

What's New in N.Hd. Silviculture??

By
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Maine FIA, 2008

- The dominance of beech, soft maple, and noncommercial tree species in the sapling size class (55%) in Maine hardwood forests raises concerns about the future forest resource in the State. Our silvicultural objective is to regenerate and grow a diversity of quality hardwoods: good for timber production, market flexibility, wildlife diversity, and environmental impacts!

Table 21: Summary of Silvi methods

(Gen.Tech Rep. NRS 132,2014)

- 1. Single-tree selection
- 2. Group \patch: includes group release and shelterwood groups
- 3. Clearcutting
- 4. Overstory removal
- 5. Standard shelterwood
- 6. Low-density shelterwood
- 7. Deferred shelterwood
- 8. Irregular shelterwood
- 9. Precommercial thinning
- 10. Commercial thinning
- 11. Stand improvement
- 12. Rehabilitation
- 13. Ecological forestry
- 14. Natural disturbance silviculture

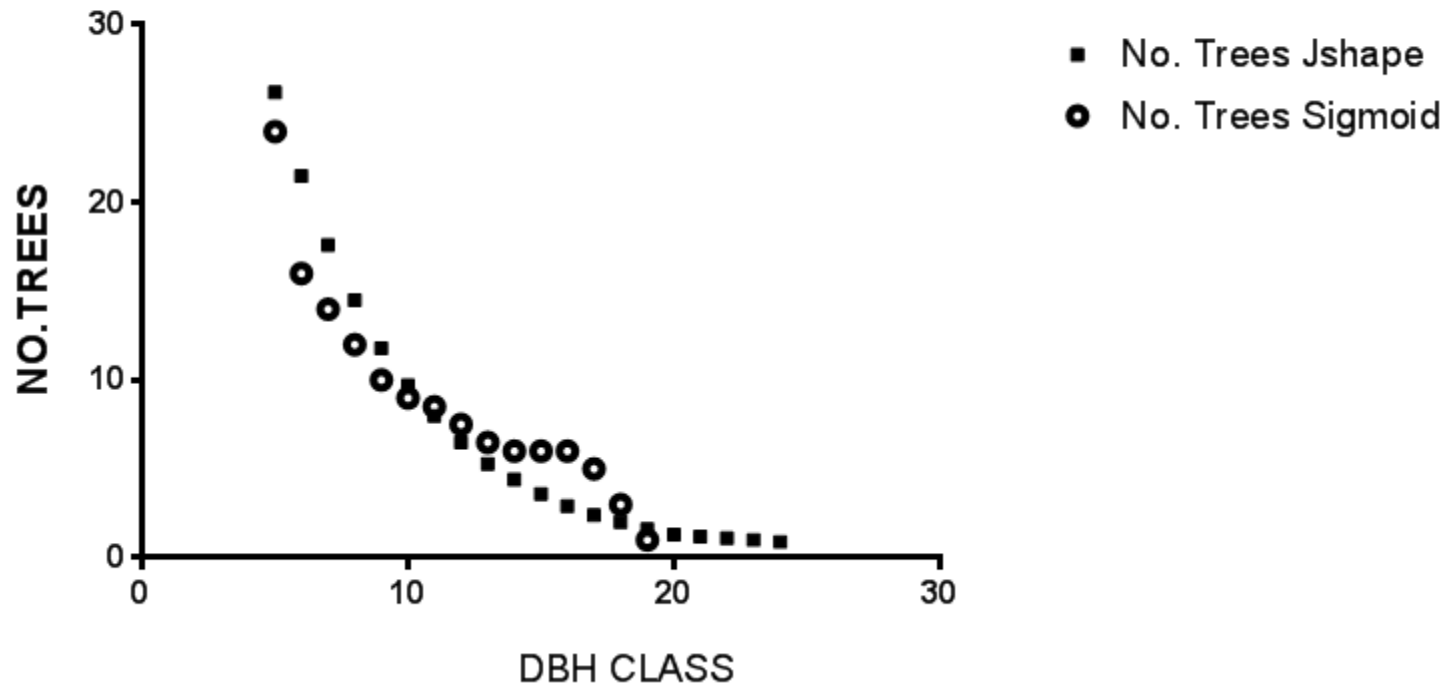
Single-tree Selection

- 1. Flexible dbh distribution: less emphasis on J-shaped.
- 2. Lower stocking levels: stand-level and sawtimber (60 BA total, 25 BA saw).
- 3. Still regenerates tolerants: recommended for good sites (esp. rich bedrock sources).
Dense beech regen on moderate/poor sites.



