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REPORT
FOR
THE YEAR 1885,
OF THE
FOREST COMMISSIONER
OF THE
STATE OF COLORADO
TO THE GOVERNOR.



DENVER, COLORADO:
COLLIER & CLEVELAND LITH. CO., STATE PRINTERS.
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DENVER, COLO., Dec. 15, 1885.

To His Excellency,

BENJAMIN H. EATON,

Governor of Colorado:

SIR: I have the honor to submit to you, in accordance with law, a report of the operations of this office, from the time it was instituted, April 4, 1885, to this date; together with such information and suggestions as may tend to promote the forestry interests of the State.

I remain, Sir,

Very Respectfully, Yours,

EDGAR T. ENSIGN,

Forest Commissioner of the State of Colorado.

REPORT OF FOREST COMMISSIONER.

ACTION PRECEDING THE CREATION OF A FOREST COMMISSION.

I find no record of any public measures taken in this State, for the preservation of forests, earlier than the year 1876. In that year the State Constitutional Convention inserted a clause in the Constitution, then being framed, requiring legislation for the protection of forests; and also memorialized Congress, asking that body to turn over to the custody of the State the forest lands, within the State, situated upon the public domain. So far as I am informed, no action was taken upon the memorial.

Although the Constitutional clause, above referred to, required the enactment of laws "to prevent the destruction of and to keep in good preservation the forests upon the lands of the State, or upon the lands of the public domain, the control of which shall be conferred by Congress upon the State," no laws of the kind were in fact enacted until the last session of the General Assembly, unless the statute providing penalties for the wilful or careless setting of fire in timber or on the public lands, might be considered such.

STATE FORESTRY ASSOCIATION.

In the month of November, 1884, as a result of previous newspaper discussion, and conference between some of our citizens, the Colorado State Forestry Association was organized. This association at once prepared the text of a bill upon the subject of forest preservation, which, at the ensuing session of the General Assembly, was presented to that body for its action. The bill so submitted was accom-

panied by a memorial, setting forth the need of such legislation, and petitions in furtherance of the object were sent from many parts of the State.

At this first meeting of the Forestry Association a number of excellent papers upon forestry subjects were contributed, and the entire proceedings of the meeting were printed in pamphlet form and circulated extensively throughout the State. (Copy of pamphlet herewith enclosed.) An address to the people of Colorado was also prepared and published, calling upon all citizens to use their influence to secure legislation for the protection of our forests; and individual members of the association, by correspondence and otherwise, sought to awaken an interest in the forestry question. Finally, the measure having secured some warm advocates among the members of the General Assembly, the bill, though shorn of an appropriation, was carried to a passage, and became a law April 4, 1885.

FORESTRY LAWS OF 1885.

The Act last referred to is entitled "An Act relating to Woodlands and Forestry in Colorado, and to create a Forest Commission for said State." It declares what lands, within the State, shall thereafter be deemed woodlands; provides for the appointment of a State Forest Commissioner; gives such Commissioner the care of the woodlands of the State, and requires him to make and publish reasonable rules and regulations for the prevention of trespass upon woodlands, for the prevention and extinguishment of fires thereon, and for the conservation of forest growth. He is also to promote, as far as possible, the extension of the forest area, encourage the planting of trees, and preserve the sources of water supply. County Commissioners and Road Overseers are made forest officers in their respective localities, and their duties prescribed. Special care and vigilance is enjoined upon all forest officers for the prevention and extinguishment of

forest fires, and for the apprehension of persons guilty of causing such fires.

For carrying out the provisions of the Act, no appropriation was made by the State, but each county is allowed to expend, for local uses, not to exceed one hundred dollars per annum.

(For text of the Act, see page 299, Session Laws of 1885.)

Another Act of the late General Assembly, in this connection, is entitled, "An Act to provide for the punishment of persons guilty of a wilful, malicious or negligent use of fire to the injury of others, and for the punishment of persons building camp-fires and failing to extinguish such fires." (See page 164, Session Laws of 1885.)

A further Act, passed at the same session, makes it the duty of the County Commissioners, in each county, to cause to be erected, in conspicuous places throughout their respective counties, notices requiring the extinguishment of camp-fires, and citing the penalties for failure to do so. (See page 161, Session Laws, 1885.)

Of the Acts named, the last two are likely to prove effective and serve the purpose intended. The Act establishing a commission, etc., is good so far as it goes, and contains some admirable provisions. Its most obvious defect is the failure to provide compensation and traveling allowances for the State Forest Commissioner. Lacking such provision, the office has not that degree of effectiveness which the Act contemplated.

STATE FOREST COMMISSIONER.

