

UNITED STATES DEPARTMENT OF AGRICULTURE
Forest Service

Miss Novacek
PM
Washington, October 9, 1946

Chief Forester Watts Objects to Placing Public Forests on a Custodial Basis:

Lyle F. Watts, chief of the Forest Service, today told the American Forest Congress at the opening session of a three-day meeting in the auditorium of the U.S. Chamber of Commerce that in a recent resource appraisal report the American Forestry Association appeared prepared to advocate placing public ownership of national forests and other public lands on a "custodial" basis rather than under stable public ownership and management as at present.

"Those Americans who value the principal of permanent forest conservation and stable State forestry," he said, "should be shocked at the proposal."

The chief forester said that he took the proposal to mean that the people would acquire and rehabilitate depleted forests at public expense and, when demand was strong and prices high, turn them back to private ownership. He quoted the association's appraisal report as preferring State forest "custody" to Federal because it was easier to get the forests from State custodians.

A committee proposal for "a thorough-going study of Federal public-land policies and administration--with a view to the adoption of a comprehensive policy covering the policy, reservation, acquisition, and administration of urban Federal lands," was called by the chief forester an "impossible committee task." He wondered if this particular proposal would not mean a holiday from needed forest acquisition by the public and demanded to know "When are we going to get down to brass tacks and put into public ownership, and start acceptable forest management on that forest acreage where experience keeps on shouting to us that public ownership is needed."

The chief forester said that the nation's forestry situation was bad, that the main key to improvement was better handling of private forest land, and proposed as a principal remedy a basic Federal charter which would give every reasonable opportunity for States to enact and, with Federal financial assistance, administer regulation under State law consistent with Federal standards, but would provide for Federal administration in States which fail to do so.

Chief Watts viewed regulation as a protection of the public against the adverse effects of destructive cutting upon timber growing stock, watershed and other values of the forest. Saying the Forestry Association Appraisal report itself stated that many private owners are ready, able and willing to practice reasonable forest conservation, Chief Watts said such operators would not be adversely affected by regulation but rather would be protected by it.

Most of the Association committee's recommendations, or proposals--such as those dealing with increased public forestry education, protection of forests from fire, insects and disease, tree planting and forest cooperatives--were said by the chief forester to be fully "in accord with the best national interests." He also endorsed committee proposals calling for intensification of public forests manage-

ment, public payments in lieu of taxes, better watershed protection and various other measures. But in addition to his stand on regulation, he strongly criticized proposals dealing with the place of public forests in the national conservation program and to a lesser extent those dealing with the problem of small private woodlands.

The chief forester charged that the committee's proposals dealing with the public forests and calling for intensive management of the national forests was studded with "allegations and innuendoes about the management of the public forests." He said he was struck particularly with the statement of the association's resource appraisal writers that the public forests could contribute about one-third of the annual timber cut, presumably in the near future. This statement was a great exaggeration of the possibilities, he said, and expressed concern that it would augment the pressures for over-cutting national forest timber. Challenging any implication that past handling of national forests had contributed measurably to the present bad forestry situation, he declared that on the contrary national forests had been managed so that now they constitute an indispensable timber reserve in a day when privately owned timber was declining. To a large extent he thought the same thing was true of other public forests. He declared he knew of no real study of national-forest administration being made by the association's resource appraisal crew.

Turning to private ownership, the chief forester said the Association's appraisal report failed to point up clearly that the crux of the problem of obtaining the forest products and services which the nation needs was getting satisfactory forest management on private land. He cited figures to show that three-fourths of the commercial forest land is in private ownership, including generally the best and most accessible of it. Fifty-seven percent, he said, was held by some 4,250 million small owners, their individuals properties averaging about 60 acres. Two-thirds of all timber cutting on private land was, he related, poor or destructive, while on the small properties alone nearly 75 percent was of this description. Further, he said, only four percent of the cutting on small properties could be classed as good, and that even on the largest private holdings, where recent progress was greatest, only 29 percent of the cutting follows good practice. It was against this background, he said, that one must consider a forest program.

As for the over-all forest situation, Chief Watts declared the forests were not providing the timber needed today, and that even under the most vigorous program of good management it would be many years before they could fully meet potential requirements. The present stand of 1,600 billion board feet of saw-timber represents conservatively a 9 percent decline since 1938 and a 43 percent decline since 1909. He told how the most accessible areas, finest timber stand, best species of trees, and largest timber had been hard hit by the decline. He warned the nation against being misled by the existence of a relatively large amount of "all timber" growth--as opposed to "saw-timber" growth--because too much of this "all timber" growth is of inferior species of poor quality, and because we are still cutting and destroying the saw-timber 50 percent faster than it is growing.

Chief Watts reminded the Congress that previous American Forestry Congresses--the first being in 1882--had long discussed the creation of permanent public forests to be safeguarded from exploitation and managed in the peoples interest. He said by a resolution in 1905 they had helped get the national forest system established in the Department of Agriculture. The present Congress, he said, faces graver forest problems than we have ever known; and he urged that most be made "of this challenge and of this opportunity in forest conservation."

Watts
Didn't find copy
of speech. Would like one.
H.A.P.

MR. COCHRAN

ROOM 4107

A copy of Mr. Watts' speech before the Agricultural Mobilization Policy Board on June 22 was routed to each of you recently. It is titled THE FOREST AND TIMBER SUPPLY SITUATION IN THE DEFENSE EMERGENCY.

The third word in the first sentence of the second paragraph on page 2 should be "not" instead of "now". The sentence should read "We are not growing sawtimber as fast as we are using it."

Dana Parkinson, Chief
Div. of Information & Education
U. S. Forest Service

Info address

I think I need not say anything to this group about the importance of forest products in the defense program. As you probably remember, the war production planners started out in World War II thinking about wood as a nice handy substitute for some of the critical war materials. Before the War was over they were wondering where they could find substitutes for wood. That mistake must not be made in the present emergency. Forest products are now classed among the essential defense materials.

Following World War II, the Forest Service made a reappraisal of the forest situation in the United States. The facts we brought together showed very definitely that our total forest resource is in unhealthy condition, that we are heading for a period of tighter supply of some forest products. In fact, we are already experiencing shortages of certain kinds of forest products, such as large-size, high-grade lumber and timbers and the kinds of wood needed for some of the specialty uses. Lumber prices have skyrocketed way beyond the average price index of other commodities, reflecting in part at least the fact that our supply of good quality, readily accessible merchantable standing timber is getting scarcer.

Our reappraisal indicated a total volume of standing saw timber of about 16 hundred billion board feet. On the basis of earlier estimates, which were not closely comparable, that would represent a decrease of some 44 percent in 36 years. Probably the actual decline in saw-timber volume was even greater. Some of this decrease was to be expected, of course, as old growth forests were being replaced by second growth.

1/ Statement by Lyle F. Watts, Chief, Forest Service, U. S. Department of Agriculture, for the Agricultural Mobilization Policy Board. June 22, 1951.

Seventy-six percent of all our commercial forest area is east of the Great Plains. But all this area now contains only about as much saw timber as the 6 percent of our commercial forest land in Western Oregon and Washington, where most of the last stands of old-growth timber remain.

We are not growing saw timber as fast as we are using it. Our reappraisal showed the total annual drain exceeding total annual growth by 50 percent. That was on the basis of the 1944-45 rates of drain and growth. My guess would be that the excess of saw-timber drain over growth is as great today. In other words, we are eating heavily into our forest capital of quality growing stock.

On the other hand, there is a near balance between drain (13.7 billion cubic feet) and growth (13.4 billion cubic feet) for all timber, including that less than saw-timber size. However, 80 percent of the total drain is in saw timber, particularly the better softwoods, whereas much of the growth is in small low-grade trees and inferior hardwoods.

I have attempted to give you this brief general picture of our over-all forest resource situation as a background for what I want to tell you about current activities. The point I want to emphasize is that we are up against a mighty tough proposition if we are to meet the forest products needs of the present emergency without further seriously weakening our long-term forest resource base.

National Forests

One of the responsibilities of the Forest Service is the protection and management of the National Forests. These National Forests contain about 180 million acres of Federal land located all the way from Alaska to Puerto Rico. Not including Alaska, they contain some 73 million acres of so-called commercial

forest land -- land that is bearing or is capable of growing merchantable timber. That is about 16 percent of all the commercial forest land in the United States. But this 16 percent of the commercial forest area now contains more than 30 percent of the Nation's total volume of standing saw timber. National forest timber is thus becoming more and more important in meeting the country's needs for forest products.

The yearly output of timber from the National Forests has been increased to about three times what it was 10 years ago. This year the total cut will exceed 4 billion board feet -- roughly 10 percent of the national total. The receipts to the Federal Treasury will be close to 50 million dollars.

In each timber management working circle in the National Forests, the yearly cutting budget looks to a permanent and continuing output of timber -- to what we foresters call a sustained yield. Production is not yet up to sustained yield capacity, however, on many of our National Forests. In the eastern forests and also on many western areas, timber growth still has to be brought back on areas that were deforested in the past. As the growing stock is built up on these lands, the yearly cut can gradually be increased. In the western National Forests, the big bottleneck to increased timber cut is lack of roads. Substantial areas of mature and overmature timber are still inaccessible and cannot be harvested until access roads are built.

The Forest Service estimates that construction of main-line log-haul roads to reach the large stands of national-forest timber now inaccessible would make possible an increase of about 2 billion board feet a year over the current timber-cutting rate. That would be a 50 percent increase -- from the present cut of around 4 billion feet to at least 6 billion feet. We in the Forest

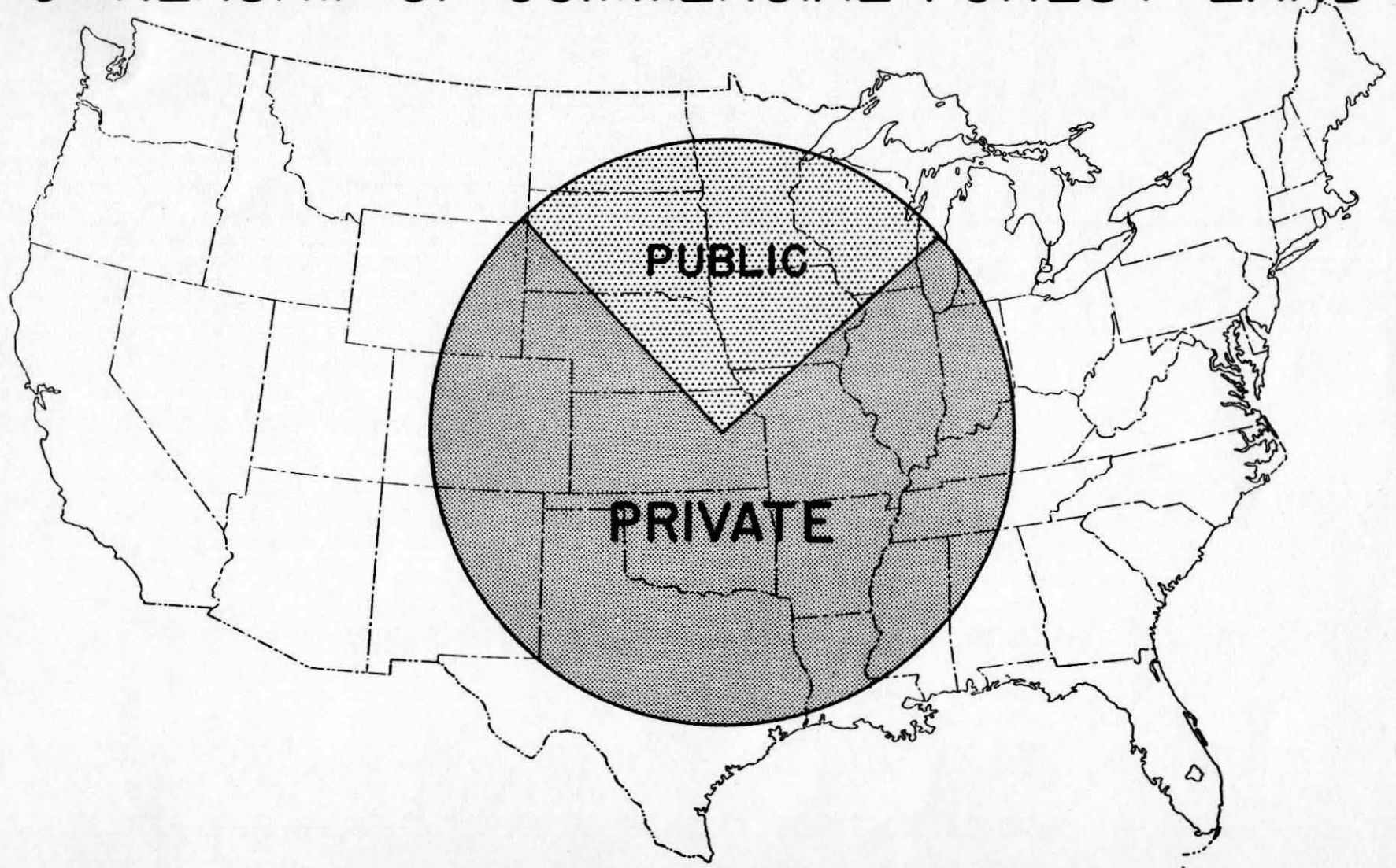
Service would like to move ahead with this access road program just as rapidly as possible, while the contractors and equipment and skilled workers for road construction work are available. They may not be available later, as the defense program expands, or if total war comes. And the demand for that additional timber will accelerate with the increasing needs of the defense program. It will be vitally important in the event of all-out mobilization.

Aside from the matter of national defense needs, building these access roads looks to us like a pretty good business proposition. The 2 billion feet a year increase in timber cut, at present prices, would bring an additional 20 million dollars a year into the Federal Treasury -- enough to cover the total cost of the access roads in just a few years, and continue as a sustained annual income indefinitely.

Some recently constructed access roads already have been paying handsome returns. In the Nezperce National Forest in Idaho, for example, 7 miles of reconstruction and surfacing brought in more than a third of the cost through timber sale revenue in the first 12 months. In the Plumas National Forest, California, 7 miles of new access roads were completed in October, 1947, at a cost of \$80,000. By September 1, of the next year, \$140,000 worth of national forest timber came out over that road. It much more than paid for itself in less than a year.

For the long pull, even greater timber production can be obtained from the National Forests. It can be obtained with more intensive management, including tighter control of fires and of insects and diseases, close utilization to get as much usable wood as possible from the trees cut, and silvicultural treatment of young stands, such as thinning and weeding and pruning, to speed growth and improve quality. Also, more than 3 million acres of good timber-growing land

OWNERSHIP OF COMMERCIAL FOREST LAND



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in the National Forests is now deforested and needs planting to restore it to productivity.

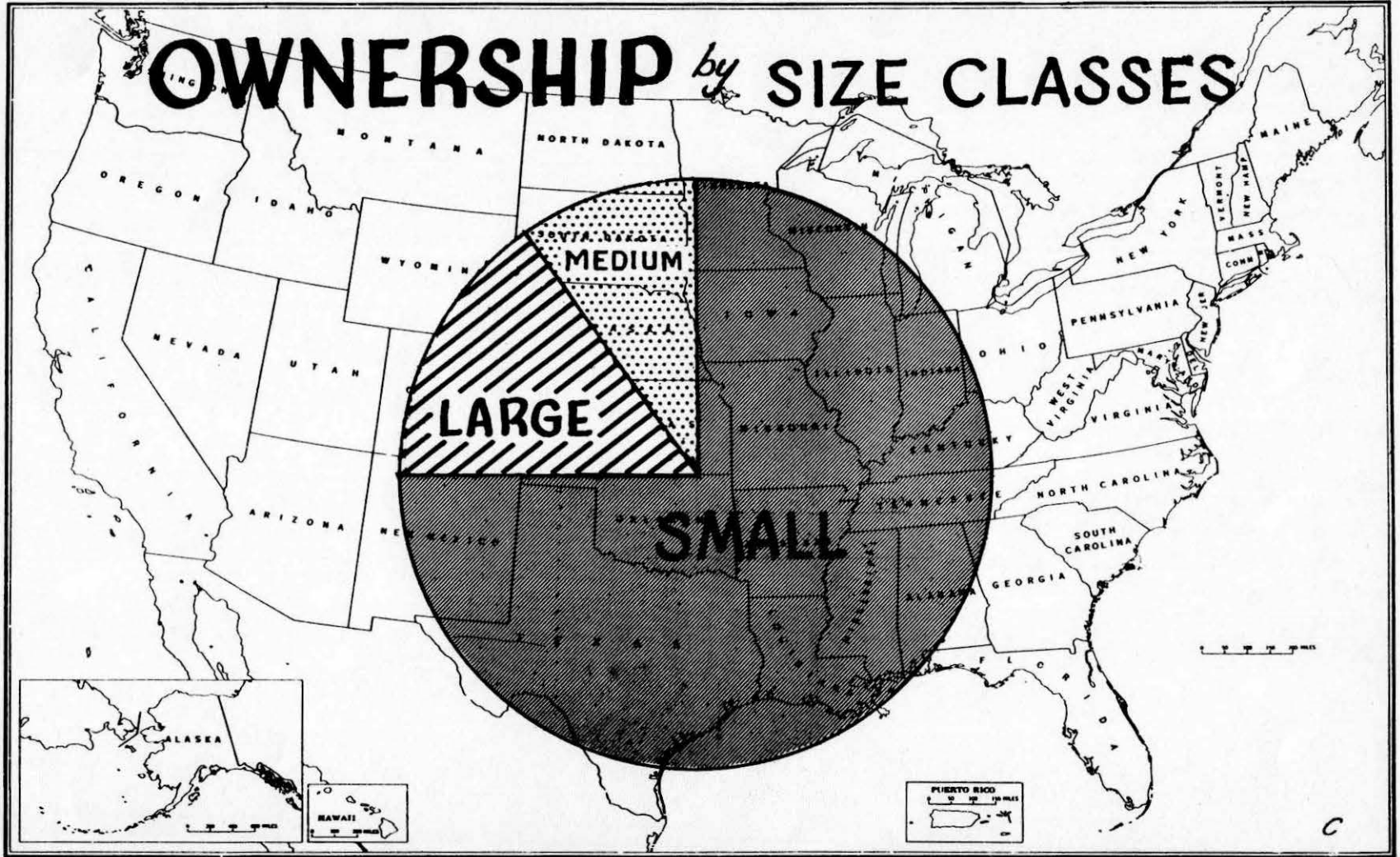
Private Forest Lands

For the bulk of our timber supply, however, we must look to the privately-owned forest lands. They comprise the bulk -- about three-fourths, in fact -- of our commercial forest area, and generally they are the best and most accessible timber-growing lands. (Chart I). Here the problem is to build up a seriously deficient growing stock for the long pull, while we continue to meet the current needs for forest products. That isn't going to be easy. Building up the growing stock would be relatively simple if we wanted to, or could, get along with a greatly reduced supply of forest products. But we can't do that -- least of all, in the present emergency. What we are up against -- what the situation calls for -- is an expert job of eating our cake and having it too.

On the average, timber growth on private commercial forest lands is probably less than half of what the land could and should produce. Our reappraisal showed that 64 percent of all cutting on private lands was still poor or destructive. Most of the rest rated only fair; only 8 percent was up to really good forestry standards.

We find the highest percentage of good practice on large industrial holdings. Many of the big lumber and pulp and paper companies are practicing good forestry. Compared with the 8 percent of good practice on all private forest lands, the larger holdings (5,000 acres and up) showed good or high order practice on nearly 30 percent of the operating acreage. In the case of many of these larger operators, much of the land on which they are now applying good forestry is cut-over land, understocked with second-growth. So even with the best of

PRIVATE FOREST LAND



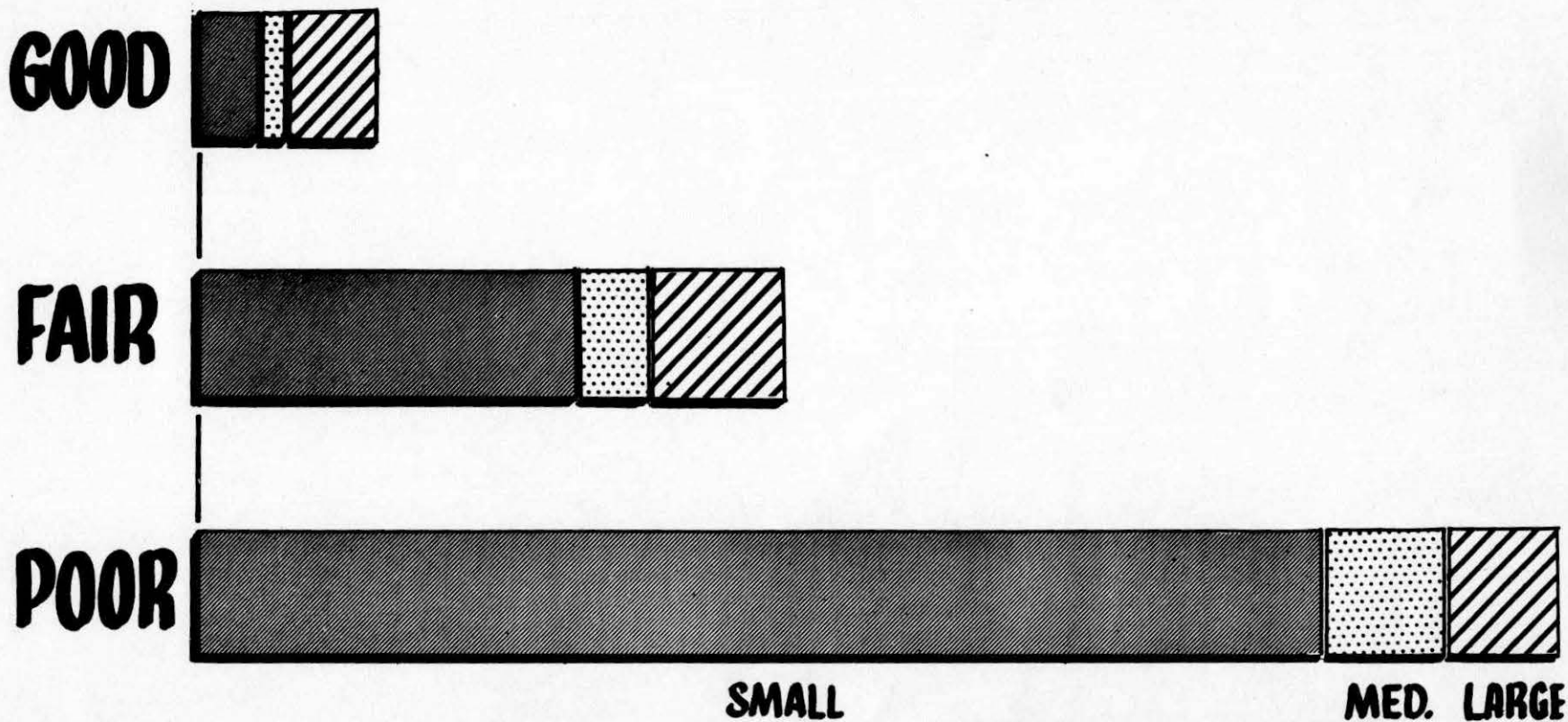
practice, quite a number of them are short of timber now, and this will continue until their "tree farms" and other lands can grow new forests to merchantable size.

Then too, the commercial forest land in industrial and other medium to large holdings altogether amounts to only 84 million acres. But there are 261 million acres of commercial forest land in small holdings, divided among more than 4 million owners. (Chart II). About half of this land in small holdings is in farms, and half in non-farm ownerships, held by small-town merchants, bankers, doctors, lawyers, real estate men, speculators, and the like. A substantial portion of our forest products supply comes from these forest lands in small ownerships, farm and non-farm. And on these lands more than 70 percent of all cutting is still poor or destructive. The 261 million acres of private commercial forest land in small ownerships is the heart of our forest problem. (Chart III).

As I see it, the present situation calls for making every possible effort to foster and encourage good forestry practice on private lands, while we are continuing insofar as possible to get timber from these lands to meet essential domestic demand and the defense program requirements. Because of the declining trend of the resource and the long-time nature of the emergency, time is of the essence. The Department of Agriculture has recently reaffirmed its opinion that some form of public control of cutting and other forest practices is necessary to keep lands reasonably productive and prevent forest deterioration. We should continue, and even intensify, whenever we can, other programs aimed at raising the general level of forest management practice and building up our forest growing stock. About 75 million acres of good commercial timber-growing land, public and private, is now so poorly stocked or deforested that planting is necessary to

PRIVATE FOREST LAND

PRESENT CUTTING PRACTICES



bring it back into production. Reforestation work should certainly go forward as rapidly as possible.

Now, I want to describe briefly some of our current activities in the defense program.

Emergency Fire Protection

Under a directive from the Federal Civil Defense Administration, the Forest Service and cooperating agencies are working on the preparation and assembly of comprehensive plans for the protection of the Nation's forest and wild lands from possible fire attacks through enemy action. The Department of Interior and the State forestry departments of 43 States are cooperating in the preparation of the operational fire plans, which will cover all told more than a billion acres of forest and range land in continental United States and Alaska. C. A. Gustafson, Chief of Forest Fire Control for the Forest Service, has been named chairman of a national committee to coordinate the program. Other members of the committee are Joseph Kaylor of Maryland, representing the State Foresters' Association; John F. Shanklin of the Bureau of Land Management, Department of Interior; and Howard J. Eberly, representing the Federal-State cooperative forest fire protection program.

When organization is completed, it is anticipated that we shall be able to mobilize quickly all presently available forest fire fighting personnel and equipment in the event of an attack. Planning will also provide for additional personnel, equipment, and facilitating gear that might be required for emergency fire protection.

The forests of this country are highly vulnerable to sabotage or enemy attack. The Japanese knew that, you remember, when they made their long-distance

attack on the forests of the western United States with incendiary balloons in 1945. If it had been a little later in the season, that balloon barrage might have caused plenty of damage. Besides the direct damage forest fires do to timber, watersheds, and property -- and to human life -- they can disrupt communications and transportation, tie up logging and other industrial operations, and cause a big drain on the time of workers on the farms and in the factories -- time that would be much better spent at productive work.

Probably most of you have never seen a really hot forest fire. When one gets going strong, like the fires that roared across parts of southern Maine three or four years ago, it is really a terrible thing.

Defense Production Activities

With respect to forest products, the President's Executive Order No. 10161 delegated functions under the Defense Production Act to the Secretary of Commerce and to the Secretary of Agriculture. There were a lot of questions as to where the division of responsibilities between Commerce and Agriculture should be. Since forest industry is a highly integrated industry, we in Agriculture believed that any division of emergency authority between Departments would lead to complications. In the interest of focusing defense powers and duties in the defense agencies, we felt that the National Production Authority, which was set up in the Commerce Department, should be the principal Government agency with which forest industry would deal on defense production matters -- just as the War Production Board was the principal agency during World War II. We insisted however that the Forest Service be used in an advisory and facilitating capacity, for those jobs which our widespread field organization and our personnel trained in forestry and forest products were especially equipped to handle. And by agreement between

the Departments of Commerce and Agriculture, that is the way it is working out.

We expect NPA to make full use of the Forest Service for any special studies that may be needed to administer the action programs and overcome difficulties in the forest products field. They have been keeping us very busy.

With regard to applications for accelerated tax amortization and for Government loans for plant expansions, NPA receives the applications and makes the final recommendations to Defense Production Administration, the certifying authority. But when forest products are involved, it refers the application to the Forest Service for field investigation and report.

The Forest Service is primarily concerned with the adequacy of timber supply in the territory tributary to proposed plant expansions. In the aggregate, the proposed expansions will amount to many millions of dollars and will represent a potential new drain on the country's timber resources of considerable proportions. Generally we report favorably on a proposed expansion of plant facilities wherever the timber supply is adequate and there will not be an excessive concentration of installed capacity in the area. But we do not want to be a party to any plant expansion that would disrupt existing industry, or that would jeopardize sound long-term developments by causing over-drain and depletion of the forest resources.

The Forest Service is calling upon its field offices to make the necessary investigations on the ground. This means that men already familiar with the local situation and with the forest industries and the forest conditions in the area will study the local timber supply situation in connection with the proposal. Up to June 1, a total of 165 applications from forest products industries had been referred by NPA to the Forest Service for review. These included 157

applications for accelerated tax amortization and 8 for government production loans. Action had been completed for 132 of these applications and prompt action was expected on the remainder. Most of the applications were for additional expansions in the pulp and paper industry. Others were for increased production in softwood plywood and in lumber, and for wood treating plants.

A high proportion of the applications referred to us contemplate plant expansions in the Southern States. In many forest areas the installed plant capacity is already much in excess of the growth rate of local timber; but there are a number of places in the South where expansion of plant capacity is possible and desirable, especially where the expansion is based on increased utilization of hardwoods. The big development of the pulp and paper industry in the South has made possible an increased utilization of small-sized trees and hardwood species formerly unused, and that makes more intensive forest management possible. A number of plant expansions in the South and elsewhere also are based on the utilization of sawmill waste.

Research Projects

The Forest Service has under way a survey of the equipment, supplies, and manpower needs of the primary forest products industries. Personnel is assigned to this work from our regular research activities. The wood-using plants and loggers have been very cooperative in providing the needed information. Reports have been completed for NPA, DPA, and OPS on various problems, including the pulpwood situation in the northern regions, and the general long-run timber supply and requirements situation in the United States. Also we have completed reports covering the log supply situation for the softwood plywood industries on the West Coast and the hardwood veneer and plywood industries in the Lake States and the Northeast.

Plans have been made for a survey of the timber laminating industry, to determine existing laminating facilities, potentialities for expansion of the industry, and requirements for specific equipment and supplies to meet prospective requirements for laminated products, especially for the wooden ship building program.

A survey of the chestnut tannin extract industry was made to appraise the supply situation for chestnut extract wood and wood procurement problems. Studies have been made on the supply and availability of foreign forest products, including cork and mahogany.

Our Forest Products Laboratory at Madison, Wisconsin, is making a number of research studies for the military agencies. Special investigations on the design and testing of containers are being made for the Chief of Ordnance, Department of the Army. The Laboratory is also conducting special instruction courses in packaging techniques for members of the armed forces and representatives of defense industries.

The Laboratory's work on containers and packaging was one of its big contributions during World War II. Improvements in shipping containers and packaging techniques not only greatly reduced damage to war material in transit, but resulted in saving at least 10 percent in lumber requirements and 20 percent in shipping-space requirements. In other words, they made it possible for 4 ships to carry as much war material as 5 ships carried before.

The Laboratory also is doing research on the so-called wood sandwiches for the Air Force. Wood sandwiches consist of high-strength veneer surfaces glued or cemented to light-weight cores, thereby providing a strong, stiff, but light-weight material which has been used in the manufacture of aircraft and certain

types of boats. Sandwich construction may have other possibilities, too -- for instance for panels for pre-fabricated houses.

The Forest Service is making a comprehensive study for the Army Engineers Corps, to analyze military requirements and procurement of timber products during World War II. For the Corps of Engineers the Forest Products Laboratory is completing a study of the current lumber procurement, handling, storage and utilization practices of the military depots and other facilities. We are also participating in the Task Group C Air Transport Mobilization Survey, concerning priority guides for the non-military uses of our craft. In the mapping field, more than 50 percent of the manpower of the Forest Service Photogrammetric Unit are on special work for the Navy Hydrographic Office, preparing maps for defense purposes.

Now, to go back for a moment to the forest situation generally, as I attempted to outline it at the beginning. The way it looks now, we are going to be in a semi-war economy for as far ahead as we can see. That means we should give attention not only to the immediate defense requirements, but to the long-term factors that make for the permanent strength of our economy.

In the present mobilization effort, we shall want to meet our timber-products requirements as far as possible with good cutting practice, and with full regard to the long-term interests of industries and communities. Beyond that, there is need to strengthen our over-all forest resource situation. Our prospective semi-war economy will probably mean a long-continued and heavy drain on our resources. While we meet present essential needs, we shall certainly want to see every possible means taken to build up our forest growing stock, to strengthen our resource base nation-wide, and to make our forests capable of meeting the requirements of the future.

Forest Depletion--A Community Problem

By LYLE F. WATTS

FOREST conservation is no longer a subject which can be effectively discussed in generalities. From the standpoint of timber supply, as well as recreation and watershed protection, the critical character of our forestry problem can only be understood by going behind the over-all statistics for the nation as a whole and viewing the situation regionally, locally and in its component parts. It is necessary to get right down to the individual worker who wants security in his job and a permanent home for his family.

For more than 50 years the question of the nation's timber supply has been a matter of major public concern. The people were first aroused in the days of Gifford Pinchot and Theodore Roosevelt by predictions of an early "timber famine." Then with the culmination of agricultural expansion, and the acceleration of industrial life, public concern waned. Declining consumption of lumber, substitution of other materials for construction, furniture, and other fields originally dominated by wood, and chronic threat of overproduction from mill capacity in excess of demand, led many to believe that Pinchot had been wrong, even though whole regions had been so thoroughly stripped of merchantable timber that local forest industry was little more than a memory.

Prolific second growth in parts of the Northeast and most of the South seemed to many to discount forever the possibility that a national timber shortage would



materialize. Concern about timber for the future was further allayed by technological developments foreshadowing a much wider use of wood by chemical conversion. To many the prospect that pulping and chemical processes might completely supplant the use of wood in its natural form seemed so real that any forestry beyond protection from fire seemed quite needless and futile.

But continued exploitation at a rate far in excess of current growth, disturbing increases in the area of non-productive land suitable only for forests, and inescapable social and economic maladjustments in many cut-over regions led others to realize that the problem remained critical. These far-sighted leaders realized that, in spite of substantial progress with respect to national forests, systematic fire protection, and management for sustained yield by many private operators, cumulative forest depletion was still undermining at hundreds of points an indispensable part of the foundation on which national prosperity had been built.

Now under the exigencies of war, requirements for forest

products are again on the level which prevailed in the years before the depression. Scarcity of metals, coupled with spectacular developments in the use of wood for structural purposes and challenging vistas of new fields of use for plywood, plastics, and chemical products, now focus attention on wood as an indispensable and versatile raw material which should enjoy large and perhaps expanding outlets so long as it is abundantly available at a reasonable price.

In the light of accelerated forest depletion brought on by the war and the better outlook for future wood utilization, the problem of timber supply presses anew for solution. But even before this country entered the war, a Joint Congressional Committee confirmed the conclusion of the Forest Service that the public interest in continued productivity of private forest lands could only be protected by public control of cutting and other closely related practices on such lands.

A large part of the strategy of those who oppose public action going beyond cooperation and aid in protection and management, is based on a philosophy of complacency—using statistics for the nation as a whole to support the thesis that there is really no cause for concern. The impression is created that progress in forestry has been so widespread in recent years that a satisfactory balance between growth and drain is only temporarily deferred by wartime activity. Rapid liquidation of virgin timber in the West is



Communications

To the Editors:

It was a very great pleasure to see your excellent publication. In these days when so much propaganda is being devoted to poisoning the minds of people with fallacies about planning, world governments, controls and other inventions of the devil for the enslavement of the human soul, it is refreshing to find a publication devoted exclusively to pleading the cause of decentralization and individual independence.

This is an issue fundamental to the outcome of the present world conflict—in fact, I would say that it is *the* issue which faces humanity at the present time.

L. D. BYRNE

Edmonton, Alberta

To the Editors:

I'm persuaded that the need for more publications which are of the type, and advocate the principles, of FREE AMERICA, was never as great as at present. The comparative indifference of numerous other publications which deal with our various social and economic problems, to the importance of the principles which are so ably expounded in every issue of your publication, may be said to be almost deplorable. I'm wondering if more could not be accomplished by keeping before our readers the evils of centralization and awakening them to the existence, extent, and immediate effect of those evils, than by trying to focus their attention on the benefits of decentralization when, and if, it is accom-

plished sometime in the dim and distant future. I believe that most Americans are much more interested in something that *immediately* affects them adversely, than they are in something that *may* affect them favorably sometime in the future.

It is a well-known fact that certain "interests" have succeeded in monopolizing practically all of our natural resources and public utilities. These same interests are now engaged in a tremendous effort to produce a monopolization of the land of our nation, and God help America if they succeed in doing so; in fact, they have already succeeded to an appalling extent.

The Agricultural Census of 1940 reveals that there are 6,100,000 farms in the United States, of which 264,225 are farms of the "big business" type, containing 500 or more acres. The value of these farms, exclusive of the buildings, was \$5,104,493,545, nearly one-fourth of the value of all our farm lands; in other words, 4 per cent of the farms had 25 per cent of all farm land values. The report goes on to say that one-ninth of the farms have one-half of the total land values. It also says that there are 60,000 farm families whose average income was \$19,831 the previous year, and who are among the one-tenth of the American farmers who received the major portion of the \$5 billion in government payments made to farmers during the past eight years. (How generous the "paternalistic" government is in giving aid to those who don't need it; how nig-

gardly in giving it to those who do need it.)

Should we not do all we can to awaken the American people to the evils of centralization and the dangers which will surely result therefrom? I still have enough faith in the people of America to believe that their apparent apathy will disappear when and if they come to a realization of their true situation.

GEORGE F. CURRY

Martins Ferry, Ohio

To the Editors:

A few suggestions as to future articles for FREE AMERICA. I'd like to see more articles on simple old fashioned food . . . and where one can buy basic things. I'd like to see more histories of couples who have moved to the country from the city and are making a go of it. Real honest to goodness cases. These efforts are too isolated . . . and there should be more . . . perhaps there are more than we realize. I'd like to see some articles on the basic requirements needed for any one who feels the urge to change his mode of living. The main thing I feel is that the self sufficient will survive this, and any other wars. Perhaps self reliant is better. And all in the family must be in accord. They must make up their minds that courage and faith are their major strength.

WALTER KOCH

Stormville, N. Y.

To the Editors:

I like your main attack on keeping independent by means of production for own use while having a city vocation near a suburban or rural district. There is no doubt that rationing will continue some time after the war, and there will doubtlessly be a period of retrenchment in our national economy. FREE AMERICA should provide a way to cushion the shock of adjustment to peace time activities.

MORRIS SKLUTE

St. Petersburg, Florida

glossed over as necessary to forestall losses from insects and disease and as beneficial in releasing additional areas for new growth. Viewing the picture solely on a statistical basis, it has been argued that wartime forest depletion is not serious anyway inasmuch as annual lumber cut has not exceeded two per cent of the total remaining stand of merchantable sawtimber. Such complacency is dangerous.

Perhaps the most significant fact is that our eastern forests, constituting three-fourths of our total commercial forest area, now contain less sawtimber than the six per cent of our forest land in western Washington and Oregon. Our continued ability to draw heavily upon the remaining virgin forests of the Northwest neither keeps mills running nor provides employment for people in the depleted forest regions of the East. It doesn't give much help to the forest community in Michigan or Louisiana, whose sawmills have been closed for lack of timber, to know that there are 70 billion feet of almost untouched timber in Douglas County, Oregon. It doesn't help Klamath County in the pine region just over the mountains, where timber resource is being liquidated three times faster than it ought to be.

It doesn't even help communities in other parts of the Douglas-fir region itself, where excessive timber depletion has already begun to sap the vitality of this last virgin source of forest wealth. For the Puget Sound, Gray's Harbor and the Lower Columbia River areas are already experiencing drastic shrinkage in industrial employment based on sawmills and wood operations.

Existence of a substantial area of virgin timber in the Porcupine Mountains in Michigan did not forestall the recent closing of the big sawmill in Rhinelander, Wisconsin, only 100 miles distant, at the very time when the nation's



need for lumber was most acute.

In 1920 Klamath County had a population of only 4,800 and relatively small lumber output. Construction of modern sawmills was followed by rapid increase in population. In 1940 the census disclosed almost 40,000 people. Lumber cut, already at 400 million bd. ft. level in 1925, exceeded 700 million by 1940. But analysis of the resource situation indicates that only five of the 15 mills now in operation will remain 10 years hence. Only one has reasonable assurance of a life of 25 years or longer. And this situation exists in spite of the fact that two-thirds of the remaining timber is on public lands where light selective logging has been or will be practiced to maintain productivity. The fact is, as things are going, it is unlikely that an output of more than 200 million bd. ft. can be sustained indefinitely. That gives a measure of the extent of readjustment which must be made within the next 20 years.

Even in agricultural sections of the East, productive woodland on individual farms has a significance which cannot be expressed in national statistics. Through a well developed forestry enterprise, net income of dairy farms in central New York, for example, may be increased about 15 per cent on the average. Such an enterprise need not compete seriously with other farm activities as to time. It offers opportunity to more completely utilize available labor and equip-

ment. It gives farmers a larger degree of independence and security. It may spell the difference between a profitable and a sub-marginal farm unit. Such economic benefits to thousands of farmers should not be neglected. They cannot be offset by the large-scale, highly mechanized logging operations of the Northwest. Nor will careful management of public forests, no matter how widely they may be distributed, compensate fully for these values which are inherent in the property of individuals living and working on the land.

The forest problem of any community or region cannot be viewed solely as one of balancing annual growth against forest drain. When the process of forest liquidation is allowed to take its course unchecked, the reduction of industrial activity which follows exhaustion of merchantable timber, will eventually lead to a balance between growth and drain at a level where the contribution of the forests to the economic life of the community is at a vanishing point.

Last summer the "model" town of Elizabeth, La., was left stranded when its major industry, a large sawmill, ceased operation because, as reported in a lumber trade journal, "The timber has been raked and scraped to the last available and purchasable tree."

In February of this year the entire town of Weirgate, Texas, was sold to a wrecking company after a life of only 25 years in which some 100,000 acres of virgin longleaf pine were stripped. Its sawmill, logging and turpentine operations are reported to have provided support for some 2,000 people.

With these industries eliminated, a forest survey might well show that forest growth now exceeded drain in these localities. But this would mean little to the people who had looked to these industries for employment. Neither

would it help meet the country's wartime need for lumber.

In the long run productive capacity rather than a balance between growth and drain is the only valid criterion of progress. And the amount of usable wood that can be produced annually is a function of the merchantable growing stock or forest capital upon which it accrues.

The seriousness of the depletion of growing stock in the eastern region is brought out by the following comparative estimates of sawtimber stands:

	1919	1938	Reduction
	billion bd. ft.		
Eastern hardwoods	459.7	256.6	42%
Southern yellow pine	257.7	196.8	23%
Other eastern softwoods	133.3	80.2	40%

The reductions indicated are probably very conservative because the earlier estimates generally reported less timber than was actually on the ground in terms of utilization standards of the later estimates. Thus in a period of 20 years, the ability to sustain communities dependent upon Southern yellow pine was reduced about one-fourth and the basis for other eastern softwood production, as well as the hardwood industries, was almost cut in half.

On the other hand, development of the full productive capacity of forest lands implies a decentralization and diversification of industry which should be wholesome and stimulating in its social significance. Because of their low value in relation to bulk, most forest products cannot well stand transportation for long distances. Primary conversion plants, therefore, must be kept close to the timber. In addition, the full utilization, which is an inseparable attribute of intensive forest management, encourages establishment in the rural communities of new industries using or fabricating wood in various forms.

The town of Crossett, Arkansas, affords an outstanding example of such sound industrial and community development based on far-sighted and intensive forest management. Here pulp and paper manufacture were first added to the original lumber industry to provide effective utilization for much of the lower grade material, especially that yielded by early cuttings in second growth pines. Then a wood distillation plant was established as an outlet for the hardwood which was impeding growth of the pine in some areas. Each new development has created additional employment in the community without the threat of future collapse because each has been planned in relation to the productive capacity of the forest.

In every forest region individual operators have recognized the economic advantages of permanence for their industries and stability for the dependent communities. The number of cases where a start has been made on long-range forest management to insure a sustained supply of raw material for local industries has grown tremendously in the past decade. Many sound industrial forestry programs have been under way for longer periods.

Individual communities, with aroused leadership, can do much to insure optimum development of local forest resources and thus obtain maximum security for their people and institutions. By cooperation and planning, industry can be geared to the current capacity of the land to produce. In the new regions steps may be taken to check or discourage over-expansion. Incentives can be provided to stimulate secondary processing and fabrication of finished products to facilitate utilization of waste and to provide employment for labor released when curtailment of primary forest operations is necessary. In the older regions new industries can be stimulated for utilization of the particular

species or sizes of material which can be harvested in the process of improving and building up productive growing stock.

However, as the problems of all forest communities are added together, it becomes apparent that, if the social and economic benefits of sound forest developments are to be realized on a national scale, we cannot leave the solution entirely to individual operators or the local communities. The necessary financial aids and other safeguards for decentralized private enterprise are often beyond the capacity of local communities to supply. And all too frequently the communities lack strength and foresight to withstand the pressures of selfish industrial or political interests.

Federal action is needed and national welfare demands public regulation of basic forest practices, supported by public aid and assistance to private forest land owners on a large scale. For the sustained yield we should achieve on a community basis is not measured in board feet alone. It is something much broader. Sustained yield of forest products at a high level implies reasonable security for labor and a substitution of the family man for the transient bunkhouse worker characteristic of the pioneer lumber industry. It justifies confidence in building, buying, and improving homes. It assures a continuity of business for the local butcher, baker, and candlestick-maker. It helps to maintain the tax base by stabilizing timber values on the one hand and by putting a firm foundation under real estate, business, civic improvement values on the other. The school system, the social life, and the health agencies of the community are part and parcel of sustained yield.

The local people and the State will have to pay dearly and long for the short-lived boom which has been stimulated by uncontrolled exploitation of the private timber.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICEAddress Reply to
CHIEF, FOREST SERVICE
and Refer to

WASHINGTON 25, D. C.

I
COOPERATION
General

September 20, 1951

Regional Foresters
and Directors

I&E No. 673

Dear Sir:

Enclosed is a copy of Mr. Watts' statement before the Senate Committee on Expenditures in the Executive Department, September 18.

This is the first opportunity the Forest Service has had to express its views on this matter before a Congressional Committee. Hence it is very significant. Comments received since its presentation, from a variety of sources, have all been very favorable.

