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A PROGRAM FOR
DIRECT FEDERAL AND STATE AID

FROM
"A NATIONAL PLAN FOR AMERICAN FORESTRY"

A Report Prepared by the Forest Service, U. S. Department of Agriculture
in Response to S. Res. 175 (72d Congress)

SENATE DOCUMENT No. 12 - SEPARATE No. 26



UNITED STATES
GOVERNMENT PRINTING OFFICE
WASHINGTON : 1933

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PRINCIPLES UNDERLYING PUBLIC AID

Public aid, both Federal and State, to private owners is based in part on the public interest in obtaining the full economic and social benefits from the productive forest.

On the one hand, the public must recognize such factors as the following in granting aid:

In fire protection, the public use of private land, public carelessness with fire, and the fire hazard which is beyond the control of private owners;

In insect and disease protection, the irregular epidemic character and special control methods which may make efforts by individual owners ineffective; and

For some classes of forest research and where many small owners of land are involved, the greater effectiveness of combining efforts and acting through public agencies rather than individually. Advice in forest management, etc., is governed by similar considerations. So also is the production of nursery stock for planting.

On the other hand, private owners must recognize such factors as the following in asking and receiving aid:

That the public has the right to expect commensurate returns from its expenditures—it has, in fact, the right to expect that, in the long run, private owners will in their forest management go beyond what the public actually helps to pay for;

That public aid should not go beyond the point of public interest into the pork-barrel category;

That if costs of aid to the public are too high and the returns through ineffective or limited efforts are too low, it may become better public policy to obtain full control of the land by outright ownership and be in the position to receive direct as well as indirect returns; and

That, in other words, the public interest in trying to keep land in private ownership by means of aid may if net costs become excessive have to give way to the public interest by means of direct ownership.

The following program attempts to recognize these considerations and to balance Federal, State, local, and private ownership interest and obligation in determining what aid public agencies should give.

INDIRECT FEDERAL AND STATE AID

It should be emphasized that, excepting cash income for sale of raw materials, the States derive the same benefits from Federally owned lands as they would from State-owned. Therefore, unless cash returns exceed investment and administrative costs, the State profits more through the Federal activity than it would if the project were conducted by the State with Federal financial assistance. Before presenting a program for carrying out the plans for direct financial aid to States that have been proposed in the several sections of this report, therefore, it is desirable to review briefly the other forms of Federal aid that have been recommended.

Although justified primarily for its contribution to the national interest, the largest of the other forms of aid, present and proposed, is in the national-forest project. It was shown in the section of this report entitled "The National Forests as a Form of Federal Aid to the States" that, during the years 1923-1927, there was a net gain to the States and counties concerned of \$10,000,000 a year from present Federal ownership. Without the national-forest system, the States would have had to spend an equal amount for equivalent development and care of the land, or to suffer corresponding depreciation of the land and forego corresponding improvements. It was also shown that the States receive the same indirect social and economic advantages with the land in Federal ownership that they would receive were it in State ownership.

Provision is made in this program for Federal aid to States in the survey and local control phases of insect control. This, if carried out, would very substantially reduce insect epidemics, affecting large areas of forests and spreading over State lines. But when this epidemic condition does exist, it calls for emergency action that cannot be left to the local interest—which may often be a minor one—to take the needed action. Therefore, Federal leadership will often be necessary. In addition to the plan for a cooperative survey and control organization, provision is made for Federal control activities at an annual cost of \$700,000 and State activities at a cost of \$1,250,000. Both fall within the aid classification.

Control of forest-tree diseases falls into two classes. Control of non-epidemic diseases has so far been approached through the cutting and the marketing of the trees affected. Technical advice would undoubtedly make such action more effective.

Disease epidemics present an entirely different problem. The spread of such diseases as the white pine blister rust, for example, can only be checked by vigorous action on the part of the Federal Government with such assistance as may be administratively obtained from the States and private owners affected. The occurrence of epidemics is so irregular, and the methods of control so different and so highly specialized that a satisfactory cooperative control service offers some difficulties. In any case provision should be made for a Federal-control service, which would be an enlargement of the existing blister rust-control organization. It would be available for control of other epidemics and it would also have advisory functions which should be very helpful in both epidemic and nonepidemic diseases. The annual cost would start at \$554,000 and rise to \$719,000 at the end of 5 years.

