

## "THE FUTURE MANPOWER NEEDS OF THE LOGGING INDUSTRY IN HAWKE'S BAY"

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### INTRODUCTION

The long awaited increase in wood availability and harvesting in the Hawke's Bay is about to commence. This paper reviews the existing logging scene and identifies the likely manpower levels required to meet future harvesting targets.

### THE HAWKES BAY RESOURCE

Hawke's Bay Forests are generally small to medium sized holdings established along the foothills of the Eastern Ranges and are evenly spread between Wairoa and Waipukurau. (See Appendix A).

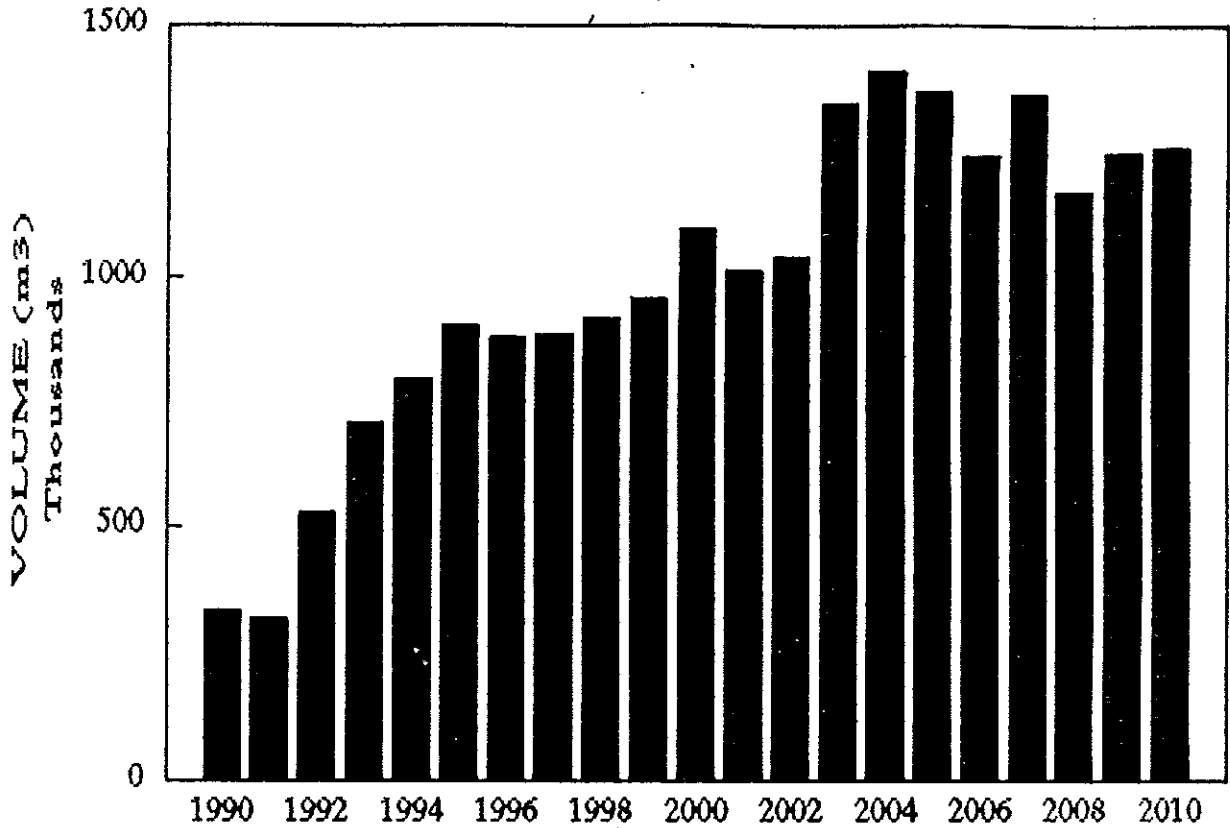
The rapid increase in wood availability occurs in the next ten years and Figure 1 shows that the annual sustained yield of about 1.3 million M<sup>3</sup> is reached about the year 2003. This represents a four fold increase on the 1990 cut.

All plantation areas over 20 hectares are included regardless of ownership i.e. State, Company, Local Authority, Private and Maori Blocks. The approximate stocked area is 71,000 hectares and covers all established species of which Radiata accounts for 90%.

