BIENNIAL REPORT

OF THE

State Fish Commissioner

and

Game Warden

OF

COLORADO

FOR

1893 AND 1894.

W. R. CALLICOTTE,
Fish Commissioner and Game Warden.

DENVER, COLORADO:
THE SMITH-BROOKS PRINTING CO., STATE PRINTERS
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OFFICERS

OF THE

State Fish Commission and Game Wardens.

W. R. CALLICOTTE, Fish Commissioner and Game Warden, Denver, salary, $1,200.00.

C. M. WHITE, Deputy Warden, Grand Junction, salary, $1,200.00.

WM. CARDNELL, Deputy Warden, Glenwood Springs, salary, $1,200.00.

F. E. MOODY, Deputy Warden, Monte Vista, salary, $1,200.00.

T. A. CALLICOTTE, Superintendent of Hatcheries, Denver.

A. F. ABBOTT, Assistant Superintendent, Denver.

JAMES BRUNER, Assistant Superintendent, Twin Lakes.

J. W. CURTIS, Assistant Superintendent, Gunnison.

F. H. SARLES, Assistant Superintendent, Durango.

Salaries, $50.00 to $75.00 per month.

Numerous Special Game and Fish Wardens have been appointed as the necessity seemed to warrant.

REPORT.

TO DAVIS H. WAITE,
Governor of the State of Colorado:

The State Fish Commissioner and Game Warden presents herewith his biennial report of operations, covering the period from April 1, 1893, to April 1, 1895:

Your commissioner entered upon his duties April 5, 1893. At this date the state had three fish hatcheries—one located near the Platte river, eight miles from Denver; one located near Twin Lakes, four miles from Granite Station, and eighteen miles from Leadville; and one at Gunnison City, in Gunnison county.

The difficulties with which we undertook the work seemed almost insurmountable.

There were but few stock fish with which to begin the work. We mean by stock fish, fish of sufficient age and size to produce eggs.

There were no reports giving data with regard to difficulties to be overcome at the various locations of hatcheries. These had to be learned by experience at the several stations.

With all the fine locations for trout hatcheries that might have been secured, it seems incredible that such poor locations have been made; not one seems made with the judgment that should have been used by men versed in trout culture.

With the amount of money expended the state should now be able to produce at least five millions of fish per year.

Public sentiment was not in sympathy with the work. There seemed to be an idea that the business was conducted in the interest of a few sporting men from Denver, and other cities in and out of the state. At Twin Lakes this feeling was so marked that it became necessary to guard the traps for catching spawners by day and by night to prevent their threatened destruction by the citizens.

I am satisfied that much of this opposition is but a just criticism upon the former commissioner.

A fish commissioner who spends a great portion of his time wining and dining with sportsmen and tourists, and who is constantly accepting their courtesies cannot expect a public sentiment among the masses different from what I found it on my inception into office.

When the mass of people understand the real benefits of trout propagation, their co-operation will be unanimous. In the natural way of reproduction, trout do not mature as much as 1 per cent. of their ova, while by artificial means we can hatch and plant at least, under proper conditions, 75 per cent. of the number of ova taken.

After an experience of nine years in practical trout culture, I am satisfied that the rearing of trout can be made a success if the same attention be given it as is given to other successful enterprises.

Suitable location with reference to water, food, transportation, and market are the essential features to success. Attendants who will give their entire time and attention to the business are essential.

Trout culture will, in time, be one of the profitable industries of the state.

We have the finest of waters for trout, both in lakes and streams. In the early settlement of this country the settler found an abundance of trout in most of our streams and lakes.

The idea that these waters would ever be depleted seemed impossible.

With the settlement came the sportsmen, the market fisher, the fish hog, the dynamiter, the saw-mill, the placer, the ore mills, and the irrigation ditchs—all sources of destruction to fish. These have done their deadly work, until many of our streams have not a fish left to tell the sad story.

The idea of preventing the destruction of the fishes, and the restocking of the streams by artificial means, has been successfully carried out. Many streams, almost depleted, have been restocked with new varieties and furnish thousands of trout for sport and food.

