

CHAPTER 11.

Effect of Taxes and Financial Incentives on Family-Owned Forest Land

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KEY FINDINGS

- Federal and State taxes reduce the pre-tax value of family-owned forest land in the South by amounts ranging from little more than one-quarter to nearly half, with the greatest share of the reduction attributable to the Federal income tax and State property taxes.
- Most family forest owners are aware of some general business provisions of the Federal income tax, but half or fewer are aware of provisions specifically for forests and other working lands, such as the reforestation incentives and special treatment of qualifying cost-share payments.
- For family forest owners who do not grow timber for sale, State property taxes are of greater concern than any other tax, because they occur annually and are perceived as being high in relation to the value of the land.
- State-to-State variability in property taxes produces relative disadvantages to holding forest land and likely contributes to conversion of family-owned forest land in States that tax property at higher rates.
- Owners of family forests and other working lands are many times more likely than U.S. taxpayers in general to incur the Federal estate tax. Of the forest estates that owe estate tax, 40 percent sell timber or land to pay part or all of the tax, with roughly one-quarter of the acres sold converted to other uses.
- Financial incentive programs are generally successful in promoting sustainable practices among the family forest owners who participate in them, but funding levels and owner confusion about the requirements to apply for and participate in the programs limit the number of acres that are treated.

INTRODUCTION

Taxes on forest-related income, forest land, and forest products can encourage or inhibit private investment in forest resource management. In financial analyses, taxes rank with harvest returns and rotation length as a key determinant of the viability of forest management investments. As such, they constitute an important part of the operating environment for owners and managers of private forest land, and a critical factor in determining the level of stewardship practiced and the types of products and services provided. For units of government, taxes represent a significant source of funding and a powerful tool for pursuing societal goals. These characteristics combine to make effective integration of tax considerations both problematic and essential for forest owners, managers, investors, elected officials, and natural resource policymakers.

Of the 751 million acres of forest land in the United States, 35 percent (264 million acres) is owned by families—defined to include individuals, married couples, estates, trusts, and other unincorporated groups of individuals—and 18 percent (138 million acres) is owned by forest industry (Butler 2009). Private forest ownership is even more prevalent in the South, with 59 percent of forest land (128 million acres) held by families (Butler and Leatherberry 2004) and 27 percent (57 million acres) held by forest industry (Smith and others 2009).

This chapter addresses the effect of Federal, State, and local taxes on family-owned forests in the South. The effect of taxes on land owned by forest industry and the comparative advantages of different business organizational models are discussed in chapter 6.

The Federal Income Tax

The Federal income tax was established in 1913, under the 16th amendment to the U.S. Constitution. The earliest provisions that recognize the unique character of forest management date to 1918 (Dana and Fairfax 1980). The Federal income tax has the greatest potential of any tax to affect family forest owners, because it applies to income from all sources and the rates are high compared with other taxes. The economic effect

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of an income tax is to increase the variable cost of owning or managing forests. It therefore influences how intensively owners manage their holdings (Gregory 1972).

Since its institution, a number of provisions have been added to the Federal income tax that help family forest owners keep their land in forest and manage it sustainably. Some are general business provisions, while others are specifically for owners of forests and other working lands. Among the most important of the general provisions are (Greene and others 2013):

Long-term capital gain treatment of qualifying income—

Income from the sale of timber held for more than 12 months generally qualifies as a “long-term capital gain.” Long-term capital gains currently are taxed to individuals at a maximum rate of 20 percent (compared with 39.6 percent for ordinary income) and a minimum rate of 0 percent (compared with 10 or 15 percent for ordinary income; CCH 2013). Capital gains enjoy other advantages over ordinary income: they are not subject to self-employment taxes, at rates up to 15.3 percent, and they do not count toward the amount of income retired persons may earn before their Social Security benefits are reduced. Further, large losses in capital investments may only be applied against \$3,000 of ordinary income per year, but against any amount of capital gains.

Depletion deduction—Owners who sell or dispose of timber or such other natural resources as oil or minerals can recover their investment in the resource sold through a depletion deduction. The deduction is equal to the owner’s “basis” (a measure of investment in a capital asset) in each unit of the resource sold. This deduction is available to all owners who hold their forest for the production of income, whether as an investment or part of a trade or business.

Annual deduction of management costs—Owners may deduct the cost of forest management practices annually, as they occur. This deduction does not apply to reforestation, which has its own provisions (see below), but does apply to fees paid to a consulting forester or the cost of brush control, thinning, mid-rotation fertilization, timber stand improvement, control of insects and diseases, maintenance of roads and firebreaks, and similar practices, as long as they are ordinary and necessary for timber management and related to the income potential of the forest. This deduction also is available to all owners who hold their forest for the production of income. Investors, however, must take it as a “miscellaneous itemized deduction,” which combined with other such expenses is deductible only to the extent it exceeds 2 percent of their “adjusted gross income.”

Depreciation deductions—Owners can recover investments in qualifying income-producing property—including machinery, buildings, equipment, fences, culverts, and

bridges—as it loses value over time due to wear and tear, age, deterioration, or obsolescence. Depreciation deductions are available to all owners who hold their forests to produce income, although investors again must report them as miscellaneous itemized deductions subject to the 2 percent of adjusted gross income floor. Under current law, owners also may elect to take a first-year “bonus” depreciation deduction equal to 100 percent of the cost of new property “placed in service” (available and ready for use) between Sep. 9, 2009, and the end of 2011. The bonus depreciation deduction for new property placed in service before Sep. 9, 2009, or during 2012 or 2013, is 50 percent of its cost (CCH 2010, CCH 2013).

The section 179 deduction—Owners who hold their forest as part of a trade or business may elect to deduct part or all of the cost of certain types of property instead of capitalizing and depreciating it. This deduction is not available to investors, trusts, or estates. Qualifying property includes tangible personal property, but not improvements to land, buildings, or components of buildings. For 2010 through the end of 2013, the maximum amount of the deduction is \$500,000, reduced by \$1 for each dollar over \$2 million of section 179 property placed in service during the year (CCH 2010, CCH 2013).

Loss deductions—All owners who hold their forest land to produce income may recover the amount of their basis in timber or other property lost in a casualty event, theft, or condemnation. Owners who hold their forest as part of a trade or business also may recover their basis in property lost in a noncasualty event. (Owners who hold their forest for personal use, without a profit motive, can recover their basis in timber or other property lost in a casualty event, theft, or condemnation only to the extent that all losses in a year, minus \$100 per event, exceed 10 percent of their adjusted gross income.) If income-producing property is damaged rather than destroyed, the owner must make an effort to salvage it. Since owners’ basis in their timber typically is lower than its actual value, a salvage harvest of damaged timber often results in a taxable gain rather than a loss. But the owner can postpone recognition of the gain, and the tax on it, by using the gain to restore or replace the damaged property within the allowable replacement period, usually 2 years.

The provisions for owners of forests and other working lands include (Greene and others 2013):

Reforestation incentives—All owners who hold forest land for the production of income may deduct outright qualifying reforestation costs up to \$10,000 per year and “amortize” (write off over a set period) any additional amount over 8 tax years.

Special treatment of qualifying cost-share payments—Landowners may elect to exclude a calculated portion of

qualifying public cost-share payments from their gross income. Currently, cost-share payments from nine Federal programs—the Conservation Reserve Program, Emergency Forest Restoration Program, Emergency Watershed Protection Program, Environmental Quality Incentives Program, Forest Health Protection Program, Longleaf Pine Initiative, State Acres for Wildlife Enhancement, Wetlands Reserve Program, and Wildlife Habitat Incentives Program (table 11.1)—as well as a number of State programs are approved for exclusion. Because of the way the excludable portion is calculated, it is likely that the full amount of a cost-share payment will be excludable if the affected area has been harvested in the past 3 years, but only a fraction will be excludable if it has not.

Enhanced charitable deduction for a qualifying donation of interest in land—Landowners may take a charitable contribution deduction for donation of an interest in land. To qualify for a deduction, the donation must consist of a qualified real property interest, made to a government agency or qualified publicly-supported organization, for one of four conservation purposes (see “Incentives for Conservation Easements”). Under current law, the annual limit for this deduction is 100 percent of adjusted gross income for owners who earn more than half of their gross income from farming (defined to include forest land) or ranching, and 50 percent of adjusted gross income for other owners (Land Trust Alliance Web site 2011).

The tax rates and deduction limits for four of the above provisions are temporary, and were originally put in place by laws enacted between 2001 and 2008, collectively called the Bush tax cuts:

- The reduced tax rates for long-term capital gains were put in place by the Jobs and Growth Tax Relief Reconciliation Act of 2003 (P.L. 108-27), and were scheduled to sunset at the end of 2010.
- Bonus depreciation, previously available only to taxpayers affected by a Presidentially-declared disaster, was made generally available by the Economic Stimulus Act of 2008 (P.L. 110-185) and extended through the end of 2009 (through the end of 2010 for certain property with a long production period) by the American Recovery and Reinvestment Act of 2009 (P.L. 111-5).
- The increased section 179 deduction was put in place by The Economic Stimulus Act of 2008 (P.L. 110-185), then increased further and extended through the end of 2011 by the Hiring Incentives to Restore Employment and Small Business Jobs Acts of 2010 (P.L. 111-147 and 111-240, respectively).
- The enhanced charitable deduction for a qualifying donation of interest in land was put in place by the Pension Preservation Act of 2006 (P.L. 109-280) and extended through the end of 2009 by the 2008 Farm Bill (P.L. 110-246).

As a result, the provisions either expired at the end of 2009 or were set to expire at the end of 2010 or 2011. The Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act (2010 Tax Relief Act, P.L. 111-312), signed into law Dec. 17, 2010, reinstated all four provisions and extended them through the end of 2012 (CCH 2010). The American Taxpayer Relief Act of 2012 (P.L. 112-249), signed into law Jan. 2, 2013, replaced the first three temporary provisions with permanent ones and extended the enhanced charitable deduction for donation of an interest in land through the end of 2013, preventing all four provisions from returning to pre-2002 law (CCH 2013).

State Income Taxes

All but three of the Southern States tax income to individuals. The exceptions are Florida and Texas, which do not levy an individual income tax, and Tennessee, which taxes only dividend and interest income (table 11.2). Most States that tax income to individuals use Federal adjusted gross income or Federal taxable income as the starting point for calculating the State tax (Cushing 2006); however, they differ widely in how they set tax rate schedules, incorporate personal exemptions and itemized deductions, and treat retirement income and capital gains (Butler and others 2010). Because of the close link between Federal and State income taxes, most Federal tax provisions that benefit family forest owners flow through to the State income tax (Siegel and others 1996).

State income tax rate schedules generally ramp up quickly. In all Southern States except Kentucky and Georgia, the threshold for the top tax rate is below the ceiling for the 15-percent Federal tax bracket, the second-lowest bracket (Bankrate.com 2011). But the top marginal State tax rates range only from 5 percent to 8 percent, well below the top Federal rates for either capital gains (20 percent) or ordinary income (39.6 percent). For this reason, although State income taxes have the same economic effect as the Federal tax, their qualitative impact is smaller.

State Property and Harvest Taxes

State and local governments have levied taxes on land and other forms of property since the colonial period, with provisions which recognize that taxing land and timber together encourages deforestation dating to the 1860s (Dana and Fairfax 1980). Property taxes have the greatest impact of any State tax on family forest owners, because they occur annually and are based on the value of the land. The economic effect of a property tax is to increase the fixed cost of owning land. It therefore influences forest owners' decisions about whether to continue holding their land (Gregory 1972).

All of the Southern States assess or tax family-owned forest land in its current use rather than its highest and best use

Table 11.1—Federal incentive programs of interest to family forest owners

Biomass Crop Assistance Program (BCAP)—Authorized in 2008 to provide financial incentives for the collection, harvest, storage, and transportation of biomass material by qualified conversion facilities and the establishment and production of biomass crops. Payments to landowners under the biomass material provisions were suspended early in 2010 pending issuance of final rules and the biomass crop provisions are to be implemented in the future. All program payments must be included in adjusted gross income. BCAP is administered by the Farm Service Agency.^{a,b}

Conservation Reserve Program (CRP)—Established in 1985 to help safeguard environmentally sensitive agricultural land by converting it to a long-term, resource-conserving cover. Participants receive annual rental payments under a 10 to 15 year contract. They also may receive incentive payments, and cost-share payments to cover up to 50 percent of the cost of establishing a suitable long-term cover. A calculated portion of cost-share payments may be excluded from adjusted gross income, but all other program payments must be included. CRP is administered by the Farm Service Agency.^c

Conservation Stewardship Program (CSP)—Authorized in 2008 to assist owners of agricultural and forest land to adopt and maintain practices to conserve soil, water, air, and related resources. Participating owners receive annual payments under a 5-year contract to install and maintain new conservation practices; they also may receive supplemental payments to adopt a resource-conserving crop rotation. All program payments must be included in adjusted gross income. CSP is administered by the Natural Resources Conservation Service.^d

Emergency Forest Restoration Program (EFRP)—Created in 2008 as a new part of the Emergency Conservation Program. EFRP provides participating forest owners a cost-share of up to 75 percent of the cost of restoring land damaged by a natural disaster, such as a flood, hurricane, tornado, or wildfire. A calculated portion of EFRP cost-share payments may be excluded from adjusted gross income. EFRP is administered by the Farm Service Agency.^e

Emergency Watershed Protection Program (EWP)—Established to assist in implementing emergency recovery measures from natural disasters that impair or damage watersheds. Affected landowners may receive technical assistance and a cost-share of up to 75 percent (90 percent in limited resource areas) of the cost of clearing or restoring the damage; the administering agency also may elect to purchase perpetual floodplain easements from willing owners. A calculated portion of EWP cost-share payments have been excludable from adjusted gross income since 1978. EWP is administered by the Farm Service Agency.^d

Environmental Quality Incentives Program (EQIP)—Established in 1996 to help farm, ranch, and forest-landowners address management practices that pose a significant threat to soil or water resources. Participating landowners receive technical assistance, incentive payments, and cost-share payments for 1 to 10 years that cover up to 75 percent (90 percent for new, limited resource, or socially disadvantaged owners) of the cost of implementing conservation practices. A calculated portion of EQIP cost-share payments may be excluded from adjusted gross income. EQIP is administered by the Farm Service Agency.^d

Forest Land Enhancement Program (FLEP)—Established in 2002, FLEP combined aspects of two earlier programs. It promoted sustainable management of family forest land by providing technical, educational, and cost-share assistance to owners. A written forest management plan was required to participate. A calculated portion of FLEP cost-share payments could be excluded from adjusted gross income. Administered by the U.S. Forest Service in cooperation with State forestry agencies, the program was not reauthorized in the 2008 Farm Bill.

