



PO BOX 2244, ROTORUA, NEW ZEALAND  
TELEPHONE: 07 348 7168 FAX: 07 346 2886

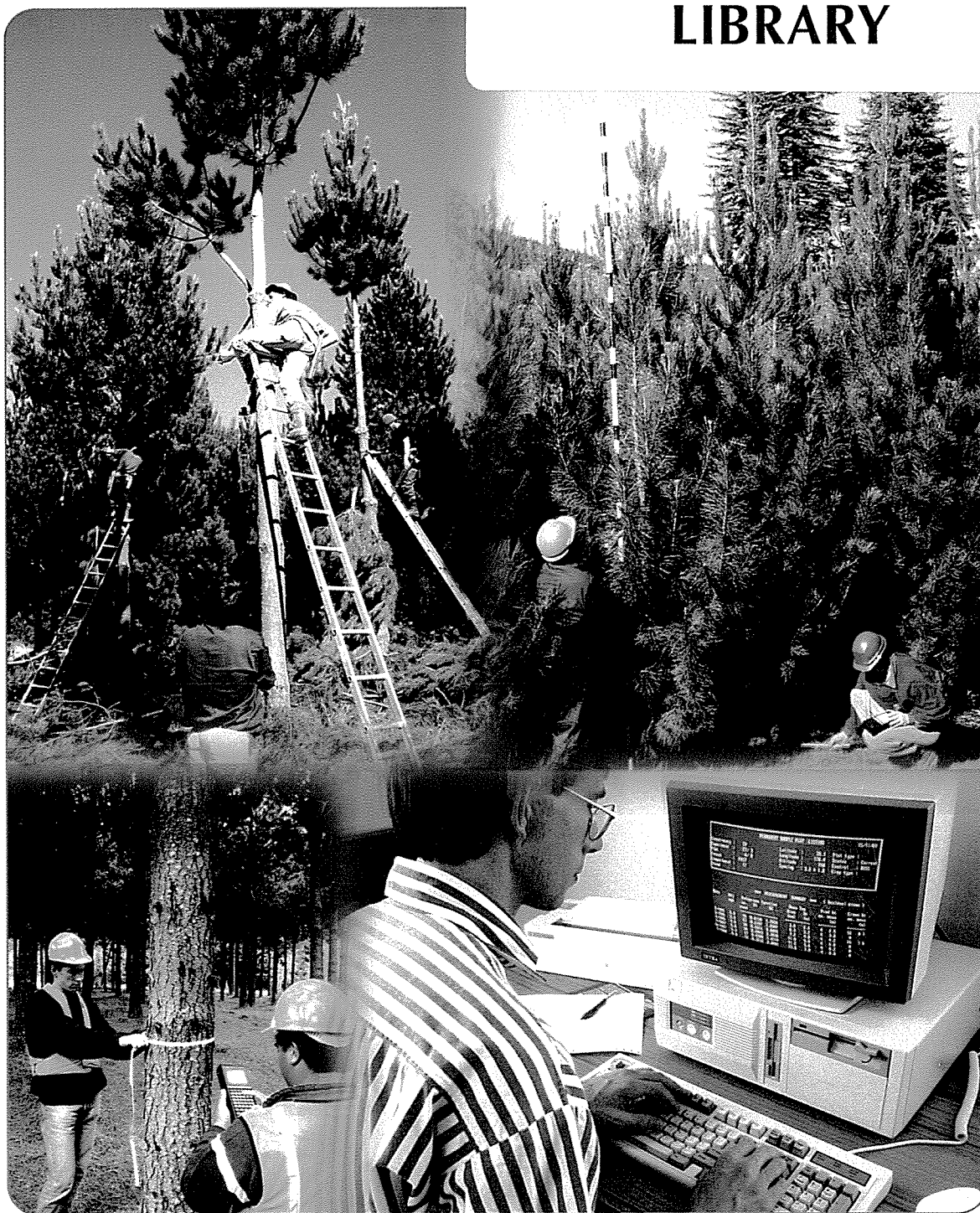
# PROJECT REPORT

PR - 68  
JUNE 1998

## FORESTRY SECTOR UNIVERSITY DEGREES: Their Impact on Graduate Employment (1994-1998)

**Tina Cummins**

PROPERTY OF  
**NATIONAL FORESTRY  
LIBRARY**



Liro Limited  
P. O. Box 2244  
Rotorua  
NEW ZEALAND

# **FORESTRY SECTOR UNIVERSITY DEGREES:**

**Their Impact on Graduate Employment  
(1994 - 1998)**

**Project Report 68**

**Prepared by:  
Tina Cummins  
Human Factors Researcher**

**Liro Limited  
June 1998**



**Copyright © 1998 by Liro Limited**

The form and content of this Project Report are copyright. No material, information or inclusions appearing in this Project Report may be used for advertising or other sales promotion purposes without prior written permission.

This Project Report is confidential to members and may not be communicated to non-members except with written permission of the Chief Executive Officer of Liro Limited.

For information, please contact Liro Limited, P.O. Box 2244, Rotorua, New Zealand.

# TABLE OF CONTENTS

	Page
List of Tables	5
List of Figures	5
Executive Summary	6
1 INTRODUCTION	8
METHODOLOGY	9
ACKNOWLEDGMENTS	10
2 RESULTS AND DISCUSSION	11
 <b>PART 1: STUDENT SURVEY</b>	
<b>Demographics</b>	
Age and sex	11
Ethnicity	11
Parents job	11
<b>Why forestry?</b>	
Prior contact with the forest industry	12
Why forestry as a career choice?	13
Rating of reasons for choosing a forestry-focused degree	13
What type of job do you hope to obtain?	14
<b>Training providers</b>	
Why did you choose this university?	17
Who funded the training?	17
 <b>PART 2: GRADUATE SURVEY</b>	
<b>Demographics</b>	
Sex and ethnicity	18
<b>Employment</b>	
Where employed at time of second survey	18
How graduates had obtained their first job	19
Employers of graduates	20



Importance of having a forestry degree to obtaining first job	20
Time to obtain first job after graduating	21
First job in forestry	21
Tasks graduates were involved in	22
Graduates working outside of the forest sector	23
<b>Acquired skill base</b>	
How well do you think you would have coped with the job if you had not undertaken this degree?	23
Use of skills in the workplace	24
Most useful skills learned in course	24
What skills should have been included in the course ?	25
<b>Graduate perspective</b>	
Composition of degree	26
Graduate comments on how courses could be better designed	27
Additional training undertaken since graduating	28
Graduate perceptions of the industry - a comparison	29
<b>3 CONCLUSIONS</b>	<b>30</b>
<b>4 REFERENCES</b>	<b>31</b>
<b>5 APPENDIX 1 STUDENT SURVEY</b>	<b>33</b>
<b>APPENDIX 2 GRADUATE SURVEY</b>	<b>37</b>
<b>APPENDIX 3 GRADUATE COMMENTS ON DEGREE STRUCTURE</b>	<b>44</b>

## LIST OF TABLES

Table	Page
1 Response rate by university degree programme	9
2 Prior contact with forest industry	12
3 Previous tertiary training courses undertaken by students	12
4 Why did you choose the degree?	13
5 Why did you choose to attend this university?	17
6 Response rate by sex for both surveys	18
7 How long did it take to obtain a job after graduating?	20
8 First and second jobs of graduates	22
9 Why are you not working in the forest industry?	23
10 Most useful skills provided by the course	25
11 What skills should have been included in the degree, that were not?	26

## LIST OF FIGURES

Figure	Page
1 Reasons rated as very important to choosing to study forestry	14
2 Preferred job choices of BForSci students	15
3 Preferred job choices for BCom (For) students	15
4 Preferred choice of job for BScTech students	16
5 How did you obtain your first job?	19
6 Employers of graduates	20
7 Importance of having a forestry focused degree to obtaining first job	21
8 Tasks graduates were working in	22
9 How well did your degree help you to cope with your first job?	23
10 How often do you use the skills obtained at university in your job?	24
11 Graduates perception of the course composition	27
12 Additional training undertaken by graduates working in the forest industry	28
13 Changes in industry perception over time	29

## EXECUTIVE SUMMARY

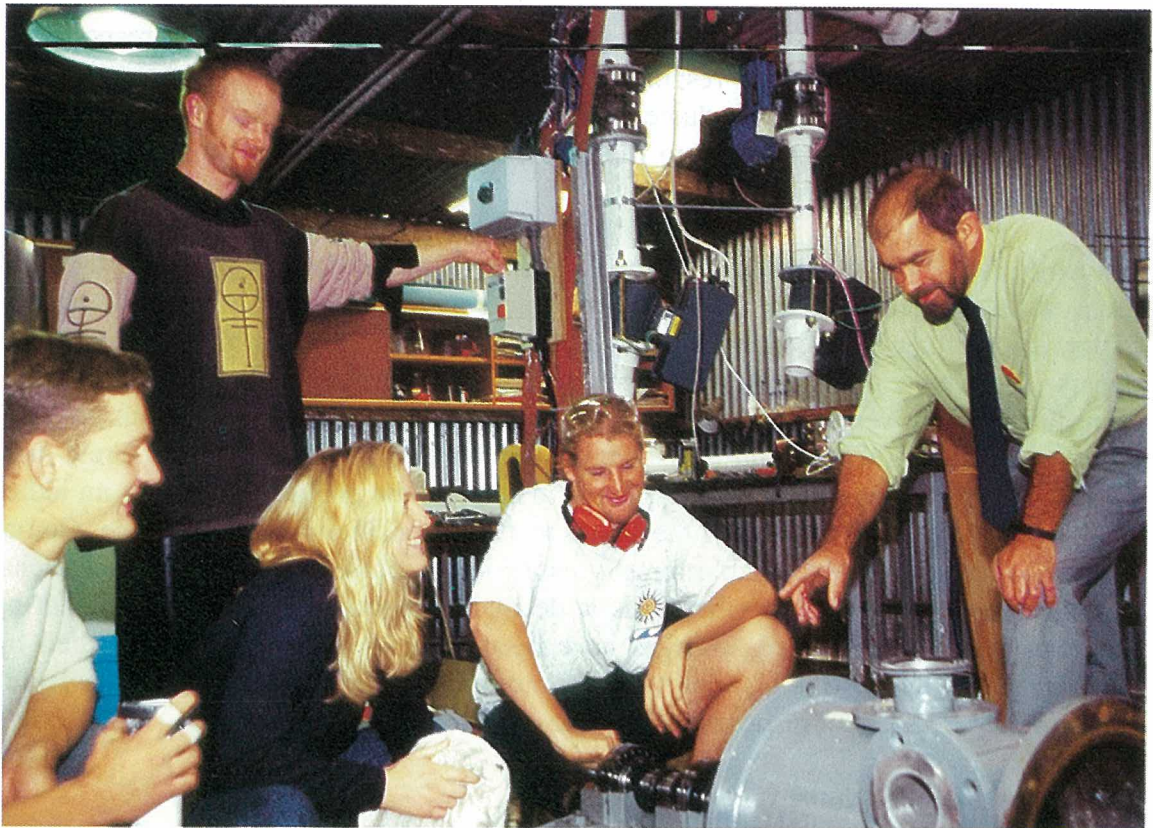
A study was carried out to track the career progression of graduates from three New Zealand universities which include forestry in their curriculum. A total of 108 students enrolled in years one to four of the degree programmes offered by the University of Canterbury, Lincoln University and Waikato University, were contacted during the first semester of the 1994 study year. They were asked to complete a questionnaire to determine their motivations for enrolling a forestry-focused degree, and their career aspirations at graduation. Results from this survey are presented in Part 1 of this report. The same group of students were sent a follow-up survey by mail in 1998. The second survey achieved an overall response rate of 47%. The highest number of respondents by individual degree was obtained from the Bachelor of Forestry Science graduates from the University of Canterbury. Results from the graduate survey and comparisons to the student survey are documented in Part 2 of this report.

