automobile Association is a statewide non-profit motor club affiliated with the A. A. A. Chief functions of the association include the moulding of legislation to create funds for the building of Montana highways and to attract the motorist from other states to travel in and through Montana. It renders an assortment of special services to its members scattered throughout the state.

Out Door Ethics Code

Your outdoor manners tell the world what you are at home.

What belongs to the public isn't your own—play fair.

Respect the property of rural residents—ask before using it.

Save fences, close gates and bars, go around planted fields.

Do your shooting only where absolutely safe—see clearly before pulling the trigger.

Respect the law—take enough legal fish and game to eat, then quit.

Protect public health—keep springs and streams clean.

Clean up your camp and don't litter the highways with trash.

Carelessness with fires is a crime against humanity—prevent them.

Leave flowers and shrubs for others to enjoy—help keep outdoor Montana beautiful.

The Hungarian Partridge

In general appearance and body conformation, the Hungarian partridge of Montana resembles bob-white quail. However, the "Hun" is nearly twice as large as the quail, weighing from 12 to 14 ounces. The Hungarian, as in the case of quail, is a timid bird and consequently a peaceful one.

Incubation of Hungarian partridge eggs is from 21 to 23 days. The average nest contains about 16 eggs. Nesting sites picked by Hungarians often are along the edge of ditches, along grassy side-roads or in grassy fence rows. If suitable locations cannot be found elsewhere, Hungarians sometimes nest in hayfields and rough pastures, or other spots where there are quantities of old long, dry grass of the previous year's growth.

Hungarians prefer rich, fertile, flat or gently rolling land of clay loam. They seldom are found on high rolling or hilly land and are found in these locations only when their natural ranging grounds are within easy flight.

These birds should receive the encouragement of every agricultural community for they are a distinct benefit to farmers in their feeding habits. Their food consists chiefly of insects, weed seeds and waste grain. During spring and summer their diet is believed to consist chiefly of insect life. Fall and winter months find them feeding on ragweed, foxtail, black bindweed and many other noxious weeds. Zoologists have estimated that approximately 80 per cent of the Hungarian's diet is weed seed, the balance being made up of fallen grains.

Coloration of the Hungarian partridge is light steely gray, darkening as it proceeds from the neck to the body, until the gray nearly disappears in a maze of copper, white and black markings. Underparts are dull, yellowish white. Their dreaded enemy is the Cooper's hawk. At nights the "Huns" form in a loose ring similar to that used by quail. When disturbed they seem to flush simultaneously, each bird taking to the air at the same instant. Sportsmen find them one of the most difficult shots of all game birds.

BEAVERS BOTHER NORWAY

It is claimed that American beaver imported into Norway have proved to be a nuisance. They are now so numerous that their dams have flooded meadows, undermined roads and weakened bridges and farmers have petitioned for a repeal of the protective law accorded these animals by the Norwegian government.

Buck Law Is Bringing Back the Deer

By Fred B. Williams of Bozeman, President Montana Sportsmen's Association

F. B. Williams

MONTANA'S buck law, which forbids the killing of female deer in all but six counties of the state, has proven its worth to sportsmen keenly interested in the increase of the species. It is the best piece of legislation ever listed among fish and game laws. For many years the writer was an opponent of the buck law, but when the deer population of Gallatin county began to diminish, it began to be apparent that the buck law should be made operative and opinions were changed. During the last year I have covered much of Montana and in practically all regions where deer range, evidences show substantial increases because of the operation of the buck law.

Every effort should be made to educate the businessman as well as the sportsmen of Montana to the real value of wild life in this state. The amount of money spent by the tourists and vacationists who come here for the opportunity to see our game, is of major importance. For this reason we should keep our buck law on the books and build up our deer herds so that most anyone driving through the National Forests of Montana can see deer and other wild game and be able to return to their homes and tell friends about the game in Montana. No better advertising could possibly be undertaken and at no cost to us.

Montana's game is one of our greatest assets—not alone to the field of sport, but in times like these, from the standpoint of food. We have the finest playground for sportsmen in the United States and we should do everything in our power to keep it this way. The elk and deer killed in this state each year represent many dollars in food value. The Montana Sportsmen's Association has been fighting for many years to protect and build up our wild life and we feel that our efforts have not been in vain.

There is no doubt about the monetary value of fish and game from a scenic point of view. The tourist coming to this state prefers to see game more than anything else we have to offer. This value is far in excess of any possible income we may derive from the relatively small kills made for food.

Park, Gallatin and Madison counties will always have big game on account of their relation to Yellowstone National Park. The natural overflow is bound to drift into the forest adjoining the park. Heavy snows force deer to hunt lower lands and many of them find new homes and locate there.

GAME AND FOREST FIRES

Game resources cannot be successfully increased by mere laws. Game must be raised. To do so successfully the natural cover must be protected from forest fires. Give the wild life of Montana the right kind of environment and protect all game during the breeding season, then game will come back in large numbers. Laws have been enacted to protect game. Laws exist prohibiting forest fires. The public must cooperate by observing the game and forestry laws. Cooperation is the essential factor.

BOY—PAGE WEBSTER

"Not drunk is he who from the floor
can rise and drink once more,
"But drunk is he who prostrate lies and
cannot either drink or rise."

State Sportsmen Meet at Helena

MEMBERS of the Montana Sportsmen's Association are scheduled to hold the annual meeting at the Hotel Placer at Helena, Tuesday and Wednesday, January 10 and 11, according to word from Roger M. Cummings of Missoula, Secretary. Officers of the association include President Fred B. Williams of Bozeman, Secretary Cummings and the following directors: A. C. Baumgartner of Great Falls, Ed M. Boyes of Libby, A. H. Croonquist of Billings, Dr. J. H. Garberson of Miles City, Glen A. Smith of Missoula and Harlan L. Hart of Helena. The call for the meeting announces that questions regarding needed legislation will be discussed and a program arranged to be presented to members of the state legislative assembly. Coordination of activities of all state departments and organizations interested in the welfare of the wild life of Montana, is sought by the association.

Planting Fingerlings

Baby trout, hatched and reared in Montana's fish hatcheries, are carefully placed in the headwaters of crystal streams, safe from attack by their cannibalistic elders. Fish experts survey surroundings, take the temperature of the waters and equalize environment so that the little fellows get an even break from the start.

The Sentinel

Rocky Mountain goats leap from crag to crag in Montana's parks to add thrills to the visits of eastern tourists.

Fur Farming in Montana

By M. M. Atwater of Basin, Secretary Montana Fox and Fur Breeders Association

MONTANA'S fur farming is a recent addition to the state's oldest industry, the fur trade. Records of the State Fish and Game Department list approximately 100 licensed fur farms for 1932. This represents a decline in numbers from former years, a decline traceable to business conditions.

In common with all other forms of business, fur farming has suffered from the depression, yet it has shown remarkable vitality and there has not been a time when the fur farmer could not sell his product for cash and at a price which allows the more efficient operators to maintain themselves. This is a record which few businesses can match at the present time.

Montana is an ideal fur farming state. Much has been said of the advantages of climate, but there are other advantages less often mentioned but even more important. Some of these are low cost of land, low taxes and cheap food supply. The authorities which regulate fur farming are sympathetic with its aims and realize possibilities of this new industry which provides employment, attracts capital, utilizes waste land and increases the taxable value of property.

Authorities and fur farmers are cooperating on a friendly basis to develop the industry in a conservative and businesslike manner.

The product of fur farms is an important factor in the fur trade and is becoming more important year by year. It is no idle prophecy to say that fur farm production will soon exceed wild fur production.

At the present time all silver fox pelts are domestic. The number of ranch-raised mink pelts is gaining on the number wild-caught and as more and more fur-bearing species, threatened with extinction, are put on the protected list, the production of fur farms of various types is increasing in significance. Montana has a logical place in this development.

Fox and mink farms, as elsewhere, are dominant elements in Montana fur farming. However, many farmers are experimenting with marten and this fur bearer shows great promise due to the high value of the pelt and its increasing scarcity in the wild.

Quite recently a new kind of fur farming has emerged from the experimental stage: namely, the raising of beaver and muskrat in semi-captivity on large fenced areas.

Montana is peculiarly suited for enterprises of this type since it has a large natural supply of these animals as well as much suitable acreage. Since a good deal of this acreage is included in the National Forests, the Forest Service has become interested in the possibilities and is co-operating with both state and individual farmers to explore them.

The Montana Fox and Fur Breeders Association has been in existence for five years and is affiliated with the American National Fox and Fur Breeders Association. The state association represents the fur farmers of Montana in matters of legislation and policy, and acts as an agency for disseminating information and new developments among its members.

Fur farming in Montana is a young and growing industry which has demonstrated its ability to weather hard times, which has benefited the state in the past and will benefit it still more in the future.

Tagging Beaver

Mr. Atwater is shown above tagging beaver for identification at the fur farm.

Montana Beaver Worth Fortune

IF BEAVER hides had maintained an average price of $20 which prevailed years prior to the fur slump, the 71,831 hides tagged by the state department during the last 12 years would have a value of $1,436,620. The tagging fee is 50 cents and every beaver hide must bear the tag before it can be transferred. Beaver must be taken on permits issued by the department only where they are causing damage to agricultural lands or industrial plants. Prior to 1921 the state law made no provision for tagging and thousands of the valuable animals were slaughtered. The record of beaver hides tagged since 1921, follows:

1921	479
1922	2,430
1923	2,339
1924	3,184
1925	6,190
1926	9,714
1927	9,227
1928	5,749
1929	8,154
1930	8,692
1931	7,003
1932	4,670
Total	71,831

Quick Growing Trees

Although many valuable trees are comparatively slow growers, some of the best kinds develop to merchantable sizes with surprising rapidity, says the Forest Service, United States Department of Agriculture. Douglas fir in the Pacific Northwest will grow in dense seedling stands, in some cases reach 90 feet in height in 30 years. At 50 years it will produce 1 to 3 cords of wood per acre per year. In a dense stand the trees produce a high proportion of clean lumber.

Southern pines are among the quickest growing trees, saplings 20 years old often attaining a height of 40 feet. The annual yield in good second-growth stands may by this time reach 1 to 3 cords per acre.

Spruce and fir seedlings in the Northeast are often held back for 15 to 40 years by competition, but they never grow up quickly when the old trees are removed. The advance reproduction, as such a stand of little trees is called, when freed by the harvesting of the mature crop, in about 40 years develops into a new pulpwood forest producing acre.

Hardwoods are generally slower grow- 1 or more cords of wood annually per ing than the pine family. However, the yellow popular, or tulip tree, in second-growth stands reaches heights of 50 to 100 feet in 30 to 50 years.

