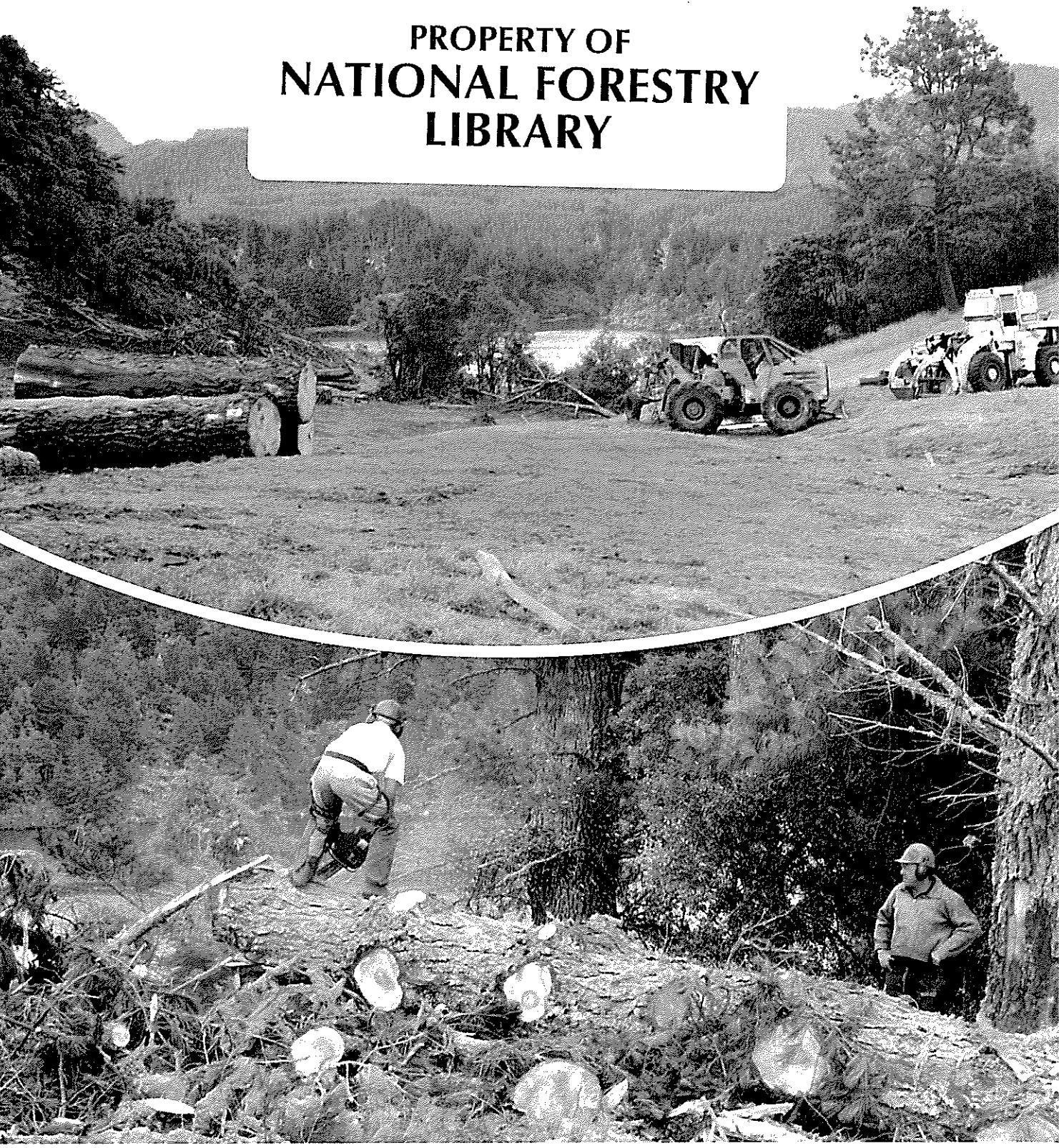


**A SURVEY OF NORTH ISLAND WOODLOT
LOGGING CONTRACTORS**

**Janelle Byers
Tina Cummins**

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Liro Limited
P.O. Box 2244
Rotorua
NEW ZEALAND

A SURVEY OF NORTH ISLAND WOODLOT LOGGING CONTRACTORS

Project Report 65 1997

Prepared By:

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July 1997

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EXECUTIVE SUMMARY

The small forest (woodlot) resource, classified in New Zealand as forest holdings less than 50 hectares, forms an important and increasing part of the national forestry resource. It has been estimated that in the next 10 to 20 years, small forests could account for half of New Zealand's forest resource (Ministry of Forestry, 1994). Much of the harvesting of these smaller forests and woodlots tends to be carried out by loggers working outside of the major corporate structures. Given the predicted increase in future harvest volumes from woodlots, and the fact that little is currently known about the composition of the woodlot workforce, it was considered timely to gather information. This was achieved through a comprehensive survey of 102 woodlot logging contractors working in the North Island of New Zealand.

Key Findings:

- A lack of continuity of work was the main issue identified by woodlot logging contractors, due to its downstream impacts on worker retention, turnover, training, and even machinery status.
- The majority of the woodlot contractor workforce was European (90%), the remainder were Maori (9%), and "other" (1%). The average age of woodlot contractors was 43 years.
- One third of the contractors had not worked for any other crews. Almost half had worked for a corporate crew at some time during their careers.
- Forty-six percent held formal forestry qualifications such as Forest Industry Record of Skills (FIRS) modules or the old Loggers Certificate.
- Most (83%) of the contractors were undergoing further training for FIRS modules. Forest owner trainers provided most of the training for the contractor (41%) and crew (38%). Although 57% of the contractors had not seen a trainer in the previous 12 months, half said they would like to see a trainer monthly or as needed.
- The woodlot contractors suffered from the same work related problems as the corporate workforce. Nearly half had experienced a back injury, and 22% suffered from white finger. These results were to be expected given the heavy nature of logging.
- The Health and Safety in Employment Act (1992) appeared to be having an impact on the woodlot contractors, 75% said they had a safety plan, and 84% said that they held regular safety meetings with their crews.
- Turnover was a problem for the woodlot logging workforce. In 28% of crews, a crew member had left in the month prior to the survey. Most (59%) of those crew members who had left, had gone to another logging job. Woodlot contractors attributed turnover to inconsistent woodflows, and their lack of ability to offer continuous employment.
- Only 60% of the woodlot contractors logged woodlots full-time. For those not logging continuously, earthmoving was the most common (39%) alternative source of income.

INTRODUCTION

In 1995, the New Zealand Forest Owners' Association (NZFOA) estimated that 24% of the forest estate was owned by 'others', mostly small forest owners with less than 50 hectares in forest (NZFOA, 1996). The Ministry of Forestry (MOF) stated that if the current trend toward small forest establishment (predominantly farm forests) continues, that in the next 10 to 20 years, small forests could account for half of the country's total forest area (Eyre, 1996), - a significant proportion of the saleable wood resource.

Much of the harvesting of these smaller forests and woodlots has tended to be carried out by loggers working outside of the major forest company structures. These loggers often worked in different conditions and were exposed to different constraints and hazards to those found in corporate forests.

At the time of the survey, many of these woodlot contractors supplied wood to the larger forest companies, and under an arrangement such as this, the forest company as a principal has some responsibility under the HSE Act (1992). Little is currently known about the woodlot contractor workforce. Therefore, given the predicted increasing future harvest volumes from woodlots, and the responsibilities of principals under the HSE Act (1992), it was considered timely to gather information on the composition of this workforce.

The overall aim of this study was to determine the demographic characteristics of the woodlot logging contractor, and in particular to quantify current health, safety, training, turnover levels, and industry awareness.

ACKNOWLEDGMENTS

Liro Limited would like to thank all the woodlot contractors who gave their time to participate in the survey.

METHODOLOGY

In order to gain an overview of the woodlot contractors, and to limit the study to a manageable size, only those woodlot contractors working in the North Island were surveyed. The information for this survey was collected through personal interviews using a standardised questionnaire (Appendix One). A similar questionnaire format to previous workforce surveys was used in order to facilitate comparisons with the corporate logging workforce.

102 contractors completed the questionnaire. The survey area comprised most of the North Island, from the Far North to Masterton, and from Hawke's Bay and Gisborne to Taranaki. This incorporated the dominant wood-producing regions of the North Island.

RESULTS AND DISCUSSION

This study specifically focused on woodlot contractors, whereas earlier LIRO workforce studies combined crew and contractor responses. Therefore, results from this survey were compared with earlier LIRO workforce surveys only when the information provided applied to both the woodlot contractor and woodlot crew.

Personal Details

Age

The average age for these contractors (all of whom were male) was 43 years (range 24 to 70 years).

Ethnicity

The woodlot logging contractors were predominantly European (90%). Only 9% identified themselves as Maori, and 1% as "other".

Marital Status

Most contractors were either married (68%) or in a defacto relationship (14%), 18% of contractors were single. The number of dependants woodlot contractors had, ranged from none to six. Thirty-two percent had no dependants, and 68% were responsible for one or more people, most commonly three. Dependants included children and "other".

Residential Location

Over half of the contractors lived in rural areas (51%), and only 9% lived in a city (Figure 1).

Secondary School Education

All of the logging contractors had completed some secondary schooling. Most (62%) had spent one to three years at

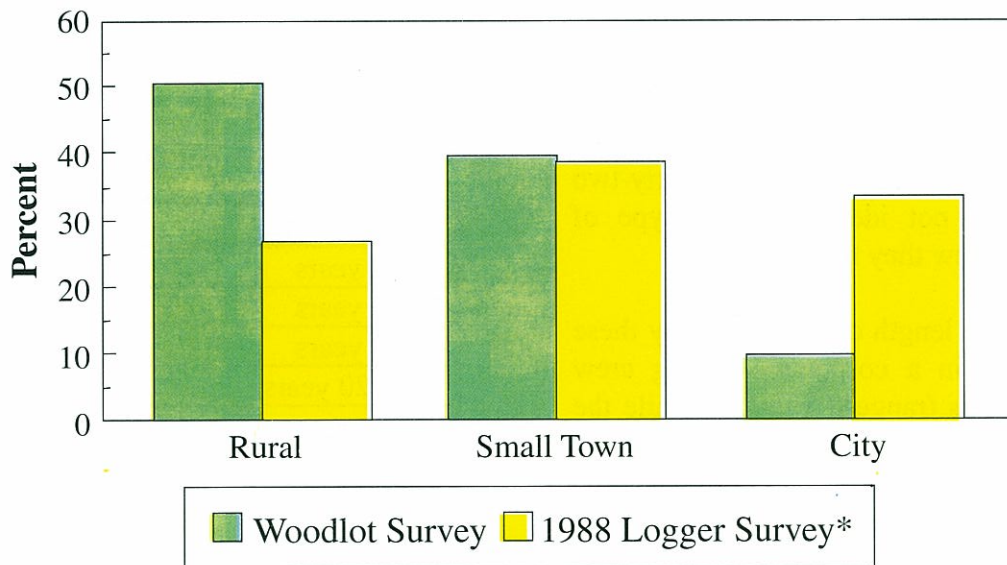
secondary school, while 23% had stayed longer than three years. Although 66% left without any formal qualifications, 34% had gained a formal qualification before leaving school (Table 1).

