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# FORESTRY ON ARIZONA STATE LANDS

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The State of Arizona has a land surface of 72,838,400 acres, or about equal to the combined area of all the New England States (except Rhode Island) and New York. Within the State there is a wide range of elevation, from less than 100 feet above sea level near Yuma to 12,611 feet on the San Francisco peaks. More than half the area of the State has an elevation of over 5,000 feet. All the life zones are represented, except the humid tropical, from the Boreal-Canadian, through the Transition, Upper Sonoran, Lower Sonoran to the Arid-Tropical, all of which are reflected even more distinctly in the flora. Three characteristic physiographic regions are to be noted, the Colorado Plateau, Mountain, and Plains or Desert region. The Colorado Plateau (over 5,000 feet in elevation) includes some 30 million acres, the Mountain (3,000 to 5,000 feet) some 17 million acres, and the Plains or Desert (below 3,000 feet) some 25 million. Arizona's principal timbered area is found within the Colorado Plateau region, which includes the Coconino Forest<sup>1</sup> of some 3,840,000 acres, a part of the largest unbroken pine forest in America. To one unfamiliar with the State it will probably be a surprise to know that 19% of the area of Arizona is forest land, or 14 million acres, of which approximately 3,500,000 acres are of the saw-timber type within National Forests<sup>2</sup> and approximately 1,200,000 acres of saw-timber in Indian Reservations.<sup>3</sup> Generally speaking, her saw-timber forests are found at elevations from 7,000 to 11,500 feet; below 7,000 and down to approximately 4,000 feet the woodland type (pinion and juniper) occurs.

## HISTORICAL

By the Act of Congress of Feb. 18, 1881, the Territory of Arizona, (along with the existing Territories of Dakota, Montana, Idaho and

<sup>1</sup>Not to be confused with the present administrative unit, the Coconino National Forest. The extensive stand of western yellow pine in northern Arizona was known as the Coconino Forest for many years before there were any National Forests. It included all of the present Coconino and Tusayan National Forests and possibly portions of the Sitgreaves.

<sup>2</sup>The net area of the ten National Forests in Arizona is 11,204,304 acres, with 18,653,014 acres within sixteen Indian Reservations.

<sup>3</sup>Four Indian Reservations alone in Arizona are credited with 4,000,000,000 ft. B. M.

Wyoming) received a grant of 72 sections (46,678.68 acres) of land "for the use and support of a university." Arizona was not, however, to gain title until she became a state, which she did by the Enabling Act of June 20, 1910. Under this latter Act, Arizona was the recipient of 2,300,000 acres additional of public land of which 200,000 acres were granted for the State University. This article deals, however, entirely with the 72 sections granted under the Act of 1881, which area was to be selected from the surveyed, unreserved, non-mineral lands of the state. The selection was made in 1882 by a commission authorized by the Territorial Legislature and under the supervision of Superintendent of Public Instruction M. H. Sherman and W. N. Kelly, Register of the U. S. Land Office at Prescott. And here a tribute might well be paid to the sagacity and vision of this Commission and the men who made the field locations for their care in keeping the best interests of Arizona in mind, for be it said that they selected some of the choicest timber sections of the entire Colorado Plateau, in northern Arizona. Of the 46,678.68 acres to which the Territory was entitled, and which the Commission selected, the Federal Government through its Department of Interior rejected 8,869.86 acres (which the State later lost), leaving 58½ sections or 36,790.14 acres of some of the best western yellow pine timber in Arizona, all within Coconino County. The area chosen was not in a compact body but the sections were intermingled with government and railroad grant sections through eight different townships and were estimated to have contained approximately 350,000,000 feet board measure of yellow pine, accessible to the main line of the Santa Fe Railroad and on the whole fairly easy to log. Having no title to these University sections, the Territory could make little or no use of them from 1881 until August 17, 1898, when President McKinley included much of the timbered portion of the Coconino Forest in the San Francisco Mountains Forest Reserve.

