

How do current policies, regulations, and laws affect forest resources and their management?

## Chapter 8: Policies, Regulations, and Laws

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### Key Findings

#### Federal Income Tax Incentives

Since the Federal tax code was enacted in 1913, provisions have been added to encourage improved management and stewardship of private forest land; but forest owners and policymakers believe additional incentives still are needed.

- Incentives that alter the tax treatment of reforestation expenses have the potential to improve management and stewardship on nonindustrial private forests (NIPFs), because they are specifically linked to reforestation of harvested areas. Examples of such incentives include immediate deduction of reforestation expenses, enhanced amortization provisions, and Green Accounts.
- Extending tax provisions and incentives already available to owners who manage their forest holdings for a profit to owners who manage primarily for environmental or social purposes would encourage and enable additional owners to make stewardship investments.

#### Federal Estate Tax

- An average of 87,000 transfers of forest estates occurs each year, nationwide. Some 59 million acres of forest land are transferred each year.
- Forest owners are many times more likely than the U.S. population in general to incur the Federal estate tax. Nationwide, about 2.6 million acres of forest land must be harvested and 1.4 million acres must be sold each year to pay the Federal estate tax.

- Roughly one-fourth of forest acres sold to pay the Federal estate tax are converted to other, more developed uses.

#### Cost-Share Programs

- Federal cost-share programs that provide funding for reforestation and management practices on private forest land include the Forestry Incentive Program, the Conservation Reserve Program, the Wetlands Reserve Program, the Stewardship Incentives Program, the Environmental Quality Incentives Program, and the Wildlife Habitat Incentives Program.
- Funding for reforestation and timber stand improvement projects are available through State cost-share programs in 8 of the 13 Southern States: Alabama, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. Programs also have been enacted in Oklahoma and Georgia but have not been funded to date. Florida implemented two programs in past years, but these have been discontinued.
- State cost-share programs contributed payments of about \$6 million for tree planting and timber stand improvement projects on about 140,000 acres in 1993. In 2000, accomplishments were nearly double, with cost-share payments of about \$13.5 million for projects on about 278,000 acres. Cost-share payments and project acres in 2000 increased over 1993 levels in all seven States with programs in both surveyed years.
- In 2000, about 87 percent of cost-share projects in Southern States were accomplished in Virginia, Mississippi, North Carolina, and Louisiana.

- In addition to the regeneration and stand improvement assistance programs, Kentucky, North Carolina, Tennessee, and Virginia share costs for water-quality protection practices.

#### Current-Use Property Valuation

- In Southern States, forest is among the classes of land eligible for current-use assessment.
- Use-value laws, by themselves, have only a minor impact on land use decisions. It appears that use-value taxation may, at best, delay but not prevent development of rural land.

#### Conservation Easements

- Over the past two decades, conservation easements have emerged as a popular tool for preserving open space and keeping land in forest cover.
- By 1996, conservation easements on an estimated 333,000 acres of forest land had been granted to private land trusts in the Southern United States. While still influencing a relatively small portion of the region, growth in acquired acreage has been accelerating in the 1990s.

#### Protective Regulatory Policies

- Most protective regulatory statutes apply to Federal and State land.
- Few of the protective regulatory policies are specifically directed at managing private forests. In the vast majority of cases, forestry is affected only when certain activities are deemed to have the potential to impair water quality, air quality, or critical habitat for endangered species.
- Most forestry operations are exempted from the permit

requirements of Federal and State nonpoint-source pollution programs. Although provisions exist to encourage operators to meet voluntary best management practices (BMPs) and to bring polluters into compliance, these rely more heavily on education and technical assistance and less on fines and penalties.

■ In the majority of instances, implementation and enforcement duties for Federal protective regulatory statutes have been delegated to the States.

■ While meeting their environmental objectives, protective regulatory policies reduce overall production and raise unit costs for people who are raising timber crops.

### Local Ordinances

■ As of 2000, county and municipal governments in 10 of the 13 Southern States had enacted a total of 346 forest-related ordinances. This is a marked increase from 7 States and 141 ordinances in 1992.

■ Most of the ordinances were enacted in States experiencing rapid urban expansion. Georgia and Virginia together account for over one-half of the total; Louisiana and Florida together account for an additional one-fourth.

■ Regionwide, public property protection ordinances account for nearly half of all ordinances. Next most common are special feature protection ordinances, followed by tree protection ordinances, timber harvesting ordinances, and general environmental protection ordinances.

### Private Property Rights and Right-to-Practice Acts

■ Comprehensive property rights protection laws were enacted in 1995 in Florida, Texas, and Virginia, and were proposed but failed to be enacted in Alabama, Arkansas, North Carolina, and South Carolina. These laws: (1) assert landowners' constitutional rights for ownership and use of their land, (2) provide for landowner compensation for regulatory takings, and/or (3) require economic impact assessments of potentially restrictive proposed legislation or ordinances.

■ Private property rights protection laws specific to forest and farmland were enacted in Mississippi in 1994

and Louisiana in 1995. These laws: (1) assert landowners' rights to conduct farm and forestry practices; (2) create a legal remedy for takings at a threshold of 20 percent of value reduction in Louisiana and 40 percent in Mississippi; and (3) in Louisiana, require an economic assessment of proposed laws for takings impact.

■ Right to farm and practice forestry laws were enacted in Florida, Georgia, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, and Virginia from 1991 through 2000. These laws: (1) recognize the benefits of forestry to the economy and ecology of the State, (2) provide protection from public and private nuisance actions against landowners conducting forestry operations, and/or (3) limit local governments' power to enact ordinances and zoning regulations restrictive to forestry.

■ Right to prescribe burn laws were enacted in Alabama, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Texas, and Virginia between 1990 and 1999. These laws: (1) recognize prescribed burning as a legal and ecologically beneficial operation, (2) establish burner training/certification programs, (3) protect landowners from nuisance claims for prescribed burning activity, and (4) limit burners' liability for damages and injuries.

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## Introduction

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This chapter addresses an extremely broad question. Southern forests and their management are influenced by a large body of legislation that stems from all levels of government: Federal, State, and local. Some laws address forests specifically, but many others influence forest conditions indirectly. Measuring the impact of a particular law or regulation can be difficult, if not impossible, except for programs that provide funding for specific actions and have reporting requirements. To a large extent, current forest conditions and trends reflect the combined impacts of all legislation in effect over time.

The topics included in this chapter address concerns identified by the public as important aspects of the overall question. Shown below are the major components of this overall

question, the sections which address them, and the authors principally responsible for those sections:

a. The implications of the tax code on the structure and management of forests. This item is addressed in the sections concerning Federal income tax incentives and the Federal estate tax, authored by John L. Greene.

b. The impacts of programs that are designed to encourage forest management. This item is addressed in the section on Federal and State cost-share programs, authored by Terry Haines and John L. Greene.

c. The effects of programs for keeping land in forest cover. This item is addressed in the sections concerning current-use property valuation, authored by Brian A. Doherty, and the section on conservation easements, authored by James E. Granskog, Steven Bick, and Harry L. Haney, Jr.

d. State laws and local regulations that define landowner responsibilities in managing forests. This item is addressed by the section covering protective regulatory policies, authored by Steverson O. Moffat and Jerry Speir; the section on local forest-related ordinances, authored by Jonathan J. Spink, Harry L. Haney, Jr., and John L. Greene; and the section on private property rights and right to practice forestry acts in the South, authored by Terry Haines.

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## Federal Income Tax Incentives

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### Introduction

The Federal income tax dates from 1913, shortly after ratification of the 16th amendment to the U.S. Constitution empowered Congress to tax income "from whatever source derived" (Graetz 1997). In general, the provisions of the Internal Revenue Code (IRC) apply to private forest owners just as they do to other taxpayers. Over time, however, provisions have been added to encourage improved management of private forests:

■ Depletion deductions—which recognize that part of the price owners receive from the sale of a natural resource is a recovery of their

investment in the resource rather than taxable income—were first specifically applied to timber in the Revenue Act of 1919 (Siegel 1978).

- Capital gain tax treatment was originally available only to owners who sold their timber “lump-sum.” The Revenue Act of 1943 extended capital gain treatment to owners who dispose of their timber “with an economic interest retained,” either by selling it on a per-unit basis or harvesting it themselves and selling logs or wood products (Siegel 1978).

- Federal cost-share programs help forest owners afford the high up-front cost of investments in forest management and stewardship. Programs currently available include the Forestry Incentive Program, the Conservation Reserve Program, the Wetlands Reserve Program, the Stewardship Incentives Program, the Environmental Quality Incentives Program, and the Wildlife Habitat Incentives Program. The programs themselves are not income tax provisions, since 1979 IRC Section 126 permits forest owners to exclude a calculated part of qualifying cost-share payments from their gross income (Haney and others 2001).

- Reforestation incentives—a 10-percent tax credit on and amortization over 8 tax years of up to \$10,000 of reforestation expenses per year—were enacted in Public Law 96-451 of 1980 (Haney and others 2001). The effect of these provisions is to reduce or eliminate the need for forest owners to capitalize reforestation expenses over the life of a stand.

Nevertheless, forest owners and policymakers alike continue to argue that additional incentives are needed to encourage improved management and stewardship of NIPFs. In studies conducted in 1997 and 2000, the Forest Law and Economics Research Unit of the USDA Forest Service, Southern Research Station, analyzed the economic effect of several incentives that have been proposed, including:

- income averaging;
- reducing the tax rates for long-term capital gains;
- enhancing the amortization provisions for reforestation expenses;

- permitting deduction of reforestation expenses in the year they occur;

- establishing Green Accounts, in which forest owners can accumulate pretax dollars to pay upcoming reforestation or management expenses; and

- stewardship investment provisions for qualified conservation-related investments in forest management.

## Methods

A series of computer spreadsheets was developed to determine the effect of the proposed incentives on Federal tax receipts and cash flow to “typical” NIPF owners. The hypothetical owners were assumed to be a married couple who (1) own 100 acres of forest land, (2) file joint tax returns, (3) have \$40,000 of other income and \$6,900 in other deductions annually, and (4) have no dependent children. The \$40,000 income level closely approximates the median household income for noncorporate private forest owners in the United States (Personal communication, 1997. T.W. Birch, USDA Forest Service, Northeastern Research Station, 11 Campus Blvd., Newtown Square, PA 19073). We assumed no dependent children because over half of private forest owners are at or near retirement age (Haney and Siegel 1993, Sampson and DeCoster 1997).

The spreadsheets were constructed around management plans developed for each of the three major southern timber types: loblolly pine, bottomland hardwood, and upland hardwood. The plans specified practices and rotation lengths representative of those used by nonindustrial forest owners in the region. The plans did not, therefore, optimize financial return or fiber production, but used fundamental practices to maintain a relatively high timber growth rate over a sawtimber rotation.

The personal exemptions and rate schedules used to calculate the Federal income tax were for the 1997 tax year. The \$6,900 amount used for other deductions equaled the Federal 1997 standard deduction for a married couple filing jointly. State and local taxes were included in the analysis because they affect both cash flow to the owners and Federal taxable

income; the rates used were typical for a Southern State (Greene 1995).

No increases were assumed for costs, returns, or tax rates. Both the owners’ personal discount rate and the interest rate earned by Green Accounts were assumed to be 4 percent after inflation.

## Data Sources

Management costs for the loblolly pine timber type were taken from the “Forest Farmer 30th Manual Edition” (DuBois and others 1995) and adjusted to reflect a small ownership. Pine sawtimber and pulpwood stumpage prices were 1995 regional average prices for the Southern United States as reported in “Timber Mart-South” (Norris 1995). The management plan was developed using the COMPUTE\_MERCHLOB growth-and-yield model (Busby and others 1990). The costs, returns, and management plan for the bottomland hardwood timber type were adapted from Amacher and others’ (1997) findings for Nuttall oak. The costs, returns, and management plan for the central Appalachian hardwood timber type were provided by G.W. Miller (Personal Communication, 1997. G.W. Miller, USDA Forest Service, Northeastern Research Station, 11 Campus Blvd., Newtown Square, PA 19073).

## Results

**Income averaging**—The form of income averaging analyzed would permit forest owners to treat income from a commercial thinning or timber harvest as if it were paid in three equal annual installments, beginning in the year of the sale. The tax schedule for long-term capital gains has two tiers: (1) amounts in the bottom tax bracket (for 1997, amounts up to \$41,200 minus the owners’ taxable ordinary income) are taxed at 10 percent, and (2) additional amounts are taxed at 20 percent. Under income averaging, this calculation is made in each of the 3 years to which timber sale income is attributed, so that three times as much income qualifies to be taxed at the lower rate. Because the incentive alters the owners’ adjusted gross income for each year over which income is averaged, State income tax also is affected. Income averaging would provide a modest benefit to owners in each of the three timber types (table 8.1) (Greene 1998).

**Table 8.1—Comparison of Federal income tax incentives by timber type**

Incentives	Timber type		
	Loblolly pine	Bottomland hardwood	Upland hardwood
-----Dollars-----			
A. Current law			
Present value of Federal income tax receipts	11,202	8,669	4,774
Present value of cash flow to the owners	48,410	28,079	18,873
B. Further reduced tax rates for long-term capital gains			
Present value of Federal income tax receipts	6,502	4,953	2,382
Difference from current law	-4,699	-3,716	-2,392
Present value of cash flow to the owners	53,110	31,795	21,265
Difference from current law	4,699	3,716	2,392
C. Income averaging			
Present value of Federal income tax receipts	9,267	7,687	3,836
Difference from current law	-1,935	-982	-938
Present value of cash flow to the owners	50,557	29,214	19,911
Difference from current law	2,147	1,135	1,039
D. Enhanced reforestation amortization provisions			
Present value of Federal income tax receipts	10,077	7,180	4,736
Difference from current law	-1,125	-1,490	-38
Present value of cash flow to the owners	49,943	30,202	18,926
Difference from current law	1,533	2,123	53
E. Immediate deduction of reforestation expenses			
Present value of Federal income tax receipts	10,838	8,074	5,016
Difference from current law	-363	-595	242
Present value of cash flow to the owners	49,340	29,380	18,848
Difference from current law	930	1,301	-24
F. Green account			
Present value of Federal income tax receipts	9,881	7,151	4,774
Difference from current law	-1,321	-1,518	0
Present value of cash flow to the owners	50,181	30,196	18,873
Difference from current law	1,771	2,117	0
G. Stewardship investment provisions			
Present value of Federal income tax receipts	10,052	7,560	3,756
Difference from current law	-1,150	-1,109	-1,018
Present value of cash flow to the owners	48,410	28,079	18,873
Difference from current law	0	0	0

Source: Sections A through F—Greene 1998; section G—Greene and Beauvais (2002).

### Reducing the tax rates for long-term capital gains

The 1997 Taxpayer Relief Act reintroduced the concept of preferential treatment for long-term capital investments and reduced Federal tax rates for long-term capital gains. The incentive analyzed would lower the rates further, to half those for ordinary income. Such an adjustment to Federal tax rates has no effect on State taxable income or tax due. Reducing the tax rates for long-term capital gains would provide a substantial benefit to owners in all three timber types (table 8.1), with the entire cost borne at the Federal level (Greene 1998).

### Enhancing the amortization provisions for reforestation expenses

The incentive analyzed would further reduce the need for forest owners to capitalize the high up-front cost of investments in forest management by doubling the amount of reforestation expenses that can be amortized (from \$10,000 to \$20,000) and compressing the recovery period from 8 to 6 tax years. The reforestation tax credit—10 percent of the first \$10,000 of qualifying expenses—was assumed to be unchanged. The incentive would provide the greatest benefit to owners with reforestation expenses above the \$10,000 amount

that can be amortized under current law. Such cost levels are typical for loblolly pine and bottomland hardwood management. Owners with reforestation expenses under \$10,000 would derive a small benefit from the shortened recovery period (table 8.1) (Greene 1998).

**Permitting deduction of reforestation expenses**—Permitting forest owners to deduct reforestation expenses as they occur would eliminate the need to capitalize any of the high up-front costs associated with forest management. Reforestation expenses would be on a par with property taxes, interest, and forest management expenses, which can be deducted in the year they occur. This incentive would provide a modest benefit to owners whose reforestation expenses are above the \$10,000 amount that can be amortized under current law. It would not benefit owners whose reforestation expenses already can be fully amortized (table 8.1) (Greene 1998).

**Establishing Green Accounts**—Two types of Green Accounts were analyzed: one modeled after a traditional IRA, and the other modeled after the cafeteria-plan Medical Saving Accounts available to many taxpayers through their employers. Either type of account would enable forest owners to pay reforestation costs that cannot be amortized with pretax dollars, eliminating the need to capitalize them. For this reason, benefits from this incentive follow the same pattern as for deduction of reforestation expenses, except they are larger because reforestation expenses are paid with pretax dollars. Again, the incentive would provide no benefit to owners whose reforestation expenses already can be fully amortized under current law (table 8.1) (Greene 1998).