Table 1 - Formal school qualifications

School qualifications	%
None	66
School Certificate	22
University Entrance/ 6th Form Certificate	10
H.S.C./Bursary	2
TOTAL	100

Tertiary Qualifications

The majority of participants (58%) had not undertaken any additional training or education since leaving secondary school. For those who had, the most common training was of a technical nature (33%), most commonly a polytechnic course in areas ranging from engineering to horticulture. Five percent of the woodlot logging contractors had completed some University study, and 4% had undertaken another form of training such as carpentry.



*Gaskin, Smith and Wilson, 1988

Figure 1 - Residential pattern of woodlot loggers

Turnover

Number of Other Crews Worked For

Contractors were asked how many other crews they had worked for. Thirty-four percent of the contractors had not worked for any other crews, and the remainder (66%) had worked for between one and 10 other crews. Of these, most (21%) had worked for one or two other crews (18%). The remainder (27%) had worked in three to ten other crews.

Have You Worked For a Corporate Crew?

Almost half (45%) of the contractors had worked for a corporate crew at some stage in their career (Table 2). When asked to identify whether they had worked in a silviculture or logging crew, most (47%) said they had previously worked in a logging gang.

Table 2 - Have you worked for a corporate crew?

Worked for corporate?	%
Yes	45
No	53
No reply	2

A further 16% had worked in a silvicultural crew, and 5% of the contractors had worked in both corporate logging and silvicultural crews. Thirty-two percent did not identify which type of corporate crew they had worked in.

The average length of time spent by these contractors in a corporate logging crew was six years (range 0.5 to 20), while the

average time spent in a corporate silvicultural crew was four years (range 0.25 to 14).

Future Intentions

Contractors were asked if they thought they would still be in woodlot logging in five years time. Seventy-two percent said they would like to be, 28% said that they hoped to be doing something else. When questioned further about their aspirations five years forward, 54% felt they would still like to be logging woodlots, and 27% said they would like to be logging in a corporate crew. Eight percent wanted to be farming in five years time, while 3% said they would like to be involved in another form of contracting; 8% replied "retired".

Time Spent in Woodlot Logging

When contractors were asked the length of time they had spent logging woodlots, a wide range of responses was received (Table 3). Times ranged from 0 to 53 years, but the majority (13%) had been woodlot contractors for three years. Turnover had been identified in earlier studies as a serious problem in both logging and forestry (Adams, 1993, Bomford and Gaskin, 1988, Byers and Adams, 1995, Cummins and Byers, 1997, Gaskin *et al*, 1989).

Table 3 - Time spent in woodlot logging

Time	Number
0 to 2 years	13
3 to 5 years	28
6 to 9 years	18
10 to 20 years	27
21+ years	14



Figure 2 - Average piece size for one woodlot crew

Accidents and Downtime

One of the objectives of the survey was to ascertain the status of accidents and injuries in comparison with the corporate crews. Contractors were asked whether they had sustained an accident during the past five years, which had resulted in more than one day off work. Only 16% of all surveyed woodlot contractors had experienced a lost time injury (LTI) in the last five years. One contractor had been injured twice in that time.

Lost Time Days

The contractors who had suffered an injury were asked the number of days they had taken off work as a result of their accident. Seventy-five percent had taken more than one day off work, with a range in lost time days from two to 95 days. The most common periods away from work were five (15%) and 10 (15%) days, but because of four very severe injuries, the average time off was 17 days.

Frequency of Injuries

Twenty-five percent of all woodlot crew members had at least one LTI in the last 12 months, with one crew having three LTIs.

Overall, these injuries resulted in a total of 295 days lost and an average of 11 days off work (range two to 95 days). This does not differ significantly from the Forest Industry Accident Reporting Scheme (ARS) which reported an average of 10 and nine days lost per logging injury in 1994 and 1995 respectively (Parker, 1995, 1996). Figure 3 illustrates the number of lost time days for crew and contractor.

Number Killed in New Zealand Forest Industry in 1995

To identify the awareness woodlot contractors had of the industry's fatality rate, they were asked to identify the number of people they thought had been killed in the forest industry (both logging and forestry) in 1995. Only 19% provided the correct answer of 12 people. It may be startling to many to see the high number killed, as most (82%) identified fewer than this number.

An earlier study by Gibson (1994), showed that the majority of the corporate workforce also showed an apparent lack of awareness of numbers killed each year in forestry or logging.

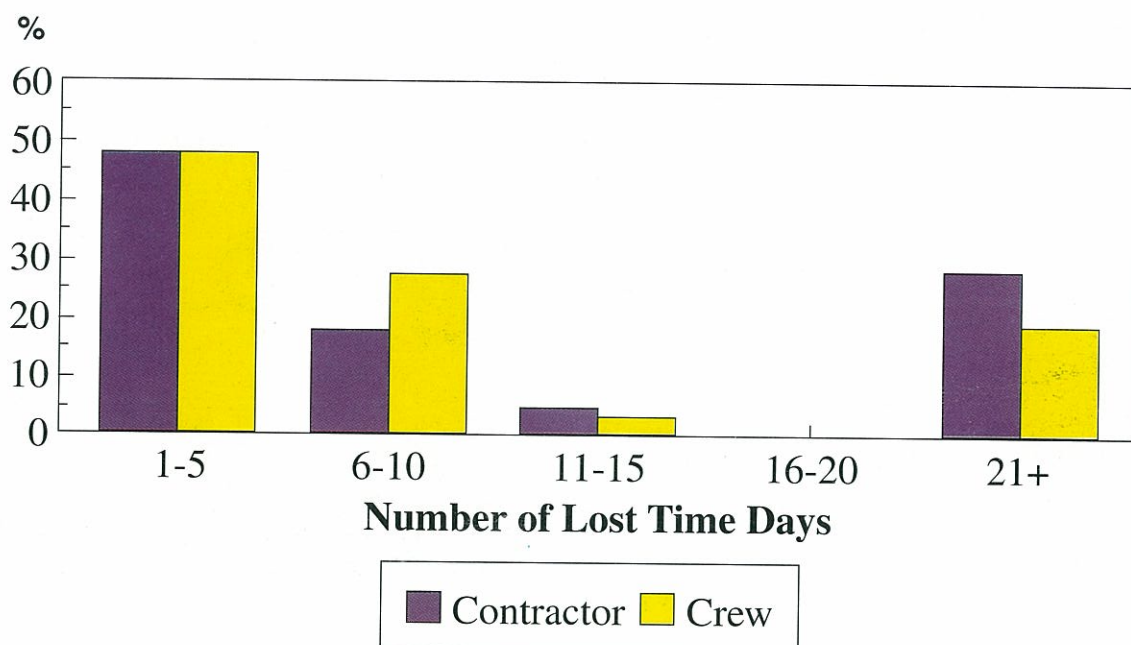


Figure 3 - Accident record of woodlot workforce

Occupational Health

Back Problems and White Finger

In order to identify any potentially detrimental health trends within the woodlot logging workforce, questions about health and chronic ailments were incorporated into the survey. As with accident information, the information about occupational injuries was memory-reliant, and therefore may contain inaccuracies.

Almost half (43%) of the woodlot contractors reported some back problems. This was not unexpected considering the heavy physical nature of logging. Twenty-two percent of contractors suffered from white finger. Chainsaw manufacturers are aware of the potential for sustained vibration to cause nerve damage, and anti-vibration devices have been built into later model chainsaws. The higher average age of woodlot contractors may account for increased incidence of whitefinger, as many may have previously used chainsaws with no anti-vibration device.

Incidence of Melanoma

Information from the Cancer Society of New Zealand (1996) estimates 20,000 new cases of skin cancer being diagnosed each year. Australia and New Zealand have the highest incidence of skin cancer in the world and if ozone depletion continues it is forecast that the incidence of skin cancer will double in the next 40 years. In 1992, 1032 cases of melanoma were reported in New Zealand, by 1994 this figure had increased to 1432.

An early indicator of melanoma is a spot which looks like an unusual freckle, which changes in size, colour and shape over a period of weeks or months. Outdoor workers receiving a lot of sun exposure are listed among those most likely to get melanoma. To identify the incidence of symptoms among woodlot contractors, we asked whether they had ever had a mole removed. Eleven percent of the woodlot contractors said they had previously had a mole removed. This is of concern, and is an area of occupational health which we currently know little about in the logging industry.

Eye and Lung Conditions

Questions about eye and lung conditions revealed few reported problems in this area. Only 3% of contractors reported a lung problem and none reported eye trouble. Of those who reported a lung condition, all were asthmatic and smokers.

Hearing

Annual monitoring of hearing levels has more commonly been carried out on forestry workers in response to the requirements of the HSE Act (1992). Of all the contractors questioned, just over one-third (35%) had undergone a hearing test. Nearly 45% felt that their hearing had been affected by logging, and most (62%) thought it was due to not wearing earmuffs early in their logging career.

Industry Awareness

This section of the survey looked at the awareness the woodlot contractors had of organisations including the Logging Industry Research Organisation (LIRO), the Logging and Forest Industry Training

Board (LFITB), and the Forest Research Institute (FRI).

Have You Heard Of LIRO, and Do You Know What LIRO Does?

While 85% had heard of LIRO, only 68% knew what LIRO's role was. Only half of all contractors had seen a LIRO publication, and even fewer (28%) had met a LIRO staff member. As only 10% of the contractors surveyed were members of LIRO, much work needs to be undertaken to increase the transfer of knowledge to this potentially large workforce.