The laws now in force are sufficient, if enforced, to cure most of the causes of trout destruction mentioned. Numerous arrests and convictions have been made during the last two years. This, with the constant planting of trout, has created a healthful public sentiment in favor of enforcing the laws.

When a stream or lake has been stocked, and artificial stocking practically demonstrated, the residents themselves will preserve the fish.

In many cases samplers and reduction works could settle the material coming from their works with but little expense, and thus open up some of our best trout streams.

Horizontal screens should be used at the head of irrigation ditches coming from trout streams.

Trout fishing should not be authorized to begin before July 1, as the native trout are spawning in May and June. It should close November 1, as the Eastern brook trout spawn in November and December.

The California trout spawns from January to May. I have taken spawn from this trout at the Denver hatchery as early as December 25; while at Twin Lakes I took it as late as June 1. The high altitude, and consequent low temperature, has extended the time for spawning until it so nearly corresponds with the native trout's spawning season that we have been

enabled to cross the two varieties. We produced at Twin Lakes about 20,000 of this hybrid trout and planted them at that place.

The introduced varieties, brook and California trout, have done well in Colorado waters. The Eastern brook grows rapidly and to a larger size than he does in his native Eastern home. His habit of remaining near the place of planting makes him a valuable trout for stocking streams largely used for irrigation. He may be planted above the point where ditches are taken out and will work up stream rather than down.

The native mountain trout goes far up the mountain streams in the spring and returns to the lower waters in the fall. On his return is the time the ditches catch him.

The California trout have made some phenomenal growths in Colorado. California trout planted in Rock creek, near Carbondale, one year ago, now weigh one-half pound. One caught in the Platte in North Park weighed eight pounds; this was a five-year-old fish. Numerous catches have been made of this fish in the Gunnison, running from one pound up to as high as ten pounds in weight.

The largest caught was at Gunnison; it weighed ten and one-half pounds, and could not have been over six years old. He seems to be the most hardy and gamey fish we have.

He does well in the waters at the Denver hatchery, where the brook and native trout will not live.

The Eastern brook trout were affected in 1893 with an epidemic. This seemed to be a fungus growth which attacked the fish, soon causing death. Mr. J. M. Schaedler, of Aspen, in charge of Hallam Lakes; Mr. Grubb, of Carbondale; Mr. Fred Lammers, of Denver; the United States hatchery near Leadville, and the Denver State Hatchery lost fish from this cause.

I am satisfied that weak fish may be produced by breeding in from the same stock. I, therefore, secured 200,000 eggs from Massachusetts and planted the young fry in our streams. I also made an exchange with the Wyoming hatchery.

The native trout at Sweet Water lake were attacked by a parasite, a small worm, just back of the forward fin, and many died from this cause.

The demand for trout for public waters has exceeded the supply by at least 3,000,000.

I am satisfied that the money expended in fish culture is well spent. It comes back to the people in the supply of food fish, healthful recreation and pleasure. The expenditure per annum amounts to about two cents per capita. Should one-half the trout planted in the last two years mature and reach an average of one-quarter of a pound in weight, the value at ten cents per pound would be $44,612.50. The expenditure amounted to but $15,000 for two years. Trout are worth fifty cents per pound in the retail markets of Denver.

Black bass have done well in the lakes near Denver. We have secured a number of spawners and placed them in the ponds at the Denver hatchery, We also placed 1,000 yearlings in the slough or pond on state lands at the Denver plant.

Carp have been secured from private parties and sent to those desiring them.

These two families will propagate and do well only in the lower and warmer waters of the state.

The bass should not be planted with trout as his cannibalistic habits will soon destroy the trout. The carp and bass may be placed in the same ponds as the young carp will be excellent food for the bass.

The Denver hatchery should make an effort to propagate more extensively these two classes of fish.

We have furnished trout at $5 per 1,000 to private parties. All such sales were made from fish

belonging to private parties who had leased to the state their spawners, the state giving them one-third of the young fry. About 60,000 young fry and 80,000 ova were thus permitted to be sold through the state fish commission.

This enabled the purchaser to get his fish at cost of production as the state shipped the eggs to nearest express office free. By this means the state was enabled to place the entire output in the public waters.