Under separate cover you are being sent a supply. Please distribute to reach down to and include the rangers and work centers. There are enough extra copies so you can also supply key people outside of the Service who might be interested, including of course those who were actively concerned in the hearings.

Very truly yours,

*Dana Parkinson*DANA PARKINSON, Chief
Division of Information & Education

Enclosure

Statement by Lyle F. Watts, Chief, Forest Service, before the Senate Committee on Expenditures in the Executive Department, with respect to the Committee Print of S. 1149, a Bill "To provide for the organization of the Department of Agriculture in accordance with the recommendations of the Commission on Organization of the Executive Branch of the Government," September 18, 1951.

Mr. Chairman and Committee Members:

I am Lyle F. Watts, Chief of the Forest Service. I appear before you in compliance with a request from the Committee Chairman to express my views on S. 1149. The Bureau of the Budget has expressed to you its position respecting the proposal in Section 7 of the bill to transfer the Bureau of Land Management to the Department of Agriculture. In recognition of that position and as Secretary Brannan has indicated, I shall try to present to the Committee some basic facts relating to that proposal. Because a proposal was made here the other day to transfer the national forests to a Department of Natural Resources, my statement will include facts pertinent to that proposal. I hope my comments will be helpful to the Committee in its consideration of this organization problem.

The national parks and Indian reservations are not involved. In the Hoover Commission sense, the "major purpose" of their administration is social.

First, I want to say that I have been a conservationist in the service of the United States for nearly 40 years. When I entered the Forest Service in 1913, it was already the dominant public conservation agency. In fact it was the only agency in Government which was seriously concerned with conservation of our natural resources. The Forest Service was then administering a sound and effective forestry, grazing, and watershed program; and to this day it has maintained the research and facilities to back up such a program.

It won't be many years before I shall retire. So my personal career is not at stake in this bill. My concern is solely with what will be best for our country. I believe that proper government organization is essential to an effective national conservation program. I believe further that such a program is of the utmost importance to our national welfare and security.

I.

Forestry and grazing are agricultural functions. Trees and grass are crops. Like corn, wheat, and cotton they start from seed. They respond to the same kind of care given other crops. They are harvested— or at least they should be harvested— so that one crop follows another. Their culture is based on the biological sciences, which are chiefly and in many cases exclusively the concern of the Department of Agriculture. Insect and plant disease control, genetics, soil science and other agricultural sciences are as important to growing crops of trees and grass as they are to field crops.

Moreover, the same plants and plant pests often relate to both. The bluegrass of Kentucky and Iowa is also one of the more important forage plants on our western mountain ranges. Crested wheatgrass is planted both by farmers for their pastures and by stockmen on their ranges. Currant and gooseberry bushes are host plants to a rust that kills white pine.

Forestry and grazing are inseparable parts of agriculture. It takes the same know-how to grow timber in the farmer's woods as it does in forests owned by anyone else. Farm woodlands are indispensable to the Nation's

(Over)

timber supply. Farmers own one-third of all our commercial forest land -- 139 million acres.

Turning it around, woodlands are indispensable to the farmer. Forest land makes up half the total farm acreage in New England and about 40 percent of all farm acreage in the South. Forest products provide farmers in many regions with a valuable source of cash income. When forest land is properly managed, the timber harvest can be as regular and dependable as any other crop.

Farm forestry is an integral part of the Department's farm program. Farmers look to the Department of Agriculture for help on farm forestry just as they do in animal husbandry, fruit growing, or other crop problems. The small nonfarm forest properties of 125 million acres-- almost as extensive as the farm forests and often intermingled with them -- face exactly the same problems and should be served by the same agency.

Similarly no line can be drawn between open-range livestock production and livestock grown on farms. In the western States and in the South much livestock is grazed part time on forest-range and part time on farm pasture. Few livestock operations in the western range country can be separated from the base of privately owned, feed-producing ranches. Cattle and sheep which fatten on the open-range are certainly agricultural products.

Nor can any sharp line be drawn between forestry and grazing. In much of the South and West the same land is used to grow both trees and grass. Thus all such lands are interrelated parts of the Nation's agricultural enterprise.

And from the watershed angle, forest and grazing lands are inseparably linked with field-crop lands. In every watershed, we must have a unified approach covering all lands to effectively control erosion, floods, and water supply. Soil conservation and watershed management are agriculture, and the Department of Agriculture, under the Flood Control Act of 1936, is responsible for watershed surveys on all lands. Within the Department, the Forest Service and the Soil Conservation Service work together closely to reduce damage from floods and sedimentation on forest, grazing, and other crop lands.

Adding it all up, any way you look at it the answer is the same: Forestry and grazing are agriculture.

II.

Most Federal forest and grazing work is already in the Department of Agriculture. For the past three-quarters of a century the Department of Agriculture has been carrying on forestry activities by congressional direction. First there was a Commissioner of Forestry, then a Division of Forestry, later a Bureau of Forestry, and in 1905 the Forest Service was established. At that time the forest reserves, which had been created out of the public domain and for that reason were under the jurisdiction of the General Land Office of Interior, were transferred by Congress to the Department of Agriculture.

Somewhat paralleling the history of the national forests is the much more recent story of the Soil Conservation Service, first established in the Department of the Interior. The new agency was transferred shortly to the Department of Agriculture, where the sciences related to soil conservation had been developed and trained men were available to provide necessary technical leadership. At the present time all Federal forestry and grazing research and practically all assistance to private owners as well as the preponderance of acreage responsibility, including both public and private lands, are in Agriculture.

With respect to forest research, the Forest Service is responsible for Federal effort in management, watershed influences, economics, and products. It also handles Federal grazing research for both forests and open range. I think it especially important that this bill or its legislative history recognize the need for continuing management and operational research -- and that is our type of research -- under the agency having action responsibilities. This was recommended by the Hoover Commission.

There are other research activities in the Department affecting forestry and grazing:

The Bureau of Plant Industry, Soils, and Agricultural Engineering is responsible for the introduction and development of new pasture and open-range forage plants, soil surveys as a basis for successful reseeding and reforestation, and research on forest disease problems.

The work of the Bureau of Entomology and Plant Quarantine includes research and control work on forest insects.

The Bureau of Agricultural and Industrial Chemistry is doing research on the use of cellulose and lignin; also on naval stores.

The Bureau of Animal Industry and the Forest Service jointly operate range livestock experiment stations at Dubois, Idaho; Miles City, Montana; Tifton, Georgia; and Tidewater, North Carolina.

In all of this research work, through joint operation and otherwise, there is the closest kind of integration and cooperation between the Forest Service and other agencies in the Department of Agriculture.

Practically all Federal assistance to private owners for forest and grazing operations is handled by the Department of Agriculture. These tremendously important and far-flung activities include:

1. Forest fire prevention and control on 427 million acres of privately owned land -- nearly one-fourth of the total area of the United States. This is a cooperative project with 43 States and involves annual expenditures - Federal, State, and private - of 31 million dollars.
2. Aid in control of destructive forest insects and diseases. The Department has taken the lead in identifying the causes of these attacks, develops effective control measures, and operates large-scale control programs. Much of this work also is done cooperatively with the States and private landowners.
3. For the 4 million private forest owners, the Department provides technical advice and assistance in forest management, harvesting, marketing, and processing forest products. Here again the work is handled in cooperation with the State Foresters of 40 States.
4. The Department is assisting private owners in reforesting some 60 million acres of logged-off, burned-over, non-productive forest land. This year, in cooperation with State forestry agencies, about 400 million trees will be made available at low cost for planting on these lands.

5. Educational assistance to private landowners in forestry and grazing is provided through well-established channels by cooperation with the Agricultural Extension Services of the Land-Grant Colleges in 45 States.
6. Farm conservation plans developed by farmers with assistance by Soil Conservation Service personnel always include recognition of the farm woodland, improved pasture and range as integral parts of the whole farm enterprise.
7. Financial assistance to farmers through loans of various types by the Farm Credit Administration and Farmers Home Administration; also price supports for a number of farm products, including naval stores.
8. The Agricultural Conservation Program of the Production and Marketing Administration includes payments for improved forestry and grazing practices and for better forest practices in the naval stores industry.
9. Research in growing, managing, and protecting timber and grass crops. Much of this is in cooperation with State Agricultural Experiment Stations.

Acreage responsibility (including both the administration of Federal lands and services to other lands) is chiefly in the Department of Agriculture. The Department of Agriculture provides service for 76 percent of all our forests and 68 percent of all our open-range and farm pasture. If Alaska is excluded, the percentages served by the Department of Agriculture become 91 percent for forest land and 79 percent for open-range and pasture lands. These lands are widely distributed from coast to coast. Following are the pertinent figures for the continental United States, taken from a joint Agriculture-Interior-Budget Bureau study.

Forest Land Range, Pasture, and Desert
(Including forest range)

	<u>Million Acres</u>	
<u>Department of Agriculture</u>		
a. Public land administered	123	86
b. Private and State land served by research, technical guidance, financial and educational assistance, cooperative protection, etc.	444	735
c. Total under Agriculture	567	821
<u>Department of Interior</u>		
a. Public and Indian lands administered	55	215

With your permission I shall supply for the record the more detailed table on which the above summary table is based. (Not included here.)

The huge acreage of public domain in Alaska is not well known. Much of it is nonproductive. There are perhaps 40 million acres of commercial forest. Further exploration, surveys, and land classification are needed to determine the best use of this land.

If for the moment we think only in terms of federally administered commercial forest land in the continental United States, the Forest Service manages 148 national forests in 38 States, including 74 million acres of commercial forest. The Bureau of Land Management administers 6 million acres of commercial forest.

III.

The Nation's forest and grazing situation calls for strong, unified Federal leadership.

We have made great progress in forestry, but have far to go. Our forests are still operating in the red, and the quality of our timber is getting poorer. There is inadequate provision for restocking and future growth. Millions of acres are still without organized fire protection.

Similarly, much of our grazing land is overstocked, run-down, and eroding. For the western open-range country as a whole, grazing capacity has been cut in half by misuse. We face a huge task of restoring forage crops and building up livestock production on run-down ranges.

These are hard facts, but they are facts. We must restore these lands to good condition and keep them that way. The Nation needs their products now. It will need them even more in the world struggle ahead. Nor can these lands be allowed to spew forth flood waters and silt to ruin other lands and property. The economic prosperity and stability of many people and communities are dependent upon their productiveness.

The progress that is needed will not be achieved without unified leadership.

The major reason why forestry has made the progress that it has in this country is because Federal forestry activities have been largely unified since 1905 in one bureau in one department. The public generally and the Congress, regardless of party, have consistently supported the Forest Service in its fights for the conservation of our renewable natural resources.

If we are to have a truly national policy and program for the conservation of renewable resources, that policy and program must embrace private as well as public forest and range. The bulk of such public land is in the West. So a public land program would be dominantly a western program. However, 64 percent of all forest and 77 percent of the commercial forest is in the East. The bulk of the Nation's forage production is also in the East.

Public forests include less than one-fourth of the Nation's commercial forest land. The acreage of farm woodland is greater than that of all public forest of commercial quality.

Similarly, private open-range and pastures aggregate 507 million acres; Federal ranges only 243 million. Farm livestock production is far in excess of livestock production on public lands.

A division based on ownership is also untenable with respect to watershed relations. Watershed problems cut across public and private land boundaries; but each watershed must be treated as a unit. Again in the Hoover Commission sense, the "major purpose" which the lands serve should be the basis for

action — not who owns it.

It is clear that a national conservation program must involve more than the public forest and range. The "major purpose" of forest and grazing lands is agricultural regardless of ownership.

IV.

Agricultural functions are divided. Unification would promote economy and efficiency and eliminate duplication.

In this connection I wish to comment on several classes of publicly owned land.

Grazing districts and public-domain grazing land

Grazing on 147 million acres of Taylor grazing districts in the West and on 31 million acres of unreserved public domain is administered by the Bureau of Land Management. On these lands also are some 4 million acres of commercial forest.

Prior to 1934 there had been no control over grazing on these lands. Most of it was overgrazed and much of it seriously eroded. These grazing-district lands are tied to the national forests and the adjacent private lands in a range economy that requires use of different lands at different seasons of the year. In many cases the cattle and sheep which graze on national-forest lands in summer use grazing-district lands at other seasons. And they are also dependent upon privately owned feed-producing base properties.

In Utah, for example, the national forests take in most of the mountain land, a strip of private land occupies the irrigable bench lands and adjacent lower slopes, while the grazing-district lands are chiefly the dry interior basins and low non-timbered mountains.

In southern Idaho, by way of contrast, the grazing-district lands are adjacent to the national forests on the lower slopes, while the private ranch land is confined to narrow stringers along the valley bottoms.

Obviously the job of administering and developing the range resources wisely, whether in national forests or grazing districts, is handicapped by divided responsibility. Unification would result in administration from the same regional offices and under uniform regulations to the extent that this would be consistent with basic law. Procedures for the use of both lands by the same livestock could be simplified, and it would be feasible to make better use of men and equipment by equalizing work loads between seasons. In many cases, men who work on the high-mountain ranges in the national forests during the summer could work on the lower-elevation grazing districts in the winter.

Public Domain in Alaska

Alaska contains a huge acreage — nearly 300 million acres — of unreserved public domain now under the custody of the Bureau of Land Management. This is believed to include 125 million acres of forest, about one-third of which may be of commercial quality.

In southeastern Alaska, where climatic conditions are reasonably favorable,

two national forests of 21 million acres are administered by the Forest Service.

The ultimate use of the unreserved public domain is not clear. Some of it is suitable for homesteading and the development of farms. Parts of it will find its best use in commercial timber production. Except for mining, such utilization and development as can now be foreseen will be agricultural, including forestry and grazing.

Among the immediate needs of this area are agricultural research, timber surveys, and soil classification. These are agricultural functions.

Oregon and California revested lands

The heavily forested so-called O&C grant lands in western Oregon include about 2 million acres intermingled with, adjacent to, and practically surrounded by some 6-1/4 million acres of national forests. Of these, some 450,000 acres are intermingled checkerboard fashion with national-forest lands. These revested lands were originally granted by the Government to aid the building of a railroad from Portland, Oregon, to the California line, and of a wagon road from Coos Bay to Roseburg. They were later repossessed by the Government because of violations of conditions of the grants.

The Department of the Interior claims another half million acres within the national forests in a similar mile-square checkerboard pattern. These are known as controverted lands. These controverted lands were also included within the boundary of the original grants, but since title to them never passed to private owners, they have continuously been an integral part of the national forests. The Attorney General in response to a request of the Secretary of Interior in an opinion dated September 6, 1940, concluded: "...it is my opinion that a disturbance of the continued administration of these lands by the Department of Agriculture as a part of the national-forest reserves would not be warranted under existing law."

Nearly all of the O&C land is commercial forest land; more than half still supports virgin timber. For the most part these lands are identical in character with adjacent national-forest lands. However, the Act of 1937 which provided for their administration left jurisdiction in what was then the General Land Office, which previously had custody over them. The result has been two Federal agencies with similar functions operating in the same locality.

A separate organization has been set up to handle timber management on the O&C lands. Independent and overlapping negotiations by two agencies with identical timber operators are confusing to the operator and not in the public interest. This duplication provides the opportunity for timber purchasers to try to whipsaw one agency against the other.

Duplicate organizations are so unworkable in the case of fire protection that responsibility for protection of the O&C lands has been contracted to the Forest Service and the State within their respective protection areas.

The Hoover Commission said the total result of this checkerboard administration has been "public confusion, unnecessarily duplicating services, and unsound management." Under unification, the O&C lands and the national forests

would be administered from the same regional and local offices. This would also permit administration of the O&C lands and the national forests under uniform administrative regulations, except as requirements of law would make this impossible. It would facilitate administration, strengthen supervision, simplify relations with users, and eliminate much confusion.

.....

In conclusion, I want to say I have tried to present some of the basic facts which I hope will be helpful to the Committee in its consideration of this organization problem. I am sure that everyone will agree that a sound solution of this problem is essential to the development of a strong and vigorous forest, range, and watershed conservation program in this country.

Finally, and perhaps above all, it would encourage strong national leadership in forestry and grazing. Such leadership is urgently needed today and for the future so that these renewable natural resources -- trees and grass -- may contribute their full measure to economic and social welfare and to national security.

Actually, I have tried to develop just three points:

- (1) That the growing of trees and grass and grazing of cattle and sheep are agricultural functions.
- (2) That the greater part of the Federal responsibility for these are now inseparably in the Department of Agriculture -- in many bureaus and agencies.
- (3) That the purpose the land serves rather than any division based on public and private ownership should govern its placement in government.

M. Cochran 4103-

8430

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

Address Reply to
CHIEF, FOREST SERVICE
and Refer to



WASHINGTON 25, D. C.

C
SUPERVISION
Meetings
(RF&D)

April 4, 1951

Regional Foresters
and Directors

Dear Sir:

Several of you requested an early transcript of my opening remarks at the RF&D meeting. Among other things, I believe the regional foresters had in mind its possible use at supervisors' meetings. Copies are sent you enclosed in sufficient quantities for such purpose.

This transcript will also be included in the complete record of the meeting, which will be sent you as soon as it can be compiled.

Very truly yours,

Lyle F. Watts
LYLE F. WATTS, Chief

Enclosures

1951 REGIONAL FORESTERS' AND DIRECTORS' CONFERENCEOpening Talk by Lyle F. Watts, Chief

March 26, 1951

Gentlemen:

I am opening this Regional Foresters' and Directors' Conference with a very great feeling of personal and official loss. I know that we are all of one mind: Horace Andrews was one of the truly great men in forestry. He was a real leader, with unusual vision, broad knowledge of conservation, and exceptional capacity and judgment as an administrator. He was a man to be respected and admired.

So in deepest reverence to his memory and in recognition of our great loss, may we stand for a brief space with bowed heads.

- - - - -

Friends, at this time I want to ask Chris Granger for the Washington Office, Al Hall for Research, and Ed Cliff for the Regional Foresters to draft a suitable statement of our sentiments for the record of this meeting and to send it to Mrs. Andrews by air mail or wire tomorrow morning.

Now, men, I know that if Hoss were here he would say for us just to close ranks and go on about our business; so let us do that with an even greater determination to find sound answers to the conservation problems which face the Forest Service and the Nation.

- - - - -

The agenda for each of the last several conferences have been limited rather strictly to a few major problems. As a result many important questions on organization, personnel, etc. have been passed over. This time we have recognized a widespread desire on the part of the field at least to touch on that type of problem. Thus the agenda before you seems to be heavily crowded. It may be too crowded, but I am in hopes that many of the items can be disposed of with dispatch, leaving adequate time for discussion of major policy questions.

I ask that you remember that this is a Field-Washington Office top staff meeting. Each main topic will be opened up briefly either by me or by a Washington staff member. But we want the fullest possible discussion from the field. In the interest of saving time, please speak up and don't hold back in offering your comments and advice on each topic.

In my judgment we are on the threshold of a new era in conservation generally and in the growth and development of the Forest Service. Nevertheless, I think that the problems we face are very great, perhaps greater than ever before. They can be grouped in about three main heads. I want to list these and then discuss each group briefly.

The first is defense mobilization and the part the Forest Service must play in it. The second has to do with reorganization with reference to the Hoover Commission recommendations but perhaps more critically to the recent USDA reorganization orders. The third is the need for financial recognition of conservation at a time when the defense budget is so very great as to overshadow certain domestic needs.

It seems to me that too many people are disposed to think of defense mobilization mainly in terms of manufacturing plants and their output; how to build up production of guns and planes and bombs and food for war -- or the threat of war -- and for peace, largely with an eye to the usable end product. That thinking would be sound if we were involved only in a short-time emergency. As I told you at our mid-winter conference, I don't believe that is the situation. I believe that the so-called emergency is one that will be the normal condition for many years. If the critical spot is not Korea, it may be Formosa, or Iran, or one of the Iron Curtain countries, or Western Europe itself. Even in the periods between critical outbreaks the threat will be there behind the Iron Curtain, and our defense will have to be maintained.

Then, too, it may well be true that our most effective weapons for this war of ideologies will not be tanks and bombs and guns at all. The fight against communism may well depend equally on the extent to which America can lead the free underdeveloped countries of the world to a higher standard of living. That requires the resources of our farms and forests and mines, along with the technical know-how of the President's Point 4 program.

Regardless of whether the world struggle be military or economic, fundamentally the drain will be on our natural resources -- water, soil, forests, and mines. To minimize the impact of this drain on future productivity of our resources calls for far-sighted leadership and guidance. To be truly successful our own unbelievable standard of living must be reasonably maintained.

To me that simply means maximum development of our forest land potential not only for the short view but even more for the long pull. If ever there was a time when there was need to put our forest land to work, it is now. We ought to find no difficulty in financing access roads to put all our national forest lands into production. We should be going forward with the Anderson-Mansfield planting authorization full scale. There should be no question about financing fully adequate fire control or insect and disease control on the national forests. Similarly, the need for expanding Federal-State cooperation in protecting and developing private forest land should be fully recognized.

Equally clear to me is the need to reseed, develop, and use the range lands in this country. And even more important is the need to protect our watersheds.

Thus I view defense mobilization as much broader than simply the output of guns and tanks and bombs.

My second point has to do with reorganization. I won't use the time now to discuss the details of this topic. Others will do that later. However, I do want to make some observations. I am convinced that the Forest Service will stay in the Department of Agriculture. The signs point that way for me. You know it has been said with at least a germ of truth that the Forest Service is in but not a part of Agriculture; that the Forest Service enjoys a large degree of autonomy. I think that day has passed. But that, too, may be a good thing. If we have the vision and capacity to grasp the possibilities in the recent reorganization orders, they can lead to an immeasurable advance in forest conservation. The reorganization charter, as you know, gives the Forest Service substantially broader authority and responsibility in the field of forestry. Our authority is broad, but at the same time we are tied in very closely with the rest of the Department of Agriculture.

The new charter places on us the responsibility for selling our program to all of the State and county agricultural committees. It is a wonderful opportunity. We have talked about wanting to do that for a long time. Now it is our job to do just that. It won't always be easy. For example, parts of the program will be hard to sell in some places. High-level range management will not be easy to sell to some State and county committees in the West, although I don't believe it is impossible. In other places questions of public control of forest practices on private lands will be difficult. But again, that is not impossible because we know our program is sound and, since it is, we ought to have the capacity to convince reasonable men.

I also believe that the work of the Department and the Forest Service in the field of flood control and river-basin planning is to be more intimately tied in with the whole question of State and county committees. Again, this can be a tower of strength.

My third point has to do with the need for greater finances for the Forest Service. That is a tough nut to crack. You have all heard of some of our difficulties on the Hill; the situation there has been less than satisfying, and that is an understatement. To a degree it is understandable because, nationally, the American public has not learned to live with a national budget that calls for \$70 billion or more a year. That is so far beyond the thinking of what this country should regularly spend that the Congress is properly trying to find every possible place to cut down. As a result, domestic projects which do not contribute to immediate mobilization seem out of favor. I personally believe this is a transitory situation. It may be difficult for a year or two, perhaps longer. But the real difficulty will come when we all begin to realize that this great country must be indefinitely geared to a Federal budget of something like \$50 or

\$70 billion a year. In order to carry on at that level we will rather rapidly, perhaps, shift around to the point where we realize that our natural resources are as important as the products coming out of manufacturing plants and industries.

Our relationships with the Secretary's office are in a better situation than at any time in the last 9 years (and they have been good during all those 9 years). Secretary Brannan believes in our program. As the meeting goes on I want to demonstrate that to you by illustrations of talks I have had with him recently. He is not at all a rubber stamp, but he does give us aggressive support whenever we can demonstrate that aggressive support is justified. That is our job. We do enjoy an unusual degree of confidence on the part of Secretary Brannan.

Sometimes it seems to me that we have more than our fair share of opposition on the Hill. Some of this opposition is aggressive; we have some real problems to solve there. And before the week is out I hope we can be better prepared here and in the field to develop ways and means of overcoming at least part of that opposition. It is a problem -- I am not putting my head in the sand -- but I would also like to remind you that never before in history were there so many senators and congressmen convinced of the need for forest conservation. Again, it will take vision and capacity to capitalize on the opportunity to have that translated into support for an adequate program.

So, men, despite a tough, hard road ahead I am very optimistic about the future of the Forest Service -- national forests, research, and State and private forestry. I am enthusiastic about our program and about the ability of an organization as competent and fine as ours to sell that program.

We will have to do a better selling job than ever before. We are probably in better shape to do it as an organization, because I am quite sure that never before has there been a time when our national forest administration, our relationships with the State foresters, and the relationships of Research to Administration and S&PF have been so soundly based as now.

So let us face up to the tremendous problems with the realization that they are tough but that we do have the capacity and the vision to meet that challenge. I don't think we are going to get much appropriation increase this year, but I am optimistic about the longer-range possibilities.

FORESTS AND WILDLIFE

(Address by Lyle F. Watts, Chief, U. S. Forest Service, at meeting of the Southeastern Association of Game and Fish Commissioners, Richmond, Virginia, October 16, 1950.)

It is a special pleasure to meet here with you today to discuss forest wildlife management programs of the Southeast. Some of the best cooperative wildlife management work in the whole country is being done in this region. The habitat management work under way is outstanding. It is attracting Nation-wide attention. Perhaps nothing like it is as yet being attempted on as large a scale anywhere else in the United States. The States you represent and the U. S. Forest Service are thus cooperating in some pioneering enterprises of far-reaching potentialities. We, of the Forest Service, are mighty happy to be a part of this fine work.

The national forests on which these cooperative projects are under way are part of a Nation-wide system of public forests which the Forest Service is charged with administering in the best interests of this Nation and its people. These national forests offer about 15 acres of hunting land for every one of the 12 million-odd licensed hunters in the country. They have something like 81,000 miles of fishing stream and 1,650,000 acres of lakes and ponds. The Forest Service wants these lands and these waters to be made the best possible for good hunting and fishing.

The national forests have several advantages for wildlife. They constitute an area equal to one-tenth of the total land area of the United States that is open and unposted for hunting and fishing. They are public lands under stable administration and management. The multiple-use system by which they are managed looks to the coordinated protection and development of all of their resources; and natural resources, as you know, are interdependent.

The objective in the management of these lands is to provide permanently the greatest total of public benefits. We hope to achieve this objective through a sound program of resource management. Effective cooperation between the Federal Government, the States, and the individual citizens is essential.

In this program, wildlife can have a big part. Eighty-one thousand miles of streams and more than 1½ million acres of ponds and lakes in the national forests constitute a pretty good natural fish hatchery. The 180 million acres of national forest lands are a pretty sizeable outdoor rearing pen for game.

It is the Forest Service policy, as you know, to seek and maintain strong cooperative relations with other agencies that have responsibilities in the field of wildlife management. The program for national-forest wildlife is, in effect, a three-way cooperative set-up. We look to the Fish and Wildlife Service for the fundamental research necessary to determine the basic principles on which wildlife management plans are to be based, and for technical advice in carrying out such plans and principles. We look to the State fish and game departments to assume leadership for restoration, protection, and utilization of the wildlife resources; for the necessary regulations as to

licenses, seasons, and bag limits; and often for additional aid in wildlife surveys and local research projects. The Forest Service itself gives primary attention to the maintenance and improvement of a favorable habitat upon which the wildlife can be produced. It manages these lands on a multiple-use principle. Management is constantly improved by techniques developed by the forest and range experiment stations. We are hosts to the fishermen and hunters, who in turn are licensed by the States.

Thus the Forest Service, the Fish and Wildlife Service, and the State fish and game departments all have distinct and important roles to play. Through carefully arranged and coordinated cooperative procedures their programs can be made complementary to each other, with little or no overlap or duplication. A more satisfactory wildlife situation is the net result.

Such cooperation, as I have already said, is resulting in some outstanding work here in the Southeastern States. Nearly 40 cooperative wildlife management and demonstration areas are now in operation in the national forests of this region. Some very gratifying improvements in fish and game conditions have been achieved on a number of these project areas.

The Forest Service is anxious to go much farther in habitat management work, but it is handicapped by lack of regular appropriations for this purpose.

However, the financial problem of cooperative wildlife management projects in this region, in some cases, is eased through the special fees collected by the States for hunting or fishing permits on the management areas. Through cooperative agreements, the special receipts collected by the States are shared with the Forest Service and applied to the work on the area. It has been amply demonstrated on these areas that the sportsmen are willing to pay a reasonable charge for their sport. They want to know that they will get good hunting or fishing in return and that the money is being spent to maintain or improve the opportunities for more good sport.

It is our responsibility, as I said, to administer the national forests in the best public interest. They are performing many services important to local and national welfare. Here in the Southeast, the national forests last year furnished nearly 450 million board feet of timber. The returns from the sale of that timber amounted to more than 4 million dollars, 25 percent of which was turned over to the States for county road and school funds. But that yearly cut of timber also is the basis of many thousand man-days of employment; it is the basis of business and industry that helps to support many communities and contributes to a progressing economy for the region. And with the timber in the national forests managed for sustained yield, it not only will keep on coming but will gradually increase.

Last year some 3 million recreationists visited the national forests of the Southeast. They included tourists and vacationers who brought business to local communities, and local people who found opportunities for outdoor enjoyment in the forests. They included hunters and fishermen -- the Southeastern national forests last year had 4 million man-days of hunting and fishing use.

These national forests perform other important services. They safeguard the water supplies of many communities. Their watershed protection services help to reduce flood damage and sedimentation. The expenditure of 1½ million dollars for road construction and maintenance, and other expenditures for national-forest improvement in the Southeast meant additional employment and benefit for the region.

Our national-forest system is still relatively young, especially here in the Southeast. There are immense possibilities for resource development. There is need for far more intensive work than it has as yet been possible to do. Through sound multiple-use management, the forests can be made to yield far more in products and services to the public.

Wildlife benefits from such multiple-use management. Timber cutting creates openings and edge for game. Watershed management and fire control keep fishing streams in good condition. It has been well demonstrated in the cooperative wildlife management units here in the Southeastern States that forest rangers and wildlife managers work well together. Their cooperative efforts result in the improvement not only of wildlife resource values but of total resource values.

The cost of manipulating wildlife habitat is often too great for license revenue to meet alone. Commercial timber sales, however, provide an effective tool for wildlife management. We can take advantage of opportunities for selling timber when and where wildlife will benefit. Access roads for timber harvesting also provide access to hunting and fishing. Special provisions for stream-bank and channel protection are included in national-forest timber-sale agreements. Our planting programs take into consideration wildlife food and cover needs as well as timber.

The sustained-yield principle applied on the national forests means both stability of the wildlife environment as a whole and desirable variation in the cover. Thus we can get a large amount of wildlife habitat improvement done through timber sales, in which the timber management men and wildlife management men team up and work together. The opportunities in this field will be even greater as better markets develop for the small, low-value timber species. And we shall certainly be on sound economic ground if we can accomplish much of the needed wildlife habitat improvement through commercial timber sales that help to meet the growing needs of an expanding economy for essential timber products.

The best type of fishing stream improvement is good watershed management. The streams reflect the condition of the watershed. Some significant research on watershed management, by the way, is being done at the Coweeta Experimental Forest in North Carolina. Through the work there we are learning much about watersheds and streamflow that is important in the development and maintenance of the fish resource. I believe many of you would be interested in the work under way there, and I want you to know that you are all cordially invited to visit the Coweeta Station whenever an opportunity offers.

Wildlife management work, such as that under way in the Southeast, is helping to bring about a better public appreciation of all natural resource values. The Forest Service and the State Foresters are getting better cooperation in forest-fire protection from sportsmen who are becoming more and more aware of the relationship between fire control and good hunting and fishing. Through an active interest in wildlife, many people are gaining a better understanding of the interdependence of all natural resources. They are beginning to see, for example, that fish certainly cannot thrive without good water, and good water generally depends on good timber or other vegetative cover on the watersheds.

Wildlife and soil, water, and forests, indeed cannot be considered apart. They will go up, or they will go down, together. We of the Forest Service want to see the wildlife resource go ahead to full development in a sound, coordinated program for the full development of all resources. If we all work together in well-planned cooperative programs, keeping in mind always the basic objective of full resource development, I know we are going to continue to make progress.

January 15, 1951

COOPERATING FOR PROGRESS IN NEW ENGLAND FORESTRY

Address by Lyle F. Watts, Chief,
Forest Service, U. S. Department of Agriculture
at 25th Annual Meeting, New England Council
Boston, Mass., Nov. 17, 1950

I. Introduction

Your program committee suggested that I review the activities of the Forest Service in New England. I have done so and am strongly impressed by the extent to which progress is being achieved by cooperation.

This is noteworthy because, as an outsider, I understood New England had a reputation for rugged individualism. But, as I stopped to think of it, the establishment of the New England Council 25 years ago was a concrete expression of a desire to work together. To the founders of the New England Council, New England problems loomed as regional problems rather than State problems.

Furthermore, I understood that New England has traditionally stood for self-determination and against enlargement of the scope of Federal activities. But your forest history reveals ample evidence for a contrary view.

It was New England which took the lead in working for Federal purchase of mountain lands for National Forests early in the century. The New England States were quick to see the need for Federal cooperation in forest fire protection under the Clarke-McNary Law. They cooperated wholeheartedly with the Forest Service in administration of the Civilian Conservation Corps during the depression. And New England's call for Federal help to deal with the 1938 hurricane disaster was spontaneous and sincere.

Many recent events reveal a growing appreciation of interdependence and need for cooperation. More and more we are being led to realize that regional problems cannot be disassociated from national problems.

So it is appropriate that "Cooperation for Progress" should be the theme of my talk here today. As a federal official I shall emphasize cooperation between the Federal Government on the one hand and the States, industries and private owners on the other. But I hope you will not regard me as a power-seeking bureaucrat to be eyed with suspicion. I would like you to feel that I am a partner working for New England as well as the national public interest.

There is no need to tell you what the forest industries mean to New England, especially in the three northern States. And there is no need for me to dwell upon the importance of forest recreation in this region. You know more about these things than I do.

But it should be worth while to review some elements of progress to emphasize the direction in which we are going. It should also be worth

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while to check up on the forest resource situation. And, finally, with such a background we may profitably take a look ahead.

II. Significant Aspects of Current Situation.

The Forest Survey

Let's look at the current situation first.

We do not yet have an adequate picture of New England's forest resources. Past estimates have been based on partial or inadequate surveys and informed judgment. Only since the war has the Federal Forest Survey come into this region. New Hampshire is the only State for which figures have been released, although field work has been completed in Vermont. This survey is itself a good example of cooperation, and progress is related to the readiness of the States to participate.

I want to caution you against drawing conclusions as to trends by comparing our survey results with previous estimates. The New Hampshire survey, for example, reported more saw timber than shown in our 1945 Reappraisal project. Yet no one familiar with the situation would support a conclusion that New Hampshire forests, taken as a whole, actually have more saw timber than was true five years ago.

The Forest Survey totals up everything on the ground as shown by aerial photographs, without regard to quality or economic utility. Less-systematic estimates, conceived primarily in terms of current commercial utility, almost always overlook some of the less desirable species, the smaller timber, and the scattered trees which our Forest Survey picks up.

The important concept to keep in mind in interpreting forest resource statistics is the volume, character, and quality of growing stock in relation to that which is needed to make effective use of the productive capacity of the land.

In New Hampshire, for example, some of the important facts behind the over-all estimates are:

Only 35 percent of the total volume of all live trees 5 inches and larger in diameter, is in sawlog material. One-sixth is in cull trees.

Half of the saw-timber volume is in trees less than 15 inches in diameter. Only 45 percent is in stands that exceed 5,000 board feet per acre.

Two-thirds of the softwood saw timber is in low quality trees with less than one-third of the merchantable stem free of limbs or other defects.

At least half of the hardwood saw timber is No. 3 logs which will yield less than 30 percent of lumber in grades of No. 1 common or better.

Timber growth is reported in excess of commodity drain. But remember when drain is principally in softwood saw timber it is not of much avail to have a large excess of growth in hardwood pole timber, as is the case in New Hampshire. Nevertheless, the growth-drain relationships highlight the real forest problem. The utilization pressure on white pine saw timber is clearly in excess of that which can be sustained by current growth. On the other hand, the excess of hardwood growth reflects the lack of economic outlets for the large volume of low-grade timber which now occupies the ground.

Better Economic Setting For Forestry

These facts, applicable in a broad way to all of New England, present a continuing challenge. They should not be viewed with complacency. But they can be faced with courage and confidence. For today the economic setting for forestry in New England is better than it was before the war. The pressure of low-cost western lumber on eastern markets has been greatly reduced. Lumber prices are high and likely to stay so. In the wood pulp industry the great differential in costs, which put the North at a disadvantage in competition with the South 20 years ago, is being reduced.

Better Utilization Practices

I am told that New England has been alert to its problems of forest utilization and that its industries are better prepared to go forward in forestry than in the past.

I understand that great progress has been made in better manufacture and merchandising, especially of white pine lumber. Better returns obtained through more accurate manufacture, sawing for specific uses and attention to grade - all focus attention on the growing of larger and better quality timber.

I understand also that great changes are under way in the handling of pulpwood. Mechanization of such operations affords ample opportunity for the exercise of Yankee ingenuity. Of vast potentiality for forestry in New England also is the increased use of the dense hardwoods for pulp.

Without wanting to claim undue credit, I might point out that developments such as these are based in considerable part on Forest Service research. We think that progress is being stimulated by our Forest Utilization Service which helps forest operators and landowners take advantage of available technical information.

One indication of the improved outlook is to be found in a recent sale of 25 million board feet of timber on the White Mountain National Forest. This is the first large sale in which pulpwood, sawlogs, veneer logs, and bolts for special products will be cut in a single integrated operation. The purchaser is a logger who will sell the products to others for manufacture. In such an operation the forester is not handicapped by inadequate utilization in the application of good silvicultural practice.

Outside the National Forests, I am told that private owners and operators in New England are giving more serious attention to forest management than ever before.

Water

I want to speak of one other aspect of the current situation. In New England, as well as in parts of the country with less adequate rainfall, water is being recognized increasingly as a limiting factor in community and industrial development.

New England is power conscious. Not having natural fuel resources suitable for power generation within its borders, New England must lean heavily on water power to meet the requirements of industrial growth.

The suggestion that forest management has a significant relationship to New England's water resources is a telling way to arouse widespread interest in forestry progress for the region. It should be more generally used. Our research and flood-control surveys are piling up evidence that both floods and low-water stages in New England streams can be significantly affected by good forest management. And in New England the problems of low-water flows are as important as those of floods. They relate to stream pollution, sanitation, and fishing, as well as to base-load capacity and other power factors.

III. Elements of Cooperation in Recent Progress

Now let's take a look at some elements of cooperation in recent progress.

Perhaps the most significant example of region-wide cooperation is the Interstate Forest Fire Compact set up here last year. This had its genesis in the Maine forest fire catastrophe of 1947. That fire experience brought home the need for cooperation across state lines. The Forest Service cooperated by flying in fire-fighting equipment from the Pacific Northwest and sending experienced men from other regions to assist in fire fighting.

Stimulated by the Council of State Governments and certain insurance interests, the States worked out a compact for joint action in forest fire control. A commission composed of three men from each state, employing an executive director, is preparing a comprehensive plan of action. Major opportunities under this compact lie in correlating detection service from fire towers overlooking more than one state, in joint plans for airplane patrol, and in interstate training programs. I hope it will go much further.

We all anticipate a much-needed improvement in state fire control plans under this compact. The Forest Service stands ready to cooperate in backing up such tangible state plans by assistance in getting airplanes, moving men, procuring equipment, etc., when needed.

Technical assistance in woodland management illustrates recent progress in federal-state relations. In this program of federal aid, administered entirely by the States, resident foresters are assigned to specific localities to help farmers and other small owners in the management of

their woodlands and the marketing of their forest products. The States of Vermont, New Hampshire, and Connecticut are now fully covered by such woodland management projects. This public program supports and supplements private cooperative projects such as "Connwood, Inc." and the New England Forestry Foundation.

What has been happening in research illustrates cooperation involving private owners as well as public agencies. In recent years the Forest Service has strengthened its research locally by establishing work centers and experimental forests. In Maine, a number of paper companies joined hands in making available to the Northeastern Forest Experiment Station an experimental area of 3,800 acres for pulpwood research. Forest owners in Maine also took a long step forward in cooperation when they pooled forest resource data formerly considered confidential in order to help build up a map classifying forest lands as to vulnerability from attack by the spruce-budworm.

Such cooperation is perhaps in no small measure based on the years of joint discussions of regional problems and needs by the Northeastern Forest Research Advisory Council. On this Council, representatives of the States, the schools of forestry, conservation, agricultural, and industrial interests meet to help the Director of the Northeastern Forest Experiment Station establish and maintain a research program geared to the needs of the region. In recent years this type of cooperation has been further decentralized by the establishment of local advisory groups to help guide the work on some of our experimental forests.

IV. Looking Ahead

The National Forests

Turning now to a look ahead, I want first to speak of the national forests. Though not large in relation to the total forest area of New England, the two national forests here have a significant role to play in the New England situation.

Currently, some 20-25 million board feet of timber is being cut from the national forests each year. This is only about one-third of the allowable cut. Right now the volume of sales is limited in part by the manpower we have available to handle the work. But basically, our sales volume has been limited because the demand for timber of the character and accessibility available on these forests has been limited.

Important to New England is recreational use of the national forests. The number of people visiting these forests has more than doubled since the war. No new recreational facilities have been constructed since the hey-day of the CCC. All our important facilities are badly overcrowded. Our policy is to make simple facilities for camping, picnicking, hiking, and skiing available for the enjoyment of the great mass of the common people. At the suggestion of the Congressional Appropriation Committee, which has been loath to provide enough money for maintenance, we levied charges for use of the bathing facilities at Campton Pond last year. We do not anticipate that such charges will become general at all our recreational areas.

Perhaps even more vital to the region, though not so generally recognized, is the watershed value of these national forests. These lands were purchased primarily for watershed protection. Their value as regulators of streamflow and sources of supply for local communities is being emphasized as the role of water in the New England economy becomes critical. We are attempting to test all our resource development and use policies in the light of their impact on water. But we need to know much more about our watershed management problems. That must come from research and experience.

In order to relate the national forests more closely to local needs, it may be that the administrative group could use to advantage local advisory councils, similar to those which have served the research organization. The Regional Forester is now exploring this possibility. I am sure that responsible local people will welcome an invitation to serve on advisory councils set up to help our Forest Supervisors integrate the national forests into the economy of adjacent communities, the states, and the region.

Private Forestry

However valuable the National Forests may be, and however State and Community forests may be developed, we are, of course, fully aware of the fact that forestry in New England is primarily a problem of the private lands.

I have already mentioned the growing interest of the larger industrial owners in good forest management. But thus far such industrial forestry has barely scratched the surface. So long as the economic outlook for New England forest industries seemed uncertain, industrial forestry got little beyond fact finding, fire protection, and simple limitations on the cutting of small spruce trees. In the better economic setting which now prevails, I do not believe the large owners should or will be satisfied with such "half-a-loaf" forestry. I believe that a more intensive sustained yield management will prove more profitable from here on. Such management should not be one-product management, but integrated product management aimed at full utilization of all species. It may well mean a doubling of effective annual growth per acre.

But for most of New England the problem lies with the thousands of small owners. We have laid great emphasis on aid to small owners through technical service. We are convinced that what such service can accomplish will depend in some measure on the effectiveness of the supervision given the program by the States. We feel that the State Forestry Departments should set up forest management divisions to provide adequate supervision. The woodland management projects must be given just as much emphasis as fire protection and state forest administration.

The possibilities of progress through technical assistance have not yet been fully tested. But it remains to be proven that any such voluntary program can bring about enough good management to meet national goals for timber production or to restore or maintain desirable watershed conditions.

Experience with the technical assistance program, especially in Vermont,

New Hampshire, and Connecticut where coverage is complete, strengthens my conviction that public regulation of cutting and other forest practices is essential. The tax law adopted in New Hampshire this year recognizes this principle. It provides one approach short of a mandatory system. The rest of the country will watch the results with interest.

New York has another aid-incentive plan but I doubt if this will prove much more effective than the usual pattern of technical assistance under the cooperative program.

I think the situation in this region and elsewhere calls for a nationwide system of regulation such as the Forest Service has been advocating for ten years or more. And I want to emphasize a fact all too frequently overlooked. No where in the world has purely voluntary action succeeded in establishing the kind of forest management that is needed to protect vital public interest. In this, as in other fields of action such as traffic, pure food, meat packing, sanitation, fire protection, etc., the need for regulation grows rather than fades as our economy advances from pioneer conditions.

As our timber frontier disappears, and as good timber becomes increasingly scarce, the number of owners engaging in timber growing increases. But the acceptance of timber growing as an integral part of our economy does not lessen the need for regulation to safeguard the public interest. On the other hand, regulation will not impose undue restrictions on those who are already committed to good forest practice. Here is an important field for federal-state cooperation.

Comprehensive Planning

As I have intimated earlier, the future of forestry in New England will be tied in no small measure to the development of water resources. This leads me to speak of an important new development in federal program planning which holds great possibilities for cooperation and progress in this region.

I refer to the mandate to the Corps of Engineers in the Flood Control Act of 1950 to prepare a comprehensive program for development of the rivers and other land and water resources of New England and much of New York. President Truman has shown an active interest in making this a truly comprehensive program. He has asked the Department of Agriculture and other federal agencies to cooperate with the Army in the undertaking. This is an effort to look ahead in all phases of resource development at the same time in order more effectively to coordinate and integrate the activities of the several federal agencies into a logical and balanced plan of development for the region.

I can assure you that the agricultural phases will be developed with full cooperation of state and local agencies. I hope this effort to promote regional welfare by cooperative planning will receive full support of the New England Council and of the state forestry and agricultural agencies.

The time schedule under which we are working calls for fast action. The job is to be completed by July 1, 1952. The initial report may

prove to be sketchy and inadequate in certain respects. But it should give a clear picture of needs and priorities so that federal programs may be fully coordinated and geared to the needs of the region.