**Stewardship investment tax provisions**—An increasing number of NIPF owners hold and manage their land primarily to produce social or environmental benefits (Birch 1996). The IRC, however, provides favored tax treatment only to owners who manage their forests to produce marketable products or services. Expanding four provisions of the IRC would afford the same tax treatment to all owners who receive cost-share assistance from qualified Federal or State programs to actively manage their forests, whether

they manage for environmental or social benefits, or for profit:

- that all owners who receive qualified cost-share assistance to establish or reestablish trees may take the reforestation tax credit as permitted under IRC Section 48 and amortize their out-of-pocket expenses from the practice, as permitted under Section 194;
- that all owners who receive qualified cost-share assistance to establish trees may exclude from their gross income the full amount of the payment permitted under Section 126;
- that all owners who receive qualified cost-share assistance to carry out forest management practices may deduct their out-of-pocket expenses for the practices, as permitted under Section 212; and
- that all owners who receive qualified cost-share assistance to establish or manage trees may deduct the full amount of their basis in trees lost in a casualty, condemnation, or theft, as permitted under Section 165.

In each case, owners who could demonstrate that they did not have a profit motive would qualify for the provision on the basis of having made an approved stewardship investment. These provisions would afford little additional cash flow to the owners, since many of the cost-share practices will not yield marketable products (table 8.1) (Greene and Beauvais 2002). But they would benefit owners in all three timber types by reducing the cost of making environmentally beneficial stewardship investments.

## Discussion and Conclusions

The first and second incentives alter the amount of Federal income tax due from a timber sale. A reduction in the tax rates for long-term capital gains would provide a substantial benefit to forest owners in all three timber types. Because it is a general provision that applies to all types of businesses and investments; however, the reduction would cause a large decrease in Federal tax receipts. Income averaging over 3 years would yield a more modest, targeted benefit to owners in all three timber types. The additional cash flow these incentives provide would enable nonindustrial forest owners to improve the level of management

and stewardship. But the incentives would be available to all owners who sell timber, whether or not they manage their forest.

The third, fourth, and fifth incentives alter the tax treatment of reforestation expenses. All three incentives would benefit owners with reforestation expenses above the \$10,000 amount that can be amortized under current law. The financial benefit provided by enhanced amortization provisions or a Green Account would be larger, and that provided by deduction of reforestation expenses in the year they occur smaller. Enhanced amortization provisions also would provide a small benefit to owners with reforestation expenses that can be fully amortized. These incentives are specifically tied to reforestation of harvested areas. For this reason, they have the potential to promote changes in owners' management behavior and improve the overall level of management and stewardship on NIPFs.

The final incentive would extend provisions already present in the Federal tax code to an additional class of owners: those who manage their forest primarily for environmental or social purposes. The incentive would provide owners little or no economic benefit, but would encourage and enable owners in all timber types to make environmentally beneficial stewardship investments.

Ideally, components of a Federal tax policy to improve NIPF management would be politically acceptable, cause minimal reductions in tax receipts, require no fundamental changes to the tax code, specifically target private forests, benefit owners in all timber types, and be tied to forest management. Of the incentives analyzed, only enhanced amortization provisions for reforestation expenses might satisfy all of these criteria. But four additional incentives: (1) income averaging, (2) deduction of reforestation expenses in the year they occur, (3) Green Accounts, and (4) stewardship investment provisions meet enough of the criteria that they also merit consideration.

## Needs for Additional Research

Fundamental research is needed to assess landowner use of the incentives

for improved forest management and stewardship that are already present in the Federal tax code. There also will be a continuing need to analyze the effects of incentives proposed since the studies summarized here were conducted. To date, these include an inflation adjustment for timber capital gains and a partial capital gain exclusion. An additional class of incentives that might be developed would encourage forest owners to work in concert to develop and pursue management plans on a landscape scale. Such incentives would address the issues of urban sprawl, forest fragmentation, wildlife habitat requirements, and biodiversity.

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## The Federal Estate Tax

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### Introduction

The Federal Government has taxed the transfer of estates from one generation to another since 1916 (Haney and Siegel 1993). To prevent most estates from being affected by the tax, gifts up to \$10,000 per recipient per year, plus other lifetime gifts and estate values below the amount shielded by the unified credit effective exemption are not taxed. In recent years, however, the number and percent of estates that owe Federal estate tax have increased markedly (Herman 2001).

To address this situation, the newly enacted Economic Growth and Tax Relief Reconciliation Act of 2001 increases the unified credit effective exemption from \$675,000 to \$1 million beginning in 2002, and gradually reduces the top rate for Federal estate and gift taxes from 55 to 45 percent by 2009. The Act eliminates the estate tax entirely and sets the top tax rate for gifts equal to the top individual income tax rate beginning in 2010. But the Act itself is scheduled to "sunset" at the end of 2010, returning estate and gift taxes to prior law (Manning and Windish 2001).

There are reasons to believe the Federal estate tax has a greater effect on forested estates than on estates in general. Increasing stumpage prices (Morrow and Fritschi 1997) and urban expansion (Harris and DeForest 1994, U.S. Department of Commerce 1992) are driving up the value of both the timber and land components of forest

land. Further, the requirements for special use valuation, a provision that permits rural land to be assessed for estate tax purposes at its value in use rather than its highest and best use, are difficult to meet, particularly for managed forests.

Beyond anecdotal evidence, however, little information is available on the effect of the estate tax. A handful of case studies used hypothetical families and forest holdings to investigate aspects of the transfer of forest estates, including: (1) the size of a forest that can be transferred without incurring a tax (Sutherland 1978), (2) the effect of the estate tax on returns to forest management (Sutherland and Tedder 1979), (3) the effect of using special use valuation on the net value of a forest estate (Gardner and others 1984), and (4) the interaction between Federal and State estate and inheritance taxes (Peters and others 1998, Walden and others 1987). In addition, Howard (1985) studied the effect of form of forest ownership and assets used to pay the estate tax on returns from the forest, and two studies have examined the effect of the estate tax on transfers of large forest holdings (Lucas 1963, Northern Forest Lands Council 1994).

The Mississippi State University, College of Forest Resources, and the Forest Law and Economics Research Unit of the USDA Forest Service, Southern Research Station, are cooperating in a study to gauge the effect of the Federal estate tax on nonindustrial forests and other rural land holdings. It is the first attempt to quantify the effect of the Federal estate tax on rural land.

## Methods

Data for the study were collected by means of a mailed questionnaire, using the Dillman (1978) Total Design Method. The questionnaire was pretested with a 100-percent survey of members of the Mississippi Forestry Association. Following the pretest, randomly selected members of two national forest owner groups—the American Tree Farm System and the National Woodland Owners Association—were surveyed.

This report summarizes key findings from the two national samples and contrasts them to the results from Mississippi, which is assumed to be a representative Southern State.

## Response Rates

The combined response rate for the two national forest owner groups was 46 percent. Although most members of both groups are NIPF owners, their responses to questions regarding location of the land, form of ownership, and value of the gross taxable estate differed statistically from one another. Stratifying the responses by region accounted for these differences. The response rate for Mississippi Forestry Association members was 66 percent.

## Results

**National forest owner groups—** Eighty-three percent of the survey respondents from the national samples were members of the deceased owner's family. Nine percent were involved in the transfer of a forest estate during the 11 years prior to 1998, a period when the applicable credit shielded \$600,000 of estate value from the Federal estate tax.

Seventy-nine percent of the deceased owners held their forest in fee simple or jointly with a family member. Sixty-three percent had used the services of a financial or legal professional to plan their estate; in 60 percent of the cases, their heirs believed that using a professional reduced the estate tax due.

Only 33 percent of the estates qualified for and 25 percent applied special use valuation. In 74 percent of the cases when special use valuation was used, it was applied to both the land and timber. The value of the estate typically was reduced to an amount well below the \$750,000 maximum for the provision.

Thirty-six percent of the estates owed Federal estate tax. In 44 percent of the cases where Federal estate tax was due, timber or land was sold to pay part or all of the tax. Some 75 percent of timber sales and 57 percent of the land sales occurred because other estate assets were inadequate to pay the tax. The size of forest estates in which timber or land had to be sold to pay the estate tax ranged from under 100 acres to several thousand acres, averaging over 500 acres.

**Mississippi Forestry Association—** The results of the survey of Mississippi Forestry Association members differed from those of the national forest owner groups in several respects. A larger fraction of the respondents in

Mississippi (14 percent) were involved in the transfer of an estate during the survey period, and a smaller fraction of the deceased owners (43 percent) had used the services of a professional in planning their estates.

Eight percent of the estates in the Mississippi survey qualified for and only 5 percent made use of special use valuation. In just 27 percent of the cases where Federal estate tax was due, land or timber was sold to pay part or all of the tax. Eighty-nine percent of the sales, however, occurred because other estate assets were inadequate to pay the tax. Of the acres of land sold, 67 percent was converted to other, more developed uses.

## Discussion and Conclusions

The effect of the Federal estate tax on forest estates can be estimated on a national basis by applying the number of private forest ownership units from Birch (1996) to the survey findings. It should be noted that many of the resulting estimates are based on small samples and should be considered rough indicators rather than scientific estimates.

From the calculation, it appears that an average of 87,000 transfers of forest estates occur each year, nationwide. The amount of forest land transferred is estimated at 59 million acres per year.

It appears that about 19,000 forest estates per year make use of special use valuation. Typically, the procedure is applied to both land and timber. In many instances, this may be necessary to meet the requirements for use of the provision, but doing so precludes harvesting of timber for 10 years.

Forest owners are much more likely than the U.S. population in general to incur the Federal estate tax. The amount of forest land that must be harvested each year to pay the tax appears to be on the order of 2.6 million acres, and the amount of forest land that must be sold each year to pay the Federal estate tax appears to be on the order of 1.4 million acres. Of the acres of land sold, it appears that roughly one-fourth is converted to other, more developed uses.

To the extent that Mississippi is representative of the region, a smaller fraction of forest estates in the South may qualify for or make use of special use valuation than in other

**Table 8.2—Features and accomplishments of State forestry cost-share programs**

State programs	Cost-share rate	Maximum payment	Site productivity ranking	Ownership limits	Project limits
	Percent	Dollars		----- Acres -----	
Alabama Agricultural and Conservation Development Program	60	3,500/yr	No	20 min.	1 min.
Louisiana Forest Productivity Program	50	10,000/yr	No	None	None
Mississippi Forest Resources Development Program	50-75	5,000/yr	No	None	None
North Carolina Forest Development Program	40-60	None	No	None	1 min. to 100 max.
South Carolina Forest Renewal Act	40	None	Yes	None	100 max.
Tennessee Reforestation Incentives	50	5,000/yr	Yes <sup>1</sup>	None	None
Texas Reforestation Foundation Program	50	None	Yes	1,000 max.	10 min.
Virginia Reforestation Timberlands Act	40	75/ac	No	None	1-5 min. and 500 max.

yr = year; min. = minimum; max. = maximum; ac = acre.

<sup>1</sup> erodible lands.

U.S. regions. Also, in the cases where Federal estate tax is due, a smaller fraction of estates in the South may sell timber or land to pay part or all of the tax. It appears, however, that a larger fraction of the acres sold is converted to other, more developed uses.

### Needs for Additional Research

The study summarized here presents several avenues for development of a coordinated estate tax relief policy for forest owners, but additional work is needed to address its statistical shortcomings by obtaining a larger and broader sample of NIPF owners.

### Acknowledgments

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## Federal and State Forestry Cost-Share Programs

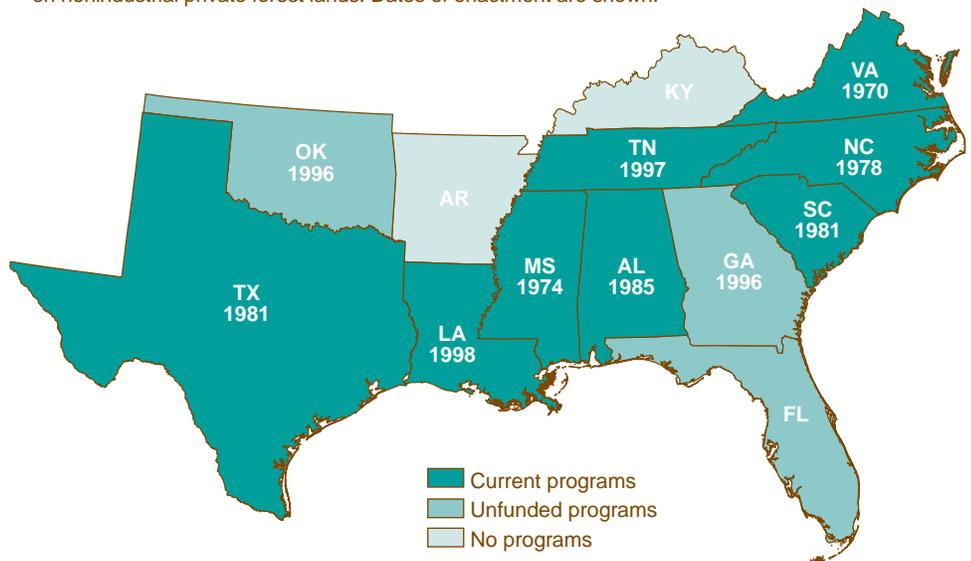
### Introduction

Nonindustrial private forest landowners play a vital role in sustaining forest resources. In 1997, NIPF land provided about 50 percent of the softwood harvest and 75 percent of hardwood harvest nationwide (Haynes, in press). As timber harvests from Federal land have been reduced in recent years, the supply of timber from NIPF land 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. Cost-share programs are designed to help NIPF landowners by reducing their initial costs for reforestation and improving rates of return.

Federal cost-share funding was insufficient to meet the needs of NIPF landowners in many Southern States. Several Southern States, therefore, established forestry cost-share programs in the 1970s and 1980s (tables 8.2 and 8.3). Funding for these programs increased more than 60 percent between 1981 and 1985 (Bullard and

Figure 8.1—State level cost-sharing programs to improve timber production on nonindustrial private forest lands. Dates of enactment are shown.



Straka 1988). Two States, Louisiana and Tennessee, implemented programs in the late 1990s.

The largest State programs in terms of payments and acreage treated are in the South. Southern States with programs include Alabama, Louisiana, Florida, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia (fig. 8.1). Outside the South, as of 1994, cost-share assistance programs for timber production had been established only in California, Illinois, Iowa, Maryland, Minnesota, and Oregon (Haines 1995).

## Methods and Data Sources

Haines (1995) comprehensively reviewed Federal and State cost-share programs. For the present Assessment, therefore, the need was for updating that work. To do so, information about Federal cost-share programs was collected from the Internet sites of the U.S. Department of Agriculture (USDA) agencies that administer each of the six programs. Data on State programs were obtained by sending a questionnaire to officials in each of the 13 Southern States. Officials were queried about any changes in their State's cost-share programs since 1994 and for information about any

programs enacted since 1994. Topics covered in the questionnaire included: (1) landowner eligibility requirements and limitations, (2) cost-share rates, (3) eligible management practices, (4) funding sources and annual level of funding, (5) annual cost-share payments, (6) project acres accomplished, and (7) outlook for continuation or expansion of the program.

All but 2 of the 13 State officials contacted completed the questionnaire. Through phone contacts with officials in the two nonreporting States, the necessary information was obtained.

**Table 8.3—Funding and accomplishments of State forestry cost-share programs**

State program and date implemented	Source of funding	Annual cost-share payments for reforestation and timber stand improvement	Annual accomplishments, reforestation, and timber stand improve.	Trends in funding
		Dollars	Acres	
Alabama Agricultural and Conservation Development Program, 1985	General State fund	750,000	21,300	Slightly increasing
Louisiana Forest Productivity Program, 1998	Timber severance tax	4,100,000	50,000	Variable with severance tax receipts
Mississippi Forest Resources Development Program, 1974	Timber harvest tax	3,000,000	63,588	Variable
North Carolina Forest Development Program, 1978	Timber harvest tax and State general funds	2,200,000	52,000	Increasing
South Carolina Forest Renewal Act, 1981	Timber harvest tax and State general funds	657,438	6,494	Stable
Tennessee Reforestation Incentives Program, 1997	Real estate transfer receipts	160,000	2,500	Variable with real estate market
Texas Reforestation Foundation Program, 1981	Voluntary forest industry assessment on primary products	350,000	7,000	Stable
Virginia Reforestation Timberlands Act, 1970	State general funds and harvest tax	2,253,546	75,900	Stable

## Results

The State agency responses to the questionnaire and information from Federal program Internet sites were compiled and summarized to describe features and accomplishments for each program.

**Federal cost-share assistance programs**—Federal cost-share assistance programs for forestry projects include the Forestry Incentive Program, the Conservation Reserve Program, the Wetlands Reserve Program, the Stewardship Incentives Program, the Environmental Quality Incentives Program, and the Wildlife Habitat Incentives Program.

**Forestry Incentive Program (FIP)**—FIP was established by the Cooperative Forestry Assistance Act of 1978 to encourage timber production and the use of good forest management practices on NIPF land. It shares costs for practices associated with tree planting, timber stand improvement, and site preparation for natural regeneration. To be enrolled, land must be suitable for afforestation, reforestation, or improved forest management and be located in a county identified by the USDA Forest Service as suitable for growing timber products. Participants generally must own between 10 and 1,000 acres of eligible land (exceptions for up to 5,000 acres can be authorized) and cannot be engaged primarily in manufacturing forest products or providing public utility services.

