

Income Tax Considerations for Forest Landowners in the South

Federal and state income taxes are calculated for hypothetical owners of nonindustrial private forests (NIPF) across 14 southern states to illustrate the effects of differential state tax treatment. The income tax liability is calculated in a year in which the timber owners harvest \$200,000 worth of timber. After-tax land expectation values for a forest landowner are also calculated to illustrate the effects of tax planning on returns to a timber investment over time. Landowners who fail to take advantage of the many tax provisions can lose a third or more of their timberland revenues to income taxes.

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A Case Study on Tax Planning

Federal and state income taxes should always be an important concern of private forest landowners because they can significantly reduce net returns on a forestland investment. The complexity of tax law, however, makes it difficult for landowners to develop a sound management plan that allows them to take advantage of the various interacting state and federal provisions pertaining to forestry. Learning all the relevant tax implications is both expensive and time consuming, but the consequences of failing to take advantage of the existing law can be even more costly.

This paper provides two analyses of the effects of federal and state tax on returns to timberland investors, using hypothetical cases in the South. The first analysis considers the tax cost of a timber sale. The second analysis examines how using various tax provisions affects the expected value of a timber investment over an infinite number of rotations.

Federal and State Income Tax Laws

The federal income tax provisions give forest landowners various opportunities for tax savings. It is important to understand the federal laws because state tax law and policy often follow the federal model. Following are the most important income tax rules for timber investments; further details of these provisions will be discussed in the section on tax planning.

1. The treatment of timber sale income as long-term capital gain.
2. The correct allocation of basis (acquisition costs) between land, timber, and other land improvements on the property.
3. Cost depletion.

4. The deduction, for an active business or investment, of management expenses, property taxes, and other business-related costs.

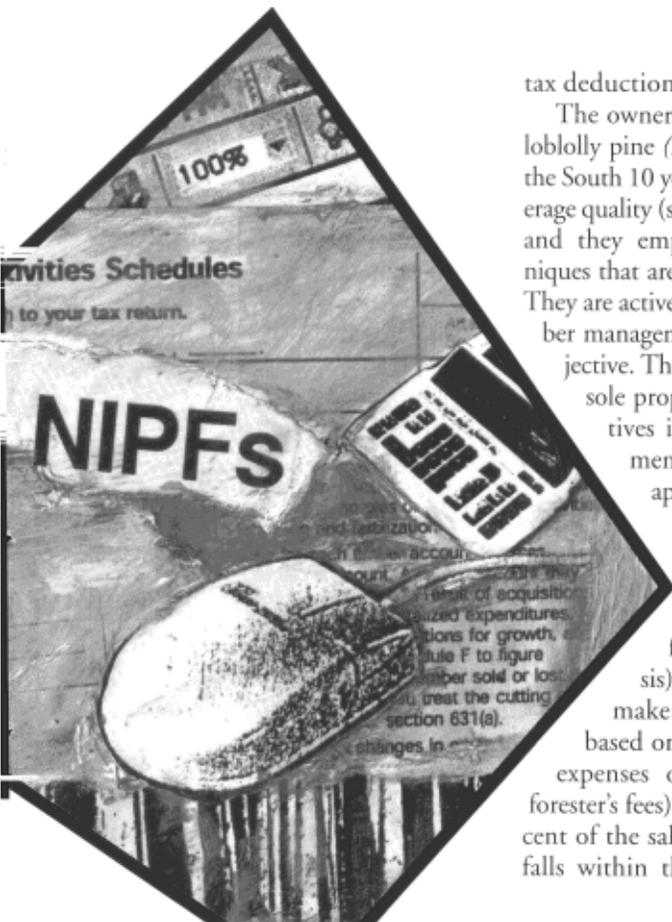
5. The suspension (or capitalization), for a passive business, of management expenses, property taxes, and other business-related costs.

6. The reforestation amortization and investment tax credit.

The 14 southern states analyzed in this study are Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia. All except Florida, Tennessee, and Texas have a comprehensive income tax. Seven of those 11 states use federal adjusted gross income as their tax base (*table 1*). North Carolina and South Carolina use federal taxable income as their tax base; Alabama and Arkansas require taxpayers to compute income from all sources. Deductibility of federal income tax, standard deductions, personal exemptions, tax rates, and long-term capital gains exclusions are detailed for each state in *table 1*.

