

# Inter-rotational forest planning on steep, fragile country

Chris Goulding

The harvesting and re-establishment of forest plantations on steep country with fragile soil is one of the more significant challenges facing New Zealand forest management. There are productivity, safety, environmental and social issues with current logging systems. There is a vulnerability to severe storm events in the period between when the existing tree roots have died and when the newly established crop forms a continuous root mass and overhead canopy. Not only are many steep country 'back-block' harvesting operations barely profitable if compounded silviculture costs are included, but when erosion and debris-flow occurs, even if rarely, they attract public attention and the sector's 'licence to operate' is threatened. Stand productivity can be severely affected by mineral-soil and organic matter disturbance, and inadequate practice on poor soils can reduce the future sustainable harvest and the financial return.

The proportion of the plantation area in this category is estimated to be approximately one-third of the total plantation forest area. Should new planting rates increase, it is likely that this will occur on land that has been taken out of agriculture for flood-water control, reduction of soil degradation or because of low productivity/profitability, and this proportion will increase. The theme of this issue is the concept of inter-rotational planning and management for an operational area, which integrates activities from pre-harvest inventory through to the final assessment of the successful re-establishment of a commercial crop or protective vegetation. For fragile sites, in particular, decisions about what must occur, from logging through to re-establishment, need to be considered early, during or prior to the short-term harvest-planning phase.

The lead paper is a jointly-written, collaborative paper from Scion and Landcare that builds on an earlier 2012 paper in this Journal to discuss 'what we know and need to know', with the forest industry requiring tools to improve risk assessment and 'whole of forest' planning. It is worthwhile to list the questions raised at the NZIF 2014 conference in Napier:

- Is it time to formally recognise what you can and can't manage?
- Are there better approaches to manage the risk of steepland harvesting?
- Is it time to recognise that there are parts of our steepland landscapes unsuitable for production forestry?
- Are there better ways to clearfell harvest or are there viable alternatives to clearfelling?

- Are some future steepland forests going to be something other than radiata?

Four papers within this collaboration follow on: reducing the risk of landslides and debris flow; the role of roots in providing erosion control; the supply of nutrients to sustain future volume growth; and managing and maintaining the network of streams that extend into the upper reaches of the forest. A sixth paper, following on from an earlier paper in the February issue of the Journal, discusses when detailed site level Erosion Susceptibility Classification (ESC) is needed to analyse and map erosion risks. The paper emphasises that ESC must be supported by specific standards for forestry operations that are appropriate for the level of erosion risk on a site and that remove the inconsistent treatment by the different regional councils in New Zealand.

Two other papers outside of the theme discuss technology advances in rural fire management and the role of Māori in the forestry biofuel industry. There are updates on education at the Waiariki Department of Forestry and Resource Management and the University of Canterbury School of Forestry.

The Last Word returns to the issue's main theme, with a warning that failure to improve current logging practice could result in government-imposed restrictions as a result of public pressure. There is a plea for continued research funding to develop modern harvesting systems, perhaps using ideas from abroad, that are efficient and that minimise their impact on the environment.

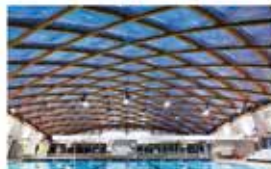
It is noteworthy that in the Scion/Landcare collaboration to produce papers for this theme of steep-land inter-rotational planning, there was no paper specifically on new logging techniques. The editor does not believe that LIRA should necessarily be re-established. After all, the organisation on which it was modelled, Skogsarbeten, has long since departed from only covering its speciality of logging research and has expanded its scope to cover all of 'forest growing' research, becoming Skogforsk, the Forestry Research Institute of Sweden. There should be a group of New Zealand harvesting researchers, possibly based in Scion, with adequate, secure funding, safe from the short-term decision making of a hard-pressed manager intent on reducing costs this year, but with close contact with forest managers and harvesting contractors. This (small) group should consist of young, enthusiastic scientists, some with recent post-graduate qualifications in forest engineering or quantitative sciences, all with practical experience of setting chokers on the New Zealand hillside, in the rain.

# NZIF 2015 Conference



New Zealand Institute of Forestry  
– Te Pūtahi Ngāherehere o Aotearoa Incorporated –

Developing forest policy for a changing future • Te Papa, Wellington • 10 August 2015



## CONFERENCE PROGRAMME

Registration

Mihi whakatau

Welcome by NZIF to conference

### NZ Forest Policy Project working parties:

- **Forest & Land Resources**  
Led by: Russell Dale, NZFOA
- **Forest Management**  
Led by: Dr Brian Richardson, Scion Research
- **Forest Products Processing and Marketing**  
Led by: Marcel Vroege, Indufor
- **Environment & Social**  
Led by: Trish Fordyce, VK Consulting Environmental Engineers Ltd
- **Regulatory Framework**  
Led by: Andrew McEwen, Registered Forester

### Hon Stuart Nash – Labour Party's spokesperson on Forestry

- **Structured Debate on Policy**

### NZIF 87th AGM, James Treadwell, President

Post-AGM/Pre-dinner drinks

NZIF & Foundation Awards Dinner

## CONFERENCE DINNER SPEAKER

### Geoff Simmons



Geoff is General Manager at The Morgan Foundation – an independent foundation which aims to stimulate debate on the important issues facing New Zealand. Everything from the NZ Housing Crisis, to Obesity to the now infamous Great Cat Debate there's not much that the Morgan Foundation don't have an engaging, stimulating and sometimes controversial, point of view on.

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