



NEW ZEALAND

PROJECT REPORT

OTAGO/SOUTHLAND FORESTRY WORKFORCE 1993

Five Years Later

JANELLE BYERS/DAVID ADAMS



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Project Report

P.R.58

New Zealand Logging Industry
Research Association,
P.O. Box 147,
Rotorua,
NEW ZEALAND.

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1993
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N.Z. Logging Industry
Research Association

July, 1995



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EXECUTIVE SUMMARY

The level of formal training has increased since the previous Otago/Southland workforce survey in 1988. In 1993, over half of all logging and forestry workers in Otago/Southland had received some formal training. In addition, most logging and forestry workers indicated that they were satisfied with the training they had received.

It is of concern that the accident rate has not decreased since 1988, and that over one-third of the forest workforce suffer from work-related back problems. However, it was encouraging to note that almost every logging and forestry worker wore all of their safety equipment.

The rate of turnover appears to have decreased, and loggers are staying longer with their crews, and consequently are working in fewer crews. Turnover amongst forestry workers is high.

Forest workers continue to gain jobs in the forest industry through word of mouth. For most, working outdoors is the main reason for working in the forest industry. A substantial number of forestry workers stated that forestry was the only job available to them, and this was their main motivation for working in forestry.

There was a high level of uncertainty shown by the respondents as to their future in the forest industry. A substantial number of logging and forestry workers did not know if they would be in logging or forestry in five years' time.

An increased number of forest workers were aware of the roles of LIRO and the Logging and Forest Industry Training Board (LFITB) in the forest industry, and had read a publication from these organisations or met a staff member.

Pay caused the most dissatisfaction among forest workers, and generally forestry workers were less satisfied with their job overall. A significantly greater number of forestry workers were dissatisfied with their actual work.

INTRODUCTION

As part of the 1986 to 1988 logging workforce survey undertaken by the Logging Industry Research Association (Gaskin, Smith and Wilson, 1989), every individual logger in the Otago/Southland region was interviewed. Interviewing was undertaken between January and April 1988. That timing was significant because:

- the New Zealand Forest Service (NZFS) had ceased to exist and the forests that the NZFS had owned were then administered by the Otago and Southland Districts of New Zealand Timberlands Limited, (the forest growing subsidiary of the newly formed New Zealand Forestry Corporation Limited),
- the recent announcement that the cutting rights to the forests administered by this group would be sold.

In 1988, New Zealand Timberlands were the largest employers of logging operations both in Otago and Southland, accounting for 74% and 58% of the estimated roundwood removals from the Otago and Southland regions respectively (New Zealand Forestry Corporation Limited, 1989). Other significant forest owning companies in the region at the time of the 1988 survey included: City Forests Limited (Otago), Tasman Forestry Limited (Otago), Invercargill City Council and Tokonui Wood Exports.

The 1988 survey provided information on employee numbers and demographic composition, and the harvesting systems used. Given that the volume harvested was predicted to increase, it is likely that considerable changes would have occurred five years later in 1993. A repeat survey in 1993 would give an insight into changes in workforce composition and attitudes, manpower productivity, and logging systems used. Changes in manpower productivity could be useful in determining labour recruitment and training requirements for other expanding forestry regions within New Zealand.

The Otago/Southland region was due to undergo significant increases in the volume available for harvest with the annual cut predicted to increase from 475,000m³ in 1988 to 1,200,000m³ by 1995. The majority of this increase (500,000m³) was predicted to occur between 1994 and 1995.

In 1993, a second workforce survey was carried out, and every logging and forestry worker in Otago/Southland was interviewed. The 1993 survey varied from the 1988 survey in that both logging and forestry workers were interviewed in 1993. The 1988 survey only interviewed loggers. This was the first time a detailed demographic study of forestry workers had been undertaken by LIRO.



Figure 1 - Definition of survey area

For the purpose of both the 1988 and 1993 surveys, Otago/Southland was defined as that area to the south of Dunedin City; Flagstaff Forest (City Forests Limited) and Mt Allen (Tasman Forestry Limited) were included but Silverpeaks Forest was outside the survey area (Figure 1).

ACKNOWLEDGEMENTS

LIRO would like to acknowledge the assistance of the logging and forestry workers who participated in the survey and the forest companies: City Forests Limited, Ernslaw One Limited, Rayonier New Zealand Limited, Pine Plan Limited and Wenita Forestry Limited.

SURVEY METHODOLOGY

Interviews with the survey participants were conducted between January and March 1993, using the same questionnaire as was used in 1988 (Appendix 1). The location of each crew was obtained from the relevant forest

owner and, whenever possible, visits were made before the start of work, at smoko breaks and at the end of the day.

The survey was fully explained to the contractor and workers and their permission obtained before commencing. Once the contractor and workers had agreed to participate in the survey, a questionnaire was handed to each member of the crew. It was stressed that the survey was not compulsory and that if they did not want to answer any questions in the questionnaire they should move on to the next question. A LIRO researcher provided assistance where clarification was sought by the participant.

The respondents' questionnaires could not be identified by either the answers provided, or any other information obtained.

The survey questionnaire addressed the following issues:

- respondent personal details
- education and training
- hours of work and remuneration
- recruitment and turnover
- accidents, occupational injuries and safety equipment
- industry awareness

The contractor, or crew foreman in the contractor's absence, was asked to complete a section relating to machinery used, tree species being logged, end use of products, and labour absenteeism and turnover for the past month.

Typically, the questionnaire took between 20 minutes to an hour to complete depending on the level of questioning involved.

FINDINGS

Survey Size

There has been a significant increase in the number of people employed in the logging industry in the Otago and Southland region since the 1988 survey. Table 1 shows the number of participants in the survey and the change (for logging) in the number of prime contractors.

Personal Details

Age

The average age of loggers has decreased from 31.7 years to 30.2 years since 1988.

The loggers' ages ranged from 17 to 57 years with a median of 29 years. The average age of the forestry workers was lower than loggers with an average age of 27 years and had a range of 15 to 47 with a median of 25 years.

The ages of both the logging and forestry workers are clustered in the 20 to 35 years age group, 71.2% of logging and 64.2% of forestry workers fit into this group (Figure 2). The median age is the age of the middle worker. If all the workers were arranged from youngest to oldest, 50% of the workers would be younger than the median age and 50% would be older than the median age.

Table 1 - Survey size

	Loggers 1988	Loggers 1993	Forestry 1993	Total 1993
Total Number Interviewed	91	174	95	269
Number of Prime Contractors	21	32	20	52

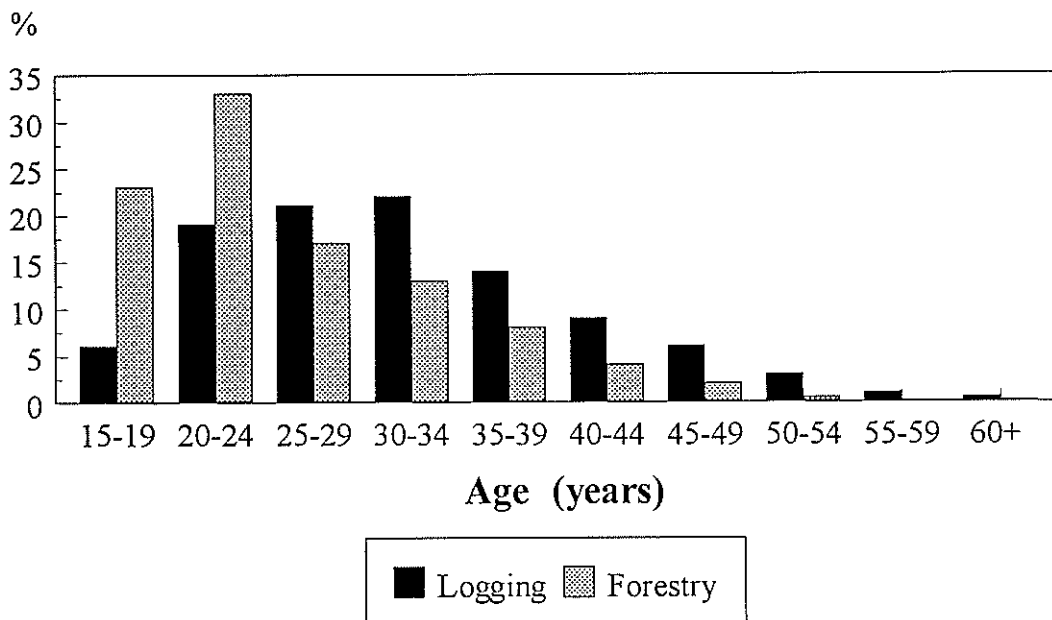


Figure 2 - Age of forestry and logging workers

Table 2 - Ethnicity

	Logging 1993 (%)	Forestry 1993 (%)	Combined (%)
NZ European	90.7	76.6	85.7
NZ Maori	8.7	21.3	13.2
Other	0.6	2.1	1.1

