

# Pruned log pricing issues

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**A**lthough pruned logs have been on stream for over 20 years, two of the problems recognised at the outset have yet to be satisfactorily resolved. The first is how to determine what various pruned logs are worth; and the second is how to get the right price.

## Back in the '80s

The first pruned price differentials were based on log size alone, which soon fulfilled predictions and proved totally inadequate. The next initiative was 'trial truck-loading' whereby one or two loads from a new harvest area were delivered to the mill for a sawing trial. This ignored all the principles of stand sampling and provided an interpretation on the mill's terms as the basis of price negotiations. While the shortcomings are obvious trial truck-loading remains common practice today, although now more often on an accept-or-reject basis rather than to determine price.

Theoretical price/quality gradients were derived by researchers at FRI. These were based on differences in timber grade outturn and residual values from a large number of sawing studies on a wide range of pruned log types. The FRI gradients were used to compare pruning regimes but had no impact on the pruned log markets at the time because there was nothing to link such results to the commercial realities. However, data from those sawing studies, augmented by further sawing simulations, were eventually used to develop Pruned Log Index (PLI) as the appropriate measure of basic pruned sawlog quality. PLI is derived from measurements of log size, log shape and defect core size and relates directly to, but remains independent of, grade and value recovery by any sawmill.

## Developments in the '90s

Interface Forest & Mill Ltd, founded in the early '90s, launched the PLI-based concepts into the commercial arena by simultaneously developing practical pruned stand sampling systems and baseline sawing study techniques. The latter were designed to benchmark sawmills, assist them with pruned log conversion issues, and demonstrate the real differences in returns to the mill from logs across the PLI range.

Over the past decade 650 pruned stands, spread throughout New Zealand, have been sampled. Analyses were either by sawing logs in a small mill or by cross-

sectioning them on the forest floor, and sometimes a mixture of both. These studies, commonly referred to as PLI Surveys, have been conducted on behalf of 10 forest companies and a number of private growers. PLI has been the basic measure of pruned sawlog quality but results also include the incidence of random defects (the most common of which are resin pockets) and estimates of the probable levels of degrade these may cause in the clearwood. PLI would be meaningless without such supplementary information as, at their worst, randomly occurring defects can completely negate all the benefits of pruning.

During the same period baseline pruned log conversion studies were completed in eight New Zealand sawmills. These were done for a range of reasons but all provided interpretations of what PLI meant in terms of both grade and value recovery to each of the mills.

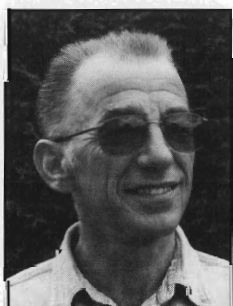
The forest company clients unanimously endorse PLI Survey results as being valid and the sawmill clients have no dispute with their mill specific interpretations of grade and value recoveries by PLI, or the supplementary adjustments for random defects. This would seem to set the ideal platform for developing a sensible and fair price/quality structure based on measurable pruned log parameters. Not yet - but a start has been made.

Fletcher Challenge Forests (FCF) have been the most proactive and developed an internal pruned log transfer pricing system based on PLI with adjustments for resin defects and intra-ring checking. This has been in place for three years now, suits the company's purpose well and, as FCF also both buy and sell pruned logs, has had an effect on the wider pruned log market. However, although PLI and pruned log sampling results exert increasing influence on the general market, the greater number of pruned log transactions at present are based around an average price delivered to mill.

## The Current Situation

It is doubtful that anyone could define exactly how the average pruned log price evolves. It is linked to pruned export prices and influenced by both current timber prices and log availability. The level seems pitched to minimise risk to the sawmiller and the poorer logs are most often further discounted either at the time of purchase, or retrospectively after some have been sawn. Similarly, variations above the average price may also be made after good results from initial sawing, but significant voluntary price increases are unusual so are not considered here.

A generalised view of the situation throughout last year is given as Fig. 1. The average pruned log price was around \$165/m<sup>3</sup>. Among stands sampled, Stand PLIs ranged from 4 to 10 on the scale and realised prices, including negotiations not based on PLI, ranged from \$140 to \$215/m<sup>3</sup>. That range has been smoothed into



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the PLI steps, peaking at PLI 9, that are shown in Fig. 1. For the purpose here, the PLIs in Fig. 1 can also be taken to represent equivalent PLIs and so include adjustments down the scale for resin defects; e.g. a PLI 8 stand with high resin may equal a 'clean' PLI 5 for price and value.