State forestry agencies have the lead role in implementing FIP. The agencies help participants develop forest management plans and, if necessary, help them find vendors to perform practices called for in the plans. Some agencies have arranged for some or all management plan development work to be done by consulting foresters. The agencies also must certify that practices are completed satisfactorily before cost-share payments can be made. Payments are limited to \$10,000 per participant per year and are not to exceed 65 percent of the cost of practices performed.

FIP is administered by the USDA Forest Service and the Natural Resources Conservation Service (NRCS) in cooperation with the State Foresters. Fiscal year (FY) 1997 funding for the program was \$6.3 million.

**Conservation Reserve Program (CRP)**—CRP was established by the 1985 Food Security Act to convert highly erodible cropland and other environmentally sensitive land to protective vegetative cover. It shares costs for establishing long-term resource-conserving cover, land rental payments under 10- to 15-year contracts, and incentive payments to encourage wetland restoration or use of continuous sign-up provisions. To be enrolled in CRP, land must be cropland that is defined as erodible or associated with noncropped wetlands or marginal pastureland that is suitable for use as a riparian buffer. Applicants generally must have owned or operated the land for at least 12 months; new owners must have inherited the land, acquired it as the result of a foreclosure, or be able to show that they did not acquire the land for the purpose of placing it in CRP.

Applicants offer bids for CRP contracts, which are ranked and selected for funding based on the Environmental Benefits Index (EBI). The EBI rates the relative environmental benefits of land according to several factors, including wildlife habitat, water, and air quality benefits; on-farm benefits of reduced erosion; probable long-term benefits; and cost. Establishing a tree cover consistently rates at or near the top of the EBI scale. Payments are limited to 50 percent of the cost of practices performed, with an incentive of an additional 25 percent available for practices to restore wetlands. Land rental payments are based on the relative productivity of soils in the county, with an incentive of 10 to 20 percent available to encourage landowners who implement specific environmentally related practices to take advantage of continuous sign-up provisions. CRP is administered by the Farm Service Administration (FSA). FY 1997 funding was \$200 million for cost-shares, land rental payments, and incentives.

**Wetlands Reserve Program (WRP)**—This program also was established by the 1985 Food Security Act to restore lost or degraded wetland habitat on private land. It operates by purchasing permanent or 30-year conservation easements on qualifying wetlands, or by providing cost-share assistance under agreements lasting 10 years or more. To be enrolled, land

must be privately owned, restorable, and suitable for wildlife benefit. Wetland converted after December 23, 1985, land with timber stands established under a CRP contract, and land where restoration is not possible are excluded from the program. Participants must have owned the land for at least 1 year or be able to show that they did not acquire the land for the purpose of placing it in WRP.

The NRCS assists participants to develop plans to restore their wetland. Participants agree to limit future development of their land, but retain ownership, control over access, the right to lease the land for undeveloped recreation, and, with approval, the right to use it for activities compatible with WRP, such as grazing, cutting hay, or harvesting timber. There are defined limits on the amount that can be paid for a conservation easement; the USDA pays all restoration costs under a permanent easement and 75 percent of restoration costs under a 30-year easement. Payments under a cost-share agreement cannot exceed 75 percent of the cost of practices performed.

WRP is administered by the NRCS in cooperation with FSA. Funding for the program in FY 1997 was \$76 million.

**Stewardship Incentives Program (SIP)**—This program was established by the 1990 Farm Bill to encourage multiple resource management on NIPF land. It provides technical and cost-share assistance to implement practices called for in a Forest Stewardship Plan. To be enrolled, land must be rural and forested or suitable for growing trees. Participants can be any type of legal private entity, including an individual, group, association, corporation, or American Indian tribe. They generally must own no more than 1,000 acres of eligible land, although exceptions for up to 5,000 acres can be authorized.

The State forestry agency helps participants develop Forest Stewardship Plans. Participants agree to maintain their land as described in their plan and to maintain and protect SIP-funded practices for at least 10 years. SIP cost shares can help pay for a variety of forest management activities, including development of the Forest Stewardship Plan; reforestation and afforestation; forest and agroforest improvement; establishment, maintenance, and improvement of hedgerows; protection

and improvement of soil, water, riparian areas, or wetlands; and enhancement of fisheries habitat, wildlife habitat, or recreation. Payments are limited to \$10,000 per participant per year and cannot exceed 75 percent of the cost of practices performed.

SIP is administered by the USDA Forest Service in cooperation with the State forestry agencies. Funding in FY 1997 was \$6.5 million. The program has not been funded for the past 3 fiscal years.

**Environmental Quality Incentives Program (EQIP)**—EQIP was established by the 1996 Farm Bill to assist farm and ranch owners in addressing natural resource problems that pose a significant threat to soil, water, or related resources. It provides technical help and cost-share assistance under 5- to 10-year contracts to enable owners to implement practices called for in a conservation plan, and incentive payments for up to 3 years to encourage adoption of desired land management practices. To participate in EQIP, land must be farm or ranch land and applicants must be engaged in livestock or agricultural production. Owners of large confined livestock operations—generally over 1,000 animal units—cannot receive cost-share assistance for animal waste storage or treatment facilities, but they can receive assistance for other conservation practices.

The NRCS assists applicants to develop site-specific conservation plans that address locally identified natural resource concerns. At designated times during the year, plans are ranked and selected according to their potential environmental benefit weighed against their cost. Priority is given to practices where State or local governments provide technical or financial assistance, and to practices that will help producers comply with Federal or State environmental laws. Cost-share payments cannot exceed 75 percent of the cost of practices performed; cost-share and incentive payments combined are limited to \$10,000 per participant per year or \$50,000 over the life of a contract.

EQIP combines and replaces four earlier Federal assistance programs: (1) the Agricultural Conservation Program, (2) the Water Quality Incentives Program, (3) the Great Plains Conservation Program, and (4) the

Colorado River Basin Salinity Control Program. The program is administered by the NRCS in cooperation with FSA. Funding was \$200 million in FY 1997.

**Wildlife Habitat Incentives Program (WHIP)**—This program also was established by the 1996 Farm Bill to encourage development and improvement of wildlife habitat on private land. It provides technical and cost-share assistance under 5- to 10-year agreements to implement practices associated with wildlife habitat improvement. Any non-Federal land can be enrolled in WHIP, unless it is enrolled in another conservation program, it is subject to an Emergency Watershed Protection Program floodplain easement, or success with habitat improvement efforts is unlikely. Participants must own or control the land under consideration.

The NRCS assists participants to develop wildlife habitat development plans. Participants agree to install and maintain the practices called for in their plan and to allow NRCS access to monitor effectiveness. Cost-share payments cannot exceed 75 percent of the cost of the practices performed, and generally are \$5,000 or less per participant per year.

WHIP is administered by the NRCS. A multi-year appropriation passed in FY 1997 averaged approximately \$8 million per year.

**State forestry cost-share assistance program**—Funding for reforestation and timber stand improvement projects are available through State cost-share programs in 8 of the 13 Southern States: Alabama, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Texas, and Virginia. State-level programs also have been enacted in Oklahoma and Georgia but have not been funded to date. Florida has implemented programs in past years, but they have been discontinued. In addition to the reforestation and stand improvement assistance programs, four States—Kentucky, North Carolina, Tennessee, and Virginia—have implemented cost-share programs for water-quality protection practices.

**Alabama cost-share program**—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. The Alabama Forestry Commission provides technical support for forestry practices. Funding is provided through State general funds. Eligible land includes private, State, and other non-Federal public holdings of 20 acres or more, with a minimum treatment area of 1 acre. Approved forestry practices include tree planting, site preparation, natural regeneration, timber stand improvement, prescribed burning, permanent fire line construction, and some soil and water-quality protection practices. 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 of maintenance are required for timber stand improvement. Practice priorities are determined by the local soil and water conservation districts.

In 2000, disbursements totaling \$750,000 were made for reforestation and timber stand improvements on about 20,000 acres—more than double the 1994 disbursement of \$349,000. Small increases in future funding are anticipated.

**Florida cost-share program**—No State-level cost-share programs are currently available in Florida, and none are anticipated in the near future. As a result of USDA Forest Service inventory reports indicating overcutting of baldcypress in Florida's panhandle region, the Federal FIP program has been restructured to give highest priority to landowner projects for cypress plantings.

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 reforestation on private land 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.

The Florida Plant a Tree Trust Fund Program, which was established in 1991 to increase urban tree planting and rural reforestation and was administered by the Florida Division of Forestry, has also been discontinued. Funding began in 1995 with a

contribution of \$70,000 from the Sunshine Gas Pipeline Company, a natural gas transmission company utilizing rights-of-way in the State. Eligible applicants included local governments, nonprofit organizations, and private landowners owning or controlling parcels of at least 10 and no more than 1,000 acres.

**Kentucky cost-share program—** The Kentucky Soil and Water Quality Cost-Share Program was initiated in 1994 to promote agricultural conservation practices. Initial funding of \$500,000 was provided through an increase in the State pesticide registration fee. In 2000, legislative appropriations of \$2,150,000 from general funds and \$9 million from tobacco settlement funds provided a total of \$11,150,000 for the program. Practices are prioritized, and funds are allocated to the conservation districts accordingly. Currently, agricultural waste control practices are given highest priority. Approved forestry projects are generally for installation of BMPs. Twenty applicants requested a total of \$64,379 in cost-share funds for forestry practices during 2000. Nine of the projects were funded for a total of \$29,025.

**Louisiana cost-share program—** The Louisiana Forest Productivity Program was initiated in 1998 in response to concerns about possible shortages in future timber supplies. The program provides financial assistance to landowners for the establishment and improvement of tree crops. Funding is provided through a portion of the State's timber severance tax. To be eligible for the program, landowners must own a minimum of 5 contiguous acres suitable for growing commercially valuable timber species; no maximum ownership size limits participation. Landowners may receive 50 percent of the cost of reforestation and timber stand improvement for stand release up to \$10,000 per year. Landowners must develop a management plan and maintain the forestry usage for 10 years. In 2001, \$4,100,000 was disbursed for cost sharing on 50,000 treated acres. Annual program funding varies with harvest levels and severance tax rates.

**Mississippi cost-share program—** The Mississippi Forest Resource Development Program was authorized in 1974 in response to concerns about the future availability of softwood

timber. 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-served 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.

The cost-share rate is 50 percent for tree planting, site preparation, prescribed burning, firebreak construction, and timber stand improvement. The rate is 75 percent for direct-seeding and mixed-stand regeneration. Payments are limited to a total of \$5,000 per landowner per year.

Disbursements for cost-share payments have increased from \$1,829,608 in 1994 to about \$3 million in 2000. Funding levels are variable from year to year, depending on timber harvest revenues. Annual treatments increased from about 39,000 acres in 1994 to more than 63,500 acres in 2000.

**North Carolina cost-share program—** The North Carolina Forest Development Program was implemented in 1978 to increase productivity of private forests 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 include site preparation, silvicultural clearcutting, tree planting or seeding, and release treatments to ensure the survival of the stand.

The cost-share rate is 40 percent for most practices. In 1993, however, a rate of 60 percent was offered for planting hardwoods and longleaf pine and for planting wetland species such

as baldcypress and Atlantic white-cedar. 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 each year, (2) projects must be initiated within 1 year and completed within 2 years after funding approval, and (3) practices must be maintained for 10 years as prescribed in the approved management plan. In addition, projects not conducted in accordance with State BMPs may not be funded and may be subject to penalties under the State's Sedimentation and Pollution Control Law.

Program accomplishments include assistance to 22,666 landowners for tree planting on more than 766,000 acres between 1978 and 1999. In 2000, about 2,000 landowners received assistance for treatments on 52,000 acres. Some 38,441 acres were treated in 1994.

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. In 1999, 646 acres were planted in trees under the program.

A temporary program, the Fran Reforestation and Rehabilitation Program, was established in 1997 to assist private landowners with reforestation and stand rehabilitation from damages resulting from Hurricane Fran (September 1996). An allocation of \$4,100,000 from the Governor's Disaster Relief Reserve funded the program. Cost-share rates ranged from 40 to 60 percent of the cost of stand establishment and improvement practices.

**South Carolina cost-share program—** The South Carolina Forest Renewal Act was enacted in 1981 to provide incentive payments to private

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 land 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 a manner that protects the State's soil, air, and water resources.

The program is funded through a combination of State appropriations (20 percent) and a severance tax (80 percent) on primary forest products. From the program's inception in 1981 through 1995, the General Assembly appropriated \$100,000 annually, and the forest industry tax provided four times that amount for a total outlay of \$500,000 per year. However, in 1996, the General Assembly increased its appropriation to \$200,000, and the industry severance tax provided \$800,000 for a total outlay of \$1 million per year. Funding in the future is expected to remain at this level.

All private nonindustrial land capable of producing at least 50 cubic feet of industrial wood per acre per year is 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. 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.

Approved practices include natural and artificial regeneration, timber stand improvement, and prescribed burning. The average cost-share rate is 40 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. Disbursements of \$657,438 were made to landowners in 1999 for practices on 6,494 acres. The totals in 1994 were \$515,736 for treatments on 5,904 acres.

**Tennessee cost-share program—**The Tennessee Reforestation Incentives Program was initiated in 1997 to provide financial assistance to landowners for planting trees on

marginal and highly erodible cropland and pastureland. Cost-share payments are available to plant pine trees and control competing vegetation. The Tennessee Division of Forestry administers the program. Funding is provided by the State Agricultural Resources Conservation fund, which was established with a portion of Tennessee's real estate transfer tax receipts. The cost-share rate is 50 percent of costs. Since 1997, total cost-share payments have ranged from \$140,000 to \$180,000 per year for treatments on 2,000 to 3,000 acres. Annual payments are limited to \$5,000 per landowner per year.

The Agricultural Resources Conservation Program, which prior to 1998 was known as the Agricultural Nonpoint Source Pollution Program, was initiated in 1993. It provides cost-share assistance for soil and water improvement and riparian zone protection practices on private agricultural land, including non-industrial forest land. Costs are shared for forestry practices, including application of BMPs on harvested sites and bottomland hardwood plantings. The program was administered by the State Department of Agriculture through the county soil conservation districts until 1998, when administration was transferred to the division of forestry. Technical support for forestry projects is also provided by the Tennessee Division of Forestry.

The program was initially funded in part by a 3-year grant from the U.S. Environmental Protection Agency (EPA). Continued funding has been from the State Agricultural Resources Conservation fund, which was established with a portion of Tennessee's real estate transfer tax receipts. Funding levels vary with fluctuations in the real estate market.

Annual cost-share payments range from \$14,000 to \$20,000 per year for forestry projects. A stewardship plan, modeled after the Federal stewardship program plan, is required. The cost-share rate is 75 percent for BMP application and riparian zone protection and 50 percent for bottomland hardwood plantings. Annual cost-share payments are limited to \$5,000 per landowner.

**Texas cost-share program—**The Texas Reforestation Foundation Program 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. Technical assistance is provided by the Texas Forest Service. To apply for funds, a landowner must submit a forest management plan for projects located in the commercial forestry region of east Texas. The cost-share rate is 50 percent for land clearing, site preparation, tree planting, and release treatments on 10 or more acres. Applicants are prioritized according to tract size, previous cover, and site index; higher ranking is assigned for small ownerships, cutover land, and properties with high site indices. The program requires practices to be maintained for 10 years.

All major forest products companies, as well as several smaller companies, provide financial support through a voluntary assessment on primary forest products. Funding is relatively stable at about \$400,000 per year. Cost-share disbursements were \$350,000 in 2000 for reforestation on about 7,000 acres. In 1994, cost-share payments of \$280,839 were made for reforestation and timber stand improvement on 6,096 acres. Funding has not been sufficient to meet landowners' demands; in most years over \$1 million is requested for projects.

**Virginia cost-share program—**The Virginia Reforestation of Timberlands Act was established in 1970 to maintain a viable pine industry in light of 1966 USDA Forest Service forest inventory statistics 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, increased to about \$1 million in 1994, and was \$1,274,000 in 2000. Matching State funds have not been fully appropriated in all years due to budgetary constraints, but in 2000, State general funds of \$1,313,574 were appropriated.

All private landowners, including industrial forest landowners, are eligible for the program. 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. However, land requiring reforestation under the State seed tree law is not eligible for this program, except where more than 75 percent of the stand is infested by the southern pine bark beetle. 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 BMPs within project boundaries and a 10-year commitment to maintain practices.

In 1994, disbursements of \$1,014,331 in cost-share payments were made for reforestation and timber stand improvement on 40,393 acres. In 2000, payments more than doubled to \$2,253,546 for practices on 75,900 acres. Funding is expected to remain stable.

The Virginia Agricultural Best Management Practices 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 BMPs are encouraged, but not mandatory. The program offers a \$150-per-acre payment for tree planting on erodible cropland or pastureland 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 practices has been around \$50,000 annually.

## Discussion and Conclusions

Softwood harvest on NIPF land is projected to increase from 5.2 billion cubic feet in 1997 to 7.2 billion cubic feet by 2050 in response to reduced harvests on national forest and other Federal land (Haynes, in press). Most of the increase in supply is projected to come from pine plantations in the South. If these plantations are not established, timber availability could be a problem in some areas.