Table 3 - Place of residence

	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Rural	39	28	19
Small Town	54	59	67
City	7	13	14

Marital Status

A lower proportion of loggers were married in the 1993 sample (50% compared to 63% in 1988). A further 9% said they were in de facto relationships and 41% identified themselves as single. Thirty-four percent of forestry workers were married, and 11% were in de facto relationships; over 50% stated that they were single.

Ethnicity

A recent New Forest Owners' Association (NZFOA) census found that 41% of the logging and 52% of forestry workforce identified themselves as Maori (Byers, 1995). In that census, 10% of the Otago/Southland forest workforce identified themselves as Maori (Byers, 1995). In 1993, 8.7% of the logging workforce and 21.3% of the forestry workforce identified themselves as Maori (Table 2).

Residential Location

Twenty-eight percent of loggers live in rural areas, compared to 39% in 1988.

Since 1988, the number of loggers living in the city has almost doubled. Forestry workers have a similar pattern of residence to loggers, with most living in small towns.

Secondary School Education

In 1988, over half of all loggers had completed between one and three years of secondary school, and 30% three years or more. In 1993, 54% of loggers and 50% of forestry workers in Otago/Southland had completed between one and three years of secondary school and 39% and 45% respectively had completed over three years of secondary school. The number of loggers with formal qualifications had also increased since 1988. The proportion with at least one School Certificate pass had increased from 18% to 31%. The number with a higher school qualification had increased from 3% to 9%. The pattern was similar for forestry workers, 33% had obtained at least one School Certificate pass, and 16% had obtained a higher school qualification.

Time Worked in Logging and Forestry

The average time worked in logging had increased by over half a year since 1988 from 6.5 years to 7.3 years (1993). The proportion of loggers who had worked for less than one year had decreased from 18.1% (1988) to 11.3% (1993). Overall, forestry workers have less experience in the job than loggers - 21.5% of forestry

workers have less than one year's experience (Figure 3). Fifty-five percent of the 1993 logging workforce have worked in logging for five years or longer, and 46% of the forestry workforce had been in forestry for at least five years, indicating a relatively stable workforce (Figure 3).

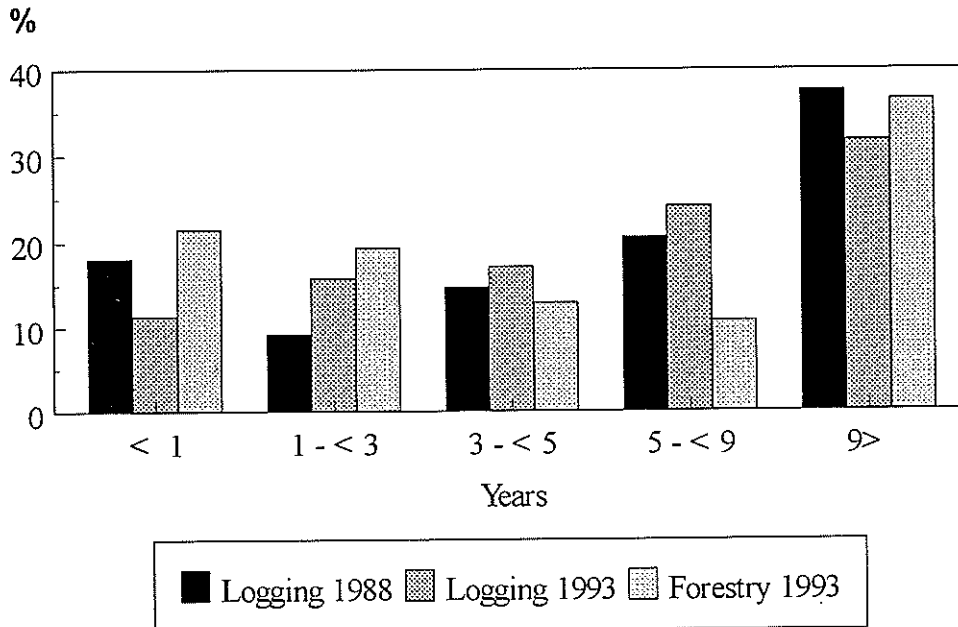


Figure 3 - Time worked in logging and forestry

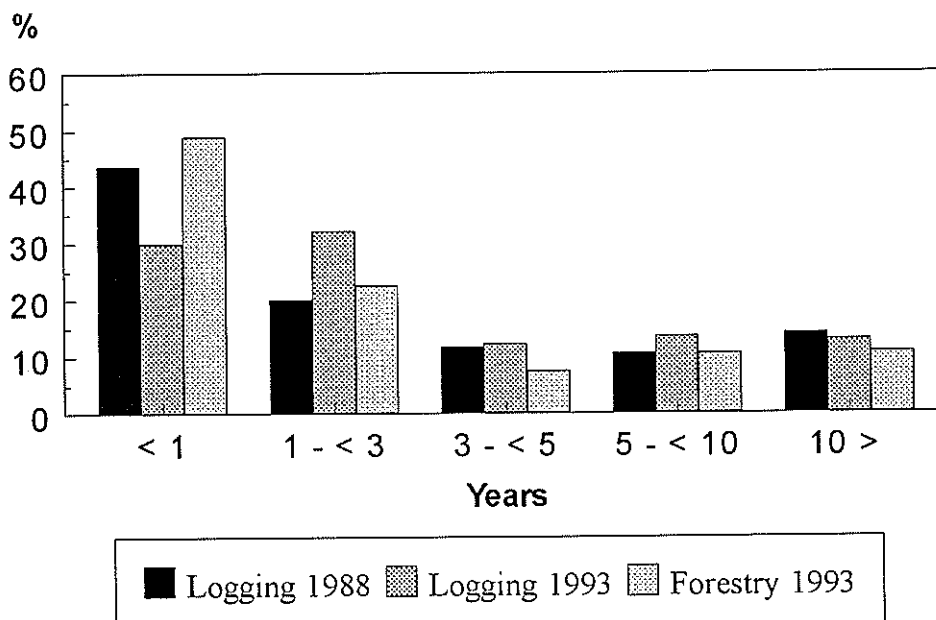


Figure 4 - Time worked in present crew

Time Worked in Present Crew

Turnover between crews appears to have decreased since 1988 as the proportion of loggers who had been in their present crew for less than 12 months had decreased from 44% (1988) to 30% (1993) and the average time worked in current crews had increased from 1.8 years (1988) to 3.7 years (1993). Turnover between crews was higher for forestry workers, although this difference was not significant. Forty-nine percent of forestry workers had worked in their current crew for less than 12 months. This is probably due to the younger age, and the relative inexperience of the forestry workforce. In 1993, the average length of time that forestry workers had been working for their current employer was 3.1 years. Time spent with current employer is shown in Figure 4.