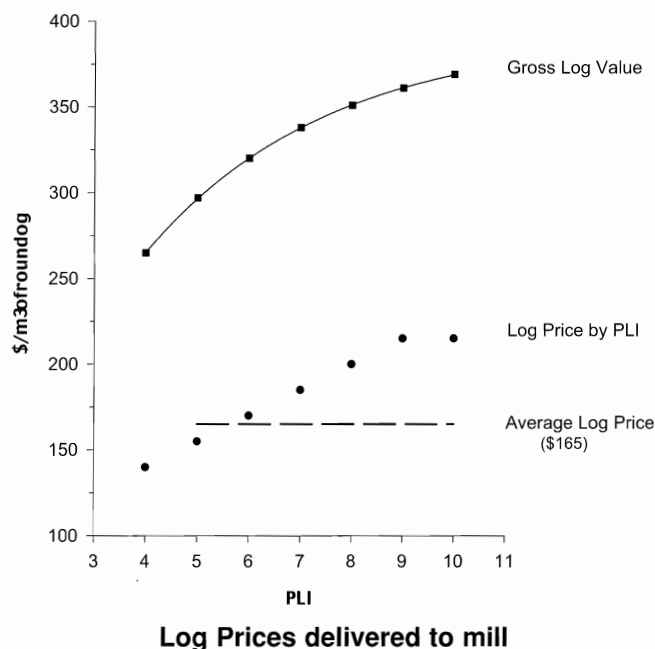


Fig. 1: Generalised Pruned Log Prices and Gross Log Values - 2001.

The upper curve shown in Fig. 1 is Gross Log Value recovery by an 'average' mill sawing pruned logs to maximise US random width Mouldings Grade. Gross Log Value is the value of all timber and residues recovered from one cubic metre of debarked log. It does not include any production or processing costs. The gross log values shown in Fig. 1 range from \$265 to \$370 and were derived from a typical 2001 pricelist where the top grade, Mouldings, was set at \$770/m³ in the kiln dried and faced condition.

Fig. 1 shows the size of the mill margins (gross log value minus log price) to cover the costs of sawing, processing, general operating and turning a profit. The log price by PLI steps more or less tracked the shape of the mill value recovery curve. The average price, of course, did not and those presenting the better logs under that system received up to \$50/m³ less.

Average pruned log pricing is the worst option for forest owners with good pruned stands not only because their logs are down-valued but also because they are subsidising a large collection of much poorer crops realising the same money. Neither is average pricing as good or safe a deal for sawmillers as may be inferred from Fig. 1. Log traders are sensitive to the fact that, under average pricing, any log consignments of uniformly poor quality are likely to be either rejected or precipitate demands for heavy price discounting. To avoid that situation, but still quit lower quality logs, an all too common practice is to mix log supplies to produce a

"basket of average quality". This presents the mill with an unnaturally wide mix in quality that cannot be untangled and is much more difficult to saw, process and market. Increased variation equals decreased efficiencies and increased costs.

Most sawmills pay at least lip service to a willingness to pay higher prices for better logs but this does not mean they are in a hurry to embrace a pricing structure over which they have little or no control. Rather, some still believe that any change in the status quo will result in higher prices for the same logs. Further to which quality is not the only, nor often the main, determinant of pruned log price. Other factors such as continuity of supply and the volumes on offer often take precedence.

### The Way Forward

In the ideal situation a price/quality gradient would exist independent of other pressures and all pruned log consignments would carry quality definition. The suggested minimum is PLI plus the incidence of resin pockets. Initially, and during the establishment of the essential price gradients, quality needs to be determined prior to marketing and that requires pre-harvest stand sampling.

It may never be practical to sample all stands and neither should that be necessary. We are moving into an era of much better stand records and improved silviculture which combine to make pruned quality easier to predict. Such predictions would be an acceptable starting point under an established price/quality structure providing both parties were agreeable to retrospective adjustments when required. Those would not be the arbitrary 'seat of the pants' type price adjustments, inevitably downwards, that frequently occur at present. Rather they would be based on at-mill measurements of the critical internal log variables. Some systems for doing that have already been developed and successfully applied. The options for rapid and practical at-mill sampling expand as mills become more high tech. Scanning systems, setworks and optimisers, and grade-mark readers can all be used to acquire data on basic pruned log variables which are independent of mill strategies or influences.

The pace of change has been slow over the past 15 years but logic is prevailing. Demands for independent definition of pruned quality are increasing and pricing systems are gradually being adapted to recognise and accommodate the wide range. Internal log scanning, still to become a reality, would be helpful but not the panacea that some are still waiting for. It would just provide another option for sampling. Identifying and measuring the critical pruned log variables and then interpreting what they mean in terms of potential grade and value recovery is the hard part. All of that is well in hand. The worth of pruned logs can be defined so there are no technical impediments to getting the right price.