AGE CLASS DISTRIBUTIONS AND IMPLICATIONS FOR SOUTHERN TIMBER MARKETS
DEFINITION OF AGE CLASS DISTRIBUTION

- From the SAFnet on-line Dictionary
  - **Age-class distribution** - the location or proportionate representation, or both, of different age classes in a forest

- Age class distributions are used:
  - To area-regulate harvests from a forest
  - As an indicator of harvest characteristics of a forest over time
  - To forecast future wood available for harvest

- Current Age Class Distribution is a function of previous reforestation acres
Current Pine Acreage by Age Class – FIA Data

Weighted Average Plantation Age: 17
Weighted Average Natural Age: 39
AND NOW FOR SOME FORECASTING…

- **Purpose** – to compare current age class distribution to future age class distributions
- **Assumptions**
  - 11 state region
  - Woodstock yield tables constructed from FIA data
  - Harvests at 2007 levels (from TPO database)
  - Product splits based on:
    - 5”-8.9” and 75% of 9.0” to 10.9” are pulpwood
    - 25% of 9.0” to 10.9” and 11.0” and up is sawtimber
  - Case 1 – FIA data for removals from plantations vs. natural timber – about 40%
CASE 2 – ADJUSTING THE REMOVALS FROM PLANTATIONS

- North Florida, South Georgia surveys of removals conflict with FIA data
- Survey of managers shows 70% from plantations
- So, case 2 “forces” 70% of volume to come from plantations
# REMOVAL PERCENTAGES FROM OUR MANAGERS

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<th>Manager</th>
<th>State</th>
<th>% Planted</th>
<th>% Natural</th>
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<td>Tom Cunningham</td>
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Average: 70 30
Southern Historical Product Consumption (Mft³)

Source: USF&PSDO Data

- Total
- Softwood Sawtimber
- Softwood Pulpwood
- Hardwood Pulpwood
- Hardwood Sawtimber


Consumption values range from 0 to 8,000,000 Mft³.
MODEL ASSUMPTIONS

- Harvest acreage can not change more than 15% per year
- Fulfill mill demand by minimizing harvested acres
- Pine thinning is 1/3 of pine plantation volume at age 15
Case 1 - Pine Sawtimber Inventory (MM cubic feet)
Case 1 - Pine Pulpwood Inventory (MM cubic feet)
Case 1 - 2025 Pine Acreage by Age Class

Weighted Average Plantation Age: 18
Weighted Average Natural Age: 33
Case 1 - 2040 Pine Acreage by Age Class

Weighted Average Plantation Age: 20
Weighted Average Natural Age: 29

Planted
Natural
FINDINGS – CASE 1

- Limiting harvest volume coming from plantations causes significant, unlikely increase in harvests from natural areas
- We will see short-term supply issues with small wood
- Inventory of natural pine sawtimber will decline dramatically over the 30 year period
- Average age in plantations increases
- Average age of natural timber decreases
Case 2 - Pine Pulpwood Inventory (MM cubic feet)
Case 2 - 2025 Pine Area by Age Class

Weighted Average Plantation Age: 14
Weighted Average Natural Age: 39

Planted
Natural
Case 2 - 2040 Pine Area by Age Class

Weighted Average Plantation Age: 13
Weighted Average Natural Age: 32
FINDINGS CASE 2

- Increasing harvest volume coming from plantations to 50 to 70 percent results in more rational inventory trends.
- Short-term supply issues with small wood (same as Case 1).
- Natural and planted pine sawtimber inventories proportionately decline over the period.
- Average age in plantations declines significantly, serious wood quality/characteristic implications (opposite Case 1).
- Average age of natural timber sustained (vs. decline in Case 1).
CONCLUSIONS

- Short-term reduction in supply of pulpwood should cause increase in price – both cases
- Could be inventory issues with pine sawtimber 15 years and out – both cases
- More intensive silviculture and GMO’s can be supported by higher prices, could offset average age reductions in Case 2
POLICY AND RESEARCH IMPLICATIONS

- Relatively small change in percent harvested from plantations (40 to ~50%) causes dramatic change in future forest characteristics
  - Research – need to know these numbers
  - Policy – need to protect practice of intensive silviculture, right to manage natural areas
  - Case 2 implies need for additional wood quality research