The objective of the study was to identify the impact of the degrees in preparing graduates for work in the forestry sector. The main objective of the first study was to determine what factors had influenced a student's decision to undertake a degree which included forestry papers, and why a particular qualification had been selected. The second study aimed to identify the effectiveness of the qualification in assisting graduates to obtain employment within the forestry sector, and to ascertain whether they remained in the forest industry. Finally, the comparison of student responses to those of the graduates provides an indication of changes to their perception of the industry after exposure to the workforce. Comments provided by graduates will enable forestry education institutions to make informed changes to their course of instruction where this is deemed as necessary. It is possible that by the time this report is published, changes have been made to the curriculum studied by the students in this study. It is also important to note that differences in degree curricula may have resulted in different responses to the questions.

The main findings from the study were:

- More males (84%) than females had enrolled in forestry-focused degree programmes.
- A personal interest in forestry and the outdoors was the most common reason for students enrolling in a degree which included forestry in the curriculum.
- A role in forest management was the preferred choice of job by the undergraduates.
- Location was the main reason students had decided to attend Waikato University. For those attending Lincoln University, course structure and subjects were the most popular reasons. Most of the students enrolled at the University of Canterbury said it was the only university offering the course at the time, and that the course was not available elsewhere.
- Half of the graduates surveyed had been employed by a forest company; the remainder were employed by consultants, in sawmills, and logging crews. Some had found employment outside of the forest sector.
- Surveyed graduates had worked in the industry an average of 2.6 years.
- Over half (57%) of graduates thought that their degree was essential to obtaining their first job.
- Nearly half (44%) of all graduates thought their degree needed more industry contact, with course material updated to reflect current industry practices.
- Most graduates were directly recruited by employers in the forest industry. Over half (58%) had a job before they graduated.

- Most (86%) graduates carried out a range of tasks in their current job. The most common task was supervision (24%).
- Fifteen percent of graduates were working outside the forest sector. Of these, 75% said they still wanted to work in forestry, but there were no jobs available.
- Computer skills learned were identified as the most important part of the course. Personnel management was the skill most requested by graduates.
- Over half (57%) completed additional training after graduating, often in those skill areas identified as lacking in the degree courses.



*“Waikato students configuring a rotary pulp screen as part of a Wood Technology laboratory”*

# **Forestry Sector University Degrees: Their Impact on Graduate Employment**

## **INTRODUCTION**

In 1996, the forest industry employed 31 903 people across all forestry activities (NZFOA, 1997). Of this, only 2% were directly involved in forestry/logging management. With forestry currently contributing 13% of New Zealand export earnings (NZFOA, 1997), and volumes predicted to double by the year 2013 (Law, 1998), there remains potential for increased employment within this sector. These predicted growth rates will help maintain the earlier trend of forestry being seen as a viable career option.

The increasing importance of forestry in New Zealand as a growth industry coupled with media portrayal of plantation forestry as a generator of income and employment, has accelerated interest in forestry careers. This in turn has led to increasing numbers of students choosing to take forestry courses or options as part of their tertiary study. While polytechnic training produces practitioners, university degree courses aim to produce people who can plan, think and create in response to changes within the industry (Sands, 1997). At a 1997 New Zealand Forest Owners' Association conference, John Faraci (CEO of Carter Holt Harvey), alluded to this, saying the biggest challenge for the forest industry was attracting and developing people who will be future industry leaders (Neilson, 1998).

In 1989, at a conference on career and employment in the forest industry, a speaker from the University of Canterbury (Sweet, 1989) stated that the School of Forestry needed to structure a degree which produced graduates with sufficient breadth of skills, suited to employment in a sector considerably wider than

commercial forestry. At the time, forestry education in New Zealand was under the spotlight in response to changes in the ownership structure of New Zealand forests, and the demise of the New Zealand Forest Service.

Over the following nine years, forestry education in New Zealand expanded to the point where three New Zealand Universities now teach degrees which include forestry in their curriculum. These degrees produce graduates who (mainly) seek jobs within the forestry sector. The best known and most established forestry degree in New Zealand is the Bachelor of Forestry Science (BForSci) degree, which is taught by the School of Forestry at the University of Canterbury. The School of Forestry also teaches the Bachelor of Forest Engineering (BEng) degree in conjunction with the University of Canterbury School of Engineering. This course specialises in forest harvesting. In 1994, Lincoln University offered a Bachelor of Commerce (Forestry) (Bcom(For)) degree, a commerce rather than science-based course which emphasised the economics of forestry and aimed to develop business skills within graduates. At Waikato University, a forestry option has been offered since 1991 within a technical degree, the Bachelor of Science (Technology) (BScTech). This degree combines forestry science, technology and business management courses with forest industry work experience. With the exception of Lincoln University's three year BCom (For) degree, these degrees are four year courses.

The level of interest in forestry education often reflects the dynamics of the marketplace. In times of peak activity, enrolment numbers in university forestry



courses peak, but in times of economic hardship the forest industry is not perceived to be a good employment sector because of outside influences (Allen, *pers. comm*). The amount of course promotion by the university and a declining population base of school leavers from the mid 1990 period are also factors which can affect course enrolment numbers (Bathgate, *pers. comm*). However, statistics from the University of Canterbury show enrolment numbers remained consistent over the period covered by this study (four years), with around 200 students per year enrolling.

The range of forestry-focused degree courses and options currently available suggests a wide range of career options. A study of university graduates (Cox and Pollock, 1997) showed forestry graduates were as successful as dentistry and medicine in gaining employment, with 80% or more obtaining full-time work in the year after graduation. The study showed that five years later graduation, 100% of forestry graduates were employed in full-time positions. However little is known about the actual career paths of graduates, including how many remain in the forest industry and what their movements are within the forest industry.

An earlier Forest Industry Training and Education Council (FITEC) review of forestry graduate education (Deloitte Touche Tohmatsu, 1994) evaluated the match of graduates to the needs of the

forest industry, from the perspective of those already employed within the industry. Because the report focused on the needs of industry, it did not review recent graduates impressions of the degree programme, including the usefulness of their degree in helping them attain employment.

## METHODOLOGY

One hundred and eight students enrolled in years one to four of the degree programmes offered by the University of Canterbury, Lincoln University and Waikato University, were contacted during the first semester of the 1994 study year (Table 1). They were asked to complete a questionnaire designed to determine their motivations for enrolling in a forestry course and their career aspirations at graduation.

As many students as possible (51) were recontacted by post in 1998 (Table 1), and asked to complete a follow-up survey. Not all students could be recontacted because they had changed addresses or were travelling overseas (5%).

An overall response rate of 47% was attained for the follow up survey, with the highest number from the University of Canterbury BForSci graduates (Table 1).

University Programme		Number students surveyed		Response rate by course
		1994	1998	1998
Canterbury	BForSci	75	40	53%
	BEng	3	3	100%
Lincoln	BCom (For)	17	3	18%
Waikato	BSc (Tech)	13	5	38%
<b>Overall</b>		<b>108</b>	<b>51</b>	<b>47%</b>

Table 1 - Response rate by university degree programme

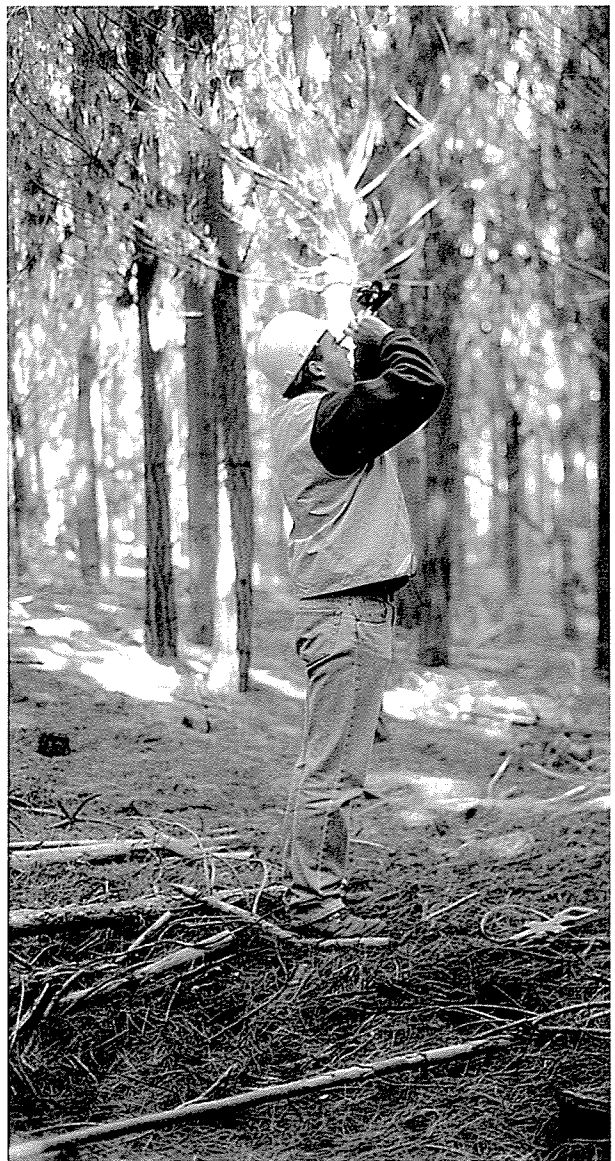
The objective of the study was to identify the career movements of graduates within the forest industry, and to ascertain whether they remained in the forest industry. The initial survey aimed to determine the factors influencing the student's decision to study forestry, and identified the student's pre-entry industry perceptions. The second survey enabled graduates to use their experience in the forestry workforce to evaluate the usefulness of their university training in preparing them for the workforce, and to comment on aspects which they thought could be improved.

## ***ACKNOWLEDGMENTS***

*Liro Limited would like to thank the staff and students of Canterbury, Lincoln and Waikato Universities for facilitating the initial student survey. A special thank you also to all those graduates who responded to the second survey, and to university staff who assisted with information requests.*

## **NOTE:**

This report contains findings from both the student and graduate surveys. The following results and discussion have therefore been separated into two sections. Part 1 reports on the findings from the initial survey, and part two focuses on results from the graduate survey, relating these back to the findings from the initial survey where relevant.