Public Understanding

I want to speak of one other thing which I feel is important for the future. That is that people should know the facts and understand the basic problems inherent in the forest resource situation. In New England, there has been no well-integrated public program for public education in regional problems and needs. The individual states and the state forestry associations vary in the orientation and effectiveness of their educational activities. The Federal effort is pretty well diluted by the time it gets down to local problems. The most consistent and best financed campaign is that of the organized forest products industries. There is an element of danger in that. I do not think the informed people of New England will be misled by the use of over-all statistics to create the impression that forest depletion and deterioration are no longer prevalent. They see deterioration as a fact in the forests all around them. Nevertheless our school children and uninformed urban people should not be misled. Perhaps the situation calls for cooperation between state and federal agencies in a unified program of public education. The Interstate Forest Fire Compact, of which I have spoken, points the way. And the Forest Fire Prevention Campaign of the National Advertising Council, with which I am sure you are all familiar, shows what can be accomplished.

In conclusion, I want to emphasize that in the future, as in the past, progress will be best when state and federal agencies and local organizations work together in programs which gear local needs into regional and national objectives of public welfare in a broad sense.

THE FORESTS AND THE FUTURE

Address by Lyle F. Watts, Chief, U. S. Forest Service,
at the 26th General Convention of the United Brotherhood
of Carpenters and Joiners of America, Cincinnati, Ohio
September 7, 1950

I want you to know that I consider it a real compliment to be invited here to speak to you today. It is especially gratifying because it is an indication that you share with us foresters an interest in the conservation of natural resources. It is an indication that you want to look beyond the day-to-day problems of the job to the basic resources back of yours and other jobs.

Right now, the thing uppermost in all our minds is the situation in Korea. At this moment we cannot tell whether successful conclusion of our efforts there will, as we hope, serve to check similar aggression elsewhere, or whether we are in for a long and increasingly difficult struggle. We shall certainly have to keep ourselves strong — prepared for adequate defense against aggression, so long as aggression motivates a big segment of this world's population. And keeping ourselves strong means strength in natural resources, including the resources of the forest. World War II, as you know, required huge quantities of wood. The Korean business and the defense program today are calling for increasing supplies of forest products. And when and as we are permitted once more to pursue our way in peace, our growing population and expanding economy will likewise require increasing quantities of wood. For a strong, healthy economy our forests must be kept productive. The forests are among the things that make for jobs, business activity, and individual and national income.

Certainly, if anybody's work depends on the products of the forest, it is that of carpenters and joiners. Wood from the forest is the material you work with; your skills and know-how are applied to converting this material from the forests into homes and other things useful or essential to mankind. You folks know better than most people what an important material wood is, how widely it is used, how essential it is to almost every enterprise, how much it contributes to our standard of living.

The employment and income of a great many other people also depend on the forests. Thousands are employed in logging and lumber production, in planing mills, sash and door plants, cooperage, furniture, tool handles, box-making, and other wood-processing plants; in the big pulp and paper industry with its hundreds of products; in rayon and cellophane manufacture, and in many other industries based wholly or partly on the use of wood. And thousands more derive employment in the businesses and activities related to wood-using industries, and in merchandizing and service establishments supported by wood-industry pay-rolls. Forest products are among the leading commodities paying freight bills and so helping to keep the railroads running. Forest industries are the principal support of hundreds of communities.

Now, it is a simple A B C proposition that if jobs dependent on wood use are to keep going, wood from the forests has to keep coming. Our forests will have to be managed so that as fast as timber is cut more timber will be coming along to replace it. That, in essence, is what we mean by forestry;

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that is the forester's job — to manage forest lands for permanent continuous production.

I want to do some plain talking today. I'm going to tell you straight out that our forest situation in the United States is not good. Real forestry — the kind of forest management I just spoke of — is being applied on far too little of the forest land in this country. We are taking saw timber from the forests faster than it is growing. The trend of our forest resource is downward. The quality of our timber growing stock is deteriorating. I don't need to tell you that we are already experiencing scarcity in some kinds of timber and in some of the higher grade materials. How long since any of you have seen a nice, clear, sound 12-inch white pine board? The general run of lumber we get today is of poorer quality, as you well know. And the price has gone way up. Of course, there are many factors entering into the higher cost of lumber, but one of the contributing causes is the growing scarcity of good timber. Lumbermen today are bidding almost as much, and sometimes more, per thousand board feet for stumpage — for timber still standing in the forest — as we used to pay for finished lumber.

In 1936 the U.S. Forest Service made a survey of South Carolina's timber resources, as part of a nationwide Forest Survey authorized by Congress. Eleven years later — in 1947 — South Carolina was resurveyed, to bring the information up to date and determine the trends. In the 11 years between the two surveys we found that the total area of commercial forest land had increased 11 percent, mainly because a large amount of one-time farm land had reverted to forest. But in spite of this increase in forest land, the total cubic foot volume of all timber had decreased 5 percent, and the total volume of saw-timber had decreased by 10 percent. Saw-timber stands were found on only 43 percent of the forest land. More than that, we found large areas where the valuable pine growth had given way to scrub oak and other low value hardwoods. Eighteen percent of the total timber volume in the State was in cull trees.

Similarly, a resurvey in Florida last year showed that the total volume of timber had declined 9 percent in 13 years, and the volume of timber of saw-timber size had dropped 17 percent.

Again, a survey recently completed in the State of Missouri showed that although more than one-third of the whole State is forest land, saw-timber stands occupy only 14 percent of Missouri's forest area. Nearly one-third of the State's woodland area has become so depleted that it contains less than 200 board feet per acre. It is estimated that Missouri's forest land, if its full growth potentialities were developed, could support five times its present volume of saw timber, and so provide much more employment and income for Missouri workers and more returns for landowners and forest industries.

Many of you can probably remember when the three Lake States — Michigan, Wisconsin, and Minnesota — were turning out billions of feet of the finest white pine lumber, and this region was the great center of the lumber industry. Today these Lake States have to get two-thirds of the lumber they need from

other regions. Some of the pulp and paper mills in the Lake States now import pulp-wood from Canada, and even haul it nearly a thousand miles from Montana. And the Lake States have 50 million acres of potentially productive commercial forest land.

In the Southern States, 60 percent of the area is forest land. In some sections whole counties are now mostly covered with scrub hardwoods because the pine timber and better hardwoods are about gone. Many mills are operating on logs a half or a third as large as formerly.

Practically all of the virgin or old-growth timber we have left is in the Western States. Three-fourths of all our commercial forest land is east of the Great Plains, but more than half of our remaining sawtimber stand is in the West.

One-third of it is concentrated on 6 percent of the Nation's commercial forest land in western Oregon and Washington. But even in the West, local timber shortages are already making themselves felt. Much of the remaining old-growth timber is in inaccessible mountain back-country, hard to get at and costly to get out. A lot of it is in National Forests, administered by the U. S. Forest Service, and the lumber industry has been clamoring for us to let more of it be cut. And so we should -- over-mature and stagnating old-growth stands should be utilized, and the land put to work growing more timber. We could increase the amount cut from the National Forests by 50% if we had the needed funds for the added sale business and to build access roads. Last year the cut from the National Forests was nearly 4 billion board feet. The forests and the economy would be improved if we had the roads and technical manpower to increase it to 6 billion feet. Yet when we asked Congress for more funds to build access roads to get to this timber, who, until recently, do you suppose it was that opposed this at the Congressional Committee hearings? It was spokesmen for some of the big lumber companies. Why? Could it be because if the Government built the roads other outfits might come in and bid for the timber -- Because lack of roads helps to hold back the timber until these companies want it, and keeps down competition that might develop if the public built the access roads? In the past few months this attitude has changed.

Now, I don't want to give a false impression about the lumber industry. Its job is to produce lumber, and it is doing a good job of it. Its traditional methods of operation developed at a time when timber was plentiful and cheap, and there was always plenty more over the next hill. It has been up against many obstacles and economic pressures that work against long-term management of forest lands. In spite of all that, many progressive companies are now practicing excellent forestry. They have established Tree Farms dedicated to good forest practice, and they have employed technical foresters to help them manage their timber holdings for permanent production.

But far too little of the commercial forest land is as yet so managed. The recent Forest Reappraisal made by the Forest Service showed that only 8 percent of all timber cutting on private lands in the United States was up to really good forestry standards. Twenty-eight percent rated fair. Sixty-

four percent of all timber cutting on private lands was still poor or destructive.

The highest percentage of good practice was on the large industrial holdings. But in the whole country there are only about 36 hundred forest holdings of 5,000 acres or larger. All together they amount to about 84 million acres. But there are 261 million acres of commercial forest land in small holdings, divided among more than four million owners. And it is on these lands in small ownerships that forestry has as yet made the least progress.

We could make our timber supply go farther by more efficient and more complete utilization. A study made by the Forest Service a few years ago showed that of all the wood cut or destroyed in logging in the United States, only 43 percent winds up in useful products. Twenty-two percent is burned up as fuel. Thirty-five percent is not used at all. Much of this waste is material left to rot in the woods after logging — tree tops, limbs, and cull logs. There is additional wastage at the sawmills in slabs, sawdust, and edgings; materials lost in pulping liquors at the pulp mills; and other wastage in primary and secondary manufacturing of wood products. It should be possible to use much more logging and mill waste for pulpwood, or for conversion into chemical products. Sawmill trimmings and short pieces that can't be sold as lumber might be made into small-dimension stock, or into many small articles that are now generally cut from standard length lumber.

Of course, if this waste material is to be utilized it will have to pay its way. Much of the waste wood is so scattered that it is not at present economically feasible to salvage it. Our Forests Products Laboratory, which the Forest Service maintains at Madison, Wisconsin, is working on this waste problem, trying to develop new, practical ways to utilizing waste materials. The forest industries also are conducting research in wood-waste utilization, and several industrial concerns are making notable progress in developing integrated wood-using operations.

If we can develop more efficient and complete utilization of timber, it will give us more wood products without increasing the drain on the forests. And it will provide more man-hours of employment for each thousand board feet taken from the forests.

Timber, by the way, is only one of the resources of the forests. I wish there were time to talk about a lot of other things — about the value of forest ranges in the production of meat and wool and leather; about forest recreation values that mean much to all of us when we want to get the family out for a healthful outing; about forest wildlife, and hunting and fishing. And about the most vitally important resource of all — water. An adequate, dependable water supply is a fundamental necessity. Yet there are many areas where abuse of the forests and overgrazing of the ranges has damaged watershed values, resulting in reduced underground water supplies, in rapid soil erosion and mud pouring into reservoirs and streams, and in wasteful flood run-off after practically every heavy rain.

Now what can we do to improve our forest situation -- to fully safeguard our watersheds, to increase timber growth, and assure an adequate supply of wood for the future? The Forest Service believes that action is needed along three major lines. It has advocated a three-point program which includes what it believes to be the essential measures for building up our forest resource.

A first essential is to put a stop to further destructive cutting. I am convinced that there must be some degree of public control over timber cutting on private lands -- controls sufficient to prevent wasteful and destructive practices and to require the use of cutting methods that will leave the land reasonably productive. The plan the Forest Service has suggested would call for regulation of timber cutting by the individual States, but with basic, nationwide standards set up by national legislation, and there should be provision for direct Federal action in any State which failed within a reasonable time to adopt and carry out a regulatory program.

Along with this, there should be increased public assistance for private forestland owners, to help overcome some of the economic obstacles to good forest management and to encourage individual owners to handle their timberlands according to the best forestry principles. These public aids would include more intensive Federal-State cooperation in the protection of forest lands from fire, and from destructive insects and tree diseases; more help in reforestation; and more on-the-ground technical advice to individual owners, especially the millions of small owners who can't afford to hire their own foresters or technical consultants. Public cooperation might also include a publicly-sponsored credit system to help owners finance long-term timber growing projects; a publicly-sponsored forest fire insurance system to help reduce the risks; and public assistance in the organization of cooperative forest management and marketing associations of small owners. And of course there should be continued and intensified research to find the answers to many problems of forest management, and to develop better and more economical methods of handling timberlands and using forest products.

A third line of activity has to do with the public forest lands. About one-fourth of the commercial forest land in this country is in National Forests, and other Federal, State and community holdings. The National Forests, and most of the other publicly-owned forests, are being managed according to good forestry principles. But we are far from realizing their full potentialities. They need more access roads, more reforestation, more watershed improvement work, more intensive fire protection, more facilities for protection and administration. Many of the National Forests are spotted through with lands in other ownerships which should be purchased so that the Forests can be more effectively developed and managed.

With action along these three lines -- public regulation of forest practices, increased public aids to private owners, and full development of the publicly-owned forests -- I believe we can start our forest resources on the upward trend, and eventually achieve permanent timber abundance. We have the forest land -- 461 million acres of it. Our job is to make and keep it productive.

Whether we would have chosen it that way or not, it has become our responsibility to exercise world leadership in a gigantic struggle to uphold the principles of democracy, freedom, and human decency against the forces of totalitarian aggression and oppression. We are in competition with a ruthless power whose objectives are the opposite of all the most precious things we stand for. If we are to redeem our responsibility of leadership in a free world we must be strong — strong of will and spirit, and strong in material resources. Soil, water, and forests are among the basic resources on which our strength depends.

Some of our resources are not inexhaustible. Once used, they cannot be replaced. Our forest resources, however, are renewable. Timber can be grown as a crop. But if we are to keep the crops coming, we shall have to build up our forest growth. It would be penny-wise and pound-foolish to skimp on the rehabilitation of our forests. The world situation today demands that we go all out to make and keep our forests productive.

And in the future peaceful years that we hope will come soon, do we want to look forward to abundant forest resources and reasonable prices, or to scarcity and high prices? Right now we are heading toward the latter. It is to the interest of the carpenters and joiners, it is to the interest of all industries and trades, of every home and family, and every citizen in this country, that we work for permanent forest abundance.

THE FORESTS AND THE FUTURE

Address by Lyle F. Watts, Chief, U. S. Forest Service,
at the 26th General Convention of the United Brotherhood
of Carpenters and Joiners of America, Cincinnati, Ohio
September 7, 1950

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Supervision
General*

I want you to know that I consider it a real compliment to be invited here to speak to you today. It is especially gratifying because it is an indication that you share with us foresters an interest in the conservation of natural resources. It is an indication that you want to look beyond the day-to-day problems of the job to the basic resources back of yours and other jobs.

Right now, the thing uppermost in all our minds is the situation in Korea. At this moment we cannot tell whether successful conclusion of our efforts there will, as we hope, serve to check similar aggression elsewhere, or whether we are in for a long and increasingly difficult struggle. We shall certainly have to keep ourselves strong — prepared for adequate defense against aggression, so long as aggression motivates a big segment of this world's population. And keeping ourselves strong means strength in natural resources, including the resources of the forest. World War II, as you know, required huge quantities of wood. The Korean business and the defense program today are calling for increasing supplies of forest products. And when and as we are permitted once more to pursue our way in peace, our growing population and expanding economy will likewise require increasing quantities of wood. For a strong, healthy economy our forests must be kept productive. The forests are among the things that make for jobs, business activity, and individual and national income.

Certainly, if anybody's work depends on the products of the forest, it is that of carpenters and joiners. Wood from the forest is the material you work with; your skills and know-how are applied to converting this material from the forests into homes and other things useful or essential to mankind. You folks know better than most people what an important material wood is, how widely it is used, how essential it is to almost every enterprise, how much it contributes to our standard of living.

The employment and income of a great many other people also depend on the forests. Thousands are employed in logging and lumber production, in planing mills, sash and door plants, cooperage, furniture, tool handles, box-making, and other wood-processing plants; in the big pulp and paper industry with its hundreds of products; in rayon and cellophane manufacture, and in many other industries based wholly or partly on the use of wood. And thousands more derive employment in the businesses and activities related to wood-using industries, and in merchandizing and service establishments supported by wood-industry pay-rolls. Forest products are among the leading commodities paying freight bills and so helping to keep the railroads running. Forest industries are the principal support of hundreds of communities.

Now, it is a simple A B C proposition that if jobs dependent on wood use are to keep going, wood from the forests has to keep coming. Our forests will have to be managed so that as fast as timber is cut more timber will be coming along to replace it. That, in essence, is what we mean by forestry;

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Mr Cochran
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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

WASHINGTON 25, D. C.

Address Reply to
CHIEF, FOREST SERVICE
and Refer to



I
INFORMATION
General

November 22, 1949

I&E No. 407

Wm J
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J
Wm

Regional Foresters
and Directors

Dear Sir:

Reference is made to circular I&E No. 393 of October 7.

We are sending you enough copies of Mr. Watts' address at the dedication of the Gifford Pinchot National Forest October 15 and of Mrs. Gifford Pinchot's address (approximate wording) to supply personnel in your own office and in the offices of the Supervisors, Rangers, and Work Centers.

If you need more copies, let us know.

Very truly yours,

Dana Parkinson

DANA PARKINSON, Chief
Division of Information & Education

"THE GREATEST GOOD OF THE GREATEST NUMBER"

Address by Lyle F. Watts, Chief, U. S. Forest Service
at dedication of Gifford Pinchot National Forest, October 15, 1949

In dedicating the Gifford Pinchot National Forest today, we honor one of America's great men.

It was Gifford Pinchot who gave conservation its first great impetus in the United States. It was largely through his tireless crusading efforts that conservation has become a part of our national policy. The ideas and forces that Gifford Pinchot set in motion may well determine the future security and prosperity and progress of this Nation. They may indeed determine the future welfare of the entire human race.

There are many here today who knew and worked with "G. P.", as Gifford Pinchot was familiarly and affectionately known to all his associates. They remember G. P. as a man of tremendous energy and enthusiasm, as an inspiring leader, as a zealous crusader. They knew him as a courageous, unflinching fighter in the public interest and for the public good. His cause did not need to be popular if it was right. He seemed at times to be fighting almost single-handed; but history has shown that the people were behind him.

Pinchot was the first Chief of the United States Forest Service. He was the first American to hang out his shingle as a consulting forester. He engineered the first conference of State Governors for the consideration of conservation policies. He promoted the North American Conservation Conference, the first conservation meeting on an international level. He was a co-founder of the Society of American Foresters, which is participating in these ceremonies today.

Pinchot was a man of many interests and many capabilities. But forest conservation was his first and greatest concern. Some of us here remember when Gifford Pinchot spoke to a group of foresters a few years ago. He said: "I have

(Over)

been a Governor now and then, but I am a Forester all the time — have been, and shall be to my dying day." He was indeed. At the time of his death in 1946, he was working over the management plan for the forests on his own land. In his last years, Pinchot suggested and promoted a world-wide conservation meeting — the initial impetus for the United Nations Scientific Conference on the Conservation of Natural Resources held at Lake Success just a few weeks ago.

The conservation movement, which Gifford Pinchot played such a big part in launching, has made much headway. Today we have a splendid system of National Forests, making many important contributions to local communities and to national welfare. The timber and other resources of these National Forests are managed for a sustained yield, for permanent and continuing production and use in the public interest. Our National Forests are furnishing an increasingly significant portion of the country's timber supply; they are protecting vitally important sources of water; their grazing lands contribute to the Nation's supply of meat, wool, and leather; they afford recreational opportunities for millions of people. Their returns to the public in timber production, water supplies, flood control, livestock production, wildlife, recreation, and other services far exceed the costs of administration. It would indeed be difficult to place a dollars and cents value on many of their services and benefits.

We have in the various States, many strong, competent State Forestry departments that are doing notable work in forest protection and development. Fifty years ago, when Gifford Pinchot was beginning his crusade for forestry, only feeble beginnings had been made in systematic protection of the forests from fire. Today, State forestry agencies are heading up a cooperative program that provides organized protection for a total of some 340 million acres of State and private forest land. State forests have been established and developed by many of the States, and in many other activities, State agencies are doing a good job for the advancement of forestry.

And so are many private owners of forest land. The forest management programs of a number of lumber and pulp and paper companies are noteworthy. The forest industries have sponsored a "tree farm" program in which hundreds of forest owners have signed up, pledging to manage their timber holdings for continuous production.

I have mentioned these advances in forestry particularly because they are the things with which I am most familiar and most directly concerned. There have been many other noteworthy advances in conservation. An aggressive program of soil conservation is under way. Wildlife management has made great strides. Deer and elk have made such a strong comeback that in some areas the problem is now to control excess populations instead of bringing back the vanished herds.

All of these things add up to an impressive total of achievement. Conservation is definitely on the move.

But we still have a long, long way to go. There is nothing in the record to justify any complacency. For the United States as a whole, we have yet to reverse the downward trend of our timber resources. The annual drain of sawtimber, though below a desirable goal for future production, still exceeds the rate of growth. Furthermore, much of the drain is of high-quality old-growth timber, and especially of the more valuable softwoods needed for construction lumber, plywood, and other important uses; whereas much of the growth is of inferior kinds of hardwoods and other poor quality material. Millions of acres capable of producing high-grade timber now have only a scrubby, almost worthless growth. The general quality of our timber stands is steadily deteriorating.

Despite the excellent forestry programs of many forest owners, the fact remains that only 36 percent of all this country's operating private commercial forest land is being handled according to practices that assure the forest being kept in reasonably productive condition. Sixty-four percent of the cutting practice must be classed as poor or destructive.

The average grazing capacity of our western ranges is little more than half of what it was originally, or of what it should be now. Many ranges are badly deteriorated; in some areas nutritious perennial grasses have almost wholly disappeared; fertile top soil is being washed or blown away, increasing the difficulty of restoring range and watershed values.

Nearly all of our major rivers run muddy, much or all of the time. When you see a muddy river, you are seeing soil from farms and hillsides being carried off to the sea, or to be deposited along the way to clog stream channels or silt up the reservoirs. Every year, raging floods take a toll of human life and cause millions of dollars worth of property damage. A lot of this damage could be averted by more adequate attention to the watershed lands where the floods come from. Some watersheds have so deteriorated that a flash flood may start from less than an inch of rainfall.

And while too much water is wasted in floods, adequate, dependable water supplies for irrigation, industrial, and domestic use are becoming an increasingly acute problem in many parts of the West, and even in some parts of the more humid East. Many streams that are raging torrents during a rainy spell dry up soon after because not enough water gets into the ground to feed a steady flow. Many valley wells go dry for the same reason.

Such things as these indicate the big jobs ahead in conservation. If I sound like an alarmist at this moment, it is because I believe there is cause for alarm. In the face of a growing population our natural resources are declining. You cannot build an expanding economy on declining resources.

But I see no need for defeatism or despair. We know which way we should go. Gifford Pinchot and other early day conservationists long ago pointed the way. They were the pioneer pathfinders who first signposted what William Vogt, in his recent thought-provoking book, has called the "Road to Survival." We can build up depleted resources. We can see that renewable resources are so managed that they will be continuously renewed. But it will take some aggressive,

forthright action.

We need aggressive action to control unwise or destructive timber cutting -- to establish certain basic rules of practice that will assure continued productivity of the forests. Some 14 States have already enacted legislation looking toward such regulation of forest practices. Their regulatory laws vary greatly in effectiveness and administration. We need Nationwide standards and action on a Nationwide scale to protect progressive owners from destructive competition, to stop further forest destruction and deterioration, and so help to maintain a reasonable growing stock as a basis for future timber production. This need was clearly foreseen by Gifford Pinchot. It has grown more urgent with the passing years.

We need also to tighten up still more our protection of the forests from fire. We need more protection work against destructive insects and diseases.

Along with such urgent defensive measures, we need positive action on a big scale to restore and build up resources. We need intensive education and other cooperative services to help forest owners improve their forests and practice real sustained yield management. We need to strengthen the public forests. We need to eliminate overgrazing and build up run-down ranges. We need to improve the condition of many watersheds. We need to replant or reseed millions of depleted acres to restore them to productivity.

And we need to get on with these things now. Time is marching on. For a century and more this country has been taking much from the land but putting little back. You can't keep on that way indefinitely. We have grown rich in worldly goods, but we are getting poorer in the natural resources that are the basis of those goods. And the longer we delay, the bigger and costlier will be the job of restoration that will have to be done if we are to maintain our high living standards and our strong place in the family of nations.

Ours is a Nation capable of doing things in a big way. We should aim

high. Our goal should be continued abundance, not just to get by.

When Gifford Pinchot was Chief Forester, the guiding principle was laid down that our National Forests should be managed for the "greatest good of the greatest number in the long run." That principle has meaning not only within the boundaries of the National Forests. It should motivate all public action. That the public has a stake in all natural resources was basic in Gifford Pinchot's thought. He strove to awaken realization of the fact that ownership of the land does not justify its abuse; that we of this generation hold the land in trust for the generations to follow; that it is our responsibility to see that it is used wisely, that it is kept productive.

One of Gifford Pinchot's achievements was in setting a high standard of public service. Under his leadership the Forest Service gained a fine reputation for unselfish zeal and devotion. Power, prestige, or pay were not the dominant forces that motivated its actions -- the public interest came first. Pinchot and his men did not stoop to subterfuge, special favors, nor secret agreements. Their fight was honest and above board.

I think I am justified in saying, and I say it proudly, that the Forest Service still carries on in those traditions. Today, we rededicate ourselves to those high standards. We shall not shrink from responsibility. We shall not be afraid of leadership in public policy. We cannot be content to drift with the tide. In the management of this National Forest and of all other National Forests, in our efforts to promote wise use of natural resources and sound conservation everywhere, our goal and guiding principle will continue to be the greatest good of the greatest number in the long run.

Our entire National Forest system, embracing more than 180 million acres in the United States and its Territories, is, in a large sense, a monument to Gifford Pinchot. But to this beautiful forest here in the Cascades of Washington has come the special honor of bearing his name. This National Forest was established when he was Chief Forester. Its administration began under his

direction. The basic principles for its management were set up under his guidance.

May the Gifford Pinchot National Forest help to keep forever alive and dynamic his conservation ideals. May it help point the way to wise use of all forests and all resources in the attainment of the good life for all men and all nations.

Address (approximate wording) by Mrs. Gifford Pinchot
at dedication of Gifford Pinchot National Forest, October 15, 1949

You will understand how hard it is for me to speak on this occasion, even to thank you for the thoughts you have so beautifully expressed and the tributes you have so generously paid. I know that every word has been heartfelt. Surely you realize how profoundly grateful I am.

Each one of you, The Foresters, Governor Langley, the soil conservationists, the engineers, have expressed, in your own separate fashions, something of the essence of what was Gifford Pinchot in the various fields in which you knew him. I can add nothing to what you have said.

But there is one point I am concerned to bring you which has not been stressed here. That is the ideal of Conservation that was so truly born of Gifford Pinchot's mind and spirit. The Conservation philosophy from which he derives his temporal and earthly immortality.

Beyond preservation of the forests, beyond reclamation of the soil, beyond the various techniques of land use and flood control, over and above and back of all of these stands the philosophy itself, the philosophy of Conservation.

Conservation to Gifford Pinchot was never a vague, fuzzy aspiration. It was concrete, exact, dynamic. The application of science and technology to our material economy for the purpose of enhancing and elevating the life of the individual. The very stuff of which democracy is made.

The Conservation he preached dealt not only with trees -- it dealt with the sheep herders and the homesteaders whose means of livelihood in the forest depended upon the kind of protection that was given them. It dealt not only with erosion and flood control, but with the wise use of the land, with the development of the great river valleys in terms of irrigation and power, such as you are so magnificently working out with your Grand Coulee and Bonneville Dams.

It dealt with research, with programs of improvement of country life, with electrification of farms, with rural education. It dealt with equality of opportunity, with control of monopoly. The list is a long one.

Most important, it dealt with the Conservation of natural resources as an international problem affecting issues of permanent peace.

To Pinchot, you see, man himself is a natural resource. The basic resource for whose material, moral and spiritual welfare the Conservation doctrine is invoked. Man, without whose energy, the energy of coal and oil, of electricity, yes of atomic science itself, is inert and meaningless.

Believing, as Pinchot did, that the planned and orderly development of the earth and all it contains is indispensable to the permanent prosperity of the human race, Conservation in its widest sense became to him one of the guiding principles through which such prosperity might be achieved. A bold creative affirmation in spiritual and ethical terms, of our faith in the dignity of man as a child of God.

Pinchot was trained as a forester, he thought as a forester, he felt like a forester. But before he had practiced forestry long, he realized that there were questions with which he as Chief Forester was called upon to deal - questions that on the face of them might seem to have little to do with trees.

In his autobiography he writes about going out some 42 years ago "in the gathering gloom of an expiring day to ride in Rock Creek Park," and of taking with him on that ride the difficult problems upon which he was constantly at work.

Particularly he was thinking of the relation of the forests not only to streams and erosion, but to inland navigation, to water power developments, to fish and game, to recreation. He was thinking of the danger of monopoly of control of natural resources - about abuses in the exploitation of mineral deposits on public lands - about river valley developments - about soil conservation - about better agriculture.

What had these to do with forestry, he asked himself, and what had forestry to do with them? What was the basic link, if any, between them all?

Suddenly the idea flashed through his mind, "Here are no longer a lot of different, independent, often antagonistic questions, each on its own separate little island"-- as he, a forester, had been in the habit of thinking. Instead there is one central question - many-sided yes - but still a unit. All so closely connected as to make it imperative they be co-ordinated and treated as part of a single coherent plan.

Seen in this new light, these separate issues fitted each into the other to make up one central problem - the use of the earth for the good of man.

To him it was "like coming out of a dark tunnel." He "had been seeing one spot of light ahead, and of a sudden the whole landscape rushed into visibility."

It was a new policy that was needed. A policy not exclusively national - but one world-wide in its scope. A policy that involved not only the welfare of man but his very existence on earth. An international policy in which all nations must eventually cooperate for their fullest development.

In these terms Conservation becomes a matter not primarily of techniques, (as some moderns seem to think) but of democratic policy. Of government policy on the highest level.

Possibly there are some of you Old Timers here - the Old Timers he loved so well - who still remember the great meeting in 1908 called at the instigation of Pinchot by the then President Theodore Roosevelt.

I want to digress here a minute to take the opportunity of bearing witness of how deeply Gifford Pinchot felt always about the debt he owed to the men of the Forest Service. Over and over again he said that to them, to the Old Timers, belonged the real credit for what had been accomplished. Never

before or since, he said, had such high morale, such devotion to the public good, such creative ability been demonstrated in any government body. It was a three way cooperation enterprise - the foresters at one end - the American people at the other - Gifford Pinchot in the middle.

After 40 years this spirit still persists, still animates the Forest Service. Today this Service is still outstanding in its high morale, its devotion to duty, its creative and imaginative leadership. It still sets a pace that many government departments might be well advised to follow.

Only a few weeks ago two men spoke to me in glowing terms of the Forest Service as the best body of public servants in Washington. They both referred (in entirely different conversations) to its energy, its courage, to the selfless devotion and drive of its personnel. They felt that the Forest Service stands today perhaps highest of all government organizations.

But to go back to the Conservation meeting in 1903 - there for the first time in history the idea of Conservation was spelled out to the American people in terms so simple as to be understood by all.

First they were made to realize that our natural resources are not inexhaustible. That, on the contrary, these are being destroyed and wasted at a rate that is disastrous and may soon become fatal.

The point was then driven home to the people that the natural resources of the country are a national heritage, to be made use of in establishing and promoting the welfare, the prosperity, and the happiness of the American people.

Hitherto, said the President, our national policy had been one of almost unrestricted destruction of these resources. It was a policy that had led and was leading to exhaustion of many of them. Moreover, it was a policy that gave unequalled opportunity for private monopoly. And "monopoly can no longer be tolerated" he proclaimed over and over again.

"In the past," Roosevelt continued, "we have admitted the right of the individual to injure the future of the Republic for his own present profit. The time has come to put an end to such exploitation..."

Always the protection of the rights of the people marched side by side with the technology of forest management, with the development of water power, extraction of minerals, etc.

Always the emphasis was laid upon the social purpose of Conservation - the greatest good to the greatest number for the longest time. Always the conception stressed that Conservation is not a series of independent issues - but one central problem to be faced and solved as such.

Two years later Gifford Pinchot projected his insight into the Conservation philosophy still further. This time to the international field. To the relationship between Conservation and the question of peace.

Why, in the long role of history, had man so persistently gone out to do battle with his fellow man? Could certain central issues be traced that underlay and explained these endless wars?

Obviously from time immemorial men had fought either to grab from their neighbors or to defend their own possession, of the best hunting grounds, the most fertile plains, of protected harbors, of lands richest in mineral deposits. In early days the thinking was in terms of iron, copper, gold; later coal and oil were included. Today nations are turning covetous eyes on rubber, on deposits of tin, manganese, chrome, molybdenum, bauxite and uranium (except for rubber, natural resources, all of these - non-renewable resources at that)

No single nation is self-sufficient in all the essential raw materials it needs, Pinchot pointed out. The welfare of each is dependent upon access to those it lacks - access without recourse to war. Moreover, the world is beginning to understand that, instead of its being in the interest of any one nation to see another depressed, it is to the interest of each and all to see the rest secure.

Could such access to raw materials be brought about by mutual consent on an international basis?

Well, Theodore Roosevelt, Franklin Roosevelt, President Truman, each one in his time believed that Conservation on the international level could and would help to remove one of the most dangerous of all obstacles to a just and permanent world peace. They believed that international cooperation in Conservation objectives most certainly would be of basic advantage to the entire world.

In 1909 a formal invitation was sent out by Theodore Roosevelt to 48 nations to join together in an international conference on the subject of natural resources and their inventory, conservation, and wise utilization.

Some 30 of these countries, including among them Great Britain, France, Germany, Canada, and Mexico, accepted. Most unfortunately, however, for the cause of peace, Roosevelt's successor, President Taft, whose failure to support domestic Conservation precipitated a major political revolt, decided to recall the invitation and to kill the conference.

Wilson, Harding and Hoover were in turn approached but all failed to act.

In 1944 we went to see Franklin Roosevelt. The story of that meeting is both exciting and dramatic. For F. D. R. with his broad and imaginative understanding of history, grasped and immediately welcomed the full significance of the idea. Pledged himself to the calling of such an international conference and asked how soon it might be put through. He authorized Pinchot to draw up an agenda, and to draft whatever government officials he might want for the doing of it.

In a letter to Cordell Hull, dated October 24, 1944, F. D. R. wrote:

"In our meetings with other nations I have a feeling that too little attention is being paid to the subject of the conservation and use of natural resources. I am surprised that the world knows so little about itself. . . .

It occurs to me, therefore, that even before the United Nations meet ... it might do much good to hold a meeting in the United States of all of the united and associated nations ... I repeat again that I am more and more convinced that Conservation is a basis of permanent peace. I think the time is ripe."

After F. D. R.'s death, President Truman, who had given the matter much close personal attention, went ahead on it. In August 1946, he sent to the United Nations as the American plan a formal proposal for such a conference.

This conference so conceived and so born took place last August at Lake Success. It was known as the Conservation and Scientific Conference. The story of this conference is a tragic one too long to go into here. Suffice it to say that the moral and social, the economic and political objectives of Conservation, its democratic significance were rigidly ignored by the men of little faith and many fears who organized the conference. Even more unbelievable, all mention of peace and war in relation to conservation was deliberately and definitely excluded from the agenda.

The sterile mouse that emerged, while excellent on the technical side and adequate enough on most of the scientific, had obviously no right to lay claim to the name of Conservation in which it was conceived.

So deplorable a retreat from so noble an opportunity was bitterly resented by many of the delegates who had been looking forward to a great upsurge of sentiment from the peoples they represented. Delegates who understood what such developments as TVA (and those you are so imaginatively building here on the Columbia River) might mean, do mean, in terms of inspiration to literally hundreds of millions of impoverished and hopeless people of Europe, Asia and Africa.

However, to dwell too narrowly and too long on the details of the past, while it may be good history, it is **not** necessarily, sound Conservation. By

which I mean that the problems of today differ at least in many superficial ways from those of yesterday.

No one understood better than Gifford Pinchot that the battlefields of the future in certain respects must necessarily take different forms from those of the past.

For one thing many concrete victories have been achieved since Conservation was first promulgated as an American doctrine - victories that will stand for all time. In the intervening years new and breathtaking techniques have been worked out, scientific truths laid bare, that were not even foreshadowed in those early days. Even more important - new problems that are constantly arising -- new needs of the American people that are coming into being. Problems and needs that demand new applications of the Conservation philosophy.

The CCC camps, the Shelterbelts, some of the recent techniques in the development of the TVA and the Columbia River are cases in point. As is the bold new doctrine of President Truman and his statesmanlike vision in building up the peoples of backward nations. All of which hold inspiration and great hope for the future.

Gifford Pinchot was always the first to proclaim the principle of growth, of development and of renewal as central to the Conservation idea.

He insisted that Conservation must be reinvigorated, revived, remanned, revitalized by each successive generation. Its implications, its urgencies, its logistics, translated in terms of the present by each of them. Always he pointed out that the victories and achievements of Conservation must never be regarded as an excuse for complacency, but only as an incentive to further goals.

He, therefore, welcomed the rediscovery of Conservation by successive Presidents and political leaders. Conservationists, you know, believe in the renewal of natural resources. And such political renewals constitute of themselves a prolific resource in our national political life.

Conservation is today more than ever a philosophy of dynamic democracy. Still to be conceived not only in terms of science and techniques, but primarily in relation to men and to women. Their needs. Their aspirations. Their social demands. That fact is what gives Conservation its basic unity. As such it is central to the domestic and international objectives of the American people.

With his deep insight into the well-springs of democratic action, with his abiding concern in the ethical and spiritual bases of American life, Gifford Pinchot provided the initial leadership in applied Conservation.

Fearless, zealous, practical and creative, a man "who never turned his back, but marched breast forward" he blazed the trail.

Upon those of us who are left, upon the young men and women of the future rests the responsibility and the glory of the long march ahead to greater opportunity - to more perfect freedom.

FIFTY YEARS OF FORESTRY IN THE BLACK HILLS

(Address by Lyle F. Watts, Chief, U. S. Forest Service, at program in observance of 50th anniversary of the establishment of the Black Hills National Forest. September 19, 1948)

We are within sight of the spot where real forestry first began in the National Forests of the United States. Here, half a century ago, was made the Government's first timber sale under supervised cutting -- the first attempt at scientific timber management in the National Forests. It was "Case Number 1" in the records of Government forestry.

I doubt if that first timber sale here in the Black Hills caused the news wires to hum all the way across the country, or that it made any big headlines in the great metropolitan newspapers. But it was an event of historical importance. Its effects were far greater than many of the other events that did make the now forgotten headlines of that day. It started something that is still growing. It was an important first step in the movement for conservation of natural resources -- a movement that may well determine whether our Nation, or indeed the human race, is to survive and prosper on this earth.

Today we celebrate the accomplishments of 50 years of forestry in the Black Hills. From the 1870's, when the Black Hills were first settled, until the National Forest was established, there had been unrestricted cutting of timber, and no effort was made to stop forest fires. Even before the area was settled there had been many bad fires. The town of Deadwood, as you know, got its name from the tangle of fire-killed timber that the earliest settlers found in the gulch. Fire and wasteful cutting were playing such havoc that back in the '90's local people began to realize that their timber supply was diminishing at an alarming rate, and that something should be done about it. The mining industry, especially, was worried about the supply of mine timbers. The movement that started here then resulted in the creation of the Black Hills Forest Reserve -- the area that now comprises the Black Hills and the Harney National Forests.

The first sale of timber was made about a year after the forest reserve was established -- in 1898. It was in some ways a rather elementary attempt at scientific timber cutting. Mistakes were made at the start. But essentially it was a sound undertaking. It proved out.

The Case No. 1 sale was made to the Homestake Mining Company. It was the first to make application to purchase timber from the forest reserve. The Company experienced many difficulties but to its everlasting credit, the Homestake Mining Company played fair with the forestry movement from the start. It gave this first attempt at forest management its full support. Eventually it put its own timberlands under management that is on a par with that of the Forest Service.

(Over)

The Black Hills Forest Reserve became a National Forest in 1905, when the U. S. Forest Service was established and placed in charge of the reserves. In 1911, part of the original reserve was made a separate National Forest -- the Harney.

It has been estimated that a billion and a half board feet of timber was used in the early mining days of the Black Hills, from 1876 to 1898. From the time of the Case No. 1 sale up to now, nearly another 1-1/3 billion was cut, or a grand total of 2,800,000,000 to date. At the same time, the forests, under management as a renewable resource, have continued their growth. It is estimated that there is now in the National Forests of the Black Hills, a total 2,300,000,000 board feet of standing saw timber -- nearly as much as all that was taken from the forests since the first settlers arrived. You might call that a case of eating your cake and having it too.

The development of the two National Forests has contributed greatly to the economic development of the whole Black Hills area. Today these National Forests are managed for permanent production -- for what foresters call a sustained yield. They are growing enough timber so that each year they can supply 37 million board feet of live saw timber, plus several million feet of additional material that can be removed by thinning young stands and cleaning out dead or defective trees.

The two National Forests provide range for 25,000 head of cattle and 20,000 head of sheep. The forests are used by something like half a million people each year for recreation purposes. There is a large deer population which assures the sportsman a good chance to bag his deer each year. The forests protect the watersheds on which originate Rapid and Spearfish Creeks and several other headwater tributaries of the Choyonno and Missouri Rivers. They protect the sources of water used for domestic purposes by Lead, Deadwood, Spearfish, Rapid City, and other towns; water used for hydro-electric power purposes and for irrigating a substantial acreage of farm lands. The utilization of the National Forest resources provides employment for many people. Enough timber is coming along to sustain a sawmill industry that not only can supply local needs, but also ships out Black Hills products to help supply the needs of other less fortunate States.

Very few of our National Forests anywhere in the United States are in as good condition as the two in the Black Hills area. In many places here you can see seedlings, saplings, pole-sized trees, intermediates, and mature trees all in the same stand. That means that under good forest management you can keep cutting mature timber and always have plenty more coming along. The timber crop is being well managed and the local people strongly support the management policies. Most of the grazing lands on the Forests are in good shape and those that are not can be improved in a short time. The cash receipts of the National Forests are steadily going up; about 332,000 last year and since 25 percent of all the receipts go to the local counties, that means that more money is coming along each year to help improve county roads and support local schools.

The going has not always been easy. We have had some heart-breaking set-backs. Tornadoes have laid down long stretches of timber across the forest. Fire has been and is a constant menace. The Rochford fire of 1931 and the McVey fire of 1939 each burned over nearly a township of forest land.

There were other bad ones, too. At the beginning of the century, one of the worst outbreaks of pine beetles in history occurred in the Black Hills and caused a heavy loss of timber. This year we have been going through a similar situation; but with emergency funds made available by Congress, we believe we shall succeed in controlling the insect attack this time.

But in spite of bugs and fire and wind and high water, we have made a lot of progress. The trees even managed to grow equally well under both Democratic and Republican administrations.

The progress made has been possible largely because the people here believed in these Forests, and in what they stood for, from the very beginning. I want to compliment the people of the Black Hills region on this splendid support and cooperation they are giving the Forest Service in the protection and development of the National Forests. They have been especially alert to the need for fire prevention, and when fires do occur they turn out promptly to help put them out. There is a cordial partnership here. It is the best kind of cooperation; it works both ways.

It is most gratifying to the Forest Service to know that you folks here in the Black Hills are keenly interested in what goes on in the National Forests. You think of them as your Forests, and that is exactly what they are. These are public forests. They belong to the people. The Forest Service is your agent, charged with managing them in your interests. The basic principle under which our National Forests are administered is "the greatest good of the greatest number in the long run." The Forest Service holds steadfastly to that principle. It is endeavoring to administer and develop these Forests for maximum, permanent service to the communities, the State, and the Nation.

In line with that objective of the greatest good of the greatest number in the long run, we have two major administrative policies. One of these is the policy of sustained yield, which I have already mentioned. It applies not only to timber, but to range forage for grazing, to game and fish, to recreational facilities, and to water supplies. The other major policy we call "multiple-use." You can see how that works right here in the Black Hills. The National Forests are managed not only to grow timber and to protect watersheds, but to furnish grazing for livestock, to provide a home for wildlife, to maintain scenic values, to provide opportunities for recreation, to support local industries and employment and many other services. All of these uses and services are coordinated in over-all, multiple-purpose management plans. Such multiple-use management brings the highest total of public benefits and services from a forest area.

The past half century, as I said, has seen some very encouraging progress in the Black Hills Forests. But we aren't done yet. There is a lot more to accomplish, a lot more improvement and development work to be done. During the '30's we made some rapid strides with the help of several Civilian Conservation Corps camps in the Black Hills and Harnoy Forests. These young men of the CCC built many miles of roads, developed recreational areas, lookouts and other fire improvements, and ranger stations. They did timber stand improvement work, which will make possible better and faster timber growth on 240,000 acres. When the war came along, it was not possible to go ahead with this kind of improvement work, nor even to maintain

many of the improvements we had. For effective fire protection we still need more roads, and more communication facilities and more heavy equipment. We need more timber stand improvement, more recreation facilities, and a lot of other improvements. We are going ahead with the program of improvement and development just as fast as funds become available.

The need for forest restoration and improvement and development is not confined to the Black Hills alone. In fact, with its two fine public forests as going concerns, the Black Hills are comparatively well off. Nationwide, our forest resource is dwindling. We are taking timber from the forests of the United States faster than it is growing back. The total volume of standing saw timber in the forests of the United States today is probably only about half of what it was 50 years ago. One-sixth of all the commercial forest land in the country has been so depleted by fires or by destructive cutting that it is now producing little or nothing. A good share of the rest is growing only a fraction of what it could. The increasing scarcity of good, easily accessible timber stands is reflected in the high prices people have to pay for a few boards to mend the back steps, or for most other forest products today.

Our National Forests and most other public forests are being managed for a sustained yield. That Case No. 1 sale here in the Black Hills involved something like 15 million board feet of timber, plus some cord wood, for about 15 thousand dollars. From that small start just 50 years ago the timber sale business on the National Forests of America has grown to nearly 4 billion feet, valued at more than 20 million dollars in the past fiscal year. With adequate funds for access roads to open up remote areas and with adequate funds to prepare plans and administer timber cutting, the amount cut from the National Forests could be increased in a few years to more than 6 billion feet a year. Both the forests and the Nation would benefit thereby.

