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Federal and State Forestry Cost-Share Assistance Programs: Structure, Accomplishments, and Future Outlook

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SUMMARY

Cost-share assistance programs have been an effective policy mechanism for increasing productivity on nonindustrial private forest (NIPF) lands. In light of reduced harvests from Federal lands, timber productivity on these lands has become increasingly important to ensure sufficient timber supplies in the future. Productivity of other forest resources has also been enhanced through these programs.

Four Federal programs, the Forestry Incentives Program, the Agricultural Conservation Program, the Stewardship Incentives Program, and the Conservation Reserve Program, provided cost-share assistance for tree planting on 467,000 acres in 1993.

State programs have been established in 19 States to cost-share forestry practices on NIPF lands. These programs contributed payments for tree planting projects on over 150,000 acres in 1993. Programs are concentrated in 10 States in the southern pine belt and 6 in the Midwest. Programs have also been established in California, Hawaii, and Oregon. The first State program was implemented in 1970 in Virginia in response to forest inventory statistics indicating a lack of investment in forest productivity on NIPF lands. Similar concerns, coupled with the lack of sufficient Federal funding for incentive payments, prompted a number of States to establish cost-share assistance programs in the 1970's and 1980's. In addition to timber-oriented programs, several States initiated cost-share assistance programs that focus on the protection and enhancement of wildlife habitats, wetlands and riparian areas, soils and water quality, or other forest resource values in the mid-1980's and 1990's.

During the course of this study, the provisions of the individual State programs, funding levels, accomplishments, and outlook for continuation or expansion, were examined. Federal programs were reviewed as well, with respect to their interaction with State-level programs. The results of the study are presented in this paper.

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INTRODUCTION

Nonindustrial private forest (NIPF) landowners play a vital role in sustaining forest resources. Nearly 60 percent of the commercial forest land in the United States is held by NIPF landowners; these lands provide about half of the timber harvested nationwide. As timber harvests from Federal lands have been reduced in recent years, the supply of timber from NIPF lands has become more crucial.

Two important barriers to NIPF landowner investments to optimize forest productivity are the lack of "up-front" capital and low expected rates of return. In response, cost-share assistance programs have been implemented to help stimulate NIPF investment by reducing landowners' initial costs for reforestation and improving rates of return.

Several studies have shown that cost-share assistance programs are effective in terms of increased productivity on NIPF lands (Mills 1976, Risbrudt and Ellefson 1983, Royer and Moulton 1987). Tree planting statistics indicate that these programs have been influential in promoting NIPF forestry investments (table 1). Federal programs provided cost-share assistance for tree planting projects on 467,102 acres and timber stand improvement practices on 113,608 acres in 1993. These acreages represent 47 percent of the total tree planting and 20 percent of the timber stand improvement accomplished in 1993 (Nisley 1994).

In addition to projects for tree planting and timber stand improvement, Federal and State cost-share assistance programs, to varying degrees, provide assistance for the preparation of management plans and for projects that focus on soil conservation, water quality, wetlands, and fish and wildlife habitat improvement.

To date, most studies of cost-share programs have focused on Federal incentive programs. Less work has been done to evaluate State cost-share programs that provide direct monetary incentives for reforestation and stand improvement. In the most recent nationwide study on this topic, a brief summary of the features of each of the existing State programs as of 1988 is presented (Bullard and Straka 1988). A brief summary of the features of the incentive programs of the Southern States is also presented in Harrell (1989).

A current, more expanded view of State cost-share programs is provided in this report, including analyses of new programs that have been implemented since 1988. Program features, funding mechanisms, and accomplishments are reviewed as well as problems that have been encountered. The likelihood of continuation or expansion of State-level incentive programs is also addressed. Federal programs providing cost-share payments to NIPF landowners are reviewed as well, with respect to their interaction with State-funded programs.

FEDERAL COST-SHARE ASSISTANCE PROGRAMS

Cost-share assistance programs of the U.S. Department of Agriculture (USDA) that are available to NIPF landowners include the Forestry Incentive Program (FIP), the Agricultural Conservation Program (ACP), the Stewardship Incentives Program (SIP), the Conservation Reserve Program (CRP), and the Wetlands Reserve Program (WRP). Funding and administration of FIP and WRP is through the USDA Natural Resource Conservation Service; the ACP and CRP are administered by the USDA Consolidated Farm Service Agency, and the USDA Forest Service administers SIP. Technical forestry aspects are handled by the Forest Service with cooperation from the State forestry agencies. The continuation of the FIP and CRP programs will likely be decided in the 104th Congress through the 1995 Farm Bill legislation. Authority for these programs expires in 1995 in accordance with the 1990 Farm Bill.

Although the legislative intent and goals for each of these programs differ, forestry practices generally authorized in these programs are site preparation, tree planting, and timber stand improvement. In addition, NIPF landowners may receive cost-share assistance for non-timber related projects, including

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Table 1.—*Accomplishments (in acres) of Federal and State forestry cost-share assistance programs in planting trees on non industrial private forest (NIPF) lands in selected States in 1993*[*]

		Federal[†]					
	State	CRP	FIP	ACP	SIP	Total Federal and State	Total NIPF
Alabama	7,215	13,426	16,596	1,631	4,126	42,994	94,972
California	4,000	163	403	348	157	5,071	9,650
Mississippi	58,768	34,862	19,438	15,676	6,938	135,682	158,286
North Carolina	41,060	3,060	19,218	1,166	----	64,504	68,938
South Carolina	5,761	4,598	14,626	13,763	745	39,493	47,881
Texas	9,361	217	12,401	1,446	2,305	25,730	33,018
Virginia	14,977	810	19,940	3,360	2,006	41,093	57,427

[*]Sources: USDA Forest Service and USDA Agricultural Stabilization and Conservation Service publications, and personal communication with State forestry agency officials.

[†]CRP=Conservation Reserve Program, FIP=Forestry Incentives Program, ACP=Agricultural Conservation Program, and SIP=Stewardship Incentives Program.

multi-resource planning, wildlife and fish habitat improvement, and tree planting to protect riparian areas and wetlands. State program committees are authorized to establish cost-share rates up to the Federal maximum and may set practice priorities or other restrictions. The CRP, ACP, and FIP programs require a practice plan for the acreage treated. However, SIP requires a more comprehensive multi-resource evaluation for contiguous forested acres within the ownership. Landowners may do the work themselves or contract the work to others. Upon completion, landowners receive the cost-share payments, provided the work is done to standards. Furthermore, landowners must maintain the practices for a set period, typically 10 years. A summarized description of the Federal cost-share assistance programs is given in Moulton (1994) and more indepth information is presented in the annual USDA Program Accomplishment Reports for ACP, FIP, CRP, and SIP, which are published by the Agricultural Stabilization and Conservation Service.

STATE FORESTRY COST-SHARE ASSISTANCE PROGRAMS

Increased awareness and concern regarding the low level of investment in the reforestation of NIPF lands after harvest prompted a number of States to establish forestry cost-share programs in the 1970's and 1980's (tables 2 and 3). Funding for these programs increased over 60 percent between 1981 and 1985 (Bullard and Starka 1988). Federal cost-share funding was insufficient to meet the needs of NIPF landowners in many States. In more recent years, new State cost-share programs have generally focused on a broader range of resource goals and have addressed specific resource protection needs or land-use priorities.