Number of Crews Worked In

Logging and forestry workers were asked how many crews they had worked in during their time in either logging or forestry. In 1988, the average number of crews that loggers had worked in was 2.3, and 19% of loggers had worked in more than three crews. In 1993 the average number of crews that loggers had worked in, had decreased to 1.4, but 25.1% of all loggers had worked in more

than three crews and one logger had worked in ten crews. The pattern is similar for forestry workers - the average number of crews worked in was 1.1, and only 14.8% had worked in more than three crews. Given the relatively low level of turnover as shown by the increased length of time spent with current crews, these results are not unexpected.

CONDITIONS OF EMPLOYMENT

Method and Frequency of Pay

Fifty-three percent of loggers and 59% of forestry workers were paid fortnightly. The most noticeable change since 1988 was the increased number of loggers who were paid monthly as shown in Table 4.

Income

Logging and forestry workers were asked what their take home pay was per fortnight. The results presented here are an estimate of net income. As in 1988, no attempt was made to separate out allowances (chainsaw and protective clothing). The average fortnightly logging income had increased from \$735 in 1988 to \$962 in 1993, an increase of \$227.

Table 4 - Frequency of pay

	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Weekly	26.7	24.5	7.3
Fortnightly	68.0	52.9	59.0
Monthly	5.3	15.7	28.9
Other	0.0	6.9	4.8

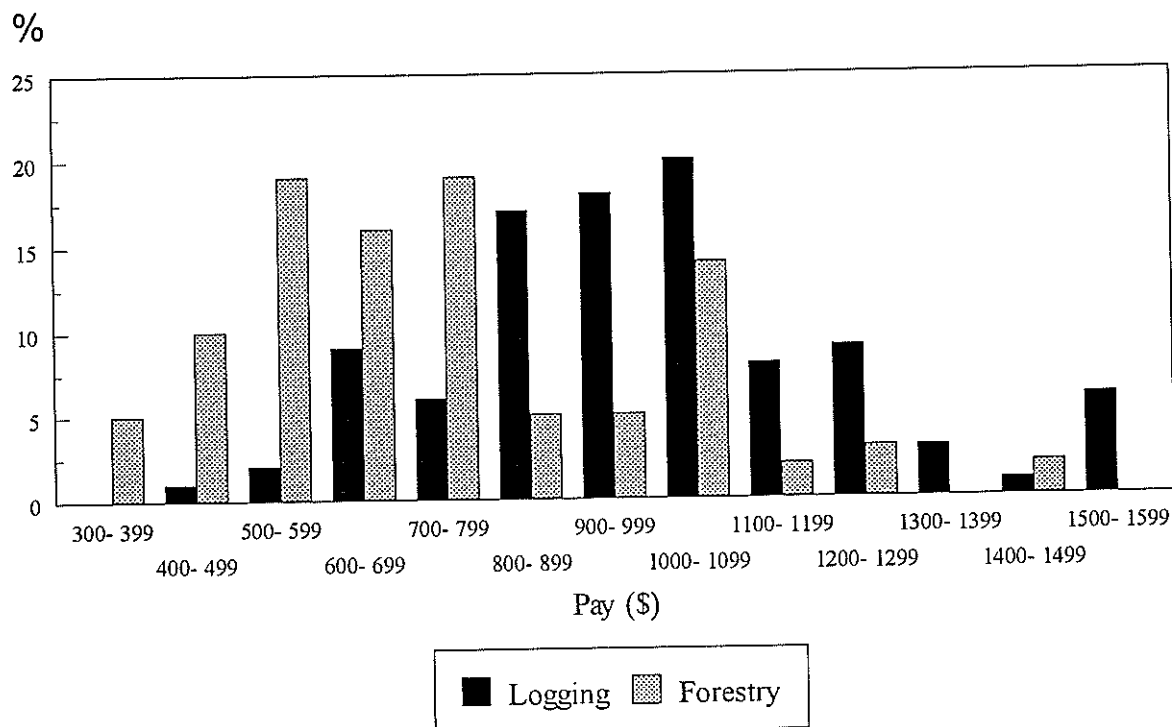


Figure 5 - Amount of pay

Table 5 - Hours of work per day

	Logging 1988 (hours)	Logging 1993 (hours)	Forestry 1993 (hours)
Minimum	7	7	6
Maximum	12	12	12
Average	8.9	9.4	8.8

The minimum logging income had increased by \$100 to \$400 a fortnight. The minimum forestry income was \$300, while the average income for forestry workers was \$712, significantly less than the average logging income of \$962. Figure 5 shows the distribution of income for loggers and forestry workers.

Hours of Work

The average time spent "on the job" (not including any travelling time) has increased by half an hour for Otago/Southland loggers from 8.9 (1988) to 9.4 (1993) hours. Loggers'

hours of work ranged from seven to 12 hours. Overall forestry workers worked a shorter day, with an average of 8.8 hours spent "on the job", and a range of six to 12 hours. Table 5 illustrates this.

Travel Time to Work

Average travel time to work has not changed significantly since 1988. On average, logging and forestry workers travel for 1.3 hours per day. The maximum time spent travelling has increased from three hours to 4.5 hours for loggers.

Table 6 - Travel time to work per day

	Logging 1988 (hours)	Logging 1993 (hours)	Forestry 1993 (hours)
Minimum	.01	0.3	0.1
Maximum	3.0	4.5	5.0
Mean	1.2	1.3	1.3

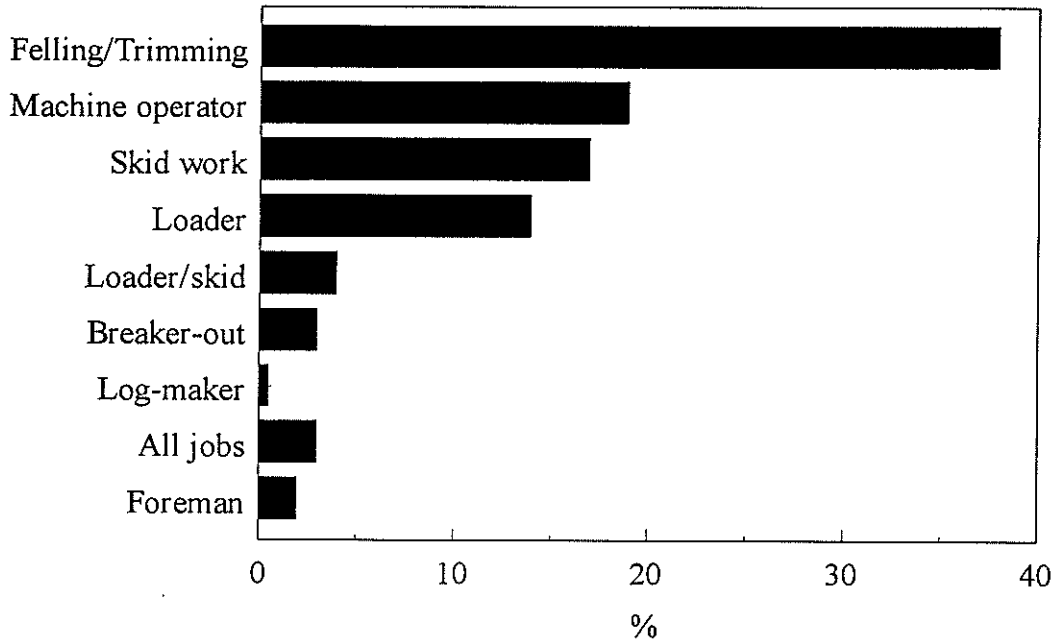


Figure 6 - Normal job in crew

When average travel time is added to average time spent "on the job" this equates to an average working day of 10.4 hours for logging and 10.1 hours for forestry workers. Part of the explanation for this may lie in the changed pattern of residence (Table 3). More loggers now live in small towns and city areas, fewer live in rural areas. Loggers, as a group, may be living further away from the forests than in 1988 when a higher proportion of loggers lived in rural areas which may have been located closer to the forests. Forest location may also account for some of this change as new forests enter the pruning and harvesting phases.

