

## CASE STUDY I

# NORTHLAND FOREST RESOURCE

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### INTRODUCTION

This paper outlines the future development of harvesting in Northland in terms of volumes to be harvested and gangs required by tractor and hauler extraction methods. The variability of harvesting conditions is discussed, as is the geographical distribution of the forests to be harvested.

The existing harvesting capability of the region is discussed and related to the expansion of harvesting capacity required to meet future harvest levels.

The problems of expanding capacity are examined from the perspective of the loggers, the logging contractor and the management and support staff.

### NORTHLAND FOREST RESOURCES

From a harvesting stand point the Northland resource is highly variable.

The main components of this variability relate to the influence of local growth patterns on volumes per hectare and piece sizes, the geographical and ownership spread of the resource and local soils and geology.

Local soils and geology will pose unique problems for prone sands to ancient cemented sands and wet clays with hard pans to erosion prone gravely clays, mudflows and hard dry clays.

Some forests have no rock underlying them at all and road making materials will have to be imported at high cost (Aupouri, Riverhead, Pouto). In others the underlying rock is of very poor quality, for example the sandstone under Mahurangi Forest.

Other forests are established on greywacke of basaltic rock with ample road making materials. On some of the cemented sands, road making consists largely of removing a few inches of loose sand from the top of the hard pan layer.

The geographical and ownership spread of the resource to be harvested will require a decentralised approach to harvest planning and management of harvesting.

The most useful aids to management will be those which can be adapted to smaller scale operations.

Fortunately the development of powerful personal computers and software means that there is no reason for Northland harvest planners to be disadvantaged compared with their peers in the Central North Island operations.

Decentralisation will also assist in adapting the harvesting operations to local conditions.

### PROJECT NORTHLAND WOODFLOWS/HARVESTING REQUIREMENTS

As a basis for regional wood volumes, the National Exotic Forest Description was used, augmented by the Forest descriptions for Auckland and Northland prepared by the Forestry Corporation as part of the sale of the State exotic forests.

It is assumed that management of the forests continues along current lines, that is, no alterations from present plans are made to account for possible changes of forest ownership.

TABLE 1

Annual Harvest Volumes NORTHLAND (000's m3)

	No	1995	2000	2005	2015
Tractor/sand	150	100	260	470	590
Tractor/clay	75	290	360	390	460
Hauler/clay	125	410	620	630	1100
<b>TOTAL</b>	<b>350</b>	<b>800</b>	<b>1240</b>	<b>1490</b>	<b>2150</b>

Numbers have been deliberately rounded as the objective of this exercise is to provide indicative data on the numbers and types of logging crews required.

Note that there are hauler logging areas being logged by tractor at present, but environmental concerns will increase to restrict these practices in future.

Note also that tractor logging on sand country drops in 1995 as logging is reduced at Woodhill and increased at Riverhead. The rise in 2005 is due to Aupouri coming on stream.

Tractor clay areas plateau relatively early. Most recently established forests have been planted on hauler country.

The most dramatic rises occur in hauler logging. Increases occur early and continue until 2015 when this activity reaches 1.1 million m<sup>3</sup>/annum.

This is translated into logging crew requirements in Table 2 assuming approximately 60 000m<sup>3</sup>/annum production per gang.

TABLE 2

LOGGING CREW REQUIREMENTS - NORTHLAND

	Now	1995	2000	2005	2015
Tractor/Sand	3	2	5	8	10
Tractor/Clay	2	5	6	7	8
<b>Total Tractor</b>	<b>5</b>	<b>7</b>	<b>11</b>	<b>15</b>	<b>18</b>
Hauler Clay	2	7	11	11	19
<b>Total Crews</b>	<b>7</b>	<b>14</b>	<b>22</b>	<b>26</b>	<b>37</b>

At this time, Northland is at the threshold of a sustained increase in the number of logging crews required, both tractor and hauler.

### **NORTHLANDS EXISTING HARVESTING CAPABILITY**

In their 1987 study of Northland's logging workforce, (LIRA Report Vol 12 No 12 1987), Wilson, Smith and Gaskin reported on 22 logging crews in Northland. Three years later, the main findings of this report still hold true. We shall revisit some of these points but to put it in perspective the following facts are highly relevant.