But the public forests comprise only about one-fourth of our commercial forest area. Three-fourths of our commercial forest land is privately owned; and the private forest land is by and large the best forest land, from which the bulk of the Nation's timber supply must come. But a recent survey showed that only 8 percent of all timber cutting on private lands could be classed as good from the standpoint of keeping the forest land in full production. Sixty-four percent of all cutting was poor to destructive.

If our country is to stop the downward trend of our forest resources and get on the road to timber abundance, we shall have to take strong and energetic measures to build up timber growth for future needs. We shall have to put idle forest lands back to work. We shall have to see to it that good management is applied to all forest lands, public and private.

Our Black Hills forests are helping to point the way. They have demonstrated that forests are a renewable resource, that forests can be managed for permanent production. Already the area here where scientific timber cutting was first attempted in the National Forests has produced another crop of timber. Second cuttings have already been made on parts of the area.

The essence of the plan on which that Case No. 1 timber sale was based was to cut carefully and clean up the logging slash, and to leave seed trees and young trees to grow for the future. It sounds pretty simple now, doesn't it? But it was a revolutionary idea at that time -- just 50 years ago. And it hasn't gotten around any too widely yet. As I indicated a moment ago, even that simple, elementary type of forest practice has yet to be applied to 64 percent of all private forest lands.

But the development in sound forestry practice that started with Case No. 1 here in the Black Hills is still going forward. Research and experience have brought many improvements in forest management and cutting practice since that first attempt. Different methods have been worked out for different forest types. Scientific forestry is now standard practice throughout all the National Forests. It is gaining ever wider acceptance on other forest lands. And I am confident that the developments in forest conservation that started here with Case No. 1 will go on until permanent timber abundance for the whole country is achieved, until forest conservation is a nation-wide reality, and the forests of the United States will be contributing their full values and benefits toward the prosperity and welfare of our people.

OUR FOREST RESOURCES

Talk By
Lyle F. Watts, Chief, Forest Service
United States Department of Agriculture

in the
Graduate School Series on Agricultural Programs
United States Department of Agriculture
November 24, 1947

The forest is one of the basic natural resources. It is a basic resource because it supplies raw material from which is made thousands of useful or essential commodities. The forest is a great conserver of water and regulator of streamflow. It is a protector and builder-upper of another basic resource -- the soil. It is the home of much of our wildlife. And not the least of the values of the forest are its scenic and recreational values which contribute to our physical and spiritual well-being.

One-third of the land area of the United States is forest land, and the broad responsibility of the Forest Service is to promote good management and wise use of this land so that it will contribute its full share to the welfare of our people. I want to discuss briefly what our forest situation is today, and what the Forest Service is trying to do about it.

Specifically, the responsibilities of the Forest Service cover three major lines of activity; administration of the National Forests; cooperation in State and private forestry; and research on forest management and wood utilization problems.

Establishment of the National Forest system was the first great step in the conservation movement in America. The National Forest system began more than 50 years ago -- back in 1891, when Congress authorized the setting aside of forest reserves from the public domain. It was not until 1905, however, when these early forest reserves were placed under the jurisdiction of the Department of Agriculture, that development of the National Forest system really got under way. The guiding principle for their administration was laid down in Secretary "Tama Jim" Wilson's letter to the then Chief of the Forest Service, Gifford Pinchot. The keynote of Secretary Wilson's letter was that the National Forests should be administered "for the greatest good to the greatest number in the long run." The Forest Service has endeavored to follow that directive ever since.

I think I can say truthfully that our National Forests have become the world's outstanding public forest system. They now number more than 150 and include nearly 180,000,000 acres, nearly one-tenth of the total land area of the United States. They have been a proving ground for the relatively new science of forestry in this country, and a demonstration that conservation is wise use. They are making important contributions to the welfare of hundreds of communities and to the whole economy of the Nation.

Over-all direction of National Forest Administration heads up in a branch of National Forest Management in the Washington headquarters of the Forest

Service. Actual administration, however, is highly decentralized. The Forest Service maintains ten regional offices, with a Regional Forester in charge of each. Individual National Forests in each region are in charge of a Supervisor who is responsible to the Regional Forester. Each National Forest in turn is divided into several ranger districts, with a District Ranger in charge, who is responsible to the Supervisor. Rangers and Supervisors are authorized to make decisions on the ground, and only questions involving matters of broad policy need be referred to the Regional Forester or to the Washington headquarters.

Administration of the National Forests is a business proposition on a man-sized scale. Many of the activities are non-revenue producing, of course--the returns must be measured in terms of public welfare rather than hard cash. But the National Forest enterprise is big business in many ways.

Last year the Forest Service sold more than 3-1/2 billion board feet of timber from the National Forests. They supplied more than one-tenth of all the lumber produced in the United States. These timber sales returned some \$15,000,000 to the U. S. Treasury, National forest timber sales represented the principal economic support of many communities. In many cases they meant the difference between continued operation of a sawmill or closing down at a time when lumber was most urgently needed.

That is not the only big business involved in national forest administration. Each year the Forest Service issues some 18,000 permits for grazing livestock on range lands within National Forests. About 5 million head of cattle and sheep are covered in these permits; if you count the young stock for which no grazing fees are charged and the free permits issued to local settlers for milk and work stock, about 9 million animals all told graze on national forest ranges.

That represents a significant contribution to the Nation's supply of meat, wool, and leather. Grazing fees last year returned more than \$2,000,000 to the U. S. Treasury. Livestock ranch properties in the West representing investments of more than two billion dollars are dependent upon seasonal grazing on national forest lands. Because the demand for grazing privileges far exceeds the carrying capacity of the ranges, the Forest Service is under constant pressure to let in more stock. At the same time it is up against pressure from some of those stockmen who do have permits to convert their grazing privileges into vested rights. And on top of all this there is a conservation job to do -- to maintain good vegetative growth both for its forage value and its watershed protection value, and to build up ranges that have been depleted by past overgrazing.

Forest Service range management objectives, however, are clear cut -- to build up and maintain the national forest ranges at maximum carrying capacity and secure their full utilization through fair and equitable distribution of grazing privileges among livestock owners large and small.

Recreation is another large-scale activity in the National Forests. There were more than 18 million visits to the National Forests for outdoor

recreation last year. The Forest Service maintains more than 4,000 improved camping and picnic grounds, dozens of winter sports areas, and 50-odd organization camps which are made available to various civic and welfare organizations to provide vacation outings for children's or adult's groups at low cost. Numerous hotels and resorts are operated by private concessionaires under permit, and sites for summer cabins are leased to thousands of individuals. The demand for recreational use in the National Forest is bound to increase tremendously in the coming years.

The National Forests contain 90 thousand miles of fishing streams and they harbor one-third of all the Nation's big game. They are the country's largest public hunting and fishing grounds. Management of the wildlife resource and maintenance of conditions favorable for wildlife is another important activity in national forest administration.

Perhaps the most important activity of all is watershed management. Watershed protection and maintenance of favorable conditions of streamflow was one of the fundamental reasons for the original establishment of National Forests. National Forests are at the headwaters of our major rivers, and these watersheds furnish the water supplies of hundreds of towns and cities. In the western States, national forests cover many of the key watersheds upon which the whole life of the West depends. Every activity, therefore -- such as timber sales, grazing and recreation -- must be handled with due regard to its effect on watersheds. Good watershed management in some cases calls for special, complex techniques; but in general the kind of management that makes for good timber production or good grazing also makes for good water-shed protection.

In the management of our National Forests, the Forest Service has two keynote principles. One of these is what foresters call "sustained yield." Although the techniques of sustained yield forest management are varied and complex, the objective is simple enough -- to keep forest land yielding maximum returns continuously. The principle applies not only to timber crops, but to wildlife, range forage, recreational values, water supplies, and other forest products and services.

The other keynote principle is "multiple use." This means simply that the various uses and services of a given forest area are coordinated in one over-all management plan. The great bulk of the forest land can be used for a number of purposes -- such as for timber growing, livestock grazing, wildlife habitat, watershed protection and recreation. Under multiple use management, such uses can be combined and coordinated on the same area. It may be necessary to provide special limitations for certain areas within the forest; livestock grazing, for instance must usually be kept away from heavily used recreation areas; or timber cutting must be restricted where it would damage important scenic values. But conflicts of various interests or uses can be adjusted by carefully worked out over-all planning.

Under such multiple-use management, our National Forests are a going concern, making important contributions to the economic life of the Nation.

But I do not mean to imply that they have already reached a state of perfection. We still have a long way to go in developing their full potentialities. Large areas that have been acquired for national forest purposes were so depleted by past abuse that it will take years to restore a good forest growth. In other areas access roads are needed to make possible the judicious harvesting of overmature timber, which will utilize such stagnating stands and start the areas growing more timber. The range lands within our western National Forests present an especially tough problem -- to heal the effects of past over-grazing and adjust present use to carrying capacity. In the development of the recreational potentialities we have scarcely more than made a beginning. We need many more roads and trails, more facilities for fire control, and other improvements. And within the boundaries of existing National Forests there are still some 35 million acres of private land which should be purchased or acquired through land exchanges to complete the development of these units for public forestry purposes.

Along with its administration of the National Forests, a second major responsibility of the Forest Service -- and in many ways an even more important one -- is that of exercising leadership in the promotion of good forest practice on all other forest lands throughout the Nation. The bulk of our forest land, and the best of it from the standpoint of potential productiveness -- is in private ownership. It is to this private land that we must look for the bulk of our timber supplies.

A number of cooperative programs are under way to encourage and facilitate good management on private forest lands. One basic job, of course, is to see that all forest lands are protected from fire. Under the Clarke-McNary Act of 1924, federal-state cooperative fire protection has been extended to some 315 million acres of State and private forest land. But there are about 120 million acres of privately owned forest land that still lack under organized protection. And on many of the protected areas, the protection organization and facilities are still far from adequate. The recent disastrous fires in Maine are a rather tragic case in point.

Legislation was enacted during the last session of Congress that will -- provided funds are appropriated to carry out the purposes of the Act -- make possible cooperative aid to private owners for protection against forest insects and diseases that in some cases cause as much or more loss than fires.

Under authorization of the Clarke-McNary Act, the Forest Service also cooperates with the States in the production and distribution of trees for farm planting. The trees are produced in State-operated nurseries and furnished to farm owners at low cost. The demand for such trees for farm woodland and shelterbelt planting is far in excess of the present capacity of State nurseries.

Lack of time precludes a discussion of the fine part other agencies of the Department play in forest conservation. However I have not overlooked their important contributions. The Extension Service of the Department of Agriculture carries on valuable education or extension work in farm forestry as part of the general extension program conducted through the

land-grant colleges and the county agents. State forestry extension specialists in 45 States and 2 Territories conduct method and result demonstrations, work with rural youth, and carry on educational work to introduce new and improved farm forestry practices. The Soil Conservation Service also does a great deal to encourage farm forestry and tree planting in connection with its work to bring about good soil conservation practices.

One cooperative activity that is producing excellent results is the farm woodland management and marketing service carried on under the Norris-Doxey Farm Forestry Act. About 150 projects have been set up to date, mostly on a 50-50 cooperative basis between the Forest Service and the States. In each project, the services of a trained forester are available to farm woodland owners to help them work up management plans for their timber tracts, obtain competitive bids when they want to sell timber and prepare simple sale agreements which will protect the interests of both farmer and purchaser. This type of assistance is resulting in the farmer getting more for the timber sold than he would have realized under the old lump-sum sale practice, and what is more important, he is left with a stand of thrifty, growing trees which will produce future timber crops.

This work is spread thin, however, through a little over 600 counties. Such on-the-ground service is needed for 3-1/4 million farm woodland owners in more than 2,000 counties, and for almost a million small non-farm owners of forest land who have so far received little help.

These small non-farm owners -- investors, estate owners, and the like -- are an especially tough problem. Many of them are absentee owners. Few of them make any effort to manage their holdings as a timber-producing enterprise. Yet all together they hold some 30 percent of all our private commercial forest land. Another 40 percent is in farm ownership. The balance is in industrial and other large holdings. We are prone to exaggerate the importance of the big industrial owners in the total timber supply picture. Actually they hold less than 30 percent of the commercial forest area. A good share of our timber supply must come from the small farm and non-farm timber holdings.

Some of the more progressive industrial owners are doing an excellent job of forest management. Many farmers also are adopting good practice in their woodlands, but the fact remains that fully 75 percent of all our private forest land is not getting good management practice. Much of our timberland is producing only one-third to one-half of what it could under reasonably good forestry practice.

Large holdings make the best showing in status of management. Twenty-nine percent of all cutting on forest lands in large ownerships can be classed as good or better from the standpoint of leaving the forest in condition for vigorous growth of desirable species. But on small holdings, farm and non-farm, only 4 percent can be classed as good. Twenty-five percent is fair; 71 percent is poor to destructive. Obviously there is need for a lot of improvement in forest practice, especially on lands in small ownerships.

A third major responsibility of the Forest Service is in the field of

research. The science of forestry is only about 50 years old in this country. The forestry techniques that had been developed in Europe usually do not fit the forest types and conditions found in America.

The research organization of the Forest Service includes eleven regional forest and range experiment stations, a tropical forestry station in Puerto Rico, and a Forest Products Laboratory at Madison, Wisconsin. Over-all direction is provided by a research branch in the Washington headquarters.

Forest Management Research is attacking many problems in the handling of various forest types for maximum production of usable timber; in the reforestation of denuded lands; and in the protection of forests from fire, insects and diseases. Watershed research is studying the influence of various types of forest cover and of various practices on water yield and flood control. Economic research is studying the financial aspects of timber growing and other economic problems involved in forestry and range management. Range research is investigation on the effects of various degrees of stocking and developing practicable methods for reseeding worn-out ranges that will increase their livestock carrying capacity.

The Forest Products Laboratory at Madison has brought out so many sensational new developments in the adaptation of wood to new uses, in waste reduction, and in widening the field of wood utilization that it has been called "Madison's House of Magic." Laminated wood, improved plywoods, and wood and paper base plastics are finding an increasing variety of uses. Such laboratory developments as "impreg", "compreg", "papreg", and the "uralloys" are receiving growing recognition in the industrial field. We now have the technical information on which could be developed the production of industrial alcohol or high protein livestock and poultry feed from wood waste.

The research program has provided a solid foundation for forestry practice in America. But the super-structure for intensive management is yet to be built. There has never yet been, for instance, a complete inventory of the forest resources of the United States. We can make pretty good estimates, but still they are only estimates. An inventory of our forest resources is now under way as part of a nationwide Forest Survey started some 15 years ago. It is now about half completed. Work on this Forest Survey was suspended during the war but has been resumed. Complete and accurate information on our forest resource is of course fundamental to the determination of sound forestry policies and programs.

Sound technical knowledge developed by painstaking research is indeed important to any program of action. And I don't need to tell you that research is a sound investment that pays handsome dividends as well. Every research agency in the Department of Agriculture can show you striking examples of that.

During the past two years, the Forest Service made a reappraisal of forest conditions in the United States in order to check up on current trends in the forest situation, evaluate progress, and provide an up-to-date factual basis for conservation objectives and policies. This reappraisal showed that the situation and the trend are not good.

It showed that saw-timber trees are being cut from our forests one and a half times as fast as they are being replaced by growth. The volume of standing saw-timber in the forests of the United States decreased 43 percent in 40 years, and 9 percent in the past seven years. Along with the decline in total volume of available saw-timber there is a marked deterioration in timber quality. Conifer stands are being replaced in some regions by low-value hardwoods, or too often by worthless brush. The new forests that have followed the removal of the virgin stands are -- nationwide -- no more than half stocked. In the forest just as in the cornfield, you can't grow a good crop with half a stand or with inferior varieties.

The demand for lumber, for woodpulp, and other forest products is high. We were unable to meet fully the demand during war time. The supply of forest products is still short today and basically is getting shorter. In my judgment, if we meet current demand it will be only because scarcity and other factors have forced prices so high that people cannot afford to use the timber products they otherwise would.

This in spite of the fact that one-third of our land is forest land, and 460 million acres are suitable and available for growing commercial timber. That is enough forest land to grow all the forest products we are likely to need, plus a margin for export and for national security.

One-third of the remaining saw-timber is now in the national forests. Our national forests will therefore be able to help cushion the shock as privately owned saw-timber becomes scarce. But we shall have to look to private forests for most of our timber supply, because three-fourths of our commercial forest land is privately owned.

Up to now we have obtained most of our timber supplies from exploitation of the vast amount of virgin forest with which this country was once blessed, or from what second growth came along naturally after the virgin stands were cut. But, if we are to have adequate timber supplies for the future, we shall have to grow them. According to our best estimates this country's present saw timber growing stock is only about half enough to meet foreseeable future needs on a sustaining basis. So, to meet future needs adequately we shall have to double the growth.

The Forest Service has proposed three main lines of action which it believes are the essential basis of a program to build up adequate timber growth and assure permanent abundance of timber supplies in the United States.

We believe most strongly that some degree of public regulation of timber cutting and allied forest practices will be necessary. We believe such regulation is needed to stop forest destruction and deterioration and keep forest lands reasonably productive. It is necessary if we are to get good management practice on the 75 percent of all private forest land that is not now getting good management practice. The Forest Service proposal contemplates a Federal legislative charter which would set up basic standards of practice sufficient to prevent destruction and keep forests in reasonably productive condition.

The individual States would be given every reasonable opportunity to enact, and with Federal assistance, to administer forest regulation under State laws consistent with the Federal Standards. But provision should be made for Federal administration in States which fail to act within a reasonable time.

To help private owners make the transition from destructive exploitation to permanent forest management and to encourage them to go beyond the simple requirements of regulation toward intensive forestry practice, more public aid and cooperation will be needed. The second phase of the three-point program -- expansion of cooperative aids -- will include such things as more intensive fire protection and aid in combating insects and diseases; more on-the-ground technical assistance in forest management problems, especially for small owners; long-term, low-interest credits to help carry long-term timber growing projects; encouragement of cooperative management and marketing associations of small owners; and, of course, continued and expanded forest research.

There will still be substantial areas privately owned of forest land that are submarginal for private enterprise -- areas which because of inaccessibility, low productivity, or depletion of values, stand little chance of being developed and managed for permanent forestry through private initiative. Public ownership -- either community, state, or federal -- offers the best assurance that such lands will be properly handled in the public interest. And there are also certain lands of critical watershed importance or other high public value that undoubtedly should be acquired by the public. A considerable expansion of public forests, therefore is the third point in the proposed program.

These three lines of activity -- regulation of timber cutting, cooperative aid to private owners, and expansion of public forest ownership -- all complement each other. As we see it, they are the three essential legs of the tripod, and you need all three legs to make it stand up. We believe these three basic lines of action will provide a sound support for our national forestry enterprise and assure permanent timber abundance for the future.

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FOREST SERVICE
United States Department of Agriculture
Washington, 25, D.C.
December 1947

ST-8

LET'S BUILD OUR FOREST PROGRAM IN THE PUBLIC INTEREST

Address by Lyle F. Watts, Chief,
U. S. Forest Service, Department of Agriculture

Before the American Forest Congress, Washington, D. C.
October 9, 1946.

There is widespread realization, among those who really know our forest situation, that it is bad. I want to discuss with you some of the basic issues involved in building a forest program that will effectively meet this situation with full regard for the public interest. It is my understanding that the Higgins Lake Committee proposals and their companion piece, the printed report of the American Forestry Association's Resource Appraisal, have been prepared as a basis for such a discussion at this Congress.

I cannot consider the proposals of the Higgins Lake Committee in a vacuum. I need to interpret them in the setting provided by the Resource Appraisal report.

Let me say freely and at once that most of the Committee proposals are, in my opinion, fully in accord with the best national interest. And they hit the mark. Or at least they are aimed at it. I refer to such items as general public education; protection of forests from fire, insects, and disease; tree planting; forest cooperatives. I refer also to intensification of public forest management, to public payments in lieu of taxes, to watershed protection, and to protection of other forest values and services.

It is true, of course, that these are mostly the old program items--the accepted items. They have long been a part of the program of the Department of Agriculture. I am filing a copy of that program for the record of this Congress.

As for the Resource Appraisal report, it is concise and interestingly presented. It contains a large array of dependable basic statistics on forest areas, volumes, classes of ownership, and related matters. Minor differences between these statistics and those of the Forest Service do not change the general picture. It seems to me, however, that for one thing the report fails to point up clearly and place in their proper perspective the private-land and the public-land aspects of our forest situation.

Private lands are the major element. They comprise 75 percent of our commercial forest acreage. They have furnished the bulk of our wood supply in the past, and must continue to do so. Please remember that generally the best and most accessible forest land is in private ownership. It is here that really intensive forestry is most feasible. And yet on small holdings, which make up three-fourths of the private forest, only 4 percent of the cutting follows good practices. Even on the largest

private holdings, where recent progress has been greatest. only 29 percent of the cutting follows good practices. On public forests the percentage is 67. It ought to be clear that our need for action in forestry centers upon the private lands. This is the background against which we must consider a forest program.

I make this emphasis at the outset because the Resource Appraisal report fails to do so. That report, it seems to me, persistently shifts attention, away from the major problem, to the public forests. It confuses the problem of supplying urgent present needs with the still larger problems of growing timber for the future. Thus it distorts the background.

Now what about the really central issues of the Nation's forest program? What does Higgins Lake offer us to help solve some of the major problems of forest management? What does the Resource Appraisal offer to help us understand those problems?

Let me be frank. I do not believe that most conservationists and those among you who give first concern to the interests of the whole people of America are going to find certain of the proposals and arguments acceptable. I, for one, vigorously reject some of them.

I refer particularly to the three main parts of the proposals and arguments on which Secretary Anderson has already commented:

1. Those dealing with the place of public forests in the national program.
2. In some measure, those dealing with the problem of the small private woodlands.
3. Those dealing with public regulation of private forest practices.

Incidentally, these are the three points on which the Higgins Lake Committee's representatives from the Department of Agriculture filed a minority statement. This minority statement was omitted from the latest printing of the record.

When I take issue with some of the proposals and arguments drawn up for this Congress, I am anxious not to be misunderstood. I realize that the Higgins Lake Committee worked without the help of some of the major groups concerned in American forestry. Public officials aside, the Committee worked without benefit of representation from the $4\frac{1}{4}$ million small owners who hold three-fourths of our private commercial forest land. The Committee membership included no representative of the operators of some 40 thousand small wood-using plants that turn out the bulk of our products. The Committee included not one of the several million workers whose job it is to cut our forests and get the products to market, and whose livelihood depends on forest conservation. Nor were timber-products consumers, as such, represented, despite the fact that it is also for consumers that we are interested in forestry and consumers suffer if we fail in forest conservation.

I hope that in this Congress those groups not represented at Higgins

Lake will speak out.

I would like to emphasize to you that our Nation has for generations been struggling toward an effective forest program that will meet the public interest. We have come a long way, and we still have a very great way to go. We have pinned down, one by one, a few critical forest issues, such as these:

We have one of the world's greatest public-forest systems -- nonpolitical and stable.

We have made good progress in developing strong forestry organizations in the States.

We have made headway toward adequate protection of our forests from fire.

We have come a long way in forest research.

We have made a start toward reasonably good management of private forests -- mostly on the larger holdings.

We have the beginnings of an effective program of special aid to small forest owners.

I need not remind you of the part played in these developments by the Forest Service during more than 40 years. I would like to remind you, however, of the prominent part played by the American Forestry Congress that met first in 1882, and of which this present Congress is at least the nominal successor. That first Congress and later ones discussed many measures which then seemed to be radical, but which have since become a firm and accepted part of our forest policy.

One of these issues long discussed was the creation of permanent public forests -- to be safeguarded from exploitation and managed in the people's interest. The Forest Congress that met here in Washington in 1905, by its very clear and vigorous resolution on that subject, undoubtedly helped to get the national-forest system as we now know it established in the Department of Agriculture. That Congress also passed a forceful resolution on another issue of the day that still holds meaning for us: the Congress protested against the attempts by private interests to get, for their own use, a part of the forest reserve in Minnesota.

Those were far-sighted, bold demands for recognition of the place of public forests in the National program. What is given to us on this subject in the printed materials prepared for the present Forest Congress?

Proposal No. 10 of the Higgins Lake Committee calls for intensive management of the national forests. Taken by itself, it thus appears to endorse the timber-management and -sale policy now in effect. The American Forestry Association's Resource Appraisal report, however, is studded with allegations and innuendoes about the management of the public forests. Parenthetically, I know of no real study of national-forest administration made by the Resource Appraisal crew.

The Forest Service has made its mistakes. It welcomes constructive criticism. I do, however, challenge any implication that past handling of the national forests has contributed measurably to present difficulties. On the contrary, I maintain that the policy of making national-forest stumelage available has been consistent with economic circumstances and sustained-yield principles. As a result, the national forests today serve as an anchor to windward. To a large extent, I think the same is true of other public forest lands.

May I say that I am particularly struck with the views of the American Forestry Association's Resource Appraisal writers that the public forests can contribute something like a third of the national cut, presumably in the near future. This is a matter to which the Forest Service has given much attention. The Appraisal report greatly exaggerates the possibilities. What concerns me is that these overestimates, together with the generally hostile context in which they are presented, will have the effect of inviting and strengthening the pressure for overcutting national-forest timber. This could be a serious threat to public forest-land management.

Let us turn now from the public timber to the public land itself. I have had a good look at Higgins Lake Proposal No. 12 -- or perhaps I should say a long look. This is the proposal -- and I quote -- "for a thorough-going study of Federal public-land policies and administration, including the relationship between Federal, State, and private ownership, with a view to the adoption of a comprehensive policy covering the disposal, reservation, acquisition, and administration of non-urban Federal lands." The Higgins Lake group proposes that a committee be appointed to make the study. With all its complex relations and interrelations, this study, in my judgment, is an impossible committee task!

I am in favor of thorough-going studies where they are necessary and feasible. I personally am convinced that there are many details, and some more than details, of public-land matters that need untangling. And I am all for doing this. But let me ask a question. In addition to recommending the impossible, does this proposal mean a holiday from needed forest acquisition by the public? When are we going to get down to brass tacks and put into public ownership and start acceptable forest management on that additional forest acreage where experience keeps on shouting to us that public ownership is needed?

The Westerner who sees, within or adjacent to the national forests, private lands of low growth capacity being stripped by owners who frankly say they have no intention to stay in business, needs no thorough-going study to convince him that public acquisition of such lands is the wisest course -- and the sooner the better! Nor does the Easterner who sees the washed-out soil and skinned-out woods from which the mountaineers of some areas attempt to make a living, need any further surveys to convince him that such land is unsuited to private tenure.

Let us have action where the need is obvious.

The Resource Appraisal writers, in their discussion of public owner-

ship, make no mention that I can find of specific problems such as these. Nor do they insist upon study and discussion. Rather they seem already prepared to advocate, instead of stable public ownership and management, placing public ownership on a custodial basis, subject to later relinquishment. I take it that this means that the people of the United States and of the several States should acquire and rehabilitate at public expense the depleted forests -- or hold and conservatively operate merchantable forests for a time. Then, when demand for timber is strong and prices high, the land will be passed to private ownership. Those who value the principle of permanent public forest conservation -- for timber production, for watershed protection, for public recreation and sport, and for other forest uses -- should be shocked at such a proposal.

The writers express the opinion that State forest "custody" is to be preferred to Federal, since it is so much easier for private interests to get the forests from State custodians. Those who, like myself, have strong faith in stable State forestry cannot be pleased at the implications of such a statement.

Incidentally, I wonder if the Higgins Lake Committee, in using the word "disposal" with reference to Federal lands, had in mind this same policy of public forest "custody"? I earnestly hope not.

I have devoted so much time to questions of public forestry because I am deeply concerned lest the Higgins Lake recommendation and the Resource Appraisal report may have the effect of threatening this, the cornerstone of our national policy of forest conservation.

So much for the public lands. Let me now reemphasize as clearly as I can the following fact: The principal forest problem of the United States -- the crux of the issue of obtaining the forest products and services we need -- is to get satisfactory forest management on private lands.

This fact would stand out in the American Forestry Association's Resource Appraisal report had the writers not interlarded their pages so heavily with editorial matter on other subjects. The fact does stand out clearly in the results of the current Forest Service reappraisal of the forest situation, preliminary reports from which will soon be available. Here is the gist of the situation:

1. Private owners hold three-fourths of our commercial forest land. Medium and large owners -- some 3,600 of them -- hold 18 percent. Some $4\frac{1}{2}$ million small owners -- their properties averaging about 60 acres -- hold 57 percent. Two-thirds of all timber cutting on these private lands follows poor or destructive practices. On the small holdings, nearly three-fourths of the cutting is poor or destructive.

2. Our forests are not providing us with our timber needs today. Even under the most vigorous program of good management it will be many years before they can fully supply our potential requirements. These requirements, together with an allowance for inevitable losses and a margin for security, exports, and other purposes, amount to some 18 or 20 billion cubic board feet of all timber per year, including 65 or 70 billion board feet of saw-timber. Most of this must come from private lands.

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3. Actual growth of saw timber, which is the critical item, falls far short of this goal. Growth will need to be doubled in the East, more than doubled in the West. That means building up the growing stock and judicious cutting of remaining old growth.

4. We are, however, continuing to deplete our saw-timber stands, for saw-timber drain still exceeds growth by a wide margin. Our present stand of 1,600 billion board feet represents, conservatively, a 9-percent decline since 1938, a 43-percent decline since 1909. Our most accessible areas, our finest stands, our best species of trees, and our largest timber have been particularly hard hit. We should not be misled by the relatively favorable balance of cubic-foot growth and drain of all timber. Too much of that growth is of inferior species or poor quality. For example, in some areas, cubic-foot growth now exceeds current drain, but good saw timber is scarce. Finding profitable use for the low-grade timber that forms the bulk of the stand is a major problem in such areas.

5. Declining timber quantity and quality are profoundly affecting the industries based on forest raw material. Plants that need high-grade logs are feeling the tightest pinch; some can already see the end of their supplies. In the lumber industry in the West, local depletion has meant local depression. In the East, the horde of little sawmills is subsisting upon ever smaller logs. The pulp industry as a whole is in reasonably good supply position, though even here there are areas of shortage.

6. The pinch of timber supplies became a grave matter during the war. And it is felt by all of us today. Our distressing housing shortage is one symptom. Over and beyond the problems of labor, equipment, and prices is the problem of inadequate stumpage supply.

It looks as though we are faced with a dilemma: We need more timber products, and yet we need to curtail output in the East if we are to build up growing stocks for the future. I doubt if we can bridge the gap completely. But there is help to be found in our Western forests through wise handling, and the public forests can contribute more, though we cannot demand the impossible of them. National forests are already contributing twice their 1940 output.

What of the future? Isn't it obvious that if we are to improve management and build up growing stocks so as eventually to increase output we had better start now? The longer we wait the more difficult the adjustment will be. The solution lies primarily not on public lands, which occupy only a fourth of the area and are generally well managed, but on private lands, which occupy three-fourths of the area and are, in the main, poorly managed. That is why I say that the principal forest problem of the United States is to get satisfactory forest management on private lands -- and, I will add, especially on the small private holdings.

Returning now to program matters, I want to consider the needs of this predominant group of small owners -- farmers and other small forest owners.

I strongly endorse the emphasis placed by the Higgins Lake Committee on the small forest owner and processor as major factors in the forest situation. I have the feeling, however, that Proposal No. 2 of this Committee fails to come to grips effectively with the small-owner problem.

First, the proposal appears to consider mainly the farm-forest owner. Nearly as much commercial forest land is owned by a million small owners who are not farmers. The handicaps of both groups are similar. Their holdings are intermingled. Both need the same kind of technical forestry assistance. It does not make sense to neglect half of the whole small-owner acreage; nor does it make sense to set up one type of organization to help one group and another type of organization to help the other.

Second, the Committee's proposal appears to recommend diffusion of small-owner assistance among many Federal and State agencies. Such overlapping programs would be costly and would get us nowhere.

Actual experience with the problems of thousands of small owners and processors convinces us that individual, on-the-ground assistance is needed. To be effective, this assistance requires a high order of technical forestry skill. It is not going to be an easy job or a cheap one, but it is what must be done to get better forest management and more efficient timber utilization within a reasonable time.

I should like now to consider the last of the three main program issues that seem to me of prime importance: public regulation of private forest practices.

I have heard it said that education should precede regulation. The Resource Appraisal report contains some remarks to that effect. The Forest Service has always subscribed to that principle. It seems to me that the principle has a twofold meaning for us today.

In the first place, we are using the educational approach. We have been using it for several generations. It must be continued and strengthened. But we are now ready -- over-ready, as our forest situation attests -- to add more decisive measures. Many individuals and groups recognize this. The Higgins Lake Committee recognizes it in principle

In the second place, the Forest Service philosophy has always been that forest regulation should be accompanied by education. I am sure that every reasonable student of the subject conceives of regulation in this way. The purpose is to aid the forest operator who is not sufficiently informed to comply with the requirements. Such an approach, as we know by everyday experience with law, is sufficient in most cases.

I view forest regulation, for one thing, as a means of protecting the public from the adverse effects of destructive cutting upon timber growing stock and upon the watershed and other values of the forest. To use a phrase from the Resource Appraisal report, it is a stop-loss measure. Really good forest management must go far beyond what may be required by regulation. Such management will be undertaken because it is good business. If large numbers of private forest owners are ready, able, and willing to practice reasonable forest conservation -- and the Resource Appraisal report is one authority that **they** are -- then these owners will be unaffected by forest regulation, except as they will be protected by it.

Now if we want forest regulation -- if we regard it, as the Higgins Lake Committee commendably appears to do, as an essential part of our national program -- then surely we want our regulation effective and nation-

ally applicable. For this reason I regard the Committee's Proposal No. 3, for purely optional State control, as inadequate. Conservation knows no State boundaries. Our need, as a whole nation, is for better forestry on all lands to solve a critical national problem. This need knows no State boundaries. It is essential to the progress of forest conservation that we have a national law assuring basic Nation-wide standards of forest regulation.

Let me restate to you the forest program of the United States Department of Agriculture and the Forest Service as it bears on the three subjects I have discussed. This, you understand, is but a part of our program. It is the part that calls for special emphasis before this Congress.

First, as to the place of public forests in the national program: The public forests should be managed intensively for full output consistent with the best principles of conservation. We point to the substantial progress already made in that direction. We propose public acquisition -- local, State, and Federal -- and stable public tenure of that substantial acreage of private forest land which clearly can best serve the interests of the people if placed in public ownership.

Second, as to the problem of small private woodlands: We continue to recommend a greatly enlarged program of on-the-ground technical advice and assistance for both nonfarm and farm small owners. We call attention to the need for new legislation that will strengthen Federal authority for technical assistance to nonfarmers and processors.

Third and finally, as to public regulation of private forest practices: We propose that a basic Federal regulatory law be enacted. This law should establish reasonable standards as a guide for forest practices adaptable to local conditions. We propose that the States be given opportunity and aid to enact and put in force their own regulatory laws. The Federal law, however, should provide for Federal administration in States which, after a reasonable period, fail to enact and administer their own regulation consistent with the Federal law.

I hope that this Congress will be a forum for all who have contributions to make to the Nation's forest program. Our forest policy is a growing thing. Every such discussion as yours serves, if we apply the vision and ideals, to advance the cause of forest conservation closer to its goal of the long-run public interest. Let us always keep that goal in clear view.

Today our need to keep the conservation goal in view is especially great. I do not say that this Forest Congress faces any graver issues than did that other Forest Congress of 41 years ago: Surely no proposal will call for greater courage than did the far-sighted public-land proposals of that earlier Congress. But I do say that the present Congress faces graver forest problems than we have ever known: Not only have our forest conditions greatly deteriorated, but our national and world need for full use and wise use of all resources has greatly expanded. Let us make the most of this challenge and this opportunity in forest conservation.

THE FOREST SITUATION IN THE UNITED STATES

by
Lyle F. Watts, Chief, Forest Service,
United States Department of Agriculture

Presented to the forestry section, United Nations Conference on Food and Agriculture, Quebec, Canada, October 23, 1945.

The United States must greatly increase its annual timber growth if its forest industries are to hold the place they should in the life of the Nation. We are near the end in exploitation of the great virgin forests which have supplied our needs for 300 years. The time is rapidly approaching when we must grow as much as we use. And there is every indication that the demand for forest products will be high. In fact, we believe that in the expanded economy to which we look forward we must plan a forest crop of 21-1/2 billion cubic feet annually, which is some 5 billion cubic feet more than what we took from our forests in the war years.

The over-all facts of forest depletion in the United States are best told in estimates of sawtimber volume. When the original colonies were being settled some 300 years ago, the country that is now the United States is believed to have contained at least 7,625 billion board feet of standing timber. In 1909, when the first crude inventory was compiled, the stand was placed at 2,826 billion board feet. And our latest comprehensive estimate, made in 1938, showed only 1,764 billion board feet, about two-thirds of which was still classed as old growth.

A reduction of 37 percent in our sawtimber stand in 30 years is a matter of concern, especially when the trend of depletion has not been stopped.

Three fourths of our commercial forest land lies east of the Great Plains. But only one-third of the sawtimber is in that part of the country. There is less sawtimber in all the East than in the narrow belt of the Douglas-fir region west of the Cascade Mountains in Oregon and Washington. The severity of past cutting in the East can be further emphasized by pointing out that the average stand of about 1,600 board feet per acre of forest land is less than half as much as the pre-war stand per acre in Germany.

Even in the Pacific Northwest, which holds the bulk of our virgin timber, exhaustion of timber supplies is rapidly making itself felt. Mills representing 60 percent of the present sawmill capacity in Washington and Oregon do not have private timber to operate more than 15 years. Some of these mills will be able to obtain public timber to prolong operation. And as others close the remnants of their timber supply will become available for those that remain. But lack of timber will inevitably force the closing of many mills in the next few years.

The problem we face is not one of acreage available for forestry. Our 462 million acres of commercial forest land is capable of producing all the timber we are likely to use without encroaching on areas dedicated to recreational use or watershed protection. But these 462 million acres have not been kept productive. Over 70 million acres are virtually without tree growth as a

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result of fire and heavy cutting. Much of the remainder is only partially stocked and producing less than half of what it should. We have allowed the growing stock in most of the East to fall far below what is needed to sustain current drain, to say nothing of the larger output envisaged for the future.

To understand our problem you must know that three-quarters of our commercial forest land is in private ownership and that nine-tenths of the annual output comes from these private lands.

The public forests, mostly in the rough mountainous country of the West, are in general less productive and less accessible than the privately owned lands. Less than half of the 179 million acres of national-forest land is classified as commercial forest. The balance is open range, barren mountain country, chaparral and other non-commercial forest. State and community forests together comprise less than 25 million acres.

We have made substantial progress in the protection and management of our public forests. On the national forests timber is sold only in accordance with sustained-yield management plans. Slopes of critical watershed value are given special protection. Grazing of livestock on the national forests is regulated by permits in order to check range deterioration and prevent soil erosion. Recreational use has been facilitated by construction of roads and trails, and the development of camp grounds, picnic spots, bathing beaches, and winter sports areas.

Looking ahead, we believe the acreage of public forests should be substantially increased to include perhaps half of our commercial forest land.

But the crux of our timber supply problem lies in the private forest lands. With minor exceptions in a few States the public has no control over the cutting of timber on private lands. Clear cutting has always been the general practice in commercial operations. In recent years an increasing number of forest industries and other land owners have planned their operations for continuous production. But by far the greater part of the cutting is still done without regard for future crops.

Under present harvesting methods, especially in the virgin forests of the Northwest, huge volumes of wood are left on the ground -- tree tops, broken trunks, cull logs and inferior species. Tremendous waste also occurs in the sawmills and other wood using factories. Better utilization of the forest crop can offset, in part, a prospective timber shortage.

Progress in forest crop production and better utilization depends upon research. The Federal Government has taken the lead in a comprehensive program of forest research carried out through 11 regional forest and range experiment stations and a central forest products laboratory. The program deals with watershed influences and range management as well as timber. A certain amount of research is also carried on by educational institutions and forest industries.

In addition to administration of the national forests and carrying on research, the Federal Government conducts a number of programs to facilitate and encourage good forest management on private lands.

Most important of these is cooperation with the States in the protection of forests from fire. Last year organized protection was provided for some 297 million acres of privately owned forests. Yet almost one-third of the private land in need of protection is still without it.

The Federal Government also cooperates with the States in helping farmers improve their woodland and market their forest products to best advantage. In the Agricultural Adjustment program benefit payments are offered to farmers in some States for tree planting and other forest practices.

Aid to non-farm owners and operators is largely confined to technical assistance in the preparation of forest management plans. Because of limited appropriations, this work has been directed primarily at the larger operating owners. The small non-farm owners, who control almost a third of the private forest acreage, present an almost untouched field.

The Forest Service believes that the educational approach alone is too slow to be effective in sustaining an adequate flow of forest products. To help bridge the gap until second-growth forests are ready to support a larger output, the Federal Government should establish standards of forest practice that will stop premature cutting and other destructive practices and keep the land reasonably productive. We propose that the Federal Government extend financial aid to States that enact regulatory legislation and enforce specific cutting rules conforming to the Federal standards; and we believe the Federal Government should itself regulate forest practices in States that fail to do so within a reasonable period of years. It is important to note that we do not propose to regulate cutting budgets or otherwise control the volume of output, except as restrictions on forest practices may limit the amount that may be removed from any particular property.

To help bring our forests and ranges into condition to support the demands that will be placed upon them in an economy of abundance, we should undertake without delay a large scale program of forest work. The work needed to restore our depleted forests and run-down range lands, and to develop fully the many values that forests can bring offers a major opportunity to build up the Nation's productive assets and broaden the base for permanent employment

We believe that the comprehensive forestry program that I have so briefly outlined will eventually create as many as 2,500,000 permanent new jobs. Thus our forests should play an important part in helping the Nation achieve the goal of full employment which is commonly regarded as the most critical issue facing our democracy today.

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FOREST SERVICE

Rogue River National Forest
MEDFORD, OREGON

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FORESTS AND COMMUNITIES

Address by Lyle F. Watts, Chief, Forest Service,
Annual Convention of the National Audubon Society,
New York, N. Y. October 17, 1944.

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Forestry - A Community Problem

The theme of this conference, "Conservation in the Community," provides an ideal setting for a discussion of the Nation's forest policy because forestry is so distinctly a community as well as a national problem.

Forestry presents a major challenge in national policy today. One of the most serious aspects of the situation is that, because of substantial but spotty accomplishment, many are under the impression that the problem has been solved. Yet the annual growth of usable timber in this country is far below annual consumption, and the dissipation of our forest capital or growing stock goes on. In the 30 years between 1909 and 1938 the volume of timber was reduced almost 40 percent. Since 1938 the rate of consumption has increased about 25 percent and there is every reason to believe that demand will continue at a high level after the war.

So, while the War Food Administration is concerned about the possibility of agricultural production in excess of domestic needs, the Forest Service calls attention to a huge pent-up demand for forest products, to the extremely low level of lumber stocks and to the threat of timber shortage implicit in unlimited cutting without regard to future forest productivity. This question of our ability to meet post-war demands must be viewed fundamentally in terms of long-range forest conservation policy rather than superficially in terms of available sawmill capacity.

I hope this brief summary of the timber supply situation will leave no doubt that forestry is not wholly a local problem that can be left to the States. It is a matter of such far-reaching significance that the Federal Government cannot escape responsibility for its solution. But today we want to think about the community aspects of forestry. For it is only as we view the problem locally that we can appreciate the real significance of forest depletion and destructive cutting. It is local forest depletion that adversely affects the people in dependent rural communities. Loss of industry, stranded workers, deflation of real estate values, widespread tax delinquency, and related evils may threaten community welfare long before timber shortage becomes acute nationally.

Forest Depletion Undermines Communities

A few examples will highlight the pattern which has characterized the exploitation of our original forest resources.

Boom came to the twin villages of Au Sable and Oscoda in Michigan with the erection of a sawmill in 1865. Eight years later these towns had 10 large sawmills. In 1890 lumber production reached 324 million board feet. The population had grown to 15,000 with work plentiful and wages good. Hotels, business, newspapers flourished. With exhaustion of local timber supply the "bust" that came after 1890 proved as rapid as the boom. Lumber cut dropped 82 percent in 6 years. Hundreds of families were forced to sacrifice homes, part with friends, and move elsewhere to find jobs. Today, 50 years after the "bust", the land devastated by logging and fire, and now part of the Huron National Forest, supports less than a thousand people.

see Robert Dodge, Ashland; Frank Hull, Herb Gray, Medford.

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The town of Fullerton, Louisiana, was built in 1907 to exploit a tract of virgin longleaf timber. With 2 electrically operated sawmills and an alcohol plant to utilize waste, the town attained a population of 5,000. Water, light, sewage, and telephone systems were installed. Fullerton had an excellent department store, free modern hospital, good schools, swimming pool, dance pavilion and baseball park. Taxes reached \$86,000 per year. In 1927, when the timber was cut out, the mills were dismantled, and the town and its inhabitants left stranded. Today abandonment is complete. The town site was sold to the Federal Government as part of a 31,000 acre tract at \$1.40 per acre.

This process is of more than historical interest. It is still in progress in the Lake States. It has not been checked in the South, although in some cases second growth has prolonged the life of the mills. Frequent reports of large mills closing down and of towns left stranded have highlighted wartime pressure for increased lumber output. Since 1935, 50 big sawmills in the South, that used to cut over 1 billion board feet annually, have ceased to operate.

Even in California and the Northwest the exhaustion of virgin timber is making itself felt. In California 7 percent of the sawmill capacity goes out of business or is forced to move to new location each year because of lack of timber. A few months ago it was reported that the entire town of Westwood, California, with a population of 5 or 6 thousand people was being offered for sale because the huge sawmill upon which the town depended was about to shut down for good.

In the Puget Sound district of western Washington 165 sawmills, representing 41 percent of the total plant capacity, do not have sufficient private timber in sight to operate more than 5 years. Of course, public timber will help prolong the life of some of these mills but a sharp curtailment of lumber output with resultant repercussions in the local communities is inevitable.

