Sustainable Fall / Winter 2011 A resource for Georgia landowners, sponsored by the SFI Implementation Committee.

Determining Site Index



As with any crop, the better the land, the more productive the forest. Many experts believe that soil quality is the most important factor to consider when making planting or any forest management decisions. Soils vary greatly in their ability to produce pulpwood, sawtimber, veneer, poles, piling or other wood products in a reasonable period of time.

Topsoil depth, soil texture, drainage, fertility levels, consistency of the subsoil and limiting layers that restrict downward growth all contribute to determining site index, which can be calculated pretty accurately for virtually any commercial tree species.

A landowner may want consult a professional forester to evaluate the site indexes for different tree species on a particular property. Alternatively, your county, the state of Georgia or even the Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service, may have information about the soils in your area.

Source: Woodland Owner Notes, North Carolina Cooperative Extension Service

To Plant or Not to Plant

Study concludes it still pays to plant pine trees.

To plant or not to plant ... that's the question that many Southern landowners may be asking themselves. While large corporate forest owners continue to replant harvested sites as usual, economic uncertainty and lower stumpage prices have many non-industrial forest landowners scratching their heads.

Georgia Forestry Commission utilization forester Josh Love analyzed various forest investment scenarios and found out that planting does indeed still pay, particularly if landowners work to diversify the timing and type of revenue streams from their forests. "Does Reforestation Pay?" was the question he set out to answer with a detailed financial analysis of six loblolly pine reforestation and forest management scenarios. "If you can only plant part of your cutover land, choose the land with the best site index to maximize growth and returns."

- Josh Love, GFC



To Plant or Not to Plant

There are Many Variables

When making a decision about planting, there are many variables to consider.

The Land – All sites are not the same in their ability to grow trees. The study looked at the returns from tree planting on sites with low, medium and high productivity potential. Better sites typically grow trees faster so you will have an income stream from those sites sooner (see *Determining Site Index* on the cover).

Revenue – In addition to traditional forest products such as pulpwood and sawtimber, landowners may have revenues from hunting leases or pine straw raking. Two revenue scenarios were evaluated for each site index – one with only traditional forest products and one that added revenues from non-traditional products.

Costs – Tree planting costs may vary significantly depending on the planting method and level of site preparation, fertilization or weed control that a landowner chooses. For purposes of the study, costs were at the mid-range of typical costs at \$234 per acre. This included: Site preparation @\$150 per acre (including moderate chemical site preparation and weed control after planting); Seedling costs @5 cents each and machine planting @ 8 cents per tree. Costs for establishing a new forest may range from a low of \$125 an acre to a high of \$375, depending upon the site conditions and requirements for establishing a successful stand.

The Results

Across all sites, planting for traditional forest products yielded positive economic returns and when income from hunting leases or pine straw was added, the returns were greater. The study projected internal rate of return (IRR), net present value (NPV) and annual equivalent value (AEV) for all six scenarios. "AEV helps you compare tree planting to other annual income-producing items so it's a good number to consider," said Josh.

Site Index	Thinning Ages (yrs)	Final Harvest Age (yrs)	Scenario	NPV (\$/ac)	AEV (\$/ac/yr)	IRR (%)
High 80	12,18	27	Traditional products only	1,200.52	82.99	12.83%
			Plus hunting and pine straw	1,455.09	99.37	15.33%
Medium 65	14, 23	34	Traditional products only	788.95	48.72	9.96%
			Plus hunting and pine straw	1,040.23	64.24	12.23%
Low 50	18	30	Traditional products only	142.04	9.24	6.44%
			Plus hunting and pine straw	374.61	24.37	8.90%

Comparison of Six Loblolly Pine Management Scenarios

"There are still attractive options for pine plantation management in Georgia," said Josh. "Even if stumpage rates are stagnant, trees continue to grow and every ton of wood added to a forest stand means income for the landowner. If you consider additional revenues from hunting leases or pine straw, even planting on lower quality sites delivers an attractive return on your reforestation investment."

"However, if you're having to make a decision and can only plant part of your cutover land, choose the land with the best site index to maximize growth and returns," continued Josh.