The largest State programs in terms of cost-share payments and acreage treated are in the South. Forest industries are a leading sector of the industrial base of many States across the South. In 1982, forest industry contributions in wages and

Table 2—*Features of State level forestry cost-share programs to improve timber production*

State program	Cost-share rate	Program features for determing project eligibility				
		Maximum payment	Site productivity ranking	Ownership limits	Project limits	Practice retention
	Percent	*Dollars*		*Acres*	*Acres*	*Years*
Alabama Agricultural and Conservation Developement Program	60	3,500/year	No	20 minimum	1 minimum	10*
California Forest Improvement Program	75-90†	----	Yes	20-5,000	0-5 minimum‡	10
Florida Plant a Tree Trust Fund Program	50	10,000	Yes	10-1,000	----	2
Illinois Forestry Development Program	80	----	No	5 minimum	----	10
Iowa Resource Enhancement and Protection Program	75	365/acre	No	----	3-5 minimum	20
Maryland Woodland Incentives Program	50	5,000/year 15,000/years/ 3 years	Yes	10-500§	----	15
Minnesota Forestry Improvement Program	50-65‡	25/acre**	No	----	5-10 minimum‡	10
Mississippi Forest Resources Development Program	50-75‡	8,000/year	No	----	----	10
North Carolina Forest Development Program	40-60‡	----	No	----	1 minimum 100 maximum	----
Oregon Forest Resource Trust	Up to 100†	100,000/ 2 years	Yes	10-5,000	----	Commercial harvest
South Carolina Forest Renewal Act	50	----	Yes	100 maximum	100 maximum††	10
Texas Reforestation Foundation Program	50	----	Yes	----	10 minimum	10
Virginia Reforestation Timberlands Act	40	75/acre	No	---	1-5 minimum‡ 500 maximum	10

*5 years for timber stand improvement.

†Projects to meet minimum standards of State forest practice acts not eligible.

‡Varies with type of practice.

§Contiguous acres in tract.

**Rate of replanting CRP plantations.

††10-acre minimum for mechanical site preparation.

Table 3.—Funding and accomplishments of State forestry cost-share programs to improve timber production

State program and date implemented	Source of funding	Annual cost-share payments for reforestation and timber stand improvement	Annual Accomplishments, reforestation and timber stand improvement	Trends in funding
		Dollars	*Acres*	
Alabama Agricultural and Conservation Development Program, 1985	Interest from oil and gas trust fund	348,913	10,949	Stable
California Forest Improvement Program, 1980	Timber harvest receipts from State lands	1,512,142	7,829	Decreasing
Florida Plant a Tree Trust Fund Program, 1995	Voluntary contributions from Sunshine Gas Pipeline Company	70,000	New	New
Illinois Forestry Development Program, 1983	Primarily through timber harvest tax	144,951	3,608	Increasing
Iowa Resource Enhancement and Protection Program, 1989	Lottery revenues and State general fund	135,880†	1,100†	Decreasing
Maryland Woodland Incentives Program, 1986	Transfer tax on agricultural lands converted to other uses	Not available	443	Statutory limit $200,000
Minnesota Forestry Improvement Program, 1989	State general funds	42,235†	1,944†	Not funded 1993-94
Mississippi Forest Resource Development Program, 1974	Timber harvest tax	1,829,608†	39,254	Stable
North Carolina Forest Development Program, 1978	Timber harvest tax (50%), State general funds (50%)	1,900,000†	38,441†	Increasing
Oregon Forest Resource Trust, 1993	Lottery revenues and PacifiCorp contributions	New	New	New
South Carolina Forest Renewal Act, 1981	Timber harvest tax (80%), State general funds (20%)	515,736	5,904	Stable
Texas Reforestation Foundation Program, 1981	Voluntary forest industry assessment on primary products	280,839	6,096	Increasing
Virginia Reforestation of Timberlands Acts, 1970	State general funds (50%), harvest tax (50%)	1,014,331	40,393	State funds decreasing, severance tax funds increasing

*Acreage and payment figures are averages of program years.

†Reforestation practices only.

salaries ranked fourth or higher among major industries—and ranked first in Arkansas, Alabama, and Mississippi. Furthermore, in 1982, employment, wages, value of shipments, and value, added by manufacturing for all forest industries in the region represented roughly one-third of forest industry activities nationwide (USDA FS 1988).

Cost-share assistance programs promoting timber production are concentrated in the southern pine belt States of Alabama, Florida, Maryland, Mississippi, North Carolina, South Carolina, Texas, and Virginia (fig. 1). The Louisiana Forestry Association is currently developing a proposal to establish a program in Louisiana. Outside the South, cost-share assistance programs for timber production have been established in California, Illinois, Iowa, Minnesota, and Oregon.

The implementation of cost-share assistance programs for forest land management that do not include timber production as a primary goal has expanded greatly over the past 10 to 15 years. Increased awareness of the importance of the non-timber forest resources, in particular water quality and wetlands, has been important in this trend. The focus of these programs include: (1) retention of agricultural and forestry land uses, (2) protection and enhancement of riparian areas and wetlands, (3) enhancement of wildlife habitats, and (4) water quality protection and soil conservation. Programs for these purposes have been established in Hawaii, Kentucky, Maryland, Minnesota, Missouri, Nebraska, New Jersey, North Carolina, Tennessee, and Virginia. With the exception of Nebraska, these programs were initiated after 1980, four after 1990.

The total contribution of State cost-share assistance programs for tree planting was over 150,000 acres in 1993. The leading programs in terms of reforestation projects were Mississippi and North Carolina, with contributions of 58,768 and 41,060 acres, respectively, in 1993 (table 1). These accomplishments represented roughly two-thirds of the total acreage of all State cost-share assisted plantings across the Nation in 1993.

Most State cost-share assistance programs are patterned after the Federal FIP, ACP, or SIP (table 2). However, specific program features vary greatly among the States.

Program funding is generally from State revenues, most commonly from timber harvest taxes and general State appropriations (table 3). Other State sources of funding include: (1) lottery revenues to establish the Oregon Forest Resource Trust Fund, (2) oil and gas windfall revenues to stablish a trust to finance the Alabama Agricultural and Conservation Development Commission Program, (3) real State transfer tax revenues to fund the Maryland