Forest Legacy Program (FLP)—Created in 1990 to protect environmentally important private forest land threatened with conversion to non-forest uses. FLP is not a cost-share program. It operates primarily through the purchase of permanent conservation easements. Up to 75 percent of the total cost of protecting forest land may be Federally funded. FLP is administered by the Forest Service in partnership with the individual States.^f

Forest Stewardship Program (FSP)—Established in 1990 to encourage and enable active long-term management of family-owned forest land and increase the economic and environmental benefits it provides. FSP is not a cost-share program. State forestry agency partners use the program to promote forest owner adoption of stewardship practices, for example, by offering a State Forest Stewards program or providing technical assistance to develop Forest Stewardship plans. FSP is administered by the U.S. Forest Service in partnership with the individual States.^g

Healthy Forest Reserve Program (HFRP)—Authorized in 2003 to restore and enhance forest ecosystems to promote the recovery of at-risk species, improve biodiversity, and enhance carbon sequestration. Participating owners receive assistance to develop a Forest Stewardship Plan, then may elect either a 10-year agreement, which pays 50 percent of the cost of the conservation practices, or a permanent easement, which pays the easement value of the land plus 100 percent of the cost of the practices. All payments must be included in adjusted gross income. HFRP is administered by the Natural Resources Conservation Service.^d

Landowner Incentive Program (LIP)—Established in 2003 to help private landowners protect and restore habitat for at-risk plant and animal species. LIP provides funding for States to offer technical assistance and grants to participating landowners to develop and implement habitat management plans. All LIP payments must be included in adjusted gross income. LIP is administered by the U.S. Fish and Wildlife Service in cooperation with the individual States. To participate, States must provide a minimum 25 percent match for Federal funding.^h

(Continued)

Table 11.1—(continued) Federal incentive programs of interest to family forest owners

Longleaf Pine Initiative (LPI)—Initiated in 2006 as a conservation practice under CRP, with the goal of restoring up to 250,000 acres of longleaf pine forest in nine Southern States. Participating landowners receive annual rental payments under a 10 to 15 year contract. They also may receive incentive payments, and cost-share payments to cover up to 50 percent of the cost to plant, protect, and manage longleaf pine stands on suitable sites. A calculated portion of LPI cost-share payments may be excluded from adjusted gross income, but all other payments must be included. LPI is administered by the Farm Service Agency.ⁱ

Partners for Fish and Wildlife (PFW)—Established in 1987 to help restore wetlands and other important fish and wildlife habitats on private lands. Participating owners receive technical assistance and a cost-share of up to 100 percent of the cost of implementing conservation practices. Funds for cost-share payments come from Federal, State, and local units of government, soil and water conservation districts, and private conservation organizations. All program payments must be included in adjusted gross income. PFW is administered by the U.S. Fish and Wildlife Service in cooperation with the individual States.^j

Red-Cockaded Woodpecker (RCW) Recovery Program—Created under the Endangered Species Act of 1973 to help public and private landowners in 11 Southern States conserve red-cockaded woodpeckers and the habitat upon which they depend. Program specifics for private landowners vary by State. In most States, participants receive technical assistance in habitat improvement, but in some States cost-share funding also is available. Any program payments must be included in adjusted gross income. RCW is administered by the Fish and Wildlife Service in cooperation with the individual States.^k

Southern Pine Beetle Prevention Program (SPBP)—Established in 2003 to help public and private forest-landowners in the Southern States reduce the susceptibility of their holdings, restore affected areas, and fund research. Program specifics vary by State, but private landowners can receive technical assistance and cost-share payments to cover part of the cost of such treatments as thinning and hazard fuel reduction. A calculated portion of SPBP cost-share payments may be excluded from adjusted gross income. SPBP is administered by the U.S. Forest Service in cooperation with the individual States.^l

State Acres for Wildlife Enhancement (SAFE)—Initiated in 2008 as a conservation practice under CRP to protect and restore habitat for high-priority wildlife species. Participating landowners receive annual rental payments under a 10 to 15 year contract. They also may receive incentive payments, and cost-share payments to cover up to 50 percent of the cost to establish habitat-enhancing natural covers on suitable land. A calculated portion of program cost-share payments may be excluded from adjusted gross income, but all other payments must be included. SAFE is administered by the Farm Service Agency.^m

Wetlands Reserve Program (WRP)—Established in 1985 to encourage conservation of wetlands on privately owned lands. Participating owners elect one of three program options: a permanent easement, which pays 100 percent of the easement value of the land and the cost of wetland restoration practices; a 30-year easement, which pays 75 percent of the easement value and the cost of restoration practices; or a cost-share option, which pays 75 percent of the cost of restoration practices. A calculated portion of WRP cost-share payments may be excluded from adjusted gross income, but all other payments must be included. WRP is administered by the Farm Service Agency.^d

Wildlife Habitat Incentives Program (WHIP)—Established in 1996 to encourage development and improvement of wildlife habitat on private land. Participating landowners receive technical assistance, incentive payments, and cost-share payments under an agreement lasting 1 to 10 years that cover up to 75 percent (90 percent for new, limited resource, socially disadvantaged owners, or Indian tribes) of the cost of implementing conservation practices. A calculated portion of program cost-share payments may be excluded from adjusted gross income. WHIP is administered by the Farm Service Agency.^d

^aFSA BCAP Fact Sheet: http://www.fsa.usda.gov/Internet/FSA_File/bcap09.pdf.

^bBiomass Magazine: http://biomassmagazine.com/article.jsp?article_id=3793.

^cFSA CRP Fact Sheet: http://www.fsa.usda.gov/Internet/FSA_File/crpcont06.pdf.

^dNRCS Conservation Programs Web page: <http://www.nrcs.usda.gov/PROGRAMS/>.

^eFSA EFRP Fact Sheet: http://www.fsa.usda.gov/Internet/FSA_File/2008fbemergencyforestsummary.pdf.

^fUSFS FLP Web page: <http://www.fs.fed.us/spf/coop/programs/loa/flp.shtml>.

^gUSFS FSP Web page: <http://www.fs.fed.us/spf/coop/programs/loa/fsp.shtml>.

^hUSFWS LIP Web page: <http://wsfrprograms.fws.gov/Subpages/GrantPrograms/LIP/LIP.htm>.

ⁱFSA LPI Fact Sheet: http://www.fsa.usda.gov/Internet/FSA_File/crplongleaf06.pdf.

^jUSFWS PFW Southeast Region Web page: <http://www.fws.gov/southeast/es/partners/>.

^kUSFWS Red-Cockaded Woodpecker Recovery Web page: <http://www.fws.gov/rcwrecovery/>.

^lUSFS SPBP Web page: http://www.fs.fed.us/r8/foresthealth/programs/spb_prevention/spb_prevention.shtml.

^mFSA SAFE Fact Sheet: http://www.fsa.usda.gov/Internet/FSA_File/safe08.pdf.

Table 11.2—State income tax provisions applicable to family forest owners in the South, 2010

State	State-level income tax	Preferential treatment of long-term capital gains	Deduction or credit for conservation
Alabama	Yes	–	–
Arkansas	Yes	Yes	Credit
Florida	–	–	–
Georgia	Yes	–	Credit
Kentucky	Yes	–	— ^a
Louisiana	Yes	–	–
Mississippi	Yes	–	Deduction
North Carolina	Yes	–	Credit
Oklahoma	Yes	–	–
South Carolina	Yes	Yes	Credit ^b
Tennessee	–	–	–
Texas	–	–	–
Virginia	Yes	–	Credit ^b

– = indicates no applicable provision.

^aSome family forest owners may qualify for an income tax deduction Kentucky provides for donation of a conservation easement on farmland or open space land for agricultural use.

^bThe credit is transferrable; that is, any unused portion may be sold to others.

Sources: Butler and others 2010, Private Landowner Network Web site 2011.

(table 11.3). The States vary substantially, however, in the approaches they use and the methods by which they apply them. Some States determine the current use value of land using soil type and productivity, which involves using a specified capitalization rate to discount prospective future returns from the land back to the present; others use fair market value in the land's current use, which emphasizes recent sales of comparable properties. The States also vary in the goals for their preferential property tax programs, and the requirements to participate in or withdraw from the program (table 11.3).

Three States—Alabama, North Carolina, and Tennessee—expressly exempt standing timber from property taxes (National Timber Tax Website 2011a). Another three states restrict deduction of property taxes on State income tax returns: Louisiana does not permit deduction of property taxes, Virginia does not allow individual taxpayers to deduct property taxes, and Tennessee does not allow corporations to deduct property taxes (Cushing 2006).

Property taxes are set and levied at the county level, making them the most diverse of the taxes that family forest owners

face and the most difficult to track. Some county officials in the Southern States have expressed interest in developing property tax provisions that discourage urban sprawl and encourage provision of ecosystem services from rural land, but little is known about how many such provisions have been put in place or the level of their success.

Seven Southern States also impose a severance tax on timber when it is harvested. Three of the States—Georgia, Louisiana, and Mississippi—levy the tax on forest owners, while the other four—Alabama, Arkansas, North Carolina, and Virginia—levy it on timber processors. All seven States use at least part of their severance tax receipts to support a forestry incentive program or another forest-related purpose (Cushing 2006, National Timber Tax Website 2011a). The economic effect of a severance tax mirrors that of an income tax, but at the rates used its impact is minor, having little effect on an owner's management decisions.

The Federal Estate and Gift Taxes

The Federal government has taxed transfers of estates since 1916 and lifetime gifts since 1932 (Siegel and others 2009). The U.S. Congress periodically redefines what constitutes a taxable transfer of wealth; the most recent changes came with passage of the Economic Growth and Tax Relief Reconciliation Act of 2001 (EGTRRA, P.L. 107-16) and the Tax Relief, Unemployment Insurance Reauthorization, and Job Creation Act of 2010 (2010 Tax Relief Act, P.L. 111-312). The economic effect of estate and gift taxes is difficult to quantify because they occur at irregular intervals. They do, however, increase risk and put a premium on keeping planning options open.

The Federal tax code includes numerous provisions that reduce or eliminate the impact of the Federal estate and gift taxes. These provisions help family forest owners keep their holdings intact through a transfer from one generation to another and reduce the likelihood that heirs will need to liquidate timber or fragment the holding. As with the Federal income tax, some are general provisions available to all taxpayers, while others are specifically for owners of forests and other working lands. Among the most important general provisions are (Siegel and others 2009):

Gifting—Individuals may make lifetime gifts up to the annual exclusion amount, currently \$14,000 (Internal Revenue Service 2012), to as many different recipients each year as they wish without using the effective exemption amount for gifts (see below) or incurring a gift tax. Married couples may make “split gifts” of double the annual exclusion amount. In addition, there is an unlimited exclusion for gifts to qualifying charitable organizations and qualifying gift payments of educational or medical costs. There is no “step-up” in basis (see below) for gifts, but gifting enables

Table 11.3—Property tax provisions applicable to family-owned forest land in the South, by State, 2010

State	Property tax type of program ^a	Primary goals ^b	Minimum acreage to enroll ^c	Requires a management plan ^c	Enrollment period in years ^c	Withdrawal penalty
Alabama	PT	AG	5	Varies	Varies	No
Arkansas	PA	–	–	–	–	–
Florida	PT	AG/OS	Varies	Varies	Continuous	No
Georgia	PT	OS	Varies	No	10	Yes
Kentucky	PA	–	–	–	–	–
Louisiana	PA	–	–	–	–	–
Mississippi	PA	–	–	–	–	–
North Carolina	PT	HAB	20	Yes	Continuous	Yes
Oklahoma	PA	–	–	–	–	–
South Carolina	PT	AG/FOR	5	Varies	Continuous	Yes
Tennessee	PT	OS	15	Yes	Continuous	Yes
Texas	PT	FOR	Varies	Varies	Continuous	Yes
Virginia	PT	FOR/OS	20	No	Continuous	Yes

– = indicates no applicable provision.

^aPA=Preferential assessment; PT=Preferential tax.

^bAG=Sustain agriculture; FOR=Sustain forestry; HAB=Habitat conservation; OS=Maintain open space.

^cVaries=Varies from county to county.

Source: Butler and others 2010.

owners to remove from their estate assets that are rapidly appreciating in value.

“Step-up” in basis for bequests—A recipient’s basis in an asset received through a bequest generally is its fair market value on the valuation date, either the date of the decedent’s death or the earlier of 6 months after death or the date any estate asset is sold. This usually results in a “step-up” in the basis compared with what it was in the decedent’s hands. EGTRRA repealed the Federal estate tax for 2010, and placed limits on the value of estate assets that could receive a step-up in basis. The 2010 Tax Relief Act extended and enhanced the Federal estate tax provisions for decedents dying in 2011 or 2012 (see below), with all estate assets eligible for a step-up in basis. For decedents dying in 2010, the executor could elect to use either the provisions of EGTRRA or the 2010 Tax Relief Act (CCH 2010, CCH 2013).

The marital deduction—The Federal tax code allows an unlimited deduction for the value of all property passed from one spouse to the other through a lifetime gift or bequest. This provision recognizes the role of both spouses in building up a family’s assets. It does not eliminate or reduce the estate tax, however, but merely postpones it to the time of the surviving spouse’s death. This can be a considerable disadvantage if the assets—land or standing timber, for

example—appreciate greatly in value during the time between the deaths.

