

## Calculating Lease Value Ranges for CRP Trees

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### How do you calculate lease rates?

Consider the question, "How can lump sum payments and annual lease payments best be calculated?" Three methods might commonly be used. These are: 1) Annual land rent for comparable uses; 2) Current CRP payments; or, 3) The lease value based upon the income potential of the tree crop on the land now. Let's examine each of these possible methods.

#### *1) Annual land rent for comparable uses.*

Land rental values in general depend on soil productivity, competing land uses, and the supply and demand for land in your area. Because the land in question is already in trees, competing uses are limited mostly to forestry crops. In using this method, the landowner would consider the best land rental rate that could be negotiated. If demand for tree land to rent is low and the supply is high, rent price will fall. This method of figuring land rents is simple and may be profitable for the landowner. However, it does not fully account for what the tree crop already growing on the land is worth to the landowner.

*2) Current CRP payments.* Some landowners have maintained that the annual CRP payment is a good basis for determining annual tree land lease payments. But, in fact the CRP payment is the amount required to get the landowner to stop growing annual rowcrops on marginal land and switch to long-term, soil conserving crops such as grass or trees. In this sense CRP payments do not show what the established tree crop is worth to the landowner. This method of figuring land rent is also

simple and could be profitable for the landowner, although it may tend to underestimate future forestry income opportunities.

*3) A lease value based on the income potential of the established tree crop.* This method uses the estimated tree growing costs and incomes to calculate an annual rental rate. Using this approach assures that the income potential of the tree crop already growing on the land is considered from planting to tree crop financial maturity. While this method is more complicated to compute and to understand, it reflects the real economic value of the established trees, and is the best overall method to use.

Landowners can easily calculate annual land rent payments from methods 1) and 2) described above. The remainder of this section will be used to discuss method 3) in greater detail.

A range of lump sum and annual lease payments are shown for slash and loblolly pine by site index in Tables 1 and 2. The lump sum and annual lease payments are shown as an estimated range from the least the landowner could expect to accept, to the highest that the lessee could be expected to pay. Read carefully the explanation given below to understand why your individual "best lease rate" could fall outside of the ranges shown.

### Lease example

This section shows establishing lease rates from age 11 to 20 years for a loblolly pine plantation with a Site Index (SI) of 65 feet at 25 years. In Table 1

we find a range of per acre lease values with lump sum payments from \$350 to \$440 and annual payments ranging from \$45 to \$67. The minimum estimates are based on a discount rate of 8 percent. In this analysis, 8 percent is considered as a minimum return on the money invested in establishing and growing the trees. In other words, if the tree growing investment cannot produce a return of at least 8 percent, then another investment opportunity for those dollars would be chosen that would earn at least 8 percent.

The maximum estimates are based on the internal rate of return (IRR) earned by investment in the tree crop grown to age 20 years. In our example, for a 20-year loblolly pine rotation on SI 65 land, the IRR is 12.6 percent. Thus, the maximum value represents a 12.6 percent return on the 20-year tree growing investment.

### Why a range for lease rates?

Remember that our estimates are made for average conditions. Our calculations show average estimated values in Coastal and Piedmont areas of Georgia where most of the CRP tree acres are located. If your land is located in Coastal Georgia, your values could be a little higher than those shown. If your land is located in Piedmont Georgia, your values could be a little lower than those shown. Also, your values could be higher if your stand of trees is above average quality, likewise your values could be lower if your stand quality is below average.

Lease bid prices are expected to vary depending on the timber market in your area. Areas with more competitive timber markets would produce better lease prices, other things being equal. Other factors can also cause the lease price to vary: stand location, road access, distance to mill, etc.

Notice that annual lease prices in Table 1 are slightly higher than those in Table 2. This can be difficult to understand. With all of the example rotations shown, the landowner has already paid the cost of growing the trees to age 10 years. The landowner expects to recover these costs over the duration of the lease. The lease for pulpwood is 10

years and for sawtimber is 23 years. These costs must be compounded forward to year 10 (the start of the lease period), then spread, as an annuity value, over the life of the timber lease. With pulpwood rotations, costs have to be recovered over a shorter lease time period, 10 years. With longer, multiple product rotations, these same costs are recovered over a longer time period, 23 years. Therefore, lease payments are slightly higher for the shorter rotations.