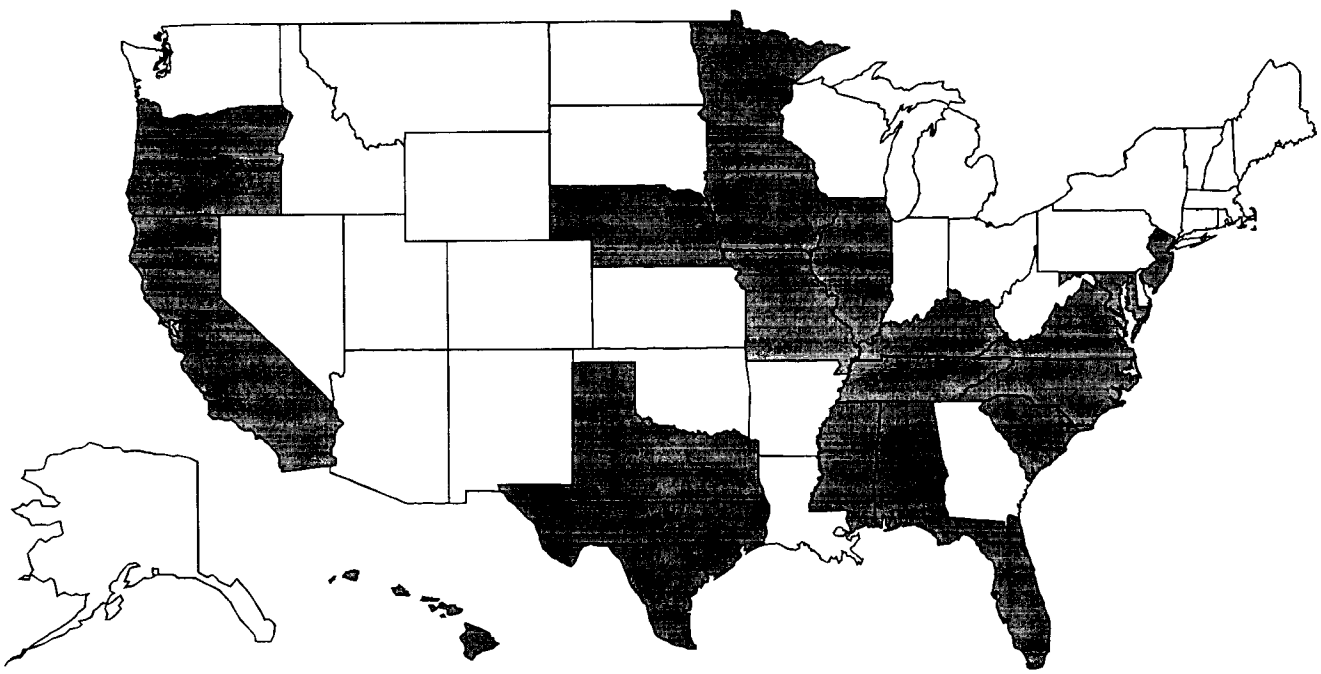

Figure 1.—*State-level cost-share assistance programs to promote conservation, improve timber productivity and enhance other resource values on non-industrial private forest lands.*

Woodland Incentives Program and the Tennessee Agricultural Non-Point Source Program, and (4) a portion of hunting and fishing license fees to finance the Missouri Streams for the Future Program.

A variety of private sources have contributed to funding in several States (table 3). The Texas cost-share assistance program is unique in that it is funded entirely by a voluntary, self-assessed tax on forest industries. Funding for the Oregon Forest Resource Trust Fund was established in part with contributions from PacifiCorp, a private utility company. Initial funding for the Florida Plant a Tree Trust Fund Program was contributed by the Sunshine Gas Pipeline Company, and the discontinued program for reimbursement to NIPF landowners for costs of pine seedlings in Florida was funded by voluntary contributions from forest industry and other private donors in the State. The Virginia Agricultural Best Management Practices (BMP) Cost-Share Program is funded in part by contributions from a private organization, the Alliance for the Chesapeake Bay.

Program features that are used to define eligibility vary among the States but generally include one or more of the following criteria: (1) minimum or maximum ownership or project size limitations, (2) site productivity ranking, and (3) priority ranking of projects according to State resource goals (table 2). All programs focus primarily on NIPF lands; however, other ownerships are eligible in some States. Corporate and industrial ownerships are eligible for cost-sharing in Alabama, Illinois, North Carolina, South Carolina, and Virginia. The South Carolina program specifically excludes wood processing industries; in contrast, the Illinois, North Carolina, and Virginia programs include forest industries as eligible ownerships. Public ownerships are eligible in some States as well; these include non-federal publicly owned lands in Alabama, Mississippi, and New Jersey and municipal holdings in Illinois.

Most programs do not permit landowners to receive concurrent Federal and State cost-share assistance for the same project. However, the programs in Illinois, Iowa, and New Jersey permit State payments to supplement Federal cost-share payments to cover landowner's costs up to 100 percent, 50 percent, and 75 percent, respectively.

Eligible forestry practices generally include tree planting, site preparation for natural and artificial regeneration, timber stand improvement practices, and prescribed burning. Other activities that may be eligible include management plan development, fencing, soil and water quality protection practices, insect and disease control, fish and wildlife habitat improvement, and windbreak construction, among others.

Maximum cost-share payment rates in 1993 ranged from 40 percent in North Carolina and Virginia to 80 percent in Illinois and up to 90 percent in California; most commonly, rates are around 50 percent. Cost-share rates vary according to purpose in some States. In California, higher rates are available on projects to restore substantially damaged lands; the Mississippi program offers higher rates (75 percent rather than 50 percent) for direct seeding and mixed stand regeneration; and in 1993, North Carolina began offering a higher cost-share rate (60 percent rather than 40 percent) for planting hardwoods and longleaf pine and for tree planting projects in wetlands. The Oregon cost-share program is unique; under a contractual agreement with the landowner, the State pays 100 percent of the tree planting costs of landowners. In exchange, the State is reimbursed with a portion of the proceeds of timber sales at harvest.

All State programs require landowners to develop a management plan and, with the exception of North Carolina, require that practices be retained for a set period, most often, 10 years (table 2).

Summaries of the individual State programs follow. Information was obtained through contact with officials of State forestry agencies, and also, from State agency reports and bulletins.

Alabama

The Alabama Agricultural and Conservation Development Commission Program was enacted in 1985 in response to cutbacks in funding for federal conservation and reforestation cost-share programs. The program is administered by the Alabama Agriculture and Conservation Commission, with the Alabama Forestry Commission providing technical support for forestry practices. Cost-share funding is provided through interest earned on a trust fund established with oil and gas windfall moneys.

Eligible lands include private, State, and other non-Federal public holdings of 20 acres or more, with a minimum treatment area of 1 acre (table 2). Approved forestry practices include tree planting, site preparation, natural regeneration, timber stand improvement, prescribed burning, permanent fire lane construction, and some soil and water quality

protection practices. In the future, beaver control measures and fencing may be included. The cost-share rate is up to 60 percent, with a maximum payment of $3,500 per year. Most practices must be maintained for 10 years, 5 years for timber stand improvement. The program is not available for projects funded with Federal cost-share dollars. Practice priorities are determined by the local Soil and Water Conservation Districts.

In the 1993-94 program year, disbursements totaling $348,913 were made for reforestation and timber stand improvement practices on 10,949 acres (table 3). Funding has been stable since the program was established in 1985.[1]

The Alabama Forestry Commission also administers the Southern Pine Beetle Contract Program to offset part of the losses incurred by landowners due to southern pine beetle attack and to encourage prompt control of infestations.

Financial support for the program, which has been available since the mid-1980's, is provided jointly through the State's emergency insect and disease fund (59 percent) and the USDA Forest Service's southern pine beetle suppression fund (41 percent). Incentive contracts are available for salvage, cut-and-leave, and premerchantable harvest operations. For salvage cuts, incentive payments of $10 per cord and $30 per thousand board feet, up to a maximum of $350 per contract, are available. For cut-and-leave operations, the landowner is paid $10 per cord up to a maximum of $150 per contract. For infestations in stands of premerchantable timber, the program offers $1 per tree up to a maximum of $500 per contract. With the exception of cut-and-leave contracts, infested trees must be removed and green tree buffer strips established within 30 days of the contract date. Commercial salvage operations are not eligible as determined by the evaluation of an agent of the Alabama Forestry Commission. Program funding has been sufficient to meet landowners' needs.[2]

California

The California Forest Improvement Program was implemented in 1980 to encourage forestry practices for the enhancement of forest productivity, land conservation, and fish and wildlife habitat. The program is funded by timber sale revenues from State lands and is administered by the Department of Forestry and Fire Protection. Private ownerships of between 20 and 5,000 acres are eligible (table 2). A minimum project area of 5 acres is required for all practices, with the exception of conservation projects that have no minimum acreage requirement. Landowners must submit a management plan certified by a registered forester and adhere to a 10-year forest land use agreement. Cost-share rates range from 75 to 90 percent, with the higher rates offered for projects located on substantially damaged lands. There is no maximum project allotment. Ranking by site productivity is used to prioritize projects; however, this practice is modified to ensure availability of the program to regions of the State where overall site productivity is low.