Beaver Trapping Permits Slump

COMPLAINTS from farmers and industrial leaders of the state that beaver have been causing damage to agricultural lands and other property, have resulted in the issuance of 459 permits to trap the animals in 1931 and 270 permits in 1932. These permits are issued only after an inspection has been made by a qualified deputy game warden. The fee is $10 and each permit bears a limitation as to the number to be trapped. Applications must be filed before November 1 of each year. During 1919-1920 collection of the fee was waived by law. The following table shows the number of permits issued since 1917.

1917	218
1918	100
1919	...
1920	...
1921	242
1922	244
1923	259
1924	139
1925	562
1926	607
1927	641
1928	613
1929	582
1930	526
1931	459
1932	270

Liver Flukes In Big Game

By Dr. W. J. Butler, State Veterinary Surgeon

LIVER fluke disease or what is often called by hunters "rotten liver" is caused by a flat ova, leaf shaped, fluke-like worm (fasciola hepatica). This parasite may infest any ruminant, that is, any animal that chews its cud. It may also occasionally infest other animals and man. Sheep are the principle sufferers closely followed by goats, deer, elk and cattle.

The life cycle of this parasite is particularly interesting. The adult fluke is found in the bile ducts and liver substance of the infested animal. The mature fluke is flat, grayish or pale brown in color and approximately one inch long by half an inch wide. Immature flukes also may be observed in the liver as small as one-eighth of an inch in length. The matured fluke may produce one hundred thousand eggs or more. These eg gs pass down the bile ducts into the intestines and then into the outer world along with the droppings of the infested animal. Eggs which reach water hatch, those which remain on dry ground do not hatch. When eggs hatch they liberate a minute embryo fluke which is called the miracidium. These miracidium are microscopic in size. They swim about in the water by means of a coat of cilia or small hairs. In this form it lives only from one to three hours unless it finds a right handed snail. The miracidium does not penetrate into a left-handed snail. Why this microscopic immature fluke does not penetrate into a left-handed snail or how it can tell a right-handed snail from a left-handed snail is a phenomenon that no one as yet has explained. Nevertheless, this is a fact and a very important one in the control of liver flukes. If there are no right-handed snails in an area then there will be no liver fluke disease. If we find right-handed snails in an area we know that liver fluke disease will undoubtedly make its appearance in that district unless we destroy these right-handed snails, which can be done in most districts by means of broadcasting copper sulphate.

The miracidium has two stages of development within the snail. The time required for this development is from 50 to 80 days. When the final development has taken place the immature fluke leaves the snail in the form of what is called a free-swimming cercariae. For every miracidium that penetrates into the right-handed snail there develops anywhere from 15 to 100 free-swimming cercariae. These cercariae resemble a tadpole in shape having a flat, heart shaped body with a long tail. They wiggle around in the water and under ordinary conditions attach themselves to grass or leaves. They lose their tail, excrete a sticky substance in which they encyst themselves and which glues them to the stem of grass or leaf. If they do not become attached to a stem of grass or a leaf they encyst themselves with a sticky substance and float around on the water. A susceptible animal that comes along and eats grass that has these cysts on it or drinks water that contains these encysted cercariae becomes infested with flukes. When these encysted cercariae are taken into the stomach of a susceptible animal the cysts are absorbed and the young flukes liberated. These young flukes then penetrate through the walls of the intestines, get into the body cavity where they wander about and in about 14 days reach the liver. When they reach the liver they penetrate the liver capsule, get into the bile ducts where they grow to sexual maturity and the whole cycle starts over again. The time required for the completion of their life cycle from egg to egg is from six to eight months.

In cooperation with the Zoological Division of the United States Department of Agriculture, the Livestock Sanitary Board has located most of the areas infested with liver fluke. So far we have never found a case of liver fluke east of the the foothills of the Rocky Mountain Divide. Practically all areas infested with the fasciola hepatica are west of the Rocky Mountain divide and a small area on the eastern slope of the Rocky Mountain Divide.

This condition is of particular interest to sportsmen and all interested in wild game life. It is not a question of sheep or cattle being on a range. Deer and elk are just as badly infested as sheep or cattle. How long these flukes have been in this country no one knows but probably long before there were any domestic animals. As long as we have right-handed snails we will have liver flukes because there are always susceptible animals wandering around. Ordinarily liver fluke infestation does not kill mature animals but if a young animal becomes heavily infested with these liver flukes the death loss may be considerable. In this country infestation generally takes place between July and the third frost in September or October.

Sheep may be individually treated with carbon tetrachloride but it is dangerous to treat cattle with carbon tetrachloride and of course when we come to wild life like deer and elk, individual treatment is out of the question.

In many districts, however, we may prevent liver fluke infestation by killing off right-handed snails. Right handed snails are very easily destroyed by means of copper sulphate and by proper drainage of infested areas.

Dr Robert Jay states that "Copper sulphate kills the snails, the miracidia, and the free swimming cercariae. It does not injure the fluke eggs or the encysted cercariae, therefore, to prevent infestation, the snails should be destroyed before the water and grasses are infected.

"In the dilutions used for killing snails, copper sulphate is not injurious to grasses, flowering plants, or to livestock which drink it. It will kill the lower form of plant life, such as the algae and mosses and will kill fish"

It has been our personal observation that copper sulphate will kill fish and especially trout in very dilute quantities. Therefore, to treat our running fish streams with copper sulphate is out of the question.

We can, however, treat marshes, stagnant water holes and quite a number of our ponds without injury to game fish.

Dr. Maurice C. Hall, chief of the Zoological Division of the United States Bureau of Animal Industry, has the following to say:

"In view of the fact that snails are essential as intermediate hosts in the life history of the liver fluke, it is highly desirable to destroy the snails in flukey areas, as any young flukes which hatch and fail to find a suitable snail are incapable of ever infecting sheep or cattle. The best known method of destroying the snails is by means of copper sulphate. Walton, in Europe, recommends spraying the pasture, either with a knapsack sprayer or with a power sprayer, using on dry pastures a ½ per cent solution made by dissolving a half pound of copper sulphate in 10 British or imperial gallons of water. The British gallon contains 160 fluid ounces; the United States gallon contains 128 fluid ounces. A solution of approximately ½ per cent would call for 12.5 U. S. gallons of water to a half pound of copper sulphate. In his experiments he found that it would require from 80 to 137 gallons of the solution to spray an acre, or usually from 100 to 120 gallons. The cost was about $1.75 an acre plus labor cost. When surface water is present the strength of the solution should be increased to 1 or 2 per cent, or even stronger if necessary. For large areas of swampy land, Walton suggests broadcasting with 1 part of powdered copper sulphate by weight to 4 to 8 parts of fine, dry sand, this costs about $2.50 an acre plus cost of labor and sand. For the margins of ponds and ditches he suggests the use of a dust made of 1 part by weight of powdered copper sulphate to 4 parts of kaolin (china clay); this costs about $3.00 an acre plus labor cost. Substances other than sand or kaolin to mix with copper sulphate for broadcasting or dusting might be found."

We have looked into this condition in wild animals as well as in domestic animals and just this fall we made a cursury survey of the Sun River country. Apparently there is not sufficient liver fluke infestation in that district to cause serious alarm at this time

Game Law Violations and Arrests

By J. W. Carney, Helena, Assistant State Game Warden

J. W. Carney

VIOLATIONS of Montana's fish and game laws during the biennium which has just closed have been held in check below the peak established in 1930, when 514 arrests were made by deputy state game wardens. Reports received at headquarters show that in 1931, 455 arrests were made by wardens while in 1932 the figure increased to 458. The top mark established in 1930 was the largest total of violations recorded in the 20 years since this information was tabulated in the department.

Analysis of statistics shows that the largest number of violations occurred in Lincoln county in 1932 where 49 arrests were made. The 1931 record was held by Beaverhead county where 33 arrests were made. During 1932 no arrests for fish and game law violations were made in 12 Montana counties: Carter, Daniels, Fallon, Garfield, Liberty, McCone, Musselshell, Powder River, Prairie, Teton, Treasure and Wibaux.

Fishing without a license proved the stumbling block for the largest number of offenders, 80 being arrested in 1931 and 89 in 1932. In former years the largest number of arrests was usually made for shipping furs outside the state without a license.

With the limited funds at its disposal, the fish and game department is striving to cover the 90,000,000 acres or 140,997 square miles included within Montana's boundaries. The official population of the state in 1930 is given as 537,606 or about four people to the square mile, hence the task confronting the small staff of law enforcement officers associated with the department, may be visualized.

Here's the record of arrests for violation of the fish and game laws during the last 20 years:

1913	49	1923	403
1914	123	1924	328
1915	237	1925	482
1916	156	1926	366
1917	171	1927	345
1918	219	1928	407
1919	60	1929	341
1920	116	1930	514
1921	278	1931	455
1922	336	1932	458

FISH AND GAME LAW VIOLATIONS, 1931-1932

	1931	1932
Alien in possession of firearms without license	9	9
Catching over the limit of game fish	15	13
Catching more than 5 fish under 7 inches in length	17	15
Fishing without a license	80	89
Fishing through the ice	8	6
Fishing in closed streams	28	23
Fishing during closed season	5	9
Fishing with more than 1 pole, line and hook and set line	7	5
Hunting without a license	15	29
Hunting on Game Preserve	3	20
Hunting deer with dogs	2	....
Illegal possession of beaver hides	8	8
Killing Bear without license	5	....
Killing a moose	3	1
Killing elk out of season	14	8
Killing deer out of season	50	42
Killing grouse, prairie chicken, etc., out of season	14	20
Killing doe deer	4	3
Killing more than one deer	4	5
Killing antelope	4	3
Killing fawn	2	....
Killing Chinese pheasants out of season	9	11
Killing deer by use of spot-light	1	....
Making false statement in application for license	31	6
Opening muskrat houses	1	3
Possession of untagged venison	12	17
Possession of a seine without a license	2	2
Salmon eggs, fishing with same	12	14
Snagging fish	2	1
Shipping furs from state without a permit	11	4
Shooting ducks after sunset	4	9
Shooting ducks after season closes	12	14
Shooting song birds	1	....
Shooting from public highway	8	9
Trapping fur-bearing animals out of season	4	7
Trapping fur-bearing animals without a license	21	10
Trapping beaver without a permit	15	12
Use of explosives for taking fish	3	....
Killing Chinese pheasant hens	3	5
Selling furs without a license	1	2
Selling Game Fish	....	1
Carrying Firearms on Game Preserve	....	1
Killing Elk on Game Preserve	....	2
Collecting Wild Duck Eggs	....	1
Selling a Game Animal	....	4
Killing Mountain Sheep	....	1
Failing to make report on Fur Sales from Fur Farms	....	1
Trapping on Game Preserve without License	....	2
Shooting a Swan	....	1
Destroying Evidence of Sex of Deer	....	1
Killing Mountain Goat out of Season	....	2
Shooting from Automobile	....	1
Guiding without a license	....	3
Killing Deer with Horns less than 4 inches	....	1
Fishing after hours in Georgetown lake	....	2
TOTAL LAW VIOLATIONS	455	458