One of the most striking things about the cycle of forest depletion is the speed with which it is accomplished. In the instances I have cited and many more that I might name, the boom lasted only from 20 to 25 years. Community prosperity was of shorter duration than the productive life span of the average citizen.

The closing of sawmills when virgin timber is exhausted is only the first and most spectacular stage in the deterioration of community life. By and by the effect of forest destruction spreads to the surrounding countryside, affecting the farmers and eventually the entire economic structure of the community.

In the Lake States the cheapness of cut-over land lured many people to attempt agricultural settlement without due regard for soil fertility, suitability of climate, or accessibility to markets. Perhaps no aspect of forest misuse has bred more human distress than such unwise clearing for agriculture.

In the Appalachian and Ozark mountains commercial timber exploitation temporarily alleviated the prevalent poverty. But dissipation of the forest wealth left the people worse off than before. Unable to make a living by farming, the mountain people resort to scavenger logging on cut-over land, attempting to cut and sell timber which the large operators found unprofitable to take. As second-growth forests approach usable size, they, too, are worked over. As a result, the forests become progressively less capable of providing a livelihood.

In the cotton and tobacco belts of the South, forest depletion has worked with soil erosion to aggravate long-standing conditions of rural poverty. As yields of cotton decline, the neighboring woodlands, all too commonly, are repeatedly logged -- first for sawtimber, then for fuel and charcoal, until they no longer provide supplementary income. Then homes and land are abandoned. The people who remain are reduced to a lower and lower standard of living. Housing is poor; medical help is inadequate; schools, roads, and other public services suffer from shrunken county revenue.

The cumulative effects of continued forest depletion in regions of second growth is not confined to these areas where rural slum conditions have been most acute. It can be seen in many communities throughout New England and the middle Atlantic States where a persistent but dwindling small mill industry has all but disappeared.

How Forestry Sustains Communities

It is often said in apology for the unfortunate reactions upon people and communities entailed in forest destruction, that such developments were unavoidable in the opening up of a new country. It will do no good to debate this question in terms of the past. But there is no excuse for allowing any such consideration to color our judgment of what can and should be done in the future. For we now have numerous examples scattered throughout the country and ranging from individual farmers with only a few acres of woods to strong corporations operating on a huge scale, as convincing evidence that good forest management is good business. Moreover, without exception, the influence of these demonstrations of good forestry on the communities concerned is constructive and wholesome.

Contrasting with the older lumber producing centers in the ponderosa pine region of the Northwest, are the modern communities of Hines and Seneca, Oregon, built in connection with integrated sustained-yield operation of a large virgin unit of national forest and adjacent private timber. The transformation of the old "cow town" of Burns, near which the new sawmill community lies, is solid rather than speculative, because the adjacent forests will be able to keep the mill running forever. The payrolls of the Hines mill have made possible an era of civic improvement embracing paved roads and fine schools. Most of the workers own their own homes. Even the logging town of Seneca, 50 miles to the North, boasts permanent, painted houses, a first class school, a movie theater, and a swimming pool. There are no logging camps in the woods, everyone returns to his home and family at night.

In Wisconsin, when the Goodman Lumber Company undertook partial cutting for sustained yield, it was forced to reduce its output by about one-half. But fuller utilization and greater variety of product provided offsetting opportunities for employment by raising the labor requirement to more than 8-1/2 man-days per thousand board feet of logs as compared to about 5-1/2 man-days in most other hardwood mills of similar size. Selective cutting has been followed by good growth and, after 16 years of this forestry program, the community exhibits a general feeling of stability and confidence. The significance of this situation can only be gauged by realizing that without forestry this community would be facing total eclipse in a few years.

Another well established example of a community stabilized through private forestry is Crossett, Arkansas. For about 20 years the Crossett Company operated in the old way -- removing all merchantable timber without much thought for permanence of the community. Then the company

Private
Lumber
without

inaugurated an intensive forestry program and provided facilities to utilize trees of almost any species, size, or quality. To its original sawmill was added first a hardwood mill, then a box factory, next a wood distillation plant and finally a pressure treating plant and a paper mill. Today, with a corps of trained foresters supervising the work, much of the output comes from thinnings and improvement cuttings in young timber. Annual cut is held well below current growth in order to build up forest productivity. The growth is increasing in volume and quality each year and the forest is on a permanent sustained-yield basis. The 5,000 citizens of Crossett as well as the 1,500 people in surrounding rural communities depend entirely, or in part, on the forest industries for a livelihood. There is ample local market for farm produce and farmers also benefit from the outlets they now have for the products of their own woodland.

Communities in second-growth sections that have long since been abandoned by the large lumber mills face a more difficult problem. But where local operators, or the people themselves, have the vision the forests can still be made to support wholesome and sound community life. In Potter County, Pennsylvania, for example, the Gray Chemical Company converts some 20,000 cords of wood into charcoal, methanol, acetic acid, and other products each year. Since 1919 this company has staked its faith on management of second growth rather than on logging and sawmill waste for its raw material supply. The company owns some 26,000 acres, but much of the wood supply is currently purchased from nearby farmers. The countryside is divided into operating units, and 300 wood cutters are regularly employed throughout the year. Comfortable modern houses have been built for wood cutters as well as mill workers.

It is in such sound communities as these that the strength of American democracy lies. Here, stemming from plans to keep forest land productive, are the elements of both national and individual security.

Many other instances might be cited to illustrate the sustaining effects of long range forest management. I might refer to the establishment of the Chippewa National Forest in Minnesota that provided a new basis for industrial activity in Cass Lake and adjacent towns, attracted recreational development, and revitalized the whole countryside in a period of only 20 years. Or I might tell you how some 156,000 acres of typical cutover, worked out, badly burned and poorly stocked longleaf-slash pine lands now in the Osceola National Forest in Florida have been made to yield an income ranging from 17 to 42 cents per acre per year in a single decade of management, providing employment for 500 workers, half of whom have no other source of income. And I might cite hundreds of cases of individual farmers whose woodlands have made a larger contribution to family living under good forest practice than would have been the case if sold for destructive clear cutting.

For example, Willie Green, a colored man living in Granville County, North Carolina, became interested in selling his pine timber when a mill moved into the vicinity of his farm. The mill operator estimated the stand at 75 M board feet and offered him \$750 for it. He obtained the assistance of one of our project foresters, and 130 M board feet were marked for a partial cutting that yielded \$1,300.

During the past 6 years a farmer in Polk County, Texas, has marketed, on a partial cutting basis from about 700 acres, sawlogs, poles, and piling, scaling over 1-1/2 million board feet, for a cash return of almost \$9,000. This farmer is receiving over \$2 per acre per year for his timber crop.

A 10-year record of partial cutting in a 15-acre northern hardwood woodlot in New York showed an average annual growth of 0.8 cord per acre. This woodlot furnished 18 days of work each year, with a gross return of \$10.50 per acre per year, or over \$1.00 per hour of labor expended. Even if the farmer did none of this work himself the income was sufficient to yield a net profit of about \$1.25 per acre per year after allowing fully for taxes, interest on value of the land, and other items of overhead. Such a source of supplementary income means much to the economic welfare of the community even in such a relatively prosperous area as the dairy farm region of central New York.

Forests and Urban Communities

The baneful influence of forest destruction and the beneficial influence of good forest practice extend far beyond the rural communities directly dependent upon forest industries.

As consumers of forest products, citizens in agricultural and industrial areas, even more than those in timber exporting areas, are affected by the adequacy of our timber supply. Many cities and communities have a stake in the treatment of the hills and mountains from which their water supplies are obtained. To a still larger group of cities and smaller communities protection and management of the forests is of interest because forest recreation is so vital a part of the American tradition of good living. In the final analysis the commerce and industry of an urban economy depend upon natural resources of which wood and water are among the most valuable, the most indispensable, and the most widely dispersed.

Community Action for Forest Conservation

Thus whether we live in the city or the country -- whether in the heavily forested Northwest, the second-growth regions of the East, or the agricultural areas of the Mississippi Valley, we find that the Nation's forest problem is our problem.

In many parts of the country one of the most practical ways for a community to give expression to its interest in forest development is through the establishment of community forests. Such forests provide object lessons in timber growing. They may help solve local problems of unemployment relief. They afford opportunities for wholesome outdoor recreation. They provide sanctuary for birds and wildlife and in other ways serve to improve the community environment.

The concept of public ownership for lands that private owners cannot afford to manage in the public interest or for lands where special public values, such as watershed protection, are paramount extends beyond the local communities to the field of State and national forests. Public ownership of perhaps one-third of the forest land now in private hands constitutes one indispensable feature of a sound forest program for the Nation. The restoration, improvement, and development of such public forests will provide a huge reservoir of worthwhile public work that should take a prominent place in plans for post-war employment.

On the other hand, private forests include the bulk of our most productive timber land and will continue to be the major source of supply for the forest industries. So the crux of our forest problem lies in the management of the forests in private ownership. The Forest Service has consistently advocated a comprehensive program of aid and encouragement to facilitate good

forest practice on private lands. The authorization for public participation in forest fire protection was greatly enlarged last year. Recent legislation paves the way for cooperative sustained-yield management of public and private timber lands. A good start has been made in extending assistance to farmers in the marketing of their forest products. Research is strengthening the basis for sound forest management and opening channels for better utilization of the products. These activities should be expanded and other measures of public cooperation need to be inaugurated.

But I am convinced that our community interest in the forests cannot be safeguarded without a reasonable exercise of public control of cutting and other forest practices on private lands. While I welcome whatever effective action the State governments may take, I do not believe that the problem will be solved without Federal legislation and leadership. As I have stated on several occasions in the past year, I believe that basic standards for forest practice must be established by the Federal Government and that the Federal Government should not only offer financial aid to the States but also should act directly after a reasonable period in any State that failed to adopt an effectively administered regulation within its borders in accordance with such standards.

With such a forest program in mind I am gratified that the National Audubon Society, whose members influence conservation thinking in thousands of communities, should feel some responsibility for our Nation's forest policy. The Audubon Society has always been motivated by the long range view of public interest. It has a background of valuable experience in holding public sentiment for constructive action. It has previously advocated conservation when much of the community was oblivious to the need. And it has seen the need for Federal legislation and leadership in conservation matters that require current and coordinated action in many States or that may even call for international collaboration.

Front Lines In Forestry

TIMBER products have advanced close to top position on the list of critical war materials. Already, ton for ton, more wood than steel is being used by our armed forces. With the growing list of wood's vital war uses fabulous by now, forests—in a myriad of forms—are being moved off to the front lines.



Lyle F. Watts

The forest goes to war with the soldier. Chestnut acid tans his shoes, dogwood blocks weave cloth to clothe him, black walnut goes into his gun-stock, and hardwood—oak, beech, birch, maple—charcoals go into his gas-mask. He embarks on Douglas-fir-decked ships from yellow-pine wharves erected on pilings of the same wood; and bivouacs in housing units built from softwood lumber and veneer—also used for the endless variety of boxes, crates, and dunnage that carry a fighting-man's equipment to the fronts.

That aspect of the forest story you know. Its sequel, however, is not so well known. The forests are feeling this war. Let us make no bones about that. In wartime, we cut for war needs at war tempo, inescapably. Last year, for example, more than 16 billion cubic feet of timber was cut or destroyed—thus exceeding the estimated 11 billion cubic feet of annual growth by almost 50 per cent! Of sawtimber, drain was nearly twice the yearly growth.

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We Cannot Duck The Issue

Bluntly put, this nation's forests are not being grown as fast as they are being depleted. We are using forest capital as well as interest, and failing to make adequate provision for new growth.

We have enough forest land ultimately to produce timber for all foreseeable needs—plenty . . . *providing that forest land is properly managed.* Total demand in the years ahead is likely to be even higher than at present, if timber is available at prices which people can afford to pay. But we will have to double the present rate of growth if we are to meet estimated future requirements. Obviously, then, we cannot stand by indefinitely and watch the forest capital upon which future growth of useful timber depends melt away. Quite as obviously, if left alone as things stand, much more of it will melt away than we can possibly afford.

For note this: timber growth has dwindled far below the productive capacity throughout whole sections of the East, the South, and Lake States, although much of the land is still primarily suited for forest. Because of continued indiscriminate cutting, timber depletion is becoming more acute in these areas. It is already a recognized critical problem in many localities in the West.

Two factors have inevitably joined: high prices and pressure to increase output. Combined with growing scarcity of accessible old-growth timber, these have stimulated premature clear-cutting of young second growth.

Such practice defeats the ends of good forestry. There is involved a sacrifice of growing stock without which there can be no usable forest crops for decades after the war. Often, you must be well aware, such ill-used land is left entirely unproductive.

The nation cannot shun the necessity of cutting all the wood that is needed for war. It should be gravely concerned, however, if short-sighted, destructive cutting practices aggravate the situation. Forests are almost as vital to the nation's welfare in time of peace as in time of war.

Only by maintenance of a high level of productivity from our natural resources can an economy of abundance result. This is well-nigh axiomatic. Yet, today, after decades of research, demonstration, and educational effort—and I say this advisedly—most of our cutting on private forest lands is still done with little regard for the future productivity of the resource.

The Number One Job

Here is the general picture: We have about 630 million acres of forest land in the United States. Something over a quarter of this is of alpine or semi-desert character, chaparral, or other forest-land types unsuited or unavailable for growing timber of commercial quality or quantity. Much of it, however, is valuable for watershed protection, for example, and for grazing or wildlife.

Of the 462 million acres of commercial forest land, approximately 17 per cent is now virtually non-productive. Cause: destructive cutting and fire. For the rest, all but about 100 million acres have been cut over; and a large part of the cut-over land now produces but a fraction of what it might.

In the 30-year period before the present war, our total reserve of standing sawtimber was reduced 40 per cent. Depletion of basic growing stocks has not yet been checked on more than a small fraction of the privately-owned forest area.

These private lands include something like 90 per cent of the potential timber-growing capacity of the entire country, and furnish 90 to 95 per cent of the present cut of all forest products. Thus, the nation is primarily dependent upon them for its timber supplies.

The public has a vital interest in the proper management of these lands. Beside the fact that we must look to them for the bulk of our timber supplies, they include areas where watershed protection problems are most critical; and the way they are handled will affect the public welfare in many ways.

To me, the No. 1 job of the Forest Service is to provide that pattern of action and active leadership necessary to make our forests produce for the future. Furthermore, since "the greatest good to the greatest number in the long run" is the cornerstone of the Forest Service interest in a sound forestry program, it would seem well first to emphasize some of the elements of social conflict in the situation.

Handwritten notes and calculations:

17% more prod
 283
 100
 19%
 100% Total
 168

79 million acres
 117
 3234
 462
 78,54

662
 79
 383

THE CARPENTER - June 1944



Herewith we present the first of series of articles being written exclusively for *The Carpenter* by the U. S. Forest Service. These articles will authoritatively discuss the pressing forestry problems of the nation—problems in which members of our Brotherhood have a vital interest.

By Lyle F. WATTS

Chief, Forest Service, U. S. Department of Agriculture

WHETHER he hangs doors, builds homes or fabricates wooden trusses for a mammoth airplane hangar, no one is more dependent upon plentiful supplies of good wood than the carpenter. Certainly, one can list thousands of other uses to which this forest-grown material is put, including some 1,200 specific purposes essential to the far-flung armed forces of the United States; but cut down the supply of wood, and whatever other difficulties result, to that extent a restriction is placed upon the carpenter's opportunity for making a living at his ancient and honorable trade.

It is for this reason, I am sure, that your magazine, *THE CARPENTER*, has in previous issues printed many articles on various phases of forestry, the forest resource, and the production and utilization of wood. Interesting and informative, these past articles now provide a fine background for clearer understanding of the crucial situation in which the forest resource—origin of our supplies of wood, protector of vital watersheds, and the wellspring of many other social and economic benefits—has been precipitated.

So widespread in its ramifications is this forest situation that it would be most troublesome, if not impossible, to set down in the limited space of this article anymore than a few highlights. To me, after 33 years in the profession of forestry, all but a few of those years in the employ of the Federal government, the unsatisfactory and challenging

facts stand out crystal clear. I became chief of the U. S. Forest Service little more than a year ago. Since that time a flow of reports, letters, telegrams and newspaper and magazine articles have convinced me of two things:

First, a growing number of Americans are coming to understand what is happening to our forests, and what this means to the United States and its people.

Second, the great majority does not understand, does not have the facts or is not in a position to fully appreciate the forest problem.

I pick up reputable newspapers and magazines and—I regret to say—I find reputable men, among them sometimes friends of long standing,

knowingly or unknowingly misrepresenting the facts, echoing a doctrine that all's well with the forests, that the way things are going there'll always be plenty of good wood and that "all we must do to be saved" is to patiently refrain from expanding public action in the restrictive fashion advocated by the Forest Service.

What are the facts?

Outstanding among them these:

On a nation-wide basis, the forests of the United States have been permitted to deteriorate to the point where today they are actually growing only about one-half enough good timber to replace the amount annually cut plus the amount destroyed by fire, insects, disease and the other elements.

In the eastern half of the United States, old-growth timber, the kind from which comes the long, wide, knotless boards, has practically been used up or destroyed; and second-growth trees are too often being cut before they have time to reach full maturity or the lumber-board-producing stage.

Further, probably 80 per cent of all cutting on private lands is being done without design and care as to whether sufficient growth stock is left standing or not.

After destructive logging and burning, 77 million acres that once grew fine merchantable timber are virtually non-productive.

And even in the Pacific Northwest where one-third of the nation's good timber is to be found on 6 per cent of our forest land, many mills are having difficulty in obtaining stumpage, and many forest communities face drastic economic

social readjustment as a result of too rapid timber exploitation.

It is true that many progressive timber owners and operators have put into effect on their own lands good sustained yield operations or other programs for perpetuating the forests, but these give no assurance that the trend of needless destruction and deterioration caused by bad practices on the great body of the forest land will be checked.

These, then, are outstanding facts, picked from the top of the heap, and for purposes of illustration in this article which through the interest and cooperation of THE CARPENTER is to be the first of a series on today's challenging forest and wood-producing situation. But behind the facts thus spotlighted one can readily trace the effects of forest deterioration and destruction in hundreds of once prosperous but now vanished or dying industries, in thousands of lost jobs for artisans and other workers and in the worst rural slums we have.

All this is not new, but to visualize and evaluate it one has to see the forest situation as the national problem that it is—and as a problem which in the long run can be solved only by nation-wide public action. For the average man, engrossed with every day personal affairs, this understanding is not as simple to come by as might seem. For example, so long as there is plenty of lumber to be obtained in the local retail yard, what carpenter has much impulse or inclination to think about where the supply comes from, whether the source of it is being protected, or whether other forest areas are headed toward timber scarcity? All of us are inclined, I think, to see things from the viewpoint of our own immediate interest and activity.

We must be informed and aroused, usually, if we are to see things from the broad viewpoint of public welfare or national good.

But the day is here when the national welfare, to which the personal welfare of each of us is indeed tied, cries out that public action be taken to stop the destruction and deterioration of forests. War-time demands serve to accentuate the wasteful cutting, the undermining of local communities, the eventual decline of local forest industries and the dislocation of workers to which I have alluded.

Furthermore, it is apparent both from the importance of wood in the present world war and from current trends in forest use and misuse that unless corrective action is taken we may sooner or later find ourselves without timber in the sizes, species and quality vital to national security. Meantime, with a declining forest resource we confront the prospect of post-war wood requirements continuing on the wartime level. One reason for this lies in the pent-up demand for forest products necessarily denied during the war. A second is that full post-war employment of American workers will necessitate a flood of industrial activity higher than ever before attained in peacetime.

A nation-wide program, with strong Federal leadership and participation, carefully calculated to meet the many-sided problems inherent in this situation, has been proposed by the U. S. Forest Service. Briefly, this program provides for public control over forest practices on private lands sufficient to check forest destruction and deterioration, for increased public acquisition of idle, cut-over lands, critical watershed areas and other

land where public values are paramount, and also for greater public aid in fire, insect and disease protection, reforestation, education, technical guidance, credit and research. This program is thoroughly democratic in conception and proposed administration. And it gives the only positive assurance that we shall get good cutting practices on the private lands as a whole—the private lands which probably include 90 per cent of the timber-growing capacity and furnish nearly 95 per cent of the lumber supply.

Yet despite the seriousness of the forest situation and the reasonableness of this program certain powerful interests within the lumber industry not only oppose it but even spray the pages of magazines and newspapers with paid advertising misleading the public into the complacent belief that there is no need for concern about the forestry problem in the United States!

As the editor of THE CARPENTER has proposed, let us examine in the next few issues of the magazine all the phases of the forest problem, as it is today, and as it is developing in this crucial period. Then let us examine what the Forest Service program actually is. After all, it is informed and interested groups like the Carpenters and Joiners who must arm themselves with the truth and in the final analysis see that proper action is taken through the democratic process. I welcome this opportunity to set the case for this program—as honestly and as fairly as lies within my power—before the 400,000 readers of THE CARPENTER.

Next Month: The impact of the war upon the forests, and the effect of forest depletion as compared to manpower and equipment shortages.

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Some Federal Functions in Wildlife and Forest Management

address by

Lyle F. Watts, Chief, U. S. Forest Service

Ninth North American Wildlife Conference

Chicago, Ill., April 24, 1944

In these days when so many people are worried about the growth of the Federal Government, conservationists should not allow themselves to be carried away on a tide of generalization. I think it may be safely asserted that conservation progress in the past has come largely through the stimulation of federal leadership. So today I propose to review certain aspects of federal functions in respect to wildlife and forest management.

National Forests have Prominent Place in Federal Wildlife Activities

The Forest Service is concerned in a very large way with virtually all phases of wildlife management and with wildlife as a recreational resource. I will not bother you with statistics, but it is obvious that the 178 million acres of national forest land, distributed among most of the States, must play an exceedingly important part as the home of wildlife.

As I look back over the wildlife activities of the Forest Service during the past 30 years I am struck, as I am sure you are, by the great changes which have come about in many phases of the wildlife situation and in our collective thinking about wildlife as a manageable resource. Many of you remember the days when our chief joint concerns were the setting up of refuges to halt wildlife depletion, the transplanting of wildlife to areas of scarcity, the packing-in of fish to waters now reached much more readily, and the apprehension of game law violators. It probably did not occur to very many of us then that within a few years we would also have to be concerned with the disposal of wildlife surpluses in a good many places and with the introduction of scientific plans of management designed both to produce optimum stocking and to prevent excessive populations. Any man in those early days who would have had the temerity to recommend an open season on does would probably have been laughed out of court.

Some of you may feel that the problems and possibilities in the big game field have been so large as to divert our attention unduly from small game and fur bearers. Although much has been done, I am sure much more could be done to capitalize on the recreational and commercial value of our fur bearers. I am also sure there are lots of places where we would like to see more wild turkeys and more grouse and others of the little fellows in the wildlife family. But you may be assured of the interest and cooperation of the Forest Service in the maintenance of a rich and varied fauna, including song birds and other creatures that delight wildlife enthusiasts.

The habitat for wildlife can often be improved by simple adjustments in timber, grazing or other resource management. For example, commercial cutting, whether for lumber, pulpwood, poles, chemical wood or fuel, can be so planned as to create openings, maintain forest margins, and encourage a varied ground cover of herbs and shrubs. It is not necessary to remove or destroy all the weed trees, snags or den trees that are valuable for wildlife. But to accomplish the desired result, Forest Service men must be

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skilled in game and cover surveys and in analyzing problems of wildlife and wild-land management. The war has unfortunately curtailed the training we are able to give our field force so that wildlife requirements will be properly correlated with other resource management. But we have not lost sight of this need.

To prevent wildlife losses and to avoid damaging over-populations present a difficult problem in management. A desirable balance can only be maintained when protection of wildlife is supplemented by measures to improve the forage crop on the one hand and to utilize the annual increment of wildlife on the other.

It is most stimulating to observe the advances which have been made in recent years. Forward-looking measures such as open seasons on antlerless deer, special hunts, and other measures to control surpluses that are hurtful to wildlife ranges and cause losses by starvation, have been adopted. Many refuges have been abandoned and special wildlife management units have been established in cooperation with the States. I think that federated groups such as are represented here can do nothing more beneficial to the cause of wildlife than to support and stimulate progress in bringing scientific management into the wildlife picture.

Public Works on Forest Lands

I am going to speak now about forest work in post-war planning. Forest rehabilitation and improvement should be undertaken after the war regardless of employment needs. Forest work is intrinsically valuable and it is ideally suited to supplying post-war employment. It is in no sense "made work." The need for it is widely distributed in rural areas. Most of this work can be undertaken with simple hand tools. Its requirements for expensive equipment and special skills on the part of the men are relatively small. Once preliminary surveys and plans are complete forest work can be quickly started. Most forest projects can be prosecuted at a flexible rate according to the amount of labor available. And to a large extent they can be curtailed when necessary without detracting from the value of the work already done.

Forest work has the further advantage of not competing with private enterprise. In fact forest development work that increases forest productivity serves to create or maintain permanent jobs and to sustain local communities. Beyond that, work in the forest will go far to reorient young men to peace-time living. The spiritual value of clean hard work in the forest cannot be lightly passed over, as was learned in CCC days.

I suspect that when forest work is mentioned most laymen will think first of tree planting. How big the job is may be gauged by comparing the 3-1/2 million acres successfully planted by all agencies prior to 1940 with the 77 million acres of forest land probably in need of planting. But planting is by no means all that needs to be done to make our forest lands reasonably productive. Of perhaps equal importance are weeding, thinning, pruning, and other practices to improve the composition and quality of young stands and to increase the rate of growth.

Fire protection is another activity which looms large in popular thought. Protection against fire is, of course, indispensable to forest conservation. It involves a wide variety of projects, such as lookout towers, telephone lines, firebreaks, trails, landing fields, equipment warehouses, water holes, and snag felling. While substantial progress has already been made in this field, much still remains to be done. More than half the forest land in the South, for example, is still without any organized protection at all. Control of injurious insects and disease is another phase of forest protection for which sufficient labor is ordinarily not available.

Various measures for the improvement of forest range must also be considered in a forest work program. Range reseeding is analogous to forest planting. Range fencing, improvement of stock driveways, development of watering places and control of rodents and noxious weeds will all contribute to productivity of forest ranges.

Sportsmen will think naturally of recreational facilities in connection with post-war public works. Fishermen will be especially interested in watershed and stream improvement to control run-off and erosion, equalize streamflow, and conserve an environment favorable for game fish.

The more hardy sportsmen may view with alarm the extension of permanent roads and trails into territory that has previously been reached by only a few people. But the benefit to the thousands who have not been able to enjoy the wildlife resources in these areas must not be overlooked. Construction of many miles of forest roads is necessary to provide access to important bodies of timber, to facilitate sustained-yield management and to increase the efficiency of fire control. New roads should not, of course, encroach upon the 14 million acres that have been set aside in the National Forests as wilderness areas. And the solitude of these areas should also be protected from unnecessary disturbance by air transport.

For a number of years the Forest Service has maintained an inventory of work projects in all these categories. The most urgent projects on the national forests should now be carried to the blueprint stage so that there need be no delay in putting men to work as soon as money becomes available for such purposes.

I do not think it necessary or desirable to restrict public works to federal and other public lands. The Federal Government has already taken a large part in the protection of all forest lands from fire, insects, and disease. Forest planting on farm lands has been subsidized for years and public loans have been made for the construction of private timber processing plants. Indeed, the public interest in productive forest lands, irrespective of ownership, is so great that the scope of public work on private lands might be greatly expanded were it backed by assurance that such lands would be kept reasonably productive.

A Federal Program to Keep Forest Lands Productive

I hope that I have made it clear that permanent forest resource management is both justification and goal for the public works program that I have been discussing. The importance of such work can only be brought into focus if we understand the critical nature of our forest resource situation. Let me remind you of just a few of the most significant facts.

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Three-fourths of the total commercial forest area is east of the Great Plains, yet the volume of sawtimber on it is no greater than in the Douglas-fir region, which has only 6 percent of our commercial forest land. The Nation's need for timber, stimulated to pre-depression levels by the war and likely to remain high in post-war years, is forcing liquidation of western timber at a rate far beyond its sustained-yield capacity. Most of the important timber units in the West face drastic readjustment in the near future. Few of the major operations can maintain present output for more than 30 years.

In the East second-growth timber now bears the brunt of the cutting. Immature timber is being indiscriminately clear-cut. Yet with the exception of a number of well managed or non-operating properties, growing stocks cannot support the current rate of cut and destruction.

We cannot continue indefinitely to cut and destroy almost twice as much sawtimber as we grow each year. Reduction of losses from fire, insects and disease and elimination of unnecessary waste in woods and mill will help. But the ultimate solution should lie in increasing growth rather than reducing consumption. For in a forestry program to provide ample timber for future needs at prices people can afford to pay lies much more than perpetuation of a resource. Ample timber production should play an important part in holding national income at the level of 135 billion dollars which economists tell us will be essential for full employment.

With the bulk of our commercial forest land in private ownership it is obvious that the problem centers in the management of the private lands rather than in the public forests. And in spite of very substantial interest in forestry by a growing number of land owners, the facts remain that destructive cutting is still the general rule on private lands. The trend of forest depletion and deterioration has not been checked.

To my way of thinking there is no question but that the Federal Government must act, and act in a more comprehensive and more aggressive manner than it has in the past. Timber is an essential item in the national economy. The war has shown how indispensable it is for national security. We must begin to realize how vital a part our forests should play in achieving post-war prosperity. Forest productivity cannot safely be left to chance.

I think there is no question of the desirability of having just as much of our forestry job done by private enterprise as is feasible and consistent with long-range public objectives. And I think there is general agreement that it is sound public policy to take steps to reduce the risk, remove handicaps, offer incentives, and otherwise make good forest practice attractive to private owners.

In this connection the Forest Service believes that larger appropriations for cooperative fire protection anticipated from enactment of S. 45 will lead to constructive results. Some progress should also be made under S. 250, a bill recently enacted into law authorizing the pooling of public and adjacent private timber in cooperative sustained-yield units. It hopes that provision for technical assistance to private owners may be broadened and believes there is a place for forest insurance and federal forest loans on terms to facilitate sustained-yield management and to promote the rehabilitation of rundown forest holdings. The research program of the

Forest Service has served to expand the technical basis for good forest management. It has also contributed to technological progress in the utilization of forest products and has attempted to clarify basic economic problems such as those associated with forest taxation.

All this, however, provides no assurance of general adoption of satisfactory forest practices. I am convinced that the trend of forest destruction and deterioration will not be checked until effective public control of cutting and related practices is applied throughout the country. Public regulation is needed, as someone has aptly said, to plug the major hole in a leaky bucket. It is folly to plug other holes and disregard it.

A number of states, notably Maryland, Massachusetts, Minnesota, Oregon, New Mexico, and Idaho have already recognized this need by enacting legislation dealing with regulation of cutting practices. It is quite appropriate for the States to shoulder the responsibility for forest regulation within their borders but such regulation should as a minimum comply with standards set up by federal legislation. Because the Federal Government has a responsibility to the people as a whole that cannot be denied, I believe it should undertake the job of regulation in states that fail to enact or satisfactorily administer legislation meeting established federal standards.

Finally, I want to be sure that while emphasizing the desirability of making good forest practice attractive to private owners and while directing attention to the necessity for public regulation to keep forest lands reasonably productive, I do not cause you to lose sight of the importance of extending the acreage of forest land in public ownership. Areas of special recreational value make up part of the acreage that should be acquired by the public. A still larger acreage should be acquired to insure proper management where public interest in watershed protection or community stability is paramount. Finally, public ownership is desirable for forest lands which, because of inherently low productivity or past abuse, will not be managed for continuous production in private hands.

There is a large opportunity for the state and community to function in the acquisition of forest lands. Indeed it is believed that some 50 million acres may eventually be added to state and community forests. But, with some 36 million acres of private land to be acquired within the boundaries of established National Forests and purchase units, and with consideration of permanent public interest and welfare indicating national forest status for more than 50 million additional acres outside of existing units, it seems inevitable that the major responsibility lies with the Federal Government.

It is true that additional federal acquisition is viewed with apprehension in some forested states because of anticipated impact upon the tax income of local governments. But it should be borne in mind that many counties from which the standing timber is being destructively cut face drastic readjustment of their tax base in any event. Furthermore, a more adequate plan for financial contributions to local governments as recommended by the Department of Agriculture and the Federal Real Estate Board, and now embodied in S. 406, would greatly improve the situation.

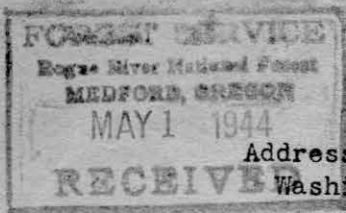
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In closing I would like to summarize very briefly the impacts upon wildlife resources of a comprehensive forest program such as I have sketched:

Adequate forest protection maintains a favorable habitat and is as indispensable for wildlife conservation as it is in forestry. Good forest practices benefit wildlife by providing varied cover and diversity of food. Public works will speed up forest development that will for the most part be beneficial to wildlife or helpful to users of wildlife resources. Public acquisition increases the acreage of forest land open to the public for use and enjoyment of wildlife.

Sportsmen and conservationists may take satisfaction in the husbandry of wildlife on the National Forests where multiple purpose management, recognizing the needs of wildlife, is being successfully applied. But because destructive cutting is still so prevalent on private forest lands and because protection in some localities is still so inadequate, they should be concerned about what is happening outside of the public forests. They should be among the first to recognize the responsibility of the Federal Government in measures to bring about better forest management. And they may properly expect effective federal leadership in a comprehensive forest conservation program.

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Supervisor	Adm. Asst.
Asst. Supr.	Accounts
Supt. of Const.	Gen. Clerical
	Warehouse

"REGULATION IS NO DILEMMA"
 Address by Lyle F. Watts, Chief, U. S. Forest Service
 Washington Section, Society of American Foresters
 April 14, 1944 Sent Dist Ranger

The topic I have chosen for my talk tonight, namely, "Regulation is No Dilemma", is the title of a 2-page editorial that appeared in the February number of "Fortune" magazine. I do this because I want to direct your attention to what some business leaders are thinking these days and how forestry fits into the general trend of economic and political development.

Forestry is just one of the many aspects of national life. Its form and color are not independent of what is happening in other fields of endeavor. Its progress will be influenced in no small degree by the main pattern of political thought and social evolution.

In the depression years of the early '30's the government, at the request of business, took a larger part in the economic life of the country than ever before, in order to keep business alive. Then came the war and again the government had to step into the picture but this time to help business attain the fantastic output demanded by war. In the past four years, under far-reaching and ever-tightening government controls, we have seen our gross national product doubled. And we have learned something of the total output of goods and services that must be maintained if we are to have full employment after the war.

Inevitably the dependence of our economy upon government action in boom as well as panic has led business men to become concerned about the status of free enterprise which has been so generally looked upon as the very corner stone of our American way of life. The relations of government to business dominates the thinking of the business world today.

Currently a wave of more conservative political thinking appears to be sweeping the country. Businessmen are more conscious than ever of the immanence of government. A reaction against further extension of federal authority and against continuation of present government controls is almost inevitable. But a number of straws have appeared in the wind in recent months to indicate that some leaders of the business world are viewing the problem more fundamentally. Beneath the wave of reaction a ground swell of social consciousness is making itself felt.

Eric Johnston, president of the United States Chamber of Commerce, for example, in a recent speech that attracted nation-wide attention, took both business and labor to task for practices not in the public interest and warned business not to make it uncomfortable for labor in the doghouse to which he felt it was now being consigned.

You will also recall the wide publicity given to the speech by Charles E. Wilson, executive vice-chairman of the War Production Board and formerly president of the General Electric Company, at the National Association of Manufacturers last December. The feature of that speech that received most comment was his concern lest "a right-wing reaction may draw some sections of capital so far away from our traditions as to imperil the entire structure of America as we know it."

"This above all," he said, "is a time when the industrial leaders of America owe it to their country and to themselves to exercise temperate judgment -- to practice the arts of compromise -- to avoid the temptation of sacrificing enduring

(Over)

values for temporary gains and to withhold encouragement from dangerous men who preach disunity."

In the light of such statements, the persistent sounding of the virtues of "free enterprise" through press, radio and rostrum without defining the term, appear to be symptomatic of the defensive position of those who blindly resist the restraints that are necessary in the protection of the public interest. Indeed, the chairman of the committee on Reconstruction and Re-establishment in the Canadian parliament recently expressed the opinion that "free enterprise" may not survive this war. And the Windsor (Ontario) Star commented editorially that there would be little hope for the country if it did in the form that many people interpret it. This editorial continues, "Enterprise must make up its mind that it must conform to a planned program which takes into account the proper use of our resources."

The same opinion was expressed with equal force last August by Walter Lippman, a columnist who, I think, is not usually considered an exponent of revolutionary doctrine. Lippman said: ".....One thing is certain: it is that free enterprise cannot be maintained in the twentieth century under nineteenth century laissez-faire. Free enterprise requires government action to maintain it by regulating it and also to compensate its tendency to booms and crashes...."

But perhaps more revealing than these isolated expressions of opinion is the conclusion reached by the editors of "Fortune", the magazine which, of all others, interprets the philosophy and ideals of big business. In a study of the transition from war to full employment in peace, published in the January number, it is declared that "above a certain level, the national output we can have is a tight function of the control we are willing to take." Pointing out that wartime controls have been accepted by business because they paid off in production, Fortune considers the possibility that full employment after the war may not be achieved without retaining much of the wartime regulation. Here then we appear to be on the horns of a dilemma. Government regulation serves to maintain the high level of production our economy requires. Yet we shrink from this regulation and exalt a tradition of freedom of enterprise. Can we have real prosperity and retain our individualism? Or, to use Fortune's idiom, "in principle Americans have a neat choice here between the spiritual values of fewer regulations and the material values of more potatoes." When Fortune declares that the people will repeal wartime regulation without counting the cost, it by no means concludes that government regulation is not needed. Indeed it is made clear that a decision as to the amount and kind of public regulation is inescapable. But believing that our economy can be so planned that we can have both prosperity and individualism, the editorial headlines "Regulation is no Dilemma."

This editorial is so pertinent to current discussion of the forest program for the Nation that I want to go into it in considerable detail. I know of no more effective way of enlisting support for forestry measures needed to promote the general welfare. Fortune has expounded in generalized terms a philosophy with which I believe the plan of action I have advocated for forestry is entirely in harmony. This philosophy may not satisfy the most radical social thinkers in our profession but it will bring forth a sympathetic response in all liberals who believe that private enterprise is an indispensable part of our American tradition. And it should likewise be acceptable to the more conservative. Certainly all business men who heed the warnings sounded by Charles Wilson and Eric Johnston will not lightly disregard it.

Who are the Pessimists?

The first few paragraphs of the Fortune editorial are particularly gratifying to those of us who have been held up to scorn as unregenerate pessimists because we are concerned about forest depletion and believe that more aggressive public action, including regulation of cutting practices on private land, is needed. Fortune starts out with the declaration "In the Anglo-American tradition, to establish a reputation for significant comment on public affairs a man must usually be a profound pessimist." It then proceeds to brand this as a "misanthropic and jaundiced view."

But in respect to public regulation we find that the pessimists Fortune takes to task are those who fear it! "On the matter of government regulation of business in the modern state," the editorial says, "tradition requires that one really excel himself in his pessimism. It is not enough merely to view the future with alarm. One must exacerbate his alarm, transform it into a strife-torn monster, dismiss the whole thing as utterly impossible, and then warn darkly that it is probably inevitable." That has a familiar ring to me after reading letters I receive and editorials in the press, trade journals and even forestry publications commenting on proposals for federal participation in the regulation of forest practices. In contrast to such ingrained pessimism the editorial declares "One can as well reach a less dramatic but more rational conclusion that the problem posed by public regulation of business is not so difficult." The necessary controls, Fortune claims, "need be neither so complex nor so inhibiting as many worried men contend or fear."

The Need for Public Regulation

According to Fortune, "The purpose of government regulation is to keep the behavior of one individual from damaging too severely the welfare of other individuals." One way to get this result is to force the individual into the proper groove by rules and regulations. Another is to make the right behavior more attractive to him than any other. Here Fortune says, "We plump for the latter. So will most people." And here you may say the editorial takes issue with the program of the Forest Service which includes regulation as one of three indispensable elements. But wait and see. Remember that the editorial is based on the conviction that some regulation is needed. And recall the audience to which it is addressed.

The January article had suggested as a guiding principle that we "have the kind of public regulation" (parenthetically explaining that "management" might be the better word) "that makes it unqualifiedly attractive for men and women by their own decision to work, invest, invent, and plan." Expanding this thought the February editorial continues, "It does require positive action by the Government to make socially harmonious behavior universally attractive or nearly so. The notion that there is a complete and universal coordination of individual and social aims is more often asserted than seriously argued. The fact is that the individual, left to his own devices, will in some circumstances do damage to his fellow citizens. The government must intervene on behalf of the community as a whole."

Fortune cites the situation likely to arise after the war, when fear of a slump may lead to a lag in investment, as a case where the government must intervene. In this situation the perfectly natural individual behavior of sitting tight

when investment prospect seems poor, runs contrary to the advantage of the community. Under such circumstances the government may need to underwrite the risk. Carrying further the principle of using inducements to right behavior as far as possible, Fortune points out that the government must underwrite a high level of prosperity by a vigorous fiscal policy using public expenditures to support the economy at the proper times.

Properly planned inducements are characterized as "the essential regulatory system of a free society", but Fortune goes on to say "there are some kinds of individual behavior that cannot be so obtained. Obviously the conventional moralities must be enforced on all by law." In the subsequent discussion of what should be included in this category, attention is confined to problems of business management rather than issues like forest conservation in which the public interest is more clearly established.

In drawing its picture Fortune emphasizes the desirability of public policy that will avoid detailed specifications for behavior and leave the individual free to exercise ingenuity, energy and resourcefulness. In the words of the editorial, "The government, if it must, sets the stage for individual initiative. The performance is the familiar melodrama and comedy of the market."

The Forest Program

I do not need to take much time to point out the similarities between Fortune's concept of public regulation and the program advocated by the Forest Service. While Fortune uses a figure about "setting the stage" for individual action, we have talk about "rules for the game." As one element in "underwriting a high level of prosperity" we insist that all forest lands be kept reasonably productive. And just as Fortune would invoke "orders to desist from wrong behavior" only where properly planned inducements do not get results, the restraints we commonly refer to as "regulation of forest practices" are not the whole story.

The Forest Service has not modified its long standing policy of making good forest practice attractive to private owners by every legitimate form of inducement. You are all familiar with the Clarke-McNary program of cooperation with the States in forest fire protection and our desire to expand it. You realize that the Forest Service has played a leading part in all phases of forest research. You know that the Norris-Doxey program involves direct help in woodland management and marketing to farmers and that we have also been exploring the opportunity for forest cooperatives. Our program seeks to induce large owners to adopt good forest practice through cooperative sustained-yield units, through expanding the scope of the extension service, through loans on terms suited to the forestry business, and through forest insurance.

The indirect inducements implicit in national fiscal policy have direct counterparts in our program to acquire forest lands which are unsuited to private ownership or otherwise needed for public purposes. Fiscal policy can also function in the field of forestry through an important and flexible program of public works for the protection and improvement of forest lands. Such work need not be restricted to lands in public ownership. But the extent of such work on private land should be limited unless we have assurance that the land benefited will thereafter be properly managed. I believe that forest resource development should become a major field for compensatory spending in the controlled fiscal policy which seems to be making so much headway in contemporary economic discussion.

Our forest program cannot be discussed as a thing apart from the world at large. It is inextricably involved in the general tide of economic thinking. As we have come to realize how indispensable wood is for military security so we must recognize how vital a part of the post-war economy our forest program is destined to become. Will the forestry profession see this vision and take a position of national leadership? Or will it float passively along, going forward only as it is carried by the tide of public opinion that is flooding in from other fields?

Forestry is one field where regulation is clearly necessary to maintain prosperity. But the essential controls can be established without abandoning private enterprise or sacrificing individual initiative.

The kind of forest policy advocated by the Forest Service, like the regulation described by Fortune, "makes unnecessary a master plan specifying the behavior of the individual but assures the welfare of all who are willing workers." And, as Fortune says, it "isn't easy to come by. Those who abhor all government intervention and many who preach the orthodoxy of economic freedom aren't describing it.....At the other extreme those Americans who presume to make a plan for everyone and everything" will not be satisfied with it either. But I think we may conclude that in forestry "public regulation is no dilemma."

So I would like to close on the same note as the Fortune editorial when it says, "Can we not wisely ignore the horror stories about how difficult and violently controversial the public regulation of enterprise that will replace our wartime controls must be? It will be a complex but wholly comprehensible and rather interesting task."

In forestry can we not wisely ignore horror stories such as those about "the federal government reaching its long arm into every logging camp and woodlot", to quote a recent editorial in "American Forests"?

And while working to expand the inducements to private forest practice and to extend the acreage in public ownership, can we not ignore those who foresee disaster in public regulation and get down to the interesting and challenging task of adding the modern machinery of regulation to our otherwise inadequate equipment for forestry progress?

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I
INFORMATION - Rogue River
Speeches of Chief

Medford, Oregon

May 2, 1944

To: Files

Address by Lyle F. Watts entitled "Regulation is No Dilemma"

this date forwarded to the following:

A.S. Cummins, Calif. Oreg. Power Co., Medford
Eugene Thorndike, First National Bank, Medford
Geo. Frey, U. S. National Bank
Frank Hull, Mgr. Chamber of Commerce

The above address was delivered by Mr. Watts before the Society
of American Foresters, Washington, D. C.

S

Federal Participation in Measures for Better Forest Practices.

Address by

Lyle F. Watts, Chief, Forest Service
Maryland Conservation Forum, Baltimore, Md.,
April 12, 1944

Maryland Steps Forward in Forestry

In putting its Forest Conservancy Districts Act of 1943 into effect, Maryland is taking a long step forward in forestry. Its progress will be watched closely by other states, by the forestry profession, and by the forest products industries throughout the Nation.