I am satisfied that a system of leasing would economize in the propagation of fish, and could be made a source of encouragement to those who are beginning the work of fish culture.

The state might offer various private plants a fixed sum for the production of 100,000 or more trout suitable for distribution. These could then be distributed by the commissioner at state expense. This would result in the establishment of numerous hatcheries and the state would get her fish at the same price, or less, than it does under the present method. I am satisfied that private plants would produce them at $3 per thousand.

The state plants could be leased to private parties on a similar plan, the state receiving one-half or less for use of plant.

If the fish commisson were given authority to prevent fishing in newly stocked lakes or streams, it would be much better for the fish interests. As the law now is, many of the yearling trout are caught and kept. By posting the streams stocked and closing them for two years the benefit to the state would be greatly increased.

The stock of fish already planted in the state could be improved by securing ova from other states and thus infusing new blood.

Following I give tables and the particulars with regard to the several hatcheries:

CAPACITY AND VALUE OF HATCHERIES.

	Capacity	Value	
Denver Hatchery	500,000	$10,000	*State owns site
Twin Lakes	500,000	1,000	State leases site
Gunnison	500,000	2,000	State leases site
Durango	500,000	5,000	County owns site
Littleton		1,000	State owns site
	2,000,000	$19,000	

*Reverts to original owners when not used for fish purposes.

COMPARATIVE STATEMENT OF THE PRODUCTION OF TROUT.

During W. R. Callicotte's term, 1893-94—

Denver Hatchery	1,000,000	
Gunnison Hatchery	600,000	
Twin Lakes Hatchery	1,000,000	
Durango	150,000	
Now in Hatcheries	1,000,000	
		3,750,000

In 1891 and 1892 during Gordon Land's term, the total production was 1,784,500.

Increased output for 1893-4, 1,965,500.

The hatcheries have been put in condition to increase the output in the future.

Cost of fish production and game protection, Gordon Land's term, 1891-2, $34,600; W. R. Callicotte's term, 1893-4, $27,000.

COST OF PRODUCTION AND VARIETIES OF TROUT PRODUCED.

Eastern Brook Trout (Salvelinus fontenalis)	2,500,000
Native Mountain Trout (Salmo mykiss)	1,000,000
California Trout (Salmo gairdneri shasta)	250,000

The cost to the state of the production of trout to a suitable size for planting in the public waters, is as follows:

During Land's term, 1891-2, cost $8.40 per thousand.

During Callicotte's term, 1893-4, cost $4.00 per thousand.

The value of trout produced estimated at $10 per thousand, is as follows:

1891-2, $17,840.

1893-4, $37,500.

It will be seen that the increased output has resulted in a saving to the state of $19,660 in the two years closing in 1894, estimated at the above rate, which is a reasonable one for trout two or three months old.

DENVER HATCHERY.

In charge of T. A. Callicotte.

Product 1,400,000.

This plant is located nine miles from Denver, and one mile from Irondale. The water supply comes from the under-ground flow or springs along the bluff. The temperature is 54 to 56 Fahrenheit as it flows from the springs. It is somewhat alkaline. The supply is not sufficient to sustain but a few thousand adult trout. A better water supply may be obtained by a system of tiling, thus taking up the entire flow which goes to waste in the slough near by. Brook trout will not live longer than to two and three-year-olds in these waters. They die at the spawning season, the most critical period of trout life.

Native trout will not live in the waters. Seven hundred taken from Twin Lakes to this plant died in July after the water became warm. At this time the water reaches a temperature of 60 and above. I tried hatching and rearing natives in these waters, but all died as the water became warmed up to 60.

California trout do well here, and it is the only trout that should be kept in stock at this plant.

This is an excellent plant for propagating bass and carp and a better stock should be kept here.

The place is suited for hatching all varieties of trout, but the fish must be taken away to colder and better water if they are to be kept. I find the water is lacking in vitality both for eggs, allevin and fry. It will not hatch more than half the trout per tank that can be hatched in the mountains.

In connection with the hatchery is a residence of six rooms, good stable and other improvements necessary for the superintendent and family.

With this hatchery there has been a leased spring and hatching house. This lease has expired, and the improvements now belong to Mr. Broadwell, the lessee.

