Early Reproduction of Longleaf Pine Established in a Savanna-style Planting

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Abstract: We planted a 5 acre cloverleaf in Prince George County, Virginia with native Virginia longleaf pine (*Pinus palustris* Mill.) in 1998. The seedlings were planted at low density (20+ foot centers) to mimic a savanna-style longleaf pine habitat. In 2009, mature cones were first observed in some trees within the planting site. This was an interesting observation in itself because open grown longleaf pines do not typically produce cones until 20 to 30 years (Wahlenberg 1946). Cone development for longleaf pine is unusual at 16 years (Wahlenberg 1946) and here cones had developed before 12 years of age. Figure 1 shows the planting site in 2010 and a couple of unopened cones we observed. The number of cones and conelets on each tree were recorded along with values for height and diameter at breast height (dbh) to investigate whether fecundity correlated with growth. Statistical analyses did not indicate any correlations. However, it should be noted that 34% of the trees, with a maximum diameter of 16.13 cm, were producing cones or conelets. The percentages of trees with cones or conelets were calculated for 4 size classes (*ca*.13, 14, 15 and 16 cm) and plotted along with data reported in Wahlenberg (1946). No trend was observed in our data (Figure 2). Nevertheless, it was readily apparent that we were observing unusually early reproduction in longleaf pine growing in Virginia. The factors contributing to the phenomenon, perhaps being tree seed selection, provenance, quality of planting site, and/or planting style, remain to be determined.

a b

Figure 1. Longleaf pine a) planting site in Prince George County, Virginia and b) seed cones discovered at an earlier than expected tree age.

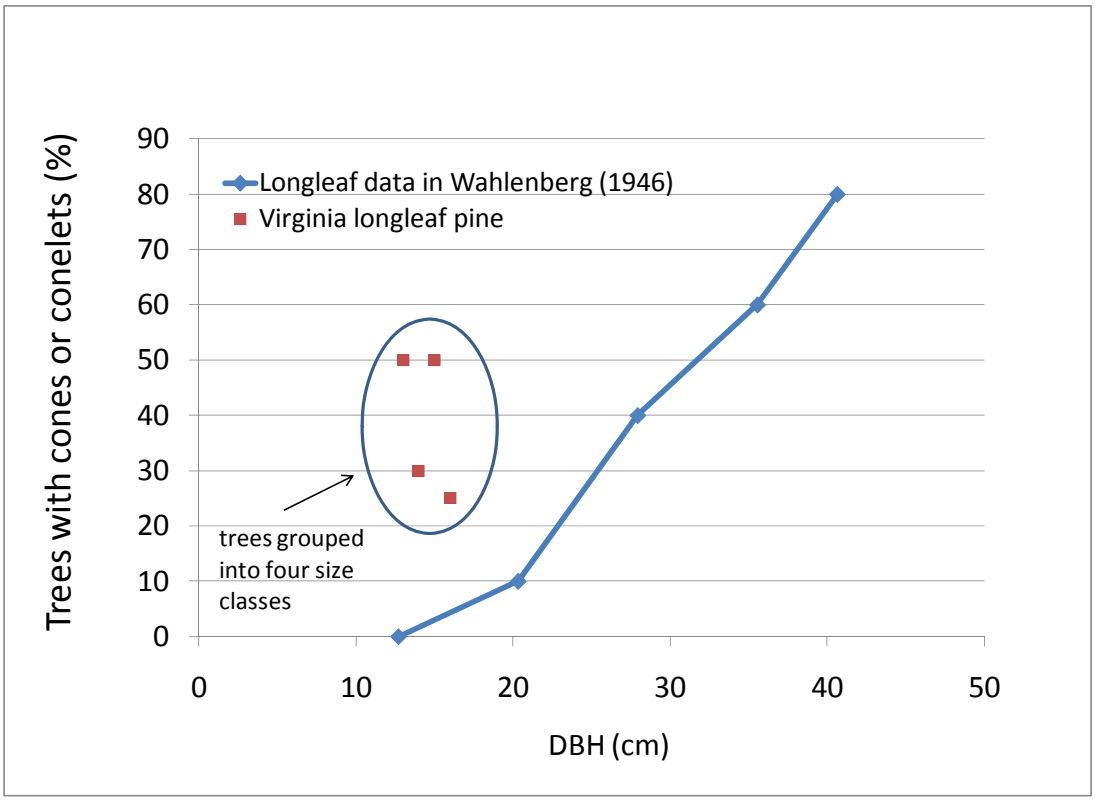

Figure 2. Percentage of trees with cones or conelets for Virginia longleaf pine compared to previously reported data.

Reference

Wahlenberg, W.G. 1946. Longleaf Pine: Its Use, Ecology, Regeneration, Protection, Growth, and Management p. 70-78.

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