This region being an important livestock raising one, the Territory had been able to derive some small returns from the lease of certain of these sections to stockmen for ranch headquarters and pastures. On the other hand the Territory had during these years spent practically nothing on these lands, the Federal Government through the Forest Service (since 1898) having given these sections protection from fire, involuntarily perhaps, because intermingled with government lands, within what later became to be known as the Coconino and Tusayan National Forests.

## ARIZONA'S LAND CODE

By the Enabling Act of 1910 Arizona, now a State, became the owner in fee simple of 36,790 acres of as good pine timber land as to be found in the Southwest.

Arizona's entry into statehood was followed by the holding of a Constitutional Convention. This was followed in 1912 by the session of its first legislature during which among the various state bodies created was a State Land Commission to be made up of three members.<sup>4</sup> The Commission appointed by the Governor was very fortunate in having as its chairman a man whose firm convictions on forest conservation and wise use of State lands has subsequently meant much to Arizona.<sup>5</sup>

The Commission's first task was to examine the State's new land heritage and on the basis of what they found to submit a report of their findings to the Governor. This report was submitted under date of Dec. 1, 1914. The report<sup>6</sup> covered the results of their labors "with such recommendations relating thereto, having for their purpose the establishment of a permanent policy for handling the public lands of the State."

On the basis of this report, which was exhaustive and statesman-like, a State land policy was passed in 1915 by the second State Legislature and known as the "Public Land Code of the State of Arizona." This code contained among many wise provisions for administering State lands several very progressive provisions relating to forestry and forest management of its timber lands. In the title of the Act or Code the purpose is stated among other things to cover "lease, sale and other disposition of the State lands *and of the timber and other products thereof.*" Examples of forestry provisions in the Code are:

#### *Sale of State Lands*

"Sec. 48—\*\*\*\*\* provided, said lands are not such as are prohibited by law to be sold; and provided that no lands containing timber of such value that it should in the opinion of the commissioner be sold separately from the said land, shall not be subject to sale until after said timber shall be sold, *and no lands chiefly valuable for the pro-*

<sup>4</sup>Arizona Revised Statutes, 1913, Chap. 1, Title 43.

<sup>5</sup>This first Commission was made up of Mulford Winsor, chairman, Cy Byrne and Wm. A. Moody.

<sup>6</sup>Report—State Land Commission of Arizona, June 6, 1912-Dec. 1, 1914.

*duction of saw-timber shall be subject to any of the provisions of this Act, relating to the sale of State lands.*

#### *Products of Land*

*“Sec. 76—Rules and Regulations:* Except as otherwise herein provided said rules and regulations for the *care, sale and administration of said timber and timber products, shall conform as nearly as may be, to the rules and regulations of the Forest Service of the United States Department of Agriculture.*

*“Sec. 77—Limitation of Timber Contracts:* No contract for the sale of timber shall exceed 5 years in term, nor shall more than 50 million feet of timber be sold to any one individual, association or corporation, at one sale, nor shall any sale be made or contract entered into with any person, association or corporation, while such individual, association or corporation, has under sale or contract more than 5 million feet of timber sold under the provisions of this act.

*“Sec. 78—University Timber Account Fund:* The expenses incurred by the commissioner for the care, sale and other administration of timber or timber products, upon lands granted for university purposes, shall be kept by the commissioner in a separate account and said expenses shall be a charge against the said university funds.

#### *Trespass on State Lands*

*“Sec. 81—Definition and Punishment:* Whoever knowingly and wilfully commits a trespass upon state lands, *either by cutting down or destroying any timber or wood standing or growing thereon, or by carrying away any timber or wood therefrom, \*\*\*\*\* or negligently or wilfully exposes growing trees, shrubs or undergrowth standing on the state lands to danger or destruction by fire, or aids or abets any such trespass or injury shall be deemed guilty of a misdemeanor and upon conviction thereof shall be fined not less than \$50 or more than \$300 or punished by imprisonment in the County jail not more than 6 months or by both such fine and imprisonment. \*\*\**