My appointment to the office of Forest Commissioner took effect April 6, 1885. Being the first incumbent of the office, and having no official precedents to follow, no funds to disburse, nor pecuniary or other emoluments to encourage honest effort, I was at the outset, at a loss to determine

whether the office should be merely "ornamental," or whether it should also be made in some degree useful. In this emergency the executive department of the State kindly came to my aid and consented to furnish certain office conveniences, stationery, printing and postage for the use of my department.

I then made a compilation of the State Forestry Laws and those relating to trees, and a digest of the Federal statutes, and rules thereunder of the general land office upon the same subject. Prefixing a brief address, calling attention to the laws and regulations in question, I had the whole printed in pamphlet form, under the title, "Forestry in Colorado." (Copy of pamphlet enclosed herewith.) Having obtained the names and post-office addresses of the County Commissioners and Road Overseers throughout the State, I sent them by mail copies of the pamphlet, accompanied by copies of Circular No. 1, from my office. (Copy of same enclosed herewith.) Copies of the pamphlet were also sent to prominent citizens in different parts of the State.

Later in the year, upon the approach of the dry season, by correspondence with the Commissioners of the various counties, I endeavored to impress upon them the need of exercising great vigilance in preventing the outbreak of fires in their respective counties. I also made particular inquiry to learn to what extent there had been compliance with the law concerning the posting of notices requiring the extinguishment of camp-fires. I am pleased to state that the law has been quite generally observed, although from a few of the counties I have had no reports upon that subject. The county forest officers, as a rule, have been zealous in seeking to enforce the forest laws, and, to the extent of their power, have cheerfully co-operated in the endeavor to protect the forests of the State. No arrests, for violation of the forest laws, have been reported to me.

It will be evident that some portions of the law, defining the duties of Forest Commissioner, cannot, at present, be made operative—owing to the restrictions now attaching to that office. It is to be hoped that at an early day the office will be made an active one; the best interests of the State demand it.

EXPENDITURES.

The expenditures for the year, in connection with the office of Forest Commissioner, have been as follows:

Printing	\$ 67 63
Stationery and incidental office expenses	31 20
Postage stamps and wrappers for circulars	22 50

Total	<u>\$121 33</u>
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By reference to the tabulated Forestry reports given herein, it will be seen that the expenditures, for forestry purposes, of the counties reported, have been very moderate.

REPORTS FROM COUNTIES.

I have, during the year, endeavored to obtain from the various Boards of County Commissioners, information relating to certain forestry matters in their respective counties. In most cases, the Commissioners have readily furnished me with such facts as were within their knowledge, while from some counties it has been impossible to obtain anything in the nature of forestry reports. The subjoined table, though incomplete, embodies considerable information with regard to forestry matters in the counties to which it relates.

TABULATED STATEMENT OF FORESTRY REPORTS FOR 1885,

RECEIVED FROM CERTAIN COUNTIES OF COLORADO.

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REPORT OF FOREST COMMISSIONER.

COUNTIES.	Approximate area—sq. mls.		Fire Losses 1885.	Forest Trees — Indigenous, and Best Adapted to County.	Expenditures for Forestry purposes.	REMARKS.
	Entire Area.	Forest Area.				
Arapahoe			None.	White Ash, Elm, Maple, Black Walnut	None.	
Archuleta	1,026	650	None.	.....	None.	Timber quite evenly divided over the county; chiefly pine of good quality.
Boulder	768	400	None.	.....	\$50 00	Timber situated in west half of county.
Chaffee	900	760	Slight.	Pine, Spruce, Piñon, Fir, Aspen, and Cottonwood abound.....	.....	Timber situated mainly in west part of the county, on the eastern slope of continental divide, and in hills between South Park and Arkansas river. Much cutting of timber for railroad ties and saw-mill purposes. Great quantities of piñon, in the open valleys, converted into charcoal for smelters at Leadville, Pueblo and Denver.
Conejos	1,320	400	One half of area damaged .....	.....	\$25 00	Timber mainly in mountains in west part of county.
Costilla	1,450	160	10,000 acres — value small	Cottonwood, a native — experimenting with others.....	.....	Timber, scattered pine, in mountains and foot-hills in west part of county.
Delta	1,150	160	None.	.....	None.	Timber in north part of county, on Grand Mesa and southern slope; 50,000 acres cedar. Of residue, one-third is spruce and two-thirds aspen.
Eagle	1,750	310	None.	.....	None.	Timber mostly in eastern and southern parts of county. Fire July 5, 1884, destroyed 2,000 acres. Estimated loss, \$50,000.