Somewhat similar State services would also be necessary from time to time and in different parts of the country, starting with organizations built up to handle current epidemics. State costs are estimated at \$537,000 to be increased to \$695,000 at the end of 5 years.

It is also true that the present Federal program of forest research, and the larger one proposed, constitute definite aid and benefit to the States and private owners since the results are available to all and the expenses of similar State programs for comparable results is thereby saved. This is true despite the fact that these programs are limited to work on national and regional problems and are extended to local problems only where Federally owned or managed lands are involved.

Another form of Federal aid that has been tentatively proposed elsewhere in this report (see Federal aid in organizing Forest credit facilities) is the extension of the existing Federal farm-loan system to forest projects.

A plan for Federal and State cooperation in advice in forest management to both farm and industrial forest owners is discussed later. In addition, a recommendation is made for a fund which would be built up to \$225,000 for direct expenditures by the Federal Forest Service. This, for example, would permit Federal extension where State cooperation could not be obtained and a material strengthening of this activity.

Still other Federal activities that will aid owners of forest land and accomplish the same results as would direct financial aid to States (were that form of assistance practicable in these activities) are the testing and certification of forest tree seed (see section The reforestation of barren and unproductive land); the existing service by the Weather Bureau in forest fire weather forecasts; and the work in control of predatory animals and injurious rodents by the Bureau of Biological Survey.

Although it is recognized that State action might be stimulated thereby, Federal gifts of funds to the States for the purchase of State forests is not recommended. One reason for this is that the Federal Government will have about all the financial load it can assume if the full plan recommended in this report is carried out. Beyond this, it is believed that it will be a sounder principle for any public agency to undertake the acquisition only of the land which it can subsequently finance. Greater efficiency in expenditures can probably be expected. The poorer States would probably need further aid pending the time when forests acquired became self-sustaining. Aid is not needed by the wealthier States. The wealthier States which will have to furnish the funds might prefer, for acquisition outside of their boundaries, to have Federal rather than State forests because of the possibility of obtaining an accounting. Finally Federal gifts for the acquisition of State forests might soon lead to a demand that the existing national forests be turned over to the States.

Federal aid to the States in the form of loans is not recommended for similar reasons. Uncertainty as to payment makes it possible that loans may actually become gifts.

It is considered highly desirable, and has been so recommended in the several sections of this report, that the States engage in most if not all of the forest-aid activities carried on by the Federal Government. It is anticipated that as the Federal program advances there will be increasing State participation, both through independent State action and through cooperative effort administratively arranged.

Whether the Federal Government shall engage in forestry activities designed to promote the public welfare through the medium of State functioning or through that of direct Federal functioning, or through formal agreements outlined by Congress, or through informal arrangements, depends on the exigencies of different situations. In any case, the objective remains the same. The real question is simply of the best way to get the job done.

It is again emphasized, therefore, that the following suggested program for direct financial aid by the Federal Government to the States and private owners and by the States to private owners includes only the smaller part of the whole program, and covers far from all of the cooperative undertakings that it is expected will be carried on. Neither does the private owners' share, as indicated by the attached tables, indicate all that they will do under the program. In protection against fire, for example, the interested private owner supplies a large share of the protection effort, although that does not appear as a cash expenditure. It cannot, therefore, be accounted for in a cooperative fiscal arrangement, or in a statement of moneys expended.

The sections of this report entitled "Federal Financial and Other Direct Aid to States" and "State Aid to Private Owners and Local Political Units" set forth in considerable detail the accomplishments to date under the Federal and State-aid systems for fire protection, planting, and management of farm woodlands. Similarly, the section entitled "Factors Affecting Federal and State Aid" discusses the several factors that have affected these accomplishments, their relation to each other, and their bearing on past and probable bearing on future progress.

AID IN PROTECTION AGAINST FIRE

The Federal program of financial aid to States and private owners begun in 1911 under the Weeks Act was designed to insure the continuous production of timber on the bulk of forest lands. It was hoped that a Federal contribution equivalent to 25 percent of current national needs for fire protection with an equal amount from the States would lend sufficient encouragement to private owners that they would go forward with plans to retain and manage their forest lands as continuous timber-producing properties.