Most Forests have been intensively tended and yield volumes of between 500-700M<sup>3</sup> per hectare are expected at age 28.

### HARVESTING - HISTORICAL

During the phasing out period of the native logging there were large volumes of privately owned Radiata coming on stream that could not be used on the domestic market. This led to the establishment of an Export based logging operation during the mid 60's, which was maintained until the early 70's. About half of the Contractors employed for this work were from outside the area & most returned to their base when the operation was scaled down. It was also about this time that the first logging of the State resource in Gwavas Forest was started. During this "boom" period the major Sawmillers, Robert Holt & Sons were still cutting large volumes of native species from their private resources.



HAWKE'S BAY WOODFLOW

FIGURE 1

These operations finally wound down in the late 70's and as there were insufficient volumes of Radiata available a number of small sawmills were closed.

The relative shortage of mature Radiata in Hawke's Bay during the 80's has obviously depressed the level of logging activity which will make the required workforce build-up in the 90's more difficult. The annual volumes of clearfelled wood during the 80's has fluctuated between 120,000M<sup>3</sup> and 200,000M<sup>3</sup> or between three and six crew equivalents. Fortunately, the growing regimes of the Carter Holt Harvey Forests Limited resource and the demand

for thinnings furnish for the Pan Pac Pulpmill has allowed the development of an experienced Contractor thinning group of some 13 crews. These crews are equipped with small crawler tractors and the systems developed for extraction from steep hill country were tested by trials that were commenced in 1982. The volume of thinnings from these operations has now reached 105,000M<sup>3</sup> annually. By contrast few opportunities have existed for the production of Radiata thinnings from State areas due to the early thinning to waste to final crop. Token volumes of Douglas fir have been extracted from Esk and Patunamu Forests.

HARVESTING - CURRENT

A total of 22 Contractor crews were engaged in logging in Hawke's Bay as at 1st June 1990. The breakdown by system, manpower numbers and expected productivity is detailed below in Figure 2.

All three haulers are operating in State areas and are all different machines. An Ecologger working for Timberlands in Esk Forest was purchased new in 1987 and is operated by Contractor Glenn. A vintage Skagit SJ7 (ex KLC) is the prime hauling unit at Patunamu and has been operated by Sonny Grant for the past two years. The most recent addition has been a Madill 171 imported new by Mitchell Bros. and has been operating for Timberlands in Mohaka Forest since early May. This is the first of the "new generation" Madill's to be seen in New Zealand. Its performance will no doubt be monitored by many groups to assess its

compatibility with the new tree crop and systems required to handle the various terrain types.

Four of the five skidders operating in Hawke's Bay at present are in the medium size range (95 KW) the other being a Cat 528 which has been working in Esk since January this year. There has been a tendency in the past to select the lighter, medium sized machine to minimise tracking width on steeper country and reduce ground pressure on the deep top soils that cause traction problems in the winter months.

Until recently all tractors engaged in thinning were either Komatsu D31 or Cat D3 machines (50 KW). Two Cat D4H (high drive) machines were recently introduced and their performance is yet to be assessed.

	<u>CREWS</u>	<u>MAN POWER</u>	<u>ESTIMATED PRODD. M<sup>3</sup>/pa</u>	<u>PROD. RANGE M<sup>3</sup>/MAN HOUR</u>
Clearfell - Ground based	5	27	155,000	4.0-5.5
- Hauler	3	23	90,000	2.25-3.5
Thinnings - Ground based	14	45	105,000	1.25-2.0
	<b>22</b>	<b>95</b>	<b>350,000</b>	

FIGURE 2

Hawke's Bay Logging Statistics  
at 1st June 1990

Loader selection for clear-fell favours wheel machines mainly for reasons of mobility as many of the crews are in small blocks. Two of the eight crews have Excavator type loaders, both are in State areas and require few shifts between settings. The loading of thinnings is a combination of both Bell Logger and Self Loading trucks.

From casual observations it is apparent that most of the 95 loggers presently engaged are from a rural background which could be expected because of the predominance of farming in Hawke's Bay. Those who were recruited from outside Hawke's Bay are usually from the Bay of Plenty and they are normally machine operators or key personnel in the crew. From a recent L.I.R.A. workforce survey the following are statistics of the Hawke's Bay Logger compared to their Bay of Plenty counterpart. (see Figure 3 below).