VIOLATIONS BY COUNTIES

	1931	1932
Beaverhead	33	32
Big Horn	4	12
Blaine	1	2
Broadwater	5	2
Carbon	17	12
Carter	1	....
Cascade	10	7
Chouteau	2	5
Custer	2	2
Daniels	1	....
Dawson	1	3
Deer Lodge	24	21
Fallon	....	....
Fergus	10	5
Flathead	26	27
Gallatin	22	23
Garfield	....	....
Glacier	5	3
Golden Valley	....	4
Granite	13	10
Hill	8	4
Jefferson	3	2
Judith Basin	9	4
Lake	20	34
Lewis and Clark	17	11
Liberty	2	....
Lincoln	23	49
Madison	14	15
McCone	....	....
Meagher	2	2
Mineral	11	26
Missoula	11	14
Musselshell	9	....
Park	9	7
Petroleum	1	2
Phillips	8	1
Pondera	4	4
Powder River	2	....
Powell	9	6
Prairie	....	....
Ravalli	1	11
Richland	9	1
Rosebud	2	6
Roosevelt	3	1
Sanders	22	35
Sheridan	2	1
Silver Bow	18	5
Stillwater	25	11
Sweet Grass	4	7
Teton	....	....
Toole	....	5
Treasure	....	....
Valley	3	2
Wheatland	....	2
Wibaux	....	....
Yellowstone	30	20
TOTAL	455	458

Fish and Game License Sales Show Decline

ECONOMIC conditions prevalent throughout the nation have been reflected in the sales of Montana fish and game licenses during the last year. Two years ago the state legislature made possible the split license system, which enabled the department to adopt the big game tagging system, and while results have been gratifying from an enforcement standpoint, receipts have shown a decline of more than $40,000 in 1932 below the mark of 1931.

The following figures denote departmental receipts from all sources for the last four years:

1929	$209,478.87
1930	209,483.90
1931	223,655.08
1932	179,644.14

In 1929 a total of 83,388 resident licenses were sold while in 1930 the figure reached 82,331. During those two years the old license system prevailed. Under the new system adopted two years ago the big game and the resident bird and fish licenses were divided. In 1931 a total of 68,574 resident bird and fish licenses were sold and 60,374 in 1932. In 1931 the resident big game licenses totaled 24,394 at $1 each while in 1932 this total reached 25,868.

The resident sportsman's license at $5 totaled 1,848 in 1931 and dropped to 695 in 1932. The non-resident fishing license sales in 1931 totaled 4,513 and in 1932 declined to 2,636.

In 1932, Silver Bow county led the state in the number of resident bird and fish licenses sold with 5,821. Lewis and Clark was second among the 56 counties with 4,438 and Flathead third with 4,179.

Flathead county holds the 1932 lead in the sale of big game licenses to residents at $1 with 3,527. Lewis and Clark is second with 2,407 and Silver Bow third with 1,931. Statistics showing the total number of licenses of all descriptions sold in Montana counties during the biennium just closed are included in the tabulation which follows.

LICENSE SALES BY COUNTIES IN 1931

	Resident Bird and Fish	Resident Big Game	Resident Sportsman	Non-Resident Fish	Non-Resident Big Game	Non-Resident Bird	Alien Fish
Beaverhead	2,119	530	72	157			4
Big Horn	576	54	17	7		6	
Blaine	435	33	12	1			
Broadwater	525	229	20	11			
Carbon	1,358	138	10	57			7
Carter	9						
Cascade	5,591	1,731	155	56	6	2	14
Chouteau	456	115	14				
Custer	223	7	5				
Daniels	58		4				
Dawson	[illegible]	56	27	11			
Deer Lodge	2,204	634	63	45			4
Fallon	37	4	2				
Fergus	1,684	290	17	29			
Flathead	4,822	3,272	48	185	9	3	17
Gallatin	3,2[illegible]3	1,014	49	589	14	10	6
Garfield	13		2				
Glacier	706	193	41	64			
Golden Valley	92	[illegible]	3	1			
Granite	710	397	10	23			
Hill	1,092	92	41	10	3		2
Jefferson	678	318	23	13			
Judith Basin	693	[illegible]	16	7			
Lake	[illegible]	1,011	51	[illegible]			
Lewis and Clark	[illegible]	2,509	282	127	[illegible]	15	*1[illegible]
Liberty	120	10	3				
Lincoln	1,926	1,218	58	168	9	6	[illegible]
Madison	1,3[illegible]9	436	40	299	2		
McCone	11						
Meagher	[illegible]	[illegible]	4	29			
Mineral	[illegible]	[illegible]	12	7			
Missoula	[illegible]	[illegible]	165	170	[illegible]	[illegible]	11
Musselshell	612	[illegible]	5	6			1
Park	[illegible]	1,023	[illegible]	121	13		13
Petroleum	[illegible]	9	[illegible]				
Phillips	[illegible]	12	[illegible]	2			
Pondera	[illegible]	[illegible]	[illegible]	[illegible]			
Powder River							
Powell	[illegible]	[illegible]	28	[illegible]	10		4
Prairie	25		1				
Ravalli	1,6[illegible]2	[illegible]	13	[illegible]	4		
Richland	[illegible]	2	[illegible]				
Rosebud	[illegible]	1	[illegible]				
Roosevelt	360	[illegible]	[illegible]	2			
Sanders	[illegible]	[illegible]	[illegible]	[illegible]	6	1	[illegible]
Sheridan	[illegible]	6	[illegible]		6		
Silver Bow	[illegible]	1,30[illegible]	[illegible]	[illegible]			[illegible]
Stillwater	[illegible]	[illegible]	[illegible]	66			
Sweet Grass	[illegible]	[illegible]	[illegible]	[illegible]			
Teton	[illegible]	[illegible]	40	6			
Toole	[illegible]	[illegible]	[illegible]				
Treasure	[illegible]						
Valley	[illegible]		14	2			
Wheatland	[illegible]	[illegible]	34	[illegible]			
Wibaux	[illegible]						
Yellowstone	[illegible]	[illegible]	[illegible]	[illegible]	4		11
IDAHO	40	[illegible]		1,060		5	
WASHINGTON				250	4	1	
	[illegible]	[illegible]	1,848	4,513	100	62	[illegible]

*—Includes [illegible] alien bird and 2 alien big game licenses

LICENSE SALE BY COUNTIES IN 1932

	Resident Bird and Fish	Resident Big Game	Resident Sportsman	Non-Resident Fish	Non-Resident Big Game	Non-Resident Bird	Alien Fish
Beaverhead	1,352	543	12	69	1	—	3
Big Horn	505	52	8	21			
Blaine	301	34	2				
Broadwater	[illegible]	197	7	7			
Carbon	1,686	226	3	32			44
Carter	22						
Cascade	5,007	2,000	70	17			4
Chouteau	[illegible]	173	2				
Custer	146	8	1				
Daniels	[illegible]		4				
Dawson	[illegible]	17	7				
Deer Lodge	[illegible]	745	9	7			6
Fallon	85						
Fergus	1,506	652	[illegible]	[illegible]	1		1
Flathead	4,179	3,527	31	101	1	1	10
Gallatin	3,018	[illegible]	46	458	14	6	11
Garfield	4						
Glacier	[illegible]	196	7	35			1
Golden Valley	[illegible]	40					
Granite	489	[illegible]	3	22			
Hill	[illegible]	[illegible]	12				1
Jefferson	[illegible]	[illegible]	2	2			
Judith Basin	[illegible]	[illegible]	1	12			
Lake	[illegible]	[illegible]	[illegible]	108	5	3	
Lewis and Clark	[illegible]	[illegible]	[illegible]	112	10	4	*13
Liberty	[illegible]	10					
Lincoln	[illegible]	[illegible]	[illegible]	11	2		1
Madison	[illegible]	[illegible]	[illegible]	180		1	
McCone	[illegible]	[illegible]					
Meagher	[illegible]	[illegible]	1	4			
Mineral	[illegible]	[illegible]	[illegible]	26		2	
Missoula	[illegible]	[illegible]	[illegible]	104	10	2	11
Musselshell	[illegible]	[illegible]	[illegible]	4			1
Park	1,784	[illegible]	41	47	1		
Petroleum	[illegible]	[illegible]					
Phillips	[illegible]	[illegible]	4				
Pondera	[illegible]	[illegible]	1	2			
Powder River	[illegible]						
Powell	[illegible]	[illegible]	6	19			
Prairie	[illegible]		6				
Ravalli	[illegible]	[illegible]	8	[illegible]			
Richland	140		4				
Rosebud	[illegible]	21	[illegible]				
Roosevelt	[illegible]						
Sanders	1,401	[illegible]		104	[illegible]	1	2
Sheridan	[illegible]	[illegible]				3	
Silver Bow	5,821	[illegible]	[illegible]	46		1	23
Stillwater	[illegible]	[illegible]		[illegible]			
Sweet Grass	[illegible]	[illegible]	11	[illegible]			
Teton	[illegible]		2	2	1		
Toole	[illegible]	144	12	4			
Treasure	[illegible]						
Valley	[illegible]	3	2	3			
Wheatland	[illegible]	[illegible]	6	[illegible]			
Wibaux	[illegible]			2			
Yellowstone	[illegible]	[illegible]	12	[illegible]	7	1	3
IDAHO	11	[illegible]		636			
WASHINGTON				97	10	1	
UTAH				6			
TOTALS	[illegible]	[illegible]	[illegible]	2,636	[illegible]	[illegible]	135

*—Includes one alien bird license

Montana's Fish Hatcheries

By Kenneth F. MacDonald, Helena, State Superintendent of Fisheries

K. F. MacDonald

EACH biennial period brings to light new factors which must be reckoned with if we are to keep pace with the ever-increasing demand for good fishing. The outstanding factor of this biennium is the road improvement program which brings the old and new fishing areas within comparatively easy reach of the fisherman. As is not always the case, the very factor which creates this new demand, serves materially in assisting with satisfying the demand as with improved highways it is now possible to enlarge upon territory served by each hatchery. With improved methods of fish transportation, it will make possible, with the enlargement of present hatcheries, to centralize activities, which is the accepted method of present day times for efficient operation.

The protracted and unprecedented drought which reached its maximum during the late summer and early fall of 1931 is another factor which demands consideration. This drought resulted in a heavy loss of fish and aquatic food life in many smaller streams, with the only compensating feature being the attention it drew to the value of water conservation. There are agencies now at work on a program of this nature and it merits the whole-hearted support of all sportsmen as well as the general public. Each fish has a monetary value, dependent upon the size and species, and until a water conservation program is put into effect assuring sufficient water for the sustaining of fish life in the areas affected by each drought, it would be the better policy to direct activities toward building up fishing in the larger streams and lakes.

