The Economics of Longleaf Pine

What kind of income can I expect to make on an acre of longleaf? Are there financial advantages to growing longleaf rather than loblolly?

These are some of the questions that Sandhills landowners are increasingly asking. They have heard that longleaf is the native tree of the Sandhills region and that it grows well in many other soil types of the Southeast. They have also heard of the aesthetic advantages of a longleaf pine forest and of the value to wildlife of the native legumes, grasses and plants of a longleaf pine ecosystem. But they wonder whether they will make money if they plant longleaf and manage it on a long-term rotation.

To provide some answers to these basic questions, forest silviculturist Fred White compared the simulated growth and yield of two pine plantations—a longleaf pine plantation grown from containerized seedlings and managed for pine straw, pulpwood, poles and sawtimber, and two successive loblolly pine plantations managed mainly for pulpwood. Both were managed over a 66-year period.

Although analyzing the future returns from any investment requires a bit of crystal ball gazing, reasonable care was taken to compare the future costs and returns of reforesting with these two tree types (see “Financial Assumptions” on page 27). Forest income will of course differ from site to site, depending on landowner objectives, the site quality, and the silvicultural methods employed.

Note: In the longleaf stand, a shelterwood cut was made at age 61 to begin the process of naturally regenerating the plantation. At age 66, after a presumed full seedling restocking, the remaining trees were cut to release the seedlings.

However, an attractive alternative to a shelterwood cut exists. At about age 55 to 60, a number of small patch cuts ranging in size from one to several acres could be made throughout the stand, while the rest of the property continued to be thinned. In time, this group selection process (see p. 23 for description) would create an open, multi-aged stand closely mimicking the historic structure of the longleaf forests of the region.

For the Sandhills landowner who wants ... the answer is ...

- High profits and frequent income: Longleaf
- Pine straw income: Longleaf
- Income from high-quality sawtimber & poles: Longleaf
- Pulpwood income: Loblolly and longleaf
- Income from hunting leases: Longleaf
- Low risk from disease and insect pests: Longleaf
- Tolerance of fire: Longleaf
- Native plant species diversity: Longleaf
- Adaptability to Sandhills soils: Longleaf
- Forest aesthetics: Longleaf
- Wildlife habitat: Longleaf

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The Bottom Line

Financial comparison between the per acre costs and returns of one 66-year-old longleaf pine plantation and two successive 33-year-rotation loblolly pine plantations.

<table>
<thead>
<tr>
<th>Analysis</th>
<th>Longleaf Rake &amp; Burn</th>
<th>Loblolly Two Rotations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present Value of All Costs</td>
<td>$374</td>
<td>$250</td>
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<tr>
<td>Present Value of All Income</td>
<td>$906</td>
<td>$618</td>
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<tr>
<td>Net Present Value of Investment</td>
<td>$532</td>
<td>$368</td>
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<tr>
<td>Value of Investment</td>
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<td></td>
</tr>
<tr>
<td>(present value of expected future returns minus present value of expected future costs)</td>
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<td></td>
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<tr>
<td>Annual Equivalent</td>
<td>$33</td>
<td>$22.6</td>
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<tr>
<td>(conversion of NPV to annual amount over life of investment)</td>
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</tr>
<tr>
<td>Composite Rate of Return</td>
<td>7.4</td>
<td>7.4</td>
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<tr>
<td>Benefit/Cost Ratio</td>
<td>2.42</td>
<td>2.47</td>
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</tbody>
</table>

*This forestry analysis shows that*... 1) Longleaf pine is capable of generating as much financial return as loblolly pine. 2) Longleaf pine can generate more frequent payments over time than loblolly pine. 3) Longleaf pine has economic advantages not shared by loblolly pine.

Financial Assumptions:
- Establishment costs:
  - Longleaf: $161/acre
  - Loblolly: $102/acre (includes site preparation, seedling cost, planting minus cost share)
- Burning: $10/acre
- Timber sale costs: 7 to 10 percent of sale revenues
- Fixed annual costs for taxes and management: $5/acre
- Pine straw value: $.75 per bale (what the landowner is paid by a raking contractor)
- Pulpwood value: $4.30 per ton
- Sawtimber value: $30.85 per ton (both pulpwood and saw timber values increased in real dollar terms at 2 percent per year)
- Discount rate: 6 percent

Two-Rotation Loblolly Pine Plantation

<table>
<thead>
<tr>
<th>Activity/Value</th>
<th>$2,800 harvest</th>
<th>$5,257 harvest</th>
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<tbody>
<tr>
<td>Establishment</td>
<td>burn</td>
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<tr>
<td>thin</td>
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</tr>
<tr>
<td>thin</td>
<td>burn</td>
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