*"Tree Measurement Exercise"*

# RESULTS and DISCUSSION

## PART 1: STUDENT SURVEY

### Personal Details

#### Age and Sex

The ages of the students surveyed at university ranged from 18 to 38 (male) and 18 to 23 (female) years. The mean age of the students was 22 years, which is comparable to the mean age of 21 years found in an earlier study of polytechnic forestry students (Byers, 1994). Over half (57%) of the students were aged between 20 and 22 years.

The majority of students participating in the first survey were male (84%); females comprised only 16% of the respondents. Most of the females (82%) had enrolled in the University of Canterbury's BForSci programme; only one had enrolled in the BEng degree. In an earlier study of women forestry science graduates (Maplesdon and Langer, 1993), women were reported to be outnumbered by men in both the engineering and forestry disciplines at the University of Canterbury, women comprised 16% of course numbers.

#### Ethnicity

Most (94%) of the students were European, only 1% were Maori. The remaining 5% categorised as "other" were from Canada and Fiji, and were enrolled in the BForSci programme at the University of Canterbury.

An earlier study of forestry management staff (Byers, 1996) showed that 7% identified themselves as Maori. This supported Gibson's 1994 finding that 10%

of company staff were Maori. While Maori make up 45% of the forestry logging and silviculture workforce (Byers, 1995), it is of concern that the number enrolled in the three forestry degree programmes was so low, considering the increasing self-management of resources by this group. Maori account for approximately 15% of the population, and collectively own approximately 1.3 million hectares of land under the control of the Maori Land Court (Schaffler, 1996). In 1993, 20% of this land had already been afforested under commercial forestry ventures. This figure continues to increase annually as both foreign and domestic interests seek land for afforestation. This should be seen as an opportunity for Maori to play a greater role in the management of their resource.

#### Parent's Job

Farming was the most commonly reported occupation (19%) of fathers. While only 9% of the students had a father working in the forest industry at the time of the survey, 19% said their fathers had at some time worked in the industry. This may have assisted in developing their awareness of forestry as a career.

Only two of the students had mothers who had previously worked in the forest industry. Teaching was the most common occupation of mothers (26%). Most (95%) of the jobs held by mothers were indoor positions, such as clerical, sales and customer service. None were working in the forest industry at the time of the survey.

Miller and Form (1964) found that the occupation of the father may strongly influence the occupation chosen by the son. This finding was supported in a survey of loggers (Gaskin et al., 1989) where 36% of loggers had a father involved in the forest industry.



## Why Forestry?

### Prior Contact with the Forest Industry

To ascertain what makes an undergraduate decide to enter into a forestry-focused degree programme, it helps to identify any previous exposure to the industry. Aside from parental contact, undergraduates may have previously been exposed to the forest industry by a number of methods, including working in the industry, living in a forestry region, or through being involved in a family forestry venture.

Additional exposure to the forest industry may have come from television and advertising or from friends working in the industry.

Thirty-five percent of those questioned had been in contact with the forest industry before entering the course. Of this group (Table 2), 80% had left their job to attend university. Some (35%) had undertaken forestry training at a lower level previous to enrolling in the degree programme (Table 3), which would have provided them with a sound understanding of the forest industry.

Prior Contact with Forest Industry	Percent
Family member in industry (includes extended family)	34
Worked in forestry - silviculture	19
Involved in family forestry venture	16
Worked in forestry - sawmill	8
Vacation work in forest	8
Worked in forestry - logging	5
Lived in forestry region	5
Consulting	5

*Table 2 - Prior contact with the forest industry*

Course Name	Percent
BSc	23
NZCF	19
Forestry course - Polytech	12
Business related course	8
BSc (Tech)	7
NZFS - ranger training	4
Other non-forestry	27

*Table 3 - Previous tertiary training undertaken by students, including forestry (shaded)*

Why Forestry As A Career Choice?

The students were asked what had motivated them to undertake a degree which included forestry in the curriculum (Table 4). A number cited a combination of factors, but by far the most common was a personal interest in forestry and the outdoors (42%). This was also found to be an important factor in a 1989 logger survey (Gaskin et al.), where an enjoyment of the outdoor environment was the most frequently offered reason for working in logging. One person made the comment that “trees are the future”, and that he wanted to be involved in a growing industry. The perception that forestry was a growing industry which would be likely to provide employment opportunities was reflected by the 32% of students who identified these reasons for choosing forestry.

Rating of Reasons for Choosing a Forestry - Focused Degree

To identify the important factors influencing a career decision, a second question asked students to rate on a scale of one (very important) to ten (not

important), a set of reasons for having chosen the degree. The same set of questions was asked of the graduated group in the follow-up study (Part 2 of this report), to identify any changes in attitude after having worked in the industry.

The type of work (20%) and employment prospects (18%) rated as very important reasons for students having initially chosen a forestry degree, followed closely by the work environment (16%) (Figure 1). This would have reflected the students’ perception of forestry as a growth industry and provider of job opportunities at the time of the first survey. In the Logging Workforce Survey (Gaskin, 1989), the work environment was rated by loggers as one of the main advantages of their job. A high industry profile was rated in the current study as the least important reason influencing the students decision to study forestry.

Two students made additional comments that the challenge and personal fulfilment of doing the course was important, and another said that he “liked trees”.

Reason for choosing degree	Percent
Interested in forestry and the outdoors	42
Employment opportunities/improved career prospects	21
Involvement in a growing industry	11
Good mixture of indoor and outdoor work	8
Offers variation and choice - mixes forestry with other skills	6
Money	4.5
Want a professional qualification	4.5
Environmental concerns	2
A friend advised it would be a good choice	1

Table 4 - Why did you choose the degree?



## Reasons rated as very important to choosing forestry

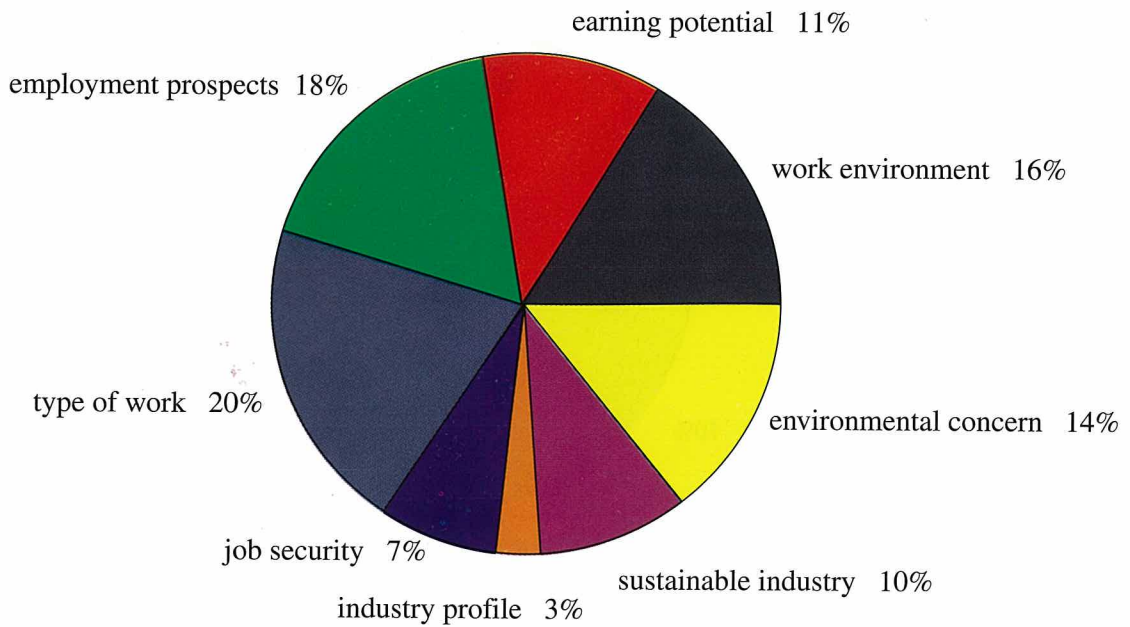


Figure 1 - Reasons rated as very important to choosing to study forestry

### What Type of Job Do You Hope To Obtain?

A person is motivated by many different personal factors to undertake a course of education. However, a desire to enter into a certain type of career and occupation would have the largest influence. The students were asked what type of job they hoped to obtain after graduating. The responses were grouped according to students' comments. There was a wide variation in the desired choice of job from all degree programmes, highlighting the students' perception that their chosen

degree would provide them with a range of work opportunities. The top three job choices were forest management (29%), a company job (18%) and consulting/self employed (10%).

Although in many cases, differences in degree curricula may have elicited different responses to questions, there was a surprising similarity in the desired choice of jobs for all students associated with this question. All except the BEng chose forest management and a company job as their preferred two choices.

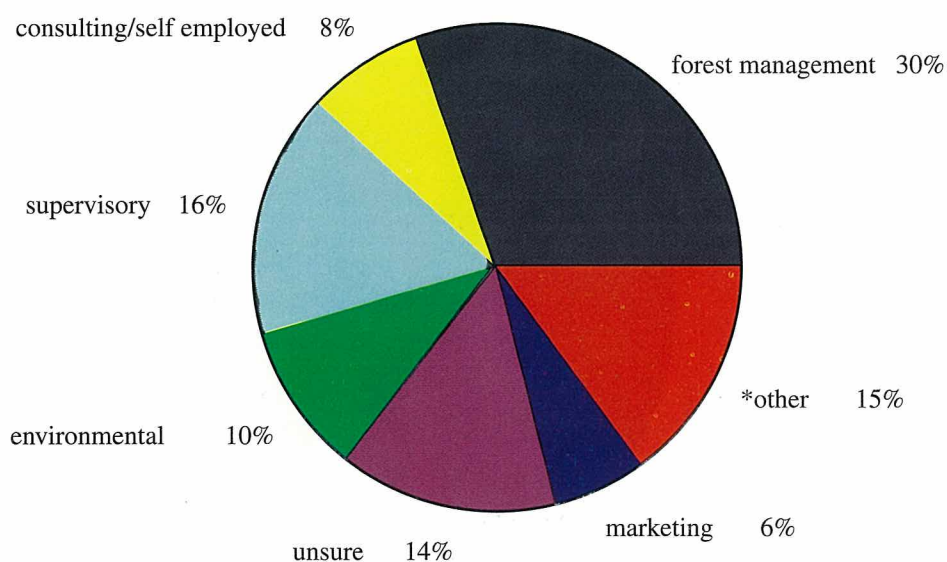


Figure 2 - Preferred job choices of BForSci students n=83

\*Other includes: harvest planning (2%), forester (4%), overseas (2%), financial (1%), research (4%), and farm forestry (2%)

Most BForSci students wanted a job in forest management (Figure 2). This is hardly surprising, given the reputation of this course in providing graduates for the forest management sector.