El Paso.....	2,646	550	None.	Cottonwood, Maple, Box Elder, Elm, Honey Locust.....	\$7 50	Timber mostly scattered pine and spruce, with some piñon, in western half of county. Aspen cover some of the burned districts. Six saw mills in county, making lumber for local use.
Fremont			None.	Cottonwood, mostly.....	None.	Timber in the mountains, north, east and west of Cañon City. Acreage not given; three saw mills at work.
Grand			None.	Pine and Cottonwood indigenous	None.	Timber on the mountain ranges—area not given. A few timber claims taken up in county—not yet cultivated.
Gilpin	140	80	None.	Spruce and Fir are natives.....	\$30 00	Timber mostly on east side of range and north side of mountains; latter mostly covered with second growth.
Hinsdale	1,440	625	None.	Cottonwood, Aspen, White and Red Spruce, Yellow Pine.....	None.	About three-fifths of area of county is forest, situated on Rio Grande river, Lake Fork of Gunnison and tributaries. Wood cut for domestic purposes only; sells at \$3 to \$4 per cord. Fires have caused some damage.
Huerfano.....	1,160	310	None.	Cottonwood and Box Elder.....	None.	Fifty thousand acres of good timber, mostly in the mountains; balance scattered over the county; 5,000 acres burned in 1880. Estimated loss, \$25,000.
Jefferson	760	470	Slight.	Cottonwood, Box Elder, Ash, Honey and Black Locust, Soft Maple, Red Elm	\$25 00	Timber mainly in west and southwest parts of county, and on Clear, Ralston and Bear Creeks.
La Plata	4,100	985 6	sq. miles.	Maple and other varieties do well	\$25 00	Location of timber: Pine River district, 250,000 acres; Florida River district, 150,000 acres; Animas River district, 100,000 acres. Remainder lies at head of La Plata, Mancos and Dolores rivers—all pine, mostly ripe. Fire in November, 1885, between Middle and East Mancos, lasted a week.
Las Animas	6,500	780	None.	Box Elder, Maple, Cottonwood, Locust	None.	Timber mainly in west and south parts of county; 1,000 acres destroyed by fire in 1880; estimated value, \$15,000.
Larimer	2,500	310	None.	Walnut, Ash, Cottonwood, Box Elder, Bl'k Locust, Soft Maple	None.	Timber extends north and south through central part of county, which includes the Medicine Bow range and foot-hills.
Mesa.....	4,000	50	None.	Cottonwood mostly—any varie- ties grow well	\$17 50	Timber mainly on Piñon Mesa, in west part of county, along the Utah line, and on Grand Mesa in southeast part of county, along the Delta county line.

TABULATED STATEMENT—Continued.

COUNTIES.	Approximate area—sq. mls		Fire Losses 1885.	Forest Trees—Indigenous, and Best Adapted to County.	Expenditures for Forestry purposes.	REMARKS.
	Entire Area.	Forest Area.				
Ouray.....	190	140	None.	Box Elder, Cottonwood.....	None.	Timber quite evenly distributed over county, heavy near Ouray. No forest fires during the last three years. Some 5,000 acres previously destroyed.
Park.....	2,300	160	None.	.....	None.	Timber on north and west borders of county; 10,000 acres burned some years ago; estimated value, \$100,000.
Rio Grande				Cottonwood	\$15 00	Area of timber lands not reported; 1,000 acres destroyed by fire—date not given.
Routt			None.	.....		Timber mostly on main range, extending north and south through the county. Three small saw-mills furnish lumber for local use—mostly at Hahn's Peak mines.
Summit	760	500	None.	.....		Timber in all parts of county, but mainly in east and south parts. Fires, before settlement of county, destroyed sixty square miles of timber.
Weld.....			None.	Cottonwood, Box Elder, Ash, Ca- talpa, Elm in moist ground	\$25 00	No timber in county. A few scattering trees along the river, and a few acres planted in timber claims. Only two of latter proved up, so far as known.
Total	34,860	7,800				

NOTE.—Statements were received from a few other counties, but too late to be embodied in this report.

FOREST AREA.

Under the limitations of the present law it is impossible to determine accurately the forest area of the State; only approximate estimates of the same can be made.

In the early part of this year, in response to an inquiry concerning the forest area of Colorado, made by Hon. N. H. Egleston, chief of the Forestry Division, at Washington, Hon. A. Z. Sheldon, of El Paso county, wrote as follows:

"I have read with interest, and some degree of amusement, the extract from Mr. Egleston's letter to you concerning the extent of forest land in Colorado. For his information permit me to say, it will be many years before any census return from Colorado will give any reliable data bearing on this subject, as our farming country here is virtually timberless. Our government surveys, even, are not to be relied on, as many deputy surveyors fail to note a great many features of the country, and especially where their lines enter and leave the timber.