What Do You Know About LFITB?

When questioned about their knowledge of their primary industry training organisation, nearly 90% said they had heard of LFITB. While 42% were members, 52% had read a LFITB publication, and 80% knew the role of the LFITB.

Forty-two percent said they had met a staff member, which appears to indicate that there was a 100% contact rate with LFITB members who were woodlot loggers.



Figure 4 - A typical woodlot operation

Are You Aware of the FRI and its Role?

A similar number of contractors (89%) knew of the FRI. Slightly fewer (69%) knew what they did, and 40% of the contractors had seen a FRI publication.

Membership of FCANZ and the Farm Forestry Association

The organisation formerly known as the Loggers' Association, has undergone a recent restructuring and objective upgrade, and is now known as the Forestry Contractors Association of New Zealand (FCANZ). The organisation is a combined body which aims to represent all forestry contractors, from logging through to forestry and roading. In the same way that Master Trade Associations work, FCANZ aims to offer accreditation to members who meet the prescribed level of quality in their operation, and thus offer purchasers of services a guarantee of workmanship. This will be the primary representative body for all woodlot contractors, and at the time of the survey 17% were members.

The Farm Forestry Association (FFA) is a group which represents the smaller forest growers. Only 6% of the contractors were members of this association.

Visits To A Processing Plant and Other Operations

To gain a better understanding of the different facets of the forest industry, logging contractors have often visited a processing plant. In this way, the downstream impact of their actions can be fully appreciated. Eighty-four percent of the woodlot contractors had visited a processing plant, while 83% had visited another forestry / logging / woodlot operation.

Which Publications Do You See?

Asked which magazines or publications they most frequently read, the greatest response was "New Zealand Forest Industries" (64%) (Table 4). Nearly three-quarters of the contractors kept in touch with developments within the industry through a forestry/logging magazine.

Table 4 - Most commonly read publications

PUBLICATIONS	%
"NZ Forest Industries"	64
"Logger and Sawmiller"	15
Machinery	5
"Farmer/Rural News"	7
Other	9
TOTAL	100

Best Sources of Information

Another way for woodlot contractors to maintain contact with the industry is through conversation with associated persons, and through literature such as magazines and trade journals. Contractors were asked to identify what they considered to be the three best sources of information about what was happening in the forest industry (Table 5). Contractors were given the opportunity to list additional sources.

A company supervisor was the most common source of information for most woodlot contractors, followed by the Occupational Safety and Health (OSH) Department and the forest manager.

The survey did not determine whether OSH information was derived from OSH leaflets or by personal visit. This highlights the importance of communication between company and contractor, as evidenced by many of the contractor comments at the end of this survey.

Table 5 - Best sources of information

Source of Information	(%)
Company Supervisor	13
OSH	10
Forest Manager	10
Workmates	9
LFITB	7
LIRO	7
Formal meetings	6
Consultant	6
Loggers Assn (FCANZ)	6
Machinery Salesmen	4
Sawmillers Assn	4
FRI	4
Pub	2
Union	1
Boss	1
Company Newsletter	-
Farm Forestry Assn	1
Truckies	1
Other or Combination	8
TOTAL	100

Knowledge of OSH

All but two of the contractors were aware of OSH and its functions and duties. Only 77% said they had seen an OSH publication. This is an alarmingly low figure, in view of the fact that the Safety Code for Forest Operations - Part 3 - Logging is an OSH publication, and is the current code of practice.

Table 6 - Number of times contractors had seen an OSH inspector

Number of Visits by OSH inspector	%
0	41
1	21
2	20
3	9
4	3
5 - 9	4
10 or more	2
TOTAL	100

The contractors were asked how many times they had seen an OSH inspector on their worksite in the last 12 months. Table 6 shows that 41% of the contractors said they had not seen an inspector in the last 12 months. However 64% of the contractors said they were unaware of the legal requirement to tell OSH where they were working.

Training

FIRS

The FIRS system was introduced in July 1992, replacing the earlier Logging Certification system (Rowse, 1996). A total of 32 different FIRS modules covering all forestry operations and tasks are available to all FIRS registered forestry workers. Most contractors (87%) had heard of the FIRS system. However, only 31 contractors (30%) held a FIRS module. This suggests that these contractors had difficulties accessing the FIRS system, or that they chose not to pursue the modules for other reasons.

FIRS Modules Currently Held

The contractors were asked which FIRS modules they held, this is summarised in Table 7. The information provided was not checked against LFITB records.

The most common module held by both contractors and crew was General Requirements. For the contractors, Advanced First Aid, Chainsaw Maintenance and Operation, and Machine Operating: Ground-Based Extraction were the most frequently held modules. For their crews, Chainsaw Maintenance, Tree Felling: Stage One, and Tree Processing on the Landing were the modules most commonly held (Table 7). An average of 1.4 modules were held by each of the 102 surveyed contractors, while the crew members held on average two modules.

Table 7 - FIRS modules currently held

FIRS Module	Module Number	Number of Modules Held By Contractor	Number of Modules Held By Crew
General requirements	1.1	31	141
Chainsaw Maintenance and Operation	1.6	19	108
Forestry Knowledge	1.2	0	0
Tree Selection	1.3	1	0
Plotting for Forest Operations	1.4	0	0
Forest Mensuration	1.5	0	0
Tree Felling: Stage One	1.7	10	63
Wire Rope and Accessories	1.8	5	10
Advanced First Aid	1.10	22	63
Fire Control: Stage One	1.12	10	25
Planting Site Preparation	2.1	0	2
Forest Planting	2.2	0	3
Tree Releasing	2.3	0	2
Silvicultural Pruning	2.4	1	3
Thin to Waste (Small Trees)	2.5	0	0
Handling Chemicals	2.6	0	0
Thin to Waste (Large Trees)	2.7	0	0
Tree Processing on the Landing	3.1	10	58
Log Making	3.2	4	29
Tree Felling: Stage Two	3.3	4	15
Tree Felling: Machine Assisted	3.4	2	6
Breaking Out: Ground-Based Extraction	3.5	9	38
Breaking Out: Cable Hauler Extraction	3.6	0	8
Machine Operating: Ground-Based Extraction	3.7	14	24
Machine Operating: Cable Hauler Extraction	3.8	1	1
Machine Operating: Loader	3.9	5	17
Machine Operating: Mechanical Processors	3.10	0	0
Hauler Systems	3.11	0	2
Salvaging Windthrown Trees	3.12	0	0

Sixteen percent of contractors held old Loggers Certificates which had not yet been changed over to the FIRS system. These are now invalid qualifications.

Training for Modules

Most (83%) of the contractors were continuing to improve their formal forestry qualifications, by training for additional FIRS modules. The most common FIRS modules contractors were training for were General Requirements (18%), Tree Felling: Stage One (14%),

and Chainsaw Maintenance and Operation (12%).

Who was Carrying Out the Training?

The contractors were asked who was responsible for training them and their crews. Of those who replied, 41% had been trained by a forest owner trainer. Fewer were receiving training from an independent trainer (16%), or another contractor (11%). Twenty-seven percent stated that they were responsible for their own training.



Figure 5 - Use of a Moxy to transport stems from skid to loading point

Forest owner contracted trainers were responsible for training 38% of crew members. Thirty percent were trained by the woodlot contractor, and 28% by an independent trainer. The survey did not ask the woodlot contractors about trainer accreditation.

Frequency of Trainer Visits

To identify possible reasons for deficiencies in training, the contractors were asked how often they had seen a trainer in the last 12 months. They were also asked how often they would like to see a trainer. Fifty-seven percent had not seen a trainer at all during the previous year, and 41% had seen a trainer one or more times. Two percent said they saw a trainer as needed (Table 8).

While the frequency of trainer visits ranged from none to 12 times, most common was one visit (14%). This is obviously an area needing attention, with greater communication needed between contractors, trainers and purchasing companies to ensure access to training.

When asked how often they would like to see a trainer, 50% of contractors said that either monthly or as needed was the best option for them. The lack of trainer

contact may explain the difference between the number of contractors who had heard of FIRS modules (87%) and the number of contractors who had acquired FIRS modules (30%).

Table 8 - How often have you seen a trainer in the last 12 months?

	Actual %	Desired %
0	57	2
1	14	1
2	8	8
3	5	3
4	4	8
5	1	-
6	5	11
7	-	-
8	-	-
9	-	-
10	1	-
11	-	-
monthly	2	31
fortnightly	-	5
weekly	-	2
trainer in crew	1	-
when needed	-	19
no answer	2	10
TOTAL	100	100

Contacting an Assessor

The contractors were asked whether they found it difficult to contact an assessor. Forty-six percent said they found it difficult contacting an assessor, and just over half (52%) said they did not. Two percent didn't know.

Health and Safety

It is accepted that the corporate logging workforce has access through company literature and training, to current information about health and safety issues. Regular communication with company representatives (usually supervisors) is a further means of health and safety information transfer which can aid understanding. To determine whether the woodlot workforce had the same level of knowledge and understanding about health and safety issues, the contractors were asked about the HSE Act (1992).

Responsibilities Under HSE Act (1992)

All of the contractors had heard of the HSE Act (1992), but only 87% said that they understood their responsibilities under the Act. It is of concern that 5% said they did not understand their responsibilities, and that 8% said they were unsure. OSH provides free information and assistance to anyone who requests information and/or clarification of the Act.

Safety Meetings

The HSE Act (1992) requires participation by all employees in hazard awareness and identification. Usually, the easiest way is to hold a meeting to discuss safety issues associated with the job at hand. Eighty-four percent of contractors said that they held regular safety meetings with their crews. This indicates that 10% of the crews that did not have a safety plan still had regular safety meetings.

When asked how often meetings were held, the most common response was that safety meetings were held when they were needed (Table 9). Several contractors commented that in some blocks, they would have a meeting about every tree to discuss the safest felling techniques.

Table 9 - Frequency of safety meetings

Frequency of Safety Meetings	%
When needed	25
Monthly	19
Weekly	16
Starting a new block	10
Fortnightly	9
Daily	8
No reply	13
TOTAL	100

First Aid Kits

In response to a question about the existence of a First Aid kit, only one contractor said he didn't have one.