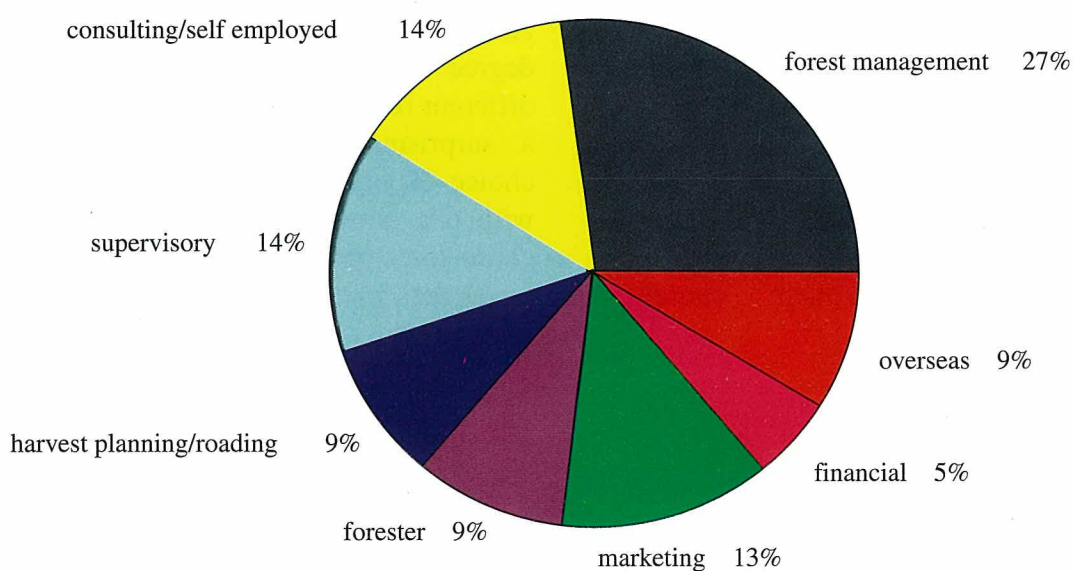
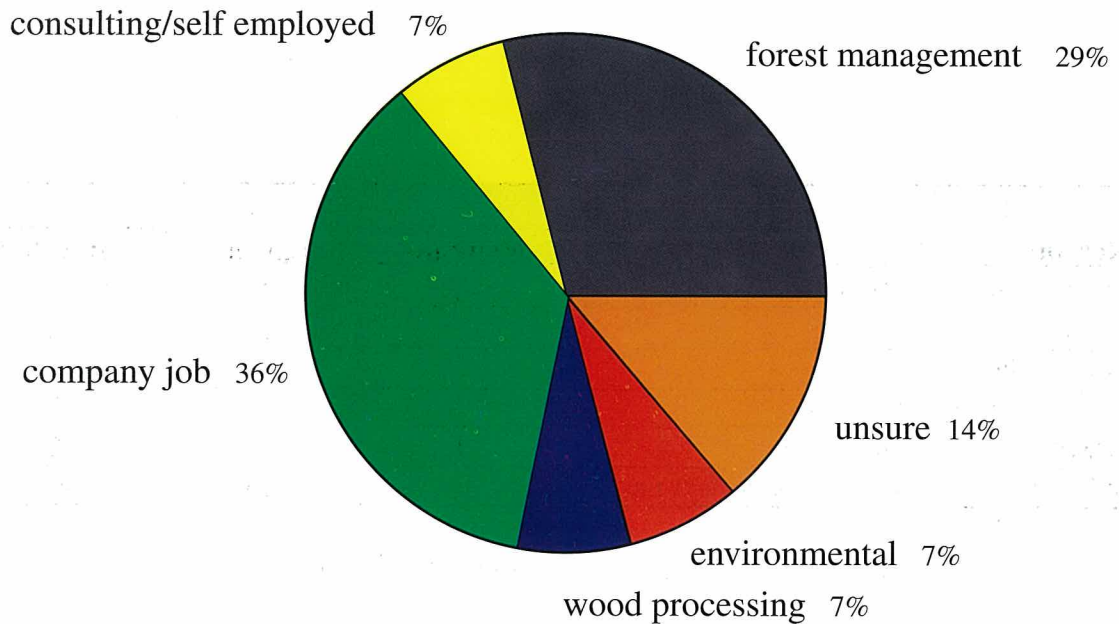


Figure 3 - Preferred job choices for BCom (For) students n=22



*Figure 4 - Preferred choice of job for BScTech students n=14*

Forest management was also the preferred choice of the BCom (For) students. However, a greater number of these students preferred a financial or marketing job, reflecting the business emphasis of the course.

A company job was the preferred choice for the BScTech students (Figure 4), followed by a forest management position. A reflection of the technological emphasis of this course is the preference for positions within wood processing and environmental.

The BEng students were true to their training, with the majority wanting a job in harvest planning or roading. This group showed the highest level of uncertainty over their job choice. However, since there were only three students, the sample was too small to make any valid conclusions.



*"Felling Practical"*



# Training Providers

## Why Did You Choose This University?

Reason	%		
	Waikato	Lincoln	Canterbury
close to home/location	47	8	14
reputation	7	17	32
already there	7	0	2
industry recommendation	13	4	5
structure of course/subjects	26	46	6
only university offering degree (at time)	0	25	41

Table 5 - Why did you choose to attend this university?

The students were asked why they had chosen the particular university, to identify those factors which had been most influential (Table 5).

Location was the main reason students chose to attend Waikato University, with many stating it was close to their homes. Traditionally, students requiring an undergraduate forestry degree have had to travel to the South Island. Waikato was the first university in the North Island to offer a forestry option, providing an alternative for North Island residents to obtain an undergraduate forestry qualification at a location closer to home. The Waikato University BSc (Tech) course is a relative newcomer to forestry education in New Zealand, and had not had the time to develop the same reputation as either the University of Canterbury or Lincoln University at the time of the first survey. However, there is relatively high industry recommendation associated with this course (Bathgate, *pers comm.*). Many of the students said they had attended the University of Canterbury because they thought it was the only university offering the course at the time they enrolled, and because it had a good reputation. Students chose to attend Lincoln University mainly because of the

specialist structure of the BCom (For) course, and the fact that it was not available elsewhere.

## Who Funded The Training?

The sale of Government owned forests and the demise of the New Zealand Forest Service, shifted the responsibility for forestry training from the employer to the trainee. This was reflected by most (67%) of the students either funding themselves entirely through their training, or obtaining a student loan from the Government. In 23% of cases, funding was from a combination of sources including family, self and student loan. Only three of the students had received assistance from their employer (a forest company) for their studies. None of the students indicated they had been funded through their iwi, which is not surprising, considering that only 1% (one student) of the survey identified themselves as Maori.

The Holt Forest Trust Scholarship contributed to 13 students training costs, and two overseas students were funded through the Ministry for External Relations and Trade (MERT).



# PART 2: GRADUATE SURVEY

## Demographics

### Sex and Ethnicity

Females showed a higher response rate to the second survey than to the first (Table 6). A noticeable difference to the first study was that all respondents identified themselves as New Zealand European. This may be partly due to the difficulty in relocating graduates who had travelled to New Zealand to do the degree, and who had subsequently returned to their overseas country of residence. It was unfortunate that of the 1% Maori who were interviewed at university, none were able to be recontacted. It would have been interesting to see whether ethnicity had an effect on career progression and industry perception.

Sex	1994	1998
Male	84%	80%
Female	16%	20%

Table 6 - Response rate by sex for both surveys

### Employment

The New Zealand forest industry is largely influenced by a changing marketplace - it is a dynamic industry subject to peaks and troughs typical of a commodity market. This factor, coupled with a changing forest ownership structure, has a downstream effect on the demand for labour, including the demand for forestry graduates.

### Where Employed at Time of Second Survey

Forestry encompasses a range of work options and graduates often find employment outside the traditional forest company structure. While 50% of

graduates had been employed by a forest company, a number were working in other sectors of the industry including forest consultancy (17%), in sawmills (8%), or logging crews (2%). Four percent had chosen to continue their studies, and a further four percent were still looking for work at the time of the survey. Some graduates (15%) had found employment outside the immediate forest industry, in research, council, agriculture and a farm park.

The average time graduates had been employed in the forest sector was 2.6 years (range 0.5 to eight years). One graduate had worked in the forest industry for 21 years prior to retraining. This was an outlier which had the effect of skewing the data, therefore it was removed when calculating the mean time graduates had worked in the forest sector.



“Encouraging women foresters”

**How Graduates Had Obtained Their First Job**

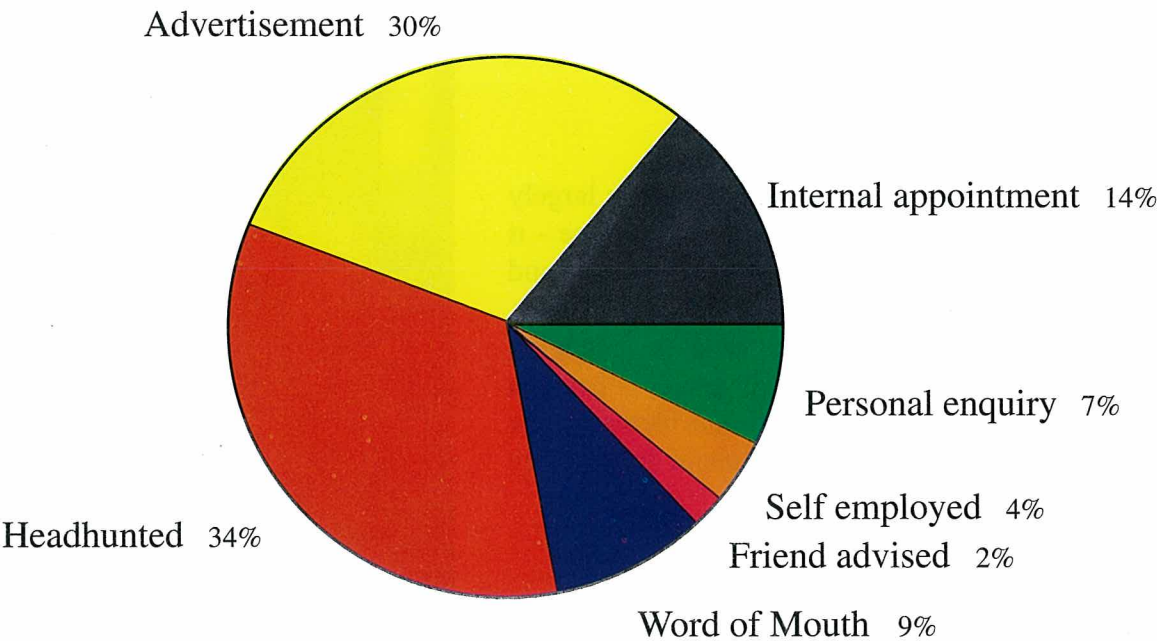
The forest industry maintains a close eye on students who are about to graduate, and representatives from forest companies will often visit the university campus to meet the graduating year of students. It is through this contact with industry that many graduates are “headhunted” for a position without having to wait for a job to be advertised. This was the most common method (34%) by which graduates had obtained their first job. Figure 5 identifies other means by which students were able to obtain their first position.