Effective exemption amount for gifts—This is a credit against the tentative gift tax due, which shields part or all of gifts over the annual exclusion amount from tax. The 2010 Tax Relief Act extended the \$1 million exemption amount for gifts made in 2010; for gifts made in 2011 or 2012, the Act established a \$5 million unified exemption amount for gifts and estates (CCH 2010). Under a unified exemption, an owner can transfer assets up to the exemption amount to recipients other than their spouse, either as lifetime gifts or bequests, without incurring a tax.

Effective exemption amount for estates—This is a credit against the tentative estate tax due, which shields part or all of an owner’s estate from tax. As just described, the 2010 Tax Relief Act combined the effective exemption amounts for gifts and estates into a \$5 million unified exemption amount. It applied to the estates of decedents dying in 2011, and where the executor elected to use the provisions of the 2010 Tax Relief Act rather than EGTRRA, to the estates of decedents dying in 2010 (CCH 2010). The American Tax Relief Act of 2012 indexed the unified exemption amount for inflation after Dec. 31, 2011, so that it increased to \$5.12 million for decedents dying in 2012 and \$5.25 million for decedents dying in 2013 (CCH 2013). The 2010 Tax Relief

Act further made the unified exemption amount “portable” between spouses. This means that in families led by a married couple, any part of the unified exemption amount not used by the estate of the first spouse to die may be added to the unified exemption amount for the estate of the second spouse. Portability effectively doubles the unified exemption amount, allowing family assets of \$10 million or more in value to pass untaxed from one generation to another (CCH 2010, CCH 2013).

Deferral and extension of estate tax—If an interest in a closely-held business accounts for more than 35 percent of a decedent’s estate, the Federal estate tax on the business portion of the estate may be deferred for 4 years after the estate tax return is filed, with only interest payments due, then paid in up to 10 annual installments. Although this provision does not reduce the amount of estate tax due, it can reduce the need to disrupt an established forest management plan in order to pay tax.

The provisions for owners of forests and other working lands include (Siegel and others 2009):

Special use valuation—Under specific conditions, an executor may elect to reduce the taxable value of an estate by valuing assets used for farming (defined to include forest land) or a trade or business according to their value in actual use rather than their fair market value. The maximum amount of the reduction has been indexed for inflation since 1998 and reached \$1.07 million in 2013 (Internal Revenue Service 2012). There are, however, stringent requirements to qualify for and remain under the provision, including a restriction against harvesting special use-valued timber for 10 years.

Exclusion for land in a qualified conservation easement—An executor may elect to exclude from the taxable value of an estate up to 40 percent of the value of land subject to a qualified conservation easement (see below). The benefit is capped at \$500,000 and the 40 percent maximum exclusion is reduced if the value of the easement is less than 30 percent of the value of the land. As with the charitable deduction for donation of an interest in land, the easement must consist of a qualified real property interest, made to a government agency or qualified publicly-supported organization, for one of four conservation purposes (see “Incentives for Conservation Easements”). This provision offers many of the benefits of special use valuation with fewer restrictions. There is, however, no step-up in basis for the excluded land.

Estate planning professionals have developed additional strategies, not specifically provided in the Federal tax code, to facilitate intergenerational transfers of family assets. These include (Siegel and others 2009):

Forms of business—Two forms of business organization, the Family Limited Partnership (FLP) and Limited Liability Company (LLC), are popular among family forest owners as means to transfer ownership of a forest enterprise to other family members and engage them in its management. The FLP is a type of limited partnership. In an FLP, the general partners (typically the parents) retain management rights but can transfer ownership to the limited partners (typically the children) through gifts, which can be discounted for minority interest and/or lack of control. The LLC is a hybrid between a partnership and a corporation. Like a partnership, an LLC is a pass-through entity for tax purposes, but like a corporation, individual members’ liability is limited to the amount of their investment in the business. Forest owners should be aware that these forms of business have two drawbacks: first, there is no step-up in basis for land or timber transferred to others through the business, and second, both FLPs and LLCs are under scrutiny by the Internal Revenue Service as potential tax avoidance devices that lack economic substance. To help avoid difficulties, owners should ensure that their FLP or LLC has a clear business purpose, is held completely separate from personal assets, and is set up and run entirely as a business.

Trusts—A trust is an arrangement in which a person or institution called the trustee holds legal title to designated property and manages it for the benefit of one or more beneficiaries. A trust is a separate legal entity from its donor. A “lifetime trust” is created during the donor’s life and may be revocable or irrevocable. Only an irrevocable lifetime trust removes the trust property from the donor’s estate. A “testamentary trust” is created at the donor’s death, according to instructions in his or her will. The full value of the trust property is included in the donor’s estate, but the trust then can provide income to successive generations of beneficiaries while shielding the trust property from further estate tax. Trusts may be used for a variety of purposes. For example, an “irrevocable life insurance trust” removes a life insurance policy from the donor’s ownership and prevents its full face value from entering his or her estate at death. A “qualified terminal interest property trust” is a type of marital deduction trust that may be useful with “blended” families; it provides for the needs of the surviving spouse while controlling disposition of the trust property remaining after his or her death.

Conservation easements—This is the donation or sale of one or more attributes of land ownership, for example, the right to subdivide the land. The easement removes the attribute(s) of ownership from the land. This typically lowers the value of the land and reduces the tax consequences of transferring it to heirs; however, the easement passes with the land and is binding on future owners. To qualify for either of the tax provisions discussed above, an easement must involve the transfer in perpetuity, by means of an outright

gift or “bargain sale” (a sale at a price below the property’s fair market value), of a qualified real property interest, to a government agency or qualified publicly-supported organization, for one of four conservation purposes (see “Incentives for Conservation Easements”).

The Bush tax cuts temporarily set separate effective exemption amounts for gifts and estates. Between 2001 and 2009 they increased the effective exemption amounts for estates from \$1 million to \$3.5 million and decreased the top rate for gift and estate taxes from 55 percent to 45 percent. For 2010, they repealed the Federal estate tax, placing limits on the value of estate assets that could receive a step-up in basis and setting the top gift tax rate at 35 percent, equal to the top Federal income tax rate. These provisions were set to sunset at the end of 2010 (Siegel and others 2009). But as noted above, the 2010 Tax Relief Act extended and enhanced the estate tax, with all estate assets eligible for a step-up in basis. As well, it reunified the effective exemption amounts for gifts and estates, with the maximum exemption increased to \$5 million and portability between married spouses, and reduced the top estate tax rate to 35 percent (CCH 2013). The American Taxpayer Relief Act of 2012 further enhanced the Federal estate and gift tax provisions and made them permanent, preventing them from returning to pre-2002 law after the end of 2012 (CCH 2013).

State Estate, Inheritance, and Gift Taxes

The States again vary widely in how they tax intergenerational transfers of assets. Some States tax the right to transfer property through an estate tax, while others tax the right of heirs to receive property through an inheritance tax. A handful of States tax gifts over specified annual or lifetime exemption amounts. As well, State transfer taxes differ in their filing requirements, exclusion amounts, and rate schedules; whether they are stand-alone taxes or tied to the Federal tax code; whether they are “flat-rate” (one tax rate applies regardless of the amount transferred), “graduated” (the tax rate increases in steps with the amount transferred) or “layered” (the tax rate varies with the heir’s relation to the decedent); and whether certain closely-related heirs are exempt (Siegel and others 2009).

Before the enactment of EGTRRA, every State had on its books at least one tax that was a “pick-up” or “piggy-back” tax designed to use the full available amount of the Federal credit for State transfer taxes. This approach apportioned part of what would have been the Federal estate or gift tax to the State, with no additional tax burden on the estate or the beneficiaries. EGTRRA phased out the Federal credit for State transfer taxes between 2002 and 2005, replacing it with a deduction. This eliminated State transfer taxes that were tied to the Federal credit, throwing State tax law and tax planning into turmoil. Individual States responded very

differently to the change. Many “decoupled” their transfer taxes from current Federal law, tying them to the Federal tax code as it existed before EGTRRA. Others made no change, allowing their estate, inheritance, and gift taxes to phase out with the Federal credit. A few States took EGTRRA as an opportunity to repeal transfer taxes or to craft stand-alone taxes on transfers of assets (Siegel and others 2009).

Only five Southern States currently levy transfer taxes: Kentucky and Louisiana each have a stand-alone inheritance tax, North Carolina has a stand-alone gift tax and an estate tax that is decoupled from current law and tied to the Federal tax code as of the end of 2001, Oklahoma has a stand-alone estate tax, and Tennessee has stand-alone inheritance and gift taxes (table 11.4). Virginia repealed its estate tax effective during 2007.

Except for North Carolina and Virginia, however, all of the Southern States still have pick-up or piggy-back taxes on their books which will come back into effect if the Federal credit for State transfer taxes is reinstated (table 11.4). If that occurs, seven additional Southern States—Alabama, Arkansas, Florida, Georgia, Mississippi, South Carolina, and Texas—will have an estate tax; Kentucky and Louisiana will have an estate tax as well as an inheritance tax; Oklahoma will have a second estate tax; and Tennessee will have estate, inheritance, and gift taxes (Siegel and others 2009).

Incentives for Conservation Easements

Conservation easements are one of the most powerful tools available to family forest owners who wish to preserve the conservation value of their land over time. A conservation easement involves the donation or sale of one or more attributes of land ownership—the right to build additional structures on the land, for example, or develop it for commercial or industrial use—to a government agency or organization that shares the owner’s vision for the land. The easement removes those attributes of ownership from the land and helps ensure that it remains in forest (Greene and others 2013).

A conservation easement does not involve the donation or sale of an owner’s entire interest in the land. The owner can retain the right to live on the land, manage it for timber or other forest products, and use it for other benefits. The easement also can apply only to part of the property, with the owner retaining all attributes of ownership for the rest. The owner can pass the full remaining interest in the land to heirs or sell it to others, although the easement passes with the land and is binding on future owners (Greene and others 2013).

The terms for conservation easements are not standardized, but can be tailored to reflect the values of the owner and

Table 11.4—State estate, inheritance, and gift tax provisions applicable to family forest owners in the South

State	Currently has a State-level estate tax	Currently has a State-level inheritance tax	Currently has a State-level gift tax	Special use valuation for estate tax	Phased-out tax still on the books
Alabama	–	–	–	–	Estate tax
Arkansas	–	–	–	–	Estate tax
Florida	–	–	–	–	Estate tax
Georgia	–	–	–	–	Estate tax
Kentucky	–	Yes	–	–	Estate tax
Louisiana	–	Yes	–	–	Estate tax
Mississippi	–	–	–	–	Estate tax
North Carolina	Yes	–	Yes	No	No
Oklahoma	Yes	–	–	No	Estate tax
South Carolina	–	–	–	–	Estate tax
Tennessee	–	Yes	Yes	–	Estate tax
Texas	–	–	–	–	Estate tax
Virginia	–	–	–	–	No

– = indicates no applicable provision.

Sources: Butler and others 2010, Siegel and others 2009.

the receiving organization, as well as the characteristics of the land itself. For example, an easement on property that contains habitat for rare plant or wildlife species might prohibit any development, while an easement on working forest land might permit continued management for forest products and the construction of roads and improvements consistent with that use. The purchaser or recipient of the easement is responsible for ensuring the easement's terms are followed (Land Trust Alliance Web site 2011).

Federal provisions—Income from the sale of a conservation easement is taxable at the Federal level. The donation or bargain sale of an easement, however, can provide a charitable contribution deduction on the donor's income tax and a future estate tax deduction (Greene and others 2013). These deductions are discussed above, but generally require the transfer in perpetuity, by means of an outright gift or bargain sale, of a qualified real property interest, to a government agency or qualified publicly-supported organization, for one of four conservation purposes. The qualified real property interest may be the owner's entire interest (but not solely a mineral interest), a remainder interest, or a perpetual restriction on how the property may be used, as with a conservation easement. The four conservation purposes are: outdoor recreation by or education of the general public; protection of a relatively natural habitat for fish, wildlife, or plants; preservation of open space for scenic enjoyment by the general public or

pursuant to a clear conservation policy of the Federal, State, or local government; and conservation of an historically important land area or certified historic structure.

Four of the Federal incentive programs available to family forest owners involve conservation easements. The Forest Legacy Program funds up to 75 percent of the cost of placing forest land under an easement. Under the Healthy Forest Reserve and Wetlands Reserve Programs, owners may elect to receive payments for the easement value of their land as well as the cost of conservation practices they implement. Under the Emergency Watershed Protection Program, the administering agency may elect to address impairment or damage to watersheds caused by a natural disaster through the purchase of floodplain easements from willing owners (SRS Forest Economics and Policy Web site 2011). The provisions of these programs are summarized in table 11.1.

State provisions—Because of the close link between Federal and State income taxes, most Federal tax provisions that benefit family forest owners flow through to the State income tax (Siegel and others 1996). Individual States, however, offer their own incentives for conservation easements. Property tax relief proportional to the decrease in value of land placed in an easement generally is available in every State, but is required by law in Florida, Georgia, Kentucky (for land dedicated to the State Nature Preserves System), South Carolina, Tennessee, and Virginia. Arkansas, Georgia, North

Carolina, South Carolina, and Virginia each have enacted an income tax credit for donation of a qualifying conservation easement. In Virginia, sales of easements over 30 years in duration are exempt from the State capital gain tax. As well, Alabama, Florida, Georgia, and Texas operate conservation trusts to preserve working agricultural and forest land (Private Landowner Network Web site 2011).

Incentives for Forest Sustainability

Forest sustainability is one aspect of sustainable development (USDA Forest Service 2004). In a broad sense, forest sustainability can be described as involving:

“... the continued existence and use of forests to meet human physical, economic, and social needs; the desire to preserve the health of forest ecosystems in perpetuity; and the ethical choice of preserving options for future generations while meeting the needs of the present.”
(USDA Forest Service 2002)

At a more specific level, it can be defined as:

“The stewardship and use of forests and forest lands in a way, and at a rate, that maintains their biodiversity, productivity, regeneration capacity, vitality, and potential to fulfill, now and in the future, relevant ecological, economic, and social functions at local, national, and global levels, and that does not cause damage to other ecosystems.” (Helms 1998)

Federal programs—The Federal government sponsors a wide range of incentive programs to encourage sustainable management of family-owned forests and other rural lands. Most are administered by agencies of the Department of Agriculture—the Farm Service Agency, Forest Service, or Natural Resources Conservation Service. Three programs are administered by the Fish and Wildlife Service within the Department of Interior. Virtually all of the programs provide technical assistance to help owners select and implement conservation practices that will be effective on their land. Many also provide financial incentives, such as cost-share payments to cover part or all of the cost of conservation practices, land rental payments over a term of years, or other types of payments.