Part I: Tax Costs of a Timber Sale

Our hypothetical taxpayers, a husband and wife, age 60 with no dependents, are representative of a general forest landowner (Birch 1997, pers. commun.). The income tax effects are shown for a medium income of \$50,000 and a high income of \$110,000, before timber revenues. To maintain comparability across states, it is assumed that the landowners use the standard deduction. (If itemized deductions were used, they would differ across states because of the different state income



tax deductions on the federal return.)

The owners purchased 500 acres of loblolly pine (*Pinus taeda*) forestland in the South 10 years ago. The land is of average quality (site index 60, base age 25), and they employ management techniques that are common for the region. They are actively involved and have timber management as their primary objective. The business is operated as a sole proprietorship. Other objectives include wildlife management, aesthetics, and value appreciation.

A timber sale is completed in the current year (1997 tax rates and law are assumed for purposes of this analysis). At the time, the owners make estimated tax payments based on the sales proceeds. The expenses of the sale (consulting forester's fees) are assumed to be 6 percent of the sale price. This percentage falls within the range of large sales,

which generally command a fee of 4 to 8 percent. It is assumed that the owners will not reforest the land until the following year, so no amortization of reforestation costs or investment tax credits are included in the analysis. The annual property tax for the landowners is assumed to be \$1,000 (500 acres at \$2 per acre), and the annual management costs are \$2,500 (500 acres at \$5 per acre) (Dubois et al. 1997). Both annual costs are fully deductible because the landowners are actively involved in the management of the forestland.

The purchase price of the timberland 10 years ago was \$500,000, or \$1,000 per acre. The land contained old-field loblolly pine with an average age of 20 to 25 years. The landowners allocated the purchase price (basis) between the land (\$215,000, or \$430 per acre) and the timber (\$285,000, or \$570 per acre). The total growing stock on the land at the time of purchase was 11,129 cords (22.25 cords per acre). The landowners are using the

Table 1. General income tax provisions for southern states.^a

	Federal adjusted gross income used as tax base	Federal income tax deductible	Personal exemption ^b	Standard deduction ^b	Abbreviated tax rate schedule ^b				Proportion of long-term capital gain taxable	Maximum effective long-term capital gains tax rate
					From	of the first	to	of the amount over		
Alabama	No	Yes	\$ 3,000	\$ 4,000 ^c	2.00%	\$ 1,000	5.00%	\$ 6,000	100%	5.00%
Arkansas	No	No	40 ^d	1,000 ^e	1.00	2,999	7.00	25,000	100	6.00 ^f
Florida	—	—	—	—	—	—	—	—	—	—
Georgia	Yes	No	3,000	3,000	1.00	1,000	6.00	10,000	100	6.00
Kentucky	Yes	No	40 ^d	900	2.00	3,000	6.00	8,000	100	6.00
Louisiana	Yes	Yes	9,000	Combined ^g	2.00	20,000	6.00	100,000	100	6.00
Mississippi	Yes	No	9,500	3,400	3.00	10,000	5.00	20,000	100	5.00
North Carolina	No ^h	No	300 ⁱ	5,000 ^j	6.00	21,250	7.75	100,000	100	7.75
Oklahoma	Yes	Yes	2,000	2,000 ^k	0.50	2,000	7.00	21,000	100	7.00
South Carolina	No ^h	No	— ^l	— ^l	2.50	2,280	7.00	11,400	44 ^m	3.08
Tennessee	—	—	—	—	—	—	—	—	—	—
Texas	—	—	—	—	—	—	—	—	—	—
Virginia	Yes	No	1,600	5,000	2.00	3,000	5.75	17,000	100	5.75
West Virginia	Yes	No	4,000	none ⁿ	3.00	10,000	6.50	60,000	100	6.50

^aAs of April 1998. The sources of information used in collecting this data were BNA Income Tax Planner with 50 States for Windows (1998), state tax forms, a survey of state tax departments, and correspondence with state tax offices.

^bThe personal exemption, standard deduction, and tax rate schedules are for married taxpayers filing a joint return.

^cIf AGI is less than \$20,000, the standard deduction is 20% of AGI.

^dA tax credit of \$20 (\$40 per couple) is used instead of a personal exemption.

