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FOREST CONSERVATION

DWINDLING FORESTS

If there is any one thing the American people should be held accountable for it is the way they have used the greatest natural resource the continent was blessed with, her forests. Practically the whole of eastern America was once covered with forests of giant pines, oaks, hickory, and numerous other trees. Our forests were the greatest the world afforded. Practically every acre was covered with trees that had been standing for generations. Our forefathers marveled at their enormous size. They served as the subject for masterpieces in prose and poem. But where in the east today will you find a forest that will inspire the soul of man? For generations these forests were the natural enemies of our ancestors. They had to be conquered in order to plant crops. Trees were girdled, great areas set on fire to afford a clearing. Then our population was scant, and our timber supply seemed adequate for all future time. But what about today?

In Eastern Carolina

Eastern Carolina was once the home of the Long Leaf Pine. Forests covering hundreds of thousands of acres of great pines stood in silent majesty. As late as three or four decades ago great areas were still intact. But where in this state today can you find a long leaf pine forest of any size? There are a few small areas that have been zealously guarded by proud owners, but the total area is small indeed. The writer has seen only one such tract in the last ten years, in Robeson county. During a recent trip that took him through practically every far eastern county from South Carolina to Virginia no single spot of original pine was seen. There are few opportunities left for the present generation to witness what was once the pride of the state.

For a generation or more the eastern part of the state was the scene of an enormous turpentine activity. The trees were boxed, then chipped as far as the long handle blades could reach. Because of this great naval industry we became known as the Tar Heel State. Following in the wake of the rosin and turpentine industry came the saw mill. Whole forests were wiped out at one fell swoop. No thought for the morrow on the part of anybody, least of all on the part of the forest vandals. Nobody seemed to care for the future. The great forests are gone, or practically so, and now it is the small saw mill that is clearing up what was left after the great saws ate their way, as a forest fire, through this magnificent pine belt.

The year 1914 marked the period of maximum timber production in this state. At that time the annual cut amounted to two billion two hundred million board feet and North Carolina was the fourth state in the amount of lumber cut. The annual cut today is just half what it was nine years ago and we have fallen to ninth place, with still lower rank in sight.

Spring Clearing

It is a sickening sight to pass through the Tidewater country during the spring months. The State Tenancy Commission has recently had such an experience. All the way up the coast, on train and in automobile, we were constantly in view, and often in midst, of forest fires, areas being burned off in order that crops might be grown or that the natural grass could come up for cattle pasture. On thousands of acres we saw young long leaf pines being blistered by fires designed to destroy the undergrowth. Often whole areas of young pine had been killed in the process. It seemed inexorable. Wood was being burned which would bring six dollars a cord in mid-state Carolina. In a very short time these people will seriously regret their wastefulness of today, just as we now regret the manner in which we wantonly destroyed our original forests.

We saw many thousand acres that had been drained at an enormous cost, and then the great gum, pine, and cypress trees set fire to and burned off. Stumps of trees two and three feet in

diameter are all that is left to testify to this waste. One man who had thus cleared up many thousand acres said it was too expensive to cut the trees and get them out! What will he think ten or twenty years from now when these trees would bring more clear profit than the crops he will grow in the meantime? Even after the forests are burned off the land is idle, growing up in rank bushes, because of lack of farmers or workers. The timber is gone, the land is standing idle, and the vast expenditures on drainage are often total losses.

We saw one tract that covers around 17,000 acres on which recently there stood a fine forest. Today as far in every direction as the eye can see there is no single tree standing, except a few small ones that have been planted here and there about farm homes during the last three or four years. The entire tract had been fired and re-fired until every vestige of plant life was burned away. Now the few people living there are planting trees to shade their homes.

The great hardwood forests in the mountain and other western counties have been treated similarly. Whole mountain sides have been completely stripped of forest trees and the bare soil left to be eroded and washed away by heavy rains. The tragedy of Mt. Mitchell alone is enough to awaken the public to some action, and hundreds of peaks have been treated in the same way, or are being so treated today. No county in the state has escaped the wanton waste of her forest resources.

Our forests and soils should be considered a public trust to be used properly by us and conserved for the people who will come after we have departed. Have we abused this trust?—S. S. H., Jr.

FOREST POLICY NEEDED

All civilized and semi-civilized nations today except China care for their forests. Until recently our country ranked almost along with China in respect to the care of forests, and even today we rank far behind the progressive modern nations of the world in the protection, preservation, and conservation of our forest resources. Japan has a well developed forest system and a national forest school. In Austria, Italy, Norway, and Sweden, government forestry is a well established portion of the national policy. Turkey, Greece, Spain, Portugal, New Zealand, Australia, Canada and many other countries have forward-looking state policies. Germany, France, and Switzerland have done more to preserve their forests than any other countries. Switzerland had a national forest policy before America was settled. Germany still holds the highest position in forest science. She has seven forest schools and the study of forestry, both in these schools and in the forest experiment stations, is eagerly pursued.