Safety Management Plan

The HSE Act (1992) requires contractors to have a means of conveying information about such areas as hazard awareness and identification, emergency procedures, induction, and training. The most common means of conveying this information is through a safety plan. When asked whether they had a Safety Management Plan, 74% of the contractors said they had one, but 26% said they didn't. Of the 87% who had stated earlier that they knew their responsibilities under the HSE Act (1992), it appears that 13% obviously did not fully understand, otherwise they would have had a working plan.

This is an area which differs substantially from the corporate workforce. In order to meet corporate health and safety requirements, all tendering contractors must have a working safety management



Figure 6 - A farm woodlot in process of being logged

plan, which is passed to the company safety officer for checking against in-house procedures.

Hazard Identification

Contractors were asked who identified hazards on their worksite (Table 10). There was an even split between the entire crew and the contractor alone identifying the hazards. Fortunately only one contractor said that no-one identified the hazards on his worksite.

Table 10 - Identification of hazards

Who identifies the hazards?	%
Team	46
Contractor	46
Foreman	6
No-one	1
No reply	1
TOTAL	100

Sixty-four percent of the contractors said that they were aware of their obligation to notify OSH when beginning work on a new site, and 65% said that they had an accident register. Again, this conflicts with the 87% who said they understood their responsibilities under the HSE Act (1992), as it is mandatory for each crew to have a formal accident register.

Environmental

Resource Management Act (1991)

A necessary prerequisite to many logging operations is a Resource Consent, and to ascertain the level of understanding about obligations under the Resource Management Act (RMA), contractors were questioned about resource consents and related issues. Eighty-nine percent of the contractors said that they knew what a resource consent was, 3% did not know, 7% were unsure, (1% did not answer).

Table 11 - Who obtained the resource consent?

Who obtained the consent?	%
Owner	24
Company	20
Contractor	19
Consent not needed	17
Consultant	11
Don't know	5
No reply	4
TOTAL	100

In most cases, the forest owner obtained the resource consent (Table 11). Seventeen percent of the contractors said that the last block they logged did not require a resource consent.

Inspection for Compliance

Fifty percent of the contractors said that their last job had been inspected for compliance to the resource consent. In most instances, the council (40%) had completed the inspection, and for 5% of replies the purchasing company was responsible. Fifty-four percent did not reply to the question.

Conditions of Work

Composition of Crew

The average woodlot logging crew (including contractor) consisted of four people. Figure 7 shows the distribution of crew size for the surveyed crews. In the 1988 Logger Profile, the average crew contained five people, and in the 1995 Otago/Southland Workforce Survey, six was the average.

Job Rotation

In many corporate crews job rotation is common practice, with crew members alternating tasks throughout the day. This

has the effect of counteracting fatigue and increasing job enjoyment (Kirk, 1996). Sixty-one percent of the woodlot contractors said they rotated staff around jobs.

Turnover

Twenty-eight percent of crews had experienced a change in staff composition in the month prior to the survey. In total, 29 people had left their crews, one crew had lost seven crew members (the highest number reported). Of those who had left, 70% were full-time employees, the remainder were part-time (25%) or seasonal (5%) workers. The high turnover was explained by contractors as a result of reduced demand by the purchasing companies, a factor commonly experienced in corporate crews in response to changes in market requirements. Most of the crew who had left woodlot logging had moved into another logging job (59%). One-third (33%) had gone on to the unemployment benefit, and the remainder (8%) had moved into another job outside the industry, such as farming.

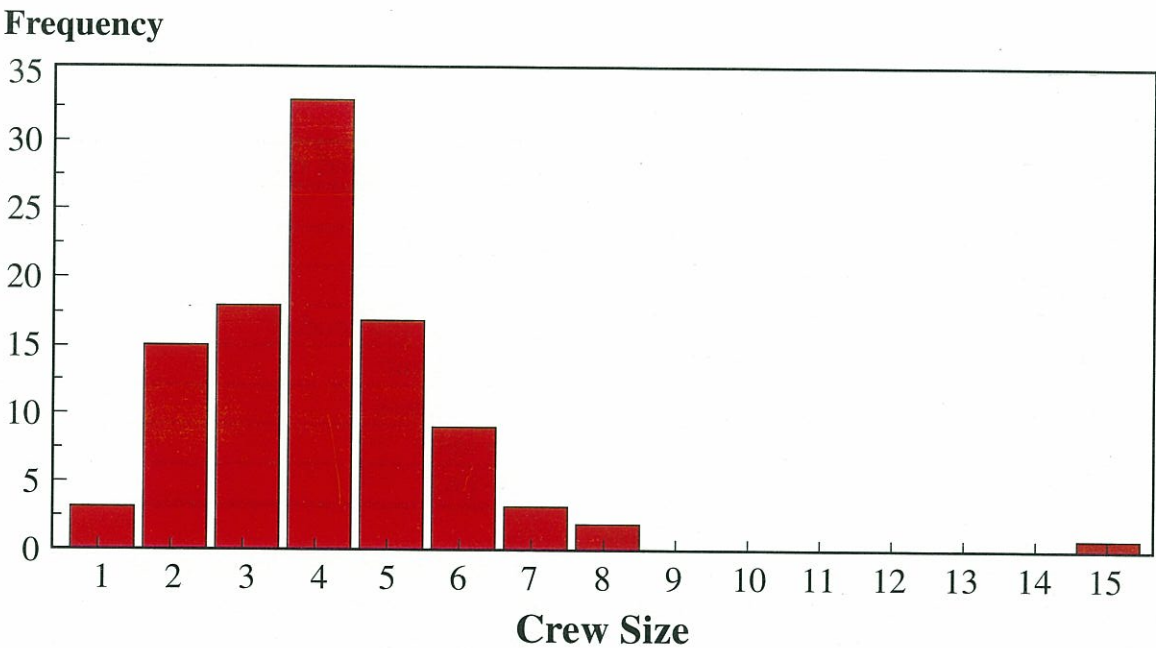


Figure 7 - Woodlot logging crew size distribution

Supply of Equipment

The contractors were asked what equipment they supplied to their crews. Table 12 shows the equipment that was supplied.

Table 12 - Type of equipment supplied to crew.

Equipment Supplied	%
All Gear Supplied	23
Safety Gear	12
Safety Gear and Saws	22
Chainsaws	5
Fuel and Oil	16
Nothing	18
Depends on Job	4
TOTAL	100

Personal Protective Equipment - Contractor

Table 13 shows the items of personal protective equipment used by the contractors and their frequency of use. Most (98%) contractors replied to all questions.

Information provided from ARS data, reveals that ankle sprains are a common injury in logging. Few contractors appeared to use spiked boots, which have been shown in a past study to significantly reduce slipping hazards with no detrimental effect on productivity, therefore reducing the potential for ankle sprain injury (Parker and Kirk, 1993).

Table 13 - Frequency of use of personal protective equipment - Contractor

	Always Wear (%)	Don't Wear (%)	Sometimes Wear (%)	Not Appl. (%)
Hi-Vis Clothing	82	14	4	
Helmet	60	37	-	3
Hi-Vis Helmet	86	13	1	-
Ear Plugs	6	89	1	4
Ear Muffs	92	8	-	-
Visor/Eye Protection	49	35	13	3
Safety Trousers	59	34	4	3
Safety Chaps	62	32	2	4
Steel-Toe Boots	93	5	1	1
Spiked Boots	13	74	7	6
Cut-Resist Gumboots	27	61	6	6
Chain Brake	89	10	-	1
Chainsaw Mitt	74	21	3	2
Machine Seatbelt	69	20	10	1
Gloves	37	41	18	4

Personal Protective Equipment - Crew

The contractors were also asked what items of Personal Protective Equipment (PPE) their crew wore, and their frequency of use. Results are shown in Table 14. The OSH Safety Code for Forest operations - Part 3: Logging, cites

mandatory use of steel-toe boots, safety helmets and high visibility clothing. In addition, chainsaw operators are required to wear safety leg protection and hearing protection. Where excessive dust or danger from flying debris exists, eye protection must also be worn.

For those outside the corporate structure, the OSH Code of Practice; Part 3 - Logging, serves to guide operators in the safest way to carry out a task, including use of compulsory protective equipment.

Therefore those few contractors and crew who may have been failing to wear the minimum PPE while logging may have been in breach of legislation, and were potentially lowering the credibility of the wider woodlot workforce who were meeting (and often exceeding) legislative and company requirements.

In a corporate logging situation, companies generally require certain items of PPE, consistent with OSH Code requirements, to be worn all of the time, by everyone on-site. Company audit procedures are generally in place to monitor compliance with this rule.

Number of Breaks During Day

Recent work on fatigue awareness (Kirk, 1996) has revealed that rest breaks

provide an opportunity for the body to recover from the mental and physical strain associated with hard work. A rest break allows recovery by lowering average heart rate, enabling effective food digestion, and stimulating mental alertness. Short, frequent breaks over the day are better than one long rest break in the middle of the day. A favoured pattern among forest workers is to take two breaks, each 30 minutes long, spaced evenly throughout the day (Gibson, 1994).

Woodlot contractors generally followed the same pattern, with 67% choosing to take two, 30 minute rest breaks over the day. All of the surveyed contractors took rest breaks, the range was from one to four over the day's work.

Crew Transportation

Nearly half of the contractors used an utility to transport the crew to the job. Twenty-eight percent said the crew used their own transport, 23% supplied a van.

Table 14 - Frequency of use of personal protective equipment - Crew

	Always Wear (%)	Don't Wear (%)	Sometimes Wear (%)	Not Applic. (%)
Hi-Vis Clothing	85	7	8	-
Hi-Vis Helmet	90	6	3	1
Ear Plugs	10	86	1	3
Ear Muffs	97	-	3	-
Visor/Eye Protection	63	20	18	-
Safety Trousers	69	25	4	2
Safety Chaps	86	9	5	-
Steel-Toe Boots	91	5	4	-
Spiked Boots	22	60	13	5
Cut-Resist Gumboots	37	49	11	3
Chain Brake	95	1	4	-
Chainsaw Mitt	83	9	7	1
Machine Seatbelt	66	16	12	6
Gloves	45	29	22	4



Figure 8 - Delimbing woodlot timber

Main Job in Crew

The contractors were asked to identify the main job they carried out in the crew, with results shown in Figure 9. Most (57%) contractors could be expected to carry out a range of operational tasks throughout the day. This was typical of woodlot logging.