^eIf gross income is less than \$10,000, the deduction is 10% of gross income.

^fMaximum tax rate on capital gains is 6 percent.

^gLouisiana uses a combined personal exemption/standard deduction.

^hTax base is federal taxable income.

ⁱThe exemption is phased out if federal AGI is over \$100,000.

^jNorth Carolina limits standard deduction to the pre-inflation adjusted federal amount.

^kDeduction is 15% of Oklahoma AGI up to a maximum of \$2,000.

^lThe federal personal exemption and standard deduction amounts are passed through to the taxpayers by the state using federal taxable income as the tax base.

^mThe long-term capital gain holding period for South Carolina is two years.

ⁿBoth standard and itemized deductions were eliminated in 1987.

Table 2. Federal income tax calculation for the hypothetical landowners.^a

	Income level	
	Medium	High
INCOME		
Personal income	\$ 50,000	\$ 110,000
Revenue from timber sale		
Less deductions		
Expense of sale	(\$12,000)	
Depletion	(\$38,880)	
Taxable long-term capital gain on sale	149,120	149,120
Less deductions		
Property tax	(\$1,000)	
Management costs	(\$2,500)	
Total deductions	(3,500)	(3,500)
Adjusted gross income	195,620	255,620
Standard deduction	(6,900)	(6,900)
Personal exemptions	(4,664)	(2,120)
Taxable income	\$ 184,056	\$ 246,600
TAXES		
Taxable income	\$ 184,056	\$ 246,600
Less taxable capital gain on sale	(149,120)	(149,120)
Ordinary income	34,936	97,480
Ordinary income tax	5,239	21,937
Taxable long-term capital gain on sale	149,120	149,120
Capital gains tax		
10%	626	0
20%	28,571	29,824
Total capital gains tax	29,197	29,824
Alternative minimum tax	0	918
Total federal income tax	\$ 34,436	\$ 52,679

^aCalculations completed with BNA Income Tax Planner with 50 States for Windows (1998).

bracket. Second, the high-income landowners are subject to the alternative minimum tax.

The alternative minimum tax is a separate tax calculation with a proportional tax rate that is applied each year to a taxpayer's income. Certain tax deductions are calculated differently. If the deduction for regular income tax purposes exceeds that allowed for alternative minimum tax purposes, then a tax liability may be incurred. If the tentative minimum tax is greater than the regular income tax, the taxpayer must pay the regular tax plus the alternative minimum tax (Willis and Davis 1998). For individuals, this tax is calculated on IRS Form 6251.

State tax analysis. State taxes are allowed as a deduction on a taxpayer's federal return if the taxpayer itemizes deductions on Schedule A of federal Form 1040. Our hypothetical taxpayers are taking the federal standard deduction to make the state computations more comparable.

The amount of state tax the hypothetical landowner must pay on a timber sale varies greatly because of differences in state tax laws (table 3). Taxable income, income tax, and combined federal-state tax liability for the hypothetical landowners in each state are shown. Florida, Tennessee, and Texas do not have state income taxes and therefore have no state income tax liability. For those states with an income tax, the highest liability for the medium-income taxpayers is incurred in North Carolina (\$13,472) and the lowest in Louisiana (\$7,091). North Carolina has the highest tax rate schedule and the highest minimum tax rate (6 percent) among the southern states. The low tax liability in Louisiana results from three factors: the allowable deduction of federal income taxes, a high personal exemption and standard deduction, and a favorable tax rate schedule. These relationships are similar for the high-income level taxpayer

Part II: Land Expectation Value

In this section we examine the effect of income taxes on the value of a timber investment over a perpetual number of rotations, using land expectation value methodology. Land expectation value is defined as the net present value

Scribner log rule and an averaging convention of 3.3 cords per thousand board feet (MBF) for depletion unit purposes (Oderwald 1998, pers. commun.). All timber volumes are calculated with WINYIELD (Hepp 1997).

The sale is a clearcut of 72 acres, which produces 2,738 cords (38 cords per acre) of wood. The landowners receive \$285 per MBF for sawtimber, \$75 per cord for Chip-n-Saw, and \$26 per cord for pulpwood (University of Georgia 1997). Total sales proceeds are \$200,000.