Maryland's law is noteworthy in that it recognizes the need for more positive action to assure better forest practices on private lands, but does not spell out the silvicultural details. It provides for the setting up of district forestry boards and for local participation in promulgation of rules of forest practice which are to have the force of law. This is in line with recommendations made by the Forest Service to the Joint Congressional Committee on Forestry in 1938. While the wording of the Maryland law is somewhat indirect, public regulation is clearly involved. But let's not be carried away by any emotional reaction against regulation as an evil to be resisted.

Under the law, every person owning 3 acres or more of forest land is required to arrange for restocking of his land after cutting, to leave conditions favorable for regrowth, to refrain from cutting immature timber except for stand improvement and to maintain adequate growing stock. Such regulation is not regimentation. It leaves wide latitude for individual initiative. It does not involve taking over any private business. It does no more than establish safeguards to the public interest in proper management of a basic natural resource.

Such a law brings to bear upon forestry a truism enunciated by George Washington in a letter to John Jay in 1782 when he wrote: "Experience has taught us that men will not adopt and carry into execution measures the best calculated for their own good without the intervention of a coercive power." The pertinence of this statement to our discussion is apparent when we consider that in Maryland, under the cooperative plan of offering technical services to private owners that has been in operation for 30 years, only 5 percent of the woodland has been examined as the basis for management plans and only 1 percent has actually been marked for cutting to meet forestry objectives.

Our democracy has not found it inconsistent with basic principles of freedom to exercise regulatory authority in other fields. Compulsory education for our youth, for example, has long been recognized as basic to progress in democratic government. Your state forester has emphasized that application of rules of forest practice under the new law will be primarily an educational job. And I think the real significance of public regulation of forest practices is clarified when it is viewed as compulsory education in forestry, -- education that holds promise of raising the general level of voluntary and intelligent individual action in forest management to a higher point than actually required by the law.

(over)

In the light of widespread concern about the extension of federal activities in the states, I think it is significant that the framers of the Maryland Forest Conservancy Districts Act evidently anticipated and desired federal participation. In fact, it is the duty of the district forestry boards to secure the cooperation and assistance of the United States and any of its agencies as well as the agencies of the State. It is therefore appropriate to discuss what the Federal Government is prepared to do and what the Forest Service thinks it should do to obtain better forest practices on private forest lands throughout the country.

Federal Government Aims to Help Private Owners.

At the outset I want to make it perfectly clear that the Department of Agriculture believes that it is sound public policy to make good forest practice attractive to private owners. A major objective of the Department's forest program is to give private owners and operators every reasonable encouragement and aid.

Of fundamental importance in this connection is the comprehensive research at the regional forest experiment stations and the Forest Products Laboratory. For more than 20 years the Forest Service has been building up knowledge of the growth habits of our principal commercial species. This research has provided the essential technical background for methods of cutting that will perpetuate the forest. It has shown the economic advantages of selective cutting. Research at the Forest Products Laboratory opens up new fields in pulp and paper making, wood plastics, and other forms of chemical utilization. It helps wood to compete in older markets by improving its serviceability through timber engineering, seasoning, conditioning and preservation. Research requires long years of persistent effort. It is indispensable to progress in better forest management. It is an invaluable service that private owners as a rule cannot provide for themselves.

The Federal Government is participating in another basic and indispensable service to all forest land owners through cooperative fire protection. In the last fiscal year, with war emergency funds supplementing regular Clarke-McNary Act allotments, the Federal Government contributed almost \$200,000 of the \$442,000 expended for forest fire protection in Maryland. Federal cooperation with the States will undoubtedly be substantially increased if S. 45, a bill that passed the Senate last July and is now before the House, is finally enacted.

It is generally recognized that the public interest in adequate protection from fire transcends individual property rights. Forest land owners have long accepted the restrictions imposed by the forest fire laws of the several states. It is worth noting in passing that the restrictions on private owners contemplated in the regulation of cutting practices do not differ in principle from those imposed for fire protection.

In service to individual owners the Federal Government functions through the State in the production and distribution of forest planting stock, in the educational program of the Extension Service, in woodland demonstration projects, and in farm forest marketing projects. The service provided in the marketing projects during the past 2 years is proving particularly effective. The project foresters, working within the limits of an area with which they can become personally familiar, are not only assisting owners in selling their timber crops advantageously, but also are demonstrating methods of cutting which maintain productive growing stock and give stability to their forestry operations. It is probable that these project foresters will play a large part in the application of forest practice rules under the Forest Conservancy District Act, since this act calls for the employ-

ment of a forester in each district to advise owners with regard to forest problems.

The Federal Government is giving aid directly to individuals through the Federal Land Banks, through F. S. A. loans and advice, through the complete farm plans furnished by the Soil Conservation Service, and through woodland demonstration projects. Beyond this the Forest Service is prepared to assist the non-farm and industrial owners in the preparation of plans for the management of their forest properties. Furthermore, as a wartime measure, the Forest Service has a number of men working in counties not served by farm forest marketing projects, to stimulate and facilitate the output of lumber and other forest products.

The legislative program advocated by the Forest Service would further encourage good forest management by provision for long-time forest loans and by providing forest insurance at reasonable rates.

In the face of all these aids to private owners it is difficult to rationalize the fears of those who charge that because the Forest Service has advocated public regulation of forest practices it aims to undermine private forest enterprise. Actually the Forest Service aims to put private forest enterprise on a much sounder and more permanent foundation.

It is encouraging to learn that in Maryland the effort to establish legal standards of forest practice is viewed as an extension of public guidance rather than as an encroachment on individual freedom.

Public Interest in Forest Practices is Nation-wide

George Washington emphasized the necessity for coercive action to get people to adopt measures for their own good. It is important to recognize also that the notion that individual and social aims are always in accord is open to question. Too often the individual is motivated by desire for immediate gain which in the final analysis proves to be at the expense of the community. Exploitation of soil and forest is patently in this category. So, the government must intervene and restrain the individual on behalf of the community.

In this connection I should like to quote from "The Wind Blew from the East" by Ferner Nuhn:

"Title to a certain piece of earth is one of our more or less useless human fictionsThe only true title to things is use, and good use in the long run is good title, while bad use is bad title. We will soon lose what we cannot use well, no matter how sure we are that we own it."

Applying this thought to our forest problem I want to point out that no owner making good use of his land as judged by criteria of good forest practice need feel any encroachment on his title through the type of public regulation proposed by the Forest Service. But I believe that such regulation is a necessity because of widespread and traditional misuse of so much private forest land.

To reiterate oft-quoted facts that must be familiar to most of you: One sixth of our commercial forest land, some 77 million acres, is essentially unproduc-

tive as a result of destructive cutting and fire. A large part of the remaining area is only partially productive. The stand of sawtimber in the United States appears to have been reduced 40 percent in 30 years prior to the war. Depletion of basic growing stocks has not yet been checked on more than a small fraction of the privately owned forest area. Although we have enough forest land to produce timber for all foreseeable needs, if it is properly managed, we will probably have to double the present rate of growth in order to meet future requirements. For annual sawtimber growth is little more than half of wartime drain and our estimates indicate that total consumption in the years ahead is likely to be even higher than at present if timber is available at prices that people can afford to pay.

Proper forest land use is a matter of national significance with which the Federal Government must be concerned because timber is such an important item in the national economy. The war has shown how vital an abundant timber supply is for national security. Internally, people in the industrial sections of the East and in the sparsely wooded or treeless agricultural areas of the Middle West and Plains States have an interest in the productivity of the major timber-producing States of the South and the far West. The Federal Government cannot evade responsibility for protecting their interests in the permanent timber supply.

And the watersheds of great streams which provide hydroelectric power to turn the wheels of industry or water to irrigate agricultural crops do not conform to state lines. Protection of the forests from destructive cutting is as important as protection from fire. And it is just as important for flood control and the regulation of streamflow as it is for timber production.

This, in brief and only in part, is the basis for my conclusion that the Federal Government must take active leadership in the nation-wide application of measures that will prevent forest destruction, check further forest deterioration and keep forest lands reasonably productive.

Federal Standards of Forest Practice

What I wish to make clear at this point is that I do not believe our national forest problem can be successfully met on the basis of state legislation alone. State programs such as that upon which Maryland has embarked, do not eliminate the need for federal legislation.

In order to assure nation-wide adherence to satisfactory levels of forest practices, the standards for regulation should be established by federal law. This does not mean that the States could not administer forest regulation within their borders in accordance with their own procedures and institutions. But it would mean that the local rules of practice adopted by the States should not fall below the standards set up in the federal law. And the Department of Agriculture should have authority to act directly in any State which failed to enact suitable legislation and enforce adequate rules of practice.

State action in this field should not be delayed by the fact that the federal legislation does not yet exist. Inauguration of a regulatory system takes time. Development of adequate rules of forest practice to meet various local conditions calls for a high level of group thinking. It will involve a lot of intensive educational effort. States like Maryland that push forward on their own initiative will have a distinct advantage over those that hold off. It may not

be possible at the outset to set forest practice at the level which may ultimately be desirable. But it is to be expected that experience will lead to a general improvement in forest operations and a gradual raising of the levels of required practice. Thus States which inaugurate regulation at a very low level may need to strengthen their standards when a federal system comes into operation, while States which have attained high standards may find no amendment necessary. The Maryland law appears to provide a framework sufficiently broad to function effectively within the pattern suggested. Final judgment as to the adequacy of the Maryland program must, of course, wait upon the formulation and application of local rules of practice by the District Forestry Boards.

As a guide to thinking and action in the States, it is appropriate to outline in some detail what the Forest Service thinks the federal standards should require. In the first place rules of forest practice should include provision for protecting forest lands against fire. The responsibility of owners and operators in connection with logging, and in disposal of inflammable material resulting from logging operations should be defined. The rules should also provide for protection from insects and disease, including such measures as the disposal of slash, unpeeled logs, or diseased and insect-infested trees when necessary and reasonable. Finally the rules should safeguard the proper use of forest lands and prevent improper exploitation by

- (a) Providing for adequate restocking after cutting with trees of desirable species and form;
- (b) Prohibiting premature or wasteful cutting in young stands;
- (c) Providing for reserving a sufficient growing stock of desirable trees to keep the lands reasonably productive;
- (d) Preventing avoidable damage to uncut trees or young growth;
- (e) Regulating grazing to prevent damage to tree growth and protect the watershed; and
- (f) Prohibiting clear cutting, or limiting the size of a tract that may be clear cut, except where clear cutting is silviculturally desirable or the land is to be put to some other suitable use.

The intent of these standards is clearly to maintain a growing stock of trees of desirable species and of a size larger than seedlings and small saplings wherever practicable. The level of required silvicultural practices would usually fall somewhat below that attained on the national forests and the more intensively managed private lands. The standards would not of themselves assure sustained-yield management.

In preparing rules of forest practice, forest lands within each administrative area should be classified with reference to such factors as forest type and conditions, topography, prevalence of insects or diseases or other relevant factors. The rules should apply uniformly to all lands within each such class. The several provisions that I have mentioned would be applied to each class so far as they are applicable and necessary, but the rules need not be restricted to these specific provisions. Insofar as practical, rules of practice should be couched in descriptive terms readily understood by landowners. To provide flex-

ibility in the application of good practices to a particular property opportunity should be given for any owner to operate under a working plan for his own property that would not fall below the level of the prescribed rules for the classes and conditions involved.

It is my firm belief that state and Federal Governments must collaborate in a plan of public regulation such as I have outlined. Not only should the States that undertake to administer such forest regulation themselves expect financial aid from the Federal Government, but the Federal Government should expect cooperation rather than opposition from the States in cases where it becomes necessary for it to take over the job or where the State prefers to have it do so.

I am not seriously concerned about the problem of enforcement. Of course, it will take money -- and your state forestry department is seriously handicapped by lack of an appropriation with which to work right now. But administration of the regulation I envisage in an atmosphere of helpful official guidance and assistance should have far-reaching educational effects. It is probable and indeed desirable that most owners will soon be led to give their lands more intensive management than will be required by the law. Such an outcome will simplify the task of enforcement, but will by no means eliminate the need for having standards of forest practice established by law.

Forestry Means Human Welfare

In closing I want to congratulate the people of Maryland on the constructive manner in which its new plan to improve private forest practices is being worked out. And I want to assure you that we in the Forest Service want to do all we can to help put your program on a truly satisfactory basis.

For success in this program means more than the conservation of a basic resource. It means jobs for workers, opportunities for enterprise, and lifeblood for rural communities which contribute so much to our American way of life.

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FOREST GROWTH AND POST-WAR NEEDS

Broadcast by Lyle F. Watts, Chief of the Forest Service, and Wallace L. Kadderly, Chief of Radio Service, in the Department of Agriculture's portion of the National Farm and Home Hour, Thursday, March 2, 1944 over stations associated with the Blue Network.

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BRADLEY (IN CHICAGO):....Neighbors, remember the old saw...how much wood would a woodchuck chuck if a woodchuck could chuck wood?...Well, nowadays, a lot of folks...human woodchucks you might call 'em...are busy as old Harry in our forests and woodlands getting out wood for the forces on the fighting fronts...It makes a feller wonder just what the timber situation is...and what it's likely to be after the war..And that's where Wallace Kadderly and our Forest Service guest for today come in...right now...How about it, Wallace?

SWITCH TO WASHINGTON

KADDERLY: This war has taught us many lessons...One of the most important is the solid fact that...for continued well-being and security...a nation needs a steady and plentiful supply of timber...With us today is Lyle Watts, Chief of the Forest Service. Mr. Watts - I hope - will throw some light on the whole picture of timber production for war...and for the peace to follow...Lyle..is it true to say that...right now...we're using up our forests and woodlands faster than ever before in our history?

WATTS: No, Wallace. Total consumption so far has been no greater than in some earlier years when timber was more plentiful.

KADDERLY: How do you account for that? It's common knowledge that forest products are now listed among the most critical war materials...and I've naturally assumed that more timber cutting than ever has been going on.

WATTS: Manpower and equipment...we're short of both. But...behind this... especially in the East...is the depletion of our forest resources. Our biggest lag in timber production is in the East with thousands of small mills standing idle.

KADDERLY: We've come to really depend on the small mills then..

WATTS: Yes, to a substantial degree...As the old growth timber disappears the small mills come more and more into the picture. And this shows how dependent...in turn..we have become upon the timber that is growing today rather than the old stuff..the virgin timber....From now on, we've got to rely more and more on the annual timber growth to keep our mills operating and our people supplied with forest products.

KADDERLY: From now on, you say..Well, what is the outlook? Is timber being grown in our forests and woodlands today as fast as it's being used up?

(Over)

- WATTS: By no means...And for the future..well, we figure that our present sawtimber growth is not much more than half of what our requirements will be in the post-war period.
- KADDERLY: The pressure on our forests won't stop with the war then.
- WATTS: No, we look for continued high demand of forest products in the years ahead.
- KADDERLY: New homes..I suppose..will be taking a lot of lumber.
- WATTS: That's one of the most important items...Some folks look for one million new homes to be built every year for 10 years after the war.
- KADDERLY: Whew! That will take a lot of lumber, won't it?
- WATTS: At least 8 billion board feet a year during the first five years.. Then, there's the building situation on the farms.
- KADDERLY: Yes, I know that maintenance and construction of farm buildings are also behind.
- WATTS: Another 7 billion board feet a year, we figure.
- KADDERLY: Military needs...though..will be cut down.
- WATTS: Yes. But even so..we believe that total lumber consumption will average about 35 billion board feet a year during the immediate post-war period. And that's not the whole story, Wallace.
- KADDERLY: Let's have it.
- WATTS: Lumber normally amounts to only about three-fifths of the total sawtimber drain...Fire..disease..insects...they still destroy a lot of timber every year. Then too, products like piling, pulpwood, and even fuelwood also involve cutting of trees of sawtimber size... Everything considered, we believe the total post-war sawtimber drain may well average 60 billion board feet or more...and that doesn't allow for the new uses of wood opening up through chemistry. Nor for reconstruction abroad.
- KADDERLY: And yet..you say our forests are only growing at a little more than half that rate right now..That's not a very bright picture, Lyle.
- WATTS: The forest picture can be changed, Wallace...It needs some doing but it can be done.
- KADDERLY: How?...How will America go about balancing her forest growth with the forest drain?

- WATTS: It's more than balancing growth and drain...We ought to build our forest growth up to a point even greater than our present consumption. Take the South for example...We're looking to the South to produce a full half of the Nation's future timber requirements. Merely balancing drain and growth won't satisfy that responsibility, Wallace...The South has got to double her present tree growth to do the job. And for the Nation as a whole..well..we have enough forest land to produce enough timber for all future needs..with proper management.
- KADDERLY: Proper forest management...That would mean better forest protection..reducing the losses from fire...insects...disease..This would help.
- WATTS: Yes...and so would eliminating waste in the woods and mills..This is all part of our Forest Service program.
- KADDERLY: I know the program, Lyle....It includes regulation of cutting and other forest practices on private land...with the States carrying the ball if they will and Uncle Sam stepping in to do the job if the States fall down or drop the ball...
- WATTS: That's right...The main idea is to establish nation-wide rules of the game to stop further destruction in our forests.
- KADDERLY: Let's see now..The Forest Service program also provides for State and Federal purchase and ownership of tax-delinquent...and other forest lands that otherwise will not be kept productive.
- WATTS: Yes...denuded or cut-over lands that private owners cannot be expected to hold because the prospect of income is so poor. Also watershed lands that might not be adequately protected unless managed as public forests.
- KADDERLY: Another point of your program...I know..deals with post-war forest employment.
- WATTS: That's a story in itself and a very important one....
- KADDERLY: At any rate...the whole program is designed to increase forest growth throughout the country.
- WATTS: Yes...and putting it most simply...to provide ample timber for future needs at prices people can afford to pay.
- KADDERLY: Ample timber at prices people can afford to pay..Sounds mighty worth-while.

WATTS: Our forest program, Wallace, concerns people as well as trees. It means permanence for that very important segment of private enterprise..the lumber and wood-working industries. It means jobs and payrolls in rural areas, homes for workers, prosperous communities and outdoor recreation for millions of our fellow-Americans... All this is related to forest productivity and how soon we get to work building it up....

KADDERLY: You have given us a look ahead...a real post-war goal, if I'm any judge...And to use your own expression...solving our forest problem needs some doing, maybe...but it can be done.

(CLOSING CUE) Curley, how about some music?

SWITCH TO CHICAGO

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COLUMBIA'S COUNTRY JOURNAL

2/5/44 - 1:30 to 2:00 P. M. EWT

WTOP, 8th Floor, Earle Bldg., Washington, D. C.

Interview with Lyle F. Watts, Chief, Forest Service on

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A FOREST PROGRAM FOR THE NATION

WORCESTER: The Forest Service of the Department of Agriculture bears a great public responsibility these days...the responsibility of seeing to it that our forest resources contribute to a better livelihood for all of us....On today's Country Journal I've asked Lyle F. Watts, Chief of the Forest Service, to join me in a discussion of the forest situation...what it is...what can be done about it...Mr. Watts... first of all...what is the situation?

WATTS: You're certainly a direct fellow, Chuck, but that's fine. We shouldn't mince words about this. So I'll be direct, too...The situation is not satisfactory. Our forests are not growing as fast as they are being cut...much of the timber we do grow is of inferior quality...A lot of good forest land lies virtually idle...A little more than half of the forest land in the South...our greatest forest region...is still without organized fire protection. That, briefly, is the overall forest situation.

WORCESTER: What of the National and State Forests? Won't they provide our future needs?

WATTS: They're being drawn upon to a larger extent than ever before...to meet war-time demands. But they're actually only a small part of the picture. Three-quarters of our commercial forest land is privately owned. These private lands today furnish 90 to 95 percent of the cut of all forest products. They represent nearly two-thirds of our critical watershed area and provide other important services.

WORCESTER: And that's why...I take it...the public has such a vital interest in how the private lands are managed.

WATTS: Exactly.

WORCESTER: Destructive cutting is still pretty widespread then?

WATTS: Well...unfortunately, yes...but first let me give credit to the growing number of progressive forest owners in every region who use good practices...and are doing an excellent job in keeping their lands productive...They're demonstrating that such methods are practicable...However, they are still in the minority. Before the war, we estimated that four-fifths of the cutting on private land was without conscious regard to future crops.

WORCESTER: Do you think that's generally known?

WATTS: Chuck...Too many folks haven't cared...haven't realized...or, I'm sorry to say...have been misinformed. It is important that the public understand the situation.

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- WORCESTER: Well, Mr. Watts...I know that the Forest Service has been working for some time on a program to improve the situation. What is that program?
- WATTS: Our Forest Program has three major points...The simplest way to explain it would be to compare the program to a three-legged stool. Because... just like a three-legged stool...our forest program requires all three of its major points to get firm support...to work effectively...to keep from falling down.
- WORCESTER: Okay...What's the first leg of the stool?
- WATTS: Public aid to private owners....Expansion of public assistance in fire protection...in control of insects and disease...in woods management... in research...With the ultimate goal, better and more forest products.. nation-wide.
- WORCESTER: I presume the trend toward more forest cooperatives fits in there, does it?
- WATTS: That's part of the leg, too...Assistance to farmers and other small owners in building up cooperatives...and in securing necessary credit facilities. We contemplate doing everything reasonable to help and encourage private owners...large and small...to make their forests more productive.
- WORCESTER: That brings us to the second leg of our stool.
- WATTS: Let's call this second leg...Public Ownership...There are still millions of acres of forest lands...unsuited for private ownership... that should be taken in hand by the Federal, State and local governments.
- WORCESTER: What do you mean by lands unsuited for private ownership?
- WATTS: For example...lands that are so poor or run down that they offer no prospect of income for a long time to come...lands that are often tax delinquent. Private individuals cannot be expected to put such lands back into production...Then there are critical watershed or other lands where public values outweigh private interests. These are lands the public should own and manage.
- WORCESTER: And now...what about the third leg?
- WATTS: The third point of our Forest Program has been a source of great conflict...Public Regulation...the regulation of cutting and other forest practices on private lands.
- WORCESTER: Who would do the regulating? The Federal Government, or the States?
- WATTS: To assure nation-wide application, basic federal legislation should set up broad standards of forest practice...Standards that would prohibit premature or wasteful cutting in young stands...provide for sufficient growing stock of desirable trees to keep the lands reasonably productive...However the Federal Government would take direct action only when a particular State...within a reasonable time...did not enact and carry out satisfactory regulatory measures...

Public regulation would not of itself bring about the most desirable type of forest management. But it would stop destructive cutting.

WORCESTER: How does the lumber industry feel about this? Do they see in this part of the Forest Program an attempt by the Forest Service to stifle free enterprise? Is that the conflict?

WATTS: Unfortunately, yes...And it's too bad because such regulation would tend to sustain forest industries. It does not dictate how much or when an owner may cut nor whom he shall hire to do the work...It does not mean taking over private business...It simply provides rules of the game to protect the public interest...You see, Chuck...Forestry is lots more than boards, ties, rayon, paper, cordwood and other forest products...Forestry has a human side...It means permanent communities with prosperous industries and a stable tax base...It means good schools...public health...attractive homes...Forestry furnishes lots of permanent jobs...it can also provide temporary work for the unemployed during depressions. Forestry means security for the worker to invest in a home...and for the butcher, the baker, and the beauty shop keeper to invest in a business...Forestry is all that and more...And it is this knowledge of what forestry is... and its importance to the American public...that drives us on in our efforts to really do something about the forest situation in this country of ours...

WORCESTER: Thank you, Mr. Watts....Friends, you have just heard Lyle F. Watts, Chief of the Forest Service, United States Department of Agriculture, in a discussion on the Forest Service program to help solve our Nation's forest problems.

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WHERE ARE THE GOAL POSTS?

address by

Lyle F. Watts, Chief, Forest Service
Southern Forestry Conference, Atlanta, Ga.,
January 20, 1944

Occasionally we read of a football player becoming confused and running the wrong way to down the ball behind his own goal posts. Likely as not the player turns out to be one of the best trained and most competent men on the team. How disconsolate he becomes when he realizes his mistake!

Such a setting for my remarks is in line with an item entitled "Let's get our Signals Straight" announcing this meeting in the December issue of the "Forest Farmer." In defining the objectives of the conference, the editor suggested that some of the players on the Southern Forestry team do not know where the goal posts are!

But before attempting to find out where the goal posts are, or to agree on signals, let's be sure we are playing on the same team. We all wear jerseys showing the same colors of conservation and economic progress, but as I review statements by your leaders which appeared in "The Forest Farmer" in 1942, I see your president out there running with the ball in direct opposition to the Forest Service. And I wonder if you should have invited me in to help fix up the signals for your team. So let's go into a huddle to straighten this out. But remember there is a sharp limit on the time we can debate amongst ourselves. If we dally too long before going into action a penalty will be imposed and we will have that much further to go.

What is the Game?

I hope I am not wrong in assuming that we are all playing the same game. Do we not all strive for economic progress in the South through strengthening and expanding the forest industries? And do we not all recognize that better protection and better forest management are essential to the expansion and sustenance of prosperous forest industries?

We are all convinced that forestry can play a vital part in the diversified agriculture to which the South is turning. And we believe that forest farming may be the economic solution for millions of acres which are now more of a liability than an asset to the counties in which they are located.

I hope that you believe as firmly as I do that the welfare of the people of the South and the conservation of forests are interdependent. It is shortsighted to suppose that forest industries can be on a sound basis with labor generally in poverty and the small landowners under constant economic pressure. A prosperous South must be based on economic health for all of the people. On the one hand labor efficiency will be increased by giving more of the coming generation an adequate education and ~~to~~ inculcate higher standards of individual responsibility and initiative. On the other hand, I believe that a

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more intelligent and skilled labor group will facilitate expansion of the primary forest industries and open the way for the secondary industries that we all hope to see established in the South. And this will react to the benefit of small owners. Fabricating and chemical industries based on wood or gum, in turn, hold much promise of further raising the level of living for the entire community.

Game
 As I appraise your basic objectives, we are playing the same game. And I wonder whether there is any organization in the South in better position to stimulate progress than the Forest Farmers Association Cooperative. For the crux of the forest problem here is in the small owners, who not only provide most of the timber for the thousands of small mills that now account for the bulk of the cut, but also supply much for many large plants. Forest landowners should be a most constructive influence because they view the problem from the most fundamental angle, namely the productivity of the forest itself. If they are properly organized and imbued with the concept of growing timber as a crop, the possibility of wasteful exploitation under the pressure of industrial demand will be reduced. The facilities for converting the timber into manufactured products will appear as servants rather than despoilers of the land. But to attain its full stature, an association of landowners like this must keep its vision high and be guided by social welfare in a large sense. It should not be bound by any traditional political dogma or special group interest.

What is the Goal?

1. Having defined the direction we are going, it should not require much discussion of statistical detail to find out how far we have to go. The Forest Survey has published its findings on the resource situation and you are all familiar with the picture.

a But we must guard against over-optimistic interpretation of local resource relationships which prevailed in the depression years when much of the Survey data were gathered. The impact of the war has rendered the balance between growth and drain less favorable. It has accentuated the sawtimber depletion that has characterized the long-time trend.

b Furthermore, we must remember that the stand deterioration that follows repeated heavy cutting and "creaming" is of more significance than bare statistics of volume change. And we now realize that we must guard against "inflation" in the use of volume data obtained in the Survey because the system takes in all trees no matter how scattered they are or how small the stand. In a concrete case in another region where small ownership predominates, discounts of more than 20 percent have been found necessary to translate similar survey data into volumes actually available for industrial use.

c It is also worth emphasizing that forest productivity is roughly proportional to the volume of growing stock. Salvation does not lie in "cellulose forestry" with rotations that yield only trees suitable for chemical conversion. Plenty of wood for such conversion will be available as a by-product of management aiming at high-quality sawtimber. But sawlogs cannot be cut from seedlings and saplings. Good growth requires ample growing stock.

To get perspective for defining the goal of Southern Forestry we must consider the outlook for wood use and think about the South in terms of national needs. But so much has been written on the new era of wood, which we seem to be entering, that I need not dwell on the many new uses opening up in the field of chemistry. And you will not need to be convinced that new engineering techniques for conditioning wood and facilitating its use for construction will enable wood to hold its place in competition with other materials. Furthermore, there can be little doubt that, in addition to domestic demands, requirements for reconstruction abroad may bring opportunities for export that will tax the productive capacity of our forests.

All in all, recent developments support the soundness of the national goal of annual growth proposed by the Forest Service in 1938. This goal of 21.4 billion cubic feet, including some 68 billion board feet of sawtimber, compares with wartime consumption and losses of less than 17 billion cubic feet, involving perhaps 60 billion board feet of sawtimber. In the economy of abundance on which post-war prosperity must be built, we should plan for an annual forest crop substantially greater than what we are using now. When we recall that wartime drain is almost twice our current annual growth, the forestry task before the Nation becomes clearer.

The South has a Great Opportunity and also a Large Responsibility

The South has pointed with justifiable pride to its vast acreage of forest land. It has extolled the virtues of the remarkably prolific and commercially useful species which are so widespread. It has not been slow to appreciate the natural advantages of easy logging conditions. It is beginning to realize the opportunity for integrated management to produce naval stores, pulpwood, poles, piling and sawlogs. Even stock raising is recognized as having a place in southern forest management. And the South knows that the products of its forest industries are in demand in the great industrial and agricultural zones of the north and central states.

But I wonder if the South has realized the extent of its responsibility to the Nation in meeting future timber requirements. Balancing all factors in the various regions it seems likely that the South should supply about half of the Nation's future output. Now let's see where we stand in relation to such a goal. Before the forests were subjected to the accelerated depletion incident to the war, current growth in the South, exclusive of the mountain region, was estimated at 5.6 billion cu. ft. with 18.6 billion bd. ft. of sawtimber. Evidently to supply half of a national goal of 21.4 billion cu. ft., it will be necessary to double current annual growth in the South.

Considering that second growth pine stands are now less than 50 percent stocked, this goal is not at all extreme. But, let us not be deceived as to the magnitude or difficulty of the job! Our forestry team will have to fight hard and long to overcome the obstacles which lie between it and the goal. We shall have to work shoulder to shoulder, using every formation that offers promise of advancing the ball.

Tactics which have been tried in the past have not proved adequate. The kind of progress experienced in the years before the war in my judgment does not justify the over-optimism and complacency that are so prevalent in the South. Without allowing for disparity in the basis for the estimates which would tend to exaggerate the change, the figure for annual growth in 1938 was only 0.8 billion cu. ft. greater than that used for 1930. Thus, even if that increase could be accepted at face value, we could not hope to double the growth in less than 50 or 60 years. But we cannot be sure that even such a prospect is justified. The apparent increase in annual growth in the years preceding the war developed when the annual cut was largely supplied by stagnant old growth. Now almost all of the cut must be borne by second growth. And a huge pulp industry has arisen to impose an additional demand of 7 million cords annually upon the young timber.

I want to tell you what impressions I gained from about 8 weeks traveling in the South and talking with informed people. I was encouraged by the number of owners who are really getting into sustained-yield management and I saw a lot of forest land in good condition. But my impression is that there still is much more bad than good forest practice. I think you will all agree that heavy cutting, and particularly premature liquidation of promising young timber, is working with uncontrolled fire to hold down the volume of growth accruing each year. In some sections it may lead to a shortage of trees available for turpentine.

I am appalled by our failure to solve the problem of fire control. When I drove from Jacksonville to Lake City, Florida, last summer I saw practically no country outside the relatively small area state-protected or federally-owned, that had not been burned hard during the previous winter and spring. We shall have to break up this combination of destructive cutting and uncontrolled fire if we are to make any real progress toward the goal.

Let me repeat, our future national welfare requires that forest productivity in the South be doubled. You have, therefore, a responsibility going much further than striking a balance between growth and drain at whatever level you happen to find yourselves. But in this goal also lies the chief hope for much of the industrial expansion so eagerly sought by the South.

Federal Aids Facilitate Progress

For more than 20 years the Forest Service has been laying the groundwork for this increased production and industrial expansion through its farflung research on the growth, reproduction and management of the principal commercial species, on forest planting, on the economics of forestry in the region, on increasing the efficiency of naval stores operation, on methods of seasoning lumber, on the chemistry of pulp and paper making, etc.

For a similar period the Federal Government has been aiding and encouraging the States and the landowners in the protection of forests from fire. Considering the traditions of the region accomplishments in this field are substantial. The problem is especially difficult because controlled use of

fire in the woods appears to have a legitimate place - at least in the long-leaf pine belt - in keeping inflammable undergrowth under control, in aiding reproduction, especially of longleaf pine, and in maintaining desirable forage conditions for livestock.

Through the various State and Federal agencies the Government has also worked to give the people an understanding of and interest in the forestry game. Particularly significant are the farm marketing projects inaugurated during the past 2 years. In each of these projects a competent technical forester is put to work, studying the problems and needs of farm woodland owners in an area no larger than he can deal with on the basis of personal acquaintance. Especial attention is given to helping the owners market most advantageously the timber that needs to be cut, and to advising them on the best methods of cutting. Results so far indicate that this is an effective way of making good players out of the thousands of small owners.

I will not take time to mention other forms of cooperation that have been recommended or extended to private owners to encourage good forest management.

Getting the Signals Straight

One of the most important matters we must decide if we are to advance toward the goal is who is going to carry the ball. In general, I think we can all agree that as far as possible the private owners should carry the ball themselves. But there are areas of such low productivity that private owners cannot be expected to carry through. In other localities commercial forests have been so extensively stripped that restoration will involve several decades. Because private owners are likely to drop the ball under such circumstances, the public must stand ready to pick it up and carry on.

The necessity for public ownership of forest lands in the South is doubtless much less than in the mountains and critical watersheds of other regions. But let's not overlook the signal for public acquisition and let's be ready to use that play to the extent necessary to maintain progress toward our goal.

We will need quite a variety of plays to provide suitable opportunities for private owners of all sorts to carry the ball. A few have had many years of successful experience in this forestry game. They have shown such resourcefulness and ability that all we need to do is give them the ball and let them drive ahead.

For the vast majority, however, our signals will need to provide protection against possible tacklers. One play holding promise for progress is for a large group to move forward together, pooling their strength by organizing for joint action in a cooperative association.

Numerous instances will occur where an owner is thrown back when short-sighted liquidation by his neighbors deprives him of adequate primary outlets for his timber. Or again operators seeking to maintain good forestry standards may find the growing stock upon which they must depend for their future raw material supply undermined by the indiscriminate cutting of competitors. To meet

2) such contingencies, our signals must provide that the public provide protection, such as is contemplated in our proposals for the regulation of cutting and related practices on private forest lands. This, I believe, is essential to keep the field clear for effective running by all owners, large and small.

1) It is at this point that our team has not pulled together. Every time the signal is called for the public to join the play in this way, someone calls for time out and argues for a different strategy. Apparently many of the players want only to be given a free hand, notwithstanding the fact that games are won by coordinated team work.

Are the Rules Adequate?

Rules
But, I must hasten to add that I do not wish to imply that the confusion which arises when the signal for public regulation is called is due solely to selfish interest. What is really being expressed is difference of opinion as to the adequacy of the rules of the game. In advocating public regulation, I am suggesting that new rules are needed. In this I am sensitive of what is taking place in other regions as well as in the South. In respect to forest resources, this country has now reached a point where it can no longer rely primarily on the virgin stands. In hundreds of localities throughout the country, depletion has reached such an advanced stage that we can no longer escape the necessity of doing something more comprehensive and more effective than our limited efforts to date. Under the old rules, too many people are being hurt.

In the course of human affairs our concepts of government and interdependence undergo progressive change. We have never experienced total war before. It should be apparent by now that the playing field is bigger than it used to be. We can never go back to the assumptions of national isolation which dominated so much of our thinking before the war. And as a corollary to this it is inevitable that we must temper our desires for individual freedom, and concede that government must have broader controls to fully serve the public interest.

The war is showing us that the game must be played much faster. Rules that might have seemed adequate under a 60 or 70 billion dollar national economy will not suffice at a tempo of 130 billion dollars annually. The game is also going to be more open because of improvements in transportation and log handling. More players will be in action that counts because we shall have to depend so largely on the small owners and the small operators. Such a game requires stronger controls and closer coordination.

Some of the players particularly those connected with the forest industries, object to rules controlling cutting and related practices because of their experience with restrictions imposed by war agencies. But the arbitrary edicts necessitated by war must be differentiated from basic rules to protect the public interest at all times. The forest regulation that I have

advocated does not involve interference in ordinary business transactions; neither does it impose a load of reporting and accounting. The cost need not be excessive.

Another source of confusion is the unfounded assumption that because the Forest Service has advocated rules for a better game, it is seeking authority for itself. It has been charged that regulation of cutting and other forest practices means displacing private enterprise and taking over management of land or industry by the Government. My recent address to the National Lumber Manufacturers Association in Chicago entitled "A Forest Program to Help Sustain Private Enterprise" should dispel any such misapprehension. In the Forest Service we fully appreciate that administration of regulation will involve plenty of "headaches" and endless hard work. The "power" which some people picture as so alluring will return no benefits to those charged with responsibility. Regulation is not an end in itself. The easy course would be for us to avoid it altogether. But the Forest Service has a Nation-wide responsibility that it cannot avoid. It believes that new rules must be adopted and it counts on responsible organizations like this to consider the need objectively. X 107

The States now have the power to keep forest lands within their borders reasonably productive. I have suggested that general standards of forest practice be defined in federal legislation, but that the federal government take direct action only when the States fail to enact and enforce suitable legislation. However, I want to emphasize that "Rose Bowl" or "Orange Bowl" rules cannot be left to each contestant to formulate as he pleases. If the national game is to be a success, the teams in all sections of the country must use similar rules.

Really, is there anything in the program I have recommended which would not encourage rather than impede the States in fully developing and protecting their forest resources and forest industries? From the standpoint of sheer self interest, it would seem that the South should welcome every aid and stimulus in developing the great potentialities of its forest resources.

Conclusion

In conclusion, it may be helpful to recall who are the real opponents in this forestry game. Neglect, fire, waste, destructive cutting, selfish interest, political interference, social exploitation - these are the opponents that have worked through forest depletion and deterioration to set us back dangerously close to our own goal line.

I have used this football analogy, knowing full well that it is far from perfect. Rarely can any such analogy be carried through without inconsistency. I trust it has served to express some things about which I am very much in earnest in a way which will appeal to your imagination. And if as a result we can agree on what is the goal of forestry in the South, it may lead to more sympathetic understanding and more constructive discussion of the details of procedure.

So let us ask again, "Where are the Goal Posts?"

Are they at the line of maintaining unlimited independence? The formation of this cooperative association should provide a convincing object lesson on the futility of complete individual independence when a common interest is to be served.

Are they at the point of balancing forest drain against annual growth? Not if the level of a pre-war depression year is accepted as the measure of success.

Or are they set far out in the public interest, where the South's expanding forest economy will yield half of the generous output of a prosperous Nation?

A wise answer to this question and a determined effort to achieve the goal is of the utmost importance. Dependence on wood in wartime is so critical that the Nation cannot leave the future to chance. The next generation will not have an abundance of virgin timber at its disposal as we have had.

The Nation is looking toward the South for a far-sighted forestry program. It counts on the united effort of landowners, timber operators, manufacturers, conservation agencies, and the public. It sees the crossbar of social progress for the South held proudly aloft on the twin goal posts of sound industrial development and forest management yielding double the present annual growth.

Beyond this goal, in a very real sense, will be found national defense and security.

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Forest Policy
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A FOREST PROGRAM TO HELP SUSTAIN PRIVATE ENTERPRISE

Address by

Lyle F. Watts, Chief, Forest Service

at meeting of

National Lumber Manufacturers Association

Chicago, Illinois, December 13, 1943

Introduction

I am glad of this opportunity to discuss with this forest industry group some of the problems which face the forestry enterprise in America. It will make for progress and understanding if you, who have a direct financial stake in our forests, know the views of myself and the public organization which I represent.

I do not believe it necessary to spend much time here discussing the basic facts of the forestry situation. You know, as well as I do, that the situation is not satisfactory. You know that timber depletion has curtailed industrial activity in many communities and will have a like effect in many more. You know that much too little of present day cutting on private lands is according to good forest practice. You know that much second-growth timber is being cut prematurely. You know that almost 60 percent of the forest land in the South is still without organized fire protection. You know that annual sawtimber growth is far below the level of what can and should be used in an economy of abundance.

On the other hand, you are well aware of the increase in good forest practice on private lands in recent years. The number of owners, who have adopted long-range forestry programs, leaves no doubt that private forestry is a practical proposition. And it is my impression that the

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owners whose forestry programs have been most successful have not been content with minimum practices to keep their lands productive. They have generally found it advantageous to go into timber growing more intensively and to organize for sustained yield.

I suppose that if we were not concerned about maintaining wood as an important and generally available material for construction, fabrication, and chemical conversion, we could be content with the gradual spread of good forest practice. But we are concerned about the markets for lumber and other forest products and we do not want to have those markets impaired by scarcity and the competition of other materials. So we cannot complacently accept the cumulative depletion of productive growing stocks in the East and the unsystematic liquidation of virgin timber in the West which inevitably undermine those markets.

A Three-Point Program

I have been studying this forestry problem from the standpoint of the welfare of the people and the Nation for many years. I have been close to the situation successively in the Intermountain Region, the Inland Empire, the Lake States, and the Pacific Northwest. During the past year I have traveled widely in the East and South, absorbing what I could from all sources, including forest owners and operators and the woods themselves. I am convinced that the public must act in a far more comprehensive manner than heretofore to stop destructive cutting, to facilitate good practices by private enterprise and to acquire such lands as may not otherwise be given the management dictated by the public interest. I believe that such public action will prove beneficial to the forest industries.

The public action which I believe to be necessary has three equally important elements. It may be likened to a tripod used by the surveyor to obtain firm support for his instrument on uneven ground. Three legs are the minimum needed to get firm support and three legs are easily adjusted to a variable base. Our program must stand firmly throughout the country on the uneven ground of forest depletion, growth capacity, logging conditions, economic environment, ownership status, and attitudes. It must be adaptable to frequent and perhaps drastic changes in these conditions. Its three legs give it that stability and adaptability. Take away any one of them and our instrument for progress will be out of balance.

Public Cooperation

The first leg of our tripod is public cooperation with private owners. Our American democracy is based largely on private enterprise. We want to encourage private enterprise in every legitimate way to provide the production, the employment, and the security upon which the welfare of the people depend. In the past we have placed major emphasis on public aids and cooperation to establish forest conditions for permanence and stability in the dependent industries, and to protect watershed, recreational, and other values inherent in forest lands.

Cooperation from the Federal Government has been a potent factor in the increasingly effective fire protection in most of the States in forested regions. Federal aid and action have been invaluable to the States and to forest land owners in the control of forest insects and

diseases. Government statistics on forest resources; the production and distribution of forest products; lumber, log and stumpage prices; etc. are constantly used by the forest industries in the conduct of their business.

Federal aid has made possible the employment of extension specialists to work with the farmers in 43 States for better woodland management. By reason of federal grants, forest planting stock has been available to farmers at very low cost, though on too small a scale. Advice and aid on forestry problems have been included in the programs of the Soil Conservation Service and the Farm Security Administration. During the past year the services of 82 foresters cooperatively employed by the State and Federal governments have been made available to farmers in 296 counties to aid in the development of regular woodland income by proper marketing of forest products. And I do not refer here to the Timber Products War Project sponsored by the War Production Board to stimulate output of small mills.

Through the regional forest experiment stations and the Forest Products Laboratory, the Government provides a program of research. This is constantly improving the technical basis for profitable forest management and for more efficient processing and use of wood. It is also opening up new fields for wood utilization.

It was research that defined the relations between weather and fire that now permit localized forecasting of fire danger. Research was needed to discover how to combat bark beetles and blister rust, and

how to protect seedlings in forest tree nurseries from damping-off and white-grubs. Through research we are learning the conditions necessary for successful reproduction of commercial species. Research has shown how profits may be increased by selective cutting that leaves the smaller trees to grow. Among the many contributions to better processing and use of forest products, I need only mention that research developed methods of kiln-drying which represent savings of millions of dollars in transportation costs now that the country depends so largely on the deep South and the far West for its lumber supply. Although the value of thorough-going research can hardly be overestimated, public service in this field, except for the work in forest products, has been curtailed year after year.

The leg of public cooperation can and must be made much stronger to bear its share of the full load of the timber-growing enterprise this country needs. To this end the Department of Agriculture reported favorably on two bills broadening public aid to forest landowners that passed the Senate last summer. One of these increases the authorization for cooperative fire protection; the other provides for cooperative sustained-yield management of federally administered and intermingled private land. The Department has also reported favorably on bills to provide the authorization needed to complete the Forest Survey and keep it up-to-date.

To strengthen the leg of public cooperation technical advice in the preparation of management plans and in utilization problems should be made generally more available. Assistance should also be available for the establishment of small-owner forest cooperatives. Public credit facilities should be broadened more adequately to meet the needs of those striving

to build up depleted forest properties and to organize for sustained yield. Insurance on standing timber should be underwritten by the Government. Taxation should be adjusted so as not to impose inequitable burdens on the forestry enterprise.

Public Acquisition

Since private enterprise alone cannot and will not solve the Nation's forestry problem in all its ramifications, we must look to the second leg of our tripod -- public acquisition of certain forest lands. Within the borders of national forests and purchase units already established are 50 million acres of private land. Of these some 36 million acres should be acquired by the public. The Forest Service, in collaboration with State forestry officials, has estimated that, for reasons of public welfare, perhaps 50 million acres outside of existing national forests and purchase units, should be given national forest status. For perhaps another 50 million acres, State or community ownership seems desirable.

Public acquisition is advocated primarily for lands unsuited for private ownership. For example, productivity of a large portion of the Ponderosa pine country is too low to provide adequate incentive for timber growing to private capital. Other lands lie at such high altitude or in such rough and inaccessible country as to be unattractive for private ownership after the original timber is out. Still other lands have been so denuded as to offer no prospect of income for many decades. Unless held as part of a generally productive property, private ownership cannot be expected to rehabilitate such lands. Public ownership is also needed

to insure proper management for certain lands where watershed or recreational values predominate. Finally, it is important that the Government own certain tracts of good timberland that vitally influence timber management on adjacent national forest lands or affect the welfare of dependent communities.