During the last two years this hachery has been in charge of T. A. Callicotte, superintendent, and A. F. Abbott, assistant. Excellent work has been done, the hatchery having been worked to its greatest capacity. A few thousand young fish were lost because of the crowded condition of the hatching tanks at close of hatching season.

One thousand black bass were purchased and placed in the large pond, but the high water in spring of 1894 carried most of them into the Platte river.

New metallic trays have been substituted for the old trays with wooden frames. This prevents fungus and has enabled us to hatch a larger per cent. than has formerly been hatched.

The eggs hatched at this plant were taken from Mr. Orahood's lake, Mr. W. R. Callicotte's lake, from trout kept in the ponds, and 200,000 were imported from Plymouth, Mass. The stronger fish were produced from the imported eggs and from eggs taken from Callicotte's plant near Aspen.

The advantages of this plant are a nearness to food supply and easy transportation facilities. A team is kept here by which, in a short time, any of the railway lines may be reached. By driving to the slaughter house, eight miles distant, a fresh food supply is obtained daily.

I would suggest that the Littleton station be made a nursery and stock fish station auxiliary to the Denver plant.

Many who have visited this plant during the past two years and know the excellent work done, and who have read the lies circulated by partisan newspapers and unscrupulous politicians, have been thoroughly convinced of the villainy used in political campaigns to gain votes.

We were compelled to do the work on a $7,000 appropriation for two years, with the added work at Littleton, while the former administration received $8,700 for doing less work. The auditor refused to allow us the full amount of the appropriation.

LITTLETON SITE.

This site was purchased for the amount of $300 appropriated by the Ninth General Assembly.

It consists of about thirty acres of land lying along the Platte river, four miles above Littleton.

It has excellent spring water of a proper temperature and quantity to hatch and rear trout.

Your commissioner spent $300 from Denver hatchery fund in clearing and preparing the grounds for ponds.

This plant should be prepared to hold stock fish, and for a nursery or feeding station for trout hatched at the Denver station. A hatchery could also be operated at the same time.

A separate appropriation should be made for this station.

The Denver station having been cut down to $1,700 less than in the previous two years, there were no funds that could be used to further improve this place.

TWIN LAKES HATCHERY.

In charge of James Bruner, assistant.

Product, 1,000,000 trout.

This plant has the poorest location of any of the state hatcheries. It is situated one-half mile below the lower lake on ground leased of Mr. Decker.

The water is conveyed from the surface of the lake, one-half mile, in a ditch; it, therefore, becomes so warm that trout are hatched in eighteen days.

The trout hatched here are too weak to be transported, and, therefore, most of the hatch were planted in the lakes.

The former weir and traps were cheap temporary affairs that went out with the rise of water in 1893.

The state has no ponds here, but must depend upon capturing spawners from Lake creek. Nothing could be done here after the weir went out. I, therefore, sent one man to Hetzer's lake, in Middle park, to take eggs, another to my own ponds near Aspen, and I went myself to Sweetwater lake. We were thus enabled to secure about 500,000 eggs all told. The travel and expense of securing eggs in this manner is too great to warrant its continuance.

Feeling the necessity for a suitable weir and traps in the outlet to the lakes, I had constructed from plans of my own a permanent weir. The weir has an apron ten feet broad and a sloping dam seven feet from apron to bottom, all made of two-inch lumber covered with inch boards. The weir is made of half-inch iron rods, placed one-half inch apart. It works like a charm, capturing over 2,000 trout in

spring of 1894, from which we took half a million eggs. A watch house was also built for the attendant. The entire cost was $600.

This plant should be removed to a more suitable location for hatching and keeping fish.

Mr. F. B. Hoelzer, who lives above the upper lake, has a most excellent location. He has three good ponds, a six-room frame dwelling, good stables, shop, a small hatchery, 160 acres of land, 500 spawners, 15,000 young fish. There is sufficient meadow land to feed a team, all fenced. He has given your commissioner an option on the entire plant for $3,500. This is a bargain and would make, with a small expenditure, not to exceed $1,000, the finest trout plant in the United States. The ponds and other necessary improvements are worth the price he asks for the entire plant.