Sufficient time has not elapsed for full realization of benefits from the act of 1911 and the Clarke-McNary Act of 1924, particularly since Federal appropriations have averaged only about 50 percent of the amount contemplated in the Clarke-McNary Act. In most of the wealthier States, however, fire and other protection measures have been advanced at a rate that indicates a healthy situation as to protection, very largely at State expense. All but one of the forested States have organized fire protection work with some contribution from public funds, but in many of those with relatively large acreages of forest lands the funds so far provided are very far from adequate for the job.

Owners of commercial stands of timber in the Northwest have continued to give a fair degree of protection to these properties with such aid as they have received from the Federal Government and the States. In the remainder of the country private expenditures for

organized protection have been small, although there has been some increase in protection effort by individual landowners that does not appear in the record.

All in all the possibilities of attaining in the near future an adequate Nation-wide system of protection do not look promising under the present system of Federal aid. While the aid extended to owners of forest land through public assistance in protection has had an appreciable effect in encouraging them to retain and manage their lands for continuous crops of timber, the total results along this line have not been large. Many other factors have determined and will continue to determine policies of private land ownership and forest culture.

These limitations on its present effectiveness do not make public aid in protection any less desirable or necessary. Pending the installation of other forest management practices by private owners or through acquisition of forest land by public agencies, it is of paramount importance that young and old growth be saved from destruction or serious injury. Granting even that other forestry practices may never be installed, protection should still be provided, since on most of the forest lands it is one of the largest single influences in forest production.

It has, therefore, been the plan in this report to recommend extension of Federal aid to States in financing forestry programs to the full extent that seems practicable under the principles established by the act of 1911, i. e., that Federal funds for State use should be conditioned under ratios that require active State participation and under conditions that insure reasonable returns for moneys expended. After exhausting these possibilities, it has appeared that the Federal interest required a greatly expanded program that could be attacked only under the plan of Federal acquisition, rehabilitation, and research that has been recommended elsewhere in this report.

The program section entitled "Protection Against Fire" defines the protection needs for all forest land now in Federal and also in non-Federal public and private ownership, sets up objectives for future accomplishment, and estimates the funds that will be required to attain these objectives.

Because of the difficulty of making an entirely satisfactory estimate for private and non-Federal public lands in the South and the uncertainty of reaching the full objective set up, an intermediate objective which would more nearly represent the possibility of the next 15 to 20 years was specified. For the entire area of lands of this class it remains to outline a more detailed program for the participation of all agencies concerned.

In the section of this report entitled "The Probable Future Distribution of Forest Land Ownership," recommendations are made for the acquisition by the Federal Government of 134 million acres of forest land now in private ownership and for the acquisition of 90 million acres by the States. Should these recommendations as to Federal purchase be carried out, the size of the job to be accomplished through the direct Federal- and State-aid systems (direct financial assistance to the States and landowners for protection by State agencies) would be reduced accordingly. But public acquisition of a large area of land will necessarily extend over a long period of years, and be subject to a great many delays. One of the most urgent present needs, as has been pointed out above, is to preserve existing

stands and to create conditions that will result in the maximum natural restocking and growth and the minimum drain from fire, insects, and disease. Another most important need is the encouragement of cutting practices for the dual purpose of increasing productive capacity of the land and income from it. It is not believed that these needs can be fully satisfied without largely increased public ownership or public regulation, or both, but pending accomplishments through these means it is important at once to extend the necessary protection to all forest lands regardless of ownership.

The system of cooperative protection inaugurated by the Weeks Law of 1911 and expanded by the Clarke-McNary Act of 1924 has in the main worked out well and, as shown by previous sections of this report, great progress has been made under it; but, as also shown, the progress has been unequal in the different sections of the United States.