**Employers Of Graduates**

As could be expected, most (46%) of the graduates had obtained a position within a

forest company (Figure 6). However, a significant number (27%) had been employed by a forestry consultancy. This reflects the changing ownership profile of the forest industry, with more forests being established on land outside corporate ownership (Eyre, 1996). As management of these forests is often outside the corporate structure, forestry consultants are playing an increasingly important role. As indicated by the survey, many forestry graduates are now moving into positions within this group.

Graduates had spent an average of 1.7 years in their first position (range six weeks to four years) before moving to their second job. For the second position, graduates had been working an average of one year (range six weeks to two years).



*Figure 5 - How did you obtain your first job?*



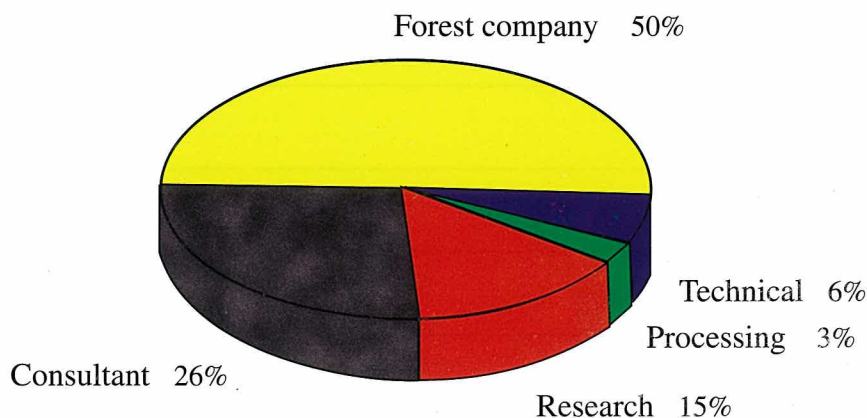


Figure 6 - Employers of graduates

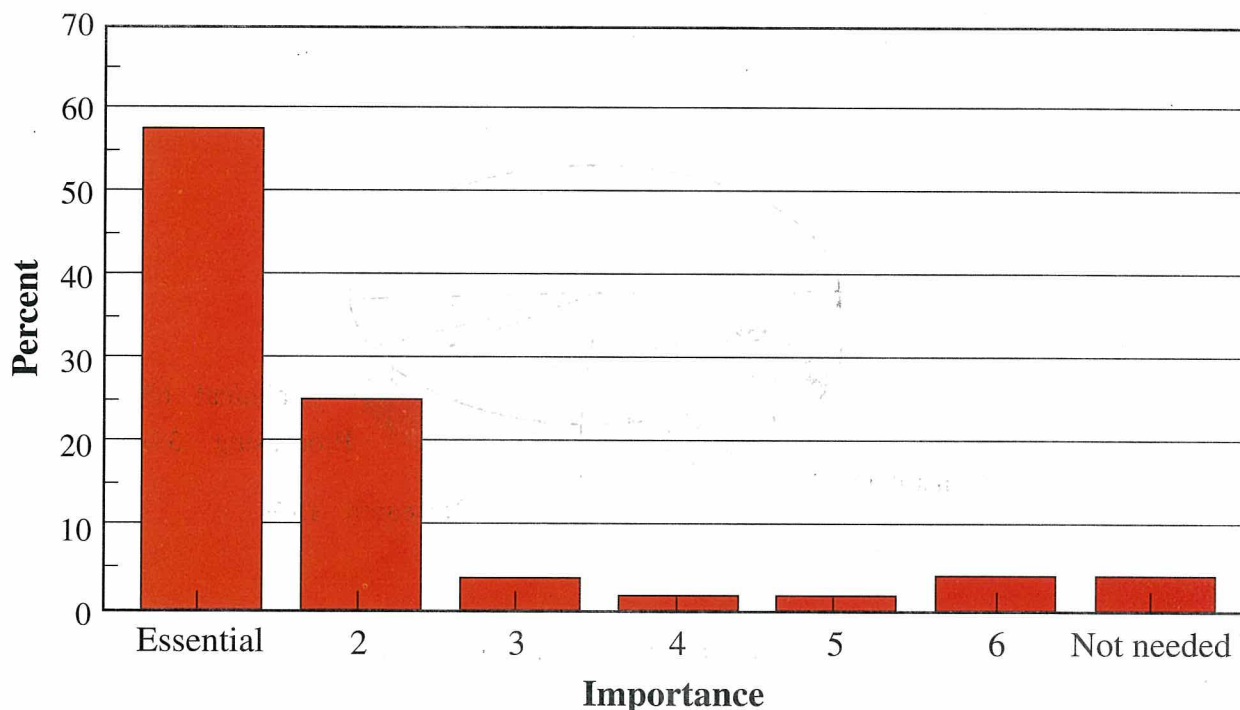
### Importance of Having A Forestry Degree To Obtaining First Job

Over half (57%) of the graduates felt that their degree was essential in assisting them to obtain their first job (Figure 7). Of interest is the small group (4%) who thought that having a forestry-focused degree had not assisted them in obtaining their first job. It is noteworthy that this figure represents only two graduates, and that only one was actually employed in the forest industry at the time the follow-up survey was completed.

In the New Zealand university graduate study (Cox and Pollock, 1997), forestry science graduates were part of a group which gave an overwhelmingly affirmative response to a question asking whether they had chosen their degree specifically to obtain a job. This also supports the findings from an earlier study by Byers (1996), which found that a forestry degree was becoming a common entry qualification for management within the forest industry.

TIME TO OBTAIN FIRST JOB	FREQUENCY	PERCENT
Had job at graduation	25	58
< 1 month	5	12
1 - 6 months	10	23
6 months - 1 year	3	7
<b>TOTAL</b>	<b>43</b>	<b>100</b>

Table 7 - How long did it take to obtain a job after graduating?



*Figure 7 - Importance of having a forestry degree to obtaining first job*

### **Time To Obtain First Job After Graduating**

Those graduates who were employed in the forest industry at the time of the survey (84%) were asked how long it had taken them to obtain a job after graduating. Over half of these students had a job to go to as soon as they had graduated, a reflection in part of graduates being recruited directly from the university. All of the group working in forestry at the time of the survey, had managed to obtain employment within 12 months of graduating (Table 7). On average, it had taken graduates 1.7 months (or nearly seven weeks) to obtain a job.

### **First Job In Forestry**

The most common position graduates had obtained for their first job (n=41) was that

of a forester (Table 8), followed by a technical job. A number (31%) who had held two jobs (n=26) had moved into a specialist area such as planning, analysis, market co-ordination and log supply management (Table 8), indicating increasing specialisation with career progression. Although a significant number were still employed as a technician or operations controller (both 27%), many of these had made a sideways shift within the same company into another area of control. Nine graduates said they had held three different jobs. Three of this group had actually made sideways shifts within the same company, and were carrying out a similar role to their earlier position but in a different task area. On average, graduates had held two jobs (1.9) by the time the second survey was carried out.

POSITION - First job	Percent	POSITION - second job	Percent
Forester	38	Technician	27
Technical	23	Operations controller	27
Researcher	10	Planner	15
Business analyst/project manager	10	Forester	15
Operations controller	7	Analyst	8
Graduate trainee	5	Marketing co-ordinator	4
Consultant	5	Log supply manager	4

Table 8 - First and second jobs of graduates

When surveyed previously as students at university, the preferred job choices were forest management (29%), a company job (18%) and consulting/self employed (10%). Results from the graduate survey indicate that many graduates actually began their forestry careers in a generalist role, later transferring into a specialist area .

### Tasks Graduates Were Involved In

Most (86%) of the graduates carried out a variety of tasks within their job, and only 14% identified a singular task area on the survey form. The most common task graduates were carrying out when surveyed was supervisory, followed by planning. Figure 8 shows those fields that graduates were working in at the time of the survey.

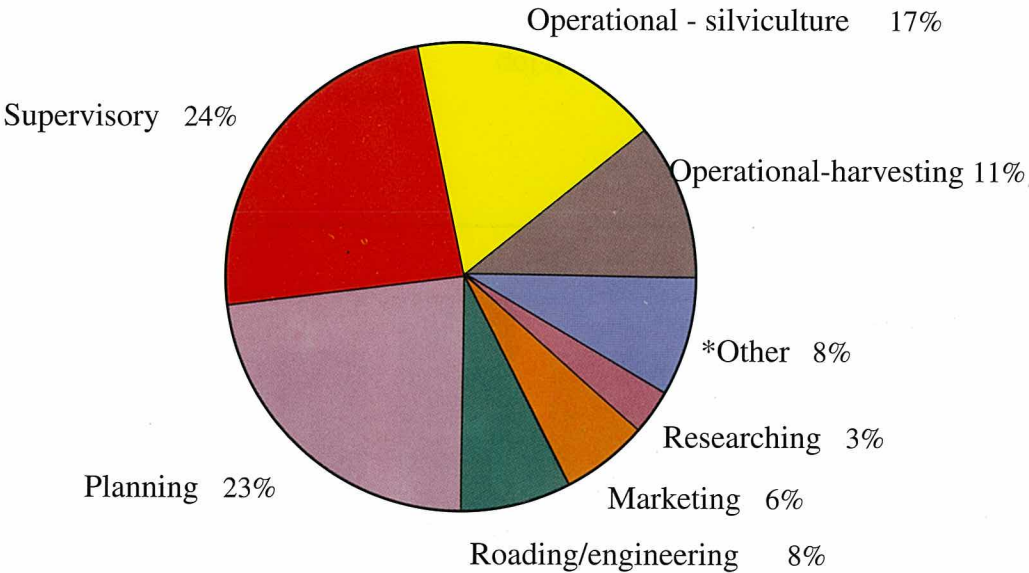


Figure 8 - Tasks graduates were working in

\*Other includes log marshalling, valuation, wood supply, mensuration"



### Graduates Working Outside of the Forest Sector

Sixteen percent of all graduates who responded to the survey were working outside of the forest industry, in areas including agriculture, building, council, and a casino. Two were completing post-graduate studies at university. However, 75% of those working outside the industry said they would still like to work in forestry. Those who did not wish to work

in forestry said they had either changed career direction, had no further interest in the forest industry, or believed there were no jobs available within the forest industry.

Table 9 illustrates reasons for graduates not having used their degree to work in the forest industry. Lack of employment positions was the main reason identified by graduates.

REASON	PERCENT
No jobs available	40
Worked in industry but left because dissatisfied	20
Skills transferable to another industry	20
Further study	20

Table 9 - Why are you not working in the forest industry?

### Acquired skill base

#### How Well Do You Think You Would Have Coped With Your Job If You Had Not Taken The Degree?

A significant number of graduates felt that their degree had helped them in a moderate to poor way to cope with the demands and expectations of their first job

(Figure 9). Most qualifications aim to provide a broad knowledge base for students, rather than provide specialist knowledge in every subject area. Once employed, graduates then have the opportunity to increase their knowledge base in the area they are working. As such, a qualification is often looked upon as “a foot in the door”. Work experience then plays an increasingly important role in securing subsequent employment.

