

Buying Rotation Length: An Easement Strategy for Conserving LSOG on Private Forestland

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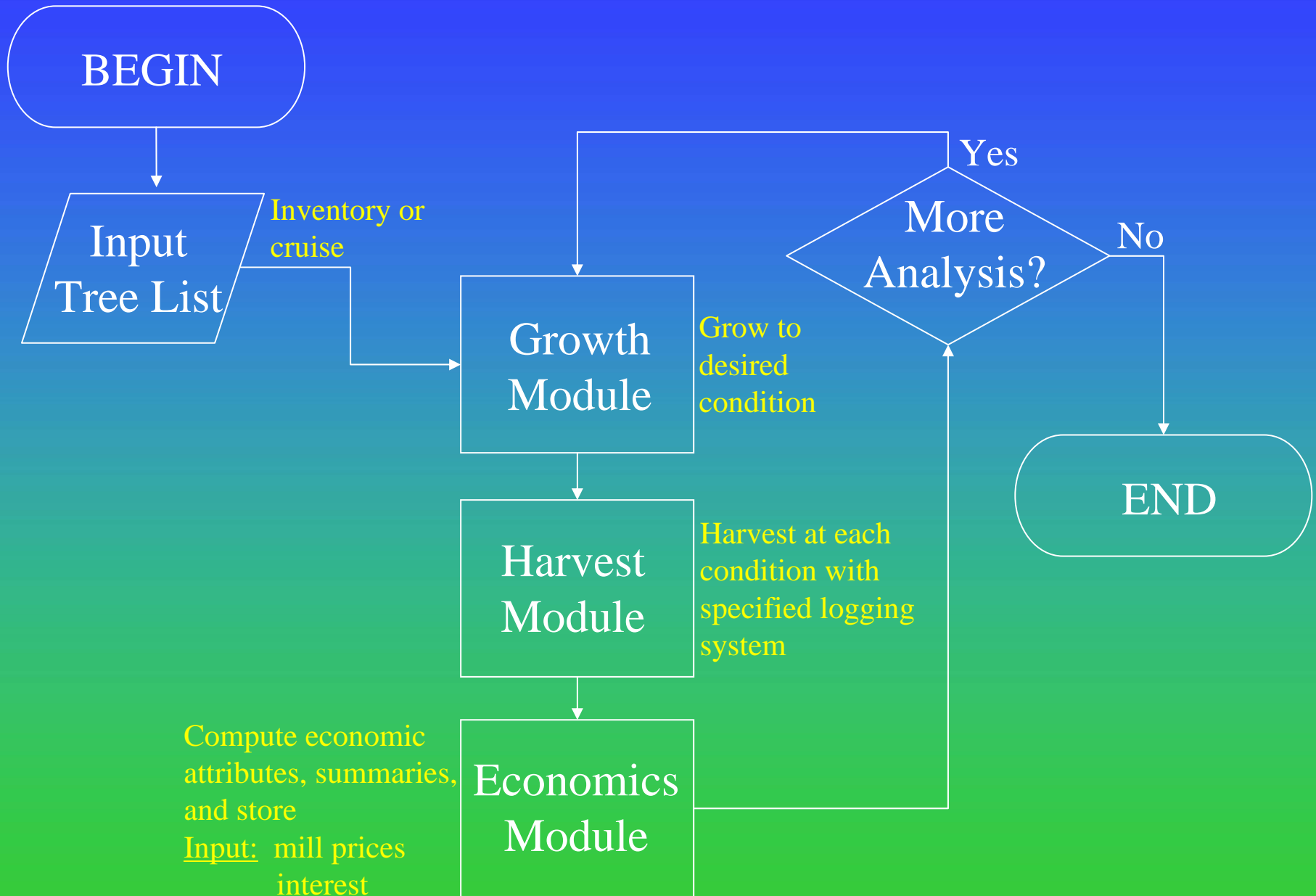
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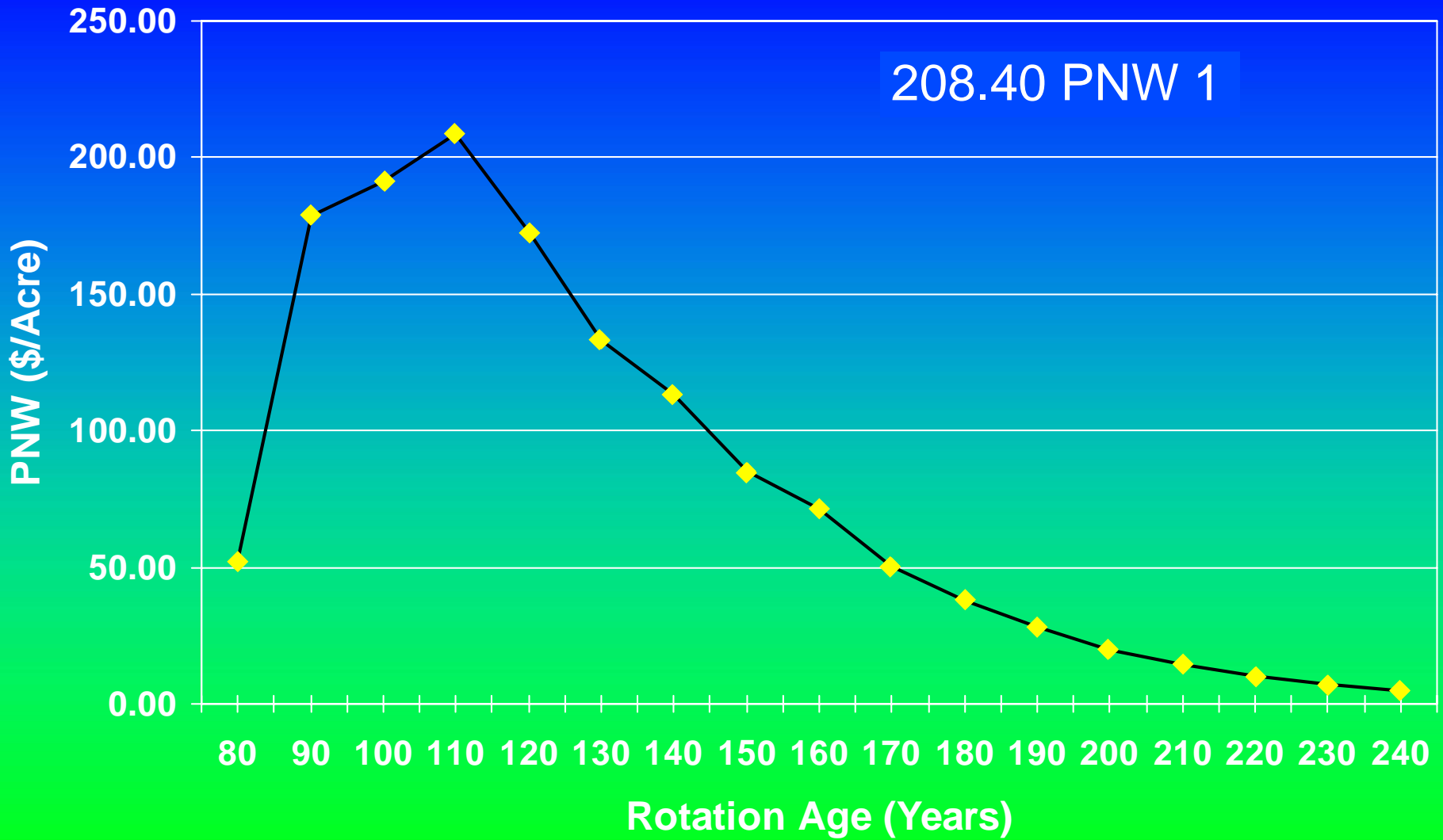
OBJECTIVE(S)