Cost-share payments are available for the development of forest management plans; site preparation and tree planting; timber stand improvement, including hazard reduction; conservation practices; fish and wildlife habitat improvement; and insect, disease, and rodent control. Practices required to meet standards under the California Forest Practices Act are not eligible.

From the program's inception in 1980 through 1992, over 21 million dollars were allocated for 2,001 projects covering 45,030 acres of planted trees and 37,180 acres of timber stand improvement. In addition, 1,086 management plans were developed for 328,442 acres during this period.

Funding has decreased in recent years from $3.5 million initially to $1.8 million in 1993. Expenditures may be reduced further due to decreasing stumpage prices and reduced harvesting to protect the habitats of endangered species. However, there is great demand for the program; over 900,000 acres of private commercial forest land and 6 million acres of non-commercial forest land are in need of improvement projects.[3]

Florida

The Florida Reforestation Incentives Program was established through a joint agreement between the Florida Division of Forestry and the Florida Forestry Association in 1981 to encourage

[1]Gothard, Tim. 1994. Alabama Forestry Commission. Personal Communication.

[2]Hyland, Jim. 1994. Alabama Forestry Commission. Personal Communication.

[3]Carter, John. 1993. California Department of Forestry and Fire Protection. Personal Communication.

reforestation on private lands by providing reimbursement for seedling costs. The program was discontinued in 1993 due to budget cuts at the Division of Forestry and the resulting closure of all but one State tree nursery. In addition, administrative problems were occurring as a result of requests by some companies that their contributions be earmarked for planting projects in counties close to their mills. The program was administered by the Florida Forestry Association and funded, through voluntary contributions from forest industry and other private donors. Technical assistance and the processing of seedlings were handled by the Division of Forestry. To be eligible, landowners were required to own a minimum of 10 acres of forest land. There was no maximum acreage limitation; however, a maximum reimbursement for 60,000 seedlings was specified.

The Florida Plant a Tree Trust Fund Program was established in 1991 to increase urban tree planting and rural reforestation and is administered by the Florida Division of Forestry. Funding began in 1995 with a contribution of $70,000 from the Sunshine Gas Pipeline Company, a natural gas transmission company utilizing right-of-ways in the State. Eligible applicants include local governments, nonprofit organizations, and private landowners (with the exception of corporations whose stocks are publicly traded) owning or controlling parcels of at least 10 and no more than 1,000 acres (table 2). Requests for funding must be for no less than $1,000 and no more than $10,000. A reforestation plan is required for rural plantings, and projects must be maintained for at least 2 years. Eligible practices include site preparation and tree planting with the following stipulations: (1) trees must be native species of Florida, (2) seedlings must be grade #1 specimens or equivalent, and (3) there must be a minimum planting density of 500 bare-root seedlings or 400 tubelings per acre. Proposed rural projects are prioritized based on several criteria, including contribution to an existing forest management plan, number and size of trees, cost effectiveness, environmental enhancement, and wildlife habitat improvement, among others. Additional funding sources are being pursued.[4]

Hawaii

The Hawaii Forest Stewardship Program was enacted in 1991 to encourage private landowners of forest land or formerly forested land to make long-term commitments to protect, maintain, and restore important watersheds, timber resources, fish and wildlife habitats, endangered plants, and native vegetation. The program is administered through the Department of Land and Natural Resources and is funded through general State revenues dedicated on a biennial basis. Outlays were $50,000 in 1992 and $200,000 in 1994. To be eligible, the parcel must not be recognized as a potential natural reserve area[5] or be managed under other financial assistance programs and must be a minimum of 5 acres in size. In addition to a stewardship plan, landowners must submit annual progress reports for each year they receive support under the program and must agree to maintain practices for a minimum of 10 years. The maximum cost-share rate is 50 percent. There are no maximum ownership size or cost-share limits, and unlike most cost-share programs, if indicated by the plan, payments may be made to the landowner for up to 10 years.

Most projects have been established to control insects and competing vegetation in native stands and to convert degraded pasture to trees. Currently, owners of lands formerly in sugarcane production are being encouraged to plant commercial tropical hardwood species. Several projects have been cost-shared as pilot projects for this purpose. Other projects include the planting of native tree species to maintain a gene pool for the future.[6]

Illinois

The Illinois Forestry Development Program was enacted in 1983 to improve management of timber and other resources on NIPF, corporate, industrial (including forest industries), and municipal holdings of at least 5 acres in size (table 2). The program is administered by the Illinois Department of Conservation (IDC), Division of Forest Resources, on a first-come, first-serve basis and is funded by a 4-percent harvest fee that is deducted from timber sales. Funding has increased each year since inception of the program, inception from $24,079 in 1985 to $532,309 in 1992. Landowners participating in the program are eligible to receive a 50-percent rebate on harvest fees.

[4]Marcus, Charles. 1995. Florida Division of Forestry. Personal Communication.

[5]Potential natural reserve areas are land or water areas within a protective subzone of a conservation district.

[6]Ayers, Nelson. 1995. Hawaii Department of Land and Natural Resources. Personal Communication.

Cost-share payments are available for up to 80 percent of expenses incurred in carrying out practices specified in an IDC approved 10-year management plan. Maximum dollar limits are set for the various practices. Eligible activities include the preparation of management plans, site preparation for natural regeneration, tree planting, timber stand improvement, livestock exclusion, and firebreak construction. Additional practices are approved for wildlife management, recreation, soil and water conservation, and other resource activities. In addition, seedlings are available free of charge to landowners who have an approved reforestation plan. Participation in the program also ensures forest use valuation for property tax purposes.

Illinois is one of the few States that permit the concurrent use of State and Federal cost-share funds. Federal payments are made first, providing reimbursement for up to 65 percent of incurred expenses; State funds further supplement the landowner for up to 100 percent of expenditures. However, maximum dollar limits set for various practices are applicable. The rationale behind the generous package offered is to induce landowners to manage for timber production, despite the long-term investment required for hardwood species and the increasing pressure for urban and suburban uses of rural lands. In addition, compliance with the high standards of the Division of Forest Resources for tree planting operations can be quite costly.

Program accomplishments include the development of 3,036 management plans for practices on 145,487 acres and cost-share payments of $2,761,800 from 1985 through 1992. Although district foresters will provide a management plan free of charge, the IDC's resources are limited, resulting in an extensive backlog of interested landowners needing a management plan. Cost-share payments are being utilized by some landowners to pay consultant fees for plan development.[7]

Iowa

The Iowa Resource Enhancement and Protection Program (REAP) was passed in 1989 as a broad range approach to protect Iowa's natural resources. The goal of the forestry component of the program is to increase the economic viability of private woodlands and to maintain forest cover for environmental protection. The program is funded by general revenue and lottery funds and is administered through the Iowa Department of Agriculture. Disbursement of funds for forestry is at the discretion of the individual conservation districts.

The cost-share rate is 75 percent, with maximum limits set for specific practices (table 2). For participation in the program, a comprehensive stewardship plan is required. Eligible forest practices include: (1) site preparation for natural regeneration and tree planting on a minimum of 3 acres, (2) timber stand improvement on a minimum of 5 acres, and (3) related activities such as improvement in the habitats of wildlife and endangered species, fencing, and establishment or restoration of windbreaks. Forest practices must be maintained for at least 20 years.