Table 11.1 provides a brief description of the Federal incentive programs of particular interest to family forest owners. As noted above, owners can elect to exclude a calculated portion of cost-share payments from nine programs from their adjusted gross income, making the payments tax-free (Greene and others 2013), and four programs involve use of conservation easements.

State programs—State agencies participate in the on-the-ground management of six Federal incentive programs: the Forest Legacy, Forest Stewardship, and Southern Pine Beetle Prevention Programs administered by the Forest Service and the Landowner Incentive, Partners for Fish and Wildlife, and Red-cockaded Woodpecker Recovery Programs administered by the Fish and Wildlife Service. As well, educational and technical assistance for forest management generally is available in every Southern State, through State forestry and cooperative extension personnel.

In addition, many States offer their own incentive programs for family forest owners. Louisiana, Mississippi, North Carolina, South Carolina, and Virginia offer reforestation cost-share programs, while Texas offers technical assistance and cost-share payments for practices to suppress oak wilt. Owners may exclude a calculated portion of payments from all six programs from adjusted gross income in calculating their Federal income tax. Mississippi and Texas also provide tax incentives for reforestation, Mississippi through a reforestation tax credit and Texas through a 50 percent property tax reduction for reforesting following a harvest. And through its Forest Health Program, Mississippi informs forest owners if they have pest damage on their property and provides technical assistance on how to salvage damaged timber and reduce or prevent further damage (Private Landowner Network Web site 2011, SRS Forest Economics and Policy Web site 2011).

Provision of Ecosystem Services

Ecosystem services are commonly defined as the benefits people obtain from ecosystems. Ecosystem services include basic services—provisioning services like delivery of food, fresh water, wood and fiber, and medicine—as well as services that are equally critical but less tangible and harder to measure: regulating services like carbon sequestration, erosion control, and pollination; cultural services like recreation, ecotourism, and educational and spiritual values; and supporting services like nutrient cycling, soil formation, and primary productivity (USDA Forest Service Valuing Ecosystem Services Web site 2011).

Federal programs—To ensure that the full range of ecological, social, and economic benefits from family-owned lands is maintained in quantity and quality over time, all of the Federal-sponsored incentive programs summarized in table 11.1 have at least one objective that focuses on conservation of natural resources, protection of natural systems, enhanced stewardship, or sustainable management. Consequently, all of the programs, as well as most of the Federal income and estate tax provisions summarized above, promote the provision of ecosystem services.

State programs—It is the States, however, that most directly address provision of ecosystem services. Educational and technical assistance for management of wildlife habitat or riparian areas, water quality, resource conservation, and protection from invasive species generally is available in all States, through their forestry, wildlife, and cooperative extension personnel. Additionally, individual States offer a wide range of programs that directly address ecosystem services (Private Landowner Network Web site 2011, SRS Forest Economics and Policy Web site 2011):

- Alabama sponsors TREASURE Forest, a voluntary program promoting sound and sustainable multiple-use forest management, and the Alabama Agricultural and Conservation Development Commission Program, which provides cost-share payments for soil conservation, water quality improvement, reforestation, and forest improvement practices.
- Arkansas has enacted an income tax credit for creating or restoring wetland or riparian zones.
- Through its Rural and Family Lands Protection Program, Florida purchases perpetual easements on working agricultural or forested lands that contain significant natural areas or water resources.
- Georgia sponsors Georgia GROWS, a recognition program promoting sound management and stewardship of family-owned forest land.
- The Kentucky Soil Erosion and Water Quality Cost Share and Soil Stewardship Programs help farm and forest owners address soil erosion, water quality, and other environmental issues.
- Louisiana provides relief from State, parish, and district property taxes for owners who enter a contract over 25 years in duration that allows the State to use their land as a wildlife management area.
- Mississippi offers a property tax exemption for owners of coastal wetlands.
- The North Carolina Agricultural Cost-Share Program reimburses up to 75 percent of the cost of controlling runoff of sediment, nutrients, animal wastes, and pesticides from working lands.
- The Oklahoma Conservation Cost-Share Program reimburses the cost of applying soil and water conservation practices.
- The Tennessee Farm Wildlife Habitat Program reimburses up to 75 percent of the cost of improving habitat for declining grassland and shrubland wildlife species, including bobwhite quail, cottontail rabbits, and songbirds.
- Texas sponsors the East Texas Wetlands Project, which reimburses up to 50 percent of the cost of restoring, enhancing, or creating wetlands on land subject to a 30-year or perpetual easement; the Lone Star Land Steward Award Program, a recognition program that promotes wildlife conservation and habitat management; the Wildlife Grant Program for habitat improvement projects closely

tied to the Texas Wildlife Action Plan; and property tax reductions for aesthetic timber management, protection of critical wildlife habitat, and streamside management.

- Virginia has enacted tax credits for a portion of the value of timber retained in a riparian buffer and the cost of approved equipment used to implement Best Management Practices (BMPs); as well, the Virginia BMP Cost-Share Program reimburses up to \$50,000 of the cost of implementing practices to address nonpoint source pollution.

Privately sponsored programs available in the Southern States include State Tree Farm programs coordinated by the American Forest Foundation (American Tree Farm System Web site 2011) and the Longleaf Restoration Program sponsored by The Longleaf Alliance (The Longleaf Alliance Web site 2011).

METHODS AND DATA SOURCES

From the time private forest owners first became interested in long-term management, researchers have been suggesting ways to improve the management and sustainability of family forest holdings: financial incentives for owners who demonstrate interest in managing their forest (Folweiler and Vaux 1944); technical assistance, leveraged through coordinated management of neighboring forest ownerships (Cloud 1966); reduced property, estate and inheritance taxes, more favorable tax credits and deductions, more favorable capital gain tax treatment of timber income, and cost-sharing of forest management expenses (Fecso and others 1982); incentives linked to specific management practices, such as reforestation (Greene 1998); and incentive programs for ecosystem services, such as wildlife habitat or protection of water quality (Greene and Blatner 1986, Koontz 1999).

Family Forest Owner Awareness and Use of Federal Income Tax Provisions

Most of the literature on income taxes concerns Federal taxation of forest-related income and focuses on the tax law itself. It consists of tax guides for forest owners (see Greene and others 2013, Hoover and Koontz 2010), popularized descriptions of how particular income tax provisions affect forest owners (see Haney 2011, Wang and Greene 2011), or background papers prepared for policymakers (see Dialog Group on Forested Lands and Taxation 2001, Granskog and others 2002). A small number of studies have analyzed the effect of current or proposed income tax provisions on returns to hypothetical family forest owners (Bailey and others 1999; Klemperer 1989; Smith and others 2007, 2008; Straka and Greene 2007).

In a 2001 study conducted in South Carolina, researchers with the Clemson University Department of Forest

Resources and the Forest Service Southern Research Station investigated whether family forest owners were aware of Federal income tax provisions that provide incentives for following sound management practices, whether they had used provisions they were aware of, and their reasons for using or not using each one. The provisions examined were: long-term capital gain treatment of qualifying income, annual deduction of management costs, depreciation and the section 179 deduction, loss deductions, special treatment of qualifying cost-share payments, and the reforestation incentives. At the time the study was conducted, the reforestation incentives consisted of a 10 percent investment tax credit on up to \$10,000 per year of qualifying expenses to establish or reestablish trees, plus the ability to amortize up to \$10,000 per year of qualifying costs over 8 tax years (the amount an owner could amortize was reduced by half of any reforestation tax credit taken).

Data for the study were collected by means of a mailed questionnaire sent to family forest owners randomly selected from a list of current, past, and prospective members maintained by the State chapter of a national forest owner organization, using the Dillman (2000) tailored design method. In addition to knowledge and use of each income tax provision, several demographic characteristics were surveyed: total acres owned; forested acres owned; primary reason for owning forest land; whether the owner belonged to a forest owner organization; whether the owner had a written forest management plan; owner occupation; and owner education, age, and household income, by level. The response categories for primary reason for owning forest land and for owner occupation, education, and age corresponded closely to those used by Birch (1996).

State Property Taxes

As with income taxes, most of the literature on State property taxes consists of landowner guides (see Baughman and Reichenbach 2009, Kays and Schultz 2002) and summaries of State tax provisions (see Chang 1996, Rodenberg and others 2004). State property tax studies by Hickman and others in Tennessee, Virginia, and Texas are distinguished by their inclusion of economic analyses as well as summaries of the law (Gayer and others 1987, Hickman 1982, Hickman and Crowther 1991).

Hibbard and others conducted a study that examined the use, structure, and effectiveness of forest property taxes throughout the U.S. In a survey of State program administrators conducted as part of the study, the researchers found that State property tax programs only marginally conformed to accepted attributes of a “good” tax (equity, efficiency, simplicity, stability, adequacy, and visibility), and only modestly accomplished program objectives (Hibbard and others 2003).

Other researchers have found that property tax program requirements can be at odds with family forest owner objectives for their land. One example, identified in studies in Pennsylvania (Jacobson and McDill 2003) and New York (Kernan 2004), is an overemphasis on timber management and production.

In a national study completed in 2010, researchers from six institutions documented the Federal, State, and local tax policies that affect family forest owners and evaluated their impact on owners’ decisions regarding their land. The collaborating institutions were the Forest Service Northern and Southern Research Stations, the University of Massachusetts Amherst Family Forest Research Center, University of Minnesota Department of Forest Resources, Utah State University Department of Environment and Society, and Yale School of Forestry and Environmental Studies. Data for the study were collected using several methods: a review of the existing literature; systematic documentation and verification of the Federal, State, and local tax provisions that affect family forest owners; a survey of State property tax program administrators; and focus groups of family forest owners and natural resource professionals in selected States. The data were quantitatively analyzed, then synthesized with the assistance of a panel of forestry, conservation, and tax professionals and family forest owners.

The literature review initially focused on peer-reviewed publications from the past 10 to 15 years, but was expanded to include earlier, seminal works and non-peer reviewed publications. Federal tax provisions affecting family forest owners were documented using sources from the National Timber Tax Website (2011b). The web site also was the starting point for documenting State tax provisions; gaps were filled in using State government web sites and other sources, then verified using a key informant in each State, an employee of either the State forestry agency or department of revenue.

The survey of State property tax administrators focused on preferential property tax programs, defined as voluntary programs that reduce the property tax burden on owners in return for requiring them to restrict use of their land, have a written forest management plan, or pay a penalty for removing land from the program. The survey was conducted using a mailed questionnaire sent to a selected department of revenue employee in each State. The questionnaire asked the respondents to use a 5-point Likert scale to rate their State’s preferential property tax program according to the eight policy effectiveness criteria used by Hibbard and others (2003):

- The program has clearly articulated goals;
- The magnitude of the tax break is significant;
- The program complements other State forestry incentive programs;
- The forest land valuation mechanisms, eligibility

requirements, withdrawal penalties, and minimum enrollment periods reflect program goals;

- The program is administered consistently from county to county;
- Funding for the program has been stable and predictable;
- The program is periodically reviewed to ensure that objectives are being met; and
- Guidance through the application process is available to forest owners.

The respondents also were asked to estimate the average savings for enrollees in the preferential property tax program, the percentage of eligible forest owners enrolled, and the overall effectiveness of the program in protecting forest resources in areas highly susceptible to development. Administrators from 33 of the 38 States that have a preferential property tax program applicable to family forest owners returned a completed questionnaire, for a response rate of 87 percent.

Ten 2-hour focus groups of 8 to 10 family forest owners were held, two each in New Hampshire, Wisconsin, South Carolina, Alabama, and Washington. The States were selected to represent a broad range of property, income, and estate or inheritance tax policies. Participants were selected from local property tax rolls. Owners who held between 10 and 999 acres of forest land were screened to provide a mix of holding sizes, harvesting experience, acquisition history (inherited or non-inherited), estate planning status (formal plan or no formal plan), and demographics (gender, age, and formal education).

Parallel focus groups of 6 to 10 forestry and conservation professionals also were held in New Hampshire, Wisconsin, South Carolina, and Washington (logistical problems precluded a professionals focus group in Alabama). Participants included members of State forestry agencies, university extension systems, and nongovernmental organizations as well as private consulting foresters. These groups covered the same topics as the forest owner focus groups.

Combined Impact of Federal and State Taxes

Family forest owners face combinations of Federal and State taxes on their forest-related income and forest land, yet with few exceptions researchers have studied taxes in isolation from one another. Only two studies were identified in the past 25 years that considered Federal and State taxes in combination. Following passage of the Tax Reform Act of 1986 (P.L. 99-514), Bettinger and others calculated the effect of Federal and State income taxes on hypothetical family forest owners in the South (Bettinger and others 1989) and West (Bettinger and others 1991). Smith and others updated this work following passage of the Economic Growth and Tax Relief Reconciliation Act of 2001 and Jobs and Growth

Tax Relief Reconciliation Act of 2003, the first Bush tax cuts, calculating the effect of Federal and State income taxes for family forest owners in the North (Smith and others 2007) and West (Smith and others 2008).

In a study initiated in 2003, researchers with the University of Georgia Warnell School of Forest Resources and the Forest Service Southern Research Station quantified the effect of Federal and State taxes on private forest owners by calculating land expectation value (LEV) for typical forest management regimes in 22 timber-producing States in the South, North, and Northwest. The calculations were made pre-tax and again after each Federal or State tax was applied. Using this approach, it was possible to determine the relative effect of each type of tax as well as the combined effect. Separate calculations were made for family, corporate, and institutional forest owners.

The study was framed by several assumptions: that forest owners of all types are profit-oriented and employ timber management practices appropriate to that objective and “typical” for their region; the owners meet the requirements for current use property tax valuation; they deduct property taxes annually against both the Federal, and as allowed, State income taxes; and they capitalize reforestation expenditures and offset them against harvest returns. The last assumption was based on studies such as Greene and others (2004) and Smith and others (2007, 2008), which found that many forest owners are unaware of Federal income tax provisions developed for owners of forests and other working lands.