Normal Job in Crew

Information for this section was obtained only from loggers. Figures 6 and 7 refer to normal and preferred job of loggers only.

Figure 6 shows the distribution of normal daily jobs for loggers. Felling and trimming accounted for the largest proportion of normal jobs performed by loggers (35%). This is slightly less than in 1988 (37.2%). Skidder and loader operators accounted for 34.2% of normal daily jobs of loggers in 1993, an increase on the recorded figure of 25.6% in 1988. In 1988, 13% of loggers stated that they were skid workers. By 1993, this figure had increased to 17.4%.

Job Most Preferred

The choice of most preferred job has changed little since 1988, with the most preferred jobs being felling and trimming 39.9% (1993), 40.5% (1988). In 1993,

28% of loggers said that machine operation was their most preferred job. Nine percent said breaking-out and 6.3% nominated skid work as the job they would most prefer to do (1993).

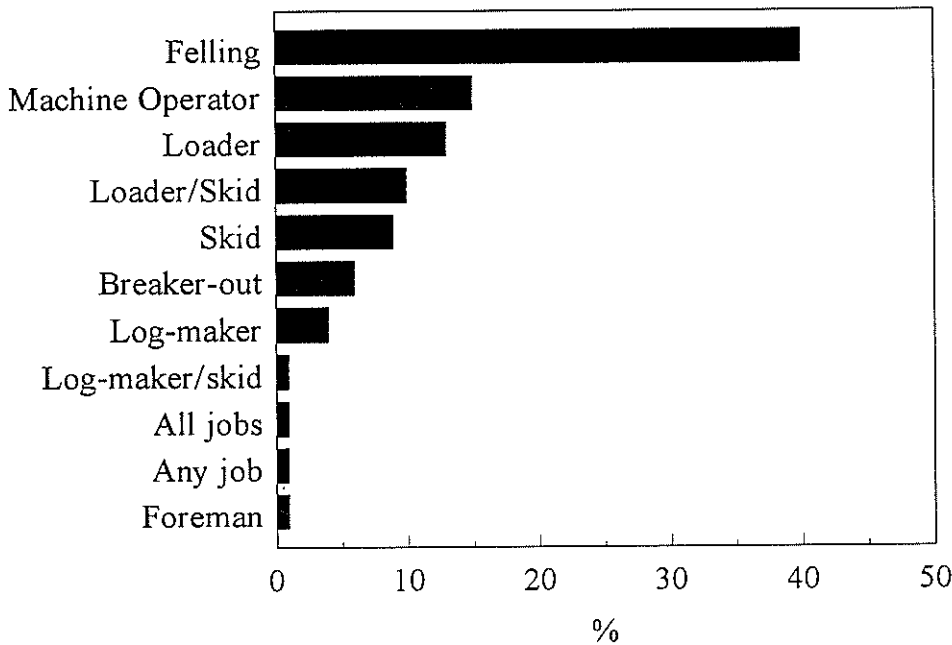


Figure 7 - Job most preferred

Table 7 - Method of recruitment

	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Advertisement	8.1	6.4	7.5
Told by Relative	15.1	19.8	22.6
Told by Friend	54.7	45.9	40.9
Other	22.1	27.9	29.0

Table 8 - Fathers' Employment

	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Forestry	8.1	12.9	7.8
Logging	22.2	16.4	15.6
Rural	20.9	21.6	22.2
Combination	na	2.9	0.0
None of above	48.8	46.2	54.4

Note: na applies to those options not given in 1988 questionnaire

RECRUITMENT AND RETENTION

Method of Recruitment - first job in logging and forestry

The most common method by which logging and forestry workers obtained their first job was by being told by a friend or relative 65.7% (1993) 69.8% (1988). Few had answered advertisements, although 'other' means of gaining jobs accounted for 27.9% of logging and 29.0% of forestry jobs, as shown in Table 7.

Fathers' Employment

In 1988, 51.2% of the loggers surveyed had fathers who had been involved in rural-based occupations including logging and forestry. In 1993, 53.8% of loggers and 45.6% of forestry workers had fathers who had been employed in rural occupations (including forestry and logging), a slight increase from 1988 (Table 8).

Main reason for working in logging and forestry

As in 1988, the outdoor environment remains the main reason for working in logging. For those working in forestry, the outdoor environment is also the most important reason. However, the lack of other available employment also appears

to be a motivating factor for gaining a forestry job, as 24.5% of forestry workers stated that "only job available" was their main reason for working in the forest industry.

First Job

As in 1988, almost a quarter of loggers employed in 1993 began their working lives in forestry or logging 24% (1993) (Table 9). A further 24% (1993) of loggers began work in a rural job other than forestry and/or logging. A higher proportion of forestry workers 31.8% (1993) began working in either forestry or logging. The same number 31.8% (1993) began working in a non-forestry rural occupation for their first job (Table 9).

Respondents' Intentions about Future in Logging and Forestry

In 1988, one-third (33%) of Otago/Southland loggers said that they planned to be logging in five years time. In 1993, 43.7% of loggers and 40% of forestry workers said they planned to be in the forest industry in five years time. One noticeable difference is that a high number of both logging and forestry workers were undecided as to their future in the forest industry, as illustrated in Figure 8. Some of this uncertainty may have been due to changes in forest ownership.

Table 9 - First job

	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Forestry/Logging	23.8	24.0	31.8
Rural	27.4	24.0	31.8
None of these	48.8	52.0	36.4

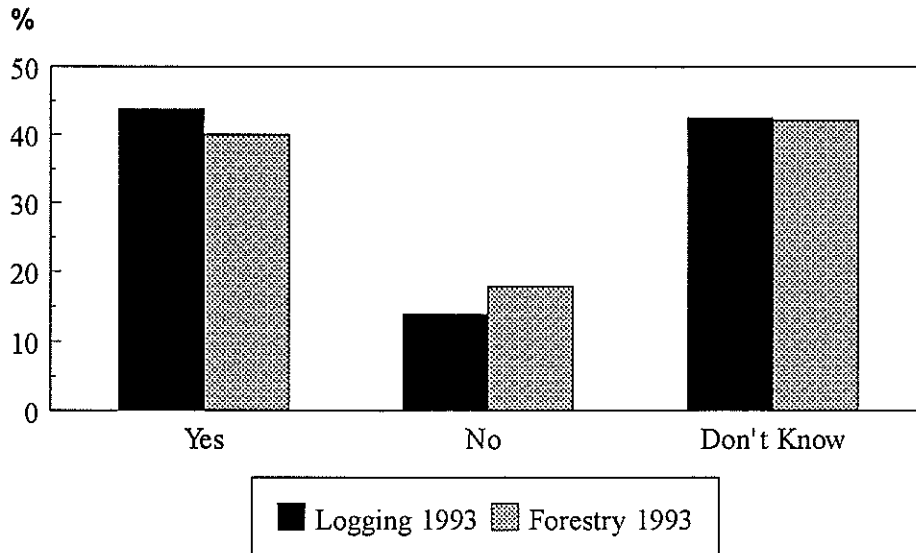


Figure 8 - Will you still be in logging/forestry in five years?