Obviously, any Federal-aid system which matches State funds on a definite ratio applicable to all of the States will result in a Federal contribution to the better-financed States larger in proportion to total needs than that to the poorer or more backward States. The extreme of this in fire protection is illustrated by a comparison of State and private expenditure in the middle Atlantic and southern regions. In the middle Atlantic region State and private expenditures were in 1932 equivalent to about 90 percent of total average needs; to this was added Federal participation equal to 17 percent of the total current protection expenditures, thus providing funds more than equivalent to the average needs for an adequate system of protection. In the South, State and private expenditures do not exceed 8 percent of the present needs (intermediate objective), and if Federal funds were allotted in the same ratio to actual expenditures as in the Northeast, Federal allotments would in 1932 have equaled only about 3 percent of needs as compared with about 17 percent in the Middle Atlantic States. Thus the large share of Federal appropriations would have been spent in the States best able to take care of their forest lands, and a smaller share in those whose forest acreage consists in large part of cut-over lands which in their present condition are not attractive to private interests and furnish a meager tax base on which the State can raise needed revenues.

The above situation has been in part met in the past by the Federal system of allotting to each State up to 8 or 9 percent of its total needs, provided that it is spending enough annually to match the Federal allotment on a 50-50 basis. Federal funds remaining after this allotment is made are then divided among the States in which fire-protection expenditures go beyond this minimum, in the ratio that their further expenditures bear to the total of all of the States.

Under the policy of limiting assistance to 25 percent of total current costs, the Federal Government has lagged behind rather than led the States and private owners in protection effort. So long as Federal appropriations are held to 25 percent of total actual expenditure, instead of being adjusted on the basis of total needed expenditure, Federal assistance at the higher ratio which some State needs require can only be given by the method of allotting less than 25 percent to other States. On the other hand, if the ratio of Federal to total expenditure were to be increased from 25 to 50 percent or any higher percentage, the result would be, as was pointed out in Factors Affecting

Federal and State Aid, to call for an increased Federal appropriation. For the present at least the same results can be attained through the method of allotting to each State 25 percent of its total needs as fast as the States can match such allotments on a 50-50 ratio. Tables 1 and 2 propose a financial arrangement for putting all forest lands under protection during the next 20 years and are in accordance with this plan.

It is, of course, obvious that such a program would result in a ratio of Federal reimbursement higher in some States than in others for a long time, possibly in some cases permanently. It is also recognized that such a plan would not necessarily result in adequate protection for all forest land in all of the States, because to bring that about the States and private owners would have to provide all of the cost after the halfway mark had been reached. It is a question of recognizing, first, that the rate of reimbursement would be unequal, and, second, that no perfect or perhaps no permanent scheme can be devised at this time.

The situation with reference to State aid to private owners is comparable to that described above, with a wider divergence in the degree of public assistance rendered. In a large percentage of the States protection of forests from fire has been recognized as a public responsibility, the expense of which is met from general taxes. On the other hand, several of the Northwestern States have not recognized the principle of public aid in cost of protecting privately owned forest land but make appropriations for protection of State-owned properties.

The plan here proposed is to continue whatever scheme is in effect in the different States, recognizing, however, that changing conditions of forest cover and economics will affect the amount that landowners can and will pay for protection of their properties, and that, after making allowance for what it is estimated the landowners can pay in those States where they are expected to contribute, and after adding the Federal share, the States must provide the remainder if the job is to be done.

Under the above-described plan, the State share of the total cost varies from 75 percent in those States that have adopted systems of protection wholly at public expense to 35 percent in some States where it is estimated that as much as 40 percent of the total cost can be obtained from the landowners.

In setting up the amount to be obtained from private owners, present State systems of protection have been followed. In those States where the system of State-wide protection is in effect with the public paying the entire cost, no estimate of private expenditure has been included. In States whose systems of protection provide for sharing the cost with the landowners, there has been included an amount which it is estimated private owners would voluntarily contribute if the States extended their protection systems as indicated. Under the system now in effect, and of which the continuance is recommended, the Federal amount remains the same regardless of the source from which the States raise the remainder.

It is, of course, obvious that under any system of Federal aid, which requires the matching of Federal by State funds on a given ratio, progress can be made only at the pace set by the States. It

is therefore possible to indicate only the total possible requirements if all States were to cover present needs in full and not the exact amounts that Congress should make available from the Federal Treasury from year to year. How much can be used must be determined as the States gradually increase their appropriations for the work. Tables 1 and 2 show what the requirements may be for the next 5- and the next 20-year period.

Likewise, in those States which make State aid contingent on a definite showing of the expense by the landowners, the amount of public funds called for will be contingent on what the owners are prepared to match.

