

# Plantation Financial Analysis Silviculture Specifications

[www.arkansastimber.info](http://www.arkansastimber.info)

Teddy Reynolds, BSF, RF, SR

- 1) Each silviculture treatment and timing (added, adjusted or omitted) correspondingly adjusts the rotation length, thinning cycles, expenditures and returns.
- 2) The influence of the investment on net return offsets the rotation length only when the treatment is properly prescribed and administered.
- 3) Tax treatment was only considered in regards to "investment costs" (expenses, depletions, and cost basis). Capital gains and state tax on the net return was not employed.
- 4) Returns were calculated for Return on Investment (ROR), Net Present Value (NPV), and External Rate of Return (ERR).
- 5) Dbh. = Diameter at Breast Height (4.5 feet); Merch. = Merchantable (marketable portion); CF = Cubic Feet; NPV = Net Present Value; FV = Future Value.
- 6) Net Returns (without appreciation)" based on today's values through the stand's rotation. Net Return (without appreciation) gains value based on biological growth and crossing product classes (pre-merchantable to pulpwood to chip-n-saw to small sawtimber to mature sawtimber).
- 7) Reforestation investment costs/acre vary based on involved acreage and selected combinations.
- 8) Land value is included as a cost to the investment and then liquidated at final harvest with no appreciation.
- 9) The analysis was conducted using 2003 timber prices and may not represent current fluctuations in the market, which change according to economic trends and local mill consumption needs.
- 10) Returns cannot be maximized if the following operational practices are not adhered to:
  - 1) Thin from "below" increasing average dbh approximately 1/2 inch per thinning.
  - 2) Thinning is timely scheduled and administered to maintain approximately 1/3 live crown.
  - 3) Root compaction (rutting) in plantations are kept below 6 inches.
  - 4) Spacing is kept uniform (crowns should not touch on more than one side).
  - 5) Remove 5th row and select between for between row thinning in first thinning.
  - 6) Thinning target to 70 Basal Area (BA).
  - 7) Marked thinning after first thinning. First thinning is operator select with before and after plot monitoring.
  - 8) After first thinning no more than 5% of trees to have deformities, rust, or skins.
  - 9) After second thinning, no more than 2% of trees to have deformities or skins.
  - 10) After third thinning, no more than 1% of trees to have deformities or skins.
  - 11) All treatments must be administered at appropriate times.
  - 12) Site preparation must be based on soil type. If site is compacted and not sub-soiled, expect reduction in returns.
- 11) Seedlings are of superior genetics and adjusted to match the soil and implemented site prep.
- 12) Pine plantations are subject to natural risks (ice damage, wind-throw, beetle damage, etc.) and operational errors. Comparatively, timberland investments are assigned the stability of a Treasury-Bill by analyst.
- 13) This analysis is not guaranteed by RFC even though data is considered sound and derived from compared actual rotated harvests.