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Timing and duration of log storage influence aspen suckering on decking areas

RENKEMA, K.N., LIEFFERS, V.J., AND S.M. LANDHÄUSSER



Poor aspen regeneration on landings and decking areas has been long attributed to the increased skidder traffic on these high impact areas.

However, there is growing evidence that the season of deposition and length of storage of the logs as decks could influence aspen sucker regeneration on these landings.

Methods: We used a combination of a field survey (26 sites north of Lac La Biche) and a controlled growth chamber study to investigate the impact and the potential mechanism of the timing of building a log deck (summer or winter) and the duration of log storage (up to one year) on aspen regeneration. To investigate other underlying factors, we also assessed the impact of soil compaction and root wounding on aspen sucker regeneration.

Results: There was no difference in soil compaction and root wounding between landings made in summer or fall; however, compaction and wounding were much higher on the landings than in less trafficked areas.

Aspen regeneration was greatly reduced on landings where log decks were made in early summer and retained for most of the same growing season, compared to landings that were decked in the fall.

If decks were made in the late fall, and stored for a full year before hauling, aspen regeneration was not different from landings formed in fall but stored only for a month.

Traffic resulted in a significant loss to the parent root system, regardless of when the decks were built.

Root wounding and storage over one growing season appear to have equal negative effects on suckering and these negative effects were mostly additive.

Interestingly, wounded roots initiated more sucker but many of these suckers did not reach the soil surface.



Decking area after clean-up. Removal of fine slash is critical – but aspen roots must be retained.

Implications: Decking of logs in early to mid summer is detrimental to aspen regeneration likely because the soil is warm and the aspen roots are physiologically ready to sucker; here the deck acts as barrier to emergence of suckers into the light.

In the late fall, when aspen roots are not likely to sucker and soils are cool, the length of log storage appears to be less of an issue.

This research further enforces the notion that traffic on unfrozen ground with poor soil strength (a combination of soil moisture and texture) is detrimental to aspen regeneration. As a result, winter logging on frozen ground and the removal of the log decks before the spring thaw would be the ideal scenario for aspen regeneration following logging.

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Further Information:

Renkema, K.N., Landhäusser, S.M. and Lieffers, V.J. 2009. Suckering response of aspen to simulated log storage and traffic-induced-root wounding. *For. Ecol. Manage.* 38: 323-335.

Renkema, K.N. Lieffers, V.J. Landhäusser S.M. 2009. Aspen regeneration on log decking areas as influenced by season and duration of log storage. *New Forest* 38: 323-335.

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Centre for Enhanced Forest Management, Dept. of Renewable Resources, U. of A., Edmonton, AB T6G 2H1

Victor.Lieffers@ualberta.ca; Simon.Landhausser@ualberta.ca

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