

# OVERVIEW

# 2

New Zealand's net stocked planted production forests covered an estimated 1.76 million hectares as at 1 April 2008. This total area is thought to be accurate to about plus or minus 5 percent. For further information refer to chapter 5, Reliability of data.

The total planted forest stem volume is estimated to be 446 million cubic metres with an average forest stand age (area weighted) of 15.2 years.

Table 2.1 (page 4) provides key national forestry statistics as at 1 April 2008 and compares these with statistics for 2007.

Of the total forest area, 70 percent is in the North Island and 30 percent is in the South Island. The Central North Island wood supply region makes up 30 percent of the entire planted forest estate.

Figures 8.1 and 8.2 (see pages 16–17) in this report show the location of New Zealand's planted forests as identified in the New Zealand Land Cover Database version 2 (NZLCDB2).

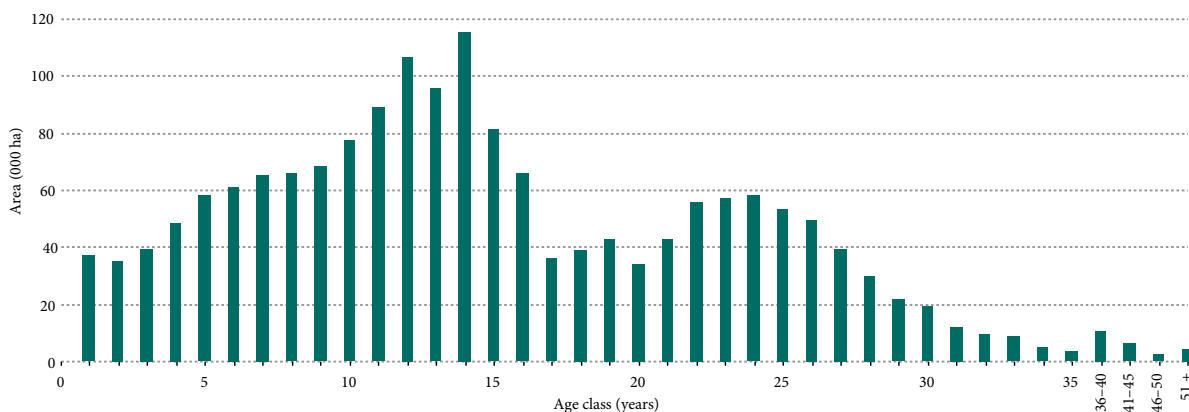
Figure 2.1 shows the age structure of the New Zealand planted forest estate. Very little of the forest area is planted in trees older than 32 years, a reflection of the rotation age of the dominant species, radiata pine. Radiata pine is typically harvested between 26 and 32 years old. The figure shows that the areas of forest planted from the late 1970s to the mid-1980s are now approaching harvest age. Also, the large areas of forest planted between 1992 and 1998, now 10 to 16 years old, are very apparent. Harvesting of these areas will begin from around 2020.

## »» SPECIES AND SILVICULTURE

As seen in Figure 2.2, radiata pine is the dominant species, making up 89 percent of the planted forest area. Douglas-fir is the next most common species, making up 6 percent. The remainder of the area is planted in cypress species, eucalyptus species, other softwood species and other hardwood species.

Figure 2.3 indicates that about 58 percent (919 000 hectares) of the radiata pine planted forest estate is, or is expected to be, pruned to a height of at least four metres. Approximately 13 percent (117 000 hectares) of pruned radiata pine is older than 25 years, while

»» FIGURE 2.1: TOTAL ESTIMATED PLANTED PRODUCTION FOREST AREA BY AGE CLASS, AS AT 1 APRIL 2008<sup>1</sup>



### Note

1. The area is shown for each age in single years up to 35 years. After this, five-year age classes are shown.

17 percent (155 000 hectares) of pruned radiata pine is between 21 and 25 years old. About 70 percent (647 000 hectares) of the pruned radiata pine is 20 years old or younger.

The area of production thinned forest has declined over the last decade. Approximately 16 percent of the radiata pine planted forest currently is, or is expected to be, production thinned. In 1995, 28 percent of the radiata pine forests was, or was intended to be, production thinned. In the Central North Island region production thinning of the radiata pine resource has decreased from 50 percent in 1995 to 21 percent in 2008.

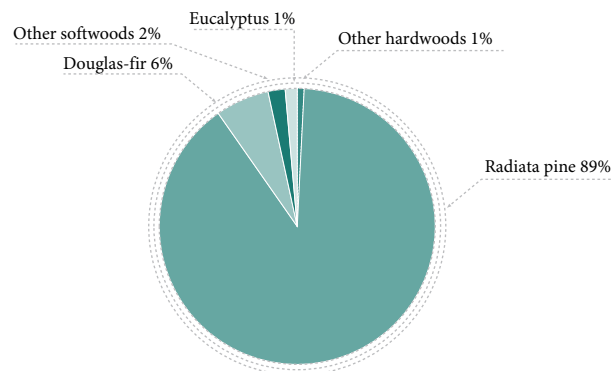
Information collected in the 2008 survey indicates that 60 percent of the forest resource is first-rotation forest, 36 percent is second or subsequent rotation, while information is incomplete for 4 percent of the estate. Of the identified first-rotation forest, 53 percent is aged 15 years or under.

### ▶▶ PLANTING

An estimated 2400 hectares of new forest were established in 2007. It is provisionally estimated that 1000 hectares of new forest was established during 2008.

Figure 2.4 shows new forest planting levels since 1920. The average new planting rate over the last 30 years has been

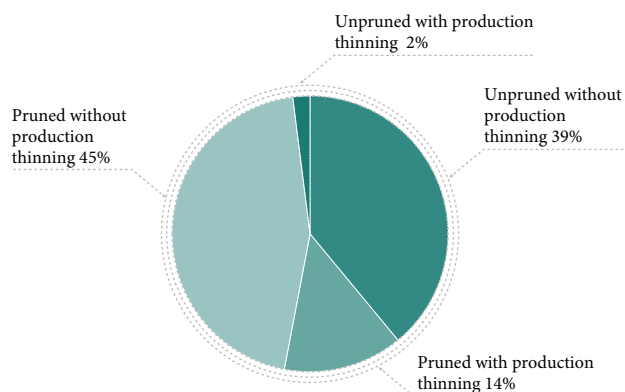
▶▶ FIGURE 2.2: SPECIES DISTRIBUTION – 2008<sup>1</sup>