The natural food rearing pond idea which was so popular a few years ago and in which this division participated to a certain extent, has proved that it has but little merit. In only isolated instances has it developed the results anticipated.

It is the present day policy to establish ponds on hatchery grounds where it is possible to have constant supervision and the cost of operation reduced.

There are instances, however, where it is to an advantage to establish the rearing ponds or better termed, feed stations, on a creek or stream in the heart of a large distribution area. Last spring one of these stations was established on Beaver Creek near Havre. This was of an experimental nature, and it developed that the nominal cost of constructing and maintaing this station, with the splendid results obtained, justify expanding upon this program.

It is the intention next year to establish stations of this type in several regions where they will make possible the liberation of larger fish with but small distribution costs.

It is possible through use of this type of pond to utilize a larger volume of water and of a higher temperature than the average hatchery water which promotes a more rapid growth of fish. The fish are transferred from the hatchery during May or June, after the high water period and at a time when the stream and hatchery water is of about the same temperature. A man is placed in charge of the station and attends to the feeding and other duties necessary in the operation.

The fish are retained until the water temperature drops to the point where they will not take food readily and are liberated in the adjacent territory. All obstructions are then removed and a volume of water allowed to run free through the ponds during the idle period. This keeps the ponds in a clean, sanitary condition and reduces the danger of disease to the minimum.

Another feature of this type of pond is the rearing of the fish in the waters in which they are to be later released or water of approximately the same character. There has been considerable study of recent years of the effect of transplanting fish from one water to another of entirely different mineral content and the results indicate that in many instances, it is disastrous.

Considerable headway was made during the last biennium toward the planting of larger fish and getting a record of waters in each district for the purpose of improving our planting pro-

Fish Distribution Report of All State Hatcheries in 1931

	Bass	Crappies and Sunfish	Perch and Catfish	Black Spotted	Rainbow	Grayling	Brook	Salmon	Leven Loch	Golden Trout	TOTALS
Anaconda	.....	.....	.....	2,516,560	130,820	1,115,290	190,022	186,474 [1]	.....	3,600	4,142,766
Big Timber	.....	.....	.....	1,715,170	820,000	.....	398,800	98,735 [1]	1,410,945	.....	4,446,650
Emigrant	.....	.....	.....	1,634,306	.....	.....	.....	.....	.....	.....	1,634,306
Great Falls	.....	.....	.....	812,500	860,110	.....	281,400	46,374 [1]	269,270	.....	2,269,654
Hamilton	.....	.....	.....	2,156,000	250,000	.....	.....	50,000	.....	.....	2,456,000
Lewistown	.....	.....	.....	920,955	429,105	.....	.....	.....	.....	.....	1,350,060
Libby	.....	.....	.....	695,600	354,500	.....	.....	.....	.....	22,100	1,072,200
Miles City	30,450	445,300	49,080	.....	.....	.....	.....	.....	.....	.....	524,830
Missoula	.....	.....	.....	1,609,000	266,000	.....	.....	.....	.....	.....	*2,750,000
Ovando	.....	.....	.....	983,036	.....	.....	.....	.....	.....	.....	983,036
Philipsburg	.....	.....	.....	974,917	.....	.....	.....	.....	.....	.....	974,917
Polson	.....	.....	.....	490,970	299,674	.....	.....	.....	.....	.....	790,644
Red Lodge	.....	.....	.....	543,430	.....	.....	.....	.....	.....	.....	543,430
Somers	.....	.....	.....	1,294,000	468,000	.....	.....	(145,000) [2] (150,000) [2]	.....	.....	2,057,000
Total State	30,450	445,300	49,080	16,349,444	3,878,209	1,115,290	870,222	676,583	1,680,215	25,700	25,996,493
Field:											
Jones Lake	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	8,400
Nine Pipe	2,032	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,032
Somers	192,066	.....	.....	.....	.....	.....	.....	.....	.....	.....	192,061
Cooperative:											
Butte Anglers	.....	.....	.....	672,000	600,000	.....	.....	.....	.....	.....	1,272,000
Bureau of Fisheries	.....	.....	.....	732,900	.....	.....	.....	.....	.....	.....	732,900
Yaak Pond	.....	.....	.....	.....	20,000	.....	.....	.....	.....	.....	20,000
	194,032	.....	.....	1,404,900	620,000	.....	.....	.....	.....	.....	2,227,393
Grand Total	224,482	445,300	49,080	17,754,344	4,498,209	1,115,290	870,222	676,583	1,680,215	25,700	28,222,886

[1] Chinook Salmon [2] Sockeye Salmon *Includes 875,000 Whitefish

gram. These records show which waters must be stocked with larger fish, and which waters, due to the protection afforded, are suitable for the planting of fingerlings or fry. The chief obstacle in the way of more rapid development of the program for the planting of larger fish is lack of revenue. We are very mindful, however, of the value of this program and intend to continue efforts toward expansion.

Some experimental work was done at Lake Helena during the fall of 1931 toward establishing a plant for the purpose of utilizing the secondary fish, carp and suckers, for fish food. The nature of the experiment was to determine the availability of these fish, their value as fish food having been previously determined. It developed that it will be possible to collect these fish at a small cost and in numbers which warrant the construction of a small canning plant. Some work was done toward preparing a fish meal as a food but little headway was made due to the improvised plant not being adapted for economical preparation for this type food. It is the intention to erect a plant at this point as soon as revenue is available, to effect a considerable saving in fish food costs incurred in holding fish to a larger size.

Because of the surplus of native trout eggs each year at the Georgetown lake spawning station, exchanges are made with other State Fish and Game Departments for different species needed to meet the wide range of conditions in this state.

While these exchanges are to our advantage in that it is possible in this way for us to obtain the different species through the operation of one spawning station, there is no assurance that it will be possible to continue with exchanges for any definite period, due to the possibility of a decrease in our native egg collection or through being able to utilize the entire take of natives. For this reason steps are being taken to develop or revive spawning stations for Rainbow at Lake Francis, Lake Ronan and Cliff lake, for Eastern Brook at Daly's lake in Park county, for Loch Leven in Hebgen lake, for Grayling in Rogers and lower Ashley lakes in Flathead county and the development of Big Ashley for natives to be used in the event that we have more demand for this species at some future time than Georgetown will supply. The magnitude of fish cultural operations is measured by the available brood stock.

Thomas E. Day

MONTANA'S State Fish and Game Department lost one of the most valued members of its fisheries division staff with the passing of Thomas E. Day, foreman of the Station Creek hatchery at Polson last June. Mr. Day, who was 42, and who had been associated with the department for eight years, was stricken with a heart attack and was unable to rally. His widow survives. During his years of service with the fisheries division he was employed at Missoula, Ovando and at Station Creek. He was relied upon annually to assist with the important spawn-taking work at the mouth of Flint creek on Georgetown lake and his death creates a vacancy that will be difficult to fill.

In the spring of 1931 the Oregon type of revolving fish screen was installed in an irrigation ditch out of Spring creek on the Madison near Ennis. This ditch was recognized as one of the worst in the state with regard to the annual loss of fish. While the screen operates effectively and leaves no doubt as to the value of its installation, the cost is prohibitive, with the present revenue, for this division to accept full responsibility for screening ditches and it is hoped that it will be possible to devise some means of financing this important undertaking or interest other agencies in the matter.

The new highway from Great Falls to Helena opens a lengthy stretch of the Missouri river to fishermen and it is planned to make a concerted effort to further develop the fishing in this water as rapidly as possible. Considerable has been done in recent years, in anticipation of the demands resulting from the new highway, toward stocking the upper stretches from Wolf Creek to Cascade with Loch Leven and Rainbow and this year many good catches were made.

The Missouri river offers a wide range of conditions in the immediate vicinity of Great Falls, with the upper portion being ideally suited for trout and with the reservoirs formed by the power dams being ideally adapted for the warm water species such as bass, crappies, perch and catfish. These species have been planted in the reservoirs for the last few years in limited numbers. The Miles City Warm Water station is not yet developed to full capacity.

In 1923 a number of catfish from Nelson Reservoir near Malta were planted in Nine Pipe Reservoir on the Flathead Reservation and splendid results obtained. It is planned to transplant a large number of these from Nine Pipe next year to the reservoirs at Great Falls.

An egg exchange has been made with Michigan whereby they are to furnish us with wall-eyed pike for grayling. It is planned to plant the pike as an experiment in the Missouri river reservoirs and in the lower Yellowstone and Tongue rivers next spring.

During the last two years, rearing ponds have been constructed on the Dearborn and Upper Sun River and they have produced satisfactory results. With the establishment of a feeding station on the Missouri river or one of the tributaries, as planned for next spring, it will be possible to keep this area in the front as a fishing paradise. Belt creek, once famed for its fishing, is fast coming back after the depletion suffered from the effects of pollution from mining operations. It is planned to plant this stream heavily with Eastern Brook and Rainbow and these eggs are now being incubated at the Great Falls hatchery.

The comparatively limited trout fishing waters in the Billings territory necessitates a careful and thorough application of fish cultural methods to keep pace with the heavy drain. Due to conditions prevailing in the Stillwater river, with fast water and lim-

Fish Distribution Report of All State Hatcheries in 1932

	Bass	Sunfish and Crapples	Catfish and Perch	Black Spotted	Rainbow	Grayling	Brook	Salmon	Loch Leven	Whitefish	TOTAL
Anaconda				2,175,890	360,008	1,840,000	21,840	93,366	1,294,000		5,785,104
Big Timber				2,004,900	778,425		439,000	90,425	1,497,200		4,809,[illegible]
Daly (Hamilton)				3,045,000	272,500						3,317,500
Emigrant				1,388,200	[2] 103,600						1,491,800
Great Falls				1,117,200	[4] 523,590		11,000		310,92[illegible]		1,962,[illegible]
Lewistown				554,246	613,[illegible]		6,160				1,174,[illegible]
Libby				1,332,525	353,700		90,000		109,175		1,885,400
Miles City	[illegible]	155,130	10,6[illegible]								175,270
Missoula				10,000	14,600						24,600
Ovando				935,200							935,200
Philipsburg				960,360							960,360
Polson				706,515	293,696					[illegible]	6,47[illegible],96[illegible]
Red Lodge				940,120							940,1[illegible]
Somers	[illegible]	1,500		1,193,000	[illegible]	[illegible]0,000	294,000	166,[illegible]			2,477,640
Yaak Pond					16,000						16,000
Ashley Lake				724,520							724,520
Cooperative											
Butte Anglers				101,000	585,000						686,000
McAllister				1,345,600							1,345,600
Grand Total	[illegible]	156,930	10,685	19,134,276	3,892,690	1,890,000	562,000	[illegible]	[illegible]	[illegible]	35,181,547

[1] Including [illegible] Park Station.
[2] From Bozeman.
[3] Includes 25,600 from the McTaggart Cronin Pond.
[4] Including 55,590 from Havre Pond.

ited areas for the development of the smaller fish, larger fingerlings and yearlings are being planted. It is planned to establish a feeding station on this stream next spring in hopes of being able to maintain good fishing.