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 partially offset landowners' initial costs for site preparation, tree planting, and forest stand improvement and increase profits at harvest.

Most State cost-share assistance programs are patterned after the Federal FIP, ACP, or SIP. 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 8.3). A variety of private sources has contributed to funding of several States' programs. The Texas cost-share program is unique in that it is funded entirely by a voluntary, self-assessed tax on forest industry firms. The Virginia Agricultural Best Management Practices Cost-Share Program is funded in part by contributions from a private organization, the Alliance for the Chesapeake Bay.

Definitions of 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 8.2). All programs focus primarily on NIPF land, but other ownerships are eligible in some States. Corporate and industrial forests are eligible for cost sharing in North Carolina, South Carolina, and Virginia. The South Carolina program specifically excludes wood-processing industries; in contrast, the North Carolina and Virginia programs include forest industries as eligible ownerships. Non-Federal public land is also eligible in Alabama and Mississippi.

Eligible forestry practices generally include tree planting, site preparation for natural and artificial regeneration, timber stand improvements, and prescribed burning. Other activities that may be eligible include management plan development, soil and water-quality protection practices, and fish and wildlife habitat improvement.

Maximum cost-share payment rates in 2000 ranged from 40 percent in North Carolina and Virginia to 75 percent for direct-seeding and mixed

stand regeneration in Mississippi. Most commonly, rates are 50 to 60 percent. All State programs require landowners to develop a management plan and require that practices be retained for 10 years (table 8.2). None of the Southern State programs permit landowners to receive concurrent Federal and State cost-share assistance for the same project.

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

Cost-share payments from Federal programs that have been approved for exclusion for Federal income tax purposes include FIP, SIP, WRP, EQIP, and WHIP. To date, CRP cost-share payments have not been ruled excludable. Cost-share payments from the following State programs have been approved for exclusion: (1) the Louisiana Forest Productivity Program, (2) the Mississippi Forest Resource Program, (3) the North Carolina Forest Development Program, (4) the South Carolina Forest Renewal Act Program, and (5) the Virginia Reforestation of Timberlands Act Program.

The Southwide accomplishments of State cost-share assistance programs for tree planting and timber stand improvement were about 140,000 acres in 1994. In 2000, treatments nearly doubled to 278,000 acres. In 1993, the leading State programs were in Virginia, Mississippi, and North Carolina where 40,393, 39,254, and 38,441 acres, respectively, were treated. Projects in these three States represented about 90 percent of the acreage treated in the South and about 83 percent of the acreage treated nationwide with State cost-share funding (Haines 1995).

In 2000, the leading State programs were again in Virginia, Mississippi, and North Carolina, in addition to the newly implemented program in Louisiana. Treated acres were 75,900, 63,588, 52,000, and 50,000, respectively. These totals represent about 87 percent of the 278,000 acres of cost-share accomplishments across the South in 2000 (table 8.3).

Assistance for forest land management that does not include timber production as a primary goal has

expanded greatly over the past 15 years. Awareness of the importance of nontimber forest resources, especially water quality and wetlands, has increased markedly. In the South, State cost-share programs for soil and water conservation and riparian zone protection have been established in Kentucky, North Carolina, Tennessee, and Virginia.

The efficiency of cost-share programs might possibly be improved by lowering cost-share rates, particularly in times of increasing stumpage prices. In this way, more owners and more acres might be covered with the same expenditures. In addition, discontinuing some Federal programs and redirecting Federal dollars to State cost-share programs could decrease administrative costs. In 1996, Federal funding of \$750,000 was appropriated to the Texas cost-share program.

In addition to cost-share programs, potential policy mechanisms to improve forest productivity and expand the forest land base include mandatory reforestation regulations or a mixture of incentive programs with regulatory mandates. For example, minimum reforestation standards might be required on harvested sites, and cost-share payments might be offered only for tree planting on open land. Additional afforestation opportunities include tree planting to offset environmental degradation such as that from pollutants emitted by coal-fired plants or to sequester carbon from other sources (Moulton 1994).

State-level tax incentive programs to promote forestry have been implemented in some Southern States. Mississippi offers a State income tax credit for reforestation costs. Oklahoma and Texas have exempted products used for forestry purposes from sales tax. Another incentive in Texas is the retention of the agricultural property tax assessment for 15 years after trees are planted on former agricultural land. Previously, the tax rate escalated upon planting of seedlings.

In recent years, State tax incentive programs have been initiated specifically to preserve, improve, and create wetlands and riparian zones. Reduced property tax assessments are available in Oklahoma for riparian buffer strips and in Texas for riparian buffer strips and endangered species habitat. State income tax credits are

offered in Arkansas for the costs of establishing and maintaining wetlands and riparian zones. In Virginia, a tax credit is available for 25 percent of the value of the timber retained in riparian buffers, up to \$17,500.

### Future Research Needs

Comprehensive analysis of the various cost-share, tax incentive, and technical assistance programs is needed to determine the most effective policy options in terms of forestry investments, individual landowners' goals, forest sustainability, and future benefits for society overall.

Finally, there is a need to compare the cumulative effects of an individual State's institutional mechanisms: tax policies, cost-share programs, and regulatory programs on forestry investments and forest resource protection.

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## Current-Use Property Valuation

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### Introduction

Current-use property tax laws provide that properties be assessed and taxed based on their productivity or income-producing potential in their current use, if that use is considered socially desirable. Forestry and agriculture are such uses. Current-use laws were enacted in response to criticisms of the traditional ad valorem tax. All 13 Southern States have use-value laws that include forests among the classes of land eligible for current-use assessment. Nationwide, 42 States have 47 use-value laws that include forests among the eligible land classes.

Under these laws, land is assessed and taxed solely on the basis of its income-producing potential when used for forestry purposes. In practice, however, significant differences exist among the statutes as to how forest land use values are to be determined. This section briefly reviews the use-value laws applicable to forest land in the South, examines the differences in

procedures to determine assessed value, and looks at the impacts of such laws.

### Methods

When the United States was founded, the States retained the right to establish their own property tax systems. Thus, considerable variation exists among State systems for taxing forest property. The USDA Forest Service sponsored several reviews of State forest land and timber tax laws (Carlen 1976; Nelson 1941; Williams 1956, 1967). These studies mostly examined the existence and depth of coverage of State assessment guides for forest land and timber. The Timber Tax Journal provided a yearly update of forestry property tax laws until it ceased publication in 1984. Hickman (1982, 1983) summarized State current-use property tax laws in several publications. The summaries were updated in 1993 (Doherty 1993). At that time, the State statute books were searched to identify States with use-value laws that include forests among the classes of land eligible for current-use assessment. Property tax officials in each of these States were contacted and asked to provide administrative rules and regulations, assessment guides, and other relevant published materials that supplement and clarify the statutory provisions. The statutes and the information obtained were used to summarize procedures for each State. The summaries were then returned to the property tax officials in each State so that the accuracy of the information contained therein could be verified.

For this Assessment the summaries were again updated by searching for changes in the statutes and by using the State property tax summaries available on the National Timber Tax Web site (Department of Forestry and Natural Resources, Purdue University 2001). The updated summaries were used to identify and categorize restrictions, requirements, and alternative procedures.

### Results

**Reasons for enactment**—Assessment and taxation of forests on the basis of use value emerged in the 1960s as a way of slowing the conversion of rural land to more intensive uses, such as industrialization, first- and second-home construction, and recreation development. Forest landowners were

often forced to develop their land because its market value commonly exceeded values based upon current income-producing ability. Use-value laws were seen as a way of restoring the balance between a property's taxable value and its income-producing potential. Hickman (1982) reported that use-value laws were seen as achieving two closely related goals:

1. Owners of forest, farm, and other rural land who wanted to profitably keep their properties in their traditional uses could do so; and
2. The State and its citizens would reap the benefits derived from the continued management of the rural land base.

Between 1950 and 1970, conversion of forest land was a serious problem in certain parts of the United States. Modest losses were experienced in the South, but the total acreage remained essentially unchanged. Losses of privately owned farmland were much more pervasive and substantial, however, declining 14 percent (Wall 1981). Such losses were of great concern for two reasons: (1) losses to development are essentially irreversible; and (2) a multitude of economic, social, and environmental benefits are derived from rural uses. Examples of these benefits include: (1) greater assurance of sufficient food and fiber to meet future needs; (2) the economic activity generated by viable agricultural and forest industries; (3) increased outdoor recreation opportunities for urban and suburban residents; (4) protection, or perhaps even improvement, of air and water quality; and (5) a slowing of urban sprawl.

**Key forestry provisions**—Use-value laws are of three basic types: (1) pure preferential assessment, (2) deferred taxation, and (3) restrictive agreements. Each provides for assessment and taxation of qualified properties based on current-use value as opposed to market value based on highest and best use. The differences between the three types stem from two things: (1) the restrictions placed on the ability of participating property owners to change land use, and (2) the provisions contained for recouping the tax concessions granted to participating property owners when they convert their properties to some ineligible use.

Under pure preferential assessment, land withdrawn from the program or

converted to an ineligible use is subsequently taxed on the basis of fair market value, but no declassification penalty is imposed. Under deferred taxation, eligible land that is withdrawn from the program or converted to another use not only is taxed at highest and best use but is subject to a penalty based on the taxes saved during the period of classification. Finally, under restrictive agreements, the owners of eligible land contract with the State to restrict the use of their property for a specified number of years. In return, they are granted current-use assessment. During the period of the contract, changes in land use are usually permitted only if they are deemed to be in the public interest. When development is allowed, a penalty based on the taxes saved during the period of classification is generally imposed.

Five Southern States have pure preferential assessment statutes, seven have deferred taxation statutes, and one, Georgia, has a restrictive agreement statute (table 8.4).

Three of the southern statutes are mandatory, and 10 are optional. In States with mandatory laws, all forest land that is eligible for use-value assessment must be assessed and taxed on the basis of its worth for forestry purposes.

All use-value laws essentially have the same structure. Their key provisions generally coincide with the law's chief administrative steps. The administration of a use-value property tax statute usually involves (1) setting the conditions for eligibility; (2) evaluating applications (if necessary) for enrollment; (3) assigning a dollar value to the enrolled property; (4) overseeing continued enrollment, withdrawal, and related penalties; (5) providing a review or appeal process concerning eligibility and assessment; and (6) collecting and distributing the taxes. See Hickman (1982, 1983) and the Gulf South Research Institute (1982) for more details.

**Valuation methodology**—The asset that is to be assessed and taxed differs among the statutes, and this difference has some bearing on the selection of a valuation method. In some States, both the land and timber thereon are considered taxable property under annual ad valorem taxation. In several other States, however, the use-value

law is linked with an exemption statute, wherein standing timber is exempt from annual ad valorem property taxation but is usually taxed instead at the time of harvest through a yield tax or severance tax. Thus, care must be taken to ensure that the valuation methodology is appropriate for the asset to be valued. Standing timber is statutorily exempt from annual property taxation in Alabama (Code of Alabama, 40-7-25.1 to 40-8-1), Georgia (Code of Georgia Ann., 48-5-2, 48-5-7.4, and 48-5-269), Louisiana (Louisiana Rev. Stat., 47:2301 to 47:2309), Mississippi (Mississippi Code, 27-35-49 to 27-35-50), North Carolina (North Carolina Gen. Stat., 105-277.2 to 105-277.7, 105-289, and 105-360), and Tennessee (Tennessee Code Ann., 67-5-1001 to 67-5-1011). Virginia statutes do not exempt standing timber from property taxation, but they tax the value of the bare land alone.

In most Southern States the chief State administrative agency or advisory committee publishes schedules of recommended current-use values, which may be broken down by region, forest type, and productivity class across the State. In these cases, the local (generally county) assessors select from the range of values provided in the tables, making adjustments, if applicable, using personal knowledge, judgment, experience, and other information that may be available. In other States, however, the tax department or an advisory committee develops procedures, usually detailed in an assessment guide, for county assessors to use in valuing individual properties. County assessors in these States use procedures and data provided by the chief administrative agency and apply them to develop assessed values for either individual properties or productivity classes in their counties.

Kentucky (Kentucky Rev. Stat., Sec. 132.450) is unique among Southern States in that it simply lists the factors to be considered in determining use value and leaves it up to the assessor to determine their relevance. The factors to be considered include: (1) the income potential of principal crops; (2) prices of comparable land acquired for agricultural purposes; (3) relative percentages of tillable land, pastureland, and woodland; (4)

**Table 8.4—State and year use-value law enacted**

Key forestry provisions	State and year													
	AL 78	AR 81	FL 59	GA 91	KY 70	LA 76	MS 80	NC 73	OK 74	SC 75	TN 76	TX 79	VA 71	
<b>Type of statute</b>														
1. Pure preferential assessment		X	X			X	X		X					
2. Deferred taxation	X				X			X		X	X	X	X	
3. Restrictive agreements				X										
<b>Scope of statute</b>														
1. Mandatory		X					X		X					
2. Optional	X		X	X	X	X		X		X	X	X	X	
<b>Restrictions on eligibility</b>														
1. None, i.e., all forest land eligible	X	X							X					
2. Minimum acreage				X	X	X	X	X			X		X	
3. History of forest use				X								X		
4. Under approval/sound program of management								X			X			
5. Minimum annual gross forest income						X								
6. Areas classified/zoned as forest land			X											X
7. Timber available for harvesting												X	X	
8. Market value exceeds use value								X						
9. Highest and best use is timber growing														
10. Other				X				X		X		X	X	
<b>Application requirements</b>														
1. None		X							X					
2. Initial application	X			X	X			X		X	X	X	X	
3. Annual applications or recommitments			X				X							
4. Enter contractual agreement														
5. Other				X		X								
<b>Determination of current use value</b>														
1. Definition only														
2. Relevant factors listed					X									
3. Agriculturally based valuation									X		X			
4. Income capitalization	X	X	X	X		X	X	X	X	X	X	X	X	X
a. Schedule provided	X			X			X	X		X	X	X	X	X
b. Timber exemption	X			X		X	X	X			X			
c. Bare land value approach								X						X
d. Sustained yield approach	X	X	X	X		X	X		X	X	X	X		
5. Other				X						X				
<b>Declassification penalty</b>														
1. None		X	X			X	X		X					
2. Rollback tax	X			X	X					X	X			
3. Rollback tax with interest								X				X	X	

soil productivity; (5) risk of flooding; (6) land improvements relating to production of income; (7) accessibility to all-weather roads and markets; and (8) all other factors affecting the general agricultural or horticultural economy—interest rates, product prices, input costs, etc.

The value of forest land has traditionally been determined under one of three bases: (1) cost methods for restoring a forestry investment, (2) comparison of sales of similar forested properties, and (3) capitalization of expected timber income (Williams and Canham 1972). The first of these—the use of historical, replacement, or restoration costs—is of limited value in determining the current-use value of forest land. First, past costs may be out of line with current costs because of appreciation or depreciation, present or prospective changes in use, or costs that were out of line to begin with. Second, immediate replacement or restoration is physically impossible because of the time element necessary to grow another stand. Timber cannot be directly replaced, and it is impossible to replace an uneven-aged stand (Williams and Canham 1972). Only Florida's law lists the cost-replacement approach as one of the choices, along with the market and income capitalization approaches, that the assessor may choose in valuing forest land (Rules of the Florida Department of Revenue, Division of Ad Valorem Tax, Chapter 12D-51.01). However, the statute recommends the income-capitalization approach, stating that the cost-replacement approach is not suited for measuring the ability of land to generate income from the growing of timber.

The second possible basis for valuing forest land is a market analysis of sales prices of similar forested properties. The advantage in using market value is that it integrates all the relevant factors comprising value. The market analysis approach is much more commonly used if highest and best use is the valuation criterion. With current use for growing timber as the criterion, however, the sales transactions in the analysis must be properties in which timber management is the highest and best use or for which the land is limited to timber management use. Problems arise in using this approach when an alternative use of a property, such as a motel site, significantly alters its

value. Another difficulty in using this approach is that no two properties are exactly alike, and it is difficult to find enough transactions involving similar properties.

While none of the statutes base use value solely on a comparison of sales of comparable properties, several use this methodology at least in part. The use-value statutes of Kentucky (Kentucky Rev. Stat., Sec. 132.450) and Tennessee (Tennessee Code Ann., 67-5-1008) list the prices of comparable land acquired for agricultural or forestry purposes as one of the relevant factors to be considered in determining use value. Florida includes market sales analysis among the three different approaches that assessors may choose from in estimating use value. The Georgia State Revenue Commissioner bases the annual recommended use-value schedule on a weighted combination of sales data and capitalized net income (Georgia Code Ann., 48-5-269). Sales data for comparable real property with and for the same existing use represent 35 percent of the weighted value. In South Carolina, an index of the average value per acre of farm real estate land and buildings is used to construct a multiplier to adjust the base-year fair market value for land used to grow timber. The multiplier is determined using an income capitalization method (South Carolina Code, 12-43-220). Outside the South several States use stumpage prices as well as land sales data as part of a hybrid approach, often in combination with income capitalization.

