

- **Protect other resources.** This can be accomplished by retaining snags, pockets of mature timber, mast-producing trees, buffers along waterways, and similar measures which the other chapters describe in greater detail.

Harvested stands should be reforested in a timely manner, preferably within 3 years, to maintain productivity. It may be desirable to wait a year before replanting to allow residue to decompose. This can reduce the likelihood of insect damage to newly planted seedlings and make the site easier to prepare for replanting.

Tree species that are best adapted to the particular site should be selected for planting. Generally speaking, soils with a layer of clay, limestone or similar material within 5 feet of the surface will grow slash, longleaf, or loblolly pine quite well. A layer of clay between 5 and 10 feet deep would indicate a site best suited to longleaf pine. If the clay layer is more than 10 feet deep, sand pine should be planted for profitable timber production. (However, landowners whose main objective is to improve wildlife habitat or aesthetic values may consider planting longleaf or hardwoods on these sites).

Hardwood species should be chosen based upon both their favorable characteristics and site suitability. For example, a landowner may want a particular species for mast production, showy flowers, minimum maintenance, or good growth. A forester can provide more detailed advice for selecting hardwood species.

Spacing depends upon the landowner's objective. Generally, more trees per acre are grown where pulpwood production is emphasized and markets for smaller trees are available. Wider spacings are favored for hardwoods and where intervals between timber harvests will be greater.

The age at which timber is harvested depends upon the landowner's overall objectives. Those who are primarily concerned with timber production will want to conduct a harvest before annual growth rates begin to decline (also known as "biological maturity"). A forester can determine if a stand has reached biological maturity by using volume tables and performing a few measurements. Landowners who consider timber production to be a secondary objective may wish to allow the timber to grow to a larger size before harvest. Selective cuttings, smaller clearcuts, and more irregularly shaped harvest areas are also appropriate where timber production is not the main emphasis.

Regardless of the primary objective, timber stands should be harvested before widespread decline occurs. Some area of mature timber and/or snags should be left in all cases to accommodate wildlife species which depend upon them. Practices such as controlled burning and removing diseased or suppressed trees, if conducted periodically, will help to maintain vigorous growth, thereby reducing hazards to the surrounding stand.

Practices to enhance timber growth

To improve the timber resource, there are three choices that the landowner can make:

- regenerate the stand;
- perform intermediate stand management;
- harvest the stand.

Stand regeneration

If the resource assessment indicates an insufficient number of desirable trees for adequate timber growth or if the site has recently been harvested, the landowner should plan to establish a new stand of seedlings. Stands which contain a sufficient number of good quality seed trees can be regenerated naturally with a minimum of expense although regeneration success can be variable. If no seed trees exist, seedlings can be planted (Figure 7).

In both cases, some site preparation is required to expose bare soil for seedfall, facilitate tree planting, reduce competition and to allow seedfall and



Figure 7. Pines are often planted to ensure adequate stocking rates, re-introduce desirable species, and utilize genetically improved planting stock.