The comparisons are as expected - the lower years in logging is probably due to lower levels of logging work available. There has been a significant increase in the percentage of loggers with certificates, the figure has moved from 26% in 1989 to 66% this year. The improvement is due to the appointment of two full time Company Trainers.

The last three Contractors to have secured long term Contracts have all come from outside the Province. These were recruited from Bay of Plenty, Wairarapa and Otago. In all cases these Contractors have arrived with one or two experienced operators with the balance of the crew being recruited locally.

	<u>HAWKE'S BAY</u>	<u>BAY OF PLENTY</u>
Average Age	30	31
Years In Logging	6	10
Years In Gang	2	3
% With L & F.I.T.B. Certif.	66%	57%

FIGURE 3

Logger Statistics  
May 1990

(By courtesy of L.I.R.A.)

### FUTURE HARVESTING - MANPOWER

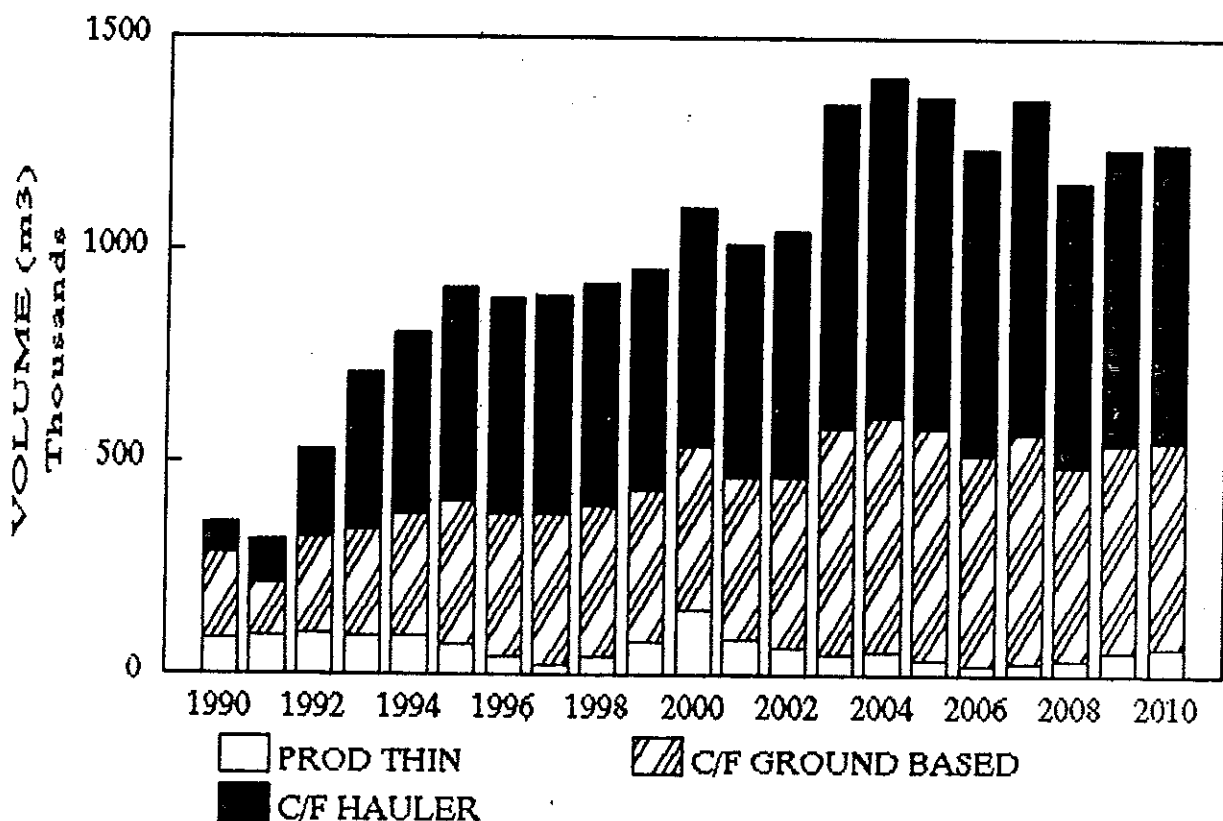
There will be many opportunities for improving logging productivity over the next ten years and it would be difficult at this stage to predict the effects of mechanisation on manpower requirements. Appendix B shows the Model Crew Base for each of the three systems that have been used in our predictions. In the case of ground based operations there are not many alternative machine configurations and current machinery and manning has been used. In the case of haulers it is evident that a number of "new generation" haulers will be required and a likely increase in productivity has been assumed.