### Regeneration after lease expiration

Questions by landowners indicate that regenerating trees after lease expiration is important. To add the value of regenerating to the lease rate, consider the following aspects. Appraise natural or planted regeneration. Natural regeneration is cheaper but carries more risk and may return fewer total dollars. Be sure to consider the number of trees per acre regenerated and the actual distribution of the trees per acre, not the average distribution of trees over the total acres. For replanting, site preparation, tree species, quality of seedlings planted, planting methods, density, and herbaceous weed control are important considerations. A forester can help you with these decisions.

To calculate the value of future regeneration to add to a 10 year lease payment on a 20 year rotation follow these steps:

- Calculate cost of regeneration at end of rotation. For example, regeneration cost per acre could be \$150 after a clear-cut to cover site preparation, seedlings, planting, weed control, etc.
- Compute annual annuity value during life of proposed present lease. Using the sinking fund formula with our above example for regeneration costs of \$150 per acre, the annual value of regeneration for a 10 year lease is \$9.41.

Or, use this short-cut for a 10% interest rate:

$$\begin{aligned}
 10 \text{ yrs.: } \$150 & \quad \times .06275 = \$9.41 \\
 10 \text{ yrs.: regeneration cost } & \times .06275 = \\
 15 \text{ yrs.: regeneration cost } & \times .03147 = \\
 20 \text{ yrs.: regeneration cost } & \times .01746 =
 \end{aligned}$$

25 yrs.: regeneration cost X .01017 =

30 yrs.: regeneration cost X .00608 =

- Subtract annual value of regeneration from present lease payment if lessee is to provide regeneration at the end of lease. For example, if the 10 year lease is \$55 per acre without regeneration, the 10 year annual lease rate with regeneration (with our assumed \$150 per acre regeneration cost) would be:  $\$55 - \$9.41 = \$45.59$ .

## Implications for the CRP landowner

Landowners can earn their greatest monetary returns by growing their own trees from planting to financial maturity. But, more landowner inputs are required to grow their own trees. Generally, fewer dollars are earned by landowners leasing their trees. Also, realize that less landowner inputs are required when leasing. However, with leasing, cash-flow is greatly improved for the landowner. Leasing remains an important option and can be a win/win experience for landowners and lessees. When examining any lease option, landowners should consider the following:

- Leasing trees is a new option -- **Go Slowly.**
- Check-out leasing company.
- Consider leasing only part of timberland.
- Consult a lawyer before signing any lease agreement.
- Lease only the specific resource (growing trees), not full use of the land.

**Table 1.** Planted pine timber lease estimates for lump sum and annual payments for years 11 through 20 of un-thinned, pulpwood rotations, Coastal and Piedmont Georgia.

Species	SI	Lump Sum Lease			Annual Lease		
		\$/A, 1996			\$/A/Yr. 1996-2006		
	feet	min	to	max	min	to	max
Slash	60	343	to	363	44	to	49
	65	345	to	395	45	to	56
	70	350	to	430	46	to	65
Loblolly	60	345	to	405	44	to	60
	65	350	to	440	45	to	67
	70	360	to	468	47	to	75

**Table 2.** Planted pine timber lease estimates for lump sum and annual payments for years 11 through 33 of multiple product rotations, Coastal and Piedmont Georgia.

Species	SI	Lump Sum Lease			Annual Lease		
		\$/A, 1996			\$/A/Yr. 1996-2019		
	feet	min	to	max	min	to	max
Slash	60	385	to	439	35	to	40
	65	390	to	442	37	to	46
	70	400	to	450	40	to	52
Loblolly	60	390	to	455	40	to	55
	65	400	to	477	42	to	61
	70	410	to	500	43	to	67