Spreadsheets were developed to perform the LEV calculations based on user input for State, management expenses, timber prices, property tax per acre, Federal income tax rate, State income tax rate, harvest tax per unit of timber, and discount rate. Following Klemperer (1988) and Chang (1996), pre-tax LEV was used as the base reference, and reduction in LEV as each tax was added as the measure of the economic effect of that tax. A discount rate of 5 percent, real (with no adjustment for inflation), was used for all LEV calculations. Because it is uniform across the nation, the effect of the Federal income tax was calculated first, followed by the State property tax, harvest tax, and income tax.

For each study State, data were collected on typical timber management practices, including species or species mix, rotation length, and harvest volumes; typical costs for stand establishment and timber management; average stumpage prices for the products obtained; applicable property tax per acre; harvest taxes per unit of timber; and applicable Federal and State income tax rates.

The data were gathered from numerous sources, including published price reports; State tax web sites; and correspondence with consulting foresters, State agency and

cooperative extension foresters, and university faculty. For the Coastal Plain States of the South, management practices and harvest volumes were determined using the SiMS 2003 growth and yield model (ForesTech International 2003). Timber product prices were taken from Timber Mart-South (2003), using the regional pine sawtimber and pulpwood market segments defined by Yin and others (2002). The Federal income tax rates and the income, property, and harvest tax rates used for each State were those in effect in 2003.

Effect of the Federal Estate Tax

Most of the literature on the effect of taxes on transfers of assets from one generation to another relates to the Federal estate tax and concerns the tax law itself. It consists of estate planning guides for forest owners (see Becker and Jacobson 2008, Siegel and others 2009) and popularized descriptions of how particular estate tax provisions affect forest owners (see Siegel 2010; Tufts and others 2003a, 2003b). A handful of case studies have used hypothetical family forest owners to analyze aspects of intergenerational transfers of forest land, including the effect of form of forest ownership and assets used to pay the estate tax on net returns from the forest (Howard 1985) and the interaction between Federal and State death taxes (Peters and others 1998; Walden and others 1987, 1988).

With the many strategies available to reduce or eliminate the impact of the estate tax, one might expect that only owners who fail to plan would owe tax. Many owners, however, fail to take advantage of the estate planning tools available to them because they are unaware of the full value of their holdings, overwhelmed by the complexity and ever-changing nature of estate tax law, unable to confront their personal mortality, or unwilling to accept the loss of control that most estate planning strategies entail. Further, the stringent requirements for special use valuation make it difficult for managed forest land to qualify for or remain under that provision (Peters and others 1998, Siegel and others 2009).

In a study initiated in 1999, researchers with the Mississippi State University College of Forest Resources and the Forest Service Southern Research Station investigated the effect of the Federal estate tax on owners of family forests and other working lands. The study represented the first attempt to quantify the effect of the Federal estate tax on family forests.

Data for the study were collected by means of a mailed questionnaire, using the Dillman (1978) total design method. A draft version of the questionnaire was pretested using members of the Mississippi Forest Association. The revised questionnaire was sent to landowners randomly selected from the membership lists of the National Woodland Owners Association and American Tree Farm System and a nationwide database of farm and ranch owners maintained by J.D. Esseks at Northern Illinois University. Questionnaire

recipients were first asked whether they had been involved in the transfer of an estate between 1987 and 1997, a period when the unified exemption amount shielded a constant \$600,000 of estate value from tax. Those who responded affirmatively were asked a series of questions about the characteristics of the estate, whether special use valuation had been used, and what assets were used to pay any Federal estate tax due.

The number of family forest holdings affected was estimated by multiplying the percent of positive responses by Birch's (1996) estimate of the number of "individual" and "other" private forest ownership units in the United States. The number of acres affected was estimated by multiplying that figure by the mean acreage response for the question. Chi-square tests at the 5 percent level of significance were used to test for differences between the responses from forest owners and other owners of working lands.

Effectiveness of Financial Incentive Programs in Promoting Sustainable Practices

Research has shown that a large percentage of family forest owners are unaware that financial and tax incentive programs exist or what the programs can do for them (Anderson 1960, Christensen and Grafton 1966, Farrell 1964, Greene and others 2004, Perry and Guttenberg 1959); that many owners who participate in an incentive would have done the supported practice anyway (Brockett and Gerhard 1999, James and others 1951), although the incentive generally enables the owners to treat additional acres (Bliss and Martin 1990, Royer 1987); and that favorable property and capital gain tax provisions have little short-term effect on forest owner behavior (Brockett and Gerhard 1999, Kluender and others 1999, Stoddard 1961).

Three approaches, however, have consistently been found to influence family forest owners to apply sustainable practices on their land: technical assistance, cost-share payments, and programs that put owners in direct contact with a forester or other natural resource professional. James and others (1951) found that owners prefer technical assistance to financial or tax incentives. Greene and Blatner (1986) further found that direct contact with a professional is associated with owners becoming forest managers. Egan and others (2001) found that the aspects of the Forest Stewardship Program that involve contact with a professional—getting a management plan and technical assistance—were the things owners liked best about the program.

In a nationwide study conducted in 2005, researchers from five institutions identified and assessed the success of public and private incentive programs in encouraging family forest owners to use sustainable practices on their lands. The collaborating institutions were the Forest Service Southern Research Station, the Clemson University Department

of Forestry and Natural Resources, Pennsylvania State University School of Forest Resources, University of Minnesota Department of Forest Resources, and Utah State University Department of Sociology, Social Work, and Anthropology.

The study was conducted in three phases: a systematic review of the research literature on the tax, cost-share, and other financial incentives available to family forest owners; a nationwide survey of selected forestry officials; and focus groups with family forest owners in the South, North, and West.

Publications for the literature review were identified through a search of databases including the University of Minnesota Social Sciences in Forestry web site and CABI Publishing's Forestry Abstracts. The identified publications were summarized and analyzed for their conclusions about the effectiveness of the various incentive programs and their apparent effect on forest owner motivations and practices.

The survey of forestry officials was done by means of a mailed questionnaire, using the Dillman (2000) tailored design method. One official in each State was selected to receive the questionnaire, based on their overall knowledge of financial incentive programs. The appropriate person in each State was identified using peer recommendations; in most cases it was the individual in the State forestry agency who managed the Forest Stewardship Program. The draft questionnaire was pre-tested with the identified official in each of the researchers' home state and refined using their feedback.

The questionnaire asked the officials to name and describe the public and private financial incentive programs available to family forest owners in their State. In follow-up questions they were asked to use a 4-point Likert scale to assess forest owners' awareness of each program they had identified, its overall appeal among the owners aware of it, and its effectiveness in encouraging sustainable forestry and enabling owners to meet their objectives of forest ownership. The officials also were asked to estimate the percent of program practices that remained in place and enrolled acres that remained in forest over time, and to suggest ways to improve owner participation in the program and its administrative effectiveness.

Nine Federal financial incentive programs were examined: the Forest Stewardship Program, Conservation Reserve Program, Environmental Quality Incentives Program, Forest Land Enhancement Program, Forest Legacy Program, Landowner Incentive Program, Southern Pine Beetle Prevention Program, Wetlands Reserve Program, and Wildlife Habitat Incentives Program (table 11.1). Three types of non-Federal financial incentive programs also were examined: preferential property tax programs for forest land,

other State-sponsored incentive programs, and programs sponsored by private entities.

Although the questionnaire was extensive—89 questions on 30 pages—follow-up e-mails and telephone calls produced a 100 percent useable response. The Likert scale ratings and the officials' written comments were compiled and summarized. Tukey tests at the 5 percent level of significance were used to identify statistically significant differences between the officials' ratings for each program attribute.

The final study phase consisted of focus groups with family forest owners in South Carolina, Pennsylvania, Minnesota, and Oregon. Two focus groups were conducted in each State, one with members of forest owner organizations and one with other family forest owners. The participants in each group were identified through an approach similar to that used for the survey of forestry officials. The number of participants in the focus groups ranged from 7 to 17 and averaged 11.

The focus group sessions were conducted using the protocol described by Daniels and Walker (2001), with a moderator guiding discussion by means of a chart mounted on the meeting room wall and verbal prompts from a prepared guideline. Data were collected by recording the sessions and by taking notes. The recordings and notes for each session were qualitatively analyzed, again following Daniels and Walker (2001), first by a single researcher, then in discussion among the entire research team. The results for each region were coded in terms of themes without consideration for what might be themes in other regions. Once the region-specific themes were identified, they were compared across regions to identify emergent patterns. The data were then re-analyzed to look specifically for the presence or absence of the emergent patterns in each region.

RESULTS

Family Forest Owner Awareness and Use of Federal Income Tax Provisions

In the study of South Carolina family forest owners, 87 percent of the survey respondents were aware of at least one Federal income tax provision. Nearly 80 percent were aware of two provisions available to taxpayers in general: treatment of qualifying income as a long-term capital gain and annual deduction of management costs. In contrast, just over 40 percent were aware of special treatment of qualifying cost-share payments, one of the provisions available to owners of working lands (Greene and others 2004).

Long-term capital gain treatment of qualifying income— Some 78 percent of the respondents were aware that income from the sale or disposal of timber can qualify as a long-term

Table 11.5—Number and percent of forest owner reporting awareness and use of beneficial Federal income tax provisions

Response to survey	Long-term capital gains treatment	Management expense deduction	Depreciation, Section 179 ^a deduction	Loss deductions		Reforestation incentives		Cost-share payment exclusion						
				Number	Percent	Tax credit	Amortization							
Aware of the provision	364	77.8%	363	77.6%	235	51.4%	277	60.2%	255	54.8%	260	56.4%	194	42.1%
Had used the provision	308	84.6%	308	84.8%	155	66.0%	64	23.1%	199	78.0%	207	79.6%	137	70.6%
Had not used the provision	56	15.4%	53	14.6%	80	34.0%	213	76.9%	56	22.0%	53	20.4%	57	29.4%
Not aware of the provision	104	22.2%	105	22.4%	222	48.6%	183	39.8%	210	45.2%	201	43.6%	267	57.9%

^aAllows a taxpayer to deduct the cost of certain types of property as an expense, rather than requiring the cost to be capitalized and depreciated. Source: Greene and others 2004.

capital gain. Of those who were aware of the provision, 85 percent had used it (table 11.5). Respondents who were aware of the provision tended to own more acres of land and more forested acres than those who were not; they also were more likely to belong to a forest owner organization and to have a written forest management plan, and tended to have higher levels of formal education and household income. As shown in Table 11.6, most respondents who were aware of the provision but had not used it believed it did not apply to their situation (36 percent) or that the benefit was too small to bother with (21 percent).

Annual deduction of management expenses—Overall, 78 percent of the respondents were aware they could deduct ordinary and necessary forest management expenses annually, and of those who were aware of the provision, 85 percent had used it (table 11.5). Respondents who were aware of the provision differed from those who were not in the same ways as above: they tended to own more acres of land and more forested acres, were more likely to belong to a forest owner organization and to have a written forest management plan, and tended to have higher levels of formal education and household income. Most respondents who were aware of the provision but had not used it believed it did not apply to their situation (35 percent) or that the benefit was too small to bother with (33 percent; table 11.6).

Depreciation and the section 179 deduction—About half of the respondents (51 percent) were aware they could recover the cost of equipment and other property purchased for the production of income on their forests through depreciation or the section 179 deduction. Of those who were aware of the provisions, 66 percent had used one or both (table 11.5). Respondents who were aware of the provisions differed from those who were not in that they tended to own more acres of land and more forested acres, were more likely to own their forest land primarily for timber production, were more likely to belong to a forest owner organization and to have a written forest management plan, were more likely to be salaried professionals, and tended to have higher levels of formal education and household income. Most respondents who were aware of the provisions but had not used them believed the provisions did not apply to their situation (57 percent) or that the benefit was too small to bother with (21 percent; table 11.3).

Loss deductions—Only 60 percent of the respondents were aware they could take a deduction for timber or other income-producing assets lost in a casualty, theft, condemnation, or for owners who held their forest as a trade or business, in a noncasualty event. Further, only 23 percent of those who were aware of the provision had used it (table 11.5). Respondents who were aware of the provision differed from those who were not on nearly all of the demographic characteristics tested: they tended to own more acres of land and more forested acres, were more likely to own their

Table 11.6—Reasons forest owners who were aware of beneficial Federal income tax provisions cited for not using the provisions

Response to survey	Long-term capital gains treatment	Management expense deduction	Depreciation, Section 179 ^a deduction	Loss deductions		Reforestation incentives		Cost-share payment exclusion
				Count	Percentage	Tax credit	Amortization	
It's too complicated	2	3	3	11	5.8%	1	0	5
Benefit is too small to bother with	11	18	16	31	16.2%	16	10	14
It doesn't apply to my situation	19	19	43	93	48.7%	20	22	11
I don't want to use it	1	1	2	5	2.6%	2	0	7
Other	20	14	12	51	26.7%	12	11	12

^aAllows a taxpayer to deduct the cost of certain types of property as an expense, rather than requiring the cost to be capitalized and depreciated. Source: Greene and others 2004.

forestland primarily for recreation or timber production, were more likely to belong to a forest owner organization and to have a written forest management plan, were more likely to be salaried professionals, and tended to have higher levels of formal education and household income. Most respondents who were aware of the provision but had not used it believed it did not apply to their situation (49 percent) or that the benefit was too small to bother with (16 percent; table 11.6).

Reforestation incentives—Just over half of the respondents (55 percent) were aware of the reforestation tax incentives, but among those who were aware, 80 percent had used one or both incentives (table 11.5). Respondents who were aware of the reforestation tax credit tended to own more acres of land and more forested acres, were more likely to belong to a forest owner organization and to have a written forest management plan, and tended to have a higher level of household income. Respondents who were aware of the reforestation amortization deduction tended to own more acres of land and more forested acres, were more likely to own their forest land primarily for recreation or timber production, were more likely to belong to a forest owner organization and to have a written forest management plan, were more likely to be a salaried professional or a farmer, and tended to have higher levels of formal education and household income. Most respondents who were aware of the provisions but had not used them believed they did not apply to their situation (51 percent) or that the benefit was too small to bother with (31 percent; table 11.6).