#### COOPERATIVE AGREEMENT

Prior to the adoption by the Legislature of a State Land Code, the Land Commission largely through Mulford Winsor, its chairman, had taken up with the District Forester's office at Albuquerque, N. M., the question of cutting of timber on these university lands. Located as they are intermingled with government timber and private timber

occupying government land (timber cutting rights having previously been secured by local companies on railroad sections later reconveyed to the United States under special agreements) and lumbering operations being in progress, the State realized the opportunity of putting some of its merchantable timber on the market. There followed a cooperative agreement between the Arizona Land Commission and the Secretary of Agriculture which was approved on January 15, 1914.<sup>7</sup> This agreement is still in effect and has therefore passed through its tenth year, with consequent changes in governors and personnel of State land commissioners. This agreement between a state and the Federal Government covered the practice of forestry on certain state lands and contained features unusual at that time and unusual now.

#### SOME PROVISIONS OF THE AGREEMENT

After the usual legal phraseology at the beginnings of such documents, the agreement starts off with a detailed list of the lands affected and a quotation of the Act under which the State Land Commission is authorized to handle these lands, and then follows with a list of the specific things each party to the contract agrees to do.

The Secretary of Agriculture through the Forest Service and the District Forester agrees to:

1. Furnish to the Land Commission the rules and regulations of the Secretary of Agriculture for the administration and use of the National Forest lands.
2. Furnish the Commission copies of fire plans for adjoining National Forests.
3. Advise the Commission as to proper care of said State lands and Forest Service timber sale contracts.
4. Examine, upon request, these university lands and report on their condition, status, products thereof, desirability of timber sales, logging plans, stumpage values, and other matters aiding in proper administration of the lands; *this service to be free of cost to State.*
5. Designate, upon request, forest officers to work for the State in scaling, supervision of logging and other operations connected with removal of timber from these State lands, *salaries and expenses of such forest officers to be paid by State.*

<sup>7</sup>Credit for the inception and putting through of this agreement is due to Arthur C. Ringland, district forester and T. S. Woolsey, Jr., assistant district forester, of the Southwestern District, neither of whom is now connected with the federal forest service.

The State Land Commission on its part agreed to:

1. *Employ at least one fire guard during the fire season who shall work with local forest officers.*
2. Pay all expenses for suppression of forest fires on or originating on these State lands.
3. *Cut and remove timber from these lands as nearly as may be in accordance with National Forest rules and regulations, and the advice given by the Forest Service and consult with the Forest Service before making any sale, the Land Commission however to conduct all negotiations of sale.*

Both parties agreed that if at any time it became necessary to employ a forest officer for administrative or supervision work (as distinguished from advisory, field or office work) that the Forest Service would furnish such a man, or men, and the State would pay him or them, their usual salary and expenses, that the agreement or contract could be terminated upon 90 days written notice. This agreement has been in effect now for some 11 years and there has never yet arisen any discord in its handling in spite of several changes of administrations both state and federal. One or more forest officers have been assigned to the sale as occasion demanded, on a part time basis, salaries being paid by the State only while handling its sales. This forest officer has also handled sales of timber on adjoining government and timber rights sections to the same purchaser. It has been fortunate that the same lumber companies have been the purchasers of all the university timber so far, with whom both the State and the Forest Service have maintained very amicable relations.

#### SALES OF UNIVERSITY TIMBER

Winsor in his report of Dec. 1, 1914,<sup>8</sup> estimated that there were approximately 300,000,000 feet board measure of mature and over-mature yellow pine on the university lands, and that approximately two-thirds or 200 million feet could be marketed within the next twelve years (by 1926). He placed what he considered a reasonable stumpage price of \$3.50 per M feet on it, which he estimated would bring into the university fund of the State a total of \$700,000 for the sale of timber alone there being nominal receipts from sale of cordwood and leases to stockmen. He also believed that "this amount can

<sup>8</sup>Report of the State Land Commission of Arizona, Period, June 6, 1912, to Dec. 1, 1914, p. 123.



be steadily increased at frequent intervals thereafter by the sale of timber not yet mature but so nearly mature that it will soon be suitable for cutting." Let us examine the accuracy of his prediction of 10 years ago.