The final and most widely used basis for determining forest-use value is the capitalization of expected income from the land. In States where forestry is a major land use, expected income is synonymous with the expected future earnings from timber management. Under this approach, forest-use value is equal to the discounted net present value of the stream of anticipated future income accruing to the land from timber production.

Some States consider value from nontimber uses in their formulas for capitalizing expected income. Florida's statute allows for income from naval stores and range pasture usage to be considered along with timber income (Rules of the Florida Department of Revenue, Division of Ad Valorem Tax, Chapter 12D-51.01). In Texas,

land on which timber harvesting is restricted to meet aesthetic, conservation, water protection, or plant or animal protection goals may qualify for appraisal as restricted-use timberland (Sec. 23.9801, Tax Code). Land in an aesthetic management zone, critical wildlife habitat zone, or streamside management zone is appraised at one-half of what it would have been appraised at under normal circumstances.

A variant of the income capitalization approach allows rental rates for land used for timber production to be used as a proxy for anticipated future timber income. Annual net cash rental is usually determined through an analysis of typical rental agreements collected over the years prior to the year for which the valuation is being determined. Comparable land must be used for forestry purposes and located in the vicinity, if practicable, of the property being valued. Among Southern States, only Oklahoma capitalizes timber income based on rents from land dedicated to that use.

Two main variants of income capitalization are: (1) the bare-land-value approach, and (2) the sustained-yield approach. Under the bare-land-value approach, a stand is assumed to be established on cutover land, grown to maturity, harvested, and the process repeated interminably. Bare-land value, also known as land-expectation value, is equal to the present net worth of an infinite series of periodic incomes. Forest land is regarded as the sole productive agent and timber as working capital. Under this approach, bare land is the basic asset to be valued, with standing timber exempted from taxation (Hickman 1989). Among the Southern States, only North Carolina and Virginia use the bare-land-value approach.

The sustained-yield approach involves capitalizing the net value of the mean annual growth increment, as if it occurred as an annual income, given an assumed rotation length. A fully regulated forest is assumed to exist in which an equal income is produced in the current and all subsequent years. Timber is regarded as fixed capital because it has to be in place to produce such an income pattern. The "factory" in which timber is produced consists of both land and trees (Hickman 1989, Williams and Canham 1972).

Thus, when this approach is used to determine forest-use value, timber as well as the land is taxed. This approach is used by the other 10 Southern States that use income capitalization. Several States that exempt timber from taxation nonetheless use the sustained-yield method. Despite this policy inconsistency, there is no evidence that property taxes are any higher in these States as a result.

A number of statutes have provisions that provide a floor or ceiling on assessed value. In Georgia, for example, the current-use value of any conservation-use property may not increase or decrease by more than 4 percent from its value for the previous taxable year or increase or decrease during a covenant period by more than 25 percent from the first year of the covenant period (Georgia Code Ann., 48-5-269). Similarly, Mississippi does not allow the variation in use value, up or down, from a previous year to exceed 10 percent (Mississippi Code, 27-35-49 to 27-35-50). Alabama's statute provides that assessed value may not be less than that levied in the first tax year for which values are computed, and may not be greater than the assessed value in the first tax year plus amounts equal to 3 percent of such values multiplied by the number of tax years elapsed since the first tax year (Code of Alabama, 40-7-25).

**Impacts**—The intent of use-value assessment of forest and other rural land is to provide property tax relief to participating landowners so that their land may continue to contribute socially desired benefits, which include food and fiber for future economic activity, open space at the urban fringe, and the slowing of urban sprawl. While States may adopt use-value assessment for any or all of these reasons, there are impacts that follow from this policy decision. As in Hickman (1983), the discussion here focuses on three main areas: (1) equity implications, (2) revenue implications, and (3) effectiveness.

■ **Equity**—Use valuation causes the taxes of participating property owners to decrease. Local government taxing bodies normally respond to the resulting decrease in the tax base by increasing tax (millage) rates. The taxes of nonparticipating owners rise, and they collectively share a greater proportion of the total tax burden.

The magnitude of the tax shift depends on the amount by which use value reduces the assessment of participating properties and the percentage of the total base that is in participating property. The amount of taxes shifted increases as participation rises. At a certain point, the number of participating properties outstrips the ability of the remaining non-participating owners to absorb the tax shift.

■ **Revenue**—If local governments do not have the flexibility to increase tax rates due to legislation or political pressures, the decline in the value of the tax base due to use-value assessment can have important revenue implications. Local governments depend heavily on property taxes to fund schools and provide public services. Any portion of lost revenues not offset by an increase in the tax rate is a cost of the program.

The revenue and equity implications often receive the most scrutiny when use-value programs are implemented. Concerns are high where the enrollment rates continue to grow and the tax base continues to erode (Newman 2000). When Georgia first implemented its current-use valuation program in 1992, there was considerable concern over the erosion of the tax base. A few counties lost almost 20 percent of their taxable base (Whitt 1992). The problem was exacerbated because Georgia constitutionally removed standing timber from property taxation in 1990 and replaced it with a yield tax that taxed timber only when it was cut. In this case, the tax-shifting impacts were particularly large, but the benefits also were substantial.

■ **Effectiveness**—A search of the literature reveals a general agreement that use valuation provides substantial tax relief to participating owners. Most researchers, however, believe that this relief, by itself, does not retain forest and other rural land in traditional uses (Anderson 1993, Coughlin and others 1978, Ferguson and Spinelli 1998, Gloudemans 1974). It appears that use-value taxation may, at best, delay but not prevent development of rural land. The most often cited reason is that property owners may be unable to resist the large capital gains associated with development. It also is believed that the present value of the tax savings

may be capitalized into higher land prices by raising the reservation prices of a significant number of landowners (Gottfried and others 1999). While use valuation plays a role in changing the relative profitability of land uses, land use change is thought to be driven by a broad range of other factors: population and migration changes, socioeconomic characteristics of landowners, and transitional factors.

## Discussion and Conclusions

Loss of forest land continues to be a serious problem despite the enactment of use-value laws. The latest data show that 2.63 million acres of southern forest were developed between 1992 and 1997. This area represents 48 percent of all land developed over that period (fig. 8.2). Texas, Georgia, and Florida led the Nation in the amount of land developed during this period (U.S. Department of Agriculture, Natural Resources Conservation Service 1997). Population growth and migration drive much of this development. Among the economic, demographic, and socioeconomic factors that influence land use change (Alig and others 1998), use-value assessment, by itself, may have only a minor impact. The impact depends largely on the degree of development pressure that exists in a given county. In mostly rural counties, use-value assessment probably has little impact because there is little difference between use value and market value. By comparison, in counties with rapid development, the difference between market and use value may be so large that most landowners choose to sell their land or convert it to a higher value use. In such areas, owners must want to keep practicing forestry; that is, they must receive intangible benefits from keeping land in forest. Gottfried and others (1999) call this the "reservation premium," the monetized present value of the intangible benefits. As the present value of the income from forestry uses plus the reservation premium exceeds the market value, the probability of conversion decreases.

Much of the land enrolled under State use-value programs is far from major metropolitan areas. This land faces little or no development pressure. There should be little difference between use value and fair market value for these properties. The two may be different because States often use different procedures in determining market

value as opposed to use value. There are at least two examples where the enactment of use-value laws resulted in enrolled forested properties having higher use valuations than comparable properties assigned fair market values. This situation was a result of select counties underestimating fair market values (Hickman and Gayer 1983, Krietemeyer and others 1987). The much more common circumstance is where the use valuation results in an assessed value below fair market value. Researchers (Brockett and others 1999) studying Tennessee's Greenbelt use-value statute found that it "... largely functioned as a windfall for participating landowners [in areas removed from development pressures] without a commensurate return for the rest of the area's citizens." The mixed objectives of the different State current-use laws make it difficult to gauge whether the benefits received justify the costs of these programs. Some statutes have stringent eligibility requirements that preclude all but land under active forest management. States

with these statutes may consider the benefits flowing from actively managed forest lands as commensurate with the costs to nonparticipating landowners.

Many serious questions have been raised about the suitability of use-value legislation for retaining forest and other rural lands. In fact, some areas experiencing high rates of growth have seen no benefit from use-value programs. In Virginia, some counties have given up on tools for slowing conversion and want to assess impact fees on developed land to pay for the infrastructure and services needed to accommodate the growth (Ferguson and Spinelli 1998). States will likely keep use-value statutes, perhaps in some modified form, for two main reasons (Hickman 1983): (1) the desire to keep forest, farm, and other open space land from converting to developed uses is at least as strong today as it was when these laws were enacted; and (2) the alternatives to use valuation—rural zoning, transferable development rights, public fee simple

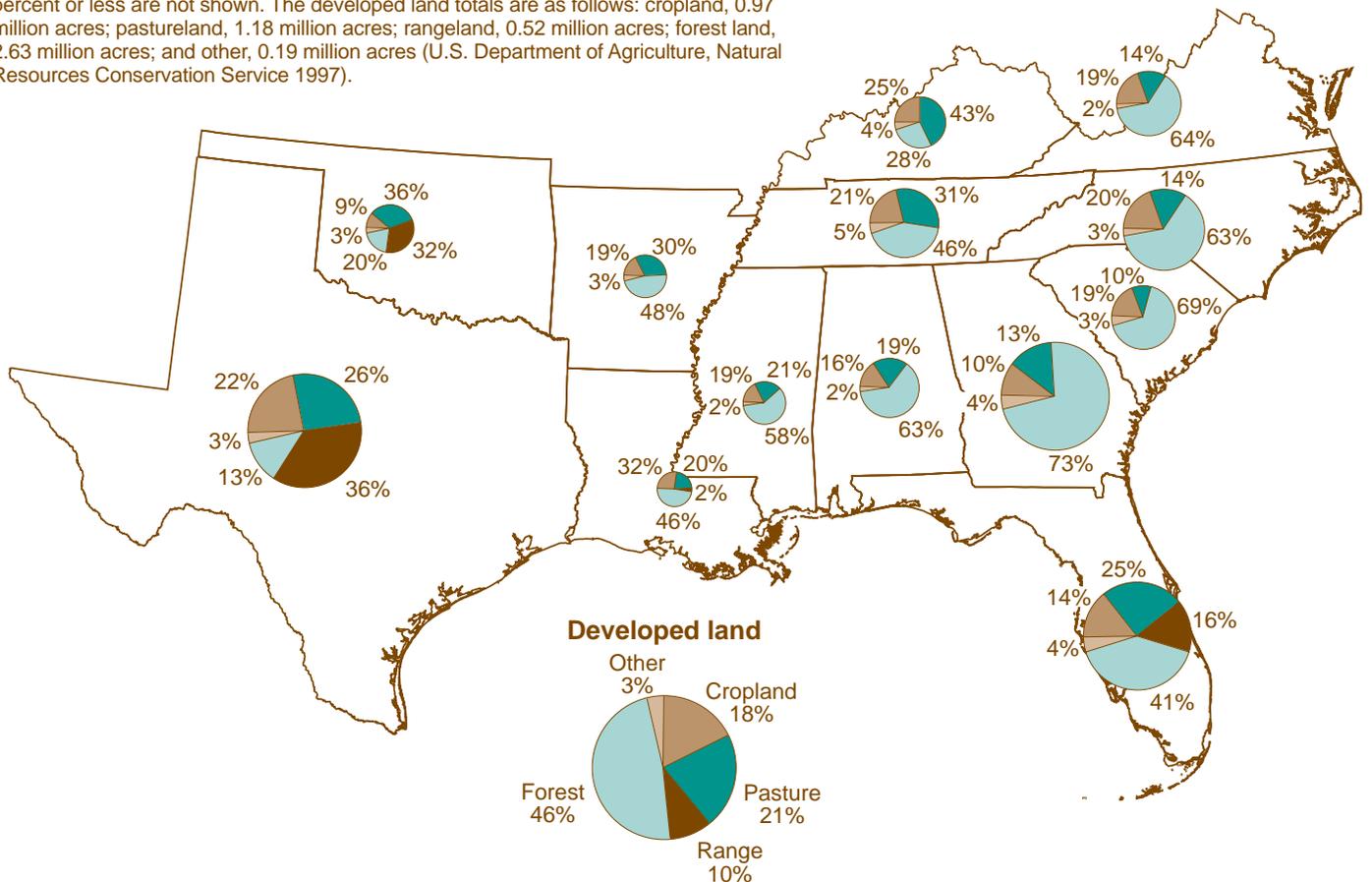
land purchases—have their own disadvantages, some more serious than those of use valuation.

States may look at modifications to improve the efficacy of their use-value statutes. Hickman (1982) made several recommendations that are still valid today. One of these concerns the need for stringent declassification penalties. The rollback tax should recoup all tax savings plus interest for the entire period that a property receives use valuation. Hickman's principal reasoning is that it promotes taxpayer equity. He argues that nonparticipating property owners who fund the program should recoup their costs when the intended benefits are not obtained. Moreover, statutes with higher declassification penalties would discourage speculation and would be more likely to attract landowners who are serious about long-term forest use.

### Needs for Additional Research

1. Changes in the relative profitability of land uses, resulting from tax policies or otherwise, do not necessarily translate into identical

Figure 8.2—Land uses converted to 5.5 million total acres of developed land, southern region, 1992-97. The pie charts are proportional to the amount of land developed. The southern region pie chart is not proportional to the State pie charts. Data values of 1 percent or less are not shown. The developed land totals are as follows: cropland, 0.97 million acres; pastureland, 1.18 million acres; rangeland, 0.52 million acres; forest land, 2.63 million acres; and other, 0.19 million acres (U.S. Department of Agriculture, Natural Resources Conservation Service 1997).



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changes in land use. Studies are needed that look at the demographic and socioeconomic characteristics that are associated with the decision to convert forest or rural land to a more developed use. Such a study might look at how these characteristics are related to the owner's reservation price.

2. Forest and rural land conversions have been increasing in locations far from major metropolitan areas. The nostalgia for small-town living, the desire to live and work in beautiful surroundings, and the new telecommunications possibilities unleashed by the digital revolution have led to boomlets in parts of the mountain west, coastal Maine, and the Blue Ridge and Smoky Mountains (Kotkin and Siegel 2000). Additional research may be needed to assess the role and efficacy of use-value programs in this new wildland-urban interface.

## Conservation Easements

### Introduction

An easement is a partial ownership interest in a parcel of land, or the right to use the land for a special purpose. Conservation easements are legally binding agreements between private landowners and nonprofit or government agencies restricting future activities that can take place on a parcel of land. The purpose is usually to preserve the open character of the land by arresting or slowing development.

Conservation easements are becoming more popular for preserving or controlling land use by landowners and government. For landowners, a conservation easement is a voluntary land use restriction, which offers a means to reduce taxes while the land remains in its current use. On the other side, conservation easements are one part of a larger spectrum of land use controls used by various levels of government. For the latter, conservation easements may accomplish land management goals when other land use controls are either too expensive or unavailable.

The popularity of conservation easements has grown since the 1970s, when the IRC was amended to allow charitable Federal income tax deductions for qualifying conservation donations, including conservation

easements (Bick and Haney 2001). However, the use of conservation easements to protect productive forest land from development and fragmentation appears to be more recent (Best and Wayburn 1996, Boelhower and Van Ryn 1996).

### Methods and Data Sources

The examination of conservation easements was added to this chapter in response to public input. Time constraints precluded any new study beyond a review of recent literature. Data were obtained from a 1996 survey by Bick and others (1998) to estimate the acreage of conservation easements on forest land held by private land trusts in the South. Forest land easement deed provisions in the South were summarized from Bick and Haney (1999).

### Results

**Forest land acreage**—The survey by Bick and others (1998) provided estimates of the growth and extent of conservation easements on forest land. The information was based on a questionnaire mailed to all organizations in the “1995 National Directory of Conservation Land Trusts” that listed conservation easements as a land protection method. One question requested the number of conservation easements and acreage on open spaces by land use types. The land use types selected were farmland, forest land, wetlands, green space, rare sites, and other.

Nationally, forest was the largest single land use among properties protected with conservation easements. Through 1996, private land trusts had acquired some 5,600 conservation easements on forest land, encumbering almost 1.6 million acres. A majority of the acreage had been acquired between 1991 and 1996. Conservation easements on an additional 900,000 acres of forest land were projected for purchase by existing land trusts by 2001.

About one-fifth of the total acreage was in the South. Northeastern States were among the leaders in terms of the number of reported forest land agreements, but Southern States were among the leaders in reported acreage, indicating a higher average protected property size in the South.

Additional data for 13 Southern States were obtained from the survey database (table 8.5). Four States—Florida, Virginia, North Carolina, and Mississippi—accounted for 97 percent of the 333,000 acres in the South; small amounts were also reported for Texas, Tennessee, and South Carolina. Other States did not have land trusts that reported forest land easements at the time of the survey. However, legislation was enacted in Alabama in 1997 that formally provided for conservation easements on real property, and data from the 1998 National Land Trust Census show land trusts have been formed in all 13 Southern States except Oklahoma (Land Trust Alliance 2000).