I would recommend its purchase and the immediate sale of the old log building, the present hatchery, and removal of the fixtures to this place.

This is the best trout location in the state for securing native mountain trout. The lakes have an area of more than 2,000 acres, with an average depth of eighty-four feet. The removal of a natural obstruction two miles above the lakes would open up thirty miles of excellent spawning grounds.

The state should secure a permanent site here before it is too late.

More than half a million trout have been planted here within the last year, including brook, rainbow, native and hybrid.

GUNNISON HATCHERY.

In charge of J. W. Curtis, assistant superintendent.

Product, 1,000,000 trout.

This plant is located in Gunnison City, and is supplied with water from the underflow and from the

city water works. Temperature varies from 38 to 52 degrees. The water from the underflow will kill trout placed in it, but will hatch the eggs, and sustain the allevin to the time at which they begin to feed.

By mixing the waters from the water works (Gunnison river) and the under flow, fish have been successfully produced.

The water gets so cold that it takes the ova from one to four months to hatch. The Gunnison is liable to overflow the ponds it has in the past.

The hatchery is a cheap frame building, 20x60, containing sixteen hatching tanks. One room affords the assistant quarters. The seven lots on which this buiding and improvements are located are leased for fish purposes.

The state had no spawners, and it became necessary to rustle for eggs in order to do anything here.

Through the kindness of Messrs. Hider and Hartman we have been able to make this plant a success. These gentlemen leased their fish for stripping purposes to the state, the state hatching the eggs and retaining two-thirds of the amount hatched.

We were also able to trap, catch and buy a number of spawners until, at present, the state is fairly well supplied with spawners at this plant. A breaking of one of the dams caused a loss of a fine lot of spawners.

This plant has never been made a success until the past two years, owing to a lack of understanding the water, and of spawners. Not over 8,000 fish were produced, and these at the expense to the state of $2,700.00, or $337.50 per thousand.

The plant is better for native trout hatching than for winter work.

Mr. Curtis has made a success of this plant by his study and perseverence. He has remained up on cold nights keeping up fires, skimming off the mush ice, and thawing out the outlets with heated iron rods.

A much better location could be made in that locality where spring water of a uniform temperature and supply could be had, and a good plant made at less expense than at the present site.

Galvanized iron hatching tanks have been used here with great success. No fungus is found on eggs or fish when hatched in these tanks.

DURANGO HATCHERY.

In charge of F. H. Sarles.

Product, 350,00 trout.

In accordance with the act of the Ninth General Assembly, your commissioner and the governor of the state selected as a site for this plant a spring brook and tract of land along the same, situated twelve miles from Durango and three miles from Hermosa Station, on the Silverton railway. The adaptability of these waters was indicated by the number of trout already there.

The site is composed of about five acres of ground purchased by the county from Hon. J. W. Wallace, at a cost of $500. The amount was donated by the honorable county commissioners of La Plata county. The deed and contract are recorded in said county.

The appropriation for this plant was $1,000 for the structure and $75 per month for the assistant.

The building constructed is a frame, 38x42 feet, set on a stone wall three and one-half feet high. A shed room is built on one end, and a portion of the main building is set off as a bed room, affording living room for the superintendent.

A pipe line of nearly 1,000 feet conducts the water to the hatchery. The water supply is also connected with the Animas river, thus affording ample supply to hold all the stock fish the state may need.

This is an excellent location, and only needs a more liberal appropriation to make it second to none in the state. The auditor did not permit the use of

the full appropriation for this plant, hence, there is a deficiency of about $500 which the state owes Mr. F. H. Sarles for money expended in the construction.

When the fixtures are all in, this plant will hatch 1,000,000 trout.

Excellent work has been done here by Mr. H. M. McDill and by Mr. F. H. Sarles; the improvements are better and more permanent than at any other plant in the state, and have cost the state less money for similar work.

The ponds have been supplied with young brook and rainbow trout, which will spawn when two and three years old.

This plant is finely situated to supply the southwest with young trout. In this part of the state are many fine streams and lakes which need restocking.

The citizens have manifested great interest in the enterprise, and are anxious to have the work continued.