The system requirements have been established by terrain surveys in the major resource areas and the chart

below shows the systems by volume through to the year 2010.

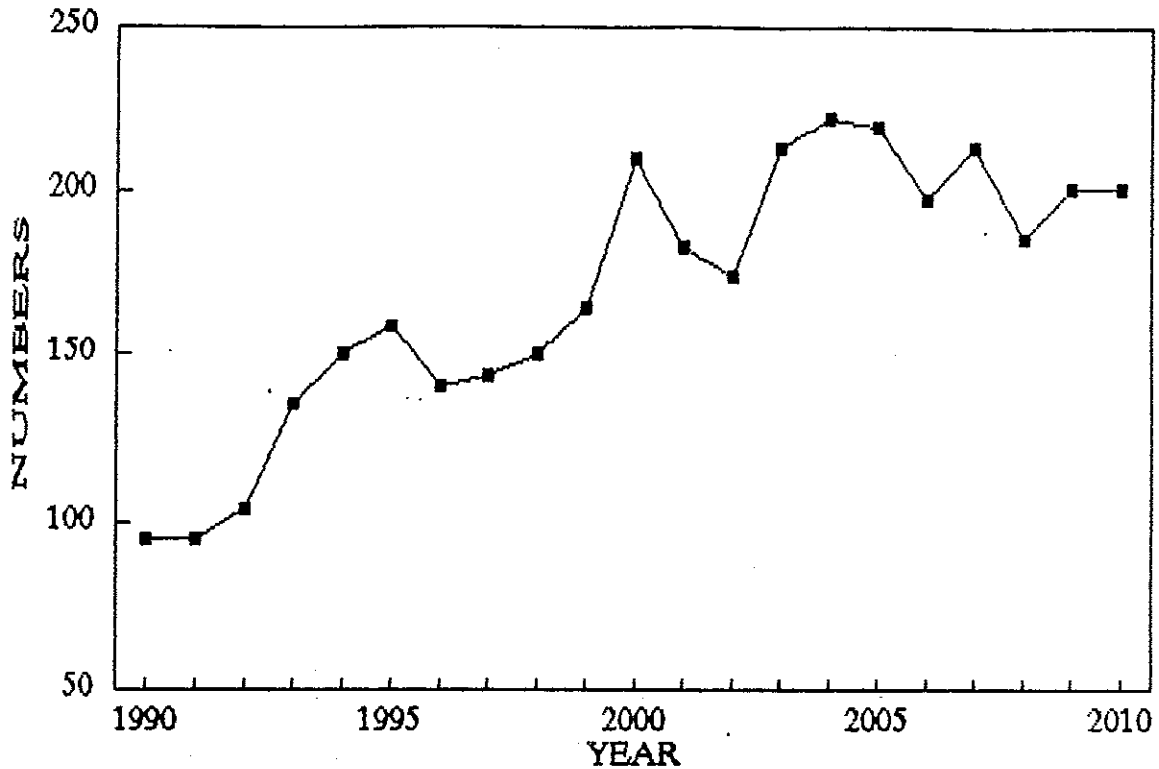
Hauler terrain averages 58% of the clearfell cut, lower than earlier estimates which were based mainly on the State resource. With the exception of an isolated high thinning volume in the year 2000, wood supply is devoid of extreme fluctuations. The major expansion in hauler systems occurs between 1993 and 1997.

Appendix C details crew requirements and manpower numbers according to resource availability while manpower needs are presented in the Figure 5 graph.



HARVESTING SYSTEMS

FIGURE 4



TOTAL MANPOWER NEEDS

FIGURE 5

It should be noted that there has been no allowance made for absenteeism which could add a further 5% to the required numbers.

Having established the manpower needs the next step is to predict how these positions will be filled. Manpower requirements peak at around 215 in the year 2004 - an additional 120 loggers. Recruitment of both Contractors and crew personnel will be from various sources and the major ones are identified:-

(1) The expertise developed in the current thinning crews will be an obvious source. Thinning is regarded by some as a first step before progressing to a clearfelling operation. Obviously, a

number of current thinning Contractors will be successful in bidding for clearfell contracts and they would retain current employees. The positions created in thinning crews would most likely be filled by recently trained personnel or those with chainsaw skills but little operational experience.

