Background and Characteristics

- Slash pine (*Pinus elliottii* var. *elliottii*) is considered, commercially, the third most important of the southern pines, following loblolly and shortleaf pine, and is favored for lumber, poles and pilings.
- Occupies approximately 10.5 million acres as the dominant site species and a volume of 10.9 billion cubic feet.
- Native range generally follows the lower Coastal Plain southeast from the far Southern corner of South Carolina into Georgia and Florida, westward into Alabama, Mississippi, and Louisiana.
- In Georgia, the native slash pine range is found in the Atlantic and Gulf middle and lower Coastal Plain.

- Slash pine grows well in many types of Coastal Plain sites but grows best on deep, well-aerated soils that supply ample quantities of moisture during the growing season.
- Is tall, growing from 80-100 feet in height (maximum = 130 feet tall), and 2-3 feet in diameter (maximum = 4 feet). Slash pine grows to be 150 years old.
- Has the narrowest native range of the southern pines.

Distinguishing Features

- Slash pine overlaps loblolly and longleaf pine species in its range and growth characteristics. Table 1 and Photo 1 illustrate some distinguishing features.

<table>
<thead>
<tr>
<th>Species</th>
<th>Needle length</th>
<th>Needle bundle #</th>
<th>Cone stem</th>
<th>Cone length</th>
<th>Terminal bud diameter</th>
<th>Terminal bud color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loblolly</td>
<td>5 - 9”</td>
<td>3 occasionally 2</td>
<td>no</td>
<td>3 - 6”</td>
<td>1/8 - 1/4”</td>
<td>brown</td>
</tr>
<tr>
<td>Slash</td>
<td>7 - 11”</td>
<td>2 occasionally 3</td>
<td>yes</td>
<td>4 - 8”</td>
<td>1/4 - 3/8”</td>
<td>reddish, cinnamon</td>
</tr>
<tr>
<td>Longleaf</td>
<td>10 - 14”</td>
<td>3 occasionally 2</td>
<td>no</td>
<td>8 - 12”</td>
<td>3/8 - 1/2”</td>
<td>cinnamon w/ white hairs</td>
</tr>
</tbody>
</table>

Management

Slash pine’s growth rate on most soils is second to loblolly pine. Due to the relatively fast growth rate, relative intolerance to shade, and availability of genetically improved seedlings, slash pine lends
itself to moderate to intensive management and artificial regeneration (planting a site with a desired
genetics and spacing versus relying on seed from a selection of trees from the current stand). To
maximize early slash survival and growth the following management activities need to be performed:

1. Some form of pre-plant site preparation is required to successfully establish slash pine; typically
   a chemical or mechanical treatment or a chemical/mechanical combination prior to planting the
   site. The site prep goals are to minimize hardwood (cutover site) and/or herbaceous (old-field
   site) vegetation, improve soil aeration/tilth, and maximize site quality so the seedlings can get
   optimal amounts of water, sunlight, and nutrients and have rapid root development.

2. Order and purchase the best genetically improved seedlings for your land / soils; typically order
   500 to 750 seedlings per acre.

3. In most cases have site prep done at least 2 to 6 months prior to planting to allow for soil settling
   if mechanical treatment is performed or if an herbicide is used with soil activity.

4. Plant containerized seedlings from mid-September to mid-February and bareroot seedlings from
   mid-December to mid-February when the site has good soil moisture.

5. Herbicides and/or fertilizers may be used post-plant depending on the need, expected slash pine
   response, cost, expected returns and time of expected returns.

6. Thinning(s) are performed when pine basal area gets to 120 ft²/acre or when live crown ratios
   approach 33% (60 feet tall trees with 20 feet of live crown = time to thin).

7. Prescribed fire can be used in slash pine stands starting when the trees are typically 15 to 20 feet
   tall and at least 3” groundline diameter.

8. Where financial performance in a top priority, a final harvest typically occurs between ages 22-
   and 35-years.

Slash pine Yields

Depending on the •site/soils, •land use history (old-field versus cut-over sites), •pine genetics,
•stocking, and •management slash pine can yield from as little as 3/4 cords/ac/yr (2 tons/ac/yr) to 2.8
 cords/ac/yr (7.6 tons/ac/yr) during the first 12- to 25-years. The figures below are examples of possible
slash pine yields under a moderate to high levels of management and growth rate for a 24-year (Figure
1) and 33-year (Figure 2) rotation or younger ages (Table 1). Individual site yields will vary.

![Slash pine - MAI = 2.01 cd/ac/yr](image1.png)

Figure 1. Slash pine yields of pulpwood (PW), Chip-n-saw (CNS), and sawtimber (ST) at a 24-
year rotation (thin @ age 15-yrs). 1 cord=2.7 tons

![Slash pine - MAI = 1.91 cd/ac/yr](image2.png)

Figure 2. Slash pine yields of pulpwood (PW), chip-n-saw (CNS) and sawtimber
(ST) under a 33-year rotation (thin @ ages
15- and 24-years). 1 cord wood+bark=2.7 tons
Table 2. Mean Annual Increment (MAI) yield estimates for slash pine in Georgia and Florida using moderate to intensive management on cut-over sites and using low to moderate management on old-field sites (as stemwood+bark green weight; one cord wood+bark = 2.7 tons)

<table>
<thead>
<tr>
<th>Ages (years)</th>
<th>Mean annual increment (cords/ac/yr)</th>
<th>Land use history</th>
<th>County, State</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>2.1 to 2.6</td>
<td>Cut-over</td>
<td>multiple Cos, Georgia</td>
</tr>
<tr>
<td>12</td>
<td>2.2 to 2.8</td>
<td>Cut-over</td>
<td>multiple Cos, Georgia</td>
</tr>
<tr>
<td>20</td>
<td>2.4</td>
<td>Cut-over</td>
<td>Madison, Florida</td>
</tr>
<tr>
<td>12</td>
<td>2.2 to 2.8</td>
<td>Old-field</td>
<td>Toombs, Georgia</td>
</tr>
<tr>
<td>17, 20</td>
<td>1.9 to 2.1</td>
<td>Old-field</td>
<td>Dodge, Brantley, Georgia</td>
</tr>
</tbody>
</table>

Photo 1. Slash pine needles (typically in fascicles of two, occasionally three; 7-9 inches long) and young cones (note short stem on cone base; loblolly and longleaf cones are sessile; no stem).