The forests of France are also admirably managed. Besides handling their national forests with great intelligence and success, the French have done much for the general progress of forestry. They developed the art of re-foresting denuded mountains and were the first to plant trees on moving sand dunes and along the seashore. In France the cutting of trees is supervised by the government. The young trees and seedlings are carefully saved and protected. Only the mature trees are allowed to be cut and taken out, or the immature ones where necessary for the better growth of the ones left. They have fire lines through the forests, which are often used for highways. The care with which France guards her forests astonishes Americans who are accustomed to universal waste.

The trees of proper size are marked to be cut, the body of the tree being used for building purposes. The limbs are then trimmed of all the smaller branches and piled up for cord wood. Even the limbs an inch in diameter are used for cord wood. The balance of the branches and twigs are then collected and bound together in bundles as fagots to be used for cooking and heating purposes. Nothing is left on the

KNOW NORTH CAROLINA Her Forest Possibilities

The State and Federal governments are cooperating with the counties to stamp out forest fires. The man who sets fire in eastern North Carolina is destined to be as unpopular in the Longleaf counties as a horse thief was in Texas. The splendid work of Col. Joseph Hyde Pratt and State Forester J. S. Holmes is already bearing fruit. A newly appointed forester for the Eastern District is actively covering this region organizing the counties for fire protection, and so the future of the longleaf pine is bright.

A planting campaign is needed, seeds should be collected every fall in large quantities and distributed at cost or gratis to landowners, and every open space suitable to pines in the forest should have its pines. With a well organized campaign covering five years, at a cost varying from a few cents to a few dollars per acre (on severely burned areas) an excellent reproduction of both longleaf and shortleaf pine can be secured.

There are millions of acres with a fair second growth of longleaf pine from one to forty years old. There are other areas nearly bare or thinly stocked. The area restocking is probably larger than on any equal area of the South Atlantic States. The area of young second growth with trees from six to fifteen inches in diameter is large when we consider the lack of protection from fire and the carelessness of the owner and the lumber companies.

The young Longleaf Pine ten inches in diameter can be successfully tapped. New methods of turpentine which aim at continuous production are being successfully followed in Florida and adjacent states. Dr. E. Gerry, of the Government Forest Products Laboratory, has just completed a two years' field study of the naval stores industry, proving conclusively that these young pines properly treated can be made to yield turpentine and timber. This means that Carolina can permanently restore her great industry.

With the present rapid increase in the price of forest products, much of the area of eastern North Carolina will yield higher returns from forest crops than from those of ordinary agriculture. Recent statistics show that the gross returns per acre for the ten principal crops of the United States vary between twenty and thirty dollars. A properly tended forest in Eastern Carolina will produce twenty-five dollars' worth of timber per acre per year at present prices.

Within fifteen years the bulk of the virgin timber in the South will have been removed and the center of the lumber industry will move to the Pacific coast. North Carolina pine in this section will then double in value; which means that twenty-five to fifty dollars per thousand will be paid for logs delivered at the mills by the time the present crop matures. But two steps to secure the return of our forest industries must be taken—fire protection and planting.—H. M. Curran, Farm Forester, in News and Observer.

It Pays in France

France is dependent on the timber she grows, consequently she grows it with deliberate care. There is very little idle or waste land in France. Whatever land is unfit for crops or grazing is growing trees. In France

the forests are returning annual yields of timber that compare favorably with crop values. The trees are cut as they mature, so that new growth is coming on all the time. The forests in the Vosges mountains, for instance, produce an average value of twenty-two dollars' worth of timber per acre per year.

What France, Germany, and the other countries have done this state must do some day. Merchantable timber is scarce even now. Fifteen years ago good pine lumber could be bought for ten to fifteen dollars per thousand feet. Today it is selling for from five to seven times as much, and the quality is poorer. Forests if properly managed can be made to yield annual dividends that compare favorably with crop yields. It is so in Europe where they have been forced to adopt stringent methods. North Carolina alone has twenty-three million acres of land not used for agricultural purposes. Much of this land can never be used for crops or pasture. But practically every acre of it will grow trees and the sooner we put this idle and semi-idle land to work the better off we will be. There is no excuse to wait until dire necessity forces us to adopt a forest policy, as in France, Germany, and elsewhere. We can become the greatest forest state in the Union, and without sacrificing an acre of land now in use. Every acre can be made a profit producing acre, and instead of one-fourth of our land carrying the entire tax burden as at present, each acre will pay its way. The future of this state rests largely on whether or not we look to our forests. Without forests we will have frequent droughts, and when it does rain the streams will be suddenly swollen and we will have floods and disaster. Forests will protect our water power and consequently our future as an industrial state. Let's join that little band of men who have been laboring for the conservation of this our greatest natural resource and work for the adoption of a forest policy that will measure up to our road and educational program. Nothing less can be expected of this state. The time is over-ripe for action.—S. H. H., Jr.