One hundred and fifty thousand brook trout were hatched the first year. The fish were kept in the hatching tanks for several months before distribution. A very small per cent. were lost in hatching, and the fish were healthful and strong from allevin to time of distribution.

I hope that a liberal appropriation will be given this plant for the southwest.

ESTIMATE OF FUNDS NECESSARY FOR 1895-6.

DENVER HATCHERY, 1895.

Superintendent's salary	$1,000 00	
Assistant's salary	600 00	
Commissioner's salary	500 00	
Fish feed, horse feed and repairs	500 00	
Expense of fish commissioner	500 00	
Water rent	240 00	
Distribution of fish	500 00	
Fish and ova from outside	1,000 00	
Total		$ 4,840 00

FOR 1896.

Superintendent's salary	$ 1,000 00	
Assistant's salary	600 00	
Commissioner's salary	500 00	
Commissioner's expense	500 00	
Fish feed, horse feed and expense	500 00	
Water rent	240 00	
Total		$ 3,340 00

LITTLETON SITE, 1895.

Assistant's salary	$ 900 00	
Construction of ponds	1,500 00	
For team, wagon and feed	600 00	
Construction of hatchery	1,000 00	
Total		$ 4,000 00

FOR 1896.

Assistant's salary	$900 00	
Fish and horse feed	500 00	
Improvements	600 00	
Total		$2,000 00

TWIN LAKES STATION, 1895.

Assistant's salary	$900 00	
Fish feed and horse feed	500 00	
For new location and improvements	3,500 00	
For a new hatching house	1,000 00	
Total		$5,900 00

FOR 1896.

Assistant's salary	$900 00	
Fish feed and horse feed	500 00	
For distribution	300 00	
For improvements	500 00	
Total		$2,200 00

GUNNISON STATION, 1895.

Assistant's salary	$900 00	
Fish feed and horse feed	300 00	
For improvements	500 00	
For distribution	300 00	
Total		$2,000 00
For 1896		$2,000 00

DURANGO STATION, 1895.

Superintendent's salary	$900 00	
Fish from outside	300 00	
Team, wagon and horse feed	500 00	
Fish feed and distribution of trout	300 00	
Balance on construction from 1894	500 00	
Stable, ponds and dams	1,000 00	
Total		$3,500 00

FOR 1896.

Superintendent's salary	$ 900 00	
Fish feed and horse feed	300 00	
Distribution of trout	300 00	
Improvements	500 00	
Total		$2,000 00

FOR PRESERVATION OF GAME,

1895.

Salary of fish commissioner and game warden	$ 700 00	
Contingent expenses and special wardens	2,000 00	
Three deputy wardens at $1,200 each	3,600 00	
Total		$6,300 00
For 1896		$6,300 00

DISTRIBUTION OF TROUT TO PUBLIC WATERS.

1893.

The trout produced have been planted as follows:

Eagle River, between Red Cliff and Wolcott, Brook Trout	100,000
Lake Creek, above Twin Lakes, Brook Trout	25,000
Twin Lakes, Native Trout	100,000
Twin Lakes, California Trout	25,000
Cottonwood Creek, near Buena Vista, California Trout	20,000
Perry Park, Brook Trout	10,000
Florida Creek, Brook Trout	20,000
Animas River, Brook Trout	25,000
South Platte, Brook Trout	25,000
Upper Boulder, Brook Trout	10,000
North Fork, Brook Trout	10,000
South Platte, near Horse Creek, Brook Trout	10,000
Lake George, Brook Trout	10,000
Tarryall Creek, Brook Trout	10,000
Fontaine Creek, Brook Trout	5,000
Platte, near Garos, Brook Trout	10,000
Deer Creek, Brook Trout	10,000
Clear Creek, Brook Trout	10,000
Empire Creek, Brook Trout	10,000
Eagle River, near Minturn, California Trout,	10,000
Eagle River, near Wolcott, California Trout	10,000
Rock Creek, near Carbondale, California Trout	10,000
Roaring Fork, above Aspen, Native Trout	50,000
Roaring Fork, above Aspen, Brook Trout	50,000
Muddy Creek, in Middle Park, Native Trout	50,000
Hetzer's Lake, in Middle Park, Native Trout	50,000
Twin Lakes, Native Trout	100,000
Gunnison River near Gunnison, Native Trout	100,000
Frying Pan, near Thomasville, Brook Trout	5,000
Frying Pan, near Norie, Brook Trout	10,000

1894.