**Deed content**—As a part of the survey by Bick and others (1998), copies of conservation easement deeds were requested from land trusts for the different types of land protection. The content of the conservation easement deeds received was analyzed and divided into four distinct categories: affirmative rights, restrictions, reserved rights, and terms and conditions. Within each category, variables were identified and grouped to determine how provisions affected timber,

**Table 8.5—Conservation easements on forest land granted to private land trusts in Southern States, 1996**

State	Total land area	Average size
----- Acres -----		
AL	0	0
AR	0	0
FL	132,571	2,073
GA	0	0
KY	0	0
LA	0	0
MS	52,598	1,481
NC	64,973	1,407
OK	0	0
SC	1,492	105
TN	2,693	152
TX	4,913	86
VA	73,897	189
Total	333,137	—

development, and amenity values (Bick and others 1999).

The components of conservation easement deeds—affirmative rights, restrictions, reserved rights, and terms and conditions—work in unison to prevent, restrict, encourage, or guarantee certain uses of the forest and associated management practices. Affirmative rights express things the grantee (land trust) is allowed to do on or with the protected property. Restrictions limit the activities of the grantor (landowner) except for those allowed under reserved rights. Reserved rights are uses of the property retained by the grantor. Terms and conditions spell out the remaining details of the agreement, such as liability issues and division of property tax burdens.

A regional analysis provided insight into conservation easement deed contents as they related to forest values in the South (Bick and Haney 1999). For timber, restrictions tended to constrain production through limits on timber harvesting methods and bans on certain forest management practices. Reserved rights pertaining to timber focused only on the harvesting of forest products, including timber and nontimber products such as pine straw, Christmas trees, and fence posts. The only affirmative right of grantees associated with timber was the right to inspect properties for compliance. Overall, a lack of provisions pertaining to timber management and the type of restrictions found suggested that timber growing was not the primary use of the properties on which the conservation easements were granted.

For development, the most common restriction was one prohibiting all agricultural, industrial, commercial, and residential activities. However, landowners often reserve rights for their own use or the use of their heirs. Typically, these development rights allow construction of a residence and associated structures. As with timber, the only affirmative right associated with development was the right to make compliance inspections on protected properties.

Forest land has many potential amenity uses compatible with the protection of open space. The most common amenity restrictions were related to recreational use, such as prohibitions against motorized vehicles

and hunting and fishing. Grantors commonly reserved a broad right for low-impact recreational uses, which also often included hunting and fishing. New amenity uses arose from affirmative rights granted to the land trust; these rights were often extended to the public, such as recreational corridors providing access via hiking trails and waterways.

## Discussion and Conclusions

Conservation easements have been publicized as a means of keeping land in its current use. Restrictions on development can preserve the current use feature, but new uses of open space can result. Also, a scattered or checkerboard pattern of protection may be a concern from a land use control perspective. To be most effective in protecting open space and avoiding fragmentation, conservation easements must be used in conjunction with other mechanisms that identify broader areas for protection.

Allowing public access for amenity uses of private forest land is an example of new land uses created by conservation easements. This change in the amenity potential of forest land can alter its utility for current owners and its value and appeal for future buyers. Private amenity enjoyment of the property is limited to activities reserved by the original grantor, with many potential uses compatible with open space foregone. The perpetual nature of most conservation easements dictates the need for careful design to achieve acceptable agreements.

In easements on forest land being managed for timber values, landowners must be careful to reserve rights essential to timber management. In addition to the right to harvest forest products, some provisions that may be necessary for southern forest land are rights to build temporary or permanent logging roads and trails, reforest with trees (including the use of improved genetic growing stock), restrict public access (if any) during harvesting periods and immediately after reforestation, and use appropriate silvicultural techniques such as prescribed fire, herbicides, and fertilization. Landowners making an informed decision to ban timber management activities should reserve the right to cut and remove timber damaged by natural disasters.

## Needs for Additional Research

The use of conservation easements on productive forest land appears to be growing rapidly. Currently, there are more than 1,200 private land trusts in the United States that accept conservation easements as donations on land; a smaller number purchase conservation easements. In addition, many public agencies are seeking conservation easements as a means of affecting land use. A more comprehensive survey of all entities seeking conservation easements on forest land is needed to determine the acreage, location, and possible effects on timber supplies and other forest values.

Relatively little research has been done on the content of forest land easements, particularly those covering productive forest land. More analysis of the provisions of conservation easement deeds is needed, as are assessments of how well conservation easements are meeting the goals and objectives of the parties involved and the principles of sustainable forest management.

## Acknowledgments

Data for table 8.5 were compiled and provided by Steven Bick, Principal Consultant, Northeast Forests, LLC, Thendara, NY.

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## Protective Regulatory Policies

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### Introduction

This section of the Assessment focuses on the protective regulatory (PR) policies that affect forestry in the South. Particular emphasis is placed on PR laws and policies protecting and enhancing water quality.

PR policies and laws safeguard society by limiting or mandating certain actions by the public and private sectors. They frequently rely on the “stick” of penalties rather than the “carrot” of subsidies or other incentives to accomplish their objectives. Only in a few instances and in limited jurisdictions do PR policies and laws specifically regulate forest management, but all forest land in the South is affected by PR policy. The effects depend on: (1) executive or jurisdictional level of the policy

(Federal, State, or local); (2) forest land ownership category (Federal, State, industrial private, or NIPF); (3) owners' management objectives (multiple use, timber/fiber production, or habitat conservation); and (4) location with respect to urban centers, water bodies, wetlands, and designated critical habitats for endangered species.

Federal PR statutes affecting forest management in the South include:

- The National Environmental Policy Act of 1969;
- The Endangered Species Act of 1973;
- The Federal Water Pollution Control Act of 1972 and subsequent amendments (Clean Water Act);
- The Coastal Zone Act Reauthorization Amendments (1990);
- The Clean Air Act (1955) and subsequent amendments;
- The Federal Insecticide, Fungicide, and Rodenticide Act (1947) and subsequent amendments;
- The Organic Statutes of the USDA Forest Service, and the U.S. Department of the Interior (USDI) Fish and Wildlife Service and National Park Service;
- The Multiple-Use Sustained-Yield Act of 1960 and the National Forest Management Act of 1976;
- The Federal Land Policy and Management Act of 1976;
- The National Wildlife Refuge System Administration Act of 1966;
- The Wilderness Act (1964);
- The National Historic Preservation Act (1966); and
- The Administrative Procedure Act (1943) and subsequent amendments.

State PR laws and policies affecting forestry in the South include:

- Statutes governing the administration of State land;
- State water-quality statutes;
- State endangered species provisions;
- State pesticide use and application guidelines;
- State regulations for land disturbance and erosion control;
- Burning statutes; and
- Seed tree, forest conservation, and BMPs for private forests.

Local PR ordinances (covered in greater detail elsewhere in this chapter)

affecting forestry in the South fall primarily in two main categories:

- Roads (access by logging equipment and weight limits), and
- Tree protection (primarily in urban and urbanizing areas).

## Methods and Data Sources

When lawyers say that they are searching for the law on a particular subject, they typically mean that they are searching for enforceable provisions within the law. They are looking for those aspects of the law that allow some private or public legal action, a means of imposing fines or penalties to discourage wrongdoing, or provide a remedy for wrong already done. Accordingly, the primary source materials consulted were the legal statutes that establish PR policy. Secondary materials included books and technical papers about forest policy. The most extensive original research for this section was performed by students at the Tulane University School of Law and by the director of the Tulane Institute for Environmental Law and Policy.

## Results—Federal Land

Federal land in the South is owned and managed by a variety of agencies, including the USDA Forest Service, the USDI Fish and Wildlife Service, the USDI National Park Service, the Department of Defense (branches of the military and the Corps of Engineers), the Department of Energy, the Bureau of Indian Affairs, and the Tennessee Valley Authority. Despite the number of agencies involved, only 9 percent of the forest land in the South is in Federal ownership; nearly 6 percent of forest is managed by the USDA Forest Service and 3 percent by other Federal agencies (Powell and others 1994).

Of the Federal PR policies listed in the introduction to this section, the Administrative Procedure Act, the National Environmental Policy Act, The National Historic Preservation Act, and the Endangered Species Act affect each of the Federal agencies with land in the South. The Administrative Procedure Act governs agency conduct in the processes of rulemaking and enforcement. In short, an agency's actions cannot be substantively arbitrary, capricious, or procedurally incompatible with its organic and other

management statutes. The National Environmental Policy Act charges Federal Government agencies to coordinate environmental protection plans and programs, to incorporate amenity values in economic analyses, to involve the public, and, most importantly, to assess the impact of Federal actions on the quality of the environment. The National Historic Preservation Act requires that Federal agencies take into account the effects a project will have on historic resources and allow the Advisory Council on Historic Preservation the opportunity to comment on the effects of the project. The Endangered Species Act requires Federal agencies to (1) manage their land to conserve endangered and threatened species and (2) consult with the Fish and Wildlife Service to ensure that any agency action “. . . is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species . . .” (16 U.S.C.S. § 1536).

In addition to the Administrative Procedure Act, the National Environmental Policy Act, the Endangered Species Act, and the National Historic Preservation Act, each agency has management regulations stipulated by the Federal Code. These statutes differ, of course, depending on agency objectives. Regulations also differ widely in the amount of public solicitation required before significant actions are taken. With the exception of the National Environmental Policy Act regulations of the Council on Environmental Quality (40 CFR § 1506.6), most Federal agencies in the South conduct their routine land management programs with little input from the public. The major exception, however, is the USDA Forest Service, which manages two-thirds of the Federal land in the South. A closer look at its organic and management statutes is, therefore, warranted.

The Organic Act established the national forests to “. . . improve and protect the forest within the boundaries, or for the purpose of securing favorable conditions of water flows, and to furnish a continuous supply of timber for the use and necessities of citizens of the United States . . .” (16 U.S.C. § 475). Timber is allowed to be sold “For the purpose of preserving the living and growing

timber and promoting the younger growth on national forests . . .” (16 U.S.C.A. § 476).

The Multiple-Use Sustained-Yield Act codified management of national forests for a variety of attributes other than timber and water. It states that: “. . . the National Forests are established and shall be administered for outdoor recreation, range, timber, watershed, and wildlife and fish purposes . . .” (16 U.S.C. § 528). “‘Sustained yield of the several products and services’ means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land” (16 U.S.C. § 531).

The National Forest Management Act was enacted in response to challenges over timber harvesting on national forest land. It has four key provisions for public oversight and management planning: (1) public participation in the planning process, (2) rules governing the preparation and revision of forest management plans, (3) guidelines for clearcutting, and (4) economic analysis of management alternatives. A possible fifth provision is the formal appeals process allowing members of the public to challenge forest management actions. Shortly after the act was passed, a committee of scientists was convened to assist the agency with writing the planning rules. This process was revisited in 1999 and 2000 by a second committee of scientists. Subsequently the planning rules were revised to make ecological sustainability the overriding objective for the management of the national forests (36 CFR Parts 217 and 219). Regardless of the objectives of management decisions, all activities must adhere (when pertinent) to the Clean Water Act, the Clean Air Act, and the Federal Insecticide, Fungicide, and Rodenticide Act as well as meet the substantive and procedural requirements of the Administrative Procedure Act, the National Environmental Policy Act, the Endangered Species Act, the National Historic Preservation Act, the Organic Act, and the Multiple-Use Sustained-Yield Act.

The impact of Federal policies on Federal land has been the recovery of forests, wildlife, and water quality on the vast majority of Federal properties

in the South. Recreation opportunities have increased. National forest and other Federal land has provided a supply of timber that, while increasing as a percentage of the overall amount allocated by the Federal Government nationwide, has declined in amount in the past decade. This recovery has not come without expense: meeting the substantive and procedural requirements of the Administrative Procedure Act, the National Environmental Policy Act, the National Forest Management Act, the Multiple-Use Sustained-Yield Act, the Endangered Species Act, and other PR statutes makes the Forest Service, as well as other Federal agencies, a high-cost producer of timber and recreation. A final and unintended consequence is conflict between forest management and environmental protection statutes due to the incremental passage of individual PR policies. These conflicts reduce efficiency and defer management action (Hill 1997).

### Results—State and Local Government Land

Collectively, the 13 Southern States own approximately 2 percent of the South’s timberland. Florida owns the most acres, followed by Tennessee, Arkansas, Mississippi, and North Carolina. This land is in State forests, State parks, State wildlife lands, and other special sites (historic, cultural, etc.). Less than 1 percent of the South’s timberland is in local and municipal ownership (Powell and others 1994).

As with the Federal agencies, the various State agencies charged with managing the States’ forest lands have differing objectives expressed in their organic statutes. As a general rule, State forestry agencies place proportionately more emphasis on timber management activities than do agencies administering wildlife, parks, and other areas. The amount of public participation in agency activity varies widely, depending upon agency objectives as well as the characteristics of each State’s administrative procedure code. Local and municipal management varies widely as well.

In addition to meeting the substantive and procedural requirements of administrative and organic codes, State land management agencies and municipalities must meet the

requirements of Federal and State water-quality laws, Federal and State endangered species laws, and Federal and State air quality laws, as well as the Federal Insecticide, Fungicide, and Rodenticide Act and any State equivalents, should management actions necessitate compliance. Unless the State or local action is carried out with Federal funding, assistance, or concurrence, the provisions of the National Environmental Policy Act and National Historic Preservation Act do not apply. As with Federal land, the overall impact of these protective regulatory policies has been the recovery of forest vegetation and many of the game and nongame animal species on State land. State parks are a very important source of outdoor recreation, and State wildlife land provides extensive areas for fishing and hunting. Local and municipal holdings offer important amenity uses (Cabbage and others 1993).

### Results—Private Land

Approximately 90 percent of the South’s timberland is privately owned. Forest industry holds almost 20 percent of the total; NIPF owners control the remaining 70 percent (Powell and others 1994). All owners are affected to a greater or lesser extent by Federal, State, and local PR policies, depending upon the location and environmental characteristics of their property.

### Federal Statutes

The substantive and procedural Federal statutes (the National Environmental Policy Act, Administrative Procedure Act, National Historic Preservation Act, Multiple-Use Sustained-Yield Act, National Forest Management Act, Wilderness Act, etc.) do not apply to private owners unless the private owner is receiving Federal grants, assistance, or permits. Environmental quality/public health laws (Clean Water Act; Clean Air Act; Federal Insecticide, Fungicide, and Rodenticide Act; and Coastal Zone Act Reauthorization Amendments) and the Endangered Species Act do apply. Other statutes such as Occupational Safety and Health Administration workplace regulations and the Superfund, while important, have a relatively minor impact on forest management activities and will not be discussed here. Also not described in detail is the River and

Harbors Act of 1899, which has the potential to affect private forestry activities that need a barge terminal.

#### **Clean Water Act and Coastal Zone Act Reauthorization Amendments—**

Two main types of water pollution sources are recognized in the Clean Water Act: point sources, which have an identifiable input site such as a drainpipe; and nonpoint sources, which do not. Examples of the latter include farms, forests, cities, and municipalities. Interpretation and enforcement of statutes pertaining to nonpoint-source pollution in the Clean Water Act and Coastal Zone Management Act have largely been delegated to the States under Sections 319 and 303(d) of the Clean Water Act and under Section 6217 of Coastal Zone Act Reauthorization Amendments. These State-administered sections will be addressed in State implementation of the Clean Water Act and the Coastal Zone Act Reauthorization Amendments section of this chapter.

The one facet of nonpoint-source water pollution not delegated to the States is Section 404 of the Clean Water Act, which has been interpreted as a mechanism to regulate activities in jurisdictional wetlands in the United States. The Corps of Engineers (COE) has primary responsibility for enforcement of Section 404; the EPA has veto authority. The COE is authorized to grant (or to deny) individual and general permits for activities that may result in the discharge of dredge or fill materials into the waters of the United States. Section 401 requires States to certify that these permits comply with State water law. If the State denies certification, the Federal permit may not be issued. Selected activities (normal farming, silviculture, and ranching) are exempted from this permitting process under Section 404(f)(1) provided that the activities are part of established, ongoing operations.

Normal silvicultural activities are defined as timber harvesting, minor plowing, seeding, draining, and cultivation for producing timber. Maintenance of structures and ditches, as well as road construction and road maintenance activities are also exempted from permitting. However, this permit exemption is conditional upon the implementation of 15 Federal BMPs for maintaining and constructing

roads. Additionally, mechanical site preparation activities require a permit in nine types of wetlands as defined in a 1995 COE memorandum (Burns 1996). Operators are exempted from the permit in other wetland types provided they utilize, as a minimum, the six BMPs for mechanical site preparation practices established in the memorandum.

Under 40 CFR 232.3(c)(1)(ii)(B), the scope of the forestry exemption is limited and “[a]ctivities which bring an area into farming, silviculture, or ranching use are not part of an established operation.” In addition, “[a]n operation ceases to be established when the area in which it was conducted has been converted to another use or has lain idle so long that modifications to the hydrological regime are necessary to resume operations.” The recapture provision of Section 404(f)(2) further limits the exemption by requiring a permit for otherwise exempted activities that convert a wetland into a new use, where the flow and circulation of waters are impaired or the reach of waters reduced. “A conversion of section 404 wetland to a non-wetland is a change in use of an area of waters of the United States” [40 CFR 232.3(b)]. Accordingly, Section 404 has the potential to affect both industrial and NIPF owners of forested wetlands depending upon the scope of operation proposed for their property as well as the intensity needed to accomplish management objectives.