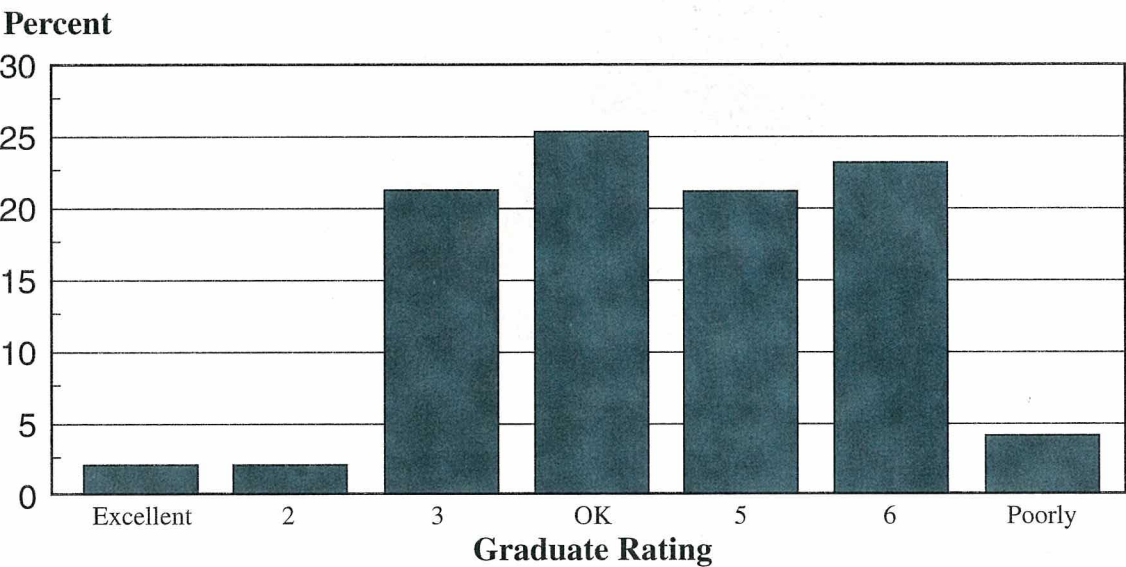


Figure 9 - How well did your degree help you to cope with your first job?

Use of Skills in the Workplace

Most students indicated that they had made moderate use of the skills obtained through their forestry degree (Figure 10). An earlier study commissioned by the New Zealand Vice Chancellors Committee (Cox and Pollock, 1997), tracked science graduates from all New

Zealand universities from 1990 to 1996. In this study, graduates were also questioned about utilisation of their qualification in the workplace. Forestry was included in a group which provided an above average response to the “not at all” option, indicating there may be a gap between the skills being taught in 1994 and the skills required by the industry in 1998.

Percent

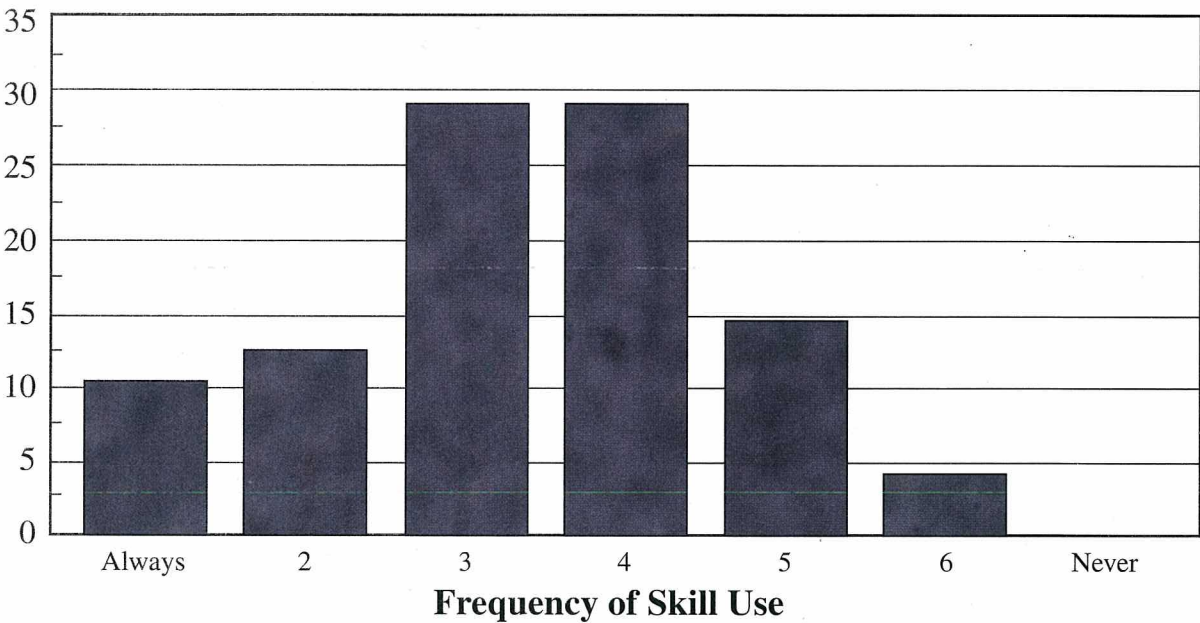


Figure 10 - How often do you use the skills obtained at university in your job?

Most Useful Skills Learned In Course

Generic computer use was the most valued skill graduates had obtained from their education. This is not surprising, given the strong role of the computer in forestry applications and the need for a basic foundation knowledge (Table 10). These skills were identified by the graduates own choosing, rather than being in any way prompted by the survey form. It is of interest that so many graduates nominated the same skills as being useful.

Most of the skills nominated by graduates as being most useful to their work in the industry were generic skills which were

related to the collation and presentation of information. This supports earlier comments by graduates that there was a lack of specific forestry skills (such as MARVL, STANDPAK applications) provided. However forestry education aims to provide a broad knowledge base for future employees of the forest industry, with many specific skills being learned once employed. One of the biggest challenges facing the New Zealand forest industry in 1998 was in finding, attracting and developing future leaders of the industry (Jayne, 1998). It is the role of the university to prepare graduates who have the “vision, competitive spirit and toughness to become internationally competitive” (Robinson, 1997).



### What Skills Should Have Been Included In the Course?

Skills in the area of personnel management were the most commonly reported skills that graduates thought should have been included in the course (23%). This was interesting, given graduate comments about a lack of specific forestry skills, and the generic nature of personnel management. Skills in the use of forestry software programs such as MARVL, FOLPI and STANDPAK were the next requested (20%). Comments from recent graduates indicate these skills are now taught as part of the degree program.

Eleven percent said they would have liked more practical forestry skills to be included in the degree. Students are expected to obtain practical work experience during their semester breaks, allowing them to correlate practical implications to the theories they are learning. Increased financial skills such as forestry taxation and budgeting were requested by 10% of graduates. Comments on skills they felt should have been

included in the course are provided in Table 11.

In the earlier study of university science graduates (Cox and Pollock, 1997), there was a strong perceived need for additional skills rather than papers. In this study, negotiation, time management and communication skills were desired by 20 to 25% of all graduates.



“Recording tree DBH measurements”

SKILL	PERCENT
Computer (generic skills)	27
Report writing	11
Researching	10
Statisticsanalysis of data	10
Presentation/communication	8
Time management/planning	8
Marketing	7
Technical (harvesting, silviculture, roading)	5
Other: resource management, team work, personnel management, wood/soil science, biometrics, economics, a general forestry knowledge paper, species recognition	14

Table 10 - Most useful skills provided by the course

## WHAT SKILLS SHOULD HAVE BEEN INCLUDED IN THE DEGREE?

- More forest measurement programmes, MARVL and FOLPI
- Managing Health and Safety, legislation etc
- Forestry taxation/GIS,MIS/forest products industry ie. global pulp and paper
- Current industry software programs
- More operations research and marketing
- More practical experience
- Safety/hazards, more holiday work experience
- People management, increase pass mark so learn more (rather than rely on knowing the basics)
- Negotiation
- More on occupational safety and health
- Business admin & basic accounting
- Personnel management
- More operational practical forestry, people management skills
- Accounting; budgeting & forecasting, extend computer skills
- GIS, GPS, use of specialised mensuration tools, vertex etc
- Personnel management
- More emphasis on logging & logistics, longer more in-depth courses.
- Forest valuation, MARVL
- Human resource, finance, better processing paper
- Valuation, more software, logistics
- More management tools covered, Standpak, FOLPI, MARVL
- Most comprehensive course
- More emphasis on forest engineering, marketing, forest economics
- Forestry roading in detail, engineering mechanics of forestry machines (BE)
- More statistics, software, harvesting option should give more harvesting experience (BE)
- More practical experience, logging, silviculture and establishment (BCom (For))
- Interpersonal relations, contract negotiation (BTech)
- Practical based skills so you know what to look for when supervising (BCom (For))
- More marketing and budget management (BTech)
- More practical forest operations, how to manage/supervise personnel (BTech)
- More on RMA, more depth in silviculture (BTech)

*Table 11 - What skills should have been included in the degree, that were not?  
In no order of priority. All unmarked comments relate to BForSci.*

## Graduate perspective

### Composition of degree

Graduates were asked what they thought about the composition, or structure of the degree they had undertaken (Figure 11). A

comparison has been made between the BForSci which provided most (79%) of the respondents, and the other degrees. It is important to note that the number of respondents from the other degrees was



too small to draw valid conclusions. However, Figure 11 shows that fewer of this group commented on their degree being either well designed, or needing redesign. This could indicate that in

general, they were satisfied with the structure of their course. Overall, most graduates from all four courses thought the degree they had studied for had been satisfactorily designed.