The total adjusted growing stock is 20,076 cords. The growth since the purchase of the land is therefore 8,947 cords. The depletion unit is calculated by dividing the purchase price allocated to the timber's adjusted basis by the total adjusted growing stock since purchase. The depletion unit for the landowners is \$14.20 ($\$285,000 \div 20,076$) per cord. The depletion unit calculation assumes that all expenses

are deducted as incurred rather than capitalized. Total depletion for the sale is \$38,880 ($\$14.20 \times 2,738$).

Federal tax analysis. The calculation of the federal tax liability for the hypothetical landowners is summarized in table 2. An after-tax net income model is used in the analysis. The personal exemption for the taxpayers in both income levels is reduced because part of the personal exemption is phased out after the taxpayers' adjusted gross income reaches \$181,800 (Willis and Davis 1998).

The long-term capital gains tax on the sale differs for landowners in the two income levels, in two respects. First, for the medium-income taxpayers, some of the capital gain is taxed at the lower, 10 percent capital gains rate because that rate applies until additional capital gains income moves the taxpayer into the 28 percent marginal federal tax bracket (over \$41,200 in taxable income for 1997) and the corresponding 20 percent capital gains

Table 3. Federal and state income tax for landowners in the South.^a

	State taxable income ^b		State income tax		Combined state and federal income tax	
	Medium income	High income	Medium income	High income	Medium income	High income
Alabama	\$ 154,184	\$ 195,941	\$ 7,629	\$ 9,717	\$ 42,065	\$ 62,396
Arkansas	194,620	254,620	11,422	15,622	45,858	68,301
Florida	—	—	0	0	34,436	52,679
Georgia	189,620	249,620	11,117	14,717	45,553	67,396
Kentucky	193,820	253,820	11,389	14,989	45,825	67,668
Louisiana	161,184	202,941	7,091	9,596	41,527	62,275
Mississippi	182,720	242,720	8,986	11,986	43,422	64,665
North Carolina	186,256	248,800	13,472	18,320	47,908	70,999
Oklahoma	191,620	251,620	12,698	16,898	47,134	69,577
South Carolina	118,443	180,987	7,960	12,338	42,396	65,017
Tennessee	—	—	0	0	34,436	52,679
Texas	—	—	0	0	34,436	52,679
Virginia	189,020	249,020	10,611	14,061	45,047	66,740
West Virginia	191,620	251,620	11,330	15,230	45,766	67,909

^aCalculations completed with BNA Income Tax Planner with 50 States for Windows (1998).

^bThe federal taxable income is \$184,056 and \$246,600 for the medium and high income levels, respectively.

of bare land used to produce perpetual rotations of timber. Land expectation value is a useful tool for estimating the maximum bid price for bare forestland (Gunter and Haney 1984).

This analysis continues the hypothetical landowner model developed in the previous section for the year after the timber sale and for all subsequent rotations. Only one income level will be examined. It is assumed that the landowners have \$70,000 per year in wages for each year of the rotation. This places them in the 28 percent federal marginal tax bracket for ordinary income. The landowners use a management rotation (table 4), which gives them a high net present value, translating into a good return on their investment (Cafferata 1997). They prepare the site and plant with genetically improved loblolly seedlings. The landowners use an herbicide release in the third year of the rotation. A thinning in year 15 of the rotation produces about 8.5 cords of pulpwood and one cord of Chip-n-Saw per acre. The final harvest occurs in year 30 of the rotation and produces approximately 12 cords of pulpwood, 24 cords of Chip-n-Saw, and 2 MBF per acre (table 4). Management costs were obtained from the *Forest Landowner 31st Manual Edition* (Dubois et al. 1997). Timber prices were calculated by using simple linear regression techniques on

10 years of *Timber Mart-South* (University of Georgia 1987–97) southern regional average prices.

Assumptions related to land expectation values are as follows:

1. Revenues and costs are assumed to be constant and will increase only with the 3 percent inflation rate assumed in the analysis.
2. Tax laws and rates are assumed to be constant throughout the rotation.
3. An after-tax net income model is used.
4. Two nominal (including inflation) after-tax interest rates of 6 and 8 percent are used in the analysis to account for any uncertainty or risk in the model.
5. Two general state tax rates of zero and 7.8 percent are chosen to model the minimum and maximum state tax rate implications for the southern model.