Productivity

Continuity of Work

To determine whether woodlot contractors were reliant solely on logging for their income, they were questioned about the continuity of their work. Sixty percent logged full-time, 22% said their work was seasonal. The remainder worked on either a part-time (12%) or casual (6%) basis.

Job Undertaken

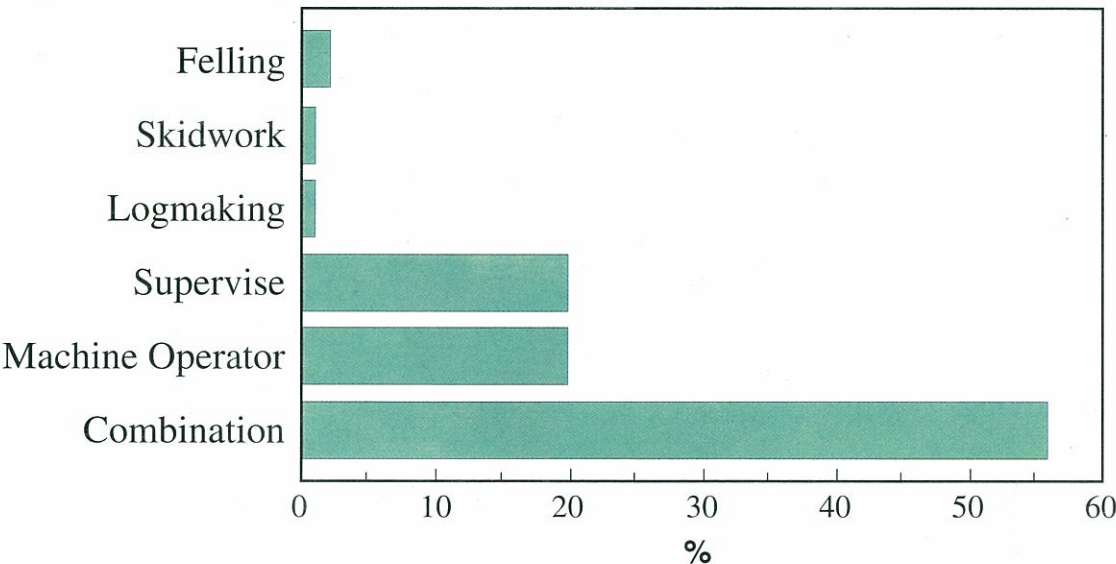


Figure 9 - Distribution of main job of woodlot contractors



Figure 10 - Larger piece size wood - typical of woodlot timber

The reason for the intermittent nature of their logging activities was unable to be ascertained from information provided. Anecdotal evidence from the contractors comments indicated that breaks in woodflow and market fluctuations were two contributing factors.

Those woodlot contractors who were not logging continuously were asked about their alternative sources of income (Figure 11). The most common alternatives for the contractors were earthmoving and farming. Possibly logging woodlots was an addition to these original activities.

Proportion of Year Spent Logging Woodlots

The contractors were asked how many months in the previous year they had spent logging woodlots. Most had worked either one month (33%) or three months (32%). With a range from zero to nine months, it was not surprising that so many were moving away from the inconsistencies of woodlot logging into other more stable work areas.

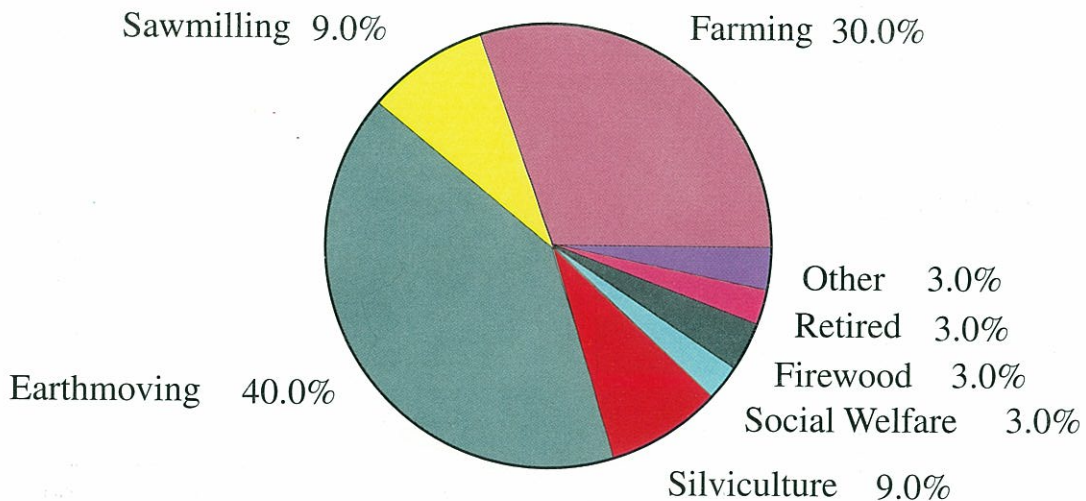


Figure 11 - Main sources of income when not logging woodlots

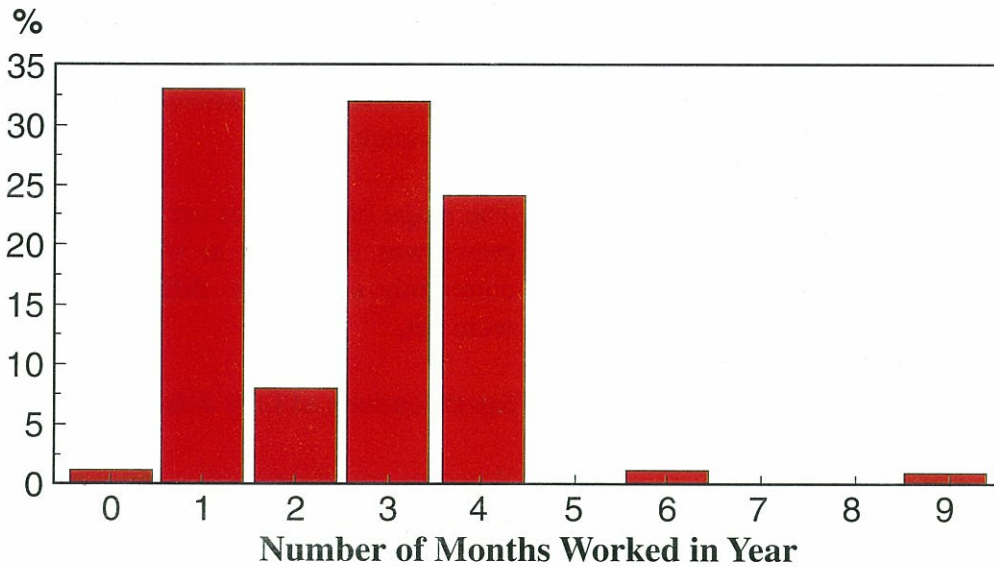


Figure 12 - Distribution of time spent logging a woodlot in previous year

Figure 12 shows the distribution of time that the contractors had spent logging in the previous 12 months. While the average time taken to complete a contract was three months (42%), times ranged from one to six months. Thirty percent took two months to complete a job and 26% took four months. Comments from the contractors indicated that weather, access to the blocks, and market fluctuations were all factors that impacted on the workflow.

Source of Current Work Contract

At the time the survey was carried out, 34% of the contractors were not working.

Of those who were working, most had obtained the job either through a farmer or by themselves (23%). The remainder of jobs were obtained through either a forest company (20%) or a forestry consultant (19%). Only one contractor had obtained the job by another means.

Major forest companies and forestry consultants were the two main employers of woodlot contractors (Figure 13). Farmers employed 11%, and with predictions for growth in this sector, this source has the greatest potential for expansion.

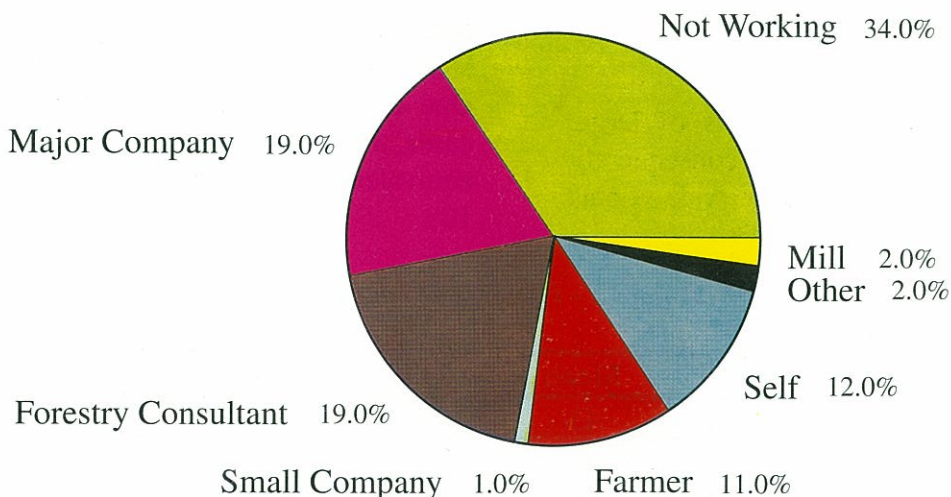


Figure 13 - Employers of woodlot loggers at time of survey.

Buyer of Wood

Most of the wood produced by the woodlot crews (45%) was purchased by a forest company and mill together. The forest company alone purchased 39% of the wood, and the mill alone bought 9%. Seven percent sold their wood to a consultant, who would often have been acting as an intermediary between the woodlot contractor and purchasing customer.

Species Logged

While the corporate workforce generally harvests the predominant New Zealand species *Pinus radiata*, woodlot crews can be expected to encounter a range of both native and exotic species. The species being logged by woodlot contractors at the time of the survey are shown in Table 15.

Table 15 - Range of species being logged.

Species	%
Radiata Pine	87%
Eucalyptus	4%
Macrocarpa	2%
Contorta Pine	2%
Pinaster	2%
Rimu	1%
Douglas Fir	1%
Mixture	1%

Log Grade Outturn

Woodlot timber often consists of large, old, unmanaged trees, which consequently reduces the number of higher valued cuts

that can be made. Much of the wood falls within pulp grade specifications due to imperfections and malformations such as large branch habit.

The range of log types cut by the woodlot crews was from one to fifteen, but most commonly six (21%) different log types were cut.