AID IN PROTECTION AGAINST INSECTS

The general situation as to insect attacks and a plan for meeting it are discussed in the section of this report entitled "Protection Against Forest Insects." Some phases of this job are on all fours with that of protection against fire. The work logically divides into four main classes; research, survey, local control, and control of attacks of epidemic character.

It is believed that public appropriations for survey and control work should be so worded as to make them available for assistance in the necessary research work.

The survey and local control can be done largely by the field organizations maintained for fire control, through extension of the time of seasonal employees, provided men especially trained in insect work are available for training and directing the fire control organizations in this work.

Control of insect attacks that have reached epidemic character call for emergency appropriations and special emergency forces. These can be best directed by Federal agencies, because of the infrequent occurrence of such attacks in any given State and the interstate aspects of such attacks.

It is believed that the survey phase of insect control should be financed by the public under the Federal aid system, with the Federal Government and the State sharing expenditures at a ratio of not to exceed 50 percent Federal. In actual control work on private land, the owner will usually contribute to or pay the entire cost of the work with supervision furnished by the State; and since insect attacks are to a large extent confined to trees of merchantable size it is not believed that private expenditures should be recognized as reimbursable by the Federal Government. No estimate of the private expenditures involved are, therefore, included in the direct Federal and State aid program. Estimates by experts in the Bureau of Entomology and Forest Service men familiar with field conditions indicate the need of approximately \$500,000 annually for work of this kind on State and privately owned lands. The organization needed for the work now exists in part, and could be expanded to meet the situation within a 5-year period.

FEDERAL AID IN PLANTING

In the section of the report entitled "Reforestation of Barren and Unproductive Lands" the need is shown for a very greatly expanded program of Federal, State, and private planting if all of the forest lands of the country are to be made productive and are otherwise to measure up to their full possibilities in social and economic service.

It is not believed, however, that the Federal and State aid system is as fully applicable to the program of reforestation by planting as it is to protection and extension. As was brought out in the section of this report entitled "Factors Affecting Federal and State Aid," it has been found impracticable to furnish private owners planting stock free of charge. To do so results in a large wastage of money, since many people ask for the trees who have no well-formed plans for planting them, and who, in fact, may fail to plant them.

It has been pointed out that planting stock raised in large quantities in State-owned nurseries can be furnished at low cost. It is believed that all practicable public stimulus should be given to planting on privately owned land and that as a general rule the public should contribute one half the cost of producing nursery stock, this expense being shared equally by the Federal Government and the States. It is not believed to be desirable for the public to assist the landowner in the expense of preparing the site or in the actual planting.

The planting program proposes a very large increase in planting on State-owned lands. There are not the same objections to large Federal financial participation in this that have been raised against it on privately owned lands, but it is believed that the Federal Government's financial participation should nevertheless be only nominal. Here as in the case of land acquisition it is a question of investment in publicly owned properties. It is not necessary or desirable that the Federal Government and the States go into partnership with title and control resting entirely in the one or the other. It seems more logical, and less confusing, for each agency to spend whatever money it has for planting on its own lands. Federal-aid to States is not therefore proposed either for the growing of nursery stock for planting on State-owned lands, or for its actual planting.

Recommendations have been made for broadening the scope of section 4 of the Clarke-McNary Act in order that it may apply to planting on other than farm woodlands. To carry out this and the largely increased farm woodland planting would require the establishment of many new nurseries, the expansion of present plants, and the enlargement of present technical and supervisory staffs. It is in this phase of the work that the Federal Government now participates, and a continuation of such participation in a greatly enlarged program would require some increase in the Federal and State appropriations. A maximum annual Federal appropriation of approximately \$350,000 and an equal amount by the States are indicated to carry out the 20-year program.

FEDERAL AID IN EXTENSION

The section of this report entitled Forest Extension, an Appraisal and a Program constitutes a discussion of the need for technical advice and assistance in the management of forest lands, both on farms and elsewhere. It proposes an increase from the present public expenditures of approximately \$160,000 per annum to a maximum of \$800,000 per annum under the Federal aid system, one half of the funds to be supplied by the States and one half by the Federal Government. The report proposes further that \$500,000 or five eighths of the total shall be used for advice and assistance in the management

of farm woodlands and the remainder for lands in State and in other forms of private ownership. It is believed that the importance of this phase of forestry warrants the building up of an organization for it as fast as qualified men can be provided, and that this can be done within a 10-year period.