The program does not prohibit concurrent use of Federal and State funds. However, unlike the Illinois program where it is feasible to be reimbursed up to 100 percent of costs incurred, REAP limits total combined cost-share payments to 75 percent. Federal programs must provide the initial funding.

Funding for REAP has decreased since the program was initiated in 1989 due to budgetary problems. Funding for 1993 was set at $7 million, a sizeable decrease from appropriations of $16 million in 1989 and $20 million in 1990 through 1992. In 1993, $500,000 was earmarked for forestry practices. In 1994, the outlay for forestry was reduced to $220,000. In the 1992-93 planting season, $135,880 were expended on reforestation projects on 1,100 acres. As of 1993, a $250,000 backlog of forestry projects was awaiting inclusion into the program.[8]

Kentucky

The Kentucky Soil and Water Quality Cost-Share Program was initiated in 1994 to promote agricultural conservation practices. Initial funding of $500,000 was from an increase in the State pesticide registration fee. Other sources of additional funding are being explored. Practices are prioritized with funds allocated to the conservation districts accordingly. Currently, agricultural waste control practices are given highest priority. Six applicants applied for

[7]Schmoker, Dan. 1993. Illinois Department of Conservation, Division of Forest Resources. Personal Communication.

[8]Kemperman, Jerry. 1994. Iowa Department of Natural Resources. Personal Communication.

cost-share funds for forestry practices during the first signup, requesting approximately $11,000. Two of the projects will likely be funded for about $5,000. In addition, 15 percent of the initial program funding is reserved for cost-sharing water quality protection measures where recommended BMP's are determined insufficient for compliance with the Kentucky Agricultural Water Quality Act.[9]

Maryland

The Maryland Woodland Incentives Program was established in 1986 to encourage the development, management, and protection of nonindustrial woodlands for sustained production of timber resources essential to commerce and industry in the State. The program is funded through an agricultural transfer tax assessed on lands converted from woodlands to non-agricultural uses and is administered by the Maryland Department of Natural Resources. Eligible practices include site preparation, tree planting, crop tree release, prescribed burning, thinning, pruning, and herbicide treatments. The cost-share rate is 50 percent up to a set maximum limit per practice (table 2). Total State assistance is limited to $5,000 per year per landowner unless a 3-year plan has been approved, in which case the landowner may receive up to $15,000 per year.

Potential project areas are NIPF lands between 10 and 500 acres is size that are capable of producing at least 20 cubic feet of wood per year. Applicants are prioritized based on site index, size of parcel and treatment area, and species composition. Landowners must submit a forest management plan approved by a licensed forester along with a signed. Statement agreeing to the following stipulations: (1) to use the cost-share funds for the growth of harvestable forest products on a long-term basis, (2) to not receive Federal and State cost-share assistance concurrently, (3) to permit inspections by the Department of Natural Resources, and (4) to maintain the projects for 15 years.

Funding is limited to $200,000 per year by the enabling legislation and is expected to remain stable in the future. Since inception of the program, 883 acres have been planted, and 1,774 acres have been improved. Funding has been sufficient to meet landowners' needs.[10]

The Maryland Buffer Incentives Program was established in 1992 to encourage the planting and maintenance of forested buffers in proximity of the Chesapeake Bay and its tributaries. The program is administered by the Maryland Resource Conservation Service. Funding, which is allocated from general State appropriations, was $150,000 in 1993 and $111,000 in 1994.

Eligible lands are pasture, cropland, or otherwise bare land between 1 and 50 acres in size that are located within 300 feet of open water or lands classified as wetlands by the State. Other critical areas outside the 300-foot limitation may be eligible under certain conditions. Practices must be maintained for at least 10 years, and inspections must be agreed to by the landowner. After successful establishment of a buffer is verified, a $500-per -acre payment is made by the State to the landowner. In 1993, 300 acres were planted. Funding level has been sufficient to meet landowners' needs.[11]

Minnesota

The Minnesota Forestry Improvement Program was enacted in 1989 to provide incentives for forestry practices not available or inadequately funded under Federal programs. The program is administered by the Board of Water and Soil Resources and the Division of Forestry. Technical assistance and a management plan for landowners participating in the program are provided by the Division of Forestry. Eligible practices include woodland fencing, firebreaks and fire lane construction, pocket gopher control, and other approved special practices. Road construction is also eligible when needed to access areas for management purposes that are not economically viable, such as non-commercial salvage operations. The minimum contract amount is $100, and practices must be retained for at least 10 years (table 2).

Cost-share funds are available for 65 percent of landowners' expenses, with the exception of road construction, which is eligible for 50 percent, and some special practices that may receive up to 75 percent. For tree planting, funds have been available only for restocking CRP plantations with less than 50-percent survival resulting from drought conditions. The rate is $25 per acre for a minimum of 11 acres; funding is not available for the first 10 acres. The demand for

[9]Perkins, Cary. 1995. Kentucky Division of Forestry. Personal Communication.

[10]Van Hassant, Donald. 1994. Maryland Department of Natural Resources, Public Lands and Forestry. Personal Communication.

[11]Van Hassant, Donald. 1994. Maryland Department of Natural Resources, Public Lands and Forestry. Personal Communication.

replanting drought-stricken CRP plantations has been satisfied.[12]

Program accomplishments in 1991 included $70,000 in cost-share assistance, of which $42,435 was dedicated to replanting 1,944 acres and $20,475 to install or repair roads. The program is funded through general appropriations and grew from $50,000 per year in 1986 to $120,000 in 1992. The program was not funded in 1993 and 1994 due to State budget cuts, and the prospect for future funding is uncertain. However, funding may be appropriated in the future for planting hybrid poplar in riparian areas for nutrient and sediment control.[13]

The Minnesota Forest Wildlife Habitat Improvement Program was initiated in 1988 to provide cost-share assistance for forest management practices that are beneficial to wildlife and not eligible for funding through more traditional forestry cost-share programs. Approved timber management operations are for the regeneration of non-merchantable tree species to enhance wildlife habitat and stand diversity. Eligible practices include tree planting, prescribed burning, and mechanical and chemical treatments. The cost-share rate is 75 percent, with payments limited to $150 per acre. A written plan is required, and practices must be maintained for at least 10 years.

The program is funded through general appropriations associated with the 1987 Reinvest in Minnesota legislation. Funding was $70,000 per year initially; however, the program has not been funded since 1992 due to State budget problems. From 1988 to 1992, a total of 572 agreements were funded through the programs at a cost of $316,058. Approximately $20,000 of funding was used for tree planting and timber management on 150 acres, with the bulk of funding being used to improve brushland wildlife habitat. Public interest in cost-share funds for wildlife habitat projects remains high.[13]

Mississippi

The Mississippi Forest Resource Development Program was authorized in 1974 in response to concerns regarding the future availability of softwood timber supplies; a prime concern in a State where the manufacturing of forest products is the leading industry (USDA FS 1988). The program is financed through 80 percent of timber severance tax collections and is administered by the Mississippi Forestry Commission. Assistance is available on a first-come, first-serve basis to NIPF and non-Federal public landowners. No minimum ownership acreage or treatment area is stipulated. Landowners are required to submit a management prescription for the desired treatment area, comply with Commission standards during operations, and maintain practices for 10 years (table 2).

The cost-share rate is 50 percent for tree planting, site preparation, prescribed burning, firebreak construction, and timber stand improvement and is 75 percent for direct-seeding and mixed-stand regeneration. Payments are limited to a total of $8,000 per year. The program is not available as a supplement for treatments performed using Federal cost-share funds.