Planting Assistance May Be Available

Depending on the location of your property and the type of trees you plant, there may be some costshare opportunities available to you for either tree establishment or cultural treatments of existing forests. Check with the Georgia Forestry Commission (www.gatrees.org or 1-800-GA-TREES) the Farm Service Agency (www.fsa.usda.gov/FSA) or the Natural Resources. **Conservation Service** (http://www.nrcs.usda.gov/) to learn more about available incentive programs.

Forest Roads Challenge Heads to the Supreme Court

For 35 years, the Environmental Protection Agency (EPA) has treated rainwater runoff from forest roads as a "nonpoint" source under the Clean Water Act. The EPA has successfully monitored and enforced this policy through best management practices (BMPs) developed and implemented by individual states rather than through federal permits. Earlier this year, a U.S. Ninth Circuit Court of Appeals ruling on the West Coast struck down EPA's Clean Water Act regulation for forest roads.

How could the ruling impact forest landowners?

If not reversed, the Ninth Circuit ruling could lead to burdensome permitting for landowners. Clean Water Act permits similar to those required for factories and wastewater treatment facilities could be required for forest roads.

If this is in the Ninth Circuit, why should Georgia landowners be concerned?

There is speculation that the ruling will eventually impact forest roads nationwide. A key question in the process will be the definition of "forest road". Will it apply only to highly engineered roads with sophisticated runoff collection systems or will it also apply to forest roads with less engineering and little use?

Have BMPs been effective?

BMPs that address such things as harvesting, planting and roads have been effective at protecting water quality. Forestry is a minor contributor to any impairment of the nation's rivers and streams, accounting for



only .5 percent of any pollution, according to several reports cited on the NAFO website (see below).

What action is being taken?

The defendants in the case, including the state of Oregon and forest landowners have appealed to the U.S. Supreme Court. Forest owners, forest industry groups and a bi-partisan, geographically diverse group of 26 state Attorneys General has filed briefs asking the Supreme Court to reverse the Ninth Circuit Court of Appeals' ruling.

Will the new or current EPA regulations apply during the appeals process?

Up to this point in time, both EPA and the states have announced that they have no intention of developing an immediate permitting program specifically for forest roads. However, if a forest landowner wished to get a permit to be "covered" for a potential point-source or stormwater discharge into waters of the United States, EPA and the states are directing them to use existing industrial general permit structures that are current in each state. There is a possibility that, under the current circumstances and especially within the jurisdiction of the Ninth Circuit, an individual or group could sue a forest landowner for an unpermitted discharge as a result of the Oregon case. This has not occurred, however, pending resolution of whether the Supreme Court will hear the case.

Where can you go for more information?

Several forestry groups including National Alliance of Forest Owners (NAFO) (<u>www.nafoalliance.org</u>) and Forest Landowners Association (FLA) (<u>www.forestlandowners.com</u>) are actively working this issue and provide regular updates on their websites. NAFO has also created a Water Quality Advocacy Toolkit that provides information and resources to help landowners understand and respond to the issue.

Sources: NAFO; Forest Landowners Association



Sustainable Forestry Initiative SFI Implementation Committee Center for Forest Business Warnell School of Forestry

Warnell School of Forestry and Natural Resources University of Georgia Athens, Georgia 30602-2152



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Tree Planting in Georgia

Georgia has a strong tradition of planting trees. From 1985 to 2006, Georgia landowners planted an average of 406,536 acres annually, but in recent years, reforestation rates have dropped somewhat due to declines in wood products manufacturing and stumpage rates. U.S. Forest Service Forest Inventory and Analysis (FIA) data indicates that tree planting in Georgia declined from 308,000 acres in 1997 to 194,000 acres in 2010. In addition to economic factors, another major reason for the decline is that most of the old agricultural or non-forested land was planted during a big Conservation Reserve Program planting effort in the 1980s and 1990s.

> In 2010, some 49 percent of Georgia landowners still replanted after harvest, but that rate has dropped from 57 percent in 1997. As for forested land that is harvested, then reforested, those rates have dropped from 57 percent to 49 percent from 1997 to 2010. Much of the remaining area is managed for natural regeneration, but there are general concerns about the decline in tree planting due to the difficult economic times.

Sources: U.S. Forest Service FIA Data; Georgia Forestry Commission, 2006; Southern Forest Resource Assessment, 2002



For More Information about SFI, call 706-542-7691 or log on to www.sfi-georgia.org.

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