For a number of years the rate of public acquisition of forest land has declined. This reflects a general lack of appreciation of the magnitude of the country's forest problem. Whether we like it or not, a substantial increase in the acreage of public forest ownership is inevitable. The adjustments involved will be easier and problems of restoration simplified if the necessary acquisition can be systematically and expeditiously carried forward. Legislation recommended by the Federal Real Estate Board for more dependable financial contributions to local governments should facilitate a more adequate purchase program.

Public Regulation

The third leg of the tripod, needed to safeguard the opportunity for private enterprise, is public regulation to keep reasonably productive all forest lands cutover in the future.

I can add little to the ideas on forest regulation included in my annual report to the Secretary of Agriculture, a preview of which constituted a widely publicized speech that I made at Milwaukee in September. In brief, I believe that basic Federal legislation is needed to assure satisfactory standards and nation-wide application. These standards should:

- (1) Provide for protecting forest lands against fire, insects, and disease, and
- (2) Safeguard proper use of forest lands and prevent improper exploitation by
 - (a) Providing for adequate restocking after cutting,
 - (b) Prohibiting premature or wasteful cutting in young stands,
 - (c) Providing for reserving a sufficient growing stock of desirable trees to keep the lands reasonably productive,
 - (d) Preventing avoidable damage to uncut trees or young growth,
 - (e) Regulating grazing to prevent damage to tree growth and protect the watershed, and
 - (f) Prohibiting clear cutting except where it is silviculturally necessary or the land is to be put to some other suitable use.

Believing that the States should be given the opportunity within such a framework to shoulder the responsibility for handling regulation within their borders, I have suggested that the Secretary of Agriculture be authorized to take direct action only where suitable State legislation is not enacted and where enforcement of the practices established are not adequate. At the outset, however, the Secretary of Agriculture would set up a representative advisory council at the national level through which the groups most directly concerned in the application of the law could express their views on any phase of its administration.

There is ample precedent for the belief that enunciation in legislation of soundly conceived standards of forest practice will bring order out of chaos and supplant suspicion on the part of industry by whole-hearted

cooperation for the common good. Certainly those operators who are already practicing sound forestry would have nothing to fear. And the confidence with which organized industry is encouraging enlistment in the "Tree Farm" movement would be ill-founded if the imminence of such public regulation threatened to undermine the position of those who had made the effort. In my opinion public regulation will prove to be a most effective educational tool. Arbitrary application as a punitive measure would doom it to failure.

I must say a word about the potentially splendid publicity regarding the Nation's forestry enterprise sponsored by the forest industries. It seems regrettable to me that so much of this gives the impression that little not already being done on private land is needed to assure the Nation ample timber supplies for the future.

I know, of course, that there is honest difference of opinion as to the need for public regulation of cutting practices on private lands. Then, too, among those who recognize the need, there is room for differences as to whether state or federal control is most desirable. Although industry spokesmen take pride in the part industry has played in the adoption of State regulations for fire protection and in initiating cutting regulations in a few states, I know that many, probably most of you, really are opposed to any extension of either State or Federal regulatory powers.

I am at a loss, though, to understand the obvious attempt by opponents of the regulation I have advocated to write into my statements ideas which simply do not exist. Does it lead to real public understanding to broadcast the idea that I seek to displace private enterprise by nationalization of the forest industries?

I doubt if any of you would claim that the railroads, the public utilities, radio broadcasting, the meat packing industry, or industrial labor itself has been "nationalized" because they are subject to federal regulation. And nothing in the regulation of forest practices that I have advocated could be rightly characterized as nationalization. It does not contemplate taking over industry, nor acquiring forest lands that private owners desire to hold. It does not dictate how much or when an owner may cut, nor who he shall hire to do the work. It deals only with preventing forest destruction and deterioration and keeping forest lands reasonably productive -- indubitably matters of great public concern.

In closing, I repeat that many of you approach this problem with a different philosophy than I do. Perhaps we cannot get together. In the final analysis the people must decide. My concern is that they be fully and frankly informed. An issue so vitally affecting the welfare and security of the common man can and must be resolved in the public interest. The program I have suggested to assure ample supplies of forest products at prices within the reach of the man on the street and the farm, provides a firm foundation for thriving and diversified forest industries.

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*Mr. Cochran 1111**412*

THE NEED FOR THE CONSERVATION OF OUR FORESTS

Address by
Lyle F. Watts, Chief, Forest Service
at meeting of
Friends of the Land, Chicago, Ill., Nov. 12, 1943

Recently, in an address before a section of the Society of American Foresters at Milwaukee, Wisconsin, I discussed the Nation's forest situation. I presented the need for reasonable public control of the treatment of private forest lands. In commenting on that paper, a friend of mine in the National Lumber Manufacturers Association alleged that, "In normal periods the basic American forestry problem is not one of scarcities but of surpluses, not of timber famine but of timber abundance." Today I want to explore that philosophy because, if it is true, there is really no occasion for much concern about forest conservation.

If I sense the times rightly, an economy of abundance is a major world objective--widely recognized and earnestly striven for as an essential element in a lasting peace. This certainly was the keynote of the recent United Nation's Food Conference at Hot Springs, Va. There freedom from want of food was declared to mean "a secure, an adequate and a suitable supply for every man." To make this ideal a reality, it was estimated that 40,000,000 additional acres would be needed for increased food production in this country.

Some of this land will come from areas now in forest. This reverses the thinking of the depression years, when reduction of the acreage in cultivation and reforestation of submarginal farm lands were given major emphasis. But the acreage available for timber crops has always been ample. So the philosophy of abundance which dominated the Food Conference when applied to forestry throws the emphasis where it belongs -- not on the acreage involved, but on forest productivity and proper management.

The amount of useable wood that can be supplied annually as a crop depends as much upon the volume and character of the growing stock -- or forest capital -- upon which growth accrues as upon the acreage and fertility of the land. If lumber and other forest products are to be generally available at reasonable cost, it will be necessary to maintain, well distributed in all forest regions, a stand of timber capable of yielding in annual growth more than enough merchantable wood for the country's needs.

In discussing this question of scarcity versus abundance, I want to make it clear that forestry is something more than boards, ties, cordwood, and other forest products. To me forestry has a human side. It encompasses permanent communities with prosperous industries and a stable tax base. It means good schools, public health, and attractive homes. It means security for the worker to invest in a home and for the butcher, the baker, and beauty shop keeper to invest in a business. In short, what I am interested in is the extent to which our forest resources may contribute to a better livelihood and greater happiness for all the people.

(over)

I must confess that I cannot rationalize the economic thinking of my industry friend who in one breath says, "We want forest products at low costs now and in the future," and in the next postulates that abundance constitutes an obstacle to attaining that goal. Evidently the lumber industry has an entirely different philosophy than that which motivated the United Nations Food Conference. But since the crucial factor is the existence or lack of surplus timber supplies rather than whether we view such surpluses as liabilities or assets, let us inquire where these surpluses may be.

Are the timber surpluses in New England?

I took a trip up there this summer and saw plenty of forest acres but not much merchantable timber. Seventy percent of New England is forest land, but 75 percent of all the wood products consumed in New England comes from outside the region. The only evidence of surplus, so far as I know, is in small low-grade material which cannot be marketed even under the intense demand of the huge industrial population.

The hurricane of 1938, followed by abnormal wartime requirements for box boards, has left only scattered remnants of merchantable white pine in central New England. Scarcity of stumpage forced several of the leading operators in Massachusetts to move out of that State last year. Even in the wild lands of Maine, most of which have been gone over several times by logging operations since Colonial times, the average out of pulpwood, taking all that is considered merchantable from the ground, is estimated at only 4 cords per acre. Such an average certainly implies no troublesome surplus of available timber.

But don't take my word for it. After all, I have only been in New England a couple of times. Listen to what men who have been intimate with New England conditions for years have to say.

Victor Cutter, prominent businessman and recently Chairman of the National Resources Planning Board for New England wrote in 1943, "The situation is ghastly here at present. I have not seen any decent lumber coming out of New England." And Henry Baldwin of New Hampshire in a recent report of the National Resources Planning Board on "Forestry in New England" declares, "Present conditions obviously demand some sort of improvement Only a drastic reversal of present cutting practices together with more effective protection can restore adequate growing stocks."

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Not so many generations ago Pennsylvania was the leading source of the Nation's lumber supply. In 1941 it ranked twenty-third among the States with an output of less than 1 percent of the total. The original pine forests have been largely replaced by scrub oak and other hardwoods as a result of fire following logging.

The anthracite region, about two-thirds of which is forest land, highlights the results of forest depletion. Here the coal mines require huge quantities of timber which the adjacent forest land is capable of producing. Yet "operators scour the country for timber large enough to make props" and find only one-third of the amount needed. Only 9 percent of the forest can be classed as sawtimber.

Are they in Virginia?

The Forest Survey for Virginia showed sawtimber growth in 1940 some 25 percent in excess of drain by cutting. So perhaps we should find the timber surplus here. But of what significance is an excess of growth over drain when lumber output is only about half of what it was 30 years earlier? The decline in Virginia's lumber output is a reflection of sawtimber scarcity. Stands with as much as 8,000 board feet per acre occupy less than 4 percent of the total forest area. More wood was consumed by non-lumber use than for lumber in 1940.

And when we examine this margin of growth we find that it is chiefly in the inferior Virginia pine and in oak less than 20" in diameter. In the Piedmont, if cutting continues at the 1940 rate, all loblolly and shortleaf pine over 13" in diameter will be gone in 30 years. And wartime increases in cut for the Coastal Plain in all probability have stopped the upward trend in loblolly and shortleaf pine growing stock noted there in 1940.

Are they in the Appalachian Mountains?

The hardwood forests in this region have been exploited for many years. "Creaming" has removed most of the better trees and the residual stands are usually of poor form or defective. Logging is difficult in the rough mountain territory so that once the high-grade timber has been removed from the "coves" it is often impractical to operate the poorer timber on the slopes. Repeated logging of the larger holdings has left much of the residual timber scattered in small tracts, often held by non-resident owners. Operators now face the necessity of ferreting out such tracts to maintain production. And a destitute rural population is urgently in need of a more adequate resource.

Another indication that this region is not burdened by a surplus of merchantable timber is the suggestion of lumbermen that National Forest timber be sold during the war without competitive bids to the operators most urgently in need, because bidding runs the stumpage prices too high!

Are they in the Deep South?

The Coastal Plain and Piedmont regions of the Deep South contain over 150 million acres of land wonderfully adapted to tree growth but not well suited for other purposes. All but a small fraction of the old-growth timber has been cut so that any surplus must be in second growth.

Almost three-fourths of this great acreage is in thrifty second growth, yet the growing stock is rated at less than half of what it should be. Some 10 million acres, mostly in the longleaf pine belt of the Coastal Plain, lie denuded. Only one-fourth of the total cubic volume of pine is sawlog material and almost three-fourths of that is in trees less than 16" in diameter. In spite of the ease of reproduction and the exceptionally rapid growth of the more valuable pines, hardwoods now account for almost 60 percent of the cubic volume of all trees.

With the rapid disappearance of old-growth timber the number of large mills has steadily declined. Closing of several mills in communities primarily dependent upon the forests has been reported in the press during the past year.

Recently one of the leading lumbermen of the South told me that 5 years hence only two major sawmills would be left in Florida. The young second growth is being combed relentlessly by thousands of small mills. And in addition a giant pulp industry consuming more than one-third of all the pulpwood used in the United States is now competing with the sawmills for desirable stumpage.

Perhaps the second growth in this region has been most prolific in southeastern Arkansas. Here, if anywhere, the alleged problems of surpluses should be observable in the community. But a trip through that section left me with impressions of prosperous towns and active, satisfied people; quite in contrast to what I saw in sections where timber was not so plentiful. Timber growing is a common topic of conversation in southeastern Arkansas, but I found no one complaining about too much.

Since we do not find surpluses a problem in regions where growth has been prolific, we must look to the West where the impact of industrial use has been more recent, and where original stands were heavier, if not more extensive. But before doing that, let's take a look at the Central and Lake States where timber depletion has been most severe.

What about the Central States?

The timber supply is vital to the great agricultural States of the Middle West. The situation became so acute in 1942 that two large farm cooperatives bought sawmills in distant forest regions in order to be sure of having the lumber they needed.

Had the forests of this region been given proper care from the beginning, farmers might still be able to meet many of their needs from local timber. Most of the older barns in southern Ohio and Indiana, for example, were built of yellow poplar. Yellow poplar grows almost as fast as any of our softwoods and is just as easily worked. But today it is far too precious to put into barns. It is no longer a significant part of the stock of the local lumber yards.

All the big pine operations are now gone from the Missouri Ozarks. Output of softwood lumber in Missouri in 1942 was only 30 million board feet. Yet in 1899 most of the three-fourths billion board feet of lumber cut in that State was softwood.

Throughout the hill country from eastern Ohio to western Missouri, millions of acres of once magnificent hardwood forests have degenerated into mere brush cover. Many of the hardwood industries of the Ohio and Mississippi Valleys, must now pay heavy transportation charges for raw material from other regions in order to continue operation. Some of them face extinction.

Forest depletion and soil deterioration have left a relatively heavy rural population poverty-stricken. Here the blighting effects upon people of the exhaustion of national resources should dispel any illusion that scarcity is not a critical social problem.

What do we find in the Lake States?

The Lake States affords one of the most serious chapters of our recent history. Here are some 52 million acres of generally level forest land,

favorably located with reference to important industrial and agricultural sections. Extensive clear cutting and uncontrolled forest fire have made a large part of this area an economic liability.

This region, whose forests housed the cornbelt and rebuilt Chicago after the great fire, now imports five-eighths of the lumber needed to meet its own requirements, even after these have been curtailed to about 70 percent of the level which prevailed in the 1920's.

The white pine and red pine which contributed so bountifully to the development of the Middle West are now little more than memories. Although some old growth--chiefly hardwood--still remains, the most significant aspect is the large proportion of inferior species, notably jack pine and aspen, in the second growth.

More than two-fifths of the cubic foot growth is of aspen--a short-lived species of limited use. Should we cite this as a surplus, since most of it will rot and die before it can be used? Perhaps, but don't lose sight of the fact that output of lumber in the Lake States dropped from 8-1/2 billion board feet annually for the 2 decades prior to 1900 to about three-fourths of a billion in 1938 and 1939. And even under all the pressure for war production it did not rise above 1-1/4 billion in 1941 and 1942.

While we read of the closing of large sawmills at Rhinelander and Oconto, Wisconsin, during the past year, second growth in Minnesota is being exploited to supply Wisconsin pulp mills. And uncut timber is so scarce that destructive logging operations are being pushed into the rough and scenic Porcupine Mountains in spite of a storm of public protest against clear cutting. In the press competent foresters are reported as saying that at the current rate of cutting "less than five years will see the finish of this last great harvest of Michigan hardwood."

Can Surpluses be found in the Inland Empire?

The timber of Idaho and Montana was almost untouched up to 1900. But the wave of depletion is rolling through this country with startling speed. In Idaho the 5 northern counties were opened up first and were soon pretty thoroughly exploited. Output reached a peak of 705 million board feet in 1925. In 1937 it was only 292 million. Obviously payrolls in these northern counties declined in about the same ratio as lumber production. Towns like Sandpoint and Coeur d'Alene were hard hit -- and Spokane turned its eyes from the panhandle of Idaho to the Grand Coulee Dam.

The increased output now coming from the five counties farther south rests on a precarious base. Only one-tenth of the 10 million acres of forest in North Idaho is in white pine sawtimber---yet this tenth is bearing the brunt of current cut. White pine output is now 2-1/2 times what the forests can sustain.

Are they in Eastern Oregon?

I know well the ponderosa pine country of the Northwest. I make the flat statement that no major pine producing unit in that area can continue long to supply anything like its present cut.

In Klamath County, Oregon, the largest ponderosa pine producing center, not

more than 5 of the 14 large mills now operating will be in existence 10 years hence. Only 1 has reasonable assurance of more than 25 years. Woods workers face migration or possibly a shift to industries not now in the picture.

A similar situation exists on the Deschutes plateau to the north. The City of Bend, which doubled in population between 1920 and 1940, as the lumber business expanded, faces inevitable retrenchment 10 or 15 years hence. The Deschutes Plateau, where lumbering is the major economic activity, now produces about 400 million board feet annually. This is more than three times its sustained-yield capacity. An annual payroll of about \$5,000,000 is involved in the lumber industry here, but the impact of forest depletion will be felt by the merchants, the professional people, and the filling station keepers as well as by those employed in the sawmills.

Burns and Prineville are the sawmill centers for 2 Oregon units operating on a more stable basis. Large-scale lumbering is of more recent origin and operations have been carefully planned for integrated use of public and private timber. But there is not enough timber to sustain even these communities at the level of wartime cutting!

Are they on the West Coast?

Having looked in vain for timber surpluses in other important forest regions, we turn at last to the West Coast. It is possible that my friend believes that the fabulous forests of the Douglas-fir region alone are more than sufficient to supply the Nation's needs, for here in the rough mountainous corner of the country comprising only 6 percent of the Nation's commercial forest land is to be found one-third of all our standing sawtimber.

As forest depletion becomes more acute in other regions, we have come to draw more heavily upon the Douglas-fir region; and we shall have to continue to do so for many years. But this is costly. The freight rate to Chicago, for example, is about \$17 per M board feet. And it is easy to overestimate the importance of this region in the national picture. Even under wartime pressure for production, lumber cut from this region has not constituted much more than 25 percent of the total. The stand of hardwoods is insignificant. And in any realistic appraisal of future supply, it is unlikely that this region will account for more than 10 percent of the Nation's timber requirements after the accessible virgin timber has been cut.

But even within this region, the apparent surplus is local in character. The only area still largely undeveloped is a portion of southern Oregon. In the older districts, notably around Puget Sound, the bulk of the readily accessible sawtimber has been removed. Sawmills have shut down and pulp mills have assumed greater importance. The available stand is no longer as large as the growing stock needed to sustain a cut commensurate with the growth capacity of the land.

Several years ago business men of Gray's Harbor adopted a slogan, "Two billion or bust!" They reached their first objective - and then the closing of saw-

mills brought them close to the second when the war came to the rescue.

The lower Columbia River district with 170 large mills and 40 billion feet of sawtimber is already feeling the pinch of scarcity. About half of the private sawtimber belongs to 2 large companies. Most of the other mills face difficulty in getting the timber they need for long-time operation.

Additional evidence of scarcity of high quality timber needed for special uses is reflected in pressure to obtain Sitka spruce and Douglas-fir for veneer logs from the Olympic National Park. If surpluses were a major problem, why should the forest industries clamor so loudly to open the Park for logging?

Finally, it must be emphasized that a substantial part of the old growth timber reported in the Pacific Northwest is of doubtful accessibility. Only about half of it was in a zone that could be operated under the price relationships which obtained in the period 1925-1929.

Are Industry Forestry Programs Based on Timber Surpluses?

In spite of the assertion that "the basic American forestry problem is not one of scarcities but of surpluses," I question whether many of the leaders in the forest industries believe that to be true. The good forestry programs adopted by many private owners would seem to point to an opposite view. For example:

Was it fear of surplus that led the Great Northern Paper Company which already owned $1\frac{1}{2}$ million acres of forest land in Maine to expand its holdings in the years just before the war? Has Finch, Pruyn and Company in New York been worried about surpluses in pursuing its forestry program on some 200,000 acres in the Adirondacks for the past 20 years? And did the Armstrong Forestry Company, with some 84,000 acres in Pennsylvania, undertake thinnings in young stands under the pressure of surpluses?

Was it troublesome surpluses that caused some 35 pulp companies in the South, most of them established there within the past 10 years, to acquire almost 5 million acres of forest land as a backlog for the future?

Was it a prospective surplus in the South that caused such operators as the Johns-Manville Company, the Chesapeake Corporation and the Chesapeake-Camp Corporation in Virginia, the Superior Pine Products Company in Georgia, the W. T. Smith Lumber Company and the Alger-Sullivan Lumber Company in Alabama, and others to adopt good forestry programs?

Is it to defend themselves against the dangers of surplus that such owners as the Crossett Lumber Company and the Fordyce Lumber Company in Arkansas, the Urania Lumber Company in Louisiana, and the Southern Kraft Division of the International Paper Company employ technical foresters to designate what trees to cut? If so, the danger must be acute, because the Crossett Company believes it necessary to have one forester for each 50,000 acres and Southern Kraft had 70 men in its forestry department in 1941.

Was it a surplus that led the Nekoosa-Edwards Paper Company in Wisconsin to operate a forest tree nursery and plant trees each year? And was it because of a surplus that the Goodman Lumber Company in Wisconsin began to conserve growing stock by selective logging?

Was it a national surplus that gave the J. Neils Lumber Company the courage to undertake sustained-yield management for its relatively slow-growing ponderosa pine at Klickitat, Washington, and Libby, Montana?

Was it impending surpluses that led the Weyerhaeuser Timber Company, by far the largest private forest landowner in the West, to inaugurate a forestry program on its principal operations? And to establish the Clemons Tree Farm and the Vale Tree Farm in Washington for the husbanding of young timber? And I wonder if the Crown Zellerbach Company, West Fork Logging Company, and others who have adopted selective logging in the Northwest thought that surpluses might endanger the success of their operations.

Did a group of lumbermen in the Northwest deliberately undertake to add to a known surplus when they joined hands in the establishment of the fine cooperative tree nursery at Nisqually, Washington? And has the National Lumber Manufacturers Association itself been misleading timberland owners by encouraging them to enlist in the "Tree Farm" movement to grow more timber?

Frankly, I guess those folks, and many more I could name, undertook forestry because they were convinced it was good business in itself rather than as a response to regional or national timber scarcity. Nevertheless, all these industrial forestry programs clearly show that we are entering an era of timber growing and that the philosophy of timber exploitation must be left behind.

Perhaps the bug-a-boo of surpluses that has been raised is really one of excess sawmill capacity in some localities. At any rate pressure to liquidate speculative timberland investments has resulted in plant capacities that cannot be sustained and that frequently burden the operators with financial problems.

Or the bug-a-boo of surpluses may reflect the large volume of small, low-grade or inferior timber for which no assured market exists. Such material renders large areas unfit for commercial operation. Elsewhere it must remain in the woods often as waste.

I suspect that the real reason for the talk about surpluses is to counteract the suggestion that the public ought to require good forest practice on private lands. But the accomplishments of those timberland owners who already have forestry programs should convince anyone that destructive cutting is unnecessary.

My friend made reference to the "timber famine publicity of the last half century," which, he said, "has helped to put the forest problem in a false national perspective." I agree that folks won't freeze for lack of shelter. And we won't have to eat off the ground for lack of lumber to build tables,

chairs, and floors. But that is not the point. A strong nation needs an abundance of resources and wood is one of the most versatile and indispensable raw materials known.

As a matter of fact, the timber shortage publicity of a previous generation has not been discredited. It was a significant factor in the establishment of the National Forests. It helped crystallize sentiment for organized fire protection. And it contributed to the far-reaching educational effort which has brought perhaps one-fifth of the private forest land under management.

These are substantial accomplishments. But in spite of them, the fact remains that the Nation's timber stand was reduced at least 37 percent in the 3 decades between 1909 and 1938. We have seen how the basis for forest industry has been lost in many localities as local supplies waned. People already go without the lumber they might use if the kind they need were readily available at reasonable price. Without the constructive results of the early publicity, timber shortage might have been even more widespread and acute.

To gloss over the facts of forest depletion is dangerous. We cannot continue indefinitely to allow destructive cutting, fire, and other forces to hold annual timber growth below the level of what can and should be used in an economy of abundance. The war is now accentuating the Nation's forest problem. It has highlighted shortages of critical species and of high grade timber. It has led to premature sacrifice of young growth to meet the huge requirements for low grade lumber. Yet total consumption has been no greater than in earlier years when timber was more plentiful.

I want to close by stating my conviction that a comprehensive legislative charter is needed to give effect to a well-rounded national forest policy and to strengthen the foundation for timely post-war action in the forestry field. Such a charter should provide for:

1. Regulation of practices on private forest land under federal leadership in more positive form than financial aid to the States alone. The States, however, should be given opportunity to enact and effectuate regulation, meeting standards defined in the federal law, themselves.
2. Better protection from fire, insects, and disease, and a broadening of public aids to facilitate good private forest management.
3. Public acquisition of forest lands where watershed or recreational values are so important, or growth conditions so adverse, that private owners cannot be expected to give the management required by the public interest, and of certain areas of merchantable timber, control of which may vitally influence the management of adjacent National Forest lands or affect the welfare of dependent communities. There are perhaps 150 million acres of forest land now in private ownership for

which public acquisition is the only solution. For much of this the task is one of reclamation in its truest sense - the return of unproductive land to productivity. The present condition of the land is the result of social errors; its return to productivity constitutes a proper public function.

Enactment and implementation of such a charter will give substantial assurance that we shall always have productive forests with plenty of timber at prices that will encourage use. Failure to act means an aggravated scarcity - not of forests but of commercial timber. Action is needed not so much to protect investments in timberlands and manufacturing facilities, important though they are, as to sustain the livelihood of the common people and to protect the value of their homes.

By building a strong forest economy, making constructive use of one-third of our land heritage, the program suggested will provide "a secure, an adequate, and a suitable supply" of timber for every man and will contribute to the structure of security and better living, which we hope will mark an enduring peace.

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*Abundance
 vs. scarcity
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The anthracite region, about two-thirds of which is forest land, highlights the results of forest depletion. Here the coal mines require huge quantities of timber which the adjacent forest land is capable of producing. Yet "operators scour the country for timber large enough to make props" and find only one-third of the amount needed. Only 9 percent of the forest can be classed as sawtimber.

Are they in Virginia?

The Forest Survey for Virginia showed sawtimber growth in 1940 some 25 percent in excess of drain by cutting. So perhaps we should find the timber surplus here. But of what significance is an excess of growth over drain when lumber output is only about half of what it was 30 years earlier? The decline in Virginia's lumber output is a reflection of sawtimber scarcity. Stands with as much as 8,000 board feet per acre occupy less than 4 percent of the total forest area. More wood was consumed by non-lumber use than for lumber in 1940.

And when we examine this margin of growth we find that it is chiefly in the inferior Virginia pine and in oak less than 20" in diameter. In the Piedmont, if cutting continues at the 1940 rate, all loblolly and shortleaf pine over 13" in diameter will be gone in 30 years. And wartime increases in cut for the Coastal Plain in all probability have stopped the upward trend in loblolly and shortleaf pine growing stock noted there in 1940.

Are they in the Appalachian Mountains?

The hardwood forests in this region have been exploited for many years. "Creaming" has removed most of the better trees and the residual stands are usually of poor form or defective. Logging is difficult in the rough mountain territory so that once the high-grade timber has been removed from the "coves" it is often impractical to operate the poorer timber on the slopes. Repeated logging of the larger holdings has left much of the residual timber scattered in small tracts, often held by non-resident owners. Operators now face the necessity of ferreting out such tracts to maintain production. And a destitute rural population is urgently in need of a more adequate resource.

Another indication that this region is not burdened by a surplus of merchantable timber is the suggestion of lumbermen that National Forest timber be sold during the war without competitive bids to the operators most urgently in need, because bidding runs the stumpage prices too high!

Are they in the Deep South?

The Coastal Plain and Piedmont regions of the Deep South contain over 150 million acres of land wonderfully adapted to tree growth but not well suited for other purposes. All but a small fraction of the old-growth timber has been cut so that any surplus must be in second growth.

Almost three-fourths of this great acreage is in thrifty second growth, yet the growing stock is rated at less than half of what it should be. Some 10 million acres, mostly in the longleaf pine belt of the Coastal Plain, lie denuded. Only one-fourth of the total cubic volume of pine is sawlog material and almost three-fourths of that is in trees less than 16" in diameter. In spite of the ease of reproduction and the exceptionally rapid growth of the more valuable pines, hardwoods now account for almost 60 percent of the cubic volume of all trees.

With the rapid disappearance of old-growth timber the number of large mills has steadily declined. Closing of several mills in communities primarily dependent upon the forests has been reported in the press during the past year.

Recently one of the leading lumbermen of the South told me that 5 years hence only two major sawmills would be left in Florida. The young second growth is being combed relentlessly by thousands of small mills. And in addition a giant pulp industry consuming more than one-third of all the pulpwood used in the United States is now competing with the sawmills for desirable stumpage.

Perhaps the second growth in this region has been most prolific in southeastern Arkansas. Here, if anywhere, the alleged problems of surpluses should be observable in the community. But a trip through that section left me with impressions of prosperous towns and active, satisfied people; quite in contrast to what I saw in sections where timber was not so plentiful. Timber growing is a common topic of conversation in southeastern Arkansas, but I found no one complaining about too much.

Since we do not find surpluses a problem in regions where growth has been prolific, we must look to the West where the impact of industrial use has been more recent, and where original stands were heavier, if not more extensive. But before doing that, let's take a look at the Central and Lake States where timber depletion has been most severe.

What about the Central States?

The timber supply is vital to the great agricultural States of the Middle West. The situation became so acute in 1942 that two large farm cooperatives bought sawmills in distant forest regions in order to be sure of having the lumber they needed.

Had the forests of this region been given proper care from the beginning, farmers might still be able to meet many of their needs from local timber. Most of the older barns in southern Ohio and Indiana, for example, were built of yellow poplar. Yellow poplar grows almost as fast as any of our softwoods and is just as easily worked. But today it is far too precious to put into barns. It is no longer a significant part of the stock of the local lumber yards.

All the big pine operations are now gone from the Missouri Ozarks. Output of softwood lumber in Missouri in 1942 was only 30 million board feet. Yet in 1899 most of the three-fourths billion board feet of lumber cut in that State was softwood.

Throughout the hill country from eastern Ohio to western Missouri, millions of acres of once magnificent hardwood forests have degenerated into mere brush cover. Many of the hardwood industries of the Ohio and Mississippi Valleys must now pay heavy transportation charges for raw material from other regions in order to continue operation. Some of them face extinction.

Forest depletion and soil deterioration have left a relatively heavy rural population poverty-stricken. Here the blighting effects upon people of the exhaustion of national resources should dispel any illusion that scarcity is not a critical social problem.

What do we find in the Lake States?

The Lake States affords one of the most serious chapters of our forest history. Here are some 52 million acres of generally level forest land,

favorably located with reference to important industrial and agricultural sections. Extensive clear cutting and uncontrolled forest fire have made a large part of this area an economic liability.

This region, whose forests housed the cornbelt and rebuilt Chicago after the great fire, now imports five-eighths of the lumber needed to meet its own requirements, even after these have been curtailed to about 70 percent of the level which prevailed in the 1920's.

The white pine and red pine which contributed so bountifully to the development of the Middle West are now little more than memories. Although some old growth--chiefly hardwood--still remains, the most significant aspect is the large proportion of inferior species, notably jack pine and aspen, in the second growth.

More than two-fifths of the cubic foot growth is of aspen--a short-lived species of limited use. Should we cite this as a surplus, since most of it will rot and die before it can be used? Perhaps, but don't lose sight of the fact that output of lumber in the Lake States dropped from 8-1/2 billion board feet annually for the 2 decades prior to 1900 to about three-fourths of a billion in 1938 and 1939. And even under all the pressure for war production it did not rise above 1-1/4 billion in 1941 and 1942.

While we read of the closing of large sawmills at Rhinelander and Oconto, Wisconsin, during the past year, second growth in Minnesota is being exploited to supply Wisconsin pulp mills. And uncut timber is so scarce that destructive logging operations are being pushed into the rough and scenic Porcupine Mountains in spite of a storm of public protest against clear cutting. In the press competent foresters are reported as saying that at the current rate of cutting "less than five years will see the finish of this last great harvest of Michigan hardwood."

Can Surpluses be found in the Inland Empire?

The timber of Idaho and Montana was almost untouched up to 1900. But the wave of depletion is rolling through this country with startling speed. In Idaho the 5 northern counties were opened up first and were soon pretty thoroughly exploited. Output reached a peak of 705 million board feet in 1925. In 1937 it was only 292 million. Obviously payrolls in these northern counties declined in about the same ratio as lumber production. Towns like Sandpoint and Coeur d'Alene were hard hit -- and Spokane turned its eyes from the panhandle of Idaho to the Grand Coulee Dam.

The increased output now coming from the five counties farther south rests on a precarious base. Only one-tenth of the 10 million acres of forest in North Idaho is in white pine sawtimber---yet this tenth is bearing the brunt of current cut. White pine output is now 2-1/2 times what the forests can sustain.

Are they in Eastern Oregon?

I know well the ponderosa pine country of the Northwest. I make the flat statement that no major pine producing unit in that area can continue long to supply anything like its present cut.

In Klamath County, Oregon, the largest ponderosa pine producing center, not

more than 5 of the 14 large mills now operating will be in existence 10 years hence. Only 1 has reasonable assurance of more than 25 years. Woods workers face migration or possibly a shift to industries not now in the picture.

A similar situation exists on the Deschutes plateau to the north. The City of Bend, which doubled in population between 1920 and 1940, as the lumber business expanded, faces inevitable retrenchment 10 or 15 years hence. The Deschutes Plateau, where lumbering is the major economic activity, now produces about 400 million board feet annually. This is more than three times its sustained-yield capacity. An annual payroll of about \$5,000,000 is involved in the lumber industry here, but the impact of forest depletion will be felt by the merchants, the professional people, and the filling station keepers as well as by those employed in the sawmills.

Burns and Prineville are the sawmill centers for 2 Oregon units operating on a more stable basis. Large-scale lumbering is of more recent origin and operations have been carefully planned for integrated use of public and private timber. But there is not enough timber to sustain even these communities at the level of wartime cutting!

Are they on the West Coast?

Having looked in vain for timber surpluses in other important forest regions, we turn at last to the West Coast. It is possible that my friend believes that the fabulous forests of the Douglas-fir region alone are more than sufficient to supply the Nation's needs, for here in the rough mountainous corner of the country comprising only 6 percent of the Nation's commercial forest land is to be found one-third of all our standing sawtimber.

As forest depletion becomes more acute in other regions, we have come to draw more heavily upon the Douglas-fir region; and we shall have to continue to do so for many years. But this is costly. The freight rate to Chicago, for example, is about \$17 per M board feet. And it is easy to overestimate the importance of this region in the national picture. Even under wartime pressure for production, lumber cut from this region has not constituted much more than 25 percent of the total. The stand of hardwoods is insignificant. And in any realistic appraisal of future supply, it is unlikely that this region will account for more than 10 percent of the Nation's timber requirements after the accessible virgin timber has been cut.

But even within this region, the apparent surplus is local in character. The only area still largely undeveloped is a portion of southern Oregon. In the older districts, notably around Puget Sound, the bulk of the readily accessible sawtimber has been removed. Sawmills have shut down and pulp mills have assumed greater importance. The available stand is no longer as large as the growing stock needed to sustain a cut commensurate with the growth capacity of the land.

Several years ago business men of Gray's Harbor adopted a slogan, "Two billion or bust!" They reached their first objective - and then the closing of saw-

mills brought them close to the second when the war came to the rescue.

The lower Columbia River district with 170 large mills and 40 billion feet of sawtimber is already feeling the pinch of scarcity. About half of the private sawtimber belongs to 2 large companies. Most of the other mills face difficulty in getting the timber they need for long-time operation.

Additional evidence of scarcity of high quality timber needed for special uses is reflected in pressure to obtain Sitka spruce and Douglas-fir for veneer logs from the Olympic National Park. If surpluses were a major problem, why should the forest industries clamor so loudly to open the Park for logging?

Finally, it must be emphasized that a substantial part of the old growth timber reported in the Pacific Northwest is of doubtful accessibility. Only about half of it was in a zone that could be operated under the price relationships which obtained in the period 1925-1929.

Are Industry Forestry Programs Based on Timber Surpluses?

In spite of the assertion that "the basic American forestry problem is not one of scarcities but of surpluses," I question whether many of the leaders in the forest industries believe that to be true. The good forestry programs adopted by many private owners would seem to point to an opposite view. For example:

Was it fear of surplus that led the Great Northern Paper Company which already owned 1- $\frac{1}{2}$ million acres of forest land in Maine to expand its holdings in the years just before the war? Has Finch, Pruyn and Company in New York been worried about surpluses in pursuing its forestry program on some 200,000 acres in the Adirondacks for the past 20 years? And did the Armstrong Forestry Company, with some 84,000 acres in Pennsylvania, undertake thinnings in young stands under the pressure of surpluses?

Was it troublesome surpluses that caused some 35 pulp companies in the South, most of them established there within the past 10 years, to acquire almost 5 million acres of forest land as a backlog for the future?

Was it a prospective surplus in the South that caused such operators as the Johns-Manville Company, the Chesapeake Corporation and the Chesapeake-Camp Corporation in Virginia, the Superior Pine Products Company in Georgia, the W. T. Smith Lumber Company and the Alger-Sullivan Lumber Company in Alabama, and others to adopt good forestry programs?

Is it to defend themselves against the dangers of surplus that such owners as the Crossett Lumber Company and the Fordyce Lumber Company in Arkansas, the Urania Lumber Company in Louisiana, and the Southern Kraft Division of the International Paper Company employ technical foresters to designate what trees to cut? If so, the danger must be acute, because the Crossett Company believes it necessary to have one forester for each 50,000 acres and Southern Kraft had 70 men in its forestry department in 1941.

Was it a surplus that led the Nekoosa-Edwards Paper Company in Wisconsin to operate a forest tree nursery and plant trees each year? And was it because of a surplus that the Goodman Lumber Company in Wisconsin began to conserve growing stock by selective logging?

Was it a national surplus that gave the J. Neils Lumber Company the courage to undertake sustained-yield management for its relatively slow-growing ponderosa pine at Klickitat, Washington, and Libby, Montana?

Was it impending surpluses that led the Weyerhaeuser Timber Company, by far the largest private forest landowner in the West, to inaugurate a forestry program on its principal operations? And to establish the Clemons Tree Farm and the Vale Tree Farm in Washington for the husbanding of young timber? And I wonder if the Crown Zellerbach Company, West Fork Logging Company, and others who have adopted selective logging in the Northwest thought that surpluses might endanger the success of their operations.

Did a group of lumbermen in the Northwest deliberately undertake to add to a known surplus when they joined hands in the establishment of the fine cooperative tree nursery at Nisqually, Washington? And has the National Lumber Manufacturers Association itself been misleading timberland owners by encouraging them to enlist in the "Tree Farm" movement to grow more timber?

Frankly, I guess those folks, and many more I could name, undertook forestry because they were convinced it was good business in itself rather than as a response to regional or national timber scarcity. Nevertheless, all these industrial forestry programs clearly show that we are entering an era of timber growing and that the philosophy of timber exploitation must be left behind.

Perhaps the bug-a-boo of surpluses that has been raised is really one of excess sawmill capacity in some localities. At any rate pressure to liquidate speculative timberland investments has resulted in plant capacities that cannot be sustained and that frequently burden the operators with financial problems.

Or the bug-a-boo of surpluses may reflect the large volume of small, low-grade or inferior timber for which no assured market exists. Such material renders large areas unfit for commercial operation. Elsewhere it must remain in the woods often as waste.

I suspect that the real reason for the talk about surpluses is to counteract the suggestion that the public ought to require good forest practice on private lands. But the accomplishments of those timberland owners who already have forestry programs should convince anyone that destructive cutting is unnecessary.

My friend made reference to the "timber famine publicity of the last half century," which, he said, "has helped to put the forest problem in a false national perspective." I agree that folks won't freeze for lack of shelter. And we won't have to eat off the ground for lack of lumber to build tables,

chairs, and floors. But that is not the point. A strong nation needs an abundance of resources and wood is one of the most versatile and indispensable raw materials known.

As a matter of fact, the timber shortage publicity of a previous generation has not been discredited. It was a significant factor in the establishment of the National Forests. It helped crystallize sentiment for organized fire protection. And it contributed to the far-reaching educational effort which has brought perhaps one-fifth of the private forest land under management.

These are substantial accomplishments. But in spite of them, the fact remains that the Nation's timber stand was reduced at least 37 percent in the 3 decades between 1909 and 1938. We have seen how the basis for forest industry has been lost in many localities as local supplies waned. People already go without the lumber they might use if the kind they need were readily available at reasonable price. Without the constructive results of the early publicity, timber shortage might have been even more widespread and acute.

To gloss over the facts of forest depletion is dangerous. We cannot continue indefinitely to allow destructive cutting, fire, and other forces to hold annual timber growth below the level of what can and should be used in an economy of abundance. The war is now accentuating the Nation's forest problem. It has highlighted shortages of critical species and of high grade timber. It has led to premature sacrifice of young growth to meet the huge requirements for low grade lumber. Yet total consumption has been no greater than in earlier years when timber was more plentiful.

I want to close by stating my conviction that a comprehensive legislative charter is needed to give effect to a well-rounded national forest policy and to strengthen the foundation for timely post-war action in the forestry field. Such a charter should provide for:

1. Regulation of practices on private forest land under federal leadership in more positive form than financial aid to the States alone. The States, however, should be given opportunity to enact and effectuate regulation, meeting standards defined in the federal law, themselves.
2. Better protection from fire, insects, and disease, and a broadening of public aids to facilitate good private forest management.
3. Public acquisition of forest lands where watershed or recreational values are so important, or growth conditions so adverse, that private owners cannot be expected to give the management required by the public interest, and of certain areas of merchantable timber, control of which may vitally influence the management of adjacent National Forest lands or affect the welfare of dependent communities. There are perhaps 150 million acres of forest land now in private ownership for

which public acquisition is the only solution. For much of this the task is one of reclamation in its truest sense - the return of unproductive land to productivity. The present condition of the land is the result of social errors; its return to productivity constitutes a proper public function.

Enactment and implementation of such a charter will give substantial assurance that we shall always have productive forests with plenty of timber at prices that will encourage use. Failure to act means an aggravated scarcity - not of forests but of commercial timber. Action is needed not so much to protect investments in timberlands and manufacturing facilities, important though they are, as to sustain the livelihood of the common people and to protect the value of their homes.

By building a strong forest economy, making constructive use of one-third of our land heritage, the program suggested will provide "a secure, an adequate, and a suitable supply" of timber for every man and will contribute to the structure of security and better living, which we hope will mark an enduring peace.

CONTRIBUTION OF FORESTS TO IRRIGATION

Address by Lyle F. Watts, Chief of the Forest Service, read by Regional Forester Peck at the Annual Meeting of the National Reclamation Association, Denver, Colorado, October 28, 1943.

Water is life. Nowhere in our country is that more realized than here in our West. Nowhere is there greater interest in the water problem. No one is more appreciative of the day-to-day value of water than the irrigation farmer. No organization is more concerned with the relation of water to the life and development of our West than the National Reclamation Association.

Water is life because of its relation to the soil and to the growing of crops. And this is the aspect of it that today directly concerns both of us - you, the water users, and we the foresters, as wild land managers. You, representing many and varied reclamation interests, are concerned mainly with problems growing out of the availability and use of water. We, the foresters, are concerned with the problem as to how best to handle the forest lands on which much of the water originates so that thirsty farm lands may have maximum quantities of usable water.

Most irrigation water is derived from mountain country, high above and often far distant from the irrigated area. Some of this water comes from snow banks above timber line, but most comes from that great area of mountain land which lies below timber line but well above the Plains. Here fall the deepest snows, the heaviest and most dependable rains. This is the area mostly covered by forests.

This western forest of spruce, of fir, of pine, of woodlands and chaparral - and covering about 250 million acres, is a multiple-purpose resource. It provides a variety of benefits which affect us all in one way or another. It serves a wide variety of purposes. Its values are enormous and cannot be appraised in full.

As a producer of wood, this forest contains some two-thirds of the entire standing timber of the country. In some instances, it is so close to markets and the wood is so useful that almost every sizable tree has commercial value. Such forests are a temptation to strip off the rich crop regardless of consequences. The deteriorated condition of some areas today bears silent witness that some one harvested the timber with no thought for other products and services. The condition on other areas shows that the ripe timber can be removed without destroying the cover.

Within the forest grow many lesser plants - grasses, herbs, and shrubs. The forage on these lands now feeds over 4 million cattle and 16,000,000 sheep during a part of the year. This mountain area is also the home of much of our big game - elk, deer, bear. Furthermore, it provides recreation for millions of our fellow citizens who turn to the hills to escape the heat of the valleys and the plains.

In addition to its value for timber, forage, recreation, or other purpose, this forest land has an enormous value as a water producer. In some localities, its value for watershed purposes may far exceed the value of any

other product or service. It is the primary source of perhaps 90 or 95 percent of all the water supplies found west of the 100th meridian. It is the fountainhead of every western stream used for irrigation, power, or domestic supply. It is the area from which most ground water basins are replenished. On the other hand, it is also the area which, if mistreated, produces many of the floods and the sediments which damage reservoirs, canals, and ditches. Because of these forest values and because of these relations, you, the water users of the West, have a direct and immediate concern in it.

The relation between forests and water has long been recognized. The first forest "reservations" to be set aside from the public lands were for watershed protection. Since then, the Congress has further recognized this relation by creating other public forests, by authorizing acquisition by purchase, donation, and exchange, of land to be added to the National Forests, and by providing annually for forest fire control not only for timber production, but in the interest of navigation, water conservation and flood control.

Practically all water users recognize the value of forest land as a producer of water. The support which the National Reclamation Association has given the forestry movement confirms this. However, it may not be amiss for me to present some of the more recent findings of our research, which help portray how much forests and water have in common.

Our Forest Service research program covers many activities - timber growing and protection, the economics of forestry, range management, the utilization of forest products, and the effects of land management on water. Of primary importance to you is the last. At four of our six western experiment stations, studies of these water relations are in progress. Some deal with how much of the water is used by trees; some with the effect of forests on streamflow; and some with the relation of forests and other natural vegetation to floods and erosion. Some are laboratory studies, others use small watersheds - singly, in pairs, or in triplicate - to obtain the needed data. In all of them, the practical problems of forest and water relations are kept constantly in mind.