Since the State program was established in 1974, expenditures have totaled $32,932,948 for tree planting on 585,676 acres and release treatments on 81,646 acres. Funding in the future is expected to remain stable.[14]

Missouri

The Missouri Soil and Water Conservation Program was enacted in 1985 to provide an incentive for the conversion of arginal soils to less intensive uses. The program is administered by the Department of Conservation and is funded through retail sales tax revenues.

Up to 75 percent in cost-share assistance is available to private landowners with approved conservation plans for site preparation, seeding or planting, fencing for livestock exclusion, establishing windbreaks, and installing drip irrigation systems. Eligibility is limited to areas susceptible to excessive erosion and to stream floodplains and upland soils with a slope exceeding 10 percent. Practices must be maintained for 10 years.

The program does not permit the concurrent use of State and Federal cost-share payments. State funding has been sufficient to satisfy demand; however, landowner participation has been low. Appropriations for the program have been stable and are expected to continue at the current level.[15]

[12]Himanga, Larry. 1994. Minnesota Department of Natural Resources. Division of Forestry. Personal Communication.

[13]Kroll, Tom. 1993. Minnesota Department of Natural Resources, Division of Forestry. Personal Communication.

[14]Romedy, Randall. 1995. Mississippi Forestry Commission. Personal Communication.

[15]Wallace, Douglas. 1993. USDA Soil Conservation Service. Personal Communication.

The Missouri Streams for the Future Program, initiated in 1992, was established as a pilot program in six counties to encourage a number of conservation practices in stream corridors. The program is administered by the Department of Conservation and provides reimbursement for up to 75 percent of expenses for tree planting in stream corridors. Funding for the program has been $300,000 annually and is appropriated from revenues allotted the Department from the sale of hunting and fishing licenses and 1/8 of 1 percent of sales tax revenues. The program has been well received by landowners.[16]

The Missouri Wildlife Habitat Improvement Program, established in the early 1950's and administered by the Department of Conservation, provides 25 percent cost-share payments in addition to the 50 percent available through CRP for tree planting projects that enhance wildlife habitat. About $300,000 of the Department's funds are allotted for the program annually. In the past, about 500,000 trees per year were distributed. However, in recent years, forestry practices have been deemphasized.[16]

Nebraska

The Nebraska Natural Resource District Program, implemented in 1972, established 23 Natural Resource Districts (NRD's) to administer a variety of conservation programs that address local natural resource concerns. Funding is primarily provided through general obligated funds and is supplemented by revenues raised through the taxing authority of each NRD. All NRD's have made cost-share funds available for tree planting in varying amounts from year to year. In eastern Nebraska, most funds are used for black walnut, oak, and hickory plantings. In the western part of the State, funds are primarily used for field windbreak and farm shelterbelt plantings.

New Jersey

The New Jersey Farmland Preservation Program was established in 1981 to encourage retention of agricultural lands in the State. The program is administered through the Soil Conservation Districts, with the New Jersey Bureau of Forest Management establishing standards and specifications to be followed for forestry operations. Revenues from three bond issues, in 1981, 1989, and 1992 for $50 million each, have funded the program. The program provides funding for the purchase of agricultural easements, as well as 50-percent cost-share payments for conservation projects including forestry practices. Funding may be available in some instances to public entities. Concurrent Federal and State cost-share payments are permitted; however, State payments must be supplemental to Federal payments, and total reimbursement is limited to 50 percent of landowners' costs. Eligible forestry activities on a minimum of 1 acre include: (1) thinning, pruning, and release treatments, and (2) site preparation for natural regeneration and tree planting for plantation establishment. Practices must be maintained for at least 8-years. Cost-share payments are based on ownership size and range from $400 per acre for parcels up to 50 acres in size to $60 per acre for parcels greater than 100 and less than 516 acres in size. No additional funding is available to the landowner for parcels over 516 acres. The cost-share payments are limited to $50,000 over an 8 year period. To date, no applications for forest practices have been received; forest management is not prevalent in the State.[17]

North Carolina

The North Carolina Forest Development Program was implemented in 1978 to increase forest productivity on private forest lands in the State while protecting soil, air, and water resources. The program is available to industrial (including forest industries) as well as nonindustrial owners. Funding is provided through a combination of State general funds of $700,000 per year and revenues of about $1.5 million annually from a tax assessed on primary forest products.

A forest management plan, with provisions for assuring forest productivity and environmental protection, must be approved by the Division of Forest Resources. Approved practices on a minimum of 1 acre (table 2) include site preparation, silvicultural clearcutting, tree planting or seeding, and timber stand improvement (with the exception of fertilization and pre-commercial thinning).

[16]Kirby, Samuel. 1993. Missouri Department of Conservation. Personal Communication.

[17]Baumley, Rod. 1994. New Jersey Division of Parks and Forestry. Personal Communication.

The cost-share rate is 40 percent for most practices; however, in 1993, the rate of 60 percent was offered for planting hardwoods and longleaf pine and for planting trees in wetlands. There has been substantial interest and response to the incentive to plant longleaf pine.

Program eligibility limitations are: (1) landowners are restricted to a maximum of 100 acres per practice each year, (2) landowners cannot receive State funding for the same acres funded through other State and Federal cost-share programs during the same year, and (3) landowner projects must be initiated within 1 year and completed within 2 years after funding approval. In addition, projects not conducted in accordance with State best management practices may not be funded and may be subject to penalties under the State's Sedimentation and Pollution Control Law. In contrast to most State cost-share programs, the North Carolina program does not contain a practice retention provision. In a few instances, landowners have received cost-share payments for practices that were not maintained over a reasonable period of time.

Program accomplishments include assistance to over 11,000 landowners for tree planting on more than 361,000 acres between 1978 and 1992. In 1993, 1,412 landowners received assistance on 40,240 acres for planting projects. The program enjoys broad support, and funding is expected to remain stable in the future.[18]

The North Carolina Agricultural Cost-Share Program for Non-Point Source Pollution Control was established in 1985 to encourage conservation practices, including tree planting on erodible soils where water quality is being impaired. The program is administered by the North Carolina Department of Environment, Health, and Natural Resources, Division of Soil and Water Conservation, and is funded through State general appropriations. The cost-share rate for tree planting is 75 percent of the average cost of establishing fescue up to a maximum of $15,000 per year. Since the program was initiated in 1985 through 1993, $1,662,164 was allocated for cost-share payments on 19,503 acres for the conversion of agricultural lands to trees. In 1993, 820 acres were planted.[19]

[18]Sanderford, Eldora. 1994. North Carolina Department of Natural Resources and Community Development, Division of Forest Resources. Personal Communication.

[19]Moore, Bobbie Joe. 1994. North Carolina Department of Environment, Health, and Natural Resources. Personal Communication.

Oregon

The Oregon Forest Resource Trust, enacted in 1993, was established to provide funds for financial and technical assistance to NIPF landowners for stand establishment and improvement practices to enhance timber productivity and other resource values. The Trust, which was legislatively established with $3.5 million from State lottery revenues for funding, is administered by the Oregon Department of Forestry. In addition, $75,000 was contributed by PacifiCorp in exchange for carbon credits as a means of offsetting carbon dioxide emissions produced in its coal-burning plants. A primary goal of the program is to reforest and restore productivity on 250,000 acres of NIPF lands by the year 2010.