Table 10 - Formal training in logging/forestry skills

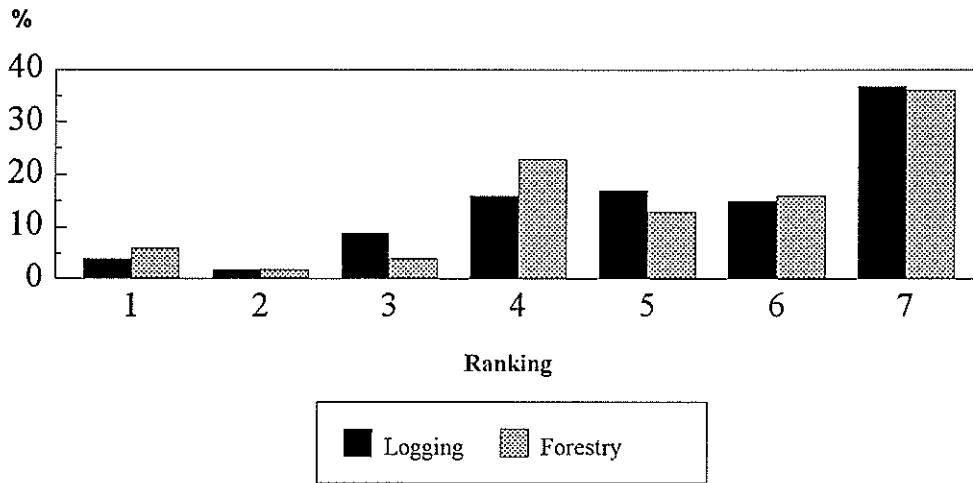
	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Yes	20.5	55.7	51.6
No	79.5	44.3	48.4

TRAINING IN LOGGING/ FORESTRY SKILLS

The level of formal training has increased substantially, 55.7% of loggers had some formal training in 1993, (20.5%, 1988). Just over half (51.6%) of forestry workers have had some formal training. The increase in the number of forest workers with formal training is encouraging, especially in view of the New Zealand Forest Owners' Association's objective of ensuring that "...100% of people working in the forest are qualified or in training for the work which they are undertaking by 1 January 1996".

Satisfaction with Training

Figure 9 shows the level of satisfaction that logging and forestry workers have with the training they have received. They were asked to rank on a scale of 1 (not satisfied at all) to 7 (completely satisfied) how satisfied they were with their training. The average ranking given by both logging and forestry workers was 5.3, which indicates that both groups were satisfied with the training they had received (Figure 9).



1= not satisfied at all

7= completely satisfied

Figure 9 - Level of satisfaction with training

Table 11 - Do you wear safety equipment?

	Logging 1993 (%)	Forestry 1993 (%)
All safety equipment	98.3	97.8
Some safety equipment	1.7	2.2

Table 12 - Who buys your safety equipment?

	Logging 1988 (%)	Logging 1993 (%)	Forestry 1993 (%)
Boss	56.8	52.1	19.5
Self	33.7	38.3	78.2
Self and Boss	9.5	9.6	2.3

ACCIDENTS

The accident rate for loggers had changed little since 1988. The information collected about accidents refers only to those accidents where the accident resulted in the worker having more than one day off work. Minor accidents were not taken into account and the information is reliant upon the memory of the workers.

When surveyed in 1988, 29.7% of loggers had been involved in an accident in the previous five years that

required more than one day off work. In 1993, 31.6% of loggers and 23.4% of forestry workers had been in work accidents in the previous five years that required more than one day off work.

Safety Equipment

This section of the survey asked whether the forest workers wore all of their safety equipment, and who provided their safety equipment.

The survey asked the workers, "Do you wear all of your safety equipment?" The results were encouraging, as 98.3% of loggers and 97.8% of forestry workers wore all of their safety gear, including helmet, ear muffs, visor, safety trousers/chaps, cut resistant boots, chain brakes and mitts (Table 11).

Table 12 shows a small decrease in the proportion of loggers who have their safety gear supplied by their boss. The supply of safety gear for forestry workers was quite different from loggers, with 78.2% of forestry workers supplying their own gear. This may be related to the mobility of the forestry workforce, as 48.9% had worked in their present crew for less than 12 months, and also to the relatively lower cost of forestry safety gear.

OCCUPATIONAL INJURIES

The survey asked whether the forest workers had experienced work-related back problems or other work-related health problems. As with accident information, the information about occupational injuries is memory-reliant, and therefore may contain inaccuracies.

In 1988 over 40% of loggers stated that they had a work-related back injury. The 1993 survey found that 38.6% of logging and 36.9% of forestry workers stated that they suffered from work-related back problems. While this figure is lower than in 1988, it is of concern that over one-third of the forest workforce still suffers from work-related back problems.

Hearing Impairment

The workers were asked if their hearing had been tested since beginning work in the forest industry. Sixty-one percent of loggers and 34% of forestry workers have had their hearing tested. In 1988, 17.5% of loggers said that their hearing had been impaired by their job. By 1993, 34.8% of loggers and 28.9% of forestry workers believed that their hearing had been impaired. This is most likely to be due to an increasing awareness of hearing problems among forestry workers, not an increase in the injury rate.

INDUSTRY AWARENESS

This section of the questionnaire looked at the awareness of the workforce of industry organisations such as the Logging Industry Research Organisation (LIRO), Logging and Forest Industry Training Board (LFITB) and the Forest Research Institute (FRI).

Have you heard of LIRO, LFITB and do you know what they do?

In 1993, over 70% of logging and 20% of forestry workers had heard of LIRO. In 1988, 46% of loggers surveyed knew what LIRO's function was. By 1993, this had increased to 62%. Eight percent of loggers had heard of LIRO but did not know what LIRO did. Fifty-six percent of loggers and 53% of forestry workers had heard of LFITB, and were also aware of the role of LFITB in the forest industry (Figure 10).

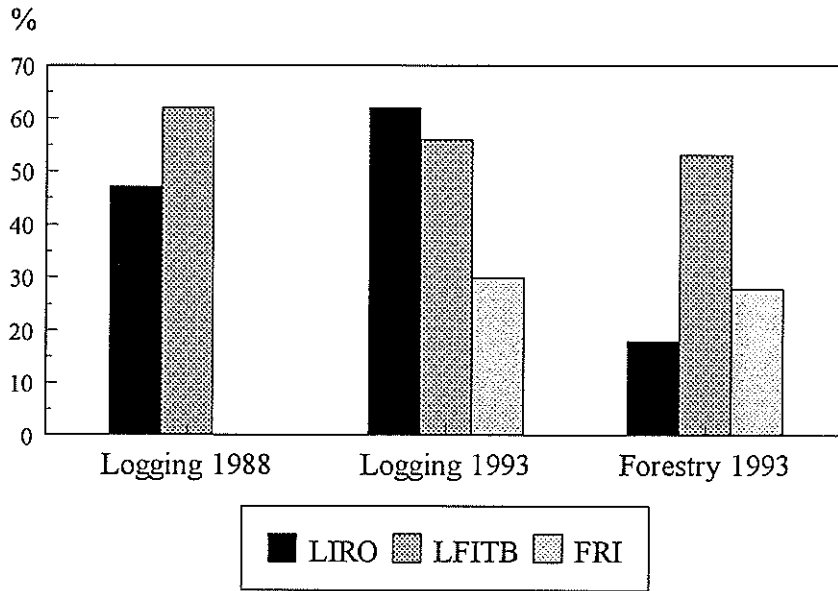


Figure 10 - Do you know what they do?

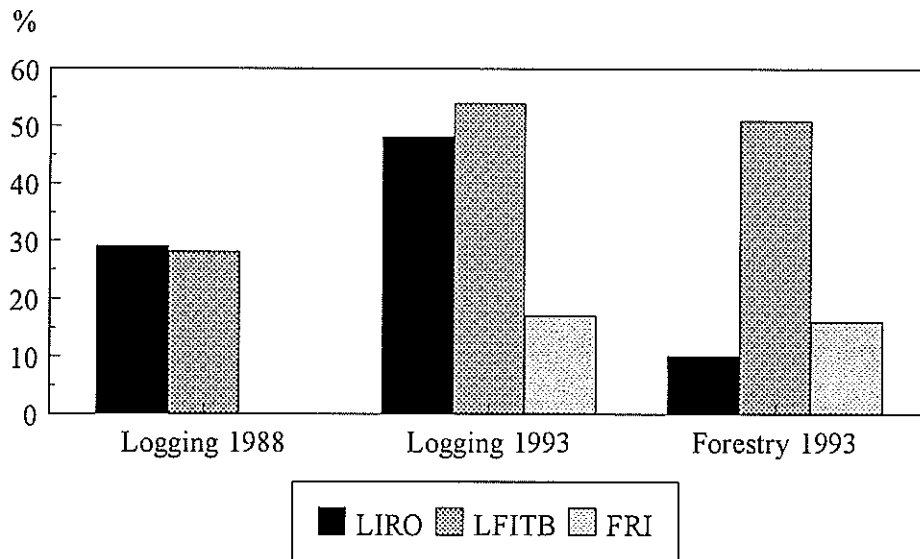


Figure 11 - Proportion of workers who have met staff from LIRO, LFITB, and FRI.