The Loch Leven trout have made a favorable showing in the Yellowstone river, from the few small plantings that have been made in years past and at the request of the fishermen of that region substantial plantings of this species will be made in the future.

The Cooke City-Red Lodge road is opening an extensive fishing area which will be accessible particularly to the fishermen of the southeastern section. The high altitude and the waters of a low temperature requires the planting of fall spawning species for the best results. Several plants of Eastern Brook were made in this area last spring and eggs are now being incubated at Emigrant and Big Timber for the purpose of making substantial plantings again next spring.

A cooperative agreement was made this year with the Wyoming department on stocking of the upper Tongue river. This stream heads in Wyoming and runs through Montana to the Yellowstone river at Miles City, and is the only possibility for development of the fishing to any extent in the far eastern section. The upper reaches of the stream in Wyoming are ideally suited for Loch Leven and it is the belief that improving the fishing in the upper portion of the stream will eventually provide fishing in the Montana portion between Ashton and the state line. This stream is of the same character as the Yellowstone and Missouri, in that the upper reaches are trout waters and the lower reaches, because of the higher temperature in the summer months and the rily condition, are more favorable to warm water fish. It is planned to plant the pike in the Tongue river below Ashton and in the Yellowstone below Billings.

The hass rescue work at Somers is of great value to fishermen of the state because of the nominal cost at which these fish, which would otherwise be lost, are rescued and distributed over the northern and western part of the state where bass fishing is being developed in waters not ideally suited for trout. This work is dependent largely upon high water during spring months at which time the adult bass seek the spawning grounds in the flooded areas and return to the lake or river as the water recedes, leaving the fry.

The last two years has seen a marked improvement in the trout fishing in Flathead lake, due largely to the operation of the hatchery at Station Creek on the east shore. A systematic trout planting program is being developed for the territory served by the Polson and Somers hatcheries with a view to utilizing to the fullest extent, the numerous lakes and streams in that section which are favorable to trout propagation.

The extreme northwestern part of the state is being served by the Libby hatchery and while this station has been in operation in the present location only two years it has already produced gratifying results.

An attempt will be made next year to develop trout fishing in the chain of Clearwater lakes near Missoula. If successful in this attempt it will fill a long-felt need. No concerted effort has ever been made to build up the trout fishing in this chain of lakes largely on account of the large number of suckers and squaw fish present. By establishing a feeding station on one of the tributary streams, making possible the planting of larger trout and with the bass which have been planted in these waters for the last four years making serious inroads on suckers and squaw fish, it is the belief that trout planting will now net desired results. It has been observed that the trout and the bass do not occupy the same areas in these waters.

It is necessary to establish a new station in the Missoula territory to replace the hatchery which was abandoned in 1931 because of water shortage. A site has been selected 35 miles north of Missoula which has every indication of meeting the requirements of present day fish culture. This site is on Highway No. 93, ideally located with respect to the distribution area, has an abundance of water and of a quality shown by experiments to be excellent for trout culture. No steps have yet been taken toward construction, but it is planned as soon as conditions warrant. This station will serve the Couer d'Alene, Clark's Fork and Mission Range territory, thereby relieving the Daly hatchery at Hamilton and the Libby hatchery. The highway west of Missoula will tend to open a large territory to fishermen from western Montana, Idaho and Washington and it will require constant effort under the best of conditions to meet the demand.

The Big Hole river is coming rapidly to the front as Rainbow fishing water and with the assistance of the Butte Anglers Club through activities at the Maiden Rock Rearing ponds, it is a certainty that the good fishing will be maintained. Large plants of Natives have been made in the tributary streams of the upper Big Hole for the last six years with the expectation they would drop down into the larger waters upon reaching maturity, but apparently they prefer the smaller creeks of a lower water temperature as several limit catches have been made the last season in these tributaries with but comparatively few Natives taken from the main stream. We are now making plans to plant Rainbow in the main stream and continue with the Native planting in the tributaries and the development of this program should meet with the approval of the most meticulous angler.

Prior to 1931, little had been done toward restocking the waters of Hebgen lake, due largely to the fact that we handled only a limited number of Loch Leven and a concerted effort was being made to build up the fishing in the Missouri river between Helena and Great Falls with this specie. In 1930 the Hebgen lake territory was badly in need of restocking and the following spring some 300,000 Loch Leven fingerlings were planted in favorable areas.

In 1932, 1,004,000 Loch Leven were planted in this area and it is planned to continue with this program until desired results are obtained. It is also planned to establish a Loch Leven spawning station at that point as soon as conditions warrant. These waters are fished heavily by Butte and Anaconda fishermen, Yellowstone Park visitors and residents of Idaho and Utah.

An outstanding accomplishment during this biennium was the agreement reached by the U. S. Bureau of Fisheries and the Fisheries Division relative to the activities of the bureau in this state. Through a general misunderstanding, the matter has been one of controversy for some years. Under the new agreement the bureau, through activities on the Madison, will deliver to the state 2,000,000 Loch Leven ages which are to be considered the state's share of the benefits accruing to the bureau from this field. Any additional Loch Leven that are delivered to the state from this field are to be on an exchange basis for Natives. Effective Jan. 1st, the bureau is to assume all

Game Fish Eggs Collected at Spawning Stations in 1931-1932

1931

Spawning Station	Natives	Rainbow	Grayling	Eastern Brook	TOTAL
Georgetown Lake	30,096,294	218,430	1,576,939	45,510	31,937,173
Lake Francis	.....	226,400	.....	.....	226,400
Lake Ronan	.....	3,577,244	.....	.....	3,577,244
Conley's Lake	.....	.....	.....	240,456	240,456
Alvord and Kilbrennan lakes (Cooperative)	.....	.....	.....	785,356	785,356
	30,096,294	4,022,074	1,576,939	1,071,322	36,766,629

1932

Spawning Station	Natives	Rainbow	Grayling	Eastern Brook	TOTAL
Georgetown Lake	36,113,840	333,168	2,276,240	199,282	38,922,530
Lake Francis	.....	457,350	.....	.....	457,350
Lake Ronan	.....	1,841,252	.....	.....	1,841,252
Upper Ashley Lake	295,542	.....	.....	.....	295,542
Middle Ashley Lake	.....	.....	929,214	.....	929,214
Rogers Lake	.....	.....	2,826,696	.....	2,826,696
Dog Lake (cooperative)	.....	76,435	.....	.....	76,435
Conley's Lake	.....	.....	.....	400,554	400,554
Alvord and Kilbrennan Lakes (Cooperative)	.....	.....	.....	835,000	835,000
	36,409,382	2,708,205	6,032,150	1,434,836	46,584,573

expenses at the Miles City station with the exception of the custodian's salary and deliver to the state 25 per cent of the output each fall, besides taking care of applications for the warm water species in this state. This temporary agreement may be changed by either party on 60 days notice at the end of the calendar year. This relieves the state of considerable expense and with the operation of the bass ponds in the Flathead country it will be possible to cover the distribution to a better advantage and at much less expense.

One matter which merits mention in this report is the transplanting of fish by individuals with no thought or knowledge as to what results may be. One outstanding example of this is the sunfish in Lake Ronan. This lake, long a spawning field, was noted for its rainbow and salmon fishing. Enthusiastic but misguided sportsmen conceived the idea of planting sunfish which were intended to provide sport for women and children who preferred fishing from the shore rather than a boat. It was thought that the sunfish would occupy shallow areas along the shore line. From this small plant, the sunfish increased at an unbelievable rate and for a time threatened to destroy the lake as a trout and salmon habitat. Through measures being taken to control this situation, it is believed the trout and salmon will again predominate but only after the lake has suffered a heavy loss due to the partial depletion of the natural food supply.

It is the desire of this division to abide by the wishes of the sportsmen and especially in regards to the species of fish planted in their local territories, but the indiscriminate planting of fish by individuals tends to break down the work being carried on for sportsmen as a group.

Work of the state division of fisheries during the biennium has been marked by splendid cooperation of outstanding Montana agencies interested in propagation and liberation of game fish. To these individuals and organizations the department owes a debt of sincere gratitude. Prominent among them may be mentioned the Montana Power Company, the Anaconda Copper Mining Company which owns the site of the great spawn-taking station at Georgetown lake, the United States Bureau of Fisheries, the Forestry Department and its individual employes, Dude Ranchers Association, Larry Hamilton and the Butte Anglers Club for keen interest shown in radio broadcasts on fish and game matters, and the many clubs of sportsmen and anglers who have assisted in fish distribution.

HATCHERY REPORT

Anaconda and Flint Creek

Aside from painting the troughs, standards and aquarium and remodeling for living quarters, the room formerly used for a shop in the hatchery building, no construction or improvement work was undertaken. Considerable repair and remodeling work was done at the Flint Creek traps for the purpose of providing more room and aeration for the fish during the spawning season.

Big Timber

The improvement work consisted of painting all troughs, standards, the interior and the north end and roof of the hatchery building. In 1931, a rearing pond 75 feet by 150 feet was constructed on the grounds, the water supply, of necessity, being the waste water from the hatchery and concrete ponds. Through a series of bottom drains in the pond it is possible to clean the bottom of all debris and refuse without altering the water level. There is ample room for additional ponds, but it will require additional water, which could in all probability be obtained by laying drain tile in an adjoining tract and picking up a supply of spring water. A building for use as a garage, store-room and work shop is badly needed.

Emigrant

All buildings were moved to the present site in December, 1931, and have since been repaired and rewired and a sewage system installed. A new floor was laid in the hatchery, new trough standards constructed, troughs and standards painted, and 900 feet of drain tile laid. The station is now in readiness for operation.

Daly Hatchery at Hamilton

This hatchery, largest in the state, was constructed by Marcus Daly Jr., in 1918 and has been used by the department since 1922. Plans are now under way for the department to acquire this property and in such event, rearing ponds should be constructed to enable the fish being held until of a larger size.

Great Falls

Considerable improvement and repair work was undertaken during the last two years. The grounds were improved in keeping with the beautification program in the Giant Springs area by the Great Falls Park Board. A large aquarium pool was constructed on the hatchery grounds, the hatchery and dwelling roofs were re-shingled, troughs and standards painted. The jointly owned pump was purchased from the Park Board and a new pump purchased to replace the supply pump which has been in constant use for the last 10 years and which had become badly worn. Two iron supply pipes from the spring to the hatchery and ponds was replaced by one large wooden pipe. A new sump is being constructed and preliminary work relative to the construction of three 40-foot circular ponds being carried on. This work is being done in conjunction with the Great Falls Chamber of Commerce, Great Falls Park Board and the Relief Committee and will, when completed, make Great Falls one of the best equipped stations in the state.