Specifications of Last Job

Woodlot contractors often log a variety of species and timber piece sizes, in comparison with the corporate logging workforce, who are generally working with tended stands and evenly distributed piece sizes. The stands of wood logged by woodlot contractors are often untended, and in addition may be difficult to access in comparison with corporate forests. Consequently, daily production often exhibits a large variation over jobs. The range of wood harvested by these contractors is shown in Table 16.

Machinery

Make

The surveyed woodlot contractors generally used similar equipment to corporate operations. However, the larger piece sizes encountered with some old trees meant they sometimes needed additional heavy machinery to extract stems to a suitable area for processing. One contractor commented that in some cases, the machinery was pulling nearly an equivalent weight in piece size (Figure 10).

Table 16 - Productivity data

	Mean	Minimum	Maximum
Age of Timber (Years)	43	14	120
Piece Size (m3)	4	0.2	15
Area (Hectares)	19	0.25	400
Daily Production (m3)	71	8	320

Model

Similar to the equipment used by a corporate logging crew, the woodlot contractors used a range of heavy machinery in their daily operations. This included a mix of excavators, skidders, loaders and crawler tractors. Figure 14 illustrates the popularity of different machinery types, by brand name.

Other Equipment

In addition to, or instead of, the standard ground-based items of logging equipment, some woodlot contractors used other equipment. Four used a Bell wheeled grapple loader in their operation, and two used cable-based extraction equipment (Madill 009 and Skagit). Two contractors used a farm tractor in their operation. Thirteen of the surveyed contractors owned trucks, and these could be expected

to be used for transporting the logs. This is a feature of woodlot operations which differs from corporate logging crews, who could be expected to use an outside operator to transport wood.

Age of Equipment

The contractors provided details of the age of their equipment. A noticeable difference to equipment used by corporate logging crews was the higher average age. In the Otago/Southland workforce survey (Byers and Adams, 1995), 47% of ground-based extraction machinery was less than five years old.

In this survey, 9% of woodlot contractors equipment was less than five years old. The average age of the different types of machinery used by the woodlot contractors is shown in Figure 15.

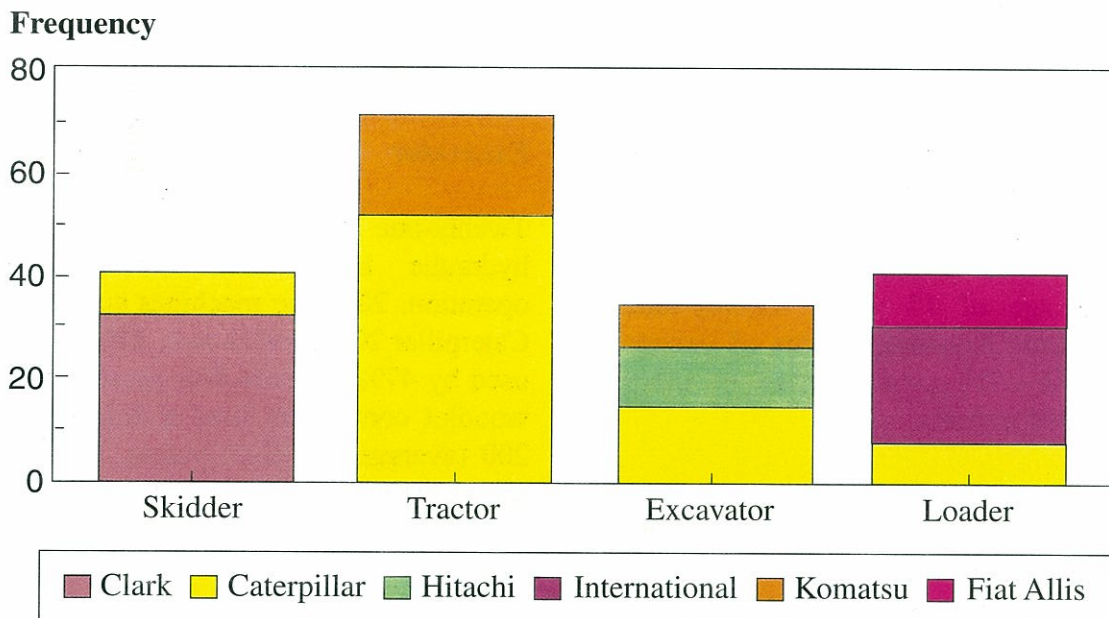


Figure 14 - Machinery used by woodlot logging contractors

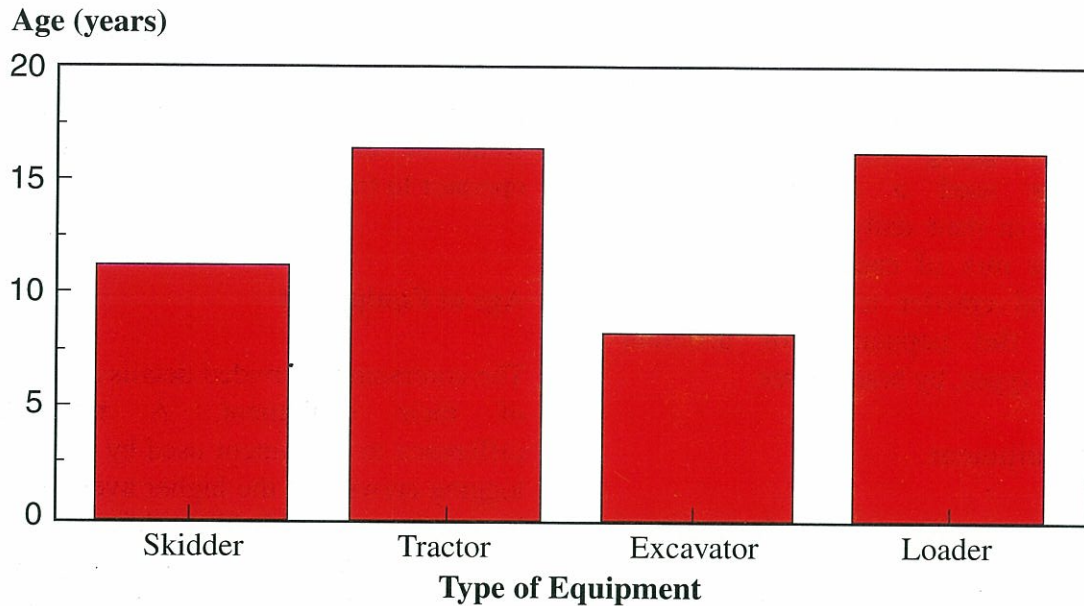


Figure 15 - Average age of equipment used by woodlot crews

Age of equipment (years)	Skidder	Tractor	Excavator	Loader
Minimum	0.5	4.0	0.5	1.0
Maximum	21.0	40.0	20.0	36.0
Average	11.0	16.5	8.4	16.4

Tractor

The most common tractor used by the woodlot contractors was the Caterpillar D series (54%), from the D3 model (48 kW) to the larger D9 (612 kW). The 56 kW D4D was most commonly used, with an average age of 17 years. Twenty-nine percent used Komatsu tractors of various sizes, and 17% used a range of other models and makes.

Skidder

Clark brand skidders were used by 48% of woodlot contractors. Caterpillar models were used by 24%, and Deere 9%. Other models accounted for 8% of responses. Sixty-three percent of the Caterpillar skidders were the "518" model (97 kW). The most common skidder size used by the woodlot contractors was the 101-150 kW range, such as the Caterpillar 518 and John

Deere 640E models. The range of sizes used is shown in Figure 16.

Excavator

Twenty-one of the surveyed crews used a hydraulic boom excavator in their operation, 20 tonne machines such as the Caterpillar 200B and Hitachi EX 200 were used by 47%. Twenty-four percent of the woodlot contractors used a Komatsu PC 200 (average age eight years). Figure 17 shows the range of excavator sizes.

Loaders

While Caterpillar held the market share for front-end loaders (29%), the single most commonly used machine was the Hough 65C, with an average age of 21 years. Fiat Allis loaders were used by six crews (average age 29 years). This was typical of the older equipment used by woodlot crews.