Special treatment of qualifying cost-share payments—Only 42 percent of the respondents were aware they could exclude a calculated portion of qualifying public cost-share payments from their gross income (table 11.5), making it the least-known provision surveyed. Of those who were aware of the provision, 71 percent had used it. Respondents who were aware of the provision were more likely than those who were not to belong to a forest owner organization and to have a written forest management plan, and tended to have a higher level of household income. Most respondents who were aware of the provision but had not used it believed the benefit was too small to bother with (29 percent) or that it did not apply to their situation (22 percent; table 11.6).

State Property Taxes

Survey of State property tax administrators—Estimates of family forest owner participation in State preferential property tax programs varied widely. Just 48 percent of the administrators who responded to the survey estimated that half or more of eligible family forest owners were enrolled in their State's program. Administrators who indicated the greatest percent of eligible forest land enrolled generally were from States in the West or South.

Of the administrators who provided a response, 83 percent estimated that participating in their State's program reduced the annual property tax burden by half or more. On the one hand, some administrators expressed regret that forest owners could not qualify for their State's agricultural preferential property tax program, which typically provides greater tax relief, while others expressed frustration at "tax dodgers" and "loopholes" that allowed their State's program to be misused.

Only a third of the administrators responded that their State's program had all of the attributes of an effective property tax policy. The most commonly noted shortcomings were lack of consistency from county to county and lack of stable funding, followed by lack of complementarity with other programs (Butler and others 2010).

Family forest owner focus groups—Property taxes were by far the tax of greatest concern to the family forest owners in this study, coming up unprompted as a concern in all 10 focus groups. This is not a surprise, since property taxes occur on an annual basis as opposed to being a rare event, as with taxes on timber income, or once-in-a-lifetime, as with an estate or inheritance tax. Particularly outside the South, owners perceived their property taxes as high, out of sync with what their land was worth, and inevitably increasing.

Some forest owners had never heard about their State's preferential property tax program, while others were uncertain about whether they were enrolled in a program. The latter was particularly the case in the South, where program requirements are the least restrictive; owners in States with more rigorous programs were more likely to know what program they were enrolled in and its requirements. The primary means for finding out about tax programs was conversations with neighbors, friends, and relatives, followed by county assessors, foresters or loggers working on the land, and community meetings.

At the same time, many owners who were enrolled their State's program were highly positive about it and recommended it to those who were not enrolled. They cited benefits including that the reduced property taxes were helping them keep their land, and the program promoted open space and sustainability, encouraged tree planting and growth, and improved forest management. Some owners became interested at this point, while others remained wary.

Reasons for wariness about participating in a preferential property tax program included uncertainty about penalties for withdrawing land and what happened if the land was sold or passed to heirs. Privacy and freedom of action were major objectives for many owners, with the result that some opted not to enroll in their State's program due to fear of losing

managerial control to the government or being required to allow public access on their land (Butler and others 2010).

Combined Impact of Federal and State Taxes

The full study reported here estimated the effect of Federal and State taxes on privately-owned forest land in 22 States in the South, North, and Northwest, by calculating pre- and after-tax land expectation value (LEV) under typical management regimes for family, corporate, and institutional forest owners (Cushing 2006). This section, however, summarizes only the results for family forest owners in the Southern States.

Pre-tax LEV—Among the Coastal Plain States, pre-tax LEV ranged from \$373 per acre for Texas to \$796 per acre for Alabama, with a mean of \$585 per acre and a median of \$539 per acre (table 11.7). Oklahoma was not included in the analysis. The spreadsheets for all 10 included States were built around the same loblolly pine management plan and assumed the same costs for stand establishment and timber management. The only source for differences in pre-tax LEV was variation in the stumpage prices for the pulpwood, chip-n-saw, and sawtimber produced.

In the States of the Appalachian-Cumberland highlands, pre-tax LEV was just \$271 per acre for Kentucky, due primarily to long rotation lengths and low harvest yields for mixed upland hardwood timber. Pre-tax LEV for Tennessee was comparable to that for the Coastal Plain States, at \$579 per acre for uneven-age management of mixed oak-hickory timber (table 11.7). There was no statistically significant difference in the results for the two subregions (Cushing 2006).

Effect of the Federal income tax—Although family forest owners in every State paid the same 15 percent Federal capital gain tax on their net harvest returns, the economic effect of the tax varied with the size and frequency of harvest returns and the amount of capitalized reforestation expenses. In the Coastal Plain States, LEV decreased by amounts ranging from \$91 per acre for Texas to \$153 per acre for Alabama, in roughly the same order as pre-tax LEV (table 11.6). The absolute and relative changes were inversely related to one another, however, with the \$91 per acre change for Texas equating to a 24 percent reduction in LEV and the \$153 per acre change for Alabama equating to a 19 percent reduction.

In the Appalachian-Cumberland highlands, the Federal income tax had a similar but smaller effect, decreasing LEV by \$48 per acre (18 percent) in Kentucky and \$87 per acre (15 percent) in Tennessee (table 11.6). The difference in the results for the two subregions was statistically significant (Cushing 2006).

Table 11.7—Comparison of pre- and after-tax land expectation values (LEV) in the South using a 5-percent discount rate, by State

State	Pre-tax LEV (Dollars)	Federal income tax			Property tax			Harvest tax			State income tax		
		New LEV	Dollars	Percent Decrease	New LEV	Dollars	Percent Decrease	New LEV	Dollars	Percent Decrease	New LEV	Dollars	Percent Decrease
Alabama	796	643	153	19.2	616	27	3.4	616	0	0.0	567	49	6.2
Arkansas	497	388	109	21.9	370	18	3.6	370	0	0.0	324	46	9.3
Florida	608	484	124	20.4	419	65	10.7	419	0	0.0	419	0	0.0
Georgia	682	546	136	19.9	475	71	10.4	448	27	4.0	400	48	7.0
Louisiana	523	412	111	21.2	371	41	7.8	336	35	6.7	291	45	8.6
Mississippi	787	636	151	19.2	579	57	7.2	573	6	0.8	527	46	5.8
North Carolina	538	423	115	21.4	371	52	9.7	371	0	0.0	314	57	10.6
South Carolina	540	426	114	21.1	379	47	8.7	379	0	0.0	330	49	9.1
Texas	373	282	91	24.4	231	51	13.7	231	0	0.0	231	0	0.0
Virginia	503	396	107	21.3	366	30	6.0	366	0	0.0	325	41	8.2
Appalachian-Cumberland highlands													
Kentucky	271	223	48	17.7	206	17	6.3	206	0	0.0	189	17	6.3
Tennessee	579	492	87	15.0	468	24	4.1	468	0	0.0	468	0	0.0

Source: Cushing 2006.

Effect of property tax—Property tax rates on family-owned forest land varied widely across the Coastal Plain States, from just over \$1 per acre per year in Arkansas to nearly \$5 per acre per year in Georgia. As a result, the amount by which property tax decreased LEV also varied widely, from \$18 per acre (4 percent) for Arkansas to \$71 per acre (10 percent) for Georgia and \$51 per acre (14 percent) for Texas. The results for the States of the Appalachian-Cumberland highlands were at the low end of the same range (table 11.6). There was no statistically significant difference in the results for the two subregions (Cushing 2006).

Effect of harvest tax—Only harvest taxes levied on forest owners were included in the study; taxes levied on timber processors were excluded. Of the three Southern States that levy a harvest tax on forest owners, Louisiana and Georgia expressed the tax as a percentage of timber stumpage price, while Mississippi expressed it as a flat rate per unit harvested. In all three States the tax rate was quite low, resulting in a decrease in LEV ranging from \$6 per acre (1 percent) for Mississippi to \$35 per acre (7 percent) for Louisiana (table 11.6).

Effect of State income tax—As discussed above, Florida and Texas do not tax income to individuals and Tennessee taxes only dividend and interest income. In most of the Southern States that tax income to individuals the top marginal tax rate for 2003 fell between 5 and 6 percent; the exceptions were North and South Carolina, with top marginal tax rates of 8.25 percent and 7 percent, respectively. In the Coastal Plain States, State income tax decreased LEV by amounts ranging from \$41 per acre (8 percent) for Virginia to \$57 per acre (11 percent) for North Carolina. In the Appalachian-Cumberland highlands, State income tax decreased LEV by \$17 per acre (6 percent) in Kentucky (table 11.6). There was no statistically significant difference in the results for the two subregions (Cushing 2006).

Effect of the Federal Estate Tax

The research results summarized in this section are from a national survey (Greene and others 2006). The sample size precludes segmenting the findings into regional estimates; however, it is known that the Southern States account for about two-fifths (41 percent) of family forest holdings and half (51 percent) of family-owned forest land in the United States (Butler and Leatherberry 2004).

Family forest land transferred—During the survey period, 9 percent of the forest owner respondents had been involved in the transfer of an estate. Among these respondents, 84 percent were family members of the decedent; the remaining 16 percent were friends, business associates, or professionals who had served the decedent. Roughly

half of the estates (49 percent) had been held in individual ownership by the decedent, with another 27 percent held jointly with other individuals, and the remaining 24 percent held by partnerships, corporations, or such other forms of business as Family Limited Partnerships or Limited Liability Companies. Some 64 percent of the decedent owners had used a financial or legal professional to help them plan their estate (table 11.8).

The value of the decedents' gross taxable estates ranged from below the \$600,000 unified credit amount to over \$3 million. The total area of the forest estates ranged from 10 to 20,000 acres, with a mean of 1,225 acres and a median of 200 acres; the forest area ranged from 8 to 20,000 acres, with a mean of 1,024 acres and a median of 156 acres (table 11.8). Expanded to family-owned forest lands throughout the United States, these findings mean an estimated 77,200 forest estates, with 79.1 million acres of forest land, were transferred each year at the death of their owners (Greene and others 2006).

Special use valuation—With forest land, special use valuation (see above) can be applied to the land only or to both the land and timber. Just 33 percent of forest estates qualified for and 26 percent elected to use special use valuation. Of the estates that used special use valuation, 26 percent applied it to the land only and 74 percent applied it to both the land and timber.

Applying special use valuation reduced the taxable value of forest estates by amounts ranging from \$0 to \$750,000, with a mean of \$325,000 and a median of \$250,000, both well under the \$750,000 maximum for the provision during the study period. Expanded nationally, these findings mean an estimated 20,000 forest estates elected to use special use valuation each year, resulting in a combined total reduction in their taxable estate values on the order of \$6.5 billion (Greene and others 2006).

Assets used to pay the Federal estate tax—A substantial majority of survey respondents (62 percent) reported that no Federal estate tax was due in the transfers they were involved with. In most instances where estate tax was due, insurance or other assets were used to pay it. But in 42 percent of the transfers, timber or land was sold to pay part or all of the tax.

In 22 percent of all transfers, timber was sold to pay estate tax, with 75 percent of the sales necessary because other assets were not sufficient to pay the tax. The forest size of ownerships that needed to sell timber ranged from 79 to 10,000 acres, with a mean of 3,035 acres and a median of 670 acres. The area harvested ranged from 5 to 1,100 acres, with a mean of 498 acres and a median of 430 acres. Expanded nationally, these findings mean an estimated

Table 11.8—Characteristics of the estates of forest owners and other owners of working lands

Survey question	Response	Forest owners		Other rural owners	
		Number	Percent	Number	Percent
Involved in an estate transfer? ^a	No	1,110	91.3	578	86.1
	Yes	106	8.7	93	13.9
Relationship of respondent to the decedent	Family member	85	84.2	84	94.4
	Friend or business associate	9	8.9	4	4.5
	Professional advisor/trustee	7	6.9	1	1.1
Form of ownership in which land was held	Individual	51	48.6	54	58.1
	Joint	28	26.7	26	28.0
	Partnership	11	10.5	1	1.1
	Corporation	8	7.6	4	4.3
	Other ^b	7	6.7	8	8.6
Value of gross taxable estate, Southern region ^c	Less than \$600,000	21	60.0	17	73.9
	\$600,000 to \$999,999	4	11.4	4	17.4
	\$1,000,000 to \$1,999,999	5	14.3	0	0.0
	\$2,000,000 to \$2,999,999	1	2.9	0	0.0
	\$3,000,000 or more	4	11.4	2	8.7
Value of gross taxable estate, Northern and Western regions ^c	Less than \$600,000	26	40.6	40	67.8
	\$600,000 to \$999,999	16	25.0	8	13.6
	\$1,000,000 to \$1,999,999	9	14.1	7	11.7
	\$2,000,000 to \$2,999,999	6	9.4	1	1.7
	\$3,000,000 or more	7	10.9	3	5.1
Total area transferred	1 to 99 acres	24	23.3	23	28.4
	100 to 499 acres	48	46.6	35	43.2
	500 acres or more	31	30.1	23	28.4
Forested area transferred ^a	0 acres	0	0.0	58	71.6
	1 to 99 acres	38	36.9	16	19.8
	100 to 499 acres	38	36.9	7	8.6
	500 acres or more	27	26.2	0	0.0
	Area converted to cropland ^a	0 acres	69	67.0	22
1 to 99 acres	25	24.3	26	32.1	
100 to 499 acres	7	6.8	23	28.4	
500 acres or more	2	1.9	10	12.3	
Area converted to grazing ^a	0 acres	62	60.2	32	39.5
	1 to 99 acres	27	26.2	21	25.9
	100 to 499 acres	10	9.7	13	16.0
	500 acres or more	4	3.9	15	18.5
Estate planning helped by a professional?	Yes	67	64.4	64	71.1
	No	34	32.7	26	28.9
	Don't know	3	2.9	0	0.0
Did professional help reduce taxes due? ^a	Yes	41	61.2	48	75.0
	No	21	31.3	8	12.5
	Don't know	5	7.5	8	12.5

^aThe samples differ statistically at the $\alpha = 0.05$ level of significance.

^bTest results are based on a small sample.

^cSuch as a Family Limited Partnership or a Limited Liability Company.

4,900 forest estates needed to sell a total of 2.4 million acres of timber each year to pay part or all of the Federal estate tax.