Lewistown

At the close of the operating season in 1931, four wooden ponds were added to the battery of concrete ponds. A concrete retaining wall was constructed to permit the use of waste water from the concrete ponds in event of temporary water shortage. Through the cooperation of the Lewistown Rod and Gun Club, additional trees, hedge and shrubbery were planted and add much to the appearance of the station. The present living quarters, being of single construction, are not desirable for year around use. It is recommended that the present dwelling be converted into a garage and work shop and a new dwelling constructed. Additional ponds should also be constructed to permit more efficient operation, especially in view of the plan to operate this station as a year around unit and enlarge upon the distribution territory to relieve the Big Timber and Great Falls stations.

Libby

The construction of a hatchery, garage and dwelling at this new site was completed in 1931. Six wooden ponds of the type to be used in the future at the hatcheries, were constructed. The grounds were leveled and a lawn planted, rock retaining wall constructed around the ponds and cattle guard installed. The grounds comprise some 60 acres, fenced. Concrete driveways were laid to the garage, brick chimneys built in the hatchery and all buildings painted. A building consisting of a refrigerator-storage room, grinding room and room for storage of supplies is badly needed. More ponds should be added to permit more efficient operation.

Station Creek—Polson

A substantial settling box was constructed where the hatchery water is diverted from Station Creek and the pipe line covered to a greater depth to prevent freezing. A cellar was constructed under the dwelling, a cesspool dug and a stairway built in the hatchery.

Rock Creek—Philipsburg

A new concrete footing foundation was put under this hatchery recently, the troughs and standards painted and the building put in first class shape for next season's operations.

Ovando

The improvement work at this station consisted of the construction of a combination garage and ice house. Ponds are badly needed to promote a more rapid growth of the fish, the hatchery water temperature being too low for the most efficient operation.

Red Lodge

Considerable work needs to be done at this station. It is planned to attend to this before the operation next spring. Due to the building being much too narrow and poorly lighted, the work is carried on under difficulties and it is planned to re-arrange the water supply trough, install additional windows and paint all equipment.

Somers

This station is badly in need of repairs, especially with regard to the water supply system. Some work was done along this line recently, but due to the lateness of the season it could not be completed. Ponds of the type used at Libby should be constructed to permit holding more fish and place the station upon a more productive basis

SAID IZAAK WALTON

"And an ingenious Spaniard says, that rivers and the inhabitants of the watery element were made for wise men to contemplate, and fools to pass by without consideration — for you may note that the waters are Nature's storehouse, in which she locks up her wonders."

Financial Statement, 1931-1932 Biennium

RECEIPTS FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1931.

HUNTING AND FISHING LICENSES

Resident Bird and Fish (68,574@$2.00)	$137,148.00
Resident Big Game (24,394@$1.00)	24,394.00
Resident Sportsman (1,848@$5.00)	9,240.00
Non-Resident Fish (4,513@$3.50)	15,795.50
Non-Resident Bird (62@$10.00)	620.00
Non-Resident Big Game (100@$30.00)	3,000.00
Alien Fish (153@$10.00)	1,530.00
Alien Bird (3@$30.00)	90.00
Alien Big Game (2@$50.00)	100.00
	$192,217.50

LESS

Fees Allowed Dealers	$ 9,732.20
Biological Fund No. 186 fee of 25c on 6,954 Licenses for January, February and March	1,738.50
	$ 11,470.70
Net Receipts	$180,746.80

LICENSES OTHER THAN THE ABOVE

Trapper (763@$10.00)	$ 7,630.00
Fur Farm (145@$5.00)	725.00
Resident Fur Dealer (121@$1.00)	121.00
Fur Dealer's Agent (19@$10.00)	190.00
Non-Resident Fur Dealer (5@$25.00)	125.00
Guide (66@$10.00)	660.00
Taxidermist (9@$15.00)	135.00
Seining (7@$5.00)	35.00
	$ 9,621.00

PERMITS AND TAGS

Beaver Tags (7,115@$ .50)	$ 3,557.50
Beaver Permits (514@$10.00)	5,140.00
Shipping Permits (3,178@$ .50)	1,589.00
	$ 10,286.50
Fines from game law violations	$ 8,663.15
Confiscations	1,431.67
Sales predatory pelts	4,208.05
Fish Royalties	722.35
Sale of Fish Eggs	3,730.20
	$ 18,855.42

MONTANA WILD LIFE

Subscriptions	$ 1,116.10
Advertisements	511.65
Sales	1.50
	$ 1,629.25

MISCELLANEOUS REVENUE

Freight refund	$ 591.48
Express refund	2.75
Insurance refund: Libby Hatchery	12.60
Telephone refund	3.00
Telephone toll	.45
Refund on auto repairs	53.42
Sale of Ford Truck: Daly Hatchery	40.00
Half rental: Jackson Pond	50.00
Sale of Domestic Fowls: Game Farm	718.41
	$ 1,472.11

SUMMARY

Hunting and Fishing Licenses	$180,746.80
Permits and Tags	10,286.50
Other Licenses	9,621.00
Fines, Confiscations, Fur Sales, etc.	18,855.42
Montana Wild Life	1,629.25
Miscellaneous Revenue	1,472.11
Total net income in 1931	$222,611.08

RECEIPTS FOR THE CALENDAR YEAR ENDED DECEMBER 31, 1932.

HUNTING AND FISHING LICENSES

Resident Bird and Fish (60,374@$2.00)	$120,748.00
Resident Big Game (25,868@$1.00)	25,868.00
Resident Sportsman (695@$5.00)	3,475.00
Non-Resident Fish (2,636@$3.50)	9,226.00
Non-Resident Big Game (73@$30.00)	2,190.00
Non-Resident Bird (26@$10.00)	260.00
Alien Fish (134@$10.00)	1,340.00
Alien Bird (1@$30.00)	30.00
	$163,137.00

LESS

Fees allowed dealers	$ 8,759.80
Net Receipts	$154,377.20

LICENSES OTHER THAN THE ABOVE

Trapper (378@$10.00)	$ 3,780.00
Guide (51@$10.00)	510.00
Seining in Public Waters (10@$5.00)	50.00
Resident Fur Buyer (8l@$1.00)	81.00
Fur Buyer's Agent (3@$10.00)	30.00
Non-Resident Fur Buyer (4@$25.00)	100.00
Fur Farm (10l@$1.00)	105.00
Taxidermist (7@$15.00)	105.00
	$ 5,161.00

PERMITS, TAGS, ETC.

Beaver Tags (4,671@$ .50)	$ 2,335.50
Beaver Permits (247@$10.00)	2,470.00
Shipping Permits (2,556@$ .50)	1,278.00
	$ 6,083.50
Fines from game law violations	$ 4,386.74
Confiscations	1,189.95
	$ 5,576.69

MONTANA WILD LIFE (6 Months)

Subscriptions	$ 306.69
Advertisements	54.00
Sales	14.25
	$ 374.94

SALES

Fish Eggs	$ 5,494.75
State Game Farm, brood hens	527.16
Capital Assets: shop at Missoula	25.00
	$ 6,046.91

MISCELLANEOUS RECEIPTS

Fish Royalties		$ 88.00
Discounts Earned:		
Somers Ford Truck	$ 9.34	
Hamilton Ford Truck	13.94	23.28
Refunds:		
G. N. Ry. Co., ticket	$2.16	
Express	.46	
J. L. Kelly, bond	5.00	
H. P. Stanford, bond	5.00	12.62
		$ 123.90

SUMMARY

Hunting and Fishing Licenses	$154,377.20
Other Licenses	5,161.00
Permits, Tags, etc.	6,083.50
Fines, Confiscations	5,576.69
Montana Wild Life	374.94
Sales	6,046.91
Miscellaneous Receipts	123.90
Total Net Income in 1932	$177,744.14

DISBURSEMENTS—ANALYZED AS TO PURPOSE

STATE FISH AND GAME COMMISSIONERS

	1931	1932
Per diem	$ 715.00	$ 1,040.00
Subsistence	307.65	497.70
Travel	437.57	255.48
Automobile Expense:		
Gas and oil $59.93		
Storage 4.50		
	64.43	49.84
Telegraph and Telephone	178.00	151.83
Bond Premiums	25.00	95.00
Stenographer: T. N. Marlowe, Chm.	1,020.00	393.72
Postage and Stationery	72.21	.....
Express	.49	.....
Legal Expense	5.00	.....
	$ 2,823.35	$ 2,483.57

OFFICE

	1931	1932
Salaries	$ 5,910.00	$ 4,720.00
Postage	1,454.48	1,560.34
Books and Blanks	318.85	404.05
Office Supplies	562.33	176.24
Telegraph and Telephone	522.04	360.03
Express and Drayage	127.64	84.61
Incidentals	73.05	46.05
Stationery	96.50	344.76
Reporting	26.50	6.00
Clerical Assistance	381.34	.....
Bond Premium	5.00	5.00
Office Rent	150.00	750.00
Editing Biennial Report	.....	60.00
	$ 9,627.73	$ 8,506.98

GENERAL ADMINISTRATION EXPENSE

MISCELLANEOUS OPERATIONS:	1931	1932
Legal Publications	$ 534.69	$ 392.53
Legal Expenses	436.55	747.83
Board of Prisoners	675.40	313.39
Printing of Licenses: 1931	2,271.12	1,369.50
Other Licenses		19.00
Printing of Game Laws 1931 and 1932	560.00	
Prepays on License Shipments	384.61	244.65
Exhibits: State & County Fairs	1,371.96	
Metal Beaver Tags: 10M@$4.30	430.00	165.29
Tagging Beaver Pelts	129.25	82.40
Association Dues	60.00	35.00
Salary of Educational Secretary	1,875.00	
Refund: Beaver Permit	10.00	
Refunds: License Accounts		38.00
Ground Rental		30.00
Motion Pictures		15.12
Incidentals		17.21
	$8,738.58	$ 3,469.92

CAPITAL OUTLAY:	1931	1932
Buildings: Billings Fair	$ 33.06	$
Furniture and Fixtures		20.89
		$ 20.89

REPAIRS AND REPLACEMENTS:	1931	1932
State Fair Buildings	226.68	

MONTANA WILD LIFE:	1931	(Jan. to June, 1932, inc.) 1932
Salary of Editor	$2,975.00	$ 1,200.00
Illustration Cuts	1,009.37	345.24
Printing	2,317.00	750.00
Addressing and Mailing	197.50	75.00
Postage	270.00	95.00
Books and Binding	24.00	
Photographs	5.75	
Telephone Tolls	6.45	1.40
Stationery	70.90	
Office Supplies	23.10	
Subsistence: field work	58.35	
Travel: field work	7.08	16.80
Incidentals	4.50	
Refunds on Subscriptions		360.54
	$6,969.00	$2,843.98