Twenty-two crews produce approximately 350 000 tonnes per annum or 15 900 tonnes per annum each on average. This total production could be achieved by six gangs as indicated above.

Northlands current harvesting operations are characterised by a few operators with relatively stable employment and a much larger number of smaller operators who are forced to stand down for periods of the year, or accept very low production quotas to remain in business.

Uncertainty of future employment has the effect of lowering the standards of equipment, increasing labour turnover, decreasing the level of training of the crews, increasing unit logging costs, demoralising the workforce and focusing contractor management effort on survival rather than increasing efficiency.

Gaskin et al found in their 1987 study of Northland's logging workforce, compared to that of the Central North Island, that the labour force was characterised by being slightly older, much less experienced, more likely to have had an accident and less likely to wear proper safety equipment. They were also uncertain as to their future in the industry.

All of the findings of Gaskin et al can be traced back to the uncertainty faced by the logging crews of Northland. For the industry to progress past this present point, there first has to be a substantial injection

of business confidence in an unequivocal, tangible form. Contractors need continuity of work, subject to satisfactory performance, to develop their businesses.

### **NORTHLANDS FUTURE LOGGING LABOUR FORCE - WHERE FROM?**

#### **1. Existing Crews**

Referring back to the table of logging crew requirements, the 22 crews we have at present would get us through to the year 2000.

However, some crews will not be able to negotiate the transition from management for survival to efficient management. The forest industry of Northland must reduce its current operating costs if it is to be able to compete on either the domestic (ie Auckland) or on export markets. There will be no future for those crews who fail to adapt.

Additionally some of the crews will have to change to hauler operations, with the increased demands on management skills and operator skills that this entails.

Some of the required crews will be sourced this way but it will clearly not be enough.

The efficiency of all crews must be increased dramatically and this is fundamentally an attitude problem bought about by many years of operating a business under siege conditions.

It is perhaps summed up best by the comments of one contractor, with 15 years logging experience in Northland. When he was instructed to produce as much as he could possible manage for a series of export vessels, he said "No one has ever asked me to do that before". In the previous 12 months he had been parked up for two months due to lack of work.

2. **Existing Silvicultural and Machinery Operating Contractors**

Several crews will arise from this source. In contrast to the logging workforce, the Northland silvicultural workforce is generally very well managed, trained and efficient. The less efficient crews have been weeded out of the industry some time ago. Additionally work in the silvicultural area will be running down at the same time as harvesting operations are increasing. L&FITB training programmes have been very successful in Northland and while the workforce would require retraining, this group of workers value training, are receptive to retraining and already have significant skill levels.

3. **Northland Logging Contractors and Loggers Returning Home**

Many of the personnel in logging crews in the Central North Island originally came from Northland and moved to the Central North Island to seek employment. Many of these people will want to return home and only require the prospect of steady employment to lure them back. These people will be very valuable to the Northland forest industry as they now have considerable skills to contribute. Their connections with the local community will tend to draw others into the industry.

4. **Logging Contractors and Loggers Moving to Northland**

For many skilled loggers, Northland will represent an opportunity to run their own crews or to move from tractor to hauler operations. It may allow others to continue in hauler operations as these operations wind down in the Central North Island due to forest age class structures requiring the use of smaller or fewer units.

5. **New Entrants - Particularly Loggers**

As the industry expands and becomes more prominent in Northlands economy, school leavers will be attracted to the industry. They will primarily be attracted by the opportunity to obtain skills and be trained in a professionally run industry. While pay rates must be adequate the image of the industry must also be improved, particularly in the health and safety aspects. In particular the frequency and severity of accidents in the industry must be addressed by a thorough and continually updated programme of on job training.

6. **Unemployed**

There is a perception abroad in Northland that the forest industry will solve all the unemployment in the region. As there are currently 8840 unemployed in the Northland labour district alone, this notion is patently ridiculous.

Additionally the attributes required in a logger or forest worker are generally not well developed in many of the beneficiaries of the welfare state. However unpalatable to the caring souls of our community the demoralising effects of unemployment, lack of exercise, unstructured lifestyle and ease of remuneration render many unemployed people a liability in a bush situation.

When the total financial position of the beneficiaries is examined and compared to the average in hand pay for typical logging in the Central North Island an interesting picture emerges.