The results of this research in forest influences are badly needed. They are needed to provide the basis for the management of the wild lands on the important watersheds of our country. They are also needed to help in the solution of some of your water problems. Just now, even though so badly needed, because of wartime conditions this research is on a strictly maintenance basis.

Now for some highlights from this research in forest influences.

1. Water users are interested in sustained streamflow. Each day that snow melt is delayed, each day that high flows are maintained, the more valuable water becomes, especially to those using water directly from the streams.

Our research is finding that snow accumulations last longer in young stands that have been thinned than in dense woods. Consequently, it is believed that small openings here and there in sapling stands will help in delaying the snow melt. Best results are obtained when these openings are given a somewhat circular shape with a diameter about equal to the height of the surrounding trees. Snow that is held by the

branches gets to the ground, it is blown into these openings, it is shaded from the sun and protected from evaporation, and melting is delayed. How much the peak flows from a treated watershed can be retarded and how much longer the flow will be sustained as a result is yet to be determined. Also not yet determined is whether the operation will be a profitable one.

2. Water users are interested in the amount of water available for reservoir storage.

It now appears possible that application of certain forest practices can actually increase the water yield. The Rocky Mountain Forest Experiment Station has learned that additional run-off can be obtained by certain treatment given the high-mountain lodgepole pine forest. By a selective process which removes certain types of trees with large and heavy branches, a number of water losses can be prevented. First, there will be a saving of some 3 inches of water which otherwise would be lost through evaporation of snow caught by the crowns and which never reaches the ground. Then, another inch or more of the summer rains can be saved from evaporation. Although these summer rains in the Rockies do not generally increase stream flow, they do maintain the soil moisture so that at the end of the summer season, the soil is not thoroughly dried out. Consequently a smaller volume of snow melt is required to satisfy the moisture deficit and thereby to produce flow. All in all about 5 inches of water can be saved and made available through the kind of cutting practiced in this mature forest. If we can continue to get the same kind of results as we have in the past three years, in some areas at least, it may be possible to make available more water for irrigation purposes. This treatment is also practical from an economic standpoint as it produces timber enough to make the operation profitable.

3. Water users are also interested in the amount of water used or transpired by vegetation.

Although the western studies are not yet far along, results from two eastern studies are of interest. In one, a study of the amount of runoff from a small water shed and including both surface and sub-surface flow, indicated that as much as 18 inches of water could be transpired by hardwood forest during a single season. However, it should be remembered that this was in an area with 80 inches of rainfall annually, that the trees were those with high moisture requirements, and that their roots were close to the water table throughout the entire growing season. The results of this study support the belief held by many throughout the west that cottonwoods and related vegetation along ditches and in areas with a high water table, will use about as much water per acre as farm crops. But, before you cut down all our willows and cottonwoods, be sure that the shade, beauty and comfort of these trees, to say nothing of the firewood being produced, are not worth their cost in water.

Those of you who have watched the hourly flow of the smaller streams are acquainted with the daily variation in flow--highest flow at night, lowest flow during the hottest part of the day. We have

found that when the moisture-loving vegetation, even the brush, is removed from along stream banks this periodic drop in the afternoon was eliminated. Just how much water may be saved on the average we yet do not know. Indications are that it may amount to as much as 5 percent of the daily summer flow in some localities. What such treatment will do to the fishing remains to be seen: it may be so harmful as not to be desirable, even if economic.

4. Water users are also interested in knowing in advance how much water is to be available in the streams.

Although snow surveys are enabling excellent predictions to be made for water from the snow-pack, the increased flows from summer storms has heretofore been neglected. The Southwestern Forest and Range Station has, however, developed a method of predicting the summer flow delivered by Salt River into the Roosevelt Reservoir. This forecast, based upon the behavior of one of the small streams on the Sierra Ancha Experimental Forest, has permitted some astonishingly correct predictions. However, because of the great variability in summer rainfall and plant cover conditions, much greater refinement is needed before the method can be applied generally. At the Appalachian Station in western North Carolina, somewhat similar forecasts have been surprisingly accurate and are coming into use by the TVA and various power companies as a basis for operating hydro-electric reservoirs and plants.

5. Water users are interested in getting water for their crops when it is needed.

Since 1914, our Intermountain Station in Utah has had two small high mountain watersheds under observation. At first, one had a fairly good cover and the other a scanty one. Both were grazed in such a way as to maintain the density uniformly throughout the first five-year period. The surface runoff from the area with the scanty cover during the first 5-year period was 2.5 times that from the area with a denser cover. This excess water came off mostly as flash floods and carried 25 times the silt load of the other. After several years during which both small drainages were ungrazed the cover density was reversed. The reversal in use reversed the results. The area which originally gave the smaller results has in the past five years become the high yielding area both in amount of surface runoff and silt, with the excess water again in the form of a silt-laden flash flood.

This helps explain why at times water users find ditches so clogged with sediments that water is unavailable. For example, Minersville in the Sevier Lake drainage and not far from the two watersheds, found itself not so long ago almost without water when its main canal could be used only 8 days in one season. Summer storms on depleted forest range lands resulted in flash floods which filled the main irrigation canal with sediments 6 times in one year. Two draglines were required to clean some 40,000 cubic yards of debris from the canal. As a result, local irrigation assessments were increased 500 percent and crop production on the irrigated lands was seriously curtailed.

I have attempted so far to present a few illustrations showing how our watershed research is providing information on specific water problems.

Let us see something of their application. Several years ago we made a survey of the watershed lands of the country. Of approximately 250 million acres of forest lands in the West we found that about 65 percent were critically significant in their water relations because of their location, soil, or character of cover. On an additional 25 percent these water relations were of sufficient consequence to warrant special concern.

Of these forest watershed lands about 130 million acres are in various types of public ownership or control. Some are State, county or municipal lands; some are Indian lands; some Parks, some public domain; the remainder, half of the total, are National Forests. About two-thirds of all these varied public lands have critical water relations. On many of them management and administrative practices are such as to safeguard water supplies. However, we must admit that some of these lands - and I do not exclude the National Forests - are not in as good shape as they ought to be. Furthermore, range conditions on some of the public lands are not satisfactory. Too many livestock and improper use of the range have sometimes resulted in deterioration of the natural cover. Fire-control measures have not yet been adequately intensified. Although timber cutting and logging on most public lands are usually done with due regard to water supplies, there are instances where satisfactory results are not obtained.

About 120 million acres of our western mountain watersheds are in private ownership. Of them, 60 million acres have major watershed influences, and 20 million have moderate influences. On those privately owned watershed lands where the timber has not been cut or where there has been but little grazing, conditions are as good as can be found anywhere. On some important watersheds, private owners have followed practices which have not injured either the water, the soil, or the future forest crop. Unfortunately, these owners are in the minority for most private owners have used and are using practices which are not only injuring the forests, but are damaging water relations as well. Logging on these lands is often done in such manner and grazing is often so heavy or the livestock so poorly managed that valley agricultural land values are threatened. Some already have been destroyed.

Let us take a look at one important watershed, the Boise River watershed in Idaho. Here recent investigations show that nearly 3 million cubic yards of sediment are annually contributed to the river from various abuses of the foothill and mountain slopes in that drainage, exclusive of the area above Anderson Ranch Dam. The cost of removing this eroded material from the reservoir, canals, and farm ditches has been estimated in excess of \$350,000 each year. This is equivalent to an annual assessment of about \$1 an acre for each acre of land on the 7,000 irrigated farms in this Boise area. Put in another way, each irrigated acre is indirectly paying a tax of \$1 a year in large part because of present and past abuse of headwater lands. And there are indications that the amount of eroded material is increasing annually rather than decreasing. Furthermore, these losses are taking place in spite of the existing program of headwaters protection, administrative policies, and present legislation. That such losses are not decreasing is evidence we have not yet reached that level of protection and management which will insure the safety and well-being of this area.

Those lands are involved? Everybody's. No single agency or individual is primarily responsible, but collectively, all agencies and owners are responsible. Some land is in Federal ownership, some in State or other local public hands, and the balance is privately owned. It is because of such scattered responsibilities that some positive action by all is necessary. Although conditions in the Boise area may not apply generally, they do show how the management of watershed lands can affect western agricultural economy.

What is needed to make sure that these watersheds are so handled that they will contribute to agriculture in maximum degree?

- (1) Better fire control is needed.
- (2) Deteriorated slopes must be rehabilitated.
- (3) The vegetative cover be supplemented with engineering measures.
- (4) Improved pastures must replace some natural range.
- (5) Fewer livestock and better management on forest ranges are essential.
- (6) Conservative logging practices must replace destructive ones.

Until these measures are adopted we shall continue to have situations where the water users in the lowlands will pay for avoidable lack of water, irregular flows and sedimentation, caused by land misuse on the slopes. How can they be put into effect?

Much of our high mountain watershed lands in the West are in public ownership. This suggests continuing vigilance on the part of the water users to see that these public lands are so used and administered as to safeguard water values. Where laws or regulations do not provide for adequate protection of watershed values, they should be amended or revised.

There is a sizeable acreage of forest watershed lands still in private ownership on which the vegetative balance is so delicate, or on which corrective action in case of misuse is so costly, or where the jumbled ownership pattern precludes proper handling, as to make public ownership the only feasible way of safeguarding the public interest. Here, too, the responsibility for seeing that the needed action is taken rests heavily upon the water users.

But there is much forest watershed land that can stay in private ownership so long as it is handled with regard to watershed values. In order to give this assurance some form of public control of forest and range practices is needed. I realize that this is regulation. I know full well that any limitation whatever of what one can do with his property is not popular. Yet where public interest in adequate water supply is so great I see no other effective assurance.

Public ownership of certain additional lands and public regulation of practices on private lands should be accompanied by certain essential public aids to the private owner. Public cooperation in protection against fire, insects, and disease should be broadened and strengthened. The public should participate in the cost of reseeding or reforesting the land where that is needed.

Technical advice and assistance in proper management to the property should be afforded. Credit adapted to the requirements of forestry should be provided. More research to improve the basis for management and utilization practices is necessary.

It is my firm belief that the only sound solution to the problem lies along the lines indicated: Better management of public watershed lands, public acquisition of certain other lands, and for the balance, public regulation and a strengthening of public assistance. For all of these more research is needed.

And again, I want to emphasize the fact that you, the water users of the West, have a vital stake in these lands.

Cochran 1111
HSC

CONTRIBUTION OF FORESTS TO IRRIGATION

Address by Lyle F. Watts, Chief of the Forest Service, read by Regional Forester Peck at the Annual Meeting of the National Reclamation Association, Denver, Colorado, October 28, 1943.

Water is life. Nowhere in our country is that more realized than here in our West. Nowhere is there greater interest in the water problem. No one is more appreciative of the day-to-day value of water than the irrigation farmer. No organization is more concerned with the relation of water to the life and development of our West than the National Reclamation Association.

Water is life because of its relation to the soil and to the growing of crops. And this is the aspect of it that today directly concerns both of us - you, the water users, and we the foresters, as wild land managers. You, representing many and varied reclamation interests, are concerned mainly with problems growing out of the availability and use of water. We, the foresters, are concerned with the problem as to how best to handle the forest lands on which much of the water originates so that thirsty farm lands may have maximum quantities of usable water.

Most irrigation water is derived from mountain country, high above and often far distant from the irrigated area. Some of this water comes from snow banks above timber line, but most comes from that great area of mountain land which lies below timber line but well above the Plains. Here fall the deepest snows, the heaviest and most dependable rains. This is the area mostly covered by forests.

This western forest of spruce, of fir, of pine, of woodlands and chaparral - and covering about 250 million acres, is a multiple-purpose resource. It provides a variety of benefits which affect us all in one way or another. It serves a wide variety of purposes. Its values are enormous and cannot be appraised in full.

As a producer of wood, this forest contains some two-thirds of the entire standing timber of the country. In some instances, it is so close to markets and the wood is so useful that almost every sizable tree has commercial value. Such forests are a temptation to strip off the rich crop regardless of consequences. The deteriorated condition of some areas today bears silent witness that some one harvested the timber with no thought for other products and services. The condition on other areas shows that the ripe timber can be removed without destroying the cover.

Within the forest grow many lesser plants - grasses, herbs, and shrubs. The forage on these lands now feeds over 4 million cattle and 16,000,000 sheep during a part of the year. This mountain area is also the home of much of our big game - elk, deer, bear. Furthermore, it provides recreation for millions of our fellow citizens who turn to the hills to escape the heat of the valleys and the plains.

In addition to its value for timber, forage, recreation, or other purpose, this forest land has an enormous value as a water producer. In some localities, its value for watershed purposes may far exceed the value of any

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other product or service. It is the primary source of perhaps 90 or 95 percent of all the water supplies found west of the 100th meridian. It is the fountainhead of every western stream used for irrigation, power, or domestic supply. It is the area from which most ground water basins are replenished. On the other hand, it is also the area which, if mistreated, produces many of the floods and the sediments which damage reservoirs, canals, and ditches. Because of these forest values and because of these relations, you, the water users of the West, have a direct and immediate concern in it.

The relation between forests and water has long been recognized. The first forest "reservations" to be set aside from the public lands were for watershed protection. Since then, the Congress has further recognized this relation by creating other public forests, by authorizing acquisition by purchase, donation, and exchange, of land to be added to the National Forests, and by providing annually for forest fire control not only for timber production, but in the interest of navigation, water conservation and flood control.

Practically all water users recognize the value of forest land as a producer of water. The support which the National Reclamation Association has given the forestry movement confirms this. However, it may not be amiss for me to present some of the more recent findings of our research, which help portray how much forests and water have in common.

Our Forest Service research program covers many activities - timber growing and protection, the economics of forestry, range management, the utilization of forest products, and the effects of land management on water. Of primary importance to you is the last. At four of our six western experiment stations, studies of these water relations are in progress. Some deal with how much of the water is used by trees; some with the effect of forests on streamflow; and some with the relation of forests and other natural vegetation to floods and erosion. Some are laboratory studies, others use small watersheds - singly, in pairs, or in triplicate - to obtain the needed data. In all of them, the practical problems of forest and water relations are kept constantly in mind.

The results of this research in forest influences are badly needed. They are needed to provide the basis for the management of the wild lands on the important watersheds of our country. They are also needed to help in the solution of some of your water problems. Just now, even though so badly needed, because of wartime conditions this research is on a strictly maintenance basis.

Now for some highlights from this research in forest influences.

1. Water users are interested in sustained streamflow. Each day that snow melt is delayed, each day that high flows are maintained, the more valuable water becomes, especially to those using water directly from the streams.

Our research is finding that snow accumulations last longer in young stands that have been thinned than in dense woods. Consequently, it is believed that small openings here and there in sapling stands will help in delaying the snow melt. Best results are obtained when these openings are given a somewhat circular shape with a diameter about equal to the height of the surrounding trees. Snow that is held by the

branches gets to the ground, it is blown into these openings, it is shaded from the sun and protected from evaporation, and melting is delayed. How much the peak flows from a treated watershed can be retarded and how much longer the flow will be sustained as a result is yet to be determined. Also not yet determined is whether the operation will be a profitable one.

2. Water users are interested in the amount of water available for reservoir storage.

It now appears possible that application of certain forest practices can actually increase the water yield. The Rocky Mountain Forest Experiment Station has learned that additional run-off can be obtained by certain treatment given the high-mountain lodgepole pine forest. By a selective process which removes certain types of trees with large and heavy branches, a number of water losses can be prevented. First, there will be a saving of some 3 inches of water which otherwise would be lost through evaporation of snow caught by the crowns and which never reaches the ground. Then, another inch or more of the summer rains can be saved from evaporation. Although these summer rains in the Rockies do not generally increase stream flow, they do maintain the soil moisture so that at the end of the summer season, the soil is not thoroughly dried out. Consequently a smaller volume of snow melt is required to satisfy the moisture deficit and thereby to produce flow. All in all about 5 inches of water can be saved and made available through the kind of cutting practiced in this mature forest. If we can continue to get the same kind of results as we have in the past three years, in some areas at least, it may be possible to make available more water for irrigation purposes. This treatment is also practical from an economic standpoint as it produces timber enough to make the operation profitable.

3. Water users are also interested in the amount of water used or transpired by vegetation.

Although the western studies are not yet far along, results from two eastern studies are of interest. In one, a study of the amount of runoff from a small water shed and including both surface and sub-surface flow, indicated that as much as 18 inches of water could be transpired by hardwood forest during a single season. However, it should be remembered that this was in an area with 80 inches of rainfall annually, that the trees were those with high moisture requirements, and that their roots were close to the water table throughout the entire growing season. The results of this study support the belief held by many throughout the west that cottonwoods and related vegetation along ditches and in areas with a high water table, will use about as much water per acre as farm crops. But, before you cut down all our willows and cottonwoods, be sure that the shade, beauty and comfort of these trees, to say nothing of the firewood being produced, are not worth their cost in water.

Those of you who have watched the hourly flow of the smaller streams are acquainted with the daily variation in flow--highest flow at night, lowest flow during the hottest part of the day. We have

found that when the moisture-loving vegetation, even the brush, is removed from along stream banks this periodic drop in the afternoon was eliminated. Just how much water may be saved on the average we yet do not know. Indications are that it may amount to as much as 5 percent of the daily summer flow in some localities. What such treatment will do to the fishing remains to be seen; it may be so harmful as not to be desirable, even if economic.

4. Water users are also interested in knowing in advance how much water is to be available in the streams.

Although snow surveys are enabling excellent predictions to be made for water from the snow-pack, the increased flows from summer storms has heretofore been neglected. The Southwestern Forest and Range Station has, however, developed a method of predicting the summer flow delivered by Salt River into the Roosevelt Reservoir. This forecast, based upon the behavior of one of the small streams on the Sierra Ancha Experimental Forest, has permitted some astonishingly correct predictions. However, because of the great variability in summer rainfall and plant cover conditions, much greater refinement is needed before the method can be applied generally. At the Appalachian Station in western North Carolina, somewhat similar forecasts have been surprisingly accurate and are coming into use by the TVA and various power companies as a basis for operating hydro-electric reservoirs and plants.

5. Water users are interested in getting water for their crops when it is needed.

Since 1914, our Intermountain Station in Utah has had two small high mountain watersheds under observation. At first, one had a fairly good cover and the other a scanty one. Both were grazed in such a way as to maintain the density uniformly throughout the first five-year period. The surface runoff from the area with the scanty cover during the first 5-year period was 2.5 times that from the area with a denser cover. This excess water came off mostly as flash floods and carried 25 times the silt load of the other. After several years during which both small drainages were ungrazed the cover density was reversed. The reversal in use reversed the results. The area which originally gave the smaller results has in the past five years become the high yielding area both in amount of surface runoff and silt, with the excess water again in the form of a silt-laden flash flood.

This helps explain why at times water users find ditches so clogged with sediments that water is unavailable. For example, Minersville in the Sevier Lake drainage and not far from the two watersheds, found itself not so long ago almost without water when its main canal could be used only 8 days in one season. Summer storms on depleted forest range lands resulted in flash floods which filled the main irrigation canal with sediments 6 times in one year. Two draglines were required to clean some 40,000 cubic yards of debris from the canal. As a result, local irrigation assessments were increased 500 percent and crop production on the irrigated lands was seriously curtailed.

I have attempted so far to present a few illustrations showing how our watershed research is providing information on specific water problems.

Let us see something of their application. Several years ago we made a survey of the watershed lands of the country. Of approximately 250 million acres of forest lands in the West we found that about 65 percent were critically significant in their water relations because of their location, soil, or character of cover. On an additional 25 percent these water relations were of sufficient consequence to warrant special concern.

Of these forest watershed lands about 130 million acres are in various types of public ownership or control. Some are State, county or municipal lands; some are Indian lands; some Parks, some public domain; the remainder, half of the total, are National Forests. About two-thirds of all these varied public lands have critical water relations. On many of them management and administrative practices are such as to safeguard water supplies. However, we must admit that some of these lands - and I do not exclude the National Forests - are not in as good shape as they ought to be. Furthermore, range conditions on some of the public lands are not satisfactory. Too many livestock and improper use of the range have sometimes resulted in deterioration of the natural cover. Fire-control measures have not yet been adequately intensified. Although timber cutting and logging on most public lands are usually done with due regard to water supplies, there are instances where satisfactory results are not obtained.

About 120 million acres of our western mountain watersheds are in private ownership. Of them, 60 million acres have major watershed influences, and 20 million have moderate influences. On those privately owned watershed lands where the timber has not been cut or where there has been but little grazing, conditions are as good as can be found anywhere. On some important watersheds, private owners have followed practices which have not injured either the water, the soil, or the future forest crop. Unfortunately, these owners are in the minority for most private owners have used and are using practices which are not only injuring the forests, but are damaging water relations as well. Logging on these lands is often done in such manner and grazing is often so heavy or the livestock so poorly managed that valley agricultural land values are threatened. Some already have been destroyed.

Let us take a look at one important watershed, the Boise River watershed in Idaho. Here recent investigations show that nearly 3 million cubic yards of sediment are annually contributed to the river from various abuses of the foothill and mountain slopes in that drainage, exclusive of the area above Anderson Ranch Dam. The cost of removing this eroded material from the reservoir, canals, and farm ditches has been estimated in excess of \$350,000 each year. This is equivalent to an annual assessment of about \$1 an acre for each acre of land on the 7,000 irrigated farms in this Boise area. Put in another way, each irrigated acre is indirectly paying a tax of \$1 a year in large part because of present and past abuse of headwater lands. And there are indications that the amount of eroded material is increasing annually rather than decreasing. Furthermore, these losses are taking place in spite of the existing program of headwaters protection, administrative policies, and present legislation. That such losses are not decreasing is evidence we have not yet reached that level of protection and management which will insure the safety and well-being of this area.

Whose lands are involved? Everybody's. No single agency or individual is primarily responsible, but collectively, all agencies and owners are responsible. Some land is in Federal ownership, some in State or other local public hands, and the balance is privately owned. It is because of such scattered responsibilities that some positive action by all is necessary. Although conditions in the Boise area may not apply generally, they do show how the management of watershed lands can affect western agricultural economy,

What is needed to make sure that these watersheds are so handled that they will contribute to agriculture in maximum degree?

- (1) Better fire control is needed.
- (2) Deteriorated slopes must be rehabilitated.
- (3) The vegetative cover be supplemented with engineering measures.
- (4) Improved pastures must replace some natural range.
- (5) Fewer livestock and better management on forest ranges are essential.
- (6) Conservative logging practices must replace destructive ones.

Until these measures are adopted we shall continue to have situations where the water users in the lowlands will pay for avoidable lack of water, irregular flows and sedimentation, caused by land misuse on the slopes. How can they be put into effect?

Much of our high mountain watershed lands in the West are in public ownership. This suggests continuing vigilance on the part of the water users to see that these public lands are so used and administered as to safeguard water values. Where laws or regulations do not provide for adequate protection of watershed values, they should be amended or revised.

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But there is much forest watershed land that can stay in private ownership so long as it is handled with regard to watershed values. In order to give this assurance some form of public control of forest and range practices is needed. I realize that this is regulation. I know full well that any limitation whatever of what one can do with his property is not popular. Yet where public interest in adequate water supply is so great I see no other effective assurance.

Public ownership of certain additional lands and public regulation of practices on private lands should be accompanied by certain essential public aids to the private owner. Public cooperation in protection against fire, insects, and disease should be broadened and strengthened. The public should participate in the cost of reseedling or reforesting the land where that is needed.

Technical advice and assistance in proper management to the property should be afforded. Credit adapted to the requirements of forestry should be provided. More research to improve the basis for management and utilization practices is necessary.

It is my firm belief that the only sound solution to the problem lies along the lines indicated: Better management of public watershed lands, public acquisition of certain other lands, and for the balance, public regulation and a strengthening of public assistance. For all of these more research is needed.

And again, I want to emphasize the fact that you, the water users of the West, have a vital stake in these lands.

UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE

ADDRESS REPLY TO
CHIEF, FOREST SERVICE
AND REFER TO



WASHINGTON

C
SUPERVISION
Programs
(Regulation)

October 5, 1943

LT 10/5/43.

Regional Foresters
and Directors

Dear Sir:

At the close of the Regional Foresters' and Directors' conference last spring, I stated that as soon as I had seen something of forest conditions in Regions 7 and 8 I would advise you of my views on public regulation. I have spent 7 weeks in the field in Region 8 and 2 $\frac{1}{2}$ weeks in Region 7. I am now prepared to fulfill my promise.

It is perfectly clear to me that effective Nation-wide public regulation of forest practice on private land is essential. I say this with full appreciation for the good work being done by many operators and owners. In fact, the successful application of good forest practices to some private holdings, both large and small, in almost every region with which I am familiar convinces me that public regulation is the next logical step in American forestry. The argument that forestry on private lands is impracticable has little substance in the face of the examples on the ground. Yet only about one-fifth of the private forest land is handled with conscious regard for real forestry needs.

Unfortunately, a campaign for complacency with regard to the forest situation has recently been gaining momentum. It is aimed, for one thing, to forestall public regulation or at most any Federal participation in it beyond giving financial aid to States. It is in the public interest that the public know the facts of the forest situation; that it not be misled as to true conditions and trends. As the Federal agency with primary responsibility in this field, the Forest Service has an unescapable duty.

I have explored the possibilities of public regulation based on State action unsupported by Federal legislation. I can find nothing to indicate that such regulation would be generally effective.

I have considered the possibilities of Federal participation through the Clarke-McNary Section 2 type of procedure. For one thing, the 137 million acres of forest land still without organized fire protection after all these years deadens any enthusiasm for applying this method to secure

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2-Regional Foresters and Directors-October 5, 1943

regulation. The fact that the only Federal leverage to encourage action would be withdrawal of Federal support leaves me cold. Even cooperative fire control itself might be jeopardized in States where regulation is lacking, ineffective, or actively opposed. There is a real likelihood that this type of legislation would result in the over-all forest situation losing ground in many States. Certainly it isn't the type of legislation we should favor.

Yet I am convinced that active State participation in a national program of forest regulation is highly desirable. In reaching this decision I have considered our recommendation to the Joint Congressional Committee on Forestry, existing public sentiment, the situation of State forestry agencies, and the judgment of many key men in the Forest Service. Based on these considerations it is my opinion that forestry as a whole will benefit most through a plan of regulation that will afford the States opportunity to enact and, with Federal financial assistance, administer regulation in accordance with federally prescribed standards. Provision for direct Federal action is necessary within those States that are unwilling or unable to meet the Federal standards.

This is in brief the plan recommended to the Joint Congressional Committee on Forestry by the Department and the Forest Service.

Such an arrangement of course necessitates basic Federal legislation. I hope such legislation can be enacted whenever it is practicable and appropriate. We are not sponsoring or soliciting support of any specific bills. However, you are free to advise anyone who is interested in my views as to the necessity for Nation-wide forest regulation and the method or plan that I favor.

There need be no uniform pattern to which a State law must conform to enable the State to qualify for Federal cooperation under such a plan. A State law, among other things, ought to establish a definite responsibility of a single State agency for administration; provide for classification of forest land to which regulation is to apply; prescribe objectives and principles or standards consistent with those of the basic Federal act for guidance in the formulation of specific rules of forest practice; and make the regulation mandatory. I believe it very desirable to provide, through representative boards or otherwise, for the advisory participation of such groups as forest land owners, the forest industry, forest laborers, and consumers in the formulation of the specific rules of practice. Bureaucratic administration and capture of the regulatory machinery by the interests to be regulated must be prevented.

We should be willing of course, if requested, to advise State folks in formulating State legislation. We therefore intend later on to send you further suggestions that may be helpful to you in complying with such requests.

3-Regional Foresters and Directors-October 5, 1943

Under the plan of regulation indicated above, rules of forest practice become extremely important. Basic to their formulation is an understanding of the standards or principles of practice contemplated. My "C-SUPERVISION-Programs" letter of June 14 was designed to facilitate this understanding. You will recall, among other things, it was indicated that the level of silvicultural practice thus visualized would generally fall somewhat below that obtained on the more intensively managed private land and on the national forests.

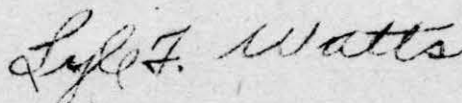
The suggested rules that you have submitted have been carefully reviewed in the light of that letter by a committee in this office. The committee appraisal and some specific suggestions are covered in memoranda by the committee which will be sent you in a few days. I am in general accord with the committee's appraisal and suggestions.

These memoranda will be transmitted to you with the thought that the rules thus far formulated, and suggestions, are illustrative rather than final, even for the specific classes of forest conditions covered. They do serve as specific expressions of the standards of practice contemplated. There will have to be a further refinement in the classification of forest conditions, and additional study in determining the final rules.

I desire that you continue actively the development of tentative rules of forest practice. It may be advantageous for you to discuss the principles and standards, and tentative rules, with interested persons outside the Service, but I think it should be made perfectly clear that any specific rules at this time are illustrative and a basis for discussion.

Please transmit by February 1 a report on your progress in reaching common understanding with other interested groups or agencies as to standards or specific rules, and covering important events bearing on the whole subject. Regional foresters and directors should collaborate in the submission of single reports for the same territories.

Sincerely,



LYLE F. WATTS, Chief

1. War activities of F.S.
2. Post-war forestry program.
3. Forest policy.

Address by
Lyle F. Watts, Chief, Forest Service, U. S. D. A.
at meeting of
Wisconsin-Upper Michigan Section,
Society of American Foresters, Milwaukee, Wisconsin

September 20, 1943
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War Activities of the Forest Service

The forests of the United States are being called upon for a tremendous output of materials essential to the war. The indispensability of wood and of wood products becomes more apparent with each month and the difficulties of meeting the demands become more acute as the tempo of war increases. Truly, wood is one of the critical materials in this conflict.

Under these circumstances the Forest Service is devoting its energies to projects that contribute to the war effort. Peacetime activities have been put on the shelf for the duration to the extent consistent with our public responsibilities.

To meet wartime demands the National Forests are being made to contribute to national needs as never before. Despite shortages of manpower to handle the timber-sale business, the cut from the National Forests in the past fiscal year, established an all-time high. The total cut was **2,359,473,000** board feet -- 7 percent more than the previous year and 83 percent above 1939. The value of the timber cut exceeded 8-1/2 million dollars.

I mentioned the handicap of manpower shortage. It will interest you to know that the Forest Service has lost to the armed forces more than 1,500 men and women with civil service status. I need not tell this audience that

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the proportion of young, technically trained, timber, range, and wild-life men has been high. These are the people who did most of the cruising, scaling, marking and supervision for timber sales, and it has been difficult indeed to increase timber sales in the face of this loss. Yet it has been done. Standards of work may have suffered somewhat, but we think that this has not been too serious.

Of special importance is the program for obtaining Sitka spruce from the National Forests of Alaska. Working under the most difficult winter conditions, contractors engaged by the Forest Service delivered the first raft of logs to Puget Sound in January. The yield of aircraft quality lumber from the Alaskan logs is exceeding all expectations. Including hemlock and spruce not suitable for aircraft, which are being sold to Alaskan sawmills for military use there, output is ^{approaching} ~~now up to~~ the goal of 10 million board feet per month which was set at the outset. It will probably not be possible to maintain this output through the coming winter months.

The National Forest range has also been making an important wartime contribution. ^{Emphasis on} Careful management, including continued ^{progressive} adjustment of live-stock numbers to the carrying capacity of the range, is ^{helpful toward} ~~making it possible~~ ^{The} to obtain maximum production of meat, wool and hides without damage to the resource. Stockmen are being urged to market their livestock early to ameliorate the domestic food situation and to supply greatly expanded western consuming centers with grass-fat beef.

Going beyond the National Forests, the Forest Service has been collaborating actively with the War Production Board, the Office of Price Administration, and other agencies in studying requirements, supplies and

output of forest products and in providing a wide range of allied information. The Branch of Research has brought together a group of men headed most energetically by George Trayer, who recently represented the Forest Service on a mission sent to England to study the problems of lumber supply. They have shown outstanding versatility and resourcefulness. As an example of the extent to which W.P.B. has learned to depend on our men, the Requirements and Supplies section has recently been asked to provide information on the quantity, character and style of winter underwear which would be needed for logging operations in northern New England and the Lake States.

During the past year the Forest Service has also given a lot of study to the problem of stimulating the production of lumber and other forest products. It was recognized early in 1942 that output was lagging and that small mills in particular were having difficulties with radical shifts of markets and complicated procedures incident to doing business in wartime. The Forest Service joined with the War Production Board in proposing a plan to utilize its far-flung field organization and to enlist cooperation of state agencies to extend aid to owners and operators and otherwise to stimulate maximum output. This plan was violently opposed by the lumber industry which saw in it a threat of federal regulation of cutting practices, and alleged that the need for the proposed services did not exist.

After months of delay, during which some of the proposals were put into operation without Forest Service assistance, the original plan was dropped. Yet the War Production Board, facing increasing shortages in lumber supply, found that additional effort to maintain output of forest products was essential. A modified plan, the Timber Production War Project,

now in operation in a number of eastern states, uses our facilities to provide service, especially to small operators, in meeting the many inevitable procedures incident to total war; to aid in securing a timber supply for mills not now adequately provided with standing timber; to aid in obtaining firm contracts for the output of logs and lumber; and to provide technical guidance to assure efficient use of available manpower and equipment. The state forestry departments and extension services are collaborating actively in the program. It is worth noting that the President's approval of the modified plan was subject to the understanding that where federal aids were advanced, there must be provision to prevent destructive forest practices.

Even before this plan was put into operation, 76 foresters assigned by the Forest Service in cooperation with the States to marketing projects, involving 286 counties in eastern States under the Norris-Doxey Farm Forestry Act, have been instrumental in stepping up production locally and in channeling farm timber into essential war industries.

Protection of the forests from fire has assumed new significance as a result of the war and this has been recognized in emergency appropriations by Congress. To the normal problem of minimizing damage to forest resources, has been added the necessity of maintaining uninterrupted service from power plants, transmission lines, railroads, and industrial plants in forested areas, the need to prevent smoke palls which might interfere with air transport or aircraft warning service, and the threat of sabotage. Military installations and the presence of large numbers of soldiers in and near forested areas added to the hazard while the difficulties of fire control were enhanced by the shortage of trained guards and fire fighters. Indicative

of the potential disruption and damage to war industry and transportation which forest fires may cause, as well as of the importance of wood in the war, is the record of two enemy incendiary bombings which occurred in the forests of western Oregon. Fortunately neither resulted in a serious outbreak.

I presume foresters here are generally aware of the prominent place the Forest Products Laboratory is taking in the war effort. To me the work being done at the Laboratory is simply unbelievable. In providing data and specifications on the use of wood for aircraft; in designing economical crates and containers for all sorts of military supplies and equipment, including anti-aircraft guns, armored trailers and cars, as well as munitions and other supplies; in training inspectors for ^{aircraft} wood products and packaging; and in broadening the use of plywood, plastics and other chemical derivatives of wood, outstanding contributions have been made.

Less well known, perhaps, is the progress that has been made by research in increasing output and conserving labor in the critical naval stores industry. Using chemical treatments, gum yields in commercial operations have been increased 25 percent. For the long pull substantial progress has also been made in the selection and rooting of strains of pine yielding 2 to 3 times as much gum as their associates of the same size and vigor.

Valuable assistance has been rendered the military in camouflage planting problems. Some of this work was only possible because of accumulated knowledge gained from pre-war investigations. On the other hand, some of the newer findings will have permanent value for the future. For example, treatments to reduce transpiration may permit forest planting

to be done at almost any season of the year and may extend the area that may be successfully planted to much more adverse sites.

I should not close this brief sketch of the wartime activities of the Forest Service without reference to the guayule rubber project, the success of which will, I believe, lead to early authorization for expansion beyond the limitation established last spring when it appeared that further use of irrigated land for guayule might interfere unnecessarily with food production. On June 30 over 23,000 acres had been planted. It is probable that the project will be expanded to an area of 150,000 acres within the next ~~two~~^{three} years. Much of the expansion, if undertaken, will be in Texas and the Southwest where competition for food cropland and for labor is not so acute as in California. Seven nurseries, aggregating about ~~3,500~~^{3,100} acres in extent, are ready with sufficient stock for next year's planting. About 400 tons of high quality rubber were manufactured from mature shrub harvested in 1942. Experimental plantings of Russian dandelion and of goldenrod are also being carried forward. It is planned to harvest part of the 1943 plantings of both these crops in order to extract a few tons of rubber for testing purposes.

Planning for Peace

Productive forests constitute so vital a part of the national economy that we must not fail, while making the utmost contribution to wartime needs, to be planning for peace. Demobilization of the armed forces and the release of labor from war industries is likely to be accompanied by a period when it may be necessary to undertake a very large program of public works in order to provide full employment.

Forests and intermingled forest range offer a large field for public works that may be readily developed in post-war years. Restoration of forests on non-productive land by planting; rehabilitation of run-down forests by weeding, thinning, and pruning, and other timber stand improvement; range reseeding; fire hazard reduction; control of injurious insects and diseases; expansion in the forest recreational facilities; and improvements of the wild-life habitat; all call for a large amount of labor with a minimum of other expense. Such work can be quickly started and easily suspended without excessive loss when the need for employment declines. It is work which is worth while in itself and should be carried forward on public forests as a continuing program in any event.

Beyond that there is need for a large amount of construction for the development, protection and utilization of public forest areas. Only half of the road system planned for the National Forests is now built and of satisfactory standard. Shifts in range management to make the National Forests contribute most fully to the livestock economy of the West under changing conditions will require new water developments, additional fencing, and other improvements. The success of the partly completed Arroyo Seco flood control project on the Los Angeles National Forest in stabilizing one-fourth million cubic yards of channel debris during heavy storms last January and the effective protection afforded valley lands, home sites and public utilities by range reseeding and contour ditching in the Intermountain region indicate that we have only begun the upstream work which is desirable for watershed protection and flood control.

The volume and geographic distribution of work in these fields may be greatly expanded by pushing the acquisition of millions of acres of forest land which seem destined for public ownership.

In planning for public works, I am anxious that foresters do not lose sight of the fact that the need for emergency public works can be kept down as the volume of employment furnished by private industry is kept up. In communities primarily dependent upon forest industries, the level of permanent industry that can be sustained is directly related to the economic productivity of the adjacent forest land. Far more fundamental than relying on the forest as a source of relief employment, is a forest policy that will contribute to the security and stability of private employment by assuring continued productivity of forest lands.

If the forests are to make their optimum contribution to the welfare of the Nation, it will be necessary to provide for better care and management than they have thus far received. An economy of abundance depends upon maintaining the productivity of natural resources at a high level; yet today, after decades of agitation and educational effort, the bulk of the cutting on private forest lands is not under any plans for perpetuating the productivity of the resource and one-third of the private forest area, including a large part of the best timber-growing land in the South is still without organized fire protection.

Looking to the future, there is good reason to believe that post-war needs for lumber and other forest products will, in the aggregate, continue at or near the wartime level. Declining needs for war purposes will be offset by pent-up demands for housing, wider application of new techniques

for using wood in construction of all kinds, the upward trend in utilization of pulp and paper products and other developments. Moulded plywood developed for aircraft will doubtless find post-war use in automobiles, furniture, and perhaps other items. Plastics made largely or entirely from wood have only begun to find commercial uses. And the manufacture of alcohol from *Sawmill waste* lignin is indicative of the field which may be opened by chemical research and industrial engineering.

With pressure from abroad to help supply the huge quantities of lumber that will be needed for the reconstruction of war-torn Europe added to a domestic demand already almost double the rate of annual saw-timber growth, it should be obvious that only by the most aggressive measures can we hope to bring saw-timber growth in line with needs.

Forest Regulation Needed

Some familiarity with this region and with 3 regions in the West, coupled with trips that I have recently taken into the deep South and the Northeast convince me that comprehensive forest legislation, including but not limited to regulation of cutting practices, is now more urgently needed than ever before. In making this statement I am not in the least overlooking or discounting the many examples of good forest management by private owners in almost every section of the country.

In this region I need no more than mention such operations as the Goodman Lumber Company or the Nekooska-Edwards Paper Co. Out in Oregon and Montana the J. Neils Lumber Company has a sustained-yield program fully equalling in intensity National Forest operations in the ponderosa pine type. The fire protection system on the Clemens Tree Farm of the Weyerhaeuser Lumber Company in Washington goes far beyond what we have been able to provide for the National Forests.

Without prejudice to what is going on in other regions, I believe I was most stirred by what I saw in the South. In the Forest Service we have always emphasized the social value of productive forests and have striven to make the National Forests contribute effectively to the welfare of local people. But nowhere have the public forests done any better than Mr. Harley Langdale who is building up an intensive forestry program on about 100,000 acres near Valdosta, Georgia. Mr. Langdale is not only going far beyond minimum requirements in turpentine practices and timber cutting, but he is providing improved living conditions for the people who work on his property. Houses are refurbished, fish ponds are constructed, and bird food is planted to insure good hunting. It was reported to me that Mr. Langdale's war output had not been handicapped by labor problems as has been so generally the case in the South and elsewhere.

And to refer to Crossett, Arkansas, which has so often been cited as an outstanding example of integrated utilization and community development. The thing that impressed me most was current plans to split the 5 districts, into which the half million acre property had previously been divided, so that the 10 technical men responsible for timbermarking and other forestry work would average only about 50,000 acres each. They talk in terms of a 10-year cutting cycle. Here again is an intensity of management equal to that of the National Forests.

But with all these and the many others that might be listed, I saw much more destructive cutting than good forestry. To me the basic facts on the Nation's forestry situation are clear enough. We do not need any

further refinement of statistics or survey of war impacts, desirable as that may be, to determine what our policy should be. The war has served to exaggerate the trend of forest deterioration and depletion which was only partially and temporarily relieved during the depression of the thirties.

There is nothing to be gained by dodging the fact that, except in localities where virgin timber still dominates, we cannot continue indefinitely to cut more than we grow without impairing future forest productivity. But our land has the capacity and we should have the determination to meet the challenge. For if we take steps to improve and build up the productive growing stock by Nation-wide application of good forest practices, the annual growth can be increased to a level which will supply our people and industries with ample timber for all foreseeable needs at reasonable cost, and a margin will be left for export or for emergency use.

The most urgent need is to stop destructive cutting so that the productivity of every acre now bearing merchantable timber may be retained. I want to say with all the force I have that Nation-wide regulation of cutting practices on private forest land under strong federal leadership is absolutely essential if needless destruction of productive growing stock is to be stopped.

It is unfortunate that a well-financed publicity campaign sponsored by the forest industries during the recent past should tend to cultivate public complacency when the situation with respect to our forest resources is so unsatisfactory. As head of the agency chiefly concerned with the public interest in maintaining the productivity of our forests, I cannot let the misleading publicity of the forest industries pass unchallenged.

This campaign creates the impression that little not already being done on private land is needed to assure the Nation ample timber supplies for the future. It implies an inevitable increase of annual growth when as foresters we know that the usable growth depends upon merchantable growing stock and that it cannot increase if destruction of the productive growing stock is indefinitely continued. It exaggerates the extent and adequacy of industry progress in good forest practice.

Since a forthright facing of the facts would not be inconsistent with the alleged objectives of the industry, namely "to perpetuate the supply of forest products through sound forest management and to promote understanding of forest ownership and enterprise." I cannot escape the conclusion that the real object of this campaign is to ward off public regulation which was recommended in one form by the Department of Agriculture in 1940, brought before Congress in several forms since then and proposed for legislation in 14 States during the past winter.

I think it fair to state that the need for public regulation is now recognized by many informed people. But conservation leaders are not in agreement as to the responsibility of the Federal Government in such regulation. It is my firm belief that regulation by state action unsupported by strong federal legislation cannot be effective. Furthermore, I do not believe that financial aid to the States to meet the costs of regulation will induce reluctant or strongly independent States to enact appropriate

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 2. Determine State compliance
 3. Inspect enforcement
 4. Direct action as needed

regulatory legislation. Nor will it give adequate assurance that the level of practices will be set at a satisfactory level. In order that Nation-wide regulation of cutting practices may come promptly and be reasonably uniform in standards and enforcement, federal legislation is needed. This should as a minimum prescribe standards for required forest practices and authorize the Secretary of Agriculture (1) to determine whether practices adopted by the States conform to such standards (2) to inspect enforcement of state laws, and (3) to take direct action where ~~suitable~~ suitable state legislation is not enacted and where enforcement of the practices are not adequate.

Of the three major lines of public action which I would advocate for a comprehensive national program in forestry--namely, regulation of forest practices on private lands, aid to forest landowners, and increased public ownership--regulation has invoked the most controversy.

It is quite probable that the larger part of the job of public acquisition will fall to the Federal Government. This does not in the least discount the desirability of an enlarged program of state and community forests.

The Federal Government should also play an important part in the aids and incentives offered to private landowners. Federal contributions loom large in fire control and extension services. Forest research has made its most substantial contributions in the work of the federal forest experiment stations and the Forest Products Laboratory. The forest survey would be a hopeless jumble if left to uncoordinated state action. The fields of forest credit and forest insurance could not be safely underwritten on a state basis. All these clearly call for action on a national level.

In the light of the significance of forest conservation for national defense and national welfare, the interdependence of States in regard to timber supply, and the extent to which the Federal Government must function in the fields just mentioned, it is strange that the question of federal responsibility in respect to regulation of cutting practices has appeared so controversial.

Without prejudice to the capacity and ability of several strong States to shoulder the public responsibility for keeping forest lands within their borders productive, it is true that many of the States where action is most urgent, will have great difficulty in handling the job effectively. And only under federal leadership can the public have assurance of uniformity of policy between States and of freedom from undesirable competitive conditions arising either from temptation or pressure in individual States to keep standards low.

The time has come to look beyond the exigencies of war to assure full and continued productivity of our vital natural resources. A comprehensive forest policy in which regulation of forest practices must go hand in hand with better protection, expansion of public aids, increased public ownership and continuing research will prove indispensable in the structure of security which we hope will mark an enduring peace.