MOTION PICTURES:	1931	1932
Salary: 5 mo.@$500.00	$2,500.00	
Subsistence: field work	93.20	
Automobile gas and oil	1.33	
Other Travel	78.72	
Development of Films	624.85	
Shipping Case for Films	11.15	
Guide and Personal Service	106.00	
Insurance on Films	40.00	
Telephone Tolls	3.00	
Incidentals	20.35	
	$3,478.60	

J. W. CARNEY: Assistant Game Warden.

		1931		1932
Salary		$2,700.00		$ 2,587.50
Subsistence		91.90		68.40
Automobile Expense:				
Gas and oil	$186.50		$214.33	
Repairs	258.27		267.57	
Storage	65.50		37.50	
Insurance			59.91	
License	10.00		10.00	
		520.27		589.31
Other Travel		76.65		8.54
Bond Premium		5.00		10.00
Telephone Tolls		2.45		
Legal Expense		2.50		
Incidentals		35.9[illegible]		
		$3,434.[illegible]2		$ 3,263.7[illegible]
Grand Total		$22,880.58		$ 9,598.51

STATE GAME FARM AT WARM SPRINGS

OPERATIONS:		1931		1932
Salaries		$6,008.50		$ 5,591.75
Bird Food		2,438.56		2,105.33
Heat, Light and Power		304.00		190 14
Telegraph and Telephone		69.20		60.48
Hardware and Supplies		116.70		46.3[illegible]
Automobile Expense:				
Gas and Oil	$312 20		$377.70	
Repairs	181.[illegible]4		327 20	
Storage	1 00		1.55	
Depreciation			170.00	
Insurance			26.75	
		497.94		903 20
Fire Insurance		13 3[illegible]		
Other Travel		3[illegible] 11		21 38
Liberating Birds		910.98		729 64
Insect Powder		37.60		62.00
Subsistence: field work		35 1[illegible]		68 2[illegible]
Express		1 32		40
Books and Blanks				13 00
Incidentals		4.97		
		$10,473.28		$ 9,797.82

CAPITAL OUTLAY:	1931	1932
Land and Land Improvements	$	$ 143.44
Buildings and Attached Fixtures	970 [illegible]	14.[illegible]
Foundation Stock	100 00	261 30
Domestic Fowls for Brooding	1,846.5[illegible]	1 272 00
Centrifugal Pump	420 00	
Pens	5 [illegible]	
Brood Hens		
	$ 3 342.3[illegible]	$ 1,690 7[illegible]

REPAIRS AND REPLACEMENTS:	1931	1932
Buildings and Attached Fixtures	73.25	
Grand Total	$13,8[illegible].83	

GAME DIVISION

MISCELLANEOUS OPERATIONS:		1931	1932
Elk Herd		$ 135.10	$ 20.0[illegible]
State Engineer's Inspection, Red Rock		85.15	
Scientific Investigation Elk Herd		159.95	
Ground Rental		28.50	20.00
Salary of W. M. Rush, elk study		1 398.00	466.00
Nine Pipe Reservoir		284.50	
Salt for animals		75.20	76.72
Ammunition		21.12	49.50
Bird and Duck Food		7 31	205.0[illegible]
Food for Animals			163.50
Patrol: Nine Pipe Reservoir:			
Salary	$200.00		75.00
Subsistence	304.18		
Operations	482.99	987 17	
Bounties			200.00
Metal Signs for Posting			17 10
Prizes: Common Enemy Control Contest, etc.			712.66
Pictures			92.85
Confiscation expense			11.71
Incidentals			13.48
		$ 3,192.00	$ 2,12[illegible] 5[illegible]

CAPITAL EXPENDITURES:		1931	1932
Land and Improvements:			
Nine Pipe	$144.00		
Fox Lake	100.00		
		$ 244.00	

REPAIRS AND REPLACEMENTS:		1931	1932
Nine Pipe	$ 3.88		
Red Rock	320.60		
		$ 324.48	

ROBERT H. HILL, State Game Warden:

		1931		Jan. 1, to Aug. 31, 1932
Salary: 3 mo.@$250.00	$ 750.00			$ 2,400.00
9 mo.@$300.00	2,700.00			
		$ 3,450.00		
Subsistence		461.55		394.00
Automobile Expense				
Gas and Oil	$441.55		$387.58	
Repairs	590.15		242.11	
Storage	125.00		95.45	
License	15.00		15 00	
Insurance	86 90		34 93	
		1 2[illegible]9 10		775.07
Other Travel		207 8[illegible]		175.36
Bond Premium and Filing Fee		50.00		55.00
Telephone Tolls		3 37		3.43
		$ 5,431.82		$ 3,802.86

CHARLES B. MARRS, State Game Warden, September 1 to December 31, 1932.

		1931		1932
Salary				$ 1,000.00
Subsistence				63.30
Automobile Expense				
Gas and Oil			$82 5[illegible]	
Repairs			71 2[illegible]	
Storage			26 60	
Insurance			7.[illegible]7	
				187 96
Other Travel				2 50
Bond Premium and Filing Fee				[illegible]5 00
Telephone and Telegraph				55
				$ 1 [illegible]
Grand Total				$ 5 112 07

DEPUTY GAME WARDENS:		1931		1932
Salaries		$[illegible] 209 04		$[illegible]1 [illegible]4 3[illegible]
Automobile Expense				
Gas and Oil	$5 [illegible] 19		$5,629 2[illegible]	
Repairs	2 860 90		2 [illegible]14 01	
Storage	[illegible]1 50		486 40	
License	20[illegible] 00		160.60	
Depreciation	2 [illegible].00		1 3[illegible] 00	
		11 [illegible]		10 295 18
Subsistence		2 8[illegible] [illegible]		3,495 80
Other Travel		3[illegible]2.60		183 40
Ammunition		187 92		29 [illegible]
Telephone and Telegraph		610.16		[illegible]22 8[illegible]
Bond Premiums and Filing Fees		100 00		115 00
Express		1 9[illegible]		
Postage		14.69		11 93
Horse Hire		[illegible]2 30		
Boat Hire and Repairs		12 [illegible]		24 10
Legal Expense		43 44		14 70
Incidentals		40 61		5 78
		$51,139.24		$44,753 13

SPECIAL DEPUTY GAME WARDENS:

	1931		1932
Salaries	$6,820.13		$ 7,900.78
Automobile Expense:			
Gas and Oil	1,664.03	$2,085.70	
Repairs	856.99	935.40	
Storage	62.00	31.90	
License	40.00	20.00	
Depreciation	585.00	495.00	
	$3,209.02		$3,568.00
Subsistence	595.26		492.71
Other Travel	45.69		109.79
Telephone and Telegraph	101.54		102.70
Horse Hire	23.95		.....
Ammunition	37.38		.....
Bond Premiums and Filing Fees	35.00		120.00
Legal Expense	.75		.....
Boat Repairs	.....		.59
Incidentals	8.12		10.80
	$10,876.84		$12,305.37

SUMMARY OF GAME DIVISION EXPENDITURES

	1931	1932
Miscellaneous Operations	$ 3,192.00	$ 2,123.55
Capital	244.00	.....
Repairs and Replacements	324.48	.....
State Game Warden	5,481.82	5,112.07
Deputy Game Wardens	51,139.24	44,752.13
Special Deputy Game Wardens	10,376.84	12,305.37
	$71,208.38	$64,293.12

DIVISION OF FISHERIES

GENERAL OFFICE:

	1931	1932
Salaries	$	$ 1,270.00
Postage	120.25	25.28
Telephone and Telegraph	207.76	244.47
Books and Blanks	331.56	173.35
Stationery	.....	9.45
Office Supplies	17.20	66.57
Association Dues	.....	10.00
Maps	51.75	.....
Fish Culturist	115.00	.....
Water Analysis	289.19	.....
Ground Rental: Rearing Pond	100.00	.....
Fish Screen Helpers	22.00	.....
Bass Rescue; Wages	29.17	.....
Express	.77	.....
Egg Distribution, U. S. Hatch	.....	30.48
Incidentals	.....	19.97
	$ 1,285.65	$ 1,849.57

CAPITAL OUTLAY:

Rearing Ponds	$ 340.40		$ 98.00
Furniture and Fixtures	.....		128.10
Fish Screens	1,286.37		233.06
Seines	232.65		.....
Chevrolet Coupe	$681.87		.....
Less turn-in	375.00		.....
	306.87		.....
	$ 2,166.29		$ 459.16

REPAIRS AND REPLACEMENTS:

Furniture and Fixtures	.....	$ 7.00

K. F. MacDONALD, Superintendent of Fisheries:

Salary: 10 mo. @$300.00	$3,000.00		$ 3,140.00
2 mo. @$270.00	540.00		
Subsistence	592.91		558.01
Automobile:			
Gas and Oil	$445.95	$422.24	
Repairs	726.37	651.39	
Storage	82.75	107.35	
Insurance	37.11	31.09	
	1,292.18		1,212.07
Postage	.....		1.50
Other Travel	140.12		32.81
Telephone	18.63		23.28
Bond	.....		20.00
Incidentals	2.25		.....
	$ 5,586.09		$ 4,987.67

I. H. TREECE: Field Foreman

	1931		1932
Salary, 6 mo. @$150.00	$ 900.00		.....
Subsistence	407.18		.....
Automobile:			
Gas and Oil	$136.00		.....
Repairs	293.42		.....
Storage	45.75		.....
Insurance	84.48		.....
	559.65		.....
Other Travel	8.53		.....
Perch Distribution	$112.15		.....
Bass Distribution	146.96		.....
	259.11		.....
Fish Traps	5.25		.....
Fishing Tackle	15.60		.....
Incidentals	9.57		.....
Telephone Tolls	3.80		.....
Freight	1.73		.....
	$ 2,170.42		.....