- To compute the opportunity cost of growing timber beyond its optimal economic rotation age
- To compute a monetary value of what landowners would have to be compensated for when growing LSOG or OG stands
- To introduce the concept of “Buying Rotation Length”

PROCEDURE



208.40 PNW 1



CONCLUSION

We provide a methodology for estimating the opportunity costs/values and capital recovery costs/values (“buying rotation length”) associated with alternative old growth creation objectives.

Breakeven Conditions

- $PNW = \frac{\text{net revenue (\$/acre)}}{(1+i)^N}$

$i = \text{interest rate}$
 $N = \text{years}$

- $208.40 = \frac{3245.11}{(1.04)^{70}} \therefore \frac{3245.11}{5477.28} = \$.59/\text{ft}^3$

- $\frac{208.40}{1} = \frac{x}{(1.04)^{180}} \therefore \frac{242,604.46}{6326.59} = \$.38.35/\text{ft}^3$
 $x = 242,604.46$

- $\$/\text{cord at } 220 = (\$.38.35)(128) = 4908.39$

- $\therefore \%$ increase from $\$.59/\text{ft}^3$ to $\$.38.35/\text{ft}^3$

$$6400\% = \left(\frac{38.35 - .59}{.59} \right) (100)$$

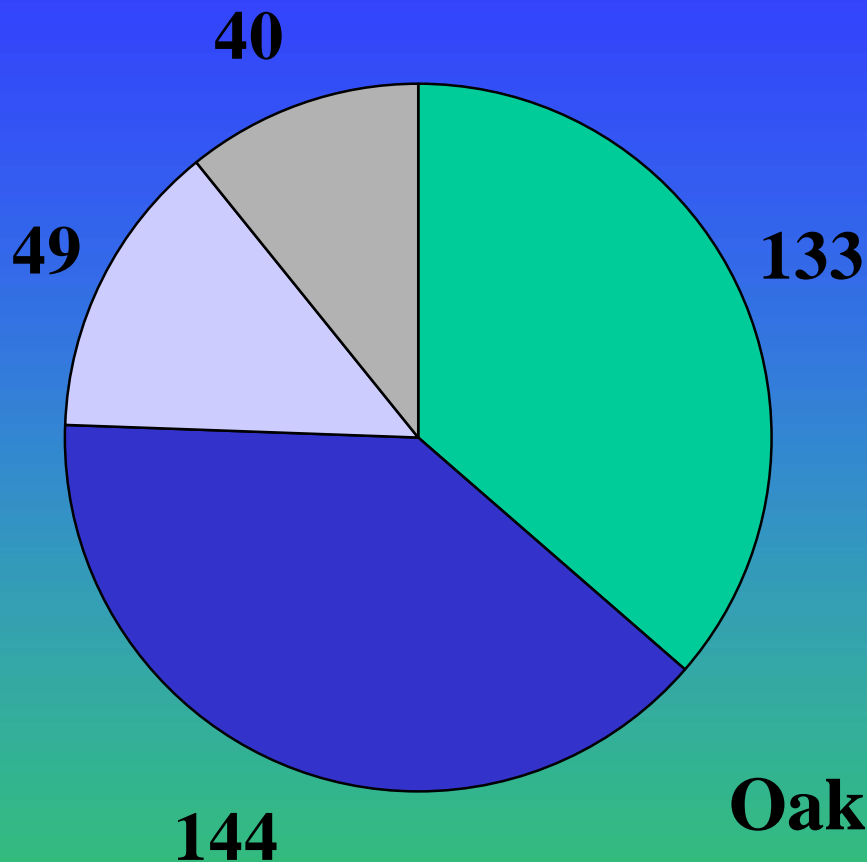
- $\%/yr = \frac{6400}{180} = 35.56\%/year$

	Original Stand Conditions	Structural Retention Treatment
Optimal Rotation Age (years)	110	220
Average DBH (inches)	13.51	21.30
Volume/Acre (ft ³)	5477.28	6326.59
Mill Value (\$/acre)	5447.28	12425.87
Logging Cost (\$/acre)	2202.17	845.68
Net Revenue (\$/acre)	3245.11	11580.19
Present Net Worth (\$/acre)	208.40	9.95
Retention Cost (\$/acre)	0	198.45
Capital Recovery Cost (\$/acre/year)	0	12.32

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CALCULATE

- Opportunity Costs
- Capital Recovery Costs
- Value of Treatment



Oak Hickory Stand

Age - 40 years old

Trees/Acre - 366

Volume/Acre - 2,234.66 ft³

Avg. DBH - 6.93

