PCT/non-PCT Study: Austin Pond - A Case Study -

Patrick Hiesl, Jeffrey G. Benjamin, and Brian E. Roth

Hiesl, P, J.G. Benjamin, and B.E. Roth. [in press]. Evaluating Harvest Costs and Profit on Commercial Thinnings in Softwood Stands in West-Central Maine: A Case Study. The Forestry Chronicle.

Austin Pond History

1970 - Clear Cut
1977 - Herbicide Trials
1986 - Precommercial Thinning

2013 – Thinning of PCT stands
2014 – Thinning of Non-PCT stands

Third Wave

Stand Conditions



PCT Plots

NPCT Plots

Austin Pond Thinnings

Prescriptions in PCT stands
33% removal of softwood volume
50% removal of softwood volume

Prescriptions in NPCT stands
33% removal of softwood volume
50% removal of softwood volume



Basal Area Removal Intensities



Thinning of PCT Plots (2012/2013)

Cut-To-Length system
Ponsse Ergo processor
Timberjack 1110 forwarder
8 PCT plots thinned
1 training plot







Thinning of NPCT Plots (2013/2014)

Whole-Tree system
CAT 501 feller-buncher
John Deere 648 GIII grapple skidder
Morbark Model 23 chipper
6 NPCT plots thinned
1 training plot







Processor Productivity



Processor Productivity



Feller-Buncher Productivity



Feller-Buncher Productivity



Unit Cost of Production

- Harvester and feller-buncher productivity was measured
 - Skidding and forwarding was simulated
- Cut-to-length system produced stud- and pulpwood
 Whole-tree system produced biomass chips only







Production Costs



Production Costs



Profit Calculations



Profit Calculations



Profit Calculations



Profit Calculations (including PCT costs in 2013 dollars)



Profit Calculations (including PCT costs in 2013 dollars)



Conditions

Cut-To-Length system in PCT plots
sawlogs and pulwood

Whole-Tree system in NPCT plots
biomass chips

• Round-trip distance to mill: 50 – 100 miles

Mid quality site (Briggs 3, Site Index₅₀ 46 ft.)

Take Home Message

 Unit cost of production is similar for roundwood and biomass chips within each prescription

 Profits are similar across both prescriptions for PCT and NPCT plots (including PCT costs)

 PCT allows for sawlog production in shorter period of time, but does not result in a financial gain or loss in this study

 The proposed whole-tree system can economically thin high density stands

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Questions?