J-Shape vs Sigmoid Distribution

App. 78 sq.ft.BA /acre



Rates of Value Increase: SM

Mendel et al, Res. Paper NE-250

• <u>Dbh</u>	<u>Annual Rate \$ Increase</u>
• 12	15-21 %
• 14	9-19 %
• 16	7-13 %
• 18	6-11 %
• 20	5-10 %
• 22	4-8 %
• 24	3-7 %

D.B.H. Max Size Objectives

(Financial Maturity)

<u>Species</u>	<u>D.B.H. Objective</u>
• SM, YB, RO, WA	18-24 (good site)
•	16-18 (moderate site)
• RM, BE	16-18
• PB	12-14



Group/ Patch Pluses and Minuses

- 1. Produces a range of species. Especially useful where beech and other less desirables are aggressive.
- 2. Using rough area control, the system easily ensures a sustainable, regulated forest.
- 3. Efficient marking and harvesting.
- 4. Works best, most efficiently, where the stand is somewhat patchy with groups of mature/overmature/defective trees.
- 5. Mark/harvest between groups/patches? At least mark along access roads.















Advantages/Applications of Releasing Advance Regen

- 1. For species that seed infrequently:
 - Pine, oak, sugar maple.
- 2. In areas where logging disturbance produces abundant nuisance vegetation such as ferns, buckthorn, etc.



What to do In Young Sapling/Pole Stands?

- 1. Precommercial (crop-tree) thinning: an investment
- 2. Commercial Thin: when shortlived species mature (paper birch, aspen) take them out.
- (Called “dominant-tree thinning”).

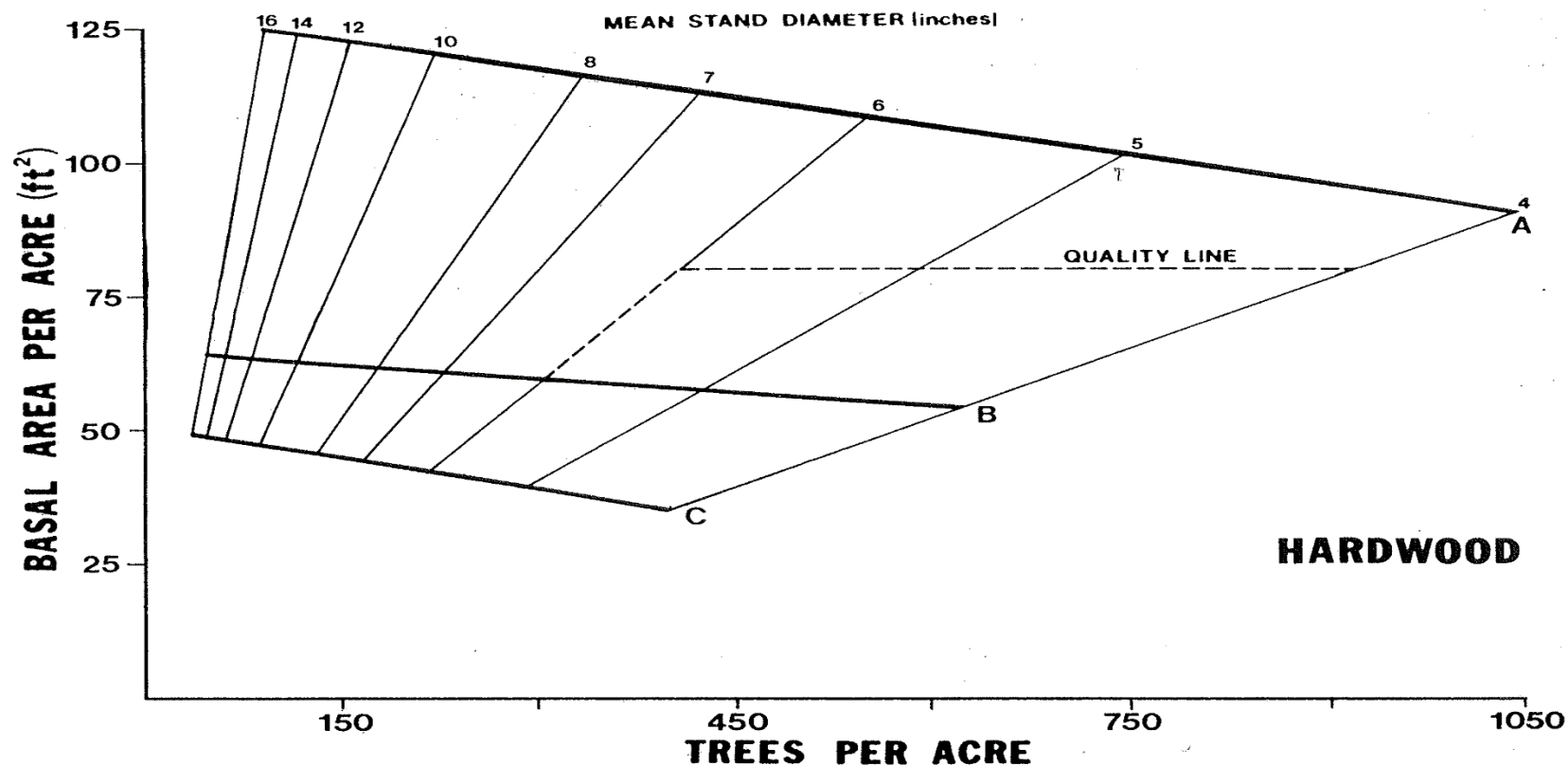
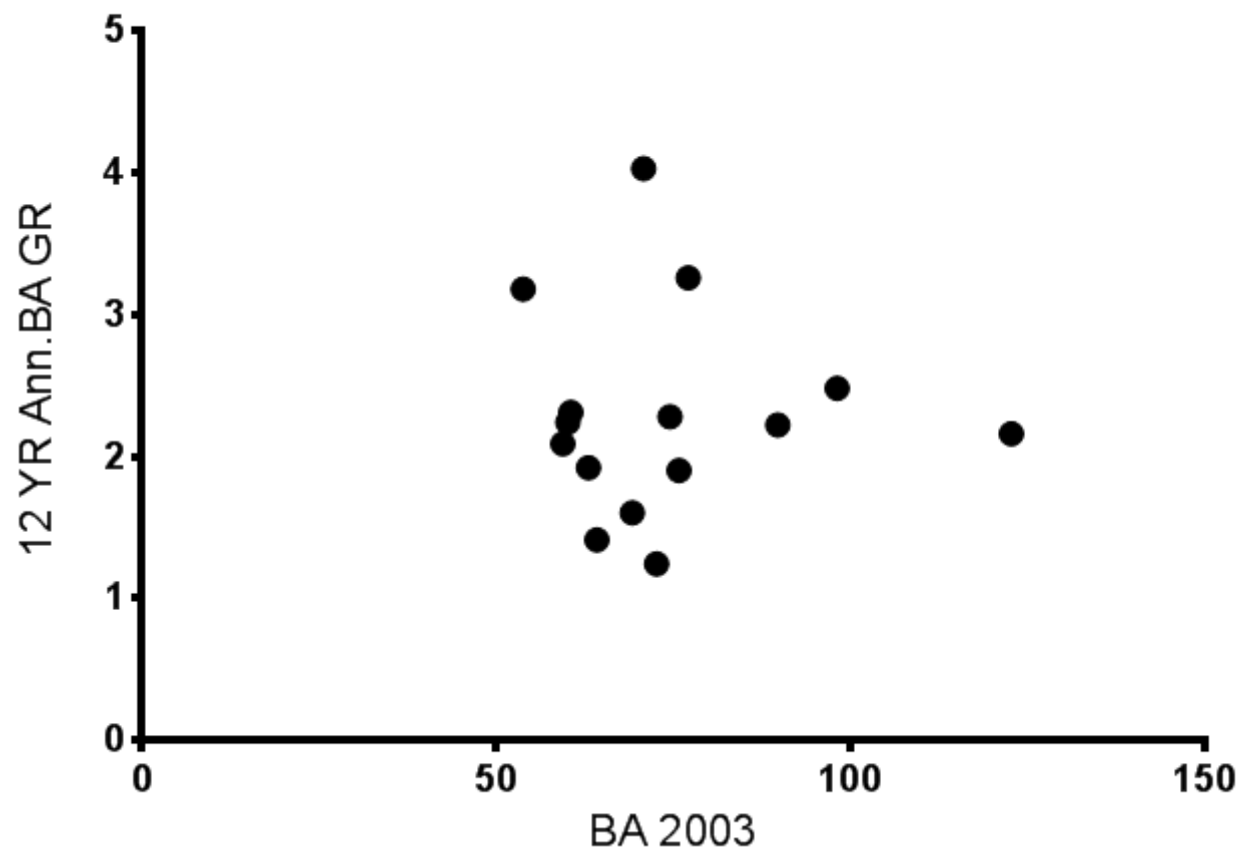