Twin Lakes, Native Trout	500,000
Twin Lakes, California Trout	25,000
Platte, from Buffalo to Jefferson, Brook Trout	225,000
Platte, from Buffalo to Jefferson, California Trout	25,000
Elk Creek, a tributary of the Platte, Brook Trout	25,000

Pine Creek, a tributary of the Platte, Brook Trout	20,000
Bear Creek, above Morrison, Brook Trout	20,000
Poudre, near Livermore, Brook Trout	5,000
Big Thompson, Brook Trout	30,000
Eagle River, below Minturn, Brook Trout	125,000
Grizzly Creek, near Glenwood, Brook Trout	4,000
Frying Pan, near Ruedi, Brook Trout	20,000
Roaring Fork, near Carbondale, Brook Trout	20,000
Roaring Fork, above Aspen, Native Trout	50,000
Maroon Creek, near Aspen, Brook Trout	20,000
Gunnison River, near Gunnison, Native Trout	40,000
Tomichi, above Gunnison, Brook Trout	35,000
Irwin Lake, near Crested Butte, Brook Trout	2,000
Spring Lake, near Crested Butte, Brook Trout	4,000
East Fork Gunnison, Brook Trout	15,000
St. Vrain, Brook Trout	20,000
Clear Creek, Brook Trout	20,000
Rio Grande, near Wagon Wheel Gap, Brook Trout	10,000
Conejos Creek, Brook Trout	10,000
Lajara Creek, Brook Trout	10,000
Pine River, Brook Trout	50,000
Animas River, Brook Trout	50,000
Lake San Cristoval, near Lake City, Brook Trout	30,000
Dallas Creek, above Dallas, Brook Trout	5,000
Dolores River, Brook Trout	10,000
Silver Creek, above Mears Junction, Brook Trout	10,000
Cheyenne Creek, near Colorado Springs, California Trout	10,000
Fountaine, California Trout	1,000
Eagle River, near Wolcott, California Trout	25,000
Roaring Fork, near Emma, California Trout	10,000
Gunnison River, Brook Trout	300,000
Frying Pan, near Aspen Junction, California Trout	100,000
South Platte, near Ammon's place	6,000

Trout have been retained at the several stations for spawners.

There are still in the hatcheries about 1,000,000 trout to be distributed in 1895.

REPORT OF GAME WARDEN'S WORK.

I undertook this work fully determined to prevent the illegal killing of game if possible. My first object was to create a better sentiment favoring the preservation of game. To do this I had published and posted throughout the game country, an abstract of the game laws and an appeal to all good citizens to assist us in their execution. I published the game laws in pamphlet form and distributed to applicants free.

I also secured the co-operation of the express and railway companies in refusing to transport game illegally taken. I attempted, with partial success, to secure the co-operation of other states and territories in the same line. We organized the sportsmen of the state into an organization known as "The Colorado Sportsman's Association."

We secured to some extent the co-operation of the press.

We began investigations, arrests and prosecutions early in 1893, and have kept it up for the past two years.

We have practically stopped the business of professional hunters. Some of them have been arrested the second time and confined in the county jail, but most of them have left the state or have quit.

We have investigated 285 reported violations; have arrested 104 persons; have convicted seventy-eight violators of the game laws. The fines have ranged from $2.50 and costs to $300. In a few cases, imprisonment has been imposed, the longest term being ninety days.

DIFFICULTIES.

The unfavorable public sentiment, resulting in acquittals and in screening offenders from prosecutions, has to a great extent been overcome by numerous prosecutions and efforts to enforce the laws.

More responsibility should be placed upon the local officers.

The panic of 1893 and consequent great number of idle laborers, made it very difficult to enforce the laws.

Many of the silver miners were compelled to resort to the rod and gun to supply themselves and families with food.

"The free and unlimited coinage of silver and gold at the present legal ratio of 16 to 1," and other legislation securing employment to idle workmen, would greatly assist in the preservation of fish and game.