**Clean Air Act**—The primary objective of the Clean Air Act is the protection of human health by limiting release of airborne fine particulate matter and gases such as ozone and sulfur oxides. Some forestry activities, primarily burning and soil disturbance in close proximity to urban centers, can be affected by the human health provisions of the Clean Air Act. However, the act’s visibility standards are more often pertinent to forestry operations. While primarily utilized to protect vistas near class I wilderness areas, these standards are most frequently applied in the South to prevent accidents by minimizing smoke drift from prescribed burnings over highways. Landowners are liable for smoke-related accidents, but a State may share the legal burden of an operation that meets the conditions of a State-issued burning permit. As with

the Clean Water Act and the Coastal Zone Act Reauthorization Amendments, the implementation, monitoring, and enforcement responsibilities are delegated to the States.

**Federal Insecticide, Fungicide, and Rodenticide Act**—Regulations about uses of herbicides, pesticides, and fertilizers influence some forestry operations. The Federal Insecticide, Fungicide, and Rodenticide Act requires that statutory restrictions, use precautions, and instructions for proper application and disposal specific to each chemical be included on labels of containers. The label also must indicate if application of the particular chemical is limited to trained and certified applicators. The EPA has regulatory and enforcement authority, although States, counties, municipalities, and other local jurisdictions may enact more stringent and preemptive supplemental use provisions that persons in those jurisdictions must abide by in addition to the Federal Insecticide, Fungicide, and Rodenticide Act.

**Endangered Species Act**—The Endangered Species Act was passed in 1973 to prevent the extinction of wildlife. Federal agencies must consult with the USDI Fish and Wildlife Service on the potential impacts to listed plants and animals and can “take” them only incidentally and with a permit. Private owners are prohibited from taking a threatened or endangered species of wildlife (vertebrates and invertebrates) but not plants. Taking is defined to include physical harm and harassment to the species as well as “significant habitat modification or degradation where it actually kills or injures wildlife” (16 U.S.C.S §1531). As some forest management activities have the potential to significantly modify or degrade habitat, this provision has affected both industrial and NIPF owners.

The 1982 amendments to the act have increased the number of management options for landowners whose properties harbor endangered species. These amendments establish provisions and special circumstances under Section 10 of the act that permit a taking (16 U.S.C.S. § 1539). Owners must first develop a detailed Habitat Conservation Plan. If the Fish and Wildlife Service determines that takings which might result from executing the plan (1) are not the purpose of the

management activity, (2) are incidental to the management activity, and (3) will not “appreciably reduce the likelihood of the survival and recovery of the species in the wild,” they may issue an Incidental Take permit (16 U.S.C.S. § 1539). Further refinements to this approach include Safe Harbor (50 CFR Part 13) and No Surprises (50 CFR Part 17) initiatives that can further limit liability for participating landowners if additional endangered species are found on their property.

#### State implementation of the Clean Water Act and the Coastal Zone Act Reauthorization Amendments—

The Clean Water Act has two sections pertinent to silviculture: Section 319 and Section 303(d). Section 319 requires State Governors to submit a report to the EPA that:

- “identifies those navigable waters within the State which, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain applicable water quality standards,”
- “identifies those categories and subcategories of nonpoint sources . . . which add significant pollution” to those subpar waters,
- “describes the process . . . for identifying best management practices” to control those problematic sources, and
- “identifies and describes State and local programs for controlling” nonpoint pollution sources [33 U.S.C.A. § 1329(a)(1)].

States are also required, “to the maximum extent practicable, [to] develop and implement a management program . . . on a watershed-by-watershed basis” [33 U.S.C.A. § 1329(a)(1)]. The act also provides that if a State fails to submit the report, the EPA is to prepare the report and submit it to Congress. Beyond that, there are no real sanctions. The principal motivation for States to comply with these requirements is a program of grant funds for the implementation of management programs.

States typically implement a significant part of their nonpoint-source pollution programs with those grant funds from the Federal Government under Section 319. Much of the activity in those programs concerns the encouragement of BMPs through educational activities, technical

assistance, financial assistance, training, and demonstration projects. Some funds are used for BMP compliance monitoring. For example, South Carolina uses some of its 319 funds for a unique aerial surveillance program that examines the State’s major streams on a monthly basis.

The second section of the Clean Water Act with implications for silviculture is the “total maximum daily load” program of Section 303(d) of the act. Somewhat dormant until a round of litigation beginning in the early 1990s, Section 303(d) requires that States:

- identify State waters from which point source effluent limitations are not sufficient to achieve water-quality standards,
- determine the total maximum daily loads that would be necessary to bring those waters up to water-quality minimums, and
- allocate those loads among sources in discharge permits and State water-quality plans [33 U.S.C.A. § 1313(d)].

Little of that had happened prior to the litigation of the past decade. The outcome of that litigation has been a series of agreements and court orders that have imposed schedules for the identification of the listing process and for the process of actually allocating loads among the various dischargers. Under those agreements and orders, States have as long as 12 years to complete the process (Houck 1999). Clearly, these total maximum daily load provisions hold the potential for significant impact on agriculture generally, and silviculture specifically, but the details are still very much in development. EPA guidance has argued that voluntary measures will be the “primary implementation mechanism” (Houck 1999). Southwide, silviculture appears to be a minor contributor to the problems of the waters that have been listed to date.

The Coastal Zone Act Reauthorization Amendments is another interface between Federal and State law with potential impacts on silviculture. In passing the act to amend the Coastal Zone Management Act in 1990, Congress added Section 6217 (16 U.S.C. §1455b), which requires States with Federally approved coastal zone management programs to:

- prepare a coastal nonpoint pollution control program that includes management measures to restore and protect coastal waters from the adverse impacts of polluted runoff;
- coordinate and integrate the State coastal zone management program with existing State and local water-quality plans and programs, particularly the State nonpoint-source management plan; and
- implement polluted runoff management measures that are consistent with the EPA’s “Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters.”

State plans under §6217 are voluminous. To date, their impacts on silviculture do not appear to be great, though the programs are still new.

#### State Statutes

The South is unique among regions of the United States in that none of its States has a comprehensive forest management act. Florida and Virginia achieve similar results with aggregated individual statutes, however. Florida’s approach includes zoning and harvest notification at the county level and BMPs for wildlife, water, and aesthetics at the water management district level. Virginia utilizes a seed tree law in conjunction with voluntary BMPs and regulation of loggers. Kentucky’s Forest Conservation Act currently stops short of comprehensive status. It does, however, establish guidelines for loggers and mandates BMPs. With those exceptions, few of the State-level PR policies directly address forestry and forest management. States do, however, have regulations to protect water quality, air quality, and endangered species, and to control pesticide use. These vary in complexity and rigor. For example, not all States have a list of threatened and endangered species, and those that do list species regulate forest management activities that may impact listed species only on State-owned lands. State air quality guidelines most often impact silviculture by limiting prescribed burning operations.

Water-quality laws affecting silviculture also vary among the States. Typically, a State’s water law will prohibit pollution (variously defined) of a State’s waters, except as it is allowed under the control of a State-issued permit. Silviculture is usually

subject to the general prohibition, but it is often specifically exempted from the permitting requirement. Further, many States' laws only make the prohibition against pollution enforceable against silviculture operations if the conduct causing the pollution rises to a certain level of culpability, at least negligence. But the implementation of BMPs by a silviculture operator typically serves as proof that the operator has exercised due diligence or, at least, the standard of care of an ordinary person, thus defeating any legal finding of negligence. Generally, however, the implementation of BMPs will not protect against private lawsuits brought by neighbors or downstream persons who can demonstrate that they have been harmed and quantify that harm in monetary terms.

In the South, forestry BMPs are most often voluntary, but they are mandatory in a few States and in some special circumstances, such as for previous violators or around waters of special concern. In some States, counties have made BMPs mandatory. Typically, there are no preharvest notification requirements, and government agencies are only able to enforce BMP or water-quality requirements by searching out active harvesting operations. If violations are found, there is often a two-or-more-step process of trying to remedy the problem with education or technical assistance before sanctions are imposed.

Variations on the typical pattern include:

- A noticed general permit system in Florida, handled by five strong regional water management districts, with some prenotification requirements;
- Kentucky's Forest Conservation Act, which requires a master logger on site and mandates BMPs;
- Mandatory BMPs in some sensitive areas (and some counties) in Georgia;
- "Courtesy BMP exams" in South Carolina (exams typically result from aerial surveillance, and can affect an operator's market by publishing information that the operator has "failed an exam");
- Virginia's system that authorizes the State Forester to issue stop-work orders to prevent water pollution;
- Tennessee's program that (1) makes BMPs mandatory for operators who

have previously been found responsible for water pollution and (2) requires preharvest notification for 2 years after an operator has been found guilty of a violation.

### Impacts of PR Policies on Private Owners

While meeting environmental and human health goals, PR policies reduce the working area of industrial forests, alter management strategies, and increase costs. For example, demarcating streamside management zones and isolating endangered species habitat limits the amount of wood available for utilization. In certain instances, management plans are designed to prevent areas from becoming suitable endangered species habitat. Owners wishing to participate in the Safe Harbor and No Surprises Programs under the Endangered Species Act must develop their own Habitat Conservation Plans, which can be prohibitively expensive. Finally, PR policies motivate industry to initiate voluntary self-regulation programs in an effort to stave off the implementation of additional PR statutes that might be less palatable.

PR policies also have the potential to reduce working area and raise costs for NIPF owners. Some owners are impacted considerably more than others depending on the size, location, and environmental attributes of their property as well as their management objectives. Obviously, people who hold property mainly for its amenity values are affected less than those seeking to maximize the amount of income they can receive through the sale of wood.

### Acknowledgments

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## Local Forest-Related Ordinances

### Introduction

In recent years, society's environmental sensitivity has increased, urbanites unfamiliar with the role of natural resources in the rural economy have migrated into rural areas, and growing cities have endeavored to maintain green space (Egan and Luloff 2000, Johnson and others 1997, Martus and others 1995). These trends have prompted local governments to adopt ordinances intended to protect the environment, aesthetics, open space, and public safety. These regulations influence how forest managers can operate on private land.

The effects of local ordinances on forest management are of concern to forestry professionals and forest owners. In addition to increasing forest owners' operating costs, regulation can create a patchwork of confusing, sometimes conflicting, requirements between different units of government (Martus 1992, Martus and others 1995, Provencher and Lassoie 1982, Shaffer 1991). Analysis of the impacts of local ordinances requires a firm understanding of their characteristics.

A study undertaken a decade ago identified units of local government that had enacted ordinances (Greene and Haines 1994, Martus 1992). The study also determined the provisions of each ordinance and categorized them by type. The current study was designed to update the earlier effort.

### Methods

No centralized reporting system for county and municipal ordinances exists, so local forest-related ordinances were compiled from a variety of sources. The units of local government identified by Martus (1992) were contacted to find out whether they had enacted new ordinances. At the same time, the responding officials were asked for information on other counties or municipalities they were aware of that had enacted forest-related ordinances. Authors of articles on local regulation, representatives of the forestry agencies and forestry associations in each Southern State, extension foresters, university faculty members, consulting foresters,

and other members of the forestry community also were contacted and asked for information on ordinances they were aware of. This process was continued until all leads were exhausted. Once identified, the units of government were contacted to obtain a copy of each ordinance.

**Data Sources**

Data for the study consisted of any law, ordinance, zoning provision, or other enactment that had been or could reasonably be used to restrict logging or silvicultural activities. Each enactment was examined to determine

its date of adoption, regulatory objective, and provisions.

**Results—Number of Ordinances**

The Martus (1992) study identified 141 local ordinances in 7 of the 13 Southern States (table 8.6). Of the 135 units of local government that had enacted ordinances, 87 percent were counties or parishes. Four States—Virginia, Georgia, Florida, and Louisiana—accounted for 96 percent of the ordinances.

The current study found that the number of local ordinances in Southern States more than doubled between 1992 and 2000. The study identified 346 forest-related ordinances distributed among 264 units of local government in 10 Southern States (table 8.6). Of the enacting governments, 83 percent were counties or parishes. The proportion of ordinances passed by city governments increased from 8 percent of the total in 1992 to 13 percent in 2000. Neither study identified any local forest-related ordinances in Kentucky, Tennessee, or Oklahoma.

Of the 346 provisions, 341 had identifiable dates of enactment. Of these, 80 percent had been enacted in the last 10 years and 44 percent within the last 5 years (table 8.7). Thus, the number of local forest-related ordinances has essentially doubled every 5 years since 1970.

There are several reasons for the proliferation of local ordinances, including urban sprawl, exurbanization, social conflict, community mobilization, and protection of public

investments. In addition, 18 percent of the ordinances resulted from State mandates. Virginia required local governments to enact watershed preservation ordinances pursuant to the Chesapeake Bay Preservation Act. Similarly, Florida mandated that county governments implement land development codes, some of which have silvicultural implications.

The “National Resources Inventory,” published in December 1999 by the USDA Natural Resources Conservation Service, reports that, on a national scale, forest acreage is declining at a rate of over 3 million acres per year due to urban sprawl. Urbanization is a major contributor to the proliferation of local ordinances in the form of tree protection and timber harvesting statutes.

Not only are cities expanding, but urban residents are migrating to rural areas seeking an improved lifestyle. This exurbanization introduces both social conflict and community mobilization as former city dwellers, unfamiliar with the role of natural resources in the rural economy, react strongly to the unpleasant appearance of harvested areas (Glickman 1999, Provencher and Lassoie 1982). Applying community organization and lobbying practices they are familiar with, the new residents press for ordinances to protect the sylvan setting they sought in moving from the city, with little regard for the effectiveness or impact of the ordinance on the traditional rural economy.

Many States in the South have a decades-old tradition of ordinances to protect public investments in roadways. The earliest identified ordinance was enacted in 1934 to protect parish rights-of-way and ditches from logging debris in Louisiana. Public protection ordinances remain the focus of local regulation in much of the South.

**Regulatory objectives**—The stated objectives of local ordinances provide insight into the attitudes of the adopting government and its constituents. Each ordinance identified in the study was placed into one of five categories:

1. Timber harvesting—Timber harvesting ordinances are adopted specifically to restrict forestry and silvicultural operations. All ordinances that referred to regulation of timber

**Table 8.6—Number of forest-related local ordinances in the South, by State, 1992 and 2000**

State	Year	
	1992	2000
	--- Number ---	
Alabama	0	6
Arkansas	3	6
Florida	26	46
Georgia	41	116
Kentucky	0	0
Louisiana	25	52
Mississippi	1	7
North Carolina	1	16
Oklahoma	0	0
South Carolina	0	9
Tennessee	0	0
Texas	0	11
Virginia	44	77
<b>Total</b>	<b>141</b>	<b>346</b>

**Table 8.7—Number of forest-related ordinances enacted in the South, by type, 1992 and 2000**

Type of ordinance	Year			
	1992		2000	
	No.	%	No.	%
Timber harvesting	8	6	35	10
Public property protection	59	42	158	46
Tree protection	11	8	48	14
Environmental protection	19	13	26	8
Special feature protection	44	31	79	22

harvesting, skid trail and haul road construction, harvest methods, equipment, or any other silvicultural activity on private property were placed in this category. Common provisions include requiring management plans, harvest permits, adherence to State BMPs, and streamside management zones (SMZs). Of the ordinances identified in the study, 10 percent were in this category in 2000 (table 8.7).

**2. Public property protection—** Ordinances in this category are enacted to protect public investments in roadways and bridges and to protect the safety of the traveling public. They place operating limits on heavy vehicles, including log trucks; prohibit accumulation of mud and debris on roadways; restrict interference with traffic flows; and protect against damage to roads, bridges, and culverts. Typical requirements include the posting of surety or cash bonds, hauling permits, placement of culverts in county ditches, and posting of warning signs at points of egress. Local ordinances in many areas of the South emphasize protection of public property and safety. Of the 346 ordinances identified, 46 percent were in this category (table 8.7).

**3. Tree protection—** Tree protection ordinances are associated with preservation of trees in areas that are being cleared for development. Common provisions include requiring tree-cutting permits, management or erosion-control plans, basal-area retention thresholds, replanting, and use of buffer strips. Landscaping laws were beyond the scope of the study. Of the ordinances identified, 14 percent were in this category (table 8.7).

**4. Environmental protection—** The purpose of ordinances in this category is to protect the general environment from land disturbing activities. Common provisions include requiring harvesting permits, soil erosion plans, use of SMZs, and buffer strips. Less than 10 percent of the ordinances identified were in this category (table 8.7).

**5. Special feature protection—** Special feature protection ordinances are adopted to protect specific areas that have scenic or environmental values. Examples are scenic river corridors, highway overlay districts, wetlands, view sheds, and special

habitats. Common provisions include prohibiting tree cutting or requiring tree-cutting permits, requiring use of buffers, and notification of the local government. Over 20 percent of the ordinances identified in the study were in this category. Most were passed in Virginia, as mandated by the Chesapeake Bay Protection Act (table 8.7).