In 19 percent of all transfers, land was sold to pay estate tax, with 57 percent of the sales necessary because other assets were not sufficient to pay the tax. The forest size of ownerships that needed to sell land ranged from 100 to 2,000 acres, with a mean of 770 acres and a median of 490 acres. The amount of land sold ranged from 160 to 780 acres, with a mean of 387 acres and a median of 220 acres. Further, in 29 percent of the cases where land was sold to pay estate tax, the land was developed or converted to another use. Expanded nationally, these findings mean an estimated 3,300 forest estates needed to sell a total of 1.3 million acres of land each year to pay the Federal estate tax, of which on the order of 400,000 acres were developed or converted to other uses (Greene and others 2006).

Comparison with owners of other working lands—The questionnaire responses from owners of other working lands, largely farmers and ranchers, were more remarkable for their similarities to forest owners than their differences. The groups differed statistically in just 6 of the 20 characteristics surveyed, with most differences stemming from the different uses the two groups make of their land: whether it is mostly forest or mostly crop or grazing land, and whether special use valuation was applied to both land and timber or to the land only. Also, a lower percentage of forest owners had been involved in the transfer of an estate during the survey period, and forest owners were less likely than other landowners to believe the decedent's use of an estate planning professional had reduced the amount of estate tax due (Greene and others 2006).

Effectiveness of Financial Incentive Programs in Promoting Sustainable Practices

This section also reports findings from a national study. But the results for the survey of forestry officials, summarized from Jacobson and others (2009), are for the Southern States. And while the results for the forest owner focus groups, summarized from Daniels and others (2010) are for the entire United States, points where the South differs from other regions are noted.

Survey of State forestry officials—Table 11.9 summarizes the results for Federal financial incentive programs as ranked by the State forestry officials. None of the officials responded about the Landowner Incentive Program, which for that reason was excluded from the analysis. Section a of the table shows the officials' mean rankings for forest owner awareness of each program and its overall appeal among owners aware of it. All of the programs were ranked in the middle ranges for both awareness and appeal, with appeal generally rated higher than

awareness. There were no statistically significant differences between the ratings for any of the programs (Table 11.9).

Section b of Table 11.9 summarizes the officials' mean rankings for the programs in terms of their effectiveness in encouraging sustainable forestry among participating owners. The Forest Legacy Program (FLP) was ranked highest overall, scoring well in all attributes of sustainability. Ranked next-highest were the Conservation Reserve Program (CRP), Forest Stewardship Program (FSP), and Forest Land Enhancement Program (FLEP). CRP scored particularly well for protecting soil productivity and water quality and preventing conversion of forest land. FSP scored well for protecting water quality, encouraging forest management, and protecting wildlife and fish, while FLEP scored quite well for encouraging forest management.

The Wetlands Reserve Program (WRP) was ranked next-highest overall, receiving its best scores for protecting water quality. The lowest rankings went to the Wildlife Habitat Incentives Program (WHIP), Environmental Quality Incentives Program (EQIP), and Southern Pine Beetle Prevention Program (SPBP), although WHIP scored quite well for protecting wildlife and fish, EQIP for protecting water quality and soil productivity, and SPBP for encouraging forest management (Table 11.9).

Section c of Table 11.9 summarizes the officials' mean rankings for the programs in terms of their effectiveness in helping owners meet their objectives of forest ownership. The officials generally scored the programs less effective in this area than in encouraging sustainable forestry. FLP again was ranked highest, scoring particularly well for helping owners meet objectives related to soil and water conservation, wildlife, and aesthetics. FSP and FLEP were ranked next-highest; FSP received high marks for objectives related to wildlife and timber production, while FLEP scored well for objectives related to timber production and soil and water conservation.

CRP and WHIP were ranked next-highest. CRP scored well for owner objectives related to soil and water conservation and wildlife, while WHIP received the highest possible score for objectives related to wildlife. None of the remaining programs rated above the moderately ineffective range, although EQIP received solid scores for objectives related to soil and water conservation, WRP for objectives related to wildlife, and SPBP for objectives related to timber production and soil and water conservation (Table 11.9).

The final section of Table 11.9 summarizes the officials' mean rankings for program practices remaining in place and enrolled acres remaining in forest over time. All eight Federal programs scored in the moderately to very

Table 11.9—State forestry officials' evaluations of Federal forestry incentive programs

Attribute	Likert rating of incentive program ^a							
	FSP	CRP	EQIP	FLEP	FLP	SPBP	WRP	WHIP
Owner awareness and appeal								
Awareness	2.69 ^A	2.62 ^A	2.40 ^A	2.58 ^A	1.89 ^A	2.00 ^A	1.75 ^A	2.14 ^A
Appeal	3.31 ^{AB}	3.38 ^{AB}	2.50 ^{AB}	3.50 ^A	3.00 ^{AB}	2.75 ^{AB}	2.13 ^B	2.86 ^{AB}
Effectiveness in encouraging sustainable forestry								
Prevents conversion	3.00 ^{ABC}	3.70 ^A	2.11 ^C	3.36 ^{AB}	3.89 ^A	2.83 ^{ABC}	3.00 ^{AB}	2.50 ^{BC}
Prevents parcelization	2.85 ^{ABC}	3.27 ^{ABC}	2.11 ^C	3.18 ^{ABC}	3.89 ^A	2.67 ^{BC}	3.38 ^{AB}	2.50 ^{BC}
Maintains forest type	3.00 ^{AB}	3.40 ^{AB}	2.40 ^B	3.27 ^{AB}	3.63 ^A	2.60 ^{AB}	3.25 ^{AB}	2.71 ^{AB}
Protects wildlife/fish	3.77 ^A	3.31 ^A	3.30 ^A	3.36 ^A	3.67 ^A	2.17 ^B	3.38 ^A	3.86 ^A
Protects water quality	3.92 ^A	3.77 ^A	3.70 ^A	3.36 ^{AB}	3.78 ^A	2.57 ^B	3.50 ^A	3.29 ^{AB}
Protects soil productivity	3.54 ^{AB}	3.92 ^A	3.50 ^{AB}	3.45 ^{AB}	3.78 ^A	2.43 ^C	3.25 ^{ABC}	2.86 ^{BC}
Encourages forest management	3.85 ^A	3.46 ^{ABC}	2.50 ^{CD}	3.91 ^A	3.56 ^{AB}	3.57 ^{AB}	2.25 ^D	2.71 ^{BCD}
Overall average	3.42 ^{AB}	3.44 ^{AB}	2.82 ^{CD}	3.42 ^{AB}	3.74 ^A	2.70 ^D	3.14 ^{BC}	2.92 ^{CD}
Effectiveness in helping owners meet their objectives								
Timber production	3.54 ^A	3.00 ^{AB}	2.30 ^{BC}	3.82 ^A	3.13 ^{AB}	3.57 ^A	2.38 ^{AB}	1.86 ^C
Recreation	3.23 ^A	2.67 ^A	2.30 ^A	3.00 ^A	3.25 ^A	2.17 ^A	2.75 ^A	3.29 ^A
Wildlife	3.69 ^A	3.31 ^A	3.20 ^{AB}	3.55 ^A	3.50 ^A	2.43 ^B	3.38 ^A	4.00 ^A
Aesthetics	3.38 ^{AB}	2.69 ^{AB}	2.70 ^{AB}	2.91 ^{AB}	3.50 ^A	2.43 ^B	3.00 ^{AB}	3.14 ^{AB}
Soil/water conservation	3.38 ^{AB}	3.92 ^A	3.50 ^{AB}	3.64 ^A	3.75 ^A	2.86 ^B	3.25 ^{AB}	2.86 ^B
Invasive species control	2.62 ^A	2.50 ^A	3.10 ^A	2.91 ^A	3.00 ^A	2.67 ^A	2.00 ^A	2.71 ^A
Overall average	3.31 ^{AB}	3.11 ^{ABC}	2.85 ^{BC}	3.30 ^{AB}	3.36 ^A	2.70 ^C	2.80 ^C	2.98 ^{ABC}
Over time								
Practices remain in place	3.38 ^A	3.69 ^A	3.50 ^A	3.50 ^A	3.89 ^A	3.71 ^A	3.63 ^A	3.17 ^A
Acres remain in forest	3.54 ^A	3.46 ^A	3.00 ^A	3.50 ^A	3.89 ^A	3.71 ^A	3.63 ^A	3.00 ^A

^aTukey's grouping across incentive programs for each respective program attribute. $\alpha = 0.05$. Means with the same superscript letter (A, B, or C) are not significantly different.

Forest Stewardship Program (FSP); Conservation Reserve Program (CRP); Environmental Quality Incentives Program (EQIP); Forest Land Enhancement Program (FLEP); Forest Legacy Program (FLP); Southern Pine Beetle Prevention Program (SPBP); Wetlands Reserve Program (WRP); Wildlife Habitat Incentives Program (WHIP). Likert Scale awareness ratings: 1 = very low, 2 = moderately low, 3 = moderately high, 4 = very high; Likert ratings for effectiveness: 1 = very ineffective, 2 = moderately ineffective, 3 = moderately effective, 4 = very effective.

effective range for these characteristics, with no statistically significant differences between the scores (Table 11.9).

The State forestry officials also ranked the success of State and private financial incentive programs. The questionnaire sections relating to private incentive programs were streamlined, however, to request only ratings for their effectiveness in encouraging sustainable forestry and helping owners meet their objectives of forest ownership; no data were collected for owner awareness and appeal, or for practices remaining in place and acres remaining in forest over time. For owner awareness, State property tax and incentive programs generally were rated higher than Federal programs; for owner appeal, they were rated about the same (table 11.10).

In terms of effectiveness in encouraging sustainable forestry, State incentive programs were ranked higher overall than property taxes, although both types of programs received high scores for preventing conversion of forest land. Among the private programs, incentives offered by nongovernmental organizations were ranked higher overall than those offered by industry firms and State forestry associations, scoring highest among all State and private programs for maintaining forest type and protecting wildlife and fish. Programs offered by firms and associations scored highest for encouraging forest management (table 11.10).

There were no statistically significant differences among the programs in the officials' mean rankings for effectiveness in helping family forest owners meet their objectives of ownership. State incentive programs again scored higher overall than property taxes, however, and programs offered by nongovernmental organizations again scored higher overall than those offered by industry firms and State forestry associations. Both types of State programs received their highest scores for helping owners meet objectives related to timber production and soil and water conservation. Programs offered by firms and associations scored best for objectives related to timber production, while programs offered by nongovernmental organizations received their highest marks for objectives related to soil and water conservation (table 11.10).

Property tax programs were ranked moderately to very effective for both practices remaining in place and enrolled acres remaining in forest over time. Other State incentives were ranked moderately effective for practices remaining in place, but moderately ineffective for acres remaining in forest. The differences, however, were not statistically significant (table 11.10; Jacobson and others 2009).

Focus group sessions with family forest owners—The focus group sessions were designed to foster discussion about family forest owners' experience with financial incentive programs, what objectives of forest ownership the programs helped them to meet, and what additional program approaches would help them meet other objectives. The actual responses were much wider in scope, however, comprising four broadly shared themes (Daniels and others 2010):

- Forest ownership is more strongly linked to self-identity and lifestyle than to profit. Despite marked differences in time of ownership, there was a broadly shared commitment to long-term stewardship and appropriate management. Land ownership seemed much more tied to self-identity and lifestyle than to financial return, and in many groups there were clear statements that financial return was not a major driver for management behavior. Of the eight focus groups, the one made up of forest owner organization members in the South was the most focused on timber management to generate financial return, but even in this group there was a strong intergenerational component in their motivations for land ownership.
- A strong ethic of conservation. A readily verbalized commitment to a strong conservation ethic appeared to be interwoven with the self-identity theme for forest ownership and management. Rather than saying they intended to sell off land or liquidate standing timber, participants emphasized a desire to pass the land to future generations, or to buy more land if they had the money.
- Landowners have heard about sustainable forestry, but generally are not clear as to its meaning. Many focus group participants said they knew about sustainable forestry, but when asked to articulate what the term meant to them, the responses became more hesitant or vague. In many cases, the participants offered statements resonant of sustained yield concepts—such as harvesting at a rate no greater than growth—or referred to the program of a particular group—for example, stating, “That is what Tree Farm is promoting.”
- Landowners have a high interest in face-to-face technical assistance. Participants in every focus group said they would do a management practice they thought was important even if there was no incentive program, but needed someone to walk their land with them and guide them through the decision about what they should do. The need for on-the-ground help in understanding what was happening on their land was strongly expressed in every region.

Table 11.10—State forestry officials’ evaluations of State tax and incentive programs, industry and State association programs, and nongovernmental organization (NGO) programs

Attribute	Likert rating provision or program ^a			
	Property tax provisions	State incentive programs	Industry programs	NGO programs
Owner awareness and appeal				
Awareness	3.00 ^A	2.70 ^A	N/A	N/A
Appeal/effectiveness	3.25 ^A	3.14 ^A	N/A	N/A
Effectiveness in encouraging sustainable management				
Prevents conversion	3.08 ^A	3.71 ^A	3.00 ^A	2.66 ^A
Prevents parcelization	2.91 ^A	3.28 ^A	2.87 ^A	3.00 ^A
Maintains forest type	3.00 ^A	3.28 ^A	3.14 ^A	3.33 ^A
Protects wildlife/fish	2.81 ^A	3.14 ^A	2.50 ^A	3.33 ^A
Protects water quality	3.00 ^A	3.42 ^A	3.12 ^A	3.33 ^A
Protects soil productivity	2.83 ^A	3.43 ^A	2.87 ^A	3.33 ^A
Encourages forest management	2.91 ^A	3.71 ^A	3.25 ^A	3.00 ^A
Overall average	2.94 ^B	3.43 ^A	2.96 ^B	3.14 ^{AB}
Effectiveness in helping owners meet their objectives				
Timber production	3.08 ^A	3.85 ^A	3.86 ^A	3.00 ^A
Recreation	2.72 ^A	3.00 ^A	2.37 ^A	3.33 ^A
Wildlife	2.75 ^A	3.28 ^A	2.62 ^A	3.33 ^A
Aesthetics	2.82 ^A	2.85 ^A	2.50 ^A	3.33 ^A
Soil/water conservation	3.00 ^A	3.57 ^A	3.25 ^A	3.66 ^A
Invasive species control	2.30 ^A	3.14 ^A	2.43 ^A	2.67 ^A
Overall average	2.79 ^A	3.28 ^A	2.85 ^A	3.22 ^A
Effectiveness over time				
Practices remain in place	3.66 ^A	3.00 ^A	N/A	N/A
Acres remain in forest	3.66 ^A	2.25 ^A	N/A	N/A

N/A = not applicable.