For a single person in hand after tax earning from employment are approximately double the in hand remuneration obtainable by a beneficiary.

The picture changes dramatically for those loggers with a wife and family to support. The same comparison shows that the employed logger with three children is just under \$6.00 per week better off than him unemployed counterpart.

Most prospective loggers entering the industry therefore face the prospect of enjoying a brief period of financial advantage compared to their counterparts on a benefit, followed by a lifetime of disadvantage as family responsibilities increase.

The full realisation of the inequity of this situation will hit the logger employed in the industry precisely at the time when his contribution to the industry is peaking.

It is not current pay rates that are the cause of this situation but the arbitrary application of social engineering to the setting of benefits.

The application of less social engineering and rather more common sense will alleviate the current situation and make employment per se and employment in the logging industry in particular a more attractive proposition.

## TRAINING

### 1. Contractors

For contractors and their employees the L&FITB training programmes are seen to be the way forward for training new and existing members of the logging workforce in safe and productive harvesting methods.

The success of the L&FITB training programme in their silvicultural crews in Northland gives every reason for confidence in the ability of the programme to deliver the training required. Some further specialist trainers may be required to be recruited to assist in this programme. It is also most likely that the formation of a "new" labour

force for the industry will present both problems and opportunities for training. With a relatively unskilled labour force, simplified methods may have to be employed to shorten learning times. However there are opportunities to introduce new techniques into a work force which has no historical background of accepted practices. An example of both of these would be making mandatory the requirements that all trees requiring scarfing be wedged over. This would allow for an acceptable result in terms of directional tree felling at lower skill levels.

Such a requirements would almost certainly have significant safety advantages at insignificant extra cost.

### 2. Management Staff

As a region, Northland has recently been through a phase of considerable expansion of its forest estates. The skills built up in the silvicultural crews has been mentioned and a similar development of skills has occurred in the management structures of the forestry organisations active in Northland.

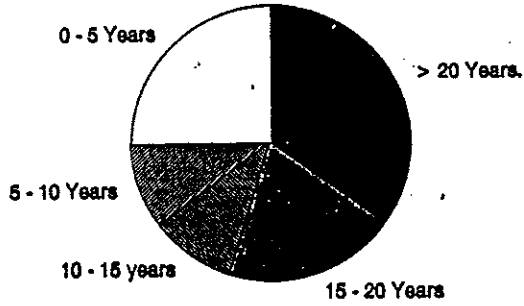
With the reduction in new plantings and with harvesting soon to increase, the total skills level of management is very high but disproportionately weighted to silviculture.

Most of these silviculture orientated management staff need to acquire harvesting skills to fit the change in emphasis of activities. Additional harvesting staff will also have to be recruited. NZFP Forests Limited, Northland region have embarked on the following programme to upgrade the skills of our management staff.

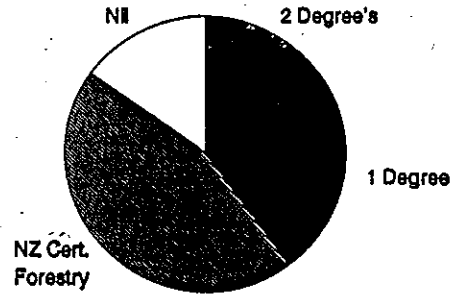
Note that with a decentralised harvest management system, dictated by geography, the demands on supervisor skills is very much greater than if a highly centralised harvesting management system is employed.