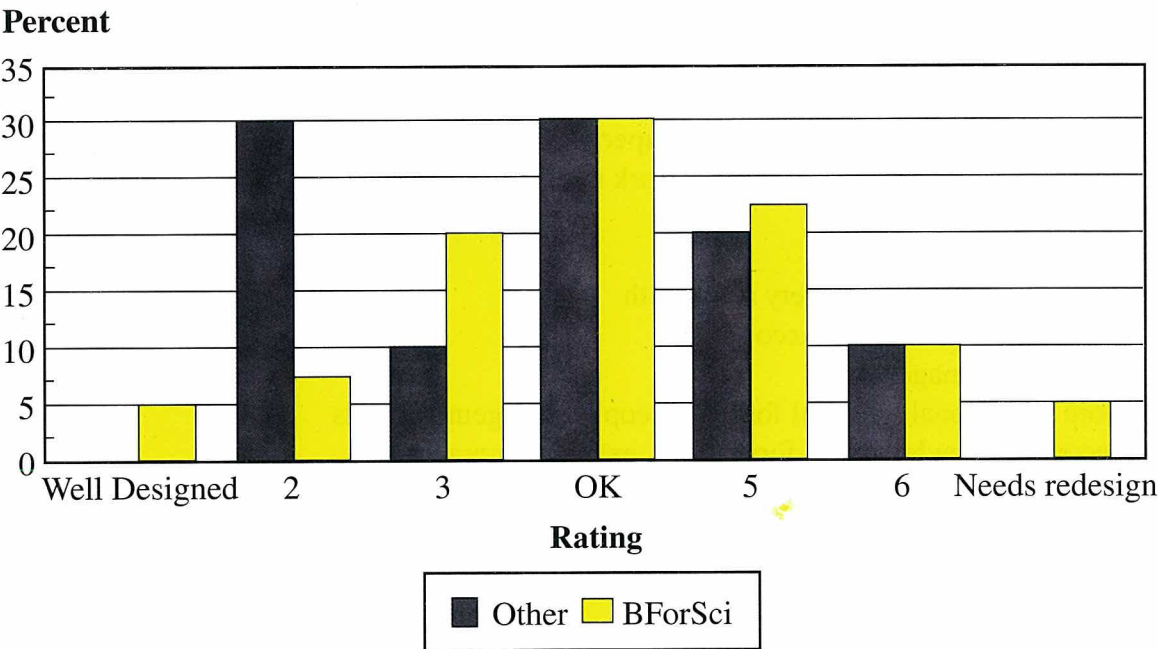


Figure 11 - Graduates' perception of the course composition

### Graduate Comments On How Courses Could Be Better Designed

Nearly half (44%) of the graduates thought that their degree needed more industry contact, with degree material updated to reflect current forest industry practices more accurately. Some graduates (18%) thought a higher practical component would make the degree more useful, especially when moving into a supervisory role. Comments from those students who have graduated from a degree programme containing forestry papers and have subsequently been employed, provide an insight into where gaps may lie in the training package. This information may help educational institutions to develop and deliver an improved training product. Comments

from graduates are presented unmodified as Appendix 3.

In the FITEC review of forestry graduate education (Deloitte, Touche Tohmatsu, 1994), there was a consensus among industry representatives that graduates from the BForSci degree were excellent technical foresters, but the greatest apparent lack was in the areas of commercial skills, report writing and the evaluation of available technology. It was also noted that there was an early need for supervisory skills in the careers of foresters.

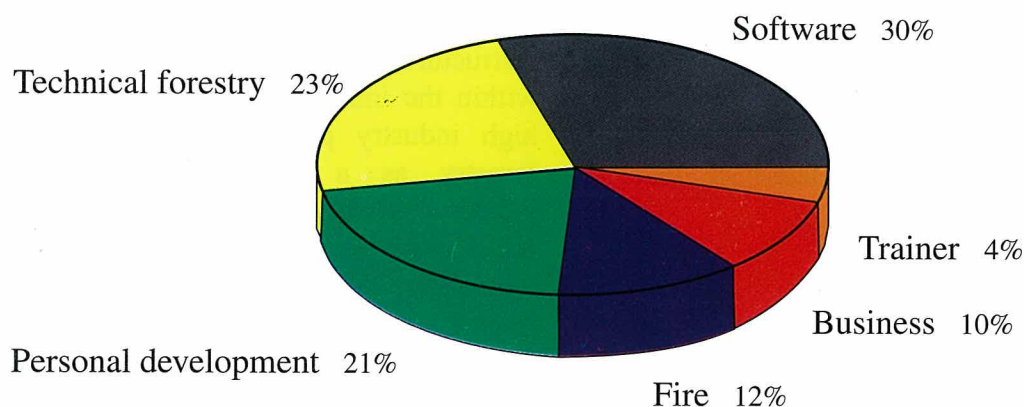
Low levels of contact between forestry educators and industry was an issue in the education review, which was supported by findings from the graduate survey.



## Additional Training Undertaken Since Graduating

Over half (57%) of those who were working in the forest industry when the survey was conducted, had undertaken some form of additional training since

graduating. Most (77%) of graduates had undertaken more than one type of additional training. The training undertaken subsequent to graduation in most cases reflected those skills that graduates indicated as lacking in their degree (Figure 12).



*Figure 12 - Additional training undertaken by graduates working in forest industry*

In most cases (58%), training had been necessary to obtain additional specific skills required for the job. In 25% of cases, additional training had been requested by the employer. Several graduates (17%) pursued further training for reasons of personal interest.

### Software training undertaken included:

- MS Access
- SAS
- GIS/GPS
- MS Powerpoint
- Advanced Excel and Word
- Standpak
- FOLPI
- MS Project



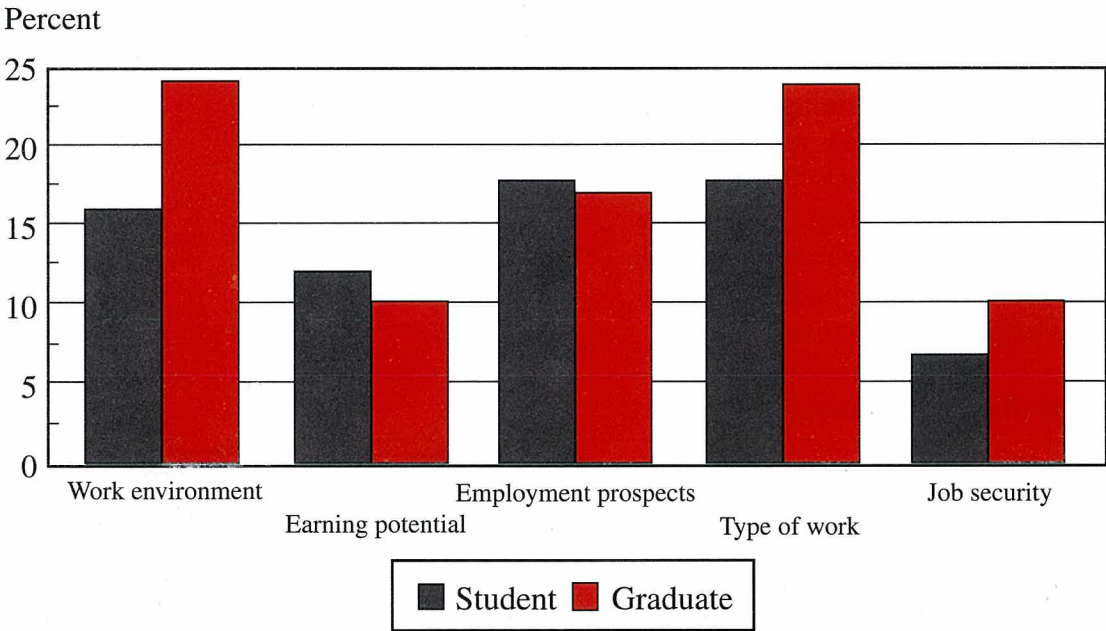
*"Tree identification tutorial"*

**Graduate Perceptions of the Forest Industry - A Comparison**

In the initial survey, the students were asked to rate the influence of a series of reasons for choosing a career in forestry. In the follow-up survey, they were again asked how important they now saw the same set of reasons for being in the forest industry. By comparing the responses of the students to that of the graduates, any changes in industry perception after exposure to the workforce can be identified. The student has by this time had the opportunity to experience the “real world” situation.

Surprisingly, graduates’ perceptions of the forest industry remained relatively

consistent with their initial perceptions (Figure 13). The work environment and type of work showed the most noticeable change between the student and graduate responses, with more graduates identifying these factors as being very important. Job security was also of greater importance to the graduates than it had been to the student group. This was not surprising given the economic climate at the time of the follow-up survey. Several of the larger forestry corporates were undergoing restructuring, and there was some concern within the industry about job security. A high industry profile, and the idea of forestry as a renewable, sustainable industry, were two factors which showed no change between the two surveys. Obviously, these two reasons had little impact on a students’ perception of the forest industry.



*Figure 13 - Changes in industry perception over time*

## CONCLUSIONS

The main findings from the study were:

- More males (84%) than females had enrolled in forestry-focused degree programmes.
- A personal interest in forestry and the outdoors was the most common reason for students enrolling in a degree which included forestry in the curriculum.
- A role in forest management was the preferred choice of job by the undergraduates.
- Location was the main reason students had decided to attend Waikato University. For those attending Lincoln University, course structure and subjects were the most popular reasons. Most of the students enrolled at the University of Canterbury said it was the only university offering the course at the time, and that the course was not available elsewhere.
- Half of the graduates surveyed had been employed by a forest company; the remainder were employed by consultants, in sawmills, and harvesting crews. Some (15%) had found employment outside of the forest sector.
- Surveyed graduates had worked in the industry an average of 2.6 years.
- Over half (57%) of graduates thought that their degree was essential to obtaining their first job.
- Nearly half (44%) of all graduates thought their course needed more industry contact, with course material updated to reflect current industry practices.
- The most common method by which graduates had obtained a job was through being headhunted. Over half (58%) had a job before they graduated.
- Most (86%) graduates carried out a range of tasks in their current job. The most common task was supervision (24%).
- Fifteen percent of graduates were working outside of the forest industry. Of these, 75% said they still wanted to work in forestry, but there were no jobs available.
- The most useful skills learned were in the use of a computer. Personnel management was the skill most requested by graduates.



*"Year 2 chainsaw safety practical - University of Canterbury"*

## REFERENCES

- Allen, J (1998): University of Canterbury School of Forestry, *pers. comm.*
- Bathgate, John (1988): University of Waikato School of Science and Technology, *pers. comm.*
- Byers, Janelle (1994): Career aspirations and industry perceptions of polytechnic forestry students - a pilot study. Liro report Vol 19, no 12.
- Byers, Janelle (1995): New Zealand Forest Owners' Association forestry workforce census 1994. Liro project report 57.
- Byers, Janelle (1996): Demographic composition of the management staff of smaller New Zealand forest companies. Liro report Vol 21, No 24.
- Cox, B.G and Pollock, R.W (1997): New Zealand graduates 1990: Follow-up survey, 1991 and 1996. Published as Ministry of Research, Science and Technology report.
- Deloitte Touche Tohmatsu (1994): Review of forestry graduate education. Report prepared for Forest Industry Training and Education Council, September 1994.
- 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, Richard (1994): Attitudes towards safety in the New Zealand forest industry 1994. Liro Project Report 53.
- Jayne, Vicki (1998): Take me to your leader. *In* New Zealand Forest Industries Magazine, February 1998, pp 14-15.
- Law, Gillian (1998): Sustainable forestry. *In* New Zealand Forest Industries Magazine, March 1998, p 41.
- Maplesdon, F. M and Langer, E. R (1993): Women in forestry science. *In* New Zealand Forestry, November 1993, pp 28-31.
- Miller, D.C. and Form, W.H. (1964): Industrial sociology: the sociology of work organisations. Second edition. Harper and Row, New York.
- Neilson, Tony (1998): Delivering on the promise. New Zealand Pine International, January/February 1998.
- NZFOA (1997): NZ Forestry Facts and Figures. In Co-operation with the Ministry of Forestry.

Robinson, Erle (1997): In a speech to NZFOA, 1997 AGM.