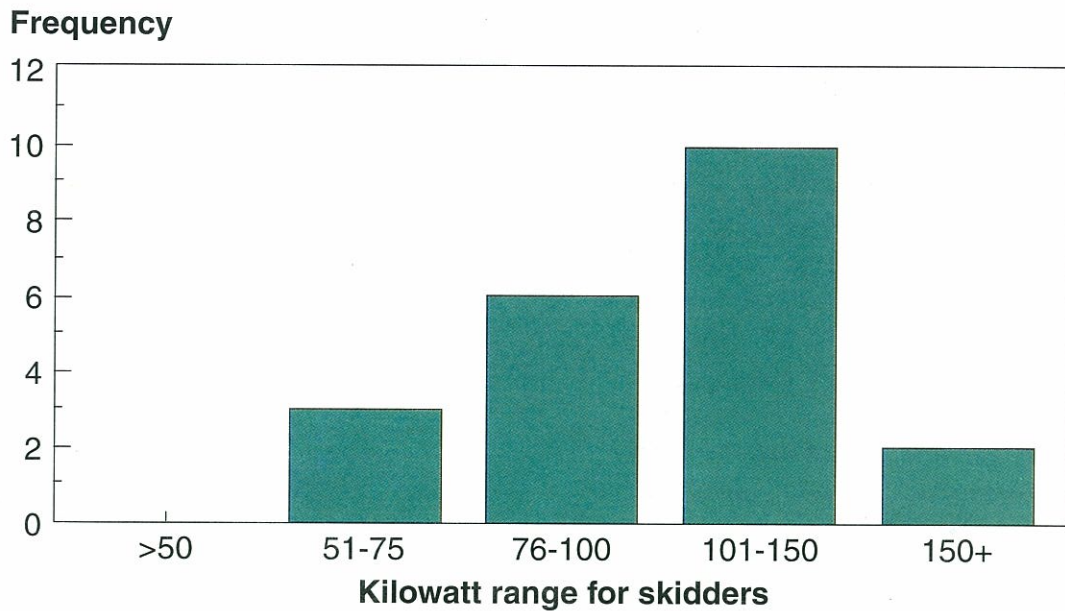


Figure 16 - Range of sizes of skidders used by woodlot contractors

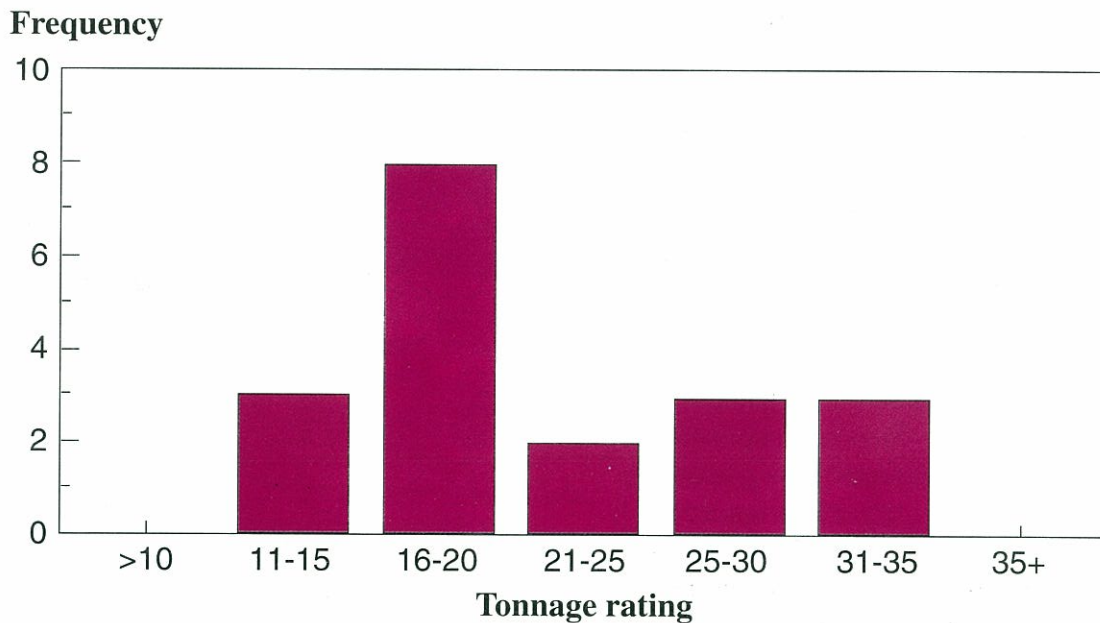


Figure 17 - Range of sizes of excavators used by woodlot contractors

Roll Over Protective Structure (ROPS) and Falling Object Protective Structure (FOPS)

To reduce the incidence of injury in the event of an accident, machines now are required to have some form of protective structure (International Standard 8082). This may be either ROPS protection, or

FOPS. There was some confusion about the meaning of FOPS on the survey questionnaire form. However all of the surveyed contractors knew what ROPS was. ROPS have the primary purpose of reducing the possibility of an operator wearing a seat-belt being crushed, should the machine roll over. Only 13% of the contractors who responded, said they did

not have ROPS protection. Generally cost was the main barrier to installing ROPS on their machinery.

FOPS provide operators with reasonable protection from falling objects, such as rocks and limbs. Thirty-eight percent of the contractors answered the question on FOPS, and of these, 84% said they had FOPS on their machine. Considering the transitory nature of a woodlot contractor's work, it was encouraging to see the high number who had these protective structures.

Contractor Comments

Contractors were given the opportunity to make comment on issues they felt were important. Numerous responses were received. A selection of the more frequent comments is attached (Appendix Two).

Most felt that communication from the companies about changes in woodflow was the biggest issue. This resulted in an inconsistent woodflow, which led to difficulties with staff retention and further training.

Many were concerned about the impact of unscrupulous and/or "cowboy" operators in the woodlot workforce. As personal recommendation is an important source of business, any negative publicity about woodlot contractors is potentially detrimental to reputable crews.

There was widespread concern that companies continued to purchase wood from operators who were failing to meet minimum safety standards.

CONCLUSIONS

- Half of the woodlot contractor workforce lived in rural areas at the time of the survey, only 9% lived in a city.
- The majority of the woodlot contractor workforce was European (90%), the remainder were Maori (9%) or other (1%).
- One-third of the contractors had only worked for their current crew. Almost half had worked for a corporate crew at some time during their career.
- The average age of woodlot contractors was 43 years. Forty-six percent held a formal forestry qualification such as FIRS modules or a Loggers Certificate.
- Most (83%) of the contractors were in training for FIRS modules. Forest owner trainers were mostly responsible for both contractor (41%) and crew (38%) training. Fifty-seven percent had not seen a trainer in the previous 12 months; half said they would like to see a trainer monthly or as needed.
- The HSE Act (1992) appeared to be having an impact on the woodlot workforce, three-quarters said that they had a safety plan, and 84% said they held regular safety meetings with their crews.
- Turnover was a problem for the woodlot logging workforce, 28% of crews had a crew member leave in the month prior to the survey. Most (59%) of those who left, had gone to another logging job. Woodlot contractors attributed turnover to inconsistent woodflows.
- Only 60% carried out woodlot logging full-time. For those who were not logging continuously, earthmoving was the most common (39%) alternative source of income.
- A lack of continuity of work appeared to be the main issue for woodlot contractors. This had downstream impacts on worker retention, turnover, training, and even machinery age.

REFERENCES

- Adams, D. (1993): Labour Movement in the Industry- One Region's Experience. LIRO Report, Vol 18 No 4.
- Bomford, D. and Gaskin, J. (1988): Turnover in Logging. LIRO Report Vol. 13, No 9.
- Byers, J. and Adams, D.(1995): Otago/Southland Forestry Workforce 1993 - Five years Later. LIRO Project Report 58.
- Cancer Society of New Zealand (1996): Lifestyle and the Sun: Melanoma. Cancer Society of New Zealand.
- Cummins, T. and Byers, J. (1997): East Coast Silviculture Workforce Survey. Liro Limited Project Report 64
- Eyre, J. (1996): Woodlot Logging - The resource. *In* Woodlot Logging: Proceedings of a Conference Held in Rotorua, November 1996. Available from LIRO Limited, Box 2244, Rotorua, New Zealand.
- Gaskin, J., Smith, B., and Wilson, P.(1989): The New Zealand Logging Worker - A Profile, LIRA Project Report 44.
- Gibson, R. (1994): Attitudes Toward Safety in the New Zealand Forest Industry 1994. LIRO Project Report 53.
- Kirk, P. (1996): Reducing the Impact of Fatigue on Forest Workers. LIRO Report Vol 21, Number 3.
- Kirk, P. and Parker, R. (1993): The Impact of Spiked Boots on the Safety, Workload and Productivity of Breaking Out. LIRO Report Vol. 18, No 3.
- Ministry of Forestry (1994): Marketing a Small Forest. Small Forest Management Series, Number 8. A Ministry of Forestry Publication.
- New Zealand Forest Owners' Association (1996): NZ Forestry Facts and Figures 96. In co-operation with Ministry of Forestry.
- Parker, R. (1994): Analysis of Lost Time Accidents 1993 - Logging. LIRO Report Vol. 19, No 9.
- Parker, R. (1995): Analysis of Lost Time Accidents 1994 - Logging. LIRO Report Vol. 20, No 11.
- Resource Management Act 1991: Reprinted Act (1994). New Zealand Government publication, 1995.
- Rowsell, S. (1996): History of the Logging and Forest Industry Training Board, 1979 - 1996. Published by LFITB.

1.	Age: _____	2.	Male	Female
3.	Ethnicity	NZ European	Tribal Affiliations _____ _____	
		NZ Maori		
		Other		
4.	Marital Status	Single	Married	De Facto
5.	Number of dependents: _____		children: _____	others: _____
6.	Where do you live?	Rural	Small Town	City

7. Length of time at secondary school: 1 year 1 - 3 years more than 3 years

8. School Qualifications:
None School. C. U.E./ Sixth Form Cert. H.S.C./ Bursary

9. Post school education:
Technical training University None Other: _____

10. How long have you worked in woodlot logging_____?
11. How many other crews have you worked for? _____
12. Have you ever worked for a **corporate** logging or silviculture crew? **yes** **no**
13. If yes, how long did you work in corporate logging crews?_____
- corporate silvicultural crews _____
14. Do you think you will still be woodlot logging in five years time? yes no
15. What would you like to be doing in five years time?

[illegible]

OCCUPATIONAL HEALTH

- | | | | | |
|-----|---|-------------------|----|--------------|
| 19. | Since you have been in logging/forestry have you ever suffered from: | | | |
| | Back Problems | yes | no | White Finger |
| | | | | yes no |
| 20. | Have you ever had any treatment for melanomas (skin cancer), eg have you ever had a mole removed? | | | |
| | | | | yes no |
| 21. | Have you ever had any problems with cataracts in your eyes? | | | |
| | | | | yes no |
| 22. | Have you ever had any lung problems? | | | |
| | | | | yes no |
| 23. | If yes, | do you smoke | | yes no |
| | | are you asthmatic | | yes no |
| | if yes, were you asthmatic before you were a logger | | | yes no |
| 24. | Any other Occupational Health problems? | | | |
| | | | | yes no |
| 25. | Have you ever had your hearing tested since you've been involved in logging? | | | |
| | | | | yes no |
| 26. | Do you think your hearing has been affected by this work? | | | |
| | | | | yes no |
| 27. | What do you think caused this? _____ | | | |
| 28. | Does your crew have a First Aid Kit? | | | |
| | | yes | no | don't know |

INDUSTRY AWARENESS

- | | | | |
|-----|---|-----|----|
| 29. | Have you heard of the Logging Industry Research Organisation (LIRO)? | yes | no |
| 30. | Do you know what LIRO does? | yes | no |
| 31. | Do you see any of LIRO's publications? | yes | no |
| 32. | Before now had you met any LIRO staff? | yes | no |
| 33. | Are you a member of LIRO? | yes | no |
| 34. | Have you heard of Logging and Forest Industry Training Board (LFITB)? | yes | no |
| 35. | Are you a member of LFITB? | yes | no |
| 36. | Do you know what LFITB does? | yes | no |