STATE PROTECTION

North Carolina with an average loss of nearly \$1,500,000 per year stands second only to Minnesota in actual damage from forest fires. These two states are also the largest in forested area, Minnesota having twenty million acres and North Carolina eighteen million acres in need of fire protection. For forest fire prevention on these areas the Minnesota state appropriation was \$178,000 while North Carolina had a state appropriation of only \$14,250 during the fiscal year 1922. The results of the work in these two states indicate exactly what might be expected. Minnesota with its large appropriation succeeded in reducing the yearly average forest-fire loss of over five million dollars to \$268,610 in 1921,

while North Carolina could reduce its yearly average loss of \$1,497,732 only to \$1,093,500 because of insufficient funds to carry on the educational and protective work.

Twenty-six states are now taking advantage of the Weeks Law and cooperating with the Federal Government in forest fire prevention. The following table shows the appropriation by states for forest fire protection for the year 1922, in these twenty-six states. All figures have been reduced to a million-acre basis for ease of comparison.

Rank	State	Forest area Million Acres	Appro. per Million Acres
1	Pa.	12.0	\$41,666
2	S. D.	0.05	30,000
3	Mass.	3.0	21,000
4	N. J.	1.8	19,989
5	R. I.	0.25	16,000
6	N. Y.	14.0	11,607
7	Me.	14.0	11,428
8	Ida.	4.5	10,586
9	N. H.	4.0	9,541
10	Mich.	15.0	9,333
11	Minn.	20.0	8,900
12	Ct.	1.5	7,933
13	Ohio	0.75	6,666
14	Wash.	10.0	6,475
15	Mont.	4.9	4,938
16	Calif.	13.0	3,830
17	Oreg.	12.0	3,541
18	Vt.	3.0	2,982
19	La.	12.0	2,916
20	Md.	2.0	2,412
21	Wis.	14.0	1,985
22	Tenn.	7.5	1,560
23	W. Va.	5.0	1,400
23	Va.	13.0	1,400
23	Tex.	10.0	1,400
26	N. C.	18.0	791

The reason that North Carolina is now so far behind the other states is at once apparent. We cannot expect to maintain an adequate educational and protective system over so large an area when the appropriation to the North Carolina Geological and Economic Survey for forest fire prevention is only from one-half to one-fifth that other states are giving for this work. Pennsylvania leads in the work and does so only after careful investigation has proved that the expenditures will be more than repaid by the return from the forests. If the work will pay in Pennsylvania it is sure to do so here for we are favored by better climatic and soil conditions which result in more rapid growth of trees and greater yield per acre in a shorter period of time.

North Carolina is taking its place among the leading states in nearly all forms of progressive work and should not lag behind in forest fire prevention. Eighteen million acres of our land are potential forest land and should be protected for this purpose until the time comes to devote some of them to agricultural purposes. If these eighteen million acres are not protected we can hardly expect the remaining thirteen million acres in the State to carry the steadily increasing burden of our taxes.—J. S. Holmes, State Forester.

DAMAGE BY FOREST FIRES

Six-Year Average, 1916-1921

Based on report of the U. S. Forest Service. The figures represent the average yearly area of forest burned and the average yearly loss from forest fires.

J. S. Holmes, State Forester, N. C. Geological and Economic Survey

Rank	State	Damage	Area Burned Acres	Rank	State	Damage	Area Burned Acres
1	Nev.	\$291	512	24	Me.	\$155,523	23,496
2	Utah	909	872	25	N. J.	175,233	59,124
3	Neb.	798	6,430	26	Ark.	214,694	568,650
4	Colo.	2,005	2,002	27	Mich.	226,482	248,967
5	Dela.	4,516	302	28	Tex.	249,763	527,137
6	Vt.	4,947	1,232	29	Mo.	296,557	496,617
7	S. D.	5,802	1,315	30	Tenn.	301,445	231,309
8	N. M.	6,701	11,325	31	S. C.	328,425	398,825
9	Ariz.	7,629	16,712	32	Mont.	354,033	128,669
10	N. Y.	13,673	15,602	33	Miss.	439,000	727,582
11	R. I.	21,009	2,858	34	Ala.	451,344	535,506
12	Ind.	28,714	45,531	35	Oreg.	468,129	223,717
13	Ill.	35,300	26,135	36	Calif.	471,493	448,182
14	Wyo.	41,693	5,687	37	Pa.	479,943	211,818
15	Ky.	50,278	19,376	38	Wash.	522,047	196,323
16	N. H.	52,813	4,104	39	La.	585,632	1,605,903
17	Wis.	55,752	81,581	40	Va.	640,225	212,136
18	Md.	57,188	22,156	41	Ida.	683,880	267,228
19	Ohio	62,515	13,332	42	Ga.	938,912	997,581
20	W. Va.	63,896	49,190	43	Fla.	987,056	1,540,044
21	Okla.	78,876	124,864	44	N. C.	1,497,732	337,737
22	Ct.	87,259	24,965	45	Minn.	5,192,413	383,597
23	Mass.	87,434	23,273				