**STAFF PROFILE - NZFP FORESTS LIMITED NORTHLAND REGION**

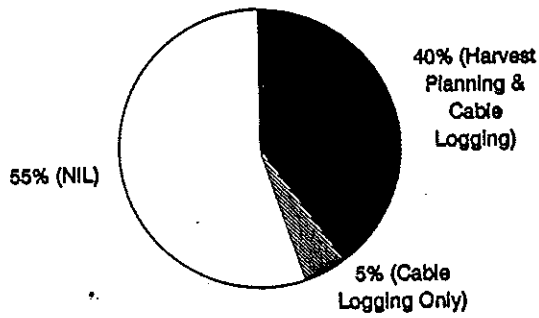
**Basic Skills - Experience.**



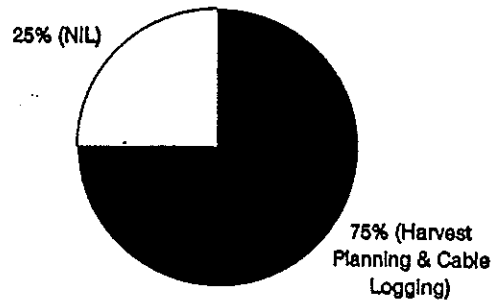
**Basic Skills - Tertiary Education.**



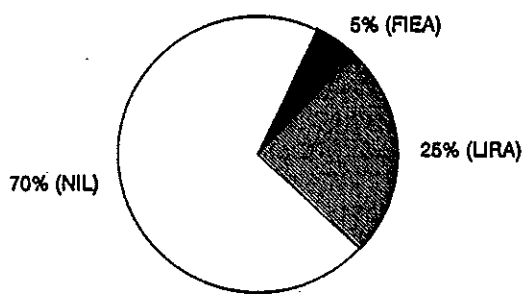
**Harvesting Skills - LIRA Courses 1990.**



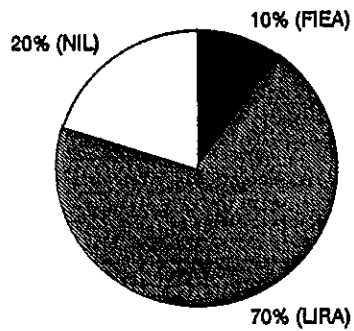
**Harvesting Skills - LIRA Courses - 1995.**



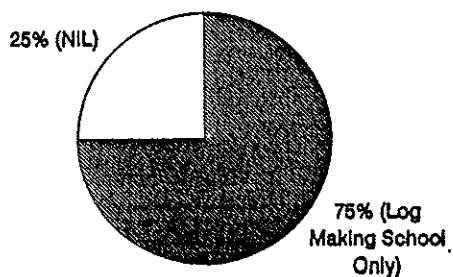
**Roading Skills. 1990.**



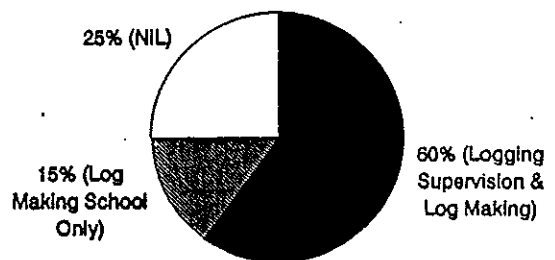
**Roading Skills - 1995.**



**Harvesting Skills. In House Training. 1990.**



**Harvesting Skills - In House Training - 1995.**



My own view is that frontline supervisors will be required to plan their own timber sheds and execute these plans within a framework of performance standards which are more centrally applied.

The advantages of this are that the continuum of harvesting operations, planning, roading, logging, loading and trucking can be easily integrated when under the control of a single supervisor. The disadvantage is that a single supervisor will control a lesser wood flow in total and the efforts of a number of supervisors have then to be co-ordinated to achieve the total woodflow required.

An inescapable fact that emerges from this is that the supervisor must be very skilled. He must carry out all the tasks to the required standards and be able to properly trade off the interactions between the operations in the harvesting system to achieve an overall minimum cost.

Front line supervisors will have to be supported in this by technical staff who relate easily to the practical realities of harvesting. Their role will be to assist supervisors to use the planning and management tools available to meet the performance standards set and to develop both these tools and the performance standards.

Many of these technical staff will be sourced from silvicultural backgrounds as the planning tools to be used have a fundamental similarity to those used in many silvicultural operations.

Harvest management will change in character as people from different backgrounds enter this field of management and bring their existing skills and attitudes to bear on the problems they encounter. It will not just be the new entrants who will have to learn new skills. Those currently in the field will have to learn the new skills that will become essential to the industry. Many of these skills will be brought to the industry by the newcomers.

The future will be exciting and rewarding for those who prepare themselves for it and for those who take up the challenges offered.

## SUMMARY

Harvesting in Northland will place great demands for skilled staff, logging contractors and loggers. Some of these will come from Northland itself, some from outside the region.