Figure 6.—Stocking guide for main crown canopy of even-aged hardwood stands (beech-red maple, beech-birch-maple) shows basal area and number of trees per acre and quadratic mean stand diameter. The A line is fully stocked, the B line is suggested residual stocking. The C-line is minimum stocking. The quality line is the density required to produce high quality stems of beech, sugar maple, yellow birch, and red maple.

Data 1





Types of Shelterwoods

- 1. Standard: residual of 60-70 sq.ft.: removal in 5-10 years. Abundant tolerant regeneration.
- 2. Low density: 20-30 sq. ft residual: provides more diverse regen, more ground disturbance, less damage during final removal.
- 3. Deferred/delayed (final removal): useful where a component of the overstory is not mature – still growing quality wood.
- 4. Irregular: where conditions of overstory maturity/quality (and regeneration) are irregular. (We also list “rehabilitation” harvests where stand conditions are heterogeneous – lack of uniform stand conditions).



Prescription Key

- Based on a walk-thru' or cruise:
- `1. Determine percentage of points that fall in groups/patches containing >50% mature/overmature/defective trees.
 - a. If patchiness > 50% of area: clearcut (poor advance regen) or overstory removal (good advance regen).
 - b. If patchiness is 10-50% of area: group/patch or group release.
 - c. If patchiness is < 10% of area: partial cuts e.g. single-tree, shelterwood, commercial thinning.