^aTukey’s grouping across incentive programs for each respective program attribute. $\alpha = 0.05$. Means with the same superscript letter (A or B) are not significantly different.

Likert Scale awareness ratings: 1 = very low, 2 = moderately low, 3 = moderately high, 4 = very high; Likert ratings for effectiveness: 1 = very ineffective, 2 = moderately ineffective, 3 = moderately effective, 4 = very effective.

DISCUSSION AND CONCLUSIONS

Because of the sources used for lists of family forest owners to receive survey questionnaires, the results of some of the studies summarized in this chapter may be more representative of owners who are active and financially motivated than family forest owners in the South in general. For this reason, the findings should be considered conservative.

Family forest owner awareness and use of Federal income tax provisions—Owner awareness of the provisions available to taxpayers in general ranged widely, from nearly 80 percent for treatment of qualifying income as a long-term capital gain and annual deduction of management costs to between 50 and 60 percent for depreciation, the section 179 deduction, and loss deductions. In comparison, awareness of the provisions intended for owners of forests and other working lands—the reforestation incentives and special treatment of qualifying cost-share payments—was substantially lower, at roughly 50 percent or less.

Three demographic characteristics were associated with owner knowledge of each of the beneficial tax provisions: membership in a forest owner organization, having a written forest management plan, and a high level of household income. None of the demographic characteristics were associated across-the-board with owner use of beneficial tax provisions.

The study findings confirm the need for additional efforts to improve family forest owner awareness of beneficial tax provisions, particularly the provisions designed specifically for them. Historically, the tax handbooks, short courses, popularized articles, and extension workshops available to owners have focused on tax aspects of timber production. This approach has been beneficial and certainly needs to be continued. It seems likely, however, that approaches aimed at informing owners of the tax implications of other forest uses—nontimber forest products, recreation, and stewardship, for example—would appeal to the interests of additional owners (Greene and others 2004).

State property taxes—Most of the property tax administrators surveyed believed their State's program was effective at achieving its primary goal—reducing property tax—and approximately half believed it was effective at retaining forest land in areas highly susceptible to development. The findings from the survey indicate, however, that only a fraction of family forest land in the United States is enrolled in a preferential property tax program. Property taxes were of greater concern to the forest owners than any other type of tax, because they occur on an annual basis, are due whether or not the property produced income during the year, and are perceived as being high in relation to the value of the land. A common theme from the focus groups

was that property taxes may be forcing some owners to sell timber or land when they would rather not. These decisions often are compounded by other factors, such as the loss of a job or the rigors of living on a fixed income. A number of owners had stories of relatives, friends, or friends of friends who had been forced to sell timber or land, and some feared they would be forced into the same position in the future. As well, several owners enrolled in a preferential property tax program stated that the program had enabled them to hold on to their land.

The study findings suggest that property tax policies should be simple, flexible enough to address the various threats to maintaining forest land that exist across a State, and appropriate to the challenges that the owners currently face. The preferential property tax programs in many States were put in place decades ago, when forest owners faced a different set of challenges. It needs to be determined whether these programs adequately address the current situation. If the primary objective of a property tax program is to keep forests as forests, it should focus primarily on discouraging conversion to other uses; promoting timber production or public access should be secondary.

The New Hampshire Forest Land tax program is one example of a flexible preferential property tax program that meets the needs of different types of owners. The basic program provides a property tax reduction for keeping land undeveloped. Forest owners who desire to manage their land according to a plan developed by a licensed forester are eligible for an additional reduction in tax. Owners who are willing to permit non-motorized recreation by the public on their property may be eligible for a further “recreational adjustment” in the assessment and taxation of their land (Butler and others 2010).

Combined impact of Federal and State taxes—Research has consistently shown that most family forest owners do not take taxes into consideration when making management decisions for their land. Nonetheless, Federal and State taxes affect the level of stewardship owners can practice and whether they are able to continue holding their land.

Federal and State taxes were found to reduce the pre-tax land expectation value of family-owned forest land in the South by amounts ranging from just over 25 percent to nearly 50 percent. Much of the reduction, but only a small part of the variation, is attributable to Federal income tax. All family forest owners in the United States face the same Federal capital gain tax rates on their net returns from timber harvests. The economic effect of the tax varies with the frequency and value of harvest returns and the amount of capitalized reforestation expenses, but within a defined area the variation falls within a fairly narrow range. In the Coastal Plain States, for example, Federal income tax decreased the

pre-tax expectation value by 19 to 24 percent, and in the Appalachian-Cumberland highlands by 15 to 18 percent (table 11.7).

In contrast, the cumulative burden of State and local taxes varied widely across the South, from 4 percent of pre-tax land expectation value in Tennessee to 23 percent in Louisiana. Some of the variation can be explained by the number of different taxes a State imposes: Tennessee essentially levies only a property tax, while Louisiana levies harvest and income taxes as well as a property tax. The number of taxes levied did not, however, explain all of the variation. Like Tennessee, Texas levies only a property tax, while like Louisiana, Mississippi, levies property, income, and harvest taxes. Yet for Texas and Mississippi, the cumulative effect of State and local taxes was near the median for the region, and relative to pre-tax land expectation value, nearly identical (table 11.7).

Most variation in the cumulative effects stemmed from State-to-State variability in property tax rates. Property taxes occur annually and carry the greatest economic burden of any State and local tax. At the same time, property tax is the tax that family forest owners can do the most about; for example, they can ensure that their forest land meets the requirements to be assessed or taxed at its current use. Some States require a written management plan to qualify for this benefit, which encourages forest stewardship while providing tax relief. Owners also can seek other sources of income from their forest land—through, for example, a hunting lease, fee recreation, or nontimber forest products—to offset the annual tax levy.

The Federal income tax and State property taxes carry costs in addition to their economic impact. The Federal tax law changes continually. Although some changes are designed to benefit owners of forests and other working lands, they have the effect of increasing the complexity of the law and the cost of complying with it. As well, State-to-State variation in property taxes produces relative disadvantages to holding forest land and may have the unintended consequence of contributing to differential rates of development among States, particularly at the urban-rural interface or in areas undergoing gentrification (Cushing 2006).

Effect of the Federal estate tax—An estimated 77,200 forest estates, with 79.1 million acres of family-owned forest land, were transferred each year at the death of their owners. The median forest area transferred was 156 acres. Only a third of forest estates qualified for and one-quarter applied for special use valuation to reduce the Federal estate tax due. In three-fourths of the transfers where it was used, special use valuation was applied to both the land and timber. Although this may have been necessary to meet the requirements for the provision, it precluded the harvesting

of timber for 10 years. The reduction in the gross value of forest estates from applying special use valuation averaged \$325,000, well under the \$750,000 maximum benefit in effect during the study period.

Owners of family forests and other rural lands were many times more likely than other taxpayers to incur the Federal estate tax. In about two-fifths of the transfers where Federal estate tax was due, timber or land was sold to pay part or all of the tax. Some three-fourths of the timber sales and nearly three-fifths of the land sales occurred because other estate assets were not sufficient to pay the tax. The need to sell timber or land to pay the estate tax was not limited to small holdings and the areas affected were not inconsequential. The mean forest size of ownerships that needed to sell timber was 3,035 acres and the mean area harvested was 498 acres; the mean forest size of ownerships that needed to sell land was 770 acres and the mean area sold was 387 acres.

The responses from forest owners and other owners of working lands were more remarkable for their similarities than their differences. The groups differed statistically in just 6 of the 20 characteristics surveyed, with most of the differences stemming from the different uses members of the two groups make of their land.

The results of this study provide insight into the magnitude of the effect of the Federal estate tax on family-owned forests and other rural lands. As well, they suggest avenues for development of an estate tax relief policy that would benefit both forest and other owners of working lands. Some elements of such a policy might include:

- A targeted increase in the effective exemption amount for estates that consist largely of working lands, such as farms, ranches, or forest land
- Revision of the requirements for special use valuation to permit timber harvests made in accordance with a management plan developed in consultation with a qualified professional forester
- Recognition of a business entity for family farms and forests, to help ensure that they qualify for business-oriented provisions in the tax code and to facilitate the transfer of working lands from one generation to another (Greene and others 2006).

Effectiveness of financial incentive programs in promoting sustainable practices—The results of the survey of State forestry officials indicate there are clear differences among the incentive programs available to family forest owners. The Forest Stewardship Program, Forest Land Enhancement Program, and Forest Legacy Program—all administered by the Forest Service—were among the top rated Federal programs by all measures, both overall and for individual attributes. All three programs stress multiple objectives, but

their clientele is limited to forest owners. The other Federal incentive programs have forestry emphases, but their clientele includes farmers and ranchers as well as forest owners.

Regardless of their orientation or administrative agency, however, all of the Federal programs scored in or near the very effective range for practices remaining in place and acres remaining in forest over time (table 11.9). This finding speaks to the participating owners' long-term commitment to the supported practices as well as the long-term effectiveness of the programs themselves.

Programs sponsored by States, industry firms and State forestry associations, and nongovernmental organizations generally were more narrowly targeted than Federal programs, and scored higher for specific attributes. Such targeted programs have the potential to outperform general conservation programs for regional concerns, emerging issues (for example, invasive species control) or where program funding is constrained.

The findings from the survey of forestry officials must be interpreted with respect to acres enrolled in incentive programs, rather than by all acres held by family forest owners. The results of the forest owner focus groups clearly showed that public and private financial incentive programs play only a limited role in promoting sustainable practices on family-owned forest land. One reason is that funding of the programs limits the number of acres that may be enrolled. Another is that many forest owners remain unaware that the programs exist. Owner awareness of Federal financial incentive programs, for example, peaked in the moderately ineffective range (table 11.9; Jacobson and others 2009).

Southern forest owners share four strongly held sentiments with family forest owners nationwide:

- Their reasons for owning forest land are more strongly linked to self-identity than to profit;
- They have a strong ethic of conservation toward their land;
- The concept of sustainable forestry resonates with them, although they are not entirely clear as to its meaning; and
- They are more interested in face-to-face technical assistance than incentive programs or beneficial tax provisions.

Forest owner organization members in the South were more focused on managing timber for profit than owners in other regions, but still operated within these broad shared themes (Daniels and others 2010).

Since the research described in this chapter was completed, funding and legislative changes have occurred in the financial incentive programs available for family forest owners. The Forest Land Enhancement Program, among the

top-rated programs, received no funding beyond its initial allocation. Forest Service distributions to States ended in 2006 and the program was not reauthorized in the 2008 Farm Bill (P.L. 110-246). As well, the Farm Bill modified provisions of the Environmental Quality Incentives Program and other programs administered by the Farm Service Agency and Natural Resources Conservation Service to include management and conservation practices on family-owned forest land as eligible for assistance. It also added protection of forests from threats such as invasive species, insects, and disease as a national priority for Federal assistance and established the Emergency Forest Restoration Program to address the new priority (Gorte 2008, Greene and others 2010).

The effect of these changes has largely been to shift incentive programs for family forest owners from the Forest Service to sister agencies within the Department of Agriculture whose traditional focus has been farmers and ranchers. The challenge for the Forest Service will be to find new ways to deliver direct assistance to landowners and to coordinate program delivery with other Federal and State agencies.

Kilgore and others (2007) proposed nine recommendations for financial incentive programs:

- Increase funding and availability of one-on-one technical assistance from both extension foresters and State service foresters;
- Approach the concept of forest sustainability through technical assistance that addresses owners' long-term stewardship and family legacy objectives rather than through certification;
- Make a written forest management plan a requirement to participate in all incentive programs;
- Design incentive programs to put forest owners in direct contact with a forester or other natural resource professional;
- Design some incentive programs with sufficient flexibility to address regional differences in forest characteristics, forest health concerns, or forest owner objectives;
- Link incentives directly to stewardship practices instead of general forest management practices;
- Fund cost-share applications according to their expected environmental benefit instead of first-come-first-served;
- Maintain adequate funding and stable program requirements for financial incentives over the long term; and
- Make the requirements for owners to participate in financial incentive programs more uniform, and coordinate program administration and delivery more closely.

KNOWLEDGE AND INFORMATION GAPS

Additional research is needed to update and validate the findings of each of the studies discussed above for current legislation, and to obtain larger and broader samples of family forest owners. Additional work also is needed to assess the policy implications that arise from the studies, including:

- Identify and evaluate program approaches for improving family forest owner awareness and use of beneficial income tax provisions, including assisting owners to develop written forest management plans, encouraging them to participate in forest owner organizations, and better informing them of the tax aspects of nontimber forest uses.
- Identify and evaluate approaches to develop an estate tax relief policy for owners of forests and other working lands, including a targeted increase in the exemption amount for estates that consist largely of working land, revising the requirements for special use valuation to permit timber harvests made in accordance with an approved management plan, and developing a business entity tailored for owners of family farms and forests.
- Monitor the development of property tax provisions intended to reduce urban sprawl and encourage provision of ecosystem services from rural land, and examine the level of their success.
- Determine whether property taxes on family forest land at the urban-rural interface remain stable over time or rise in response to development pressures.
- Determine whether property tax differentials in neighboring States continue or diminish over time.

Little is known about the effect of the changes to financial incentive programs made by the 2008 Farm Bill, which shifted major responsibility for program administration from the Forest Service to sister agencies in the Department of Agriculture. Research is needed to determine the effects of this shift on State forestry agency partners, family forest owners, and the number of family forest acres treated.

And finally, the period 2002–2012 has provided a veritable laboratory on the effects of continually changing tax provisions. Research is needed to determine the effect of such tax uncertainty on the management decisions of family forest owners.

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