Sands, Roger (1997): Skilling Fields. *In* NZ Forest Industries, September 1997. Article by Vivienne McLean.

Schaffler, Lawrence (1996):NZ's Maori, New age foresters. *In* NZ Pine International, Feb/March 1996.

Sweet, G.B. (1989):New Education Initiatives. Career structures and employment opportunities in the forest industry. *In* FIEA Conference Proceedings, Rotorua.

## APPENDIX 1 - STUDENT SURVEY

### University Students - Forestry

University \_\_\_\_\_ Course \_\_\_\_\_

Year of Course \_\_\_\_\_

1. Name \_\_\_\_\_

2. Age \_\_\_\_\_

3. Are you - Female Male

4. Are you - NZ European, NZ Maori, Other, please specify \_\_\_\_\_

5. Current Address

Number \_\_\_\_\_ Street \_\_\_\_\_

Town/City \_\_\_\_\_

6. Phone Number \_(\_\_\_\_\_) \_\_\_\_\_

7. Permanent Home Address

Number \_\_\_\_\_ Street \_\_\_\_\_

Suburb \_\_\_\_\_

Town/City \_\_\_\_\_

8. Phone Number \_(\_\_\_\_\_) \_\_\_\_\_

9. Have either of your parents ever worked in forestry?

Mother Yes No

if yes, what job \_\_\_\_\_

Father Yes No

if yes what job \_\_\_\_\_

10. What are your parents occupations now?

Mother \_\_\_\_\_ Father \_\_\_\_\_

11. Please list any other polytechnic, university or other courses you have completed

Course	Institution	Years Completed
eg BA	Victoria University	1992-1994

12. Did you have any contact with the forest/logging industry before beginning this course?  
**Yes**                      **No**

If yes, what was it? \_\_\_\_\_  
 \_\_\_\_\_

13. Did you work in the forest/logging industry before beginning this course?  
**Yes**                      **No**

If yes, where did you work \_\_\_\_\_  
 \_\_\_\_\_

14. What did you do \_\_\_\_\_

15. How long did you work there \_\_\_\_\_

16. Why did you leave \_\_\_\_\_  
 \_\_\_\_\_


17. Why did you choose to do a forestry course?  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



18. What were your main reasons for choosing a forestry degree?

**Please tick the appropriate box**

	Very Important				Not at all important
Reason	1	2	3	4	5
Work Environment					
Future Earning Potential					
Employment Prospects					
Type of Work					
Job Security					
High Profile of Industry					
Renewable, Sustainable Industry					
Gain a Qualification					
Other					

 Please specify

19. Why did you choose to do **this** forestry course at **this** university?

20. Who paid your fees for this course? **Please circle one**

You              Your family              Student Loan   Iwi

Employer        Te Puni Koriri Family/Iwi Trust

Other, please specify \_\_\_\_\_



21. Did you receive any funding scholarships or grants from forestry companies to do this course? Which company?

---

22. Did you receive any funding, scholarships or grants from any other source to do this course? Who from?

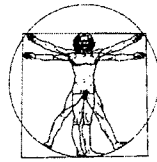
---

22. What sort of job do you hope to obtain when you finish your course?

---

---

***Thankyou for your time***



# University Graduate Follow-up Survey

You may recall taking part in a Liro study while you were attending university. This is the second part of that project, and through this survey we aim to track the career paths of university graduates.



**Please complete the following questions to your best ability and return to Liro in the accompanying pre-paid envelope.**

*NAME:*.....

*Please circle or tick the answer that applies to you.*

**Sex:**            M / F

**Ethnicity:**    NZ European, NZ Maori, Other (please specify).....

- 1 **Course:** BForSci BE(For) BCom (For) BSc(Tech)
- 2 **University:** Canterbury Lincoln Waikato
- 3 **Years since graduation:**.....
- 4 **How often do you use the skills you learned in the course?**

Always 1 2 3 4 5 6 7 never

- 5 **How important was having a forestry degree to obtaining your first job?**

essential 1 2 3 4 5 6 7 Not needed

- 6 **How well do you think you would have coped with the job if you had not undertaken this degree?**

excellent 1 2 3 4 5 6 7 poorly

- 6 **What did you think of the composition of the course**

well put together 1 2 3 4 5 6 7 Needs redesign

Do you have any comments on how it could be better designed?

.....

.....

.....

- 7 **Where are you currently employed?** 8 **How did you obtain this job?**

- ☐ Forest company
- ☐ Forest consultant
- ☐ Forest contractor
- ☐ Processing/sawmill
- ☐ Overseas
- ☐ Continuing studies
- ☐ Looking for work

- ☐ Internal appointment
- ☐ Advertisement
- ☐ Head hunted from uni
- ☐ Word of mouth
- ☐ Friend advised of position
- ☐
- ☐

- 9 In the previous survey you were asked the main reasons for choosing a forestry degree. Now that you have graduated, how important do you see the following reasons for being in the industry?

<i>Reason</i>	<i>Very Important 1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>Not important 5</i>
<b>Work environment</b>					
<b>Earning potential</b>					
<b>Employment prospects</b>					
<b>Type of work</b>					
<b>Job security</b>					
<b>High industry profile</b>					
<b>Renewable, sustainable industry</b>					
<b>Positive environmental aspects</b>					

**For the following questions, please complete the section applying to you:**

**Section A: If you are currently employed in the forest industry  
(Q 10-15)**

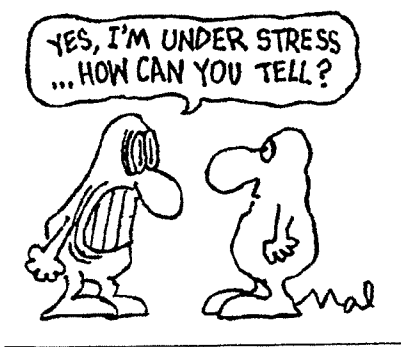
**Section B: If you are not working in the forest industry  
(Q 16-22)**

**Section A: If currently employed in the forest industry**

**Please answer questions 10-15**

- 10    How long did it take for you to get a job after graduating?.....
- 11    How long have you been working in the industry? .....years
- 12    In which area(s) are you currently working?(tick all those that apply)

operational-harvesting	
operational -silviculture	
supervisory	
planning	
roading/engineering	
marketing	
processing	
other(identify)	



**13 Please complete the following table:**

Most useful skills learned in course	Have you used these skills in the workplace? Y/N	Skills unused in the workplace

Now you are employed, what skills do you think should have been included in the forestry course which were not?

.....

.....

**14 Have you undertaken any additional training since graduating?(please complete the following table)**

<i>Name of Course</i>	<i>Course Content (mgt,marketing,computer planning etc)</i>	<i>Who instigated (self/employer)</i>	<i>*Reason for undertaking training</i>

*\*Reason for undertaking training:*  
*(1) personal interest*  
*(2) needed skills in area*  
*(3) Employer requested*  
*(4) other (please specify).....*

**15 Career Progression: (like your CV)**

<i>Employer</i>	<i>Position</i>	<i>Years in position</i>	<i>Shift ↑/↓/→</i>

*If employed in the industry, you have now completed the survey.*  
*If not currently employed in the industry, please proceed to section B.*

***Thank you for your participation.***

*If you have any questions please contact Tina Cummins, Liro Limited,  
Ph 07-348 7168. E:mail: Tina.cummins@liro.fri.cri.nz*



**Section B: If not currently employed in the forest industry**

**Please answer questions 16-22**

**16 Why are you not working in the forest industry?**

Skills learned in course were not useful	
No jobs available	
Worked in industry but left because dissatisfied	
Worked in industry but left due to restructuring	
Skills transferable to another industry	
Other (specify)	

**17 Where are you currently employed?**  
(please specify industry and position).....

**18 How long did it take for you to get a job after graduating?.....**

**19 Do you still wish to work in the forest industry? Yes/No**  
If no, why not?  
.....  
.....  
.....

**20 Please complete the following table:**

Most useful skills learned in course	Skills unused in the workplace	What skills do you think should have been included

**21 Have you undertaken any additional training since graduating?(please complete the following table)**

<i>Course Name</i>	<i>Course Content</i>	<i>Who instigated (self/employer)</i>	<i>*Reason for undertaking training</i>

*\*Reason for undertaking training:*  
*(1) personal interest*  
*(2) needed skills in area*  
*(3) Employer requested*  
*(4) other (please specify).....*

**22 Career Progression: (like your CV)**

<i>Employer</i>	<i>Position</i>	<i>Years in position</i>	<i>Shift ↑/↓/→</i>

**Finally, do you have any additional comments about your forestry training?**

*Thank you for your participation.*

*If you have any questions please contact Tina Cummins, Liro Limited,  
Ph 07-348 7168. E:mail: Tina.cummins@liro.fri.cri.nz*

### APPENDIX 3 - GRADUATE SURVEY

Graduate Comments on the Structure of their Degree - in no order of preference

#### **Batchelor of Forestry Science**

Course too intense, particularly in final year. Needs more hands-on like MARVL  
More NZ forestry oriented, especially. training, fire and forest health issues  
More forestry school contact with industry in general; push students at industry  
More industry focused composition, current lecture material, guest industry lecturers  
More focus on marketing  
More industry relevance, topical issues  
Lecturers should be more in touch with industry  
Include negotiation skills, lecturers more aware of industry  
Up to date information  
More practical implications of forest management applications eg, MARVL, roading  
People management component needed  
Requires greater practical input  
Needs more industry based information, new lecturers  
Needs lecturers in the industry who know the topics taught  
Greater component of indigenous forestry, c/f exotic plantation forestry in NZ  
Specialisation in final year would be good, keep subject range broad early on  
Computer science or geology more relevant than 12pt chemistry  
More practical, more depth to courses (like more than 1 term Harvest Planning)  
Lecturers should have more recent industry experience, many are just academics  
More emphasis on wood processing. industry  
Estate modelling and harvest engineering models out of date. Course generally out of date.  
More industry input. More exposure of lecturers to industry  
Computer work good, greater practical component would be better  
People management skills. More up to date computer packages. Bigger business component  
More practically oriented lessons, no FOLPI included in current course  
Better organised lecturers. More hands on exposure to industry  
More industry input. Up to date lecturers.  
More input from industry. Lecturers must take into account what industry is currently doing  
Course focused on specialised, large company careers. Needs some flexibility to other careers  
More practical work  
Papers generally poorly structured/focused. Teaching level not appropriate to honours level  
Overall needs more interaction with industry. More consideration of course subject timetabling

#### **Batchelor of Engineering (Forestry)**

More industry input, forestry portion out of touch with current industry  
Less movement between Canterbury and Lincoln  
More statistics, higher level maths, option for processing or harvesting

#### **Batchelor of Science (Tech - Forestry option)**

More forestry related subjects(forestry economics, engineering)  
Course pretty good. Most things can be adapted to other situations  
More focus on NZ production forestry

#### **Batchelor of Commerce (Forestry)**

Should be more practical content such as skills used in silviculture and processing eg. grading  
sawn timber