Have you read any publications from these organisations?

It was encouraging to find that over half of the loggers surveyed had read a LIRO publication. Forty-one percent of logging and 46% of forestry workers in had read an LFITB publication.

Have you met any staff from LIRO or LFITB?

Almost half of the loggers, but only 10%

of forestry workers had met a LIRO researcher. Fifty-four percent of logging and 51% of forestry workers had met an LFITB staff member.

It is encouraging that the proportion of loggers who have met a LIRO staff member has increased. The proportion of loggers who have met a LFITB staff member has also increased. This has helped to increase the profile of these organisations within the workforce.

Access to Popular Journals

Logging and forestry workers may also keep in touch with developments within the forest industry through industry-related popular journals. The survey found that in 1993 68.5% of logging and 42.6% of forestry workers had seen copies of forestry/logging magazines.

Visits to processing plants

Sixty-nine percent of loggers said that they had visited processing plants on a regular basis in 1988. Fewer loggers in 1993 (66.1%) had visited a processing plant, and 65.3% of forestry workers had done so.

Visits to other operations

A slightly higher proportion of loggers (85.7%) had visited other operations in 1993 than was reported in 1988 (82%). A much lower number of forestry workers had visited other operations (64.5%).

Contact with Forest Manager

Ninety percent of loggers in Otago/Southland have met the forest manager, an increase on 1988 (82.6%). Seventy-four percent of forestry workers had met the forest manager (Figure 12).

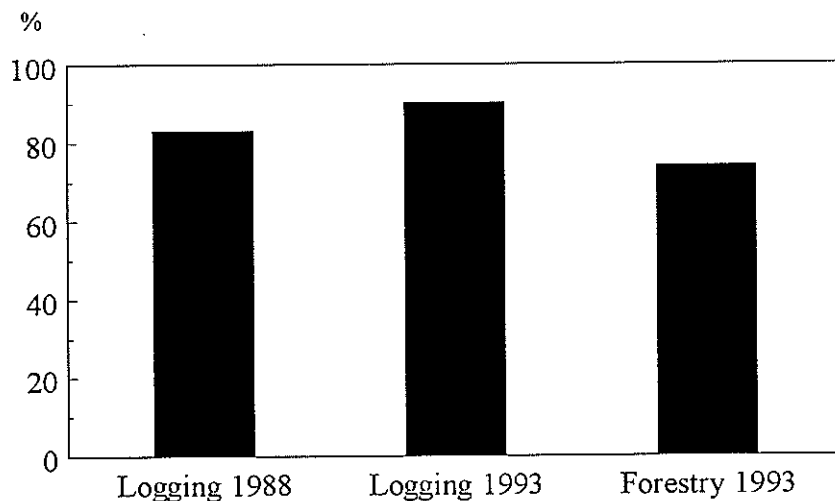


Figure 12 - Contact with forest manager

Table 13 - Best source of information

	Logging 1993 (%)	Forestry 1993 (%)
OSH	3.4	5.3
Union	1.4	2.6
Forest Manager	2.1	5.3
Pub	10.3	22.4
Formal Meetings	4.8	7.9
Company Newsletter	4.8	11.8
Company Supervisor	11.0	10.5
Boss	7.5	1.3
Workmates	13.0	2.6
Combination	41.7	30.3

Table 14 - Visits from OSH in the previous 12 months

	Logging 1993 (%)	Forestry 1993 (%)
No visits	11.6	57.4
Once	15.7	26.3
Twice	24.6	8.7
Three - Five	32.3	7.6
Six - Ten	14.4	0.0
More than Ten	1.4	0.0

Note: this data was not collected in 1988

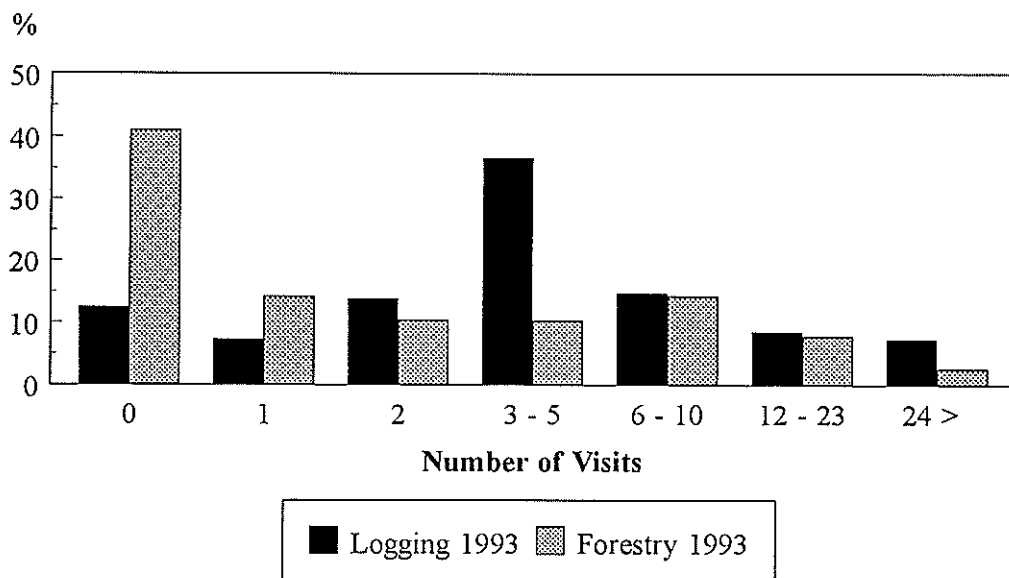


Figure 13 - Visits from trainers in the previous 12 months

Best source of information

The most noticeable change since 1988 was the decrease in the role of the pub as a source of information. There has also been a substantial decline in the role of the forest manager as an information source (23.9%, 1988; 2.1%, 1993). This role appears to have been partially taken over by forest supervisors.

In 1993, both logging and forestry workers ranked a combination of sources as the best source of information, rather than any one single source of information.

How often have you seen someone from OSH in the previous twelve months?

Visits by OSH varied considerably between logging and forestry workers. Fifty-eight percent of forestry workers had not seen an OSH Bush Inspector in the previous twelve months. In contrast, in 1993, only 11.6% of loggers had not seen an OSH Bush Inspector in the previous 12 months (Table 14). Differences are also apparent when looking at the number of logging and forestry workers who have had two or more visits from OSH. In 1993, 72.9% of loggers had seen the OSH Bush Inspector twice or more in the previous

year, whereas only 16.3% of forestry workers had seen the Bush Inspector this frequently.

How often have you seen a trainer in the previous twelve months?

One of the main differences apparent in Figure 13 is that in 1993 a greater number of logging crews saw trainers three times or more per year (67%) than forestry crews (35%). A similar proportion of forestry and logging crews saw the trainer once or twice a year (logging 21%, forestry 24%).

Productivity

Crew characteristics

Thirty-one of the logging crews surveyed (97%) were contract crews. Only one logging crew was a company crew. In 1988, two company logging crews and 19 contract logging crews (90%) were surveyed. All of the logging operations were clearfell, and all were full-time operations.

Average logging crew size has increased by almost one whole person since 1988. The 1988 average was 4.6 people per crew. In 1993, the average was 5.5

people per crew. Figure 14 shows the distribution of crew size for logging crews in 1993.