The focus of local regulation varied by State. Public property protection ordinances made up the majority of local regulations in Texas (55 percent), Alabama (67 percent), Georgia (72 percent), Arkansas (83 percent), Louisiana (86 percent), and Mississippi (100 percent). Tree protection laws dominated in North Carolina (40 percent), Florida (41 percent), and South Carolina (56 percent). Special feature protection ordinances mandated by the Chesapeake Bay Protection Act accounted for 78 percent of local forest-related ordinances in Virginia.

**Preemptive/Preventive measures—** Local ordinances affect the management alternatives available for private forests. By and large, the forestry community has responded by emphasizing ethical and stewardship-based forest management and by meeting with interested members of conservation groups, community organizations, and elected officials to show them what this approach to management looks like on the ground. By these activities, members of the forestry community seek to encourage the perception that further regulation is unwarranted. The study's data collection process, however, revealed that a variety of other, more proactive approaches have been used to prevent or preempt local regulation.

■ **State right-to-practice-forestry laws—** State right-to-practice laws attempt to ensure that forest owners can continue to grow and harvest timber by limiting the ability of local units of government to restrict forestry practices. Kentucky, Louisiana, North Carolina, and Virginia have passed right-to-practice legislation. Kentucky's law appears to be the most successful in preempting local forest-related ordinances, since the study identified no such ordinances in that State. In contrast, the North Carolina law simply protects forestry from being classed as a "nuisance" activity in local ordinances. The Virginia law

was effectively nullified by a recent State Supreme Court case (Ann F. Dail et al. v. Record No. 991591, April 2000). Local governments in that State now have court-issued authority to enact forest-related ordinances they deem justifiable.

■ **State forestry associations—** In some instances, State forestry associations have succeeded in preventing adoption of local ordinances. For example, the Mississippi Forestry Association has organized county forestry associations that keep members aware of local problems and mobilize them to act promptly. The success of this approach is reflected in the relatively low number of local ordinances in Mississippi. In other instances, State associations have promoted an outcome-based approach to regulation as more effective and less costly than a process-based approach. Once ordinances are passed, State associations work through their legislative committees to ensure they are implemented fairly and efficiently.

■ **County road commissions—** A little-used but effective strategy for preempting enactment of public property protection ordinances is the use of a county road commission composed of road superintendents, loggers, and foresters. Macon County, AL, for example, uses such a system to prevent roadway damage by having the forest industry supervise itself. If a problem arises, the commission works to correct it in a timely manner in order to avoid county intervention and the possibility of regulation.

■ **Private forestry interests—** Forest products companies as well as NIPF owners are affected by local ordinances. Many firms utilize their foresters to keep track of local governments that show interest in developing ordinances. Action can then be taken to voluntarily correct problems before they lead to regulation.

In a few highly publicized cases, industry firms have sold large tracts of forest land to environmental organizations, land trusts, or government agencies. Examples include:

■ The 1999 sale of 300,000 acres of Champion International land in three Northeast States to a coalition of organizations led by The Conser-

vation Fund of Arlington, VA (The Conservation Fund 1999);

- The 2001 sale of 57,000 acres of Rayonier land in northeast Florida to State agencies in a deal brokered by The Nature Conservancy, to create a wildlife corridor between the Osceola National Forest and the Okefenokee National Wildlife Refuge (Rayonier 2001); and

- The recently announced sale of 100,000 acres of Weyerhaeuser land in Washington to Evergreen Forest Trust, to protect forest land near Seattle from development pressure (Society of American Foresters 2002).

Such sales protect the rural character of the forest land involved, slow the inception of regulation associated with urban expansion, and enhance public perception of the firms as good environmental citizens.

## Discussion and Conclusions

Local regulation of forest activities has increased dramatically in recent years. The overall number of forest-related ordinances passed by local governments in the South increased from 141 in 1992 to 346 in 2000. Local ordinances occur in every Southern State except Kentucky, Oklahoma, and Tennessee, but they are especially prevalent in Georgia, Virginia, Louisiana, and Florida.

The mix of ordinances varies by State, but regionwide, public property protection ordinances are the most common, accounting for nearly half of all ordinances. Special feature protection ordinances are the next most common, followed by tree protection ordinances, timber harvesting ordinances, and general environmental protection ordinances. All types of ordinances increased in number between 1992 and 2000, but the relative proportion of public property protection, tree protection, and timber harvesting ordinances increased somewhat, while the relative proportion of special feature and environmental protection ordinances decreased. The proportion of forest-related ordinances passed by city governments also increased over the period.

Ordinances impact how forest managers can operate on private property. Ordinances do more than restrict forest management practices; they also increase operating expenses,

reduce timber stumpage values, and create a patchwork of conflicting requirements across the landscape. These effects may be magnified in the South due to (1) the simultaneous trends of population growth and the shift of timber demand to the region, and (2) the importance of forest industry to Southern States and local economies (Cubbage 1991).

It seems likely that the number of public property protection ordinances will level off in the future. The number of special feature protection ordinances—mandated by State law to protect specific scenic or environmental features—may also remain relatively constant. Given the rapid rate of urban expansion, however, there is little reason to believe that proliferation of the other types of local ordinances will slow.

Approaches that have been used to avert enactment of new forest-related regulations in local areas include emphasizing ethical, stewardship-based forest management; education and mobilization of private forest owners by State forestry associations; cooperation among road officials, loggers, and foresters on county road commissions; and tracking and lobbying efforts by forest industry firms. Without successful amelioration measures, it will become impractical to practice forest management in increasingly large areas of the South. This condition may lead to additional large-scale sales of forest industry land to environmental organizations, land trusts, and government agencies or to State intervention in the form of right-to-practice-forestry laws or preemptive forest management acts.

## Needs for Additional Research

The demographic and resource factors associated with localities experiencing rapid growth in forest-related ordinances need to be determined. The remaining objective of such a study should be to examine the correlation between such localities and measures of population—number, growth rate, education, income, and diversity, for example—and resource availability. Statistical analysis and a Geographic Information System will be used to seek insight into the factors

associated with the proliferation of local regulation, both overall and by type of ordinance. The analysis should also indicate underlying rationales for the proliferation of local ordinances and provide a focus for future study.

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## Private Property Rights and Right-to-Practice-Forestry Acts in the South

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### Introduction

Since the 1980s, local governments in the South have been enacting a growing number of ordinances that restrict forest practices. Historically, most local ordinances have been developed to protect the infrastructure, such as roads and bridges, but an increasing number are being directed at forest land management activities—timber harvesting practices, in particular. The previous section noted that there were 141 ordinances in the Southern States in 1992, 346 in 2000.

Local regulation, coupled with Federal and State laws and regulations enacted to control nonpoint-source water pollution or to protect wetlands, air quality, endangered species, and scenic waterways increasingly limit landowners' management options. The cumulative effect of this regulation is a complex environment in which to practice private forestry, and many southern landowners have reacted negatively.

In addition to regulatory restrictions, forest land use has been increasingly subject to litigation claiming forestry activities constitute a nuisance, particularly in wildland-urban interfaces. Both regulation and nuisance claims are symptomatic of clashing urban and rural values in areas traditionally devoted to timber growing.

In response to increasing regulatory pressures and in concert with a growing national property rights movement, five Southern States have enacted property rights protection laws that: (1) require an evaluation by government agencies of proposed regulations for private property rights implications; and/or (2) provide a mechanism to compensate landowners for losses in property value. In addition, eight Southern States have enacted right-to-practice-forestry laws to protect landowners from nuisance actions for farm and forestry operations and to restrict the enactment of local ordinances restricting silvicultural practices. Legislation specific to the practice of prescribed burning has also been implemented in nine Southern States. These laws shield burners from nuisance suits and limit their liability for damages and injuries related to fire escapes and smoke intrusions.

### Methods and Data Sources

This study is an update to research conducted by Haines (1995). Methods included standard legal research techniques. The primary source of information was the statutory code of each of the Southern States. In addition, forestry associations and forestry agencies in each State were contacted to obtain information about the current status of private property rights protection and right-to-practice-forestry laws enacted or proposed since 1995 when the Haines paper was published. The information provided included State statutes, supporting documents, position statements, and relevant published materials.

### Results

In the South, four types of laws protect landowners' property values and promote the use of forest land for personal, societal, and ecological benefits. These include: (1) comprehensive property rights protection laws, (2) private property protection laws specific to agricultural and forest lands, (3) right-to-farm and right-to-practice-forestry acts, and (4) right-to-practice laws for specific forest activities, which so far have been limited to prescribed burning (table 8.8).

**Comprehensive property rights protection laws**—Comprehensive property rights protection laws make explicit the constitutional right to own and use property for a broad range of purposes; they create a legal remedy for landowners to recover losses in property value that result from government regulation. In addition, some of these acts require government entities to conduct an economic impact assessment of proposed laws or regulations that are likely to result in reductions of private property values. Most of the momentum to pass these laws occurred in the mid-1990s. Comprehensive private property rights protection laws were enacted in Florida, Texas, and Virginia in 1995. In the same year, bills were proposed but failed to pass in the legislatures of Alabama, Arkansas, North Carolina, and South Carolina. Legislation was again proposed in Alabama in 1997 and Arkansas in 1999, but failed again.

The enacted laws either provide for landowner compensation (Florida), analysis of economic impact (Virginia), or both (Texas). The Florida law does not provide a specific threshold for diminution (loss) of property value for landowner entitlement to compensation. Instead, subjective terminology is used as the measure

**Table 8.8—Private property rights protection and right-to-practice forestry laws, dates of proposed and enacted legislation**

State	Types of laws			
	Real property takings compensation/assessment	Farm and forest land compensation/assessment	Right to farm and practice forestry	Right to prescribe burn and limit liability
Alabama	Proposed 1995, 1997			Enacted 1995
Arkansas	Proposed 1995, 1999			
Florida	Enacted 1995		Enacted 1979	Enacted 1990
Georgia			Enacted 1995	Enacted 1992
Kentucky			Enacted 1996	
Louisiana		Enacted 1995		Enacted 1993
Mississippi		Enacted 1994	Enacted 1994	Enacted 1992
North Carolina	Proposed 1995		Enacted 1991	Enacted 1999
Oklahoma			Enacted 2000	
South Carolina	Proposed 1995		Enacted 2000	Enacted 1994
Tennessee			Enacted 1982	
Texas	Enacted 1995			Enacted 1999
Virginia	Enacted 1995		Enacted 1994, 1997	Enacted 1997

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of reduction in property value. Landowners must be “inordinately burdened” by government regulation. The Florida act also creates an optional mediation process that landowners may use to instigate a review of regulatory actions without filing a lawsuit.

The Texas law sets a threshold for compensation of property value loss at 25 percent. In addition, the Texas law requires government agencies to perform an impact assessment for any new laws, regulations, or ordinances that are likely to reach the 25 percent threshold to determine potential costs to landowner compensation, and to identify alternative solutions that would have less impact on private property rights.

The Virginia statute requires the State Department of Planning and Budget to conduct an economic impact analysis on the use and value of private property for proposed State legislation.

**Laws to protect agricultural and forest land use**—Laws to specifically protect agricultural and forest land use have been enacted in Mississippi (1994) and Louisiana (1995). The provisions of these acts are similar to the more comprehensive property rights protection laws. The takings threshold for diminution of agricultural or forest land value is 20 percent in Louisiana and 40 percent in Mississippi. The loss must be established for landowners to file claims for compensation. Louisiana’s law also requires an impact assessment for any proposed government regulations or local ordinances that may result in a diminution in the value of forest land.

**Right-to-farm and right-to-practice-forestry laws**—Laws that establish the right to farm and practice forestry by protecting landowners from nuisance suits were enacted between 1991 and 2000 in eight States: Florida, Georgia, Kentucky, Mississippi, North Carolina, Oklahoma, South Carolina, and Virginia. These acts recognize that agriculture and forestry are important to the economy and environment of the States, and that silvicultural practices may be discouraged by: (1) public and private nuisance actions, and (2) local ordinances and zoning regulations.

In general, these laws provide that agricultural and forestry activities that have been in existence for 1 year or more and are located in designated

agricultural zones are protected from nuisance suits. An amendment to the Virginia law in 1997 expanded the protected area in that State beyond agricultural zones to include all areas legitimately used for forestry purposes.

Protection from these legal actions does not apply to operations conducted in a negligent or improper manner. In fact, the South Carolina, Florida, and Virginia acts specify that State BMPs must be implemented for landowners to be shielded from nuisance claims.

To varying extents, these acts also limit the power of local governments to adopt zoning regulations or ordinances that restrict or prohibit agricultural or forestry operations. Local restrictions that have prompted these provisions include: assessments of harvesting fees, requirements for public hearings and permits to harvest, outright prohibitions of harvesting, buffer and other requirements exceeding State BMPs, and prohibitions on prescribed burning.

A slightly different approach for legitimizing farm and forest practices was initiated in Georgia. Legislation was enacted there in 1995 to protect farm and forest practices through a deed notification requirement. Under this law, property owners must notify purchasers or lessees that the property they are acquiring lies within agricultural zones, that customary agricultural and forest uses of neighboring land may result in discomfort or inconvenience to them, and that these agricultural and forestry operations are permitted by law provided they conform with accepted standards and laws.

In 1994, in an opinion of the Tennessee State Attorney General, counties were determined to be prohibited from using zoning authority to regulate the clearcut method of harvest. The Attorney General based the opinion on the State’s Right to Practice Agriculture Law (1982), which defines the term “agriculture” to include forestry operations; the definition is the only reference to forestry in the law. Although an opinion is not binding, the findings of the Attorney General stymied the implementation of local ordinances in Tennessee.

Silvicultural operations may be similarly afforded protection from

nuisance claims in other States’ right-to-farm acts as well. The interpretation of forestry operations as a component of agricultural activities or farming in these laws may provide additional protection of landowners’ rights to practice forestry.

However, in contrast to the Tennessee opinion, the Virginia Supreme Court issued a very narrow ruling regarding the State’s Right to Practice Forestry Law in April 2000 (Ann F Dail, et al. v. York County et al. Record No. 991591). In this case, the landowner appealed local restrictions on clearcutting and buffer requirements in excess of State BMP standards and required approval of a forest management plan by York County. The Court ruled that: (1) approval of a management plan does not constitute a permit, which is prohibited by the State Right to Practice Forestry law; (2) State BMPs are voluntary and, therefore, counties could enact more stringent buffer requirements; and (3) local authorities could restrict the method of harvest, provided all harvesting was not precluded. The impact of this ruling in Virginia could be far reaching; some 48 local governments have ordinances, permit fees, or restrictive requirements for forestry. In addition, forest land in Virginia is being converted to other uses at a rate of about 50,000 acres per year (Forest Council of Virginia 1996).

**Right-to-practice-prescribed-burning acts**—In the past 10 years, nine Southern States have enacted legislation to authorize and promote the continued use of prescribed burning of forest land by limiting burners’ civil liability for damages or injuries resulting from fire or resultant smoke and providing protection from spurious nuisance suits. These laws define prescribed burning as a legal and socially beneficial activity that shall not be deemed a nuisance. These statutes were enacted in 1990 in Florida, in 1992 in Georgia and Mississippi, in 1993 in Louisiana, in 1994 in South Carolina, in 1995 in Alabama, in 1997 in Virginia, and in 1999 in North Carolina and Texas.

Three conditions must be met before burners can be afforded the liability protection established in these acts. The first condition is the presence of at least one certified burner at all times until the burn is completed. In Georgia, the burn manager does not have to

be certified but must have burning experience. The second condition is the development of a written fire prescription or plan. The third is adherence to the rules and notification and permit procedures established under other laws.

In the past, burners have been shielded from liability under these laws, provided any damages or injuries were not a result of negligence. However, to further encourage burning in their States, the legislatures of Georgia and Florida have recently amended their laws to further shield burners from liability. Under these amendments, burners are liable only for damages or injuries resulting from gross negligence, a lesser degree of responsibility. In legal proceedings, the expanded protection could be crucial to burners. In Mississippi, an effort is underway to similarly broaden protection.

The Texas law is the only prescribed burning protection act that addresses insurance coverage for burners; only burners with \$1 million of liability coverage are afforded protection.

## Implications

Private property rights protection and right-to-farm and right-to-practice-forestry acts are an attempt to provide an equitable balance between the goals of society and the constitutional rights of private landowners to manage their land for personal benefit. These laws provide safeguards for protecting the public from practices conducted in a negligent manner while protecting landowners' property rights and encouraging sustainable forest management practices. Since most of this legislation has been passed in recent years, the impact on the operational environment for forestry is unclear.

As previously discussed, the findings of the Tennessee Attorney General in his opinion and the decision of the Supreme Court in Virginia regarding the power of local governments to regulate forest operations are in sharp contrast. Legal interpretations through the courts in each State will likely play a pivotal role in determining the impact of these laws.

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The southern forest resource assessment provides a comprehensive analysis of the history, status, and likely future of forests in the Southern United States. Twenty-three chapters address questions regarding social/economic systems, terrestrial ecosystems, water and aquatic ecosystems, forest health, and timber management; 2 additional chapters provide a background on history and fire. Each chapter surveys pertinent literature and data, assesses conditions, identifies research needs, and examines the implications for southern forests and the benefits that they provide.

**Keywords:** Conservation, forest sustainability, integrated assessment.

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