(2) Trainees from access training programmes will be another source of manpower. There are three "Logging" Courses being run annually in Napier with a total of 36 people attending. Due to the difficulties in acquiring operational experience these courses are basically providing chainsaw tuition over a 10 week period. A scheme whereby

the top five graduates of each Course are given further on job training in crews is currently being planned by Industry and Access administrators.

(3) Notwithstanding the competitive climate that will prevail in other areas for experienced Operators and Leading Hands, there will be many from other areas of the Country who will be attracted to Hawke's Bay for both work opportunities and the exceptional lifestyle and climate the area has to offer.

(4) Seven new Contract Hauler crews will be needed over the next ten years and efficient contractors capable of managing a high producing crew will have to be found. There appears to be a shortage of top Hauler Contractors in N.Z. and there is an urgent need to identify people who show themselves to have management skills and some practical abilities and interest in hauler operations. These individuals need the support of the prospective employer to further develop their skills which could include working in hauler crews in the Pacific North West. A "new breed" of local Contractor will be required - not necessarily drawn from the "lowest tender bid" situation. The "new breed" could well come from the Supervisory, Research, Ranger or Forester ranks! The Kiwi logger needs to be identified early and requires more encouragement and support from prospective employers to develop management and business skills etc..

(5) There is already interest from American and Canadian Contractors wishing to relocate here with their

machines and the advantages of this option are already evident in the Canadian crew recently recruited for the East Coast. If we can learn something from their expertise and at the same time achieve lower logging costs then there will be justification for signing Contracts with them. There would need to be a balance between overseas and local loggers.

(6) The Labour Department report that of the unemployed in the Napier/Hastings area at present, 88 are recorded as being "skilled loggers". The level of skill would not be high but there would be a base to work on for further training.

#### SUMMARY

1. Hawke's Bay manpower requirements will increase by 121% in the next 10 years (to year 2000) and peak in year 2004 at 222 loggers.

2. Clearfell crew numbers will increase by three for ground based and eight for haulers by the year 2000.

3. The impact for manpower is eased by the scaling down of labour intensive thinning operations and the change to high producing clearfell systems.

4. Recruitment for crew positions should not be a problem provided orderly training programmes are maintained.

5. Identification of highly motivated Contractors to manage high capital hauler operations efficiently is the area of concern and requires further attention.