Absenteeism and Turnover

Sixty-one percent of crews had not experienced any absences in the month previous to the survey. A further 25% of crews had, due to absenteeism, lost between one and three days in the previous month. No crews had lost more than three days in the previous month to absenteeism. However, in six crews (21%), one person had left permanently, and in one crew two people had left. Seventy-five percent of crews had not permanently lost any crew members in the previous month.

Production

Mean Daily Production

The mean (\pm SD) daily production was $138.8, \pm 51.7\text{m}^3$, the average piece size was $1.6 \pm 1.1\text{m}^3$. Production ranged from 60 to 250m^3 per day (Figure 15). The corresponding mean annual production was $32,608\text{m}^3$ with a range of 14,100 to $58,750\text{m}^3$. This data was not collected in 1988.

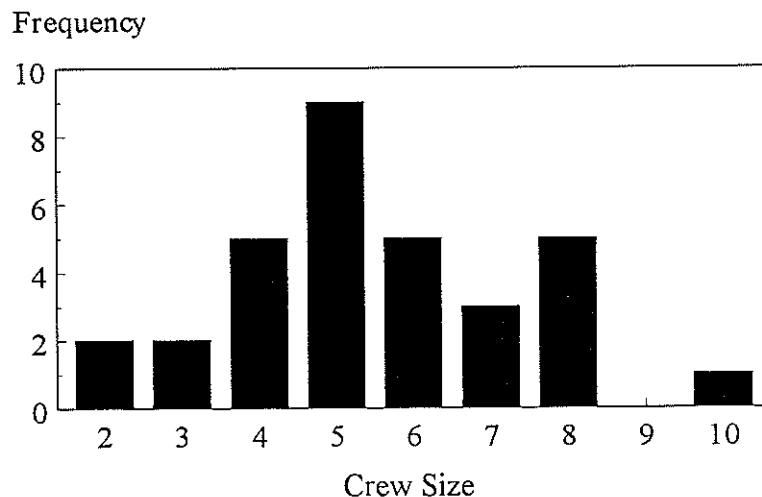


Figure 14 - Distribution of crew size

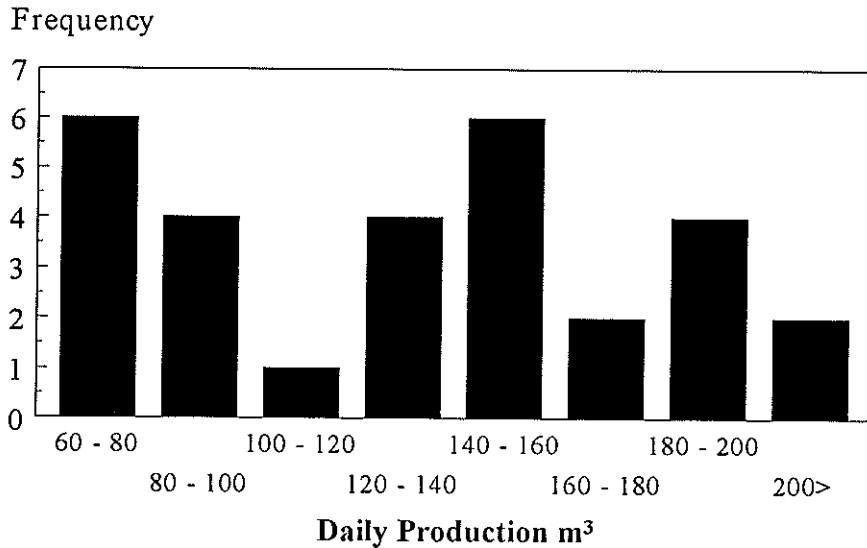


Figure 15 - Daily production m³

Note: This data was not available from all crews

Table 15 - Machines in use: Otago/Southland 1993

Type of Machine	Number of machines
Skidder	28
Hauler	7
Loader	34
Tractor	9
TOTAL	78

Note: this data was not collected in 1988

Machinery make, model and age

A total of 78 machines were in use by crews in Otago/Southland at the time of survey in 1993. This represented an average of 2.4 machines per crew, the same as that recorded in 1988. Seven crews were hauler-based, the remaining 25 crews were ground-based.

Machine Model

In 1988 most skidders in use in Otago/Southland were Clark skidders (58%). In 1993, this situation had changed dramatically, and the most common skidders in use were

Caterpillars, a total of 14, (56%). Eight of these skidders were Caterpillar 518s, and six were Caterpillar 528s. The changes in skidder model from 1988 to 1993 are shown in Table 16.

Tractors

There were nine tractors being used by Otago Southland logging crews in 1993. They comprised: six Caterpillars, one Futer, one Liebherr, and one Fiat.

Haulers

Of the seven haulers in use at the time of survey in 1993, three were Madill 071s, the remainder consisted of one Despatch, one Hayes, one Hunt and one Thunderbird TMY 70.

Table 16 - Make of skidder in use 1993

	1988	1993	1993
	%	n	%
Caterpillar	21	14	56
Clark	58	4	16
Timberjack	5	2	8
John Deere	0	4	16
Tree Farmer	16	1	4

n= number of machines

Table 17 - Excavator loaders in use in Otago/Southland

Make	1988 (%)	1993 (%)
Hitachi	53	64
Fiat-Allis	21	-
Others	26	-
Caterpillar	-	28
Komatsu	-	4
Hymac	-	4

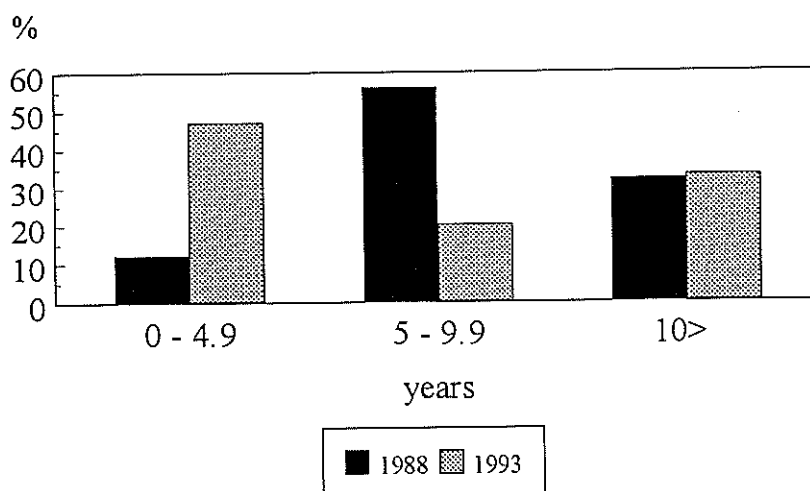


Figure 16 - Age of ground-based extraction machinery

Loaders

In 1988, most excavator-based loaders in use were Hitachis, and this remained the same in 1993. Hitachi has increased its market share from 53% in 1988 to 64% in 1993. Caterpillar loaders were the most popular second choice in 1993 (Table 17).

Bells were the main type of rubber-tyred

loader used in 1993 and six were in use in Otago/Southland at the time of survey. Also in use, were two Caterpillar rubber-tyred loaders and one Clark rubber-tyred loader.

Figure 16 shows that the age of ground-based extraction machinery has decreased since 1988. Forty-seven percent of ground-based extraction

machinery was less than five years old, in contrast to 12% in 1988.

DISCUSSION AND CONCLUSIONS

One of the main objectives of this second survey of the Otago/Southland workforce was to identify changes which had occurred in the workforce in the five years since the initial survey in 1988.

The 1993 survey included forestry workers, the first time a comprehensive survey of forestry workers had been undertaken in New Zealand. In total, 277 workers were interviewed in Otago/Southland, 174 were loggers, an increase of 83 on the 1988 total, and 95 forestry workers were interviewed.

The average age of loggers had changed little since 1988, and along with the average age of forestry workers, remains lower than that of the remainder of the male workforce in New Zealand. Nine percent of loggers and 21% of forestry workers identified themselves as Maori, similar to results reported in a 1994 Forest Owners' Census (Byers, 1995).