COSTS SUMMARIZED

Table 1 shows what is being accomplished now (1932) and what might be done during the ensuing 5-year period if the proposed program were put into effect immediately. It should be noted that comparisons based on expenditures for any one year or for a period of years are not an exact representation of protection effort. In most of the States expenditures are very substantially increased during bad years but, since conditions are never equally critical over the whole country in any one season, the maximum of available protection funds for the United States as a whole is never reached in any one year. Thus in 1932 had the conditions in all regions been relatively as critical as they were in the Middle Atlantic States, the total expenditures for that year would have been nearer to 60 percent of the adequacy figure, than to the 40 percent which they actually averaged.

Table 2 constitutes an estimate of possible accomplishments by 5-year periods for the ensuing 20 years.

In making up these tables, it has been the aim to suggest a plan that would provide for a reasonably complete system of protection and extension activities over all of the privately owned and the publicly owned lands (other than Federal) by the end of the 20-year period. The plan has also been to suggest a rate of progress fitted to the relative possibilities of financing the program in the different States so as to proceed as rapidly as possible toward the accomplishment of the whole national program. This applies particularly in fire protection where present systems vary from 15 percent to 100 percent of the needs in the different regions.

Obviously those States whose protection systems are already nearly adequate can make the additional effort needed before many of the others can have under way even a fair percentage of what is needed. It is probably a safe prediction that, without the interposition of more extensive forms of Federal aid, those regions in which consummation of the protection program is indicated within 5 years will more nearly accomplish that result than will the other regions complete their programs in 20 years.

It should be emphasized that anticipated difficulty in financing the fire-protection program is the only reason for indicating a gradual progress in any region for more than a 5-year period. All of the States have made the necessary legal provision for Federal aid in fire control. All of them either have existing protection organizations that could be sufficiently expanded within that time, or could create the organizations needed.

The organization needed for insect control and extension activities could be provided within a 10-year period if necessary funds were available, although many States do not at the present time have any basic legislation providing for such activities.

It is for such reasons that emphasis has been placed on the desirability of the Federal Government increasing its participation in such ways

as will lend greatest aid to the States most backward in their protection programs. What is urgently needed is an extension of the protection system to State-wide or near State-wide proportions. After that is done and the benefits from protection receive State-wide recognition, it should be much easier for the States themselves to intensify protection to the point of adequacy.

The planting program probably could likewise be pushed faster than is proposed if funds were available. It involves, however, some land classification, public acquisition, and a development of a planting technique that is more difficult, and consequently more time consuming, than is the case in protection from fire. The aim here has been to indicate a rate of progress that would bring the activity up to the average needed within a 20-year period.

TABLE 1.—5-year program of Federal and State aid showing estimated expenditures for the fiscal years 1935-39 compared with 1932 expenditures

[Amounts other than "Adequacy percent" in thousands of dollars]