In contrast to true cost-share programs, the Trust is a venture capital program where the State and private landowners share the risks and benefits of forest investments. The State provides up to 100 percent of the initial costs of reforestation or restoration up to a maximum of $100,000 over a 2-year period (table 2). In exchange, the landowner a grees to reimburse the State when timber from assisted acreage is harvested. Reimbursement is based on a predetermined percentage of after-tax harvest revenues ranging from 10 to 25 percent. The formula includes factors such as reforestation costs, future timber prices, a set rate of return, and inherent worth of the site. The payback obligation is binding up on new owners. However, a "buyout option" is included in the program whereby owners may terminate the contract at anytime during the first 25 years by repaying all trust funds with interest. All underproductive and understocked nonindustrial private forest ownerships of 10 to 5,000 acres in size located outside designated urban growth boundaries are eligible. However, priority is given to lands with the greatest potential for success in reforestation and to environmental restoration in areas of environmental concern. Priority may be given to projects approved for funding from other forestry incentive or loan programs. The Oregon Department of Forestry provides technical assistance for development of a required comprehensive project plan. Funding to fulfill minimum reforestation requirements of the Oregon Forest Practices Act is not available through the Trust unless landowners' revenues from harvest are insufficient to establish a new stand. However, reimbursement for stocking in excess of the minimum stocking standards may be available. Thus far, landowner response has been low. To date, about 1,000 acres have been reforested. Factors that have

contributed to the slow start are the complexity of the contractual agreement and the requirement that a lien on the property be retained by the State.[20]

South Carolina

The South Carolina Forest Renewal Act was enacted in 1981 to provide incentive payments to private forest landowners to increase the productivity of their forest land and to ensure a continuing and adequate flow of wood products in the State. At that time, some 2 million acres of poorly stocked or idle nonindustrial private lands were in need of reforestation (Izlar 1983).

The Act directs the South Carolina Forestry Commission to administer the program and to ensure that forest operations are conducted in such a manner as to protect the State's soil, air, and water resources.

The program is funded through a combination of State appropriations and a severance tax on primary forest products. Assessment rates are established by the State Forester and are suspended in any year that State general appropriations are not made. Since the program's inception in 1981, the General Assembly has appropriated $100,000 annually, and the forest industry has provided four times this amount for a total outlay of $500,000 per year. Funding in the future is expected to remain at this level.

All private nonindustrial lands capable of producing at least 50 cubic feet of industrial wood per acre per year are eligible for cost-share assistance. The program requires a minimum treatment area of 10 acres for mechanical site preparation; otherwise, there are no minimum acreage limitations (table 2). A forest management plan must be approved by the Forestry Commission, and the project area must be maintained in a forest condition for at least 10 years. The program does not permit both Federal and State cost-share assistance on the same acreage in the same year.

Approved practices include natural and artificial regeneration, timber stand improvement, and prescribed burning. The average cost-share rate is 50 percent, with reimbursements limited to the amount needed to complete the project on 100 acres. For artificial regeneration, the program requires that all merchantable timber be removed before applications are accepted. On average, 5,500 acres of cutover woodlands are reforested each year under the program.[21]

Tennessee

The Agricultural Non-Point Source Pollution Program, initiated in 1993, provides cost-share assistance for soil and water improvement and riparian zone protection practices on private agricultural lands, including nonindustrial forest lands. The program is administered by the State Department of Agriculture through the county Soil Conservation Districts. Technical support for forestry projects is provided by the Tennessee Division of Forestry. An annual budget of $100,000 has been allocated for forestry projects. The program is funded in part by a 3-year grant from the Environmental Protection Agency (EPA). Additional funding is from the State Agricultural Non-Point Source Pollution Program Fund, which has been established with a portion of real estate transfer tax receipts. The first landowner signup for the program was held in July 1993. Continuing EPA grants are anticipated, and State funding is expected to be stable in the future. A stewardship plan, modeled after the Federal stewardship program plan, is required. The cost-share rate is 75 percent for best management practices, such as the treatment of logging roads, skid trails, firebreaks, and log landings, and for the improvement, protection, and restoration of streamside areas. Annual cost-share payments are limited to $5,000 per landowner.[22]

Texas

The Texas Reforestation Foundation Program (Tre) was chartered and funded in 1981 by forest products companies in an effort to increase the productivity of private nonindustrial woodlands and thereby ensure future timber supplies. The program is administered by the Texas Forestry Association, with technical assistance being provided by the Texas Forest Service.

To apply for TRe funds, a landowner must submit a forest management plan for projects located in 1 of 42

[20]Rutledge, Wally. 1994. Oregon Department of Forestry. Personal Communication.

[21]Rogers, Evonne. 1994. South Carolina Forestry Commission. Personal Communication.

[22]Applegate, Hart. 1993. Tennessee Department of Agriculture, Division of Forestry. Personal Communication.

counties in east Texas. The cost-share rate is 50 percent for land clearing, site preparation, tree planting, and timber stand improvement practices on 10 or more acres (table 2). Applicants are prioritized by the Texas Forestry Association Board of Directors and Texas Forest Service foresters based on estimated planting costs and site index. The program requires practices to be maintained for 10 years.

All of the major forest products companies in Texas, as well as a few in Arkansas and Louisiana receiving wood from Texas, provide financial support through a voluntary assessment, on primary forest products. A number of smaller companies also participate. In addition, private landowners are encouraged to contribute 1 percent of timber sale proceeds and home builders $70.00 per home constructed to the program. The TRe has approved $450,000 for cost-share payments in 1994. From the program's inception in 1981 through 1993, cost-share payments have totaled $4,088,040 for reforestation on 83,572 acres. Funding has increased in recent years; however, demand has not been satisfied.[23]

Virginia

The Virginia Reforestation of Timberlands Act (RT) was established in 1970 to maintain a viable pine industry in light of forest inventory statistics of the USDA Forest Service for 1966 indicating softwood removals exceeding growth by 15 percent (Marcum 1993). The program is administered by the Virginia Department of Forestry and is financed through an assessment on primary forest products and matching State funds. Funding from the industry tax was $800,000 initially, with increases up to $1 million per year. Matching State funds have not been consistently appropriated in recent years due to budgetary constraints. In the past 3 years since 1995, annual appropriations have been $700,000. Dollars are distributed to six regions of the State based on previous demand.

All private landowners are eligible, including industrial forest landowners. Reimbursements are available for 40 percent of the cost of site preparation, tree planting, and brush control in pine stands up to a maximum of $75 per acre (table 2). However, lands requiring reforestation under the State seed tree law are not eligible for the RT program, except where more than 75 percent of the stand is infested by the southern pine bark beetle. However, the Federal FIP is used for reforesting harvested lands. The minimum project size is 5 acres, unless planting is done without site preparation, in which case the minimum is 1 acre. The maximum project size is 500 acres. The program requires the use of BMP's within project boundaries and a 10-year commitment to maintain practices. Since the program was funded in 1972 through 1992, 393,971 acres have been reforested. In 1993, more than 50 percent of cost-share assistance dollars were used for timber stand improvement, primarily for herbicide application, which has been promoted by the Virginia Department of Forestry. The State portion of funding may be further reduced in the future.[24]

The Virginia Agricultural BMP Cost-Share Program was established in 1984 as part of a multi-State effort to protect water quality in the Chesapeake Bay watershed. The development of a stewardship plan and compliance with BMP's is encouraged, but not mandatory. The program offers a $75 payment per acre for tree planting on erodible crop or pasture land in addition to cost-share payments from other programs. Cost-share assistance is also available for stabilizing abandoned logging roads and planting streamside buffer strips. The program is administered by the Soil and Water Conservation Districts. Funding for the program includes Federal outlays, State revenues, and contributions from private organizations such as the Alliance for the Chesapeake Bay. Funding for forestry has been around $600,000 per year and is expected to increase in the future.