## THE PROFITS OF FORESTRY

The first sale of this university timber was made in 1914,<sup>9</sup> since when 15 sales have been consummated to date (Jan. 1, 1924). A total of 128,395,000 feet, B. M. have been sold for which the State has received \$393,179.31. To make and administer these sales, to provide protection from fire and trespass on its 36,790 acres of university lands in Coconino County has cost Arizona \$15,371.14, leaving a net profit to the State for its University fund of \$377,808.17.

TABLE I.

AMOUNT OF TIMBER SOLD, RECEIPTS, COSTS, ETC.\*

Fiscal Year	Volume M. B. M. Feet	Gross Value	Cost Adminis- tration	Net Receipts	Cost Admrs. Per M. Ft.	Average Stumpage Value
1914	9,004	\$ 27,012.75	\$ 800.00	\$ 26,212.75	.....	.....
1915	20,391	67,365.67	1,800.00	65,565.67	.....	.....
1916	18,398	63,964.41	1,680.00	62,284.41	.....	.....
1917	7,490	24,342.89	818.49	23,524.40	.....	.....
1918	7,319	23,786.75	992.48	22,794.27	.....	.....
1919	19,690	60,201.00	1,148.75	58,052.25	.....	.....
1920	15,315	50,057.97	3,073.88	45,984.09	.....	.....
1921	2,909	8,018.06	1,794.38	6,223.68	.....	.....
1922	4,359	10,853.74	956.93	9,856.81	.....	.....
1923	23,520	57,576.07	2,306.23	55,269.84	.....	.....
Total	128,395	\$393,179.31	\$15,371.14	\$377,808.17	12c	\$3.06

Total amount of timber cut..... 128,395,000 feet, B. M.  
 Total area cut over..... 18,420 acres  
 Average cut per acre..... 6,912 feet, B. M.  
 Average stand left per acre..... 1,730 feet, B. M.  
 Total average original stand..... 8,640 feet, B. M.

\*Data supplied by R. F. Rhinehart, lumberman, Coconino National Forest.

The State has in addition approximately 160,000,000 feet, of which 31,867,000 feet are in trees left on cut-over sections (on some 18,420 acres) of merchantable timber as yet uncut. It will probably be 15 years before all of the virgin timber on the University sections will be cut. It has approximately 18,420<sup>10</sup> acres of this University land cut over under as good forestry practice and in as good a condition as far as second growth is concerned as the adjoining National

<sup>9</sup>The first scale report on State Sale No. 1 was dated Dec. 20, 1913.

<sup>10</sup>Exclusive of 2,615 acres of open land bearing no timber.

Forest lands. The mature timber has been removed and seed trees left. On most of the cut-over University sections there is good advance reproduction. Based on actually calipered areas, from 15 to 25% of the original stand has been left; in general, approximately 80% of the stand has been taken. The remaining stand consists of thrifty growing "black jack" with occasional yellow pine where needed for safety restocking. Some of the sections are located close to transportation so that there should not be such a long period before a second cut is practicable. Moreover, the State is realizing not a small sum from the sale of dead material, such as cull logs, dead trees, tops and limbs, as fuel wood in the Flagstaff market. The land is being protected and the State can expect to harvest succeeding crops from these lands as time goes on. So far at least, the practice of forestry has proved to be a profitable undertaking for the State of Arizona and its University.

In fact, so successful has been the administration of the timbered lands of the University of Arizona that after the passage of appropriate legislation<sup>11</sup> and after giving the procedure a thorough tryout, the State of New Mexico, through its Land Commissioner under date of September 10, 1923, entered into a similar agreement with the Secretary of Agriculture for the management of all of its timbered holdings—the only material departure being that since the New Mexico lands do not in general alternate with National Forest lands, though largely within or adjacent to National Forests, the State has agreed to pay all the expenses to the Government involved under said agreement including appraisals, technical advice, etc.

<sup>11</sup>Chapter 101, pp. 162-163, Session Laws of New Mexico, 1923.