Longleaf Pine  
*Pinus palustrus*

- Longstraw, heart, pitch, and yellow pine
- 60 million acres to < 3 million acres

Loblolly Pine  
*Pinus taeda*

- Old field pine, shortstraw pine, NC pine,
- Over half the standing pine volume
Longleaf Pine
the good & ..........the not so good

- Better taper
- Higher specific gravity
- More resistant to SPB
- Fire resistant
- Less prone to windthrow
- Better suited for long rotations

- More susceptible to ice damage
- More difficult to establish
- Slow early growth.
- Less responsive to management
SILVICS - Early GROWTH

Longleaf Pine
Pinus palustrus

• Grass stage slows early growth
• Nutrient sipper
• Responds to manipulation but not as dramatic

Loblolly Pine
Pinus taeda

• Express dominance early.
• Growth - fast 2-3 ft/year
• Nutrient user
• Responds to manipulation
“Grass stage”

height growth starts

seedling

LL seed – fall germination

4 year old “bottle brush”
SILVICS - Tree Characteristics

Longleaf Pine
*Pinus palustrus*

- Intolerant of competition
- Inconsistent cone crop
- Fall germination
- Large seed - limits dispersal (50 ft.) and hinders germination success

Loblolly Pine
*Pinus taeda*

- Tolerates competition early
- Prolific and consistent cone production.
- Germinates in spring (65°F)
- Seed disperses 100-300 ft.
- Responds well to release.
SILVICS - FIRE

Longleaf Pine  
*Pinus palustrus*

- Evolved with Fire
- Fire resistant in grass stage
- Fire damage likely once height growth begins until sapling is ???? Feet tall.

Loblolly Pine  
*Pinus taeda*

- Seedlings susceptible to Fire
- Fire resistant at maturity
Longleaf and fire

2 years later
SITE SELECTION

LONGLEAF
- Fire Driven
- Higher Risk
  - Clay
  - Saturated
  - Shallow root zone
  - High Quality

LOBLOLLY
- Less productive on dry soils
Longleaf is more resistant to damage or value loss …

• Wildfire
• Insects and disease
• Hurricanes
Longleaf more resistant to SPB
“Keep the oleoresin flowing”
Less Risk to Hurricane Damage

<table>
<thead>
<tr>
<th>Species</th>
<th>Type of Hurricane Damage (%)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
</tr>
<tr>
<td>Loblolly</td>
<td>16.3</td>
</tr>
<tr>
<td>Longleaf</td>
<td>64.0</td>
</tr>
</tbody>
</table>
Longleaf is one of the most diverse ecosystem in the world. Second only to rainforest in species richness.
Loblolly – Economic Advantages

• Short Rotations
• Fast Growth
• Intensive Management
  – Fertilization
  – Vegetative Competition Control
  – Thinning.
Longleaf - Economic Advantages

- Superior Sawtimber
  - Strength of Wood
  - Specific Gravity
  - Stem Form & Taper
- Pole Yield
- Pine Straw
- Hunting Leases
- Low Risk
Longleaf is heavier & stronger

- Denser - Higher specific gravity
- More rings per inch

# 47
2004
12” cns = $18.85
2012
14” saw. = $43.68
LL has better form; Less taper

- Natural LL (40-50 yr old) = > 40 % poles
- Natural Lob (40-50 yr old) = 20 % poles
Longleaf lives longer
# 40

2004
9” cns = $9.42

2012
11” pole = $35.88
NC = $62.34
Longleaf pinestraw provides extra income

- LL straw is superior
- Pay for management costs
- $50 - $100/acre
Regeneration
Importance of Site Preparation for Longleaf

“Much of the failure in (longleaf) plantations is due to submarginal nursery stock or inadequately prepared planting sites.”


“There is a strong, direct, and positive correlation between percent survival and initiation of height growth with intensity of site preparation”

(NCFS Forestry Note No. 61, “Establishment and Growth of Longleaf Pine on Droughty Sites in North Carolina, May 1988)
CUTHBERT GA
LONGLEAF PINE
GROWTH IMPACT 7/9/81
CONTROL
High Quality-Loblolly
Top Quality Seedlings - LONGLEAF
Longleaf Container or Bareroot?

- 1995 Region-wide survey

<table>
<thead>
<tr>
<th></th>
<th>% Survival (first year)</th>
<th>% Height Growth (after 2nd year)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bareroot</td>
<td>65 %</td>
<td>34 %</td>
</tr>
<tr>
<td>Container</td>
<td>83 %</td>
<td>62%</td>
</tr>
</tbody>
</table>
Plant longleaf pine carefully

**Bareroot**

**LONGLEAF SEEDLING**

- Ground Line 1
- "Too Deep"
- Root Collar
- Normal Correct Depth
- Tap Root
- Lateral and Feeder Roots
- Ground Line 2
- Bud
- Ground Line 3
- "Too Shallow"
Container is different
Plant loblolly pine deep

Depth of Planting

Plant slash, loblolly, shortleaf, and sand pine seedlings 2 to 3 inches deeper than they grew in the nursery.
Here's to the land of longleaf pine,
The summer land where the sun doth shine, Where the weak grow strong and the strong grow great,
Here's to "Down Home" the Old North State.

-The state toast of North Carolina by Leonora Martin and Mary Burke Kerr
Loblolly or Longleaf??

• Select the species to match your:
  – Objective
  – Management commitment
  – Desired Future Conditions
  – Site