DISCUSSION

The long-term nature of forestry investments, coupled with the up-front capital required to establish regeneration and perceived low rates of return, are major disincentives to some NIPF landowners. Cost-share payments offset landowners' initial costs for site preparation, tree planting, and forest stand improvement and increase profits at harvest. Economic opportunities for yields of at least 4 percent were identified on over 50 million acres of NIPF land in the South that were not producing to maximum

[23]Hufford, Ron. 1994. Texas Forestry Association. Personal Communication.

[24]Grimm, Phil. 1993. Virginia Department of Forestry. Personal Communication.

potential (USDA FS 1988). Cost-share payments were found to increase the internal rate of return (IRR) from over 2 to 5 percent for chemical site preparation and release treatments on sites analyzed in southern Georgia (Busby and Haines 1994). Risbrudt and Ellefson (1983) reported an average IRR of 10.9 percent for landowners' investments in forest practices cost-shared through FIP in 1979.

Of particular importance to enhanced timber production are the NIPF lands in the South that accounted for 53 percent of the softwood removals and 59 percent of the hardwood removals nationwide in 1991 (Powell and others 1993). Softwood harvests on NIPF lands is projected to increase from 4.4 billion cubic feet in 1991 to 5.9 billion cubic feet by 2040 in response to reduced harvests on national forests and other Federal lands. Most of the increase in supply is projected to come from pine plantations in the South (Haynes and others 1993). If these plantations are not established, timber availability could be a problem in some areas.

In addition to improving timber productivity, cost-share assistance programs are an important policy mechanism for achieving soil, water quality, wetland, and wildlife habitat protection. These programs provide payments to offset costs of protection and enhancement measures that NIPF landowners may be unwilling or financially unable to bear. The Federal ACP, CRP, SIP, and WRP, plus numerous State programs, foster improved stewardship on NIPF lands and a means to protect ecosystems of special concern. These types of programs could be incentive options to complement the Endangered Species Act and the wetlands provisions of the Clean Water Act, especially in light of the ongoing private property rights and takings debates.

Other policy mechanisms to improve timber productivity include mandatory reforestation regulations, tax credits and other preferential tax treatments for timber investments, and greater emphasis on education, technology transfer, and technical assistance.

Programs that do not directly address timber productivity but that may expand the available timberland base include easements on non-forested private lands for wetlands restoration, for wildlife habitat establishment, or for conversion of agricultural or urban fringe lands to forest. Additional afforestation opportunities include tree planting programs established to offset environmental degradation such as pollutants emitted from coal-fired plants or to sequester carbon from other sources (Moulton 1994).

The effect of Federal, State, and local regulation of private forest land management activities has been dichotomous. Environmental regulation may discourage forestry investments through the direct and indirect costs of compliance or because of the uncertainty of reaping full harvest benefits, thus increasing the need for incentive programs. Conversely, mandatory reforestation requirements may enhance timber productivity. A combination of mandatory reforestation regulations and availability of State forestry cost-share assistance programs for improving productivity on lands not subject to the reforestation regulations has been very effective in Virginia. Harvested pine lands must be reforested under the State seed tree law and are not eligible for the State cost-share assistance program. Thus, more cost-share dollars are available for intermediate treatments and for plantings to convert open lands to forests or to increase productivity on understocked stands. The effect of the interaction of these programs increased the land base in pine type by 20 percent between 1972 and 1977 (Flick and Horton 1981). The policy structures of California and Oregon are similar—both utilize regulatory reforestation laws and State cost-share assistance programs.

The tax treatment of cost-share payments has been favorable for landowners. Under Section 126 of the Internal Revenue Code, all or a part of cost-share payments for reforestation and some other practices may be excludable from the landowners' taxable income (Hoover 1989).

Cost-share payments from Federal programs that have been approved for exclusion for Federal income tax purposes include FIP, SIP, and ACP. To date (1995), CRP and WRP cost-share payments have not been ruled excludable. Cost-share payments from the following State programs have been approved for exclusion: (1) the North Carolina Forest Development Program, (2) the Virginia Reforestation of Timberlands Act Program and Cost-Share Program, (3) the Maryland Agricultural Cost-Share Program, (4) the Mississippi Forest Resource Development Program, (5) the California Forest Improvement Program, (6) the South Carolina Forest Renewal Act Program, (7) the Illinois Forestry Development Program, and (8) the New Jersey Farmland Preservation Program.[25]

[25]Bishop, Larry. 1995. USDA Forest Service. State and Private Forestry. Cooperative Forestry. Atlanta, GA. Personal Communication.

CONCLUSIONS

The unmet potential of nonindustrial forest lands for timber production will become increasingly important in the future if anticipated demand and reduced harvests on public lands is realized. State forestry cost-share programs have proven to be an effective policy tool for stimulating private investments in forest management. The expanded use of these programs could be a means of increasing timber productivity and also of achieving public environmental goals on private forest lands. However, the outlook for Federal funding for cost-share assistance programs is uncertain. The future of the FIP and CRP programs is still undecided, with Congress yet to act on 1995 Farm Bill legislation. State programs, however, appear to be stable or are expanding, with the exception of those in California, Iowa, and Minnesota.

There has been some debate regarding the best mechanism for allocating Federal cost-share funds to NIPF landowners. Possible scenarios include expanding the SIP to replace FIP or funneling Federal dollars directly to State cost-share programs. State forestry officials in California have requested $600,000 in Federal funds to help offset reductions in State outlays for the California Forest Improvement Program.[26] Also, Federal funding of $750,000 has been committed to the Texas Tre program for cost-share funding in 1996.[27]

There has been considerable debate regarding the social and economic efficiency of financial incentive programs for private forest investments. One hypothesis has been that these programs substitute government payments for private capital investments. Studies exploring this issue have had conflicting findings. Lee and others (1992) and de Stieger (1984) did not substantiate capital substitution for forestry investments. However, Cohen (1983) suggested that up to 50 percent of the NIPF acres planted with cost-share assistance would have occurred without these payments. Some surveys of landowners have lent some credence to this finding (Bliss and Martin 1990, Gregerson and Walker 1985). Another suggested shortcoming of these programs is that landowners may delay investing in reforestation when incentive payments are not readily available.

Improvements in the efficiency of the programs might include lowering cost-share rates, particularly in times of increasing stumpage prices. Another would be to some way identify landowners without harvest revenues available to establish plantations, as opposed to those who likely would have planted without cost-share assistance.

Comprehensive analysis of the various cost-share assistance, tax incentive, and technical assistance programs is needed to determine the most effective policy options in terms of the economic environment for forestry investments, individual landowner's goals, and future benefits for society overall. A comparison of the cumulative effectsof an individual State's institutional mechanisms—tax policies, cost-share assistance programs, and regulatory programs on forestry investments and forest resource protection—should be assessed as well.

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[26]California Department of Forestry and Fire Protection. 1995. Personal Communication.

[27]Texas Forestry. May 1995. Texas Forestry Association.

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Reviews the features of Federal and State forestry cost-share programs including statutory provisions, funding levels, accomplishments, and future outlook for continuation or expansion.

Keywords: Incentive programs, nonindustrial private forest landowners, reforestation, timber productivity, tree planting.

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OFFICIAL BUSINESS
Penalty for Private Use $300