DISTRIBUTION OF FISH

	1931		1932
Subsistence	$1,116.35		$ 767.97
Auto Trucks:			
Gas and Oil	$ 511.12	$394.48	
Repairs	1,185.89	121.19	
Storage	32.50	20.00	
	1,729.51		535.67
Express on Empties	229.07		10.07
Oxygen	247.20		211.18
Ice and Water	286.82		114.27
Express and Drayage	109.82		43.02
Other Travel	1,333.62		506.79
Telephone Tolls	56.74		12.44
Extra Labor	95.10		.....
Salaries and Wages	522.75		.....
Fish Food	1.64		.....
Incidentals	2.35		.....
	$ 5,830.98		$ 2,201.41

DISTRIBUTION OF FISH BY STATIONS

	1931	1932
Anaconda	$ 604.81	$ 322.85
Ashley Lake	.....	.....
Big Timber	1,114.25	450.86
Cliff Lake	.....	.....
Emigrant	455.31	193.50
Flint Creek	.....	.....
Great Falls	739.62	169.22
Hamilton	51.02	131.78
Havre	.....	39.14
Lake Francis	.....	.....
Lake Helena	.....	.....
Lake Ronan	.....	.....
Lewistown	267.56	28.30
Libby	29.21	110.56
Miles City	1,218.41	373.90
Missoula	732.01	96.95
Ovando	19.74	53.54
Philipsburg	.....	6.36
Polson	39.35	28.77
Red Lodge	88.81	7.40
Somers	469.88	138.28
	$ 5,830.98	$ 2,201.41

HATCHERIES DIVISION

OPERATING EXPENSES OF HATCHERIES ANALYZED AS TO PURPOSE

	1931		1932
Salaries	$40,302.16		$35,373.65
Auto Truck:			
Gas and Oil	$4,341.50	$4,463.39	
Repairs	1,618.98	2,896.32	
Insurance	138.08	465.55	
Storage	2.25	17.65	
	6,100.81		7,842.91
Fish Food	12,449.16		8,933.97
Heat, Light and Power	1,147.48		761.68
Telephone	691.42		617.11
Express on Fish Eggs	1,107.12		998.11
Hardware and Petty Sup.	695.34		665.01
Subsistence	268.89		441.56
Rubber Clothing	176.87		179.32
Fire Insurance	115.65		466.50
Salt	138.37		201.34
Office Supplies	4.00		21.90
House Rent	386.00		306.00
Ice	226.25		525.02
Travel	41.27		171.82
Seines and Nets	9.11		47.61
Express and Drayage	36.75		.....
Groceries and Meat	280.18		.....
Boat Repairs	2.75		.....
Fish Egg Supplies	9.75		.....
Ground Rental	1.00		1.00
Incidentals	59.28		111.56
Surveying	.....		53.75
	$64,249.01		$57,719.82

CAPITAL INVESTMENTS ANALYZED AS TO PURPOSE

	1931	1932
Land and Improvements	$ 273.87	$ 134.50
Buildings and Attached Fixtures	3,258.02	644.26
Rearing Ponds	2,235.10	347.16
Furniture and Fixtures	162.20	172.22
Fish Screen	181.54	5.00
Seines	257.65	.....
Fish Traps	8.00	.....
Motor Trucks	1,170.00	.....
Boat	50.12	.....
Machinery and Appliances	219.81	.....
Display Pool	742.77	.....
Tools and Implements	.....	29.75
Centrifugal Pump	.....	424.35
Fish Dryer	.....	20.25
	$ 8,660.08	$ 1,777.49

REPAIRS AND REPLACEMENTS, ANALYZED AS TO PURPOSE

	1931	1932
Buildings and Attached Fixtures	$3,119.56	$ 2,020.72
Fish Traps	148.82	71.18
Machinery and Appliances	59.30	76.63
Furniture and Fixtures	39.68	4.50
Tools and Petty Equipment	9.12	11.25
Rearing Ponds	2.49	.....
Boats	.....	25.54
	$ 3,378.97	$ 2,209.82

OPERATING EXPENSES DISTRIBUTED BY STATIONS

	1931	1932
Anaconda	$11,265.13	$10,008.04
Ashley Lake: spawn-taking		824.89
Big Timber	10,005.01	9,831.22
Cliff Lake: spawn-taking		281.74
Emigrant	5,880.10	3,231.67
Georgetown Lake		2,325.65
Flint Creek: spawntaking	2,287.28	
Great Falls	5,364.01	4,417.15
Hamilton	3,789.69	4,642.51
Havre: rearing pond		717.79
Lake Francis: spawn-taking	1,345.59	863.72
Lake Helena: fish dryer	1,055.55	24.00
Lake Ronan	517.19	678.66
Lewistown	1,828.51	3,093.17
Libby	4,157.87	4,016.33
Madison: fish screens		40.00
Miles City: cultural station		1,522.04
Missoula	6,305.06	1,334.59
Ovando	1,608.18	1,602.61
Philipsburg		505.73
Rock Creek	230.00	
Station Creek	2,580.87	
Poison		1,967.63
Red Lodge	637.37	397.96
Somers	5,391.60	5,555.72
	$64,249.01	$57,719.82

SUMMARY OF EXPENDITURES BY STATIONS, 1931

	Fish Distribution	Operating Expenses	Capital Outlay	Repairs and Replacements	TOTAL
Anaconda	$ 604.81	$11,265.13	$ 923.74	$ 241.26	$13,034.94
Ashley Lake					
Big Timber	1,114.25	10,005.01	1,762.31	137.47	13,019.04
Cliff Lake					
Emigrant	455.31	5,880.10	162.62	2,062.51	8,560.54
Flint Creek		2,287.28		296.71	2,583.99
Great Falls	739.62	5,364.01	1,115.42	111.95	7,331.00
Hamilton	51.02	3,789.69	23.00	9.52	3,873.23
Havre					
Lake Francis		1,345.59	341.43	28.25	1,715.27
Lake Helena		1,055.55	1,208.52		2,264.07
Lake Ronan		517.19			517.19
Lewistown	267.56	1,828.51	284.20	85.98	2,466.25
Libby	29.21	4,157.87	2,374.03	99.87	6,660.98
Madison at Ennis					
Miles City	1,218.41				1,218.41
Missoula	733.01	6,305.06	14.42	35.30	7,087.79
Ovando	19.74	1,608.18	22.47	22.50	1,672.89
Rock Creek		230.00			230.00
Station Creek: Poison	39.35	2,580.87	114.95	102.52	2,837.69
Red Lodge	88.81	637.37		24.24	750.42
Somers	469.88	5,391.60	112.97	120.89	6,095.34
	$5,830.98	$64,249.01	$8,660.08	$3,378.97	$82,119.04

CAPITAL INVESTMENTS, REPAIRS AND REPLACEMENTS DISTRIBUTED BY STATIONS

	1931		1932	
	Capital	Repairs	Capital	Repairs
Anaconda	$ 923.74	$ 241.26	$ 196.42	$ 427.77
Armstead			4.00	
Ashley Lake				21.06
Big Timber	1,762.31	137.47	179.81	143.93
Cliff Lake				
Emigrant	162.62	2,062.51	220.79	114.51
Georgetown Lake			25.00	100.83
Flint Creek		296.71		
Great Falls	1,115.42	111.95	405.00	653.21
Hamilton	23.00	9.52	88.66	344.80
Havre			80.75	
Lake Francis	341.43	28.25		
Lake Helena	1,208.52		20.25	4.48
Lake Ronan				.90
Lewistown	284.20	85.98	172.06	11.10
Libby	2,374.03	99.87	304.40	183.04
Madison at Ennis				12.50
Miles City		24.24	24.35	
Missoula	14.42	35.30	50.00	91.99
Ovando	22.47	22.50		10.15
Philipsburg			6.00	49.70
Polson				3.90
Red Lodge		24.24		12.50
Station Creek	114.95	102.52		
Somers	112.97	120.89		35.95
	$8,660.08	$3,378.97	$1,777.49	$2,209.82

SUMMARY OF EXPENDITURES BY STATIONS, 1932

	Fish Distribution	Operating Expenses	Capital Outlay	Repairs and Replacements	TOTAL
Anaconda	$ 322.85	$10,008.04	$ 196.42	$ 427.77	$10,955.08
Ashley Lake		824.89		21.06	845.95
Big Timber	450.86	9,831.22	179.81	143.93	10,605.82
Cliff Lake		218.74			218.74
Emigrant	193.50	3,231.67	220.79	114.51	3,760.47
Georgetown Lake		2,325.65	25.00	100.83	2,451.48
Great Falls	169.22	4,417.15	405.00	653.21	5,644.58
Hamilton	131.78	4,642.51	88.66	344.80	5,207.75
Havre	89.14	717.79	80.75		887.68
Lake Francis		863.72			863.72
Lake Helena		24.00	20.25	4.48	48.73
Lake Ronan		678.66		.90	679.56
Lewistown	28.30	3,093.17	172.06	11.10	3,304.63
Libby	110.56	4,016.33	304.40	183.04	4,614.33
Ennis		40.00			40.00
Miles City	373.90	1,522.04	24.35		1,920.29
Missoula	96.95	1,334.59	50.00	91.99	1,573.53
Ovando	53.54	1,602.61		10.15	1,666.30
Philipsburg	6.36	505.73	6.00	49.70	567.79
Polson	28.77	1,967.63		3.90	2,000.30
Red Lodge	7.40	397.96		12.50	417.86
Somers	138.28	5,555.72		35.95	5,729.95
Armstead			4.00		4.00
	$2,201.41	$57,719.82	$1,777.49	$2,209.82	$63,908.54

SUMMARY OF FISHERIES DIVISION EXPENSE

	1931		1932	
General Operations		$ 1,285.65		$ 1,849.57
Capital Outlay		2,166.29		466.16
Superintendent		5,556.05		4,987.67
Field Foreman		2,170.42		
Hatcheries:				
Fish Distribution	$ 5,830.98		$ 2,201.41	
Operations	64,213.34		57,719.82	
Capital	8,660.08		1,777.48	
Repairs	3,414.64		2,209.82	
		82,119.04		63,908.54
		$ 93,327.49		$71,211.94

TOTAL EXPENDITURES BY DIVISIONS

	1931	1932
1. Commissioners	$ 2,823.35	$ 2,483.57
2. General Administration: Office	9,627.73	8,606.98
3. General Administration: Misc.	22,880.68	9,598.54
4. State Game Farm	13,888.83	11,488.61
5. Game Division	71,208.38	64,293.12
6. Fisheries Division	93,327.49	71,211.94
	$213,756.20	$167,582.76

RECEIPTS AND DISBURSEMENTS FOR 1931

	Receipts	Disbursements
January	$ 13,139.73	$ 22,266.64
February	9,057.36	12,474.60
March	6,947.27	11,124.64
April	4,595.50	14,624.15
May	9,593.65	15,109.70
June	49,805.85	37,328.14
July	26,812.25	14,352.01
August	17,271.11	21,708.96
September	10,840.80	21,047.24
October	21,599.74	20,409.32
November	29,376.08	14,866.55
December	24,817.74	13,239.10
TOTALS	$223,655.08	$218,648.05

RECEIPTS AND DISBURSEMENTS FOR 1932

	Receipts	Disbursements
January	$ 10,449.40	$ 19,181.54
February	6,324.00	10,607.25
March	5,893.06	11,881.31
April	4,248.90	13,097.65
May	5,325.50	14,206.04
June	21,103.33	18,528.38
July	25,888.37	15,200.04
August	17,884.35	15,459.00
September	10,507.57	14,220.48
October	20,698.12	16,468.57
November	24,754.50	13,787.31
December	16,597.05	12,037.35
TOTALS	$179,611.14	$175,075.81

Montana State Fish and Game Department

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