I said I was amused in reading Mr. Egleston's letter. I was amused that Colorado should be accredited with 44,000 acres of timber. Why, El Paso county alone has 350,000 acres of good average forest.

"My estimate of Colorado is based on observation rather than measurement, and is, therefore, only an estimate, but one which cannot fail of indorsement by such as have had equal facilities for observation with myself.

"There are within the limits of Colorado, west of the 105th meridian, in round numbers, 60,000 square miles, and in the neighborhood of 20 per cent. of this timber, not heavy timber like that of northern Wisconsin, but still such as is usually recognized as timber, mostly coniferæ: aspen, cottonwood, elder and other lesser growth making up the residue. To this may be added 500 square miles from that

portion of our State lying east of that meridian, mostly in the southeasterly part of it. Let us see, then, what we have:

"West of 105th meridian	Sq. Miles. 60,000
Twenty per cent. of this.....	12,000
East of 105th meridian	500
Total forest	12,500
Area of Massachusetts.....	7,800
Area of Connecticut	4,674
Total area.....	12,474"

In explanation of the *comparison* instituted in the last paragraph, it should be said, that in a former published article, Mr Sheldon had stated that the timbered area of Colorado was sufficient to cover the States of Massachusetts and Connecticut, a statement which taxed the credulity of some readers.

On referring to the table, elsewhere in this report, I find that the nineteen counties reporting their forest area give as a total, 7,800 square miles of forest lands, or about 22 per cent. of their entire area. This estimate, so far as it extends, embraces that part of the State upon which Mr. Sheldon based his figures, and is therefore fairly confirmatory of the estimate made by him.

DEPREDACTIONS AND FIRES.

I have been unable to obtain reliable information with regard to the unlawful cutting of timber in the various counties. In many places there are saw-mills at work, but whether any of their owners are encroaching upon the public domain, or manufacturing more lumber than suffices to supply local demands, I cannot say. It is my impression that the cutting of railroad ties is causing more destruction of timber in the State, than anything else.

In October last, the chairman of the Board of Commissioners of Garfield county, made complaint to me that the

timber and grass of that section were meeting with wholesale destruction at the hands of the Ute indians, and stated that they were intentionally burning the country over in every direction, and openly boasted of it. It was further said that the citizens had applied time and again to the proper authorities, by petition and remonstrance, for protection, but without avail. Having no power to act directly in the matter, I referred the complaint to the authorities at Washington. As to what further action, if any, was taken in the premises, I am not informed. Subsequently, statements were made in the public prints concerning the burning of cattle ranges, destruction of timber, etc., in Garfield and Routt counties, by the same tribe of indians. The reliability of such reports I could not determine.

Also, within the last few days, I have noticed the following paragraph, taken from the *Express*, Fort Collins:

"All day Thursday fierce forest fires raged in the mountains west of Loveland, and appeared to be in the neighborhood of the Pine postoffice. The wind that blew during the afternoon caused the fire to spread to the southward, and miles upon miles of black smoke darkened the sky."

I have had no official report concerning this fire, and cannot now state its extent or how disastrous it was.

TIMBER LANDS OF THE UNITED STATES.

In April last, at the close of the legislative session, communications were addressed to the Secretary of the Interior, asking him to confer upon the Forest Commissioner of this State, and, through him, upon the local forest officers, certain authority with respect to the Government timber lands in the State. These papers were accompanied by copies of our forestry statutes, a recital of the facts in connection with forestry interests here, and a statement of the reasons why the authority asked for should be granted. The communications were signed by the executive and other State officers, members of the General Assembly, and other prom-

inent citizens. To the best of my knowledge, no decisive action has been taken in response to the communications. May I beg leave to ask your Excellency to bring this matter, if possible, to the favorable attention of the Secretary of the Interior, and to further, by all proper means, the granting of the request.

The General Government should also establish one or more forestal experiment stations in this State; and, what is perhaps of still greater importance, should provide for large timber reservations at the sources of the important streams which rise in Colorado, perform their good offices there, and carry their life-giving waters to neighboring States and Territories.

In conclusion, permit me to say that I have been much gratified at the newly-awakened interest in forestry matters among the people of this State. Our best citizens are becoming aroused to the necessity of taking active measures for the preservation of our forests, believing that if their further loss and destruction shall continue, with consequent diminution of the water supply, the great industries of the State will be seriously impaired, if not paralyzed.

One very pleasant manifestation of the growing interest in forestry and arboriculture is the hearty manner in which the festival of "Arbor Day" has been observed throughout the State. While the great duty of the hour seems to be to stop the present enormous waste of forest trees, the next imperative duty is to take measures for the extensive planting of young trees.