Several other changes have occurred within the workforce since 1988. The average time worked in logging had increased since 1988, and the number of loggers with less than one year's experience had decreased. In contrast, forestry workers in general had less industry experience and a higher proportion of workers who had been in the forest industry for less than 12 months.

Indications of an increasingly stable workforce included the reduced proportion of loggers who had been in their present crew for less than twelve months. In fact, the average length of time that loggers had been with their present crew had doubled since 1988.

Other indicators of workforce stability are a relatively low level of turnover and the number of workers who said that they planned to be in the forest industry in a further five years' time. Both of these are positive signs for the industry.

The Review Committee on Education and Training in the Forest Industry (Probine, Grayburn and Cooper, 1987) stated that, "Training in logging and forestry skills is important because the success of the industry depends on the efficiency, and therefore the skill, of the people carrying out what are, largely, manual operations." In addition, they state that, "It is important to have a well trained workforce because almost all of the operations carried out in the forest are potentially dangerous and, for the poorly trained, the operations are very dangerous."

In light of the Forest Owners' Association's goal of having 100% of the forest workforce trained by 1 January 1996, it is encouraging to note that over half of the logging and forestry workers have had some formal training. This represents a substantial improvement on 1988.

However, in order to attain the 100% target, there are a considerable number of workers yet to be trained and/or assessed. Loggers in Otago/Southland saw trainers on a more frequent basis than forestry workers, so it may be that the logging workforce attains a 100% trained status before forestry workers, especially given the mobility of forestry workers.

Some aspects of the workforce have changed little since 1988. Most workers still gained their jobs through contacts with friends and family. Working outdoors remained the single most important reason for working in logging and forestry. Pay was not an important

factor for logging or forestry workers in obtaining a logging or forestry job. However, "only job available" was an important reason for gaining forestry jobs, this suggests a need to improve conditions and the image of forestry jobs, so that forestry is not seen as a last resort.

Other aspects of the job have changed little since 1988. For example, most workers believed that their pay was adequate, even though their working day had lengthened. The proportion of workers who have had accidents requiring more than one day off work has remained similar to the 1988 level. In addition, over one-third of logging and forestry workers had work-related back injuries, and a similar proportion believed that their hearing had been impaired by their job. The rate of back injuries is high, and potentially extremely costly to the industry. An education programme on back care, ways to avoid injuries and instruction on ergonomically correct work techniques may help to reduce the cost of these injuries to the industry.

On a more positive note, almost all of the workers interviewed wore all of their safety equipment. Most loggers had their safety equipment supplied by their boss, although forestry workers had to supply their own equipment.

Loggers awareness of industry organisations such as LIRO and LFITB has increased, as had the number of logging and forestry workers who had read a publication or met a staff member from these organisations. Workers rely on a variety of sources to gain information about their industry. Forestry magazines, and a combination of various sources such as the pub, their workmates and their forest supervisor were popular sources of information.

In general, the Otago/Southland logging

workforce has expanded since 1988, and has become increasingly stable, through a lower level of turnover. The hours worked per day have lengthened, and most workers would prefer to be felling or operating a machine on a daily basis. The forestry workforce is, in general, younger, less experienced with a higher level of turnover than the logging workforce.

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Appendix One

LOGGING WORKFORCE SURVEY

RESPONDENT DETAILS

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

Education/ Training

7. Length of time at secondary school: 1 year
 1 - 3 years
 more than 3 years
8. School Qualifications: None S.C. U.E. H.S.C.
9. Post school education: Technical training
 University
 None: Other:
10. Have you had any formal training in logging or forestry? Yes No

 (eg induction course, FIRS modules, Woodsman school, Polytech courses)
11. Overall I was satisfied with the training I got.

--	--	--	--	--	--	--

No strongly
disagree

Yes
strongly agree

Gang/ Production Data

- | | | | |
|-----|---|----------------|---------------------|
| 12. | Is the gang: | Company | Contract |
| 13. | Number of full time employees in the crew (including yourself)? _____ | | |
| 14. | Continuity of work: | Full time | Seasonal Other_____ |
| 15. | Type of Operation: | Thinning | Clearfell |
| 16. | Species: | P. Radiata | Douglas Other _____ |
| 17. | Species: | Age | Piece size |
| 18. | Production: | Daily | |
| 19. | How many people have left this crew in the last month? | | |
| 20. | How many have been absent in the last month? for how long? | | |
| 21. | End user of product: | Export | Sawmill Pulp |
| | | Particle Board | Veneer Other_____ |
| 22. | Machinery Used: | | |
| | Make: | Model: | Age: |
| | Make: | Model: | Age: |
| | Make: | Model: | Age: |
| | Make: | Model: | Age: |
| | Make: | Model: | Age: |
| 23. | What type of Gang transport is used? | | |

PAY

24. Are you paid wages? contract? subcontract?
25. How often do you get paid? weekly fortnightly monthly
26. How much did you earn in your last normal pay period? (Take home pay)
27. What time do you start work _____ finish work _____ each day?
28. How long does it take you to get to work each day (one way) ? _____
29. Is your pay adequate to live on?

--	--	--	--	--	--	--

No strongly
disagree

Yes
strongly agree

Recruitment/Turnover

30. What was the main reason for you starting work in logging/forestry?
pay
outdoor environment
only job available
other _____
31. How did you get your first job in logging/forestry?
answered an advertisement
told by a relative
told by a friend
other _____
32. Was your father employed in:
forestry
logging
farming/orchards
other
combination
33. Would you encourage your own kids to work in the industry yes no
34. What was your first job after leaving school?
35. How long have you worked in logging/forestry
36. How long have you worked in this gang?
37. How many other gangs have you worked for?
38. Do you think you will still be in logging/forestry in five years time?

Accident Record

39. Have you ever had an accident while employed in logging/forestry during the last five years which resulted in you having more than one day off work?

yes no
40. Since you have been in logging/forestry have you ever suffered from:

Back Problems yes no
Other yes no

41. Do you wear / use the following

	Yes	No	N/A
Helmet			
Ear Muffs			
Visor			
Safety Trousers			
Safety Chaps			
Cut Resistant Gum boots			
Chain Brake			
Mitt			
Other			

42. Who buys your safety equipment?

43. Have you ever had your hearing tested since you've been in logging?
yes no

44. Do you think your hearing has been affected by this work?
yes no

45. What caused this?

INDUSTRY AWARENESS

46. Have you heard of LIRO? yes no

47. Do you know what LIRO does? yes no

48. Do you see any of LIRO's publications? yes no

49. Before now had you met any LIRO staff? yes no

50. Do you remember doing this survey five years ago? yes no

51. Do you remember any of the results? yes no

52. Have you heard of FRI? yes no

53. Do you know what FRI does? yes no
54. Do you see any of FRI's publications? yes no
56. Have you met any FRI staff? yes no
57. Have you heard of LFITB? yes no
58. Do you know what LFITB does? yes no
59. Do you see any of LFITB's publications? yes no
60. Have you met any LFITB staff? yes no
61. Do you see any copies of any forestry/logging magazines? yes no
62. If yes, how often?
63. Have you ever visited a processing plant since you've been working in forestry/ logging? yes no
64. Have you visited any other forestry/ logging operations apart from the ones you've worked in? yes no
65. Have you met the logging / forestry manager? yes no
66. What do you see as the best source of information about what is happening in the logging/forestry industry?
 OSH Union Forest Manager Machinery Salesman
 Pub Boss Formal Meetings Company Supervisor
 Workmates Combination
67. How often have you seen a Logging/ Forestry Trainer in the last 12 months?
68. How often would you like to see a trainer?

JOB SATISFACTION

69. What is your normal job?
70. Which job do you like most?
71. How do you see the future of logging/ forestry in NZ?
 Excellent Very Good Good Poor Hopeless