

Harvesting woodlots in NZ: What do small-scale landowners and loggers think?

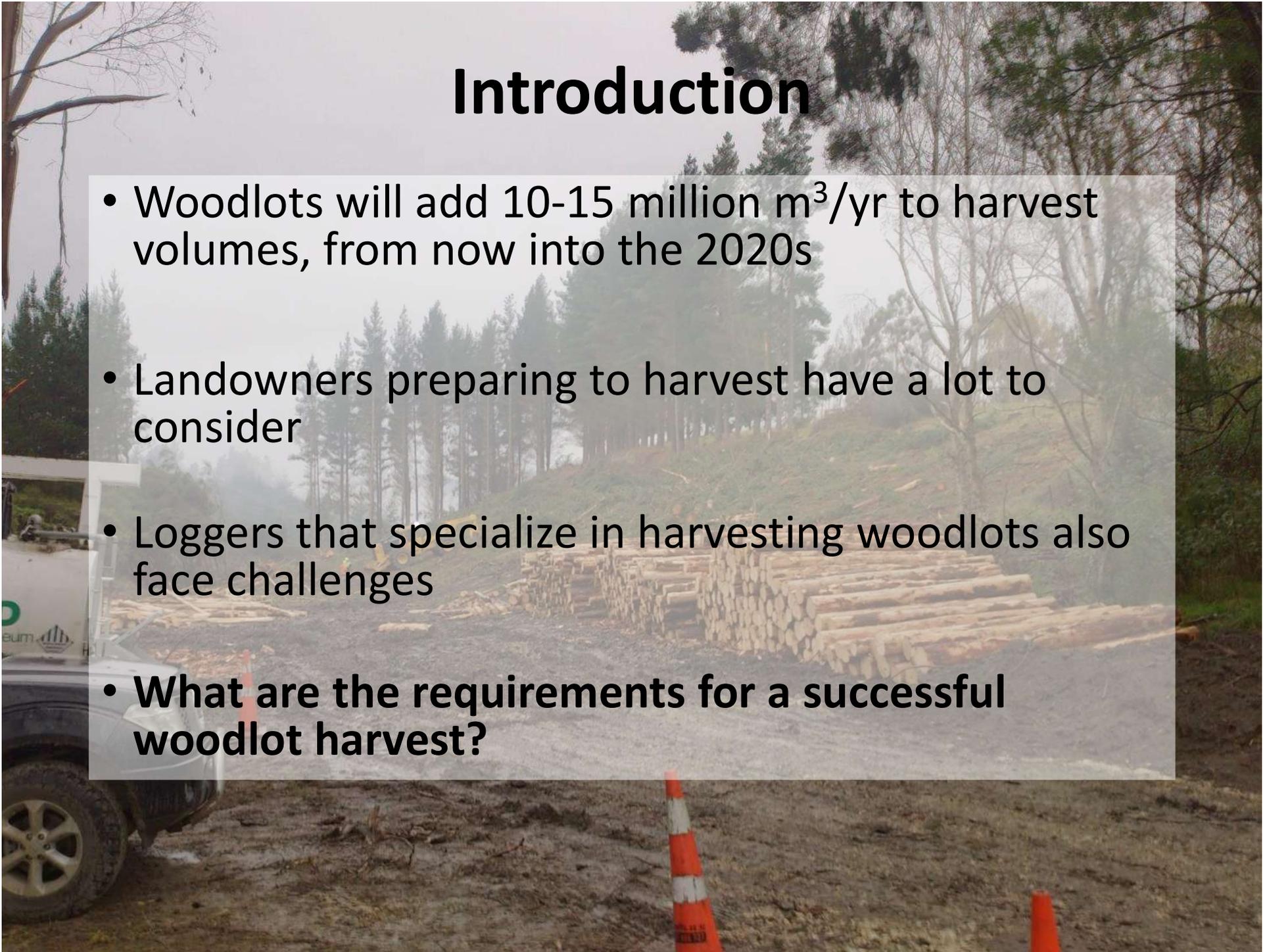


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Introduction

- Woodlots will add 10-15 million m³/yr to harvest volumes, from now into the 2020s
- Landowners preparing to harvest have a lot to consider
- Loggers that specialize in harvesting woodlots also face challenges
- **What are the requirements for a successful woodlot harvest?**



Landowner survey

- Brown and Visser (2017)* surveyed 17 landowners with recent woodlot harvest activity
- Study focused on values provided by woodlots and landowner satisfaction with the harvest, including:
 - Health and safety
 - Economic outcomes
 - Protection of environmental and cultural values
 - Disruptions to farming operations
 - Property damage, site clean-up

*Brown, K.R. and Visser, R. 2017. A survey of New Zealand farm forest owners who recently harvested. New Zealand Tree Grower, the Journal of the New Zealand Farm Forestry Association. August 2017 Issue. Vol. 38, No. 3, ISSN: 0111-2694

Findings from landowner survey

- Top woodlot objectives: 1) commercial value, 2) aesthetics, and 3) water quality protection
- Relatively low landowner satisfaction with value recovery (59%) and the overall economic outcome (64%)

Value recovery concerns:

Confusion about tonnage delivered, stem breakage, **residue** →

Other issues: Equipment move-in costs, unforeseen deductions, long transport distance to market



What do loggers think?

- Brown (2017)* interviewed the 'top 3' loggers based on most highly satisfied landowners
- Highlighted their perspectives on woodlot harvesting challenges
- Observed their logging operations to demonstrate **harvest systems/machines/operating principles** they use to address challenges



*Brown, K.R. 2018. Challenges and opportunities for harvesting New Zealand's farm forest blocks. New Zealand Tree Grower, the Journal of the New Zealand Farm Forestry Association. Vol. 39, No. 1, ISSN: 0111-2694

Harvesting challenges

- Small harvest volumes, frequent shifting of machines
- High harvesting costs exacerbated by tough logging conditions (e.g. steep and erodible terrain, edge trees, fences)
- Lack of infrastructure
- Lulls in harvest activity due to log price dips and seasonality
- Unique safety hazards:



What machinery/system is best suited to woodlots?

- Shovel logging was a popular response
 - Very efficient for short (<100m), downhill extraction
 - Lower earthwork cost and erosion risk
- Loggers emphasized ‘right machines for the job’
- Steep terrain harvest systems
 - Tethered machines
 - Yarder/loaders



What are some logging contractors getting right that others are not?

- **Value optimization**

- Mechanized felling to reduce stem breakage
- Using the felling head to minimize nodal swelling
- Taking logging residue offsite as **random pulp** →



- **Understanding landowner needs/values**

- **Protecting fences**
- Working around milking schedules
- Ensuring a tidy job



Multi-purpose machines

- Hyundai 290 Excavator w/ 10000XT Harvesting Head fells, delimbs, shovels, and processes in forest
- **Key benefit:** reduced equipment transport costs



Innovative extraction systems:

Focus on two-staging

- Description: Logs are processed in the forest, forwarded to a roadside landing or other staging area, and loaded onto on-highway trucks
- **Key benefit:** No road construction is necessary (i.e. a cost savings)
- Caveats: A loader is required at each end; May not be suitable during wet weather.







Summary

- Narrow profit margins underscore the importance of choosing a good harvest manager/logger
- Some keys to successful woodlot harvests:
 - Harvesting cost control through multi-purpose machines and innovative extraction systems (i.e. two-staging)
 - Understanding what ‘value’ means to the landowner and then optimizing for this value

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