37. Do you see any of LFITB's publications? **yes no**
38. Have you met any LFITB staff? **yes no**
39. Have you heard of Forest Research Institute (FRI)? **yes no**
40. Do you know what FRI does? **yes no**
41. Do you see any FRI publications? **yes no**
42. Are you a member of the Forestry Contractors Association of New Zealand (FCANZ) (formerly called the Loggers Association)? **yes no**
43. Are you a member of the Farm Forestry Association **yes no**
44. Are you a member of, or involved with any other forestry/logging groups?
yes no
-
45. Have you heard of Occupational Safety and Health Division of the Department of Labour (OSH)? **yes no**
46. Do you know what OSH do? **yes no**
47. Do you see any OSH publications? **yes no**
48. How many times last year did you see an OSH inspector while you were working on a logging site? _____
49. What do you see as the three best sources of information about what is happening in the logging/forestry industry? (*Please circle three or less*)
- | | | | |
|------------|---------------------------|-----------------|------------------------|
| OSH | Union | Forest Manager | Machinery Salesman |
| Pub | Boss | Formal Meetings | Company Supervisor |
| Workmates | Farm Forestry Association | | Sawmillers Association |
| Consultant | Loggers Association | | LFITB |
| LIRO | FRI | FITAG | Combination |
50. Do you see any copies of any forestry/logging/sawmilling/farming/farm forestry magazines? **yes no**
51. Which ones? _____
52. Have you ever visited a processing plant since you've been working in woodlot logging? **yes no**
53. Have you visited any other forestry/ logging/ woodlot operations apart from the ones you've worked in? **yes no**

PERSONAL PROTECTIVE EQUIPMENT

54. Are you **aware of** these items of personal protective equipment?
 55. Do you **wear / use** the following

	Aware of?	Wear	Don't wear	Sometimes wear	N/A
Hi-Viz Clothing					
Helmet					
Hi-Viz Helmet					
Ear Plugs					
Ear Muffs					
Visor / Eye Protection					
Safety Trousers					
Safety Chaps					
Steel-Toe Boots					
Spiked Boots					
Cut Resistant Gum boots					
Chain Brake					
Chainsaw Mitt					
Machine Seatbelt					
Gloves					
Other					

36. Does your **crew wear / use** the following

	Wear	Don't wear	Sometimes wear	N/A
Hi-Viz Clothing				
Helmet				
Hi-Viz Helmet				
Ear Plugs				
Ear Muffs				
Visor / Eye Protection				
Safety Trousers				
Safety Chaps				
Steel-Toe Boots				
Spiked Boots				
Cut Resistant Gum boots				
Chain Brake				
Chainsaw Mitt				
Machine Seatbelt				
Gloves				
Other				

TRAINING

57. Have you or any of your workers had any formal training in logging or forestry?
Yes No
 (eg FIRS modules, Woodsman school, Polytech courses)

58. What was it? You: _____
 Your workers: _____

59. How many of your workers have worked in corporate logging crews _____
 corporate silviculture crews _____

60. How long did they work there? _____

61. How often have you seen a Logging/ Forestry Trainer in the last 12 months?

62. How often would you like to see a trainer? _____

63. Do you know what Forest Industry Record of Skills (FIRS) modules are?
yes no

64. Do you have any FIRS modules? **yes no**

65. Do you still hold any Logger's or Forestry Skills Certificates which have not
 been changed to FIRS modules? **yes no**

66. Which FIRS modules do you have? *(tick boxes)*

67. Which FIRS modules are you undergoing training in? *(tick boxes)*

68. Who is training **you** for these modules Other Contractor Self
 Forest owner trainer Independent Trainer Other _____

69. Who is training **your crew** for these modules? Forest owner trainer
 Contractor Independent Trainer Self Other _____

70. Do you find it difficult to contact an assessor ? _____

71. Which FIRS modules would you like to attain? *(tick boxes)*

72. Which FIRS modules do your crew hold (*number in crew box, ie 2 workers have General Requirements, put a 2 in the box for General Requirements*)

73. How many of your crew **do not** have any FIRS modules? _____

Module		Hold	Train	Attain	CREW
General Requirements	1.1				
Chainsaw Maintenance and Operation	1.6				
Tree Felling Stage One	1.7				
Wire Rope and Accessories	1.8				
Advanced First Aid	1.10				
Fire Control: Stage 1	1.12				
Tree Processing On the Landing	3.1				
Log Making	3.2				
Tree Felling: Stage Two	3.3				
Tree Felling: Machine Assisted	3.4				
Breaking out: Ground Based Extraction	3.5				
Breaking Out: Cable Hauler Extraction	3.6				
Machine Operating: Ground Based Extraction	3.7				
Machine Operating: Cable Hauler Extraction	3.8				
Machine Operating: Loader	3.9				
Machine Operating: Mechanical Processors	3.10				
Hauler Systems	3.11				
Salvaging Windthrown Trees	3.12				
Forestry Knowledge	1.2				
Tree Selection	1.3				
Plotting for Forest Operations	1.4				
Forest Mensuration	1.5				
Planting Site Preparation	2.1				
Forest Planting	2.2				
Tree Releasing	2.3				
Silvicultural Pruning	2.4				
Handling Chemicals	2.6				
TOTAL					

HEALTH AND SAFETY

74. Have you heard of the Health and Safety in Employment Act?
not sure yes no

75. Do you understand your responsibilities under the new act?
not sure yes no

76. Does your crew have its own safety management plan?
yes no

77. Do you have regular safety meetings with your crew? **yes** **no**
78. How often do you have these meetings _____
79. Please circle the number of people you think were killed in the NZ forest industry for 1995 **2** **4** **6** **8** **10** **12** **15**
80. How many lost time accidents have occurred in your crew in the last 12 months?

81. How much time was lost in each accident?

82. Who identifies the hazards on your work site?

83. Do you know that you have to notify OSH when you begin logging in a new site? **yes** **no**
84. Do you have an accident register? **yes** **no**

CREW/ PRODUCTION DATA

85. Continuity of work: Full time Part Time Seasonal Casual
Other _____
86. If you do not log full-time, what is your main source of income when you are not logging? _____
87. For your last three woodlot jobs: (please fill in the details on the table below)

What was the species logged?

How old were the trees, and what was their piece size?

What was the total area logged in hectares?

Species				Area Logged	Daily Production
<i>Job</i>	<i>Age</i>	<i>Piece Size</i>	<i>Type</i>	hectares	m3
<i>eg</i>	<i>28</i>	<i>?</i>	<i>p. radiata</i>	<i>15.0</i>	<i>?</i>
<i>1</i>					
<i>2</i>					
<i>3</i>					

88. How many months in the last 12 months have you been logging in a woodlot? _____
89. What was the average length of time to complete a contract? _____
90. Who are you working for now? _____
91. How did you source this woodlot (how did you come to be logging here?) company
consultant farmer you other _____
92. How many log types do you usually cut? _____
93. Who buys your wood? company consultant mill other _____

PERSONNEL

94. Number of full time employees in the crew (including yourself) _____
Number of part-time employees? _____
Number of casual employees? _____
Number of seasonal employees? _____
95. How many people have left this crew in the last month? _____
96. Were they fulltime part-time seasonal casual
other _____
97. Where did they go? _____

98. Do you rotate personnel around different jobs? _____

99. What equipment do you supply to your workers? (safety gear, saws, chains?)

100. How many breaks does your crew have during the day? _____
101. How long are these breaks _____
102. What is the one main job you usually do in your crew? (*tick box*)

	Main Job		Main Job
Felling		Breaker out	
Skid work		Machine Operator	
Log Maker		Supervise	
Combination		Other	

APPENDIX TWO

Woodlot Contractor Comments

- Continuity of work would be good. Register all contractors. Woodlot logging is the only organisation that can do the whole job, from roading through to logging and cartage.
- Sold all machinery due to financial difficulties as a result of market fluctuation.
- Cannot obtain and keep good staff without continuous work. Currently no continuity.
- Logging rates do not reflect the length of year it is possible to work.
- Still the fly-by-nights coming in and being employed by farmers and consultants - no safety gear, cabs, etc. Some farmers now show interest in safety plan, Code of Practice and proof of Public Liability Insurance.
- All crews working in woodlots should have a minimum level of management/training etc. Small players are at the mercy of a very volatile market. Bigger players should take a more active leadership role to improve stability and trust of the landowner.
- Very vulnerable, no assurance of payment. No continuity of work but the expectation to keep equipment upgraded. Access for logging trucks hindered by weather, no metalled tracks resulting in up to two months wait for truck. Sapstain troubles.
- Keep us more informed on specification and price changes.
- Continuity of work and woodflow. Last on and first off in terms of picking up wood. Flow of information absent - no warning of any disruption or break in continuity. Affects staff turnover.
- Turnover of crew through downtime and lack of woodflow continuity.
- Rogue woodlot contractors don't pay - farmers now shy making it difficult for honest loggers. Employment problems with staff moving on to other work.
- Logging crew spend 80% of time doing silviculture since log price downturn and pulp tonnage limits imposed.
- Lots of unproductive wood in some blocks, which impacts on rate per tonne. Do not need production pressure on tricky jobs. Clean-up job should be hourly rate.
- Hardest thing is to find out about LFITB and contact trainers.
- Some inconsistencies with Regional plans i.e. Manuka can be waste-felled by farmers, but woodlot loggers must back-pull away from it. Farmers bound by HSE Act (1992) also, but appears to be no enforcing of rule.
- Inspectors look at a book, then pick a hole in a small part of the technique, rather than looking at the entire job holistically.
- Feels that companies should be more honest and "up-front" with suppliers and trucking firms about market situations
- Word of mouth recommendation important for woodlot contractors. Cowboys are ruining business.
- Hard to keep crew for 12 months. Train men up and when work stops they leave so have to start again. Reputations are important. "Cowboy" crews not paying or doing a proper job are giving reputable crews a bad name.
- Woodlot logging is a secondary occupation, with not the time or money to justify putting crews through the whole FIRS system. Needs a simpler system for woodlot logging, such as records showing no accidents due to level of experience.
- Training and qualification not possible with an inconsistent income. Main problem is inconsistency within the market.
- If contractor works for a second company during a period of downtime with the first, may be unfairly treated. Main problem is lack of continuity of work.

- No notification or reasons given for stand down. All wood sales should be levied (like wool sales) with the levy going toward training.
- Companies still buying from untrained, substandard operators. These “cowboys” give professional operators a bad name. More accidents in “maverick” operations has the effect of increasing ACC premiums.
- Public perception of logging is terrible. Kids bombarded with anti-logging sentiment at school. FIRS system too specific for woodlot workers. Most do everything.
- Companies encourage high standards of health and safety but continue to purchase wood off “cowboys”.
- Little in the LFITB FIRS system that is applicable to what we do most of the time.



Figure 18 - Additional hazards encountered while logging farm woodlots!