The territory is too great to be "watched" by the wardens. They must, to a great extent, depend upon the residents to give information. Often word is sent to the office at Denver, when local officers could be called on at once and the prosecution made with less expense to the state.

The ranchmen in the lower country are too busy to go into the game country, the mountains, during the open season, August 15 to November 1.

In November when the game comes down from the hills to winter, the hunting season is closed. They claim that the sportsmen have secured a law for their own benefit and they, the ranchmen, are loth to comply with the law and insist on killing their "winter's meat" in November.

Let us have more leisure for the farmer and less for the aristocratic sportsmen.

The Indians have been a source of annoyance. Their depredations, however, have been greatly exaggerated.

The Indians living on the Southern Ute reservation reserved by treaty (the Bruno treaty, 1873), the right to hunt in their own manner and fashion, on all the territory included in their then reservation.

This includes about all the game country in southwestern Colorado. We made no effort to preserve the game in this section, as it would be useless to arrest white men and allow the Indians to kill the game.

The Navajoe Indians have no right to hunt in Colorado.

The Northern or White River Utes have no right to hunt in Colorado. They make regular excursions in the northwestern part of the state to kill game.

They are encouraged by the citizens up there to come, as the killing of deer saves the stockmen's cattle.

None will act as deputies in arresting the Indians.

They leave when ordered out by the wardens, but return when the warden is gone. To arrest a band of these fellows means a great expense to the already over-taxed counties, as they must be fed if imprisoned.

It would take a regiment of soldiers to watch these redskins and keep them out of Colorado.

The idle soldiers now stationed at Fort Logan might be given good, healthful exercise in keeping these fellows on their reservation in Utah.

Hunting trourists and specimen hunters are becoming too numerous for successful game preservation. Many have crossed the ocean and traversed a great portion of the continent to secure an elk head. Hundreds are legally killed each year by non-resident, aristocratic nabobs, who care nothing about game preservation. They also mortally wound more than they kill and save. It is difficult to make a case against these fellows as they keep within the provisions of the law.

Those not residents of the state must be prohibited from hunting or our game will soon all be des-

troyed. Forest fires destroy the haunts of game and render the streams unfit for trout. The state should adopt some means of better forest preservation.

The laws should be divested of all indications of partiality to the sportsmen, as the game must be preserved, if at all, by those who reside in the game country.

A closed season on elk, lasting for five years, would be an excellent means of again restoring this fine animal to his old haunts.

Mountain sheep are not allowed to be killed at all, hence, they have increased a hundred-fold in the past three years.

The work of game warden should not be imposed upon the fish commissioner, as he has enough to do in his work of supervising the hatcheries and distributing fish.

Your fish commissioner and game warden has spent almost his entire time in the field attending to the production and distribution of trout, investigating reported violations, making arrests and attending prosecutions.

A deputy has been kept at the office, and directed the work as reports or complaints came in.

It is a rule of this office to answer all communications as soon as received. Hundreds of letters have been answerd covering all matters pertaining to fish and game.

Permits were given to those making collections for schools, for scientific purposes, and for propagation. Numerous permits were given to take suckers and whitefish.

I believe the interests of the public would be better served by placing the whole matter of fish, forest and game under the supervision of a commission of three. The fish business could be placed under a competent superintendent, appointed by the commission. Under the present law the commissioner

may be a figurehead, drawing a salary, while other men do the work. It is now a one-man power, and very likely to be used in the interest of some class rather than for the state. Most of the states have a fish commission composed of three members.

Your commission is under obligations to the express companies and railway companies for free transportation furnished for men and fish. The work could not have been done so effectually without their aid. The Rio Grande officials and train men have especially assisted in the distribution of trout.

The special game wardens who have served without pay and have so nobly assisted us, deserve the thanks of the state for their work.

Prosecuting attorneys and others who aided in enforcing the laws will be kindly remembered.

We are under obligations to the press for the many courtesies shown.

To my able assistants I shall ever feel grateful for your untirng efforts to make this department a success. You have been honest and faithful to the trust reposed in you.

Very respectfully submitted,

W. R. CALLICOTTE,
Fish Commissioner and Game Warden.