Year	Agency	Fire protection										Forest planting	Farm forestry extension	Industrial forestry extension	Insect control	
		New England	Middle Atlantic	Lake States	Central States	South	Pacific coast	North Rocky Mountain	South Rocky Mountain	Total						
1932	Federal	132	173	279	90	408	386	99	4	1,571	94	67				
	State	355	864	1,246	108	313	298	86	4	3,274		93				
	Private	14	2	24	19	179	574	274	9	1,095						
	Total	501	1,039	1,549	217	900	1,258	459	17	5,940		160				
	Adequacy percent	63	100	70	16	15	47	58	56	40		32				
1935	Federal	198	240	555	170	642	670	198	7.5	2,680.5	150	100	50	50		
	State	400	715	1,640	150	471	322	93	5.7	3,796.7	150	100	50	50		
	Private	15	25	25	20	286	637	276	10	1,269	300					
	Total	613	955	2,220	340	1,399	1,629	567	23.2	7,746.2	600	200	100	100		
1936	Federal	198	240	555	190	900	670	198	7.5	2,958.5	162.5	125	75	100		
	State	450	715	1,640	180	630	380	100	7.4	4,102.4	162.5	125	75	100		
	Private	16	25	25	20	382	700	278	10	1,431	325					
	Total	664	955	2,220	390	1,912	1,750	576	24.9	8,491.9	650	250	150	200		
1937	Federal	198	240	555	230	1,200	670	198	7.5	3,298.5	175	150	100	150		
	State	500	715	1,640	210	787	420	107	9.0	4,388	175	150	100	150		
	Private	17	25	25	20	496	763	280	10	1,611	350					
	Total	715	955	2,220	460	2,483	1,853	585	26.5	9,297.5	700	300	200	300		
1938	Federal	198	240	555	260	1,500	670	198	7.5	3,628.5	187.5	175	125	200		
	State	550	715	1,640	240	945	480	114	10.6	4,694.6	187.5	175	125	200		
	Private	18	25	25	20	612	826	282	10	1,793	375					
	Total	766	955	2,220	520	3,057	1,976	594	28.1	10,116.1	750	350	250	400		
1939	Federal	198	240	555	300	1,500	670	198	7.5	3,668.5	200	200	150	250		
	State	575	715	1,640	270	1,100	540	121	13	4,974	200	200	150	250		
	Private	19	25	25	30	650	889	284	10	1,907	400					
	Total	792	955	2,220	600	3,250	2,099	603	30.5	10,549.5	800	400	300	500		
	Adequacy percent (at end of period)	100	100	100	45	54	78	76	100	70	60	80	100	100		

TABLE 2.—20-year program of State and Federal aid: Average annual expenditures by 5-year periods

[Amounts other than "Adequacy percent" in thousands of dollars]

Year	Agency	Fire protection										Forest planting	Farm forestry extension	Industrial forestry extension	Insect control
		New England	Middle Atlantic	Lake	Central	South	Pacific coast	North Rocky Mountain	South Rocky Mountain	Total					
1932	Federal	132	173	279	90	408	386	99	4	1,571	94	67			
	State	355	864	1,246	108	313	298	86	4	3,274		93			
	Private	14	2	24	19	179	574	274	9	1,095					
1935 to 1939	Total	501	1,039	1,549	217	900	1,258	459	17	5,940	?	160			
	Adequacy, percent	63	100	70	16	15	47	58	56	40	?	32			
	Federal	198	240	555	230	1,148	670	198	7.5	3,246.5	175	150	100	150	150
State	495	715	1,640	210	787	428	107	9.1	4,391.1	175	150	100	100	150	
Private	17		25	22	485	763	280	10	1,602	350					
1940 to 1944	Total	710	955	2,220	462	2,420	1,861	585	26.6	9,239.6	700	300	200	300	60
	Adequacy, percent	90	100	100	35	40	69	74	87	62		75	75	75	60
	Federal	198	240	555	335	1,500	670	198	7.5	3,703.5	237.5	245	150	150	250
State	574	715	1,640	415	1,550	690	165	13	5,762	237.5	245	150	150	250	
Private	20		25	50	762	906	292	10	2,065	475					
1945 to 1949	Total	792	955	2,220	800	3,812	2,266	655	30.5	11,530.5	950	490	300	300	500
	Adequacy, percent	100	100	100	60	64	83	83	100	78		100	100	100	100
	Federal	198	240	555	335	1,500	670	198	7.5	3,703.5	300	250	150	150	250
State	574	715	1,640	600	2,000	840	212	13	6,594	300	250	150	150	250	
Private	20		25	65	875	1,000	300	10	2,295	600					
1950 to 1954	Total	792	955	2,220	1,000	4,375	2,510	710	30.5	12,592.5	1,200	500	300	300	500
	Adequacy, percent	100	100	100	75	73	93	89	100	85		100	100	100	100
	Federal	198	240	555	335	1,500	670	198	7.5	3,703.5	335.5	250	150	150	250
State	574	715	1,640	800	2,500	1,014	262	13	7,518	335.5	250	150	150	250	
Private	20		25	65	1,000	1,000	310	10	2,430	671					
	Total	792	955	2,220	1,200	5,000	2,684	770	30.5	13,651.5	1,342	500	300	300	500
	Adequacy, percent	100	100	100	90	83	100	97	100	92		100	100	100	100