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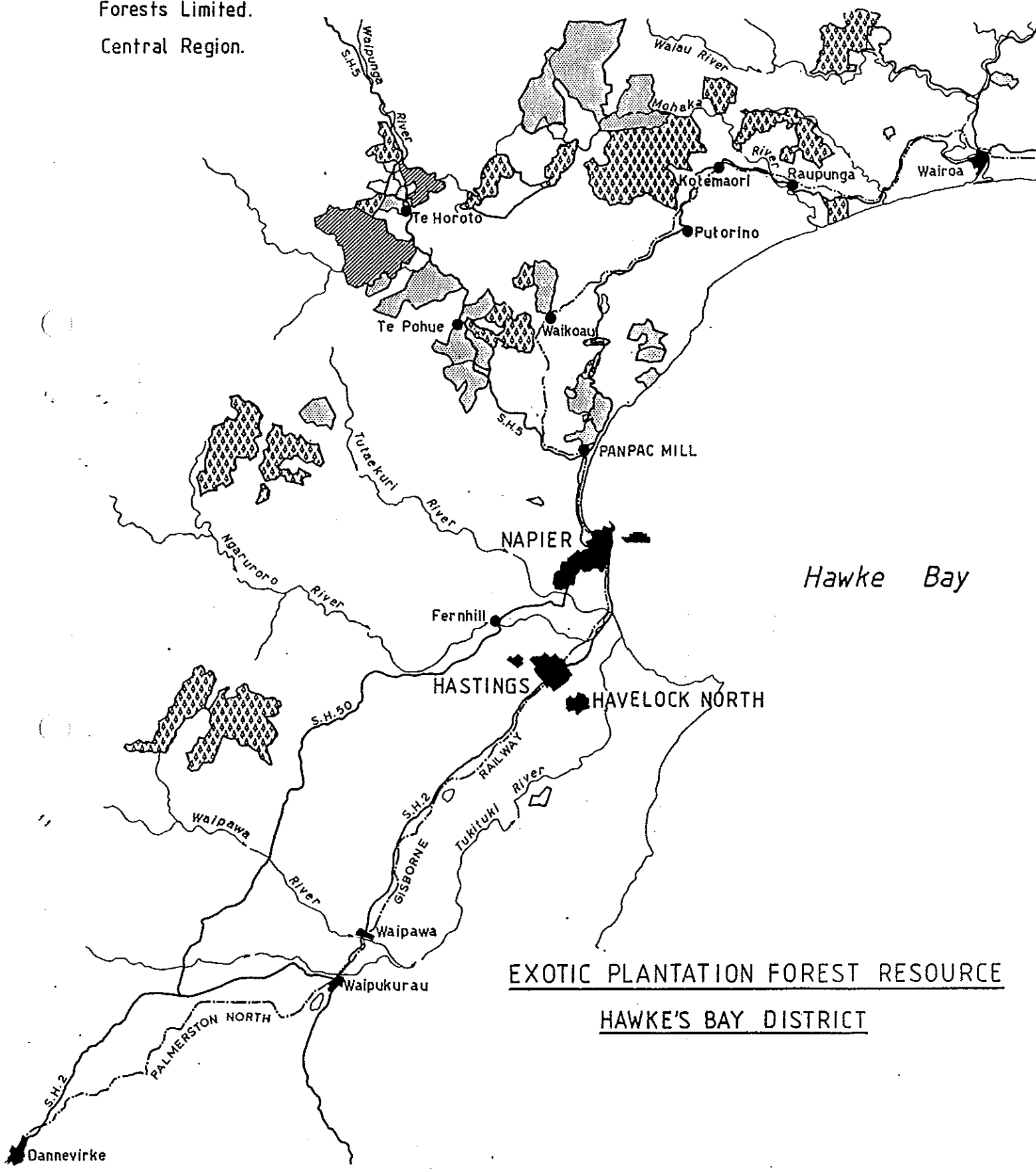
Gaskin J., Smith B., Wilson P. "The New Zealand Logging Worker - A Profile". P.R. 44 February 1980.





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A P P E N D I X B

MODEL CREW PRODUCTIVITY

1. GROUND BASED

Mid-Range Skidder

Tractor (part time)

Hydraulic loader

Manpower - 6

Expected daily production 210M<sup>3</sup>

2. HAULER

50% of Haulers employed are Madill 171 (or similar)

Balance could be 071 or 009 etc.

Tractor (part time)

Hydraulic loader

Manpower - 9

Expected daily production 225M<sup>3</sup>

Man hour productivity 3.1M<sup>3</sup>

*at least 4.5/m<sup>3</sup>*

*25.7  
8.2*

3. THINNINGS

Small tractor

Manpower - 3

Expected daily production 32M<sup>3</sup>

Man hour productivity 1.3M<sup>3</sup>.

<u>YEAR</u>	<u>THINNINGS</u>	<u>CREWS C/F GR.B.</u>	<u>HAULER</u>	<u>TOTAL CREWS</u>	<u>CREWS + OR -</u>	<u>TOTAL MANPOWER</u>	<u>MANPOWER + OR -</u>
1990	14	5	3	22		95	
1991	14	5	3	22		95	
1992	14	5	4	23	+ 1	104	+ 9
1993	14	5	7	26	+ 3	135	+31
1994	14	6	8	28	+ 2	150	+15
1995	12	7	9	28		159	+ 9
1996	6	7	9	22	- 6	141	-18
1997	4	7	10	21	- 1	144	+ 3
1998	6	7	10	23	+ 2	150	+ 6
1999	11	7	10	28	+ 5	165	+15
2000	21	8	11	40	+12	210	+45
2001	12	8	11	31	- 9	183	-27
2002	9	8	11	28	- 3	174	- 9
2003	7	11	14	32	+ 4	213	+39
2004	7	11	15	33	+ 1	222	+ 9
2005	6	11	15	32	- 1	219	- 3
2006	4	10	14	28	- 4	198	-21
2007	4	11	15	30	+ 2	213	+15
2008	5	9	13	27	- 3	186	-27
2009	8	10	13	31	+ 4	201	+15
2010	8	10	13	31		201	

APPENDIX C