Tax-planning scenarios. Six tax-planning scenarios are evaluated to determine the effects of tax provisions on land expectation value (table 5, p. 14). In the first scenario (base case) our hypothetical landowners take advantage of all available tax provisions. In each successive scenario, they forgo certain tax benefits that lower their land expectation value. These reflect common omissions and mistakes made by typical forest landowners.

Under scenario 1, the landowners, who are cash basis taxpayers, pay

\$10,000 of their reforestation costs in each of the first two years. Reforestation costs are thus spread over two tax years, allowing them to maximize their use of the reforestation amortization and the investment tax credit. The landowners deduct their management expenses, including the herbicide release (this assumes the stand is established), and property taxes. Under current tax provisions, an active business is allowed to fully deduct any ordinary and necessary expense from any current income. The owners sell the timber under a “pay-as-cut” contract (Section 631(b) of the Internal Revenue Code). As long as the one-year holding period has been met, Section 631(b) provisions allow the net gain from the thinning and clearcut to be taxed as long-term capital gains. Because the timber sale income is treated as long-term capital gains, it is not subject to self-employment tax.

In scenario 2, management costs and property taxes are capitalized. These expenses are then recovered through the

Table 4. Land expectation value assumptions.

Forest-related costs	
Reforestation expense	\$200 per acre
Herbicide release cost	\$70 per acre
Sale administration cost	6% of stumpage price
Property taxes	\$2 per acre
Annual management expenses	\$5 per acre
Forest-related revenues	
Pulpwood stumpage price	\$26 per cord
Chip-n-Saw stumpage price	\$65 per cord
Sawtimber stumpage price	\$269 per MBF
Forest management regime	
Year 1:	Reforest stand
Year 3:	Herbicide release spraying
Year 15:	Commercial thinning (80 square feet residual basal area)
	8.3 cords per acre, pulpwood
	1.0 cords per acre, Chip-n-Saw
Year 30:	Harvest
	11.9 cords per acre, pulpwood
	23.9 cords per acre, Chip-n-Saw
	2 MBF per acre, sawtimber
Site index = 60 at 25 years	
Initial planted trees per acre = 550	

Table 5. Tax planning scenarios for land expectation value analysis.

	Reforestation costs		Management expenses and property taxes				Treatment of timber sale revenue		
	Spread over two years	All costs in first year	Investment tax credit		Deducted currently	Capitalized	Neither deducted nor capitalized	Capital gain	Ordinary income
			Used	Not used					
Scenario 1	✓		✓		✓			✓	
Scenario 2	✓		✓			✓		✓	
Scenario 3	✓		✓				✓	✓	
Scenario 4	✓		✓		✓			✓	
Scenario 5		✓		✓			✓	✓	
Scenario 6		✓		✓			✓	✓	

depletion deduction when the timber is harvested. The landowners' basis in the timber is composed of management costs and property taxes because they have already amortized the reforestation expenses. Suspension (or capitalization) of these expenses is required if a landowner's business is classified as passive, unless the landowner has offsetting passive income from other sources. This scenario thus represents the tax effects for a timber investment that is classified as passive, compared with the active business in scenario 1.

Scenario 3 differs from scenario 1 in that the management expenses and

property taxes are neither deducted nor capitalized. All other variables remain the same. A landowner who fails to maintain proper records and receipts or is not aware of the tax rules loses the advantage of expense deductibility and falls into this scenario.

Scenario 4 is the same as scenario 1 except that the revenue from the timber harvests is treated as ordinary gain. Treatment of timber revenues as ordinary gains can occur if the landowners sell timber in a lump-sum sale. Gains from a lump-sum timber sale are treated as ordinary gains if the timber investment is classified as a business.

Because the sale revenue is treated as an ordinary gain, the final timber harvest moves the landowners into the 39.6 percent tax bracket. Future tax rates are uncertain; our analysis assumes that the ordinary rate stays at 28 percent. The Medicare portion (2.9 percent) of the self-employment tax on total ordinary income above \$65,400 is also omitted from the analysis for purposes of consistency. These results are conservative estimates under current law.

Scenarios 5 and 6 illustrate the extreme cases of failure to take advantage of favorable tax treatment available to the landowner. In scenario 5 the owners spend all \$200 per acre in reforestation costs in the first year. These expenses are neither amortized nor capitalized. Consequently, they do not take the associated reforestation investment tax credit. Management expenses and property taxes are neither deducted nor capitalized.

Scenario 6 is the same as scenario 5 except that the timber sale revenue is treated as an ordinary gain, even though the provisions of Section 631(b) allow the long-term capital gains treatment of timber sales. Timber sale revenue is treated as ordinary gains if the landowners sell the timber as a lump-sum sale.

Effects of tax planning. Scenario 1 produces land expectation values of \$272 to \$739 per acre (table 6). This means that a timberland buyer would be willing to pay between \$272 and \$739 per acre for bare land in the South using the previously stated loblolly pine management regime, depending on the

Table 6. Land expectation values and changes among scenarios, per acre.^a

	6% interest rate ^b		8% interest rate ^b	
	No state tax	7.8% state tax	No state tax	7.8% state tax
Scenario 1	\$739	\$667	\$302	\$272
Scenario 2	\$690	\$608	\$260	\$220
<i>Change in value between 1 and 2</i>	7%	9%	14%	19%
Scenario 3	\$667	\$576	\$247	\$201
<i>Change in value between 1 and 3</i>	10%	14%	18%	26%
Scenario 4	\$630	\$559	\$243	\$213
<i>Change in value between 1 and 4</i>	15%	16%	20%	22%
Scenario 5	\$586	\$480	\$173	\$116
<i>Change in value between 1 and 5</i>	21%	28%	43%	57%
Scenario 6	\$477	\$372	\$114	\$56
<i>Change in value between 1 and 6</i>	35%	44%	62%	79%

^aAll calculations made with WINYIELD (Hepp 1997).

^bInterest rate is nominal and includes an assumed inflation rate of 3%.

discount rate and state tax rate.

Land expectation values in scenarios 2 and 3 range from \$201 to \$690. Capitalizing expenses (scenario 2) rather than currently deducting these expenses decreases the land expectation value by 7 to 19 percent, depending on interest rates and state tax rates.

Scenario 3 illustrates the impact of losing both the capitalization and the deduction of management expenses. Failure to keep records can decrease land expectation values by 10 to 26 percent.

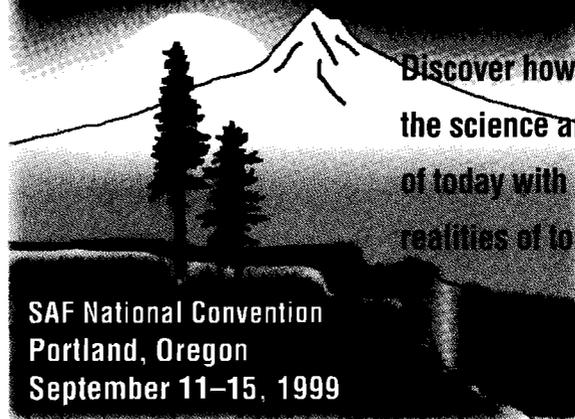
Forest landowners who do not take advantage of long-term capital gains treatment (scenario 4) can expect to lose 15 to 22 percent of their land expectation value. Long-term capital gains can be lost by neglect or ignorance of the tax law governing the relationship between being an active business and the Section 631(b) rules for selling timber. The value loss could be even greater if a landowner's ordinary tax rate is higher than the assumed 28 percent.

Land expectation values drop substantially in scenarios 5 and 6, to \$56 to \$586. Percentage decreases from the land expectation values in scenario 1 range from 21 to 79 percent, depending on state tax rates and interest rates.

Conclusion

Forest landowners must either have a working knowledge of the tax provisions affecting timberland or seek the professional services of an accountant familiar with the tax provisions relating to forestry investments. Misunderstanding and ignorance of tax provisions can cause landowners to lose a significant amount of potential revenue over a rotation. The results from this analysis show that income taxes can capture more than a third of revenues for the assumptions considered in this particular case. Annually deducting management expenses and ensuring capital gains treatment on timber sales prove crucial in ensuring that landowners receive the highest possible returns on their timberland investment. Assessment of management activities and good record keeping are essential for landowners. By investing in tax planning, landowners can increase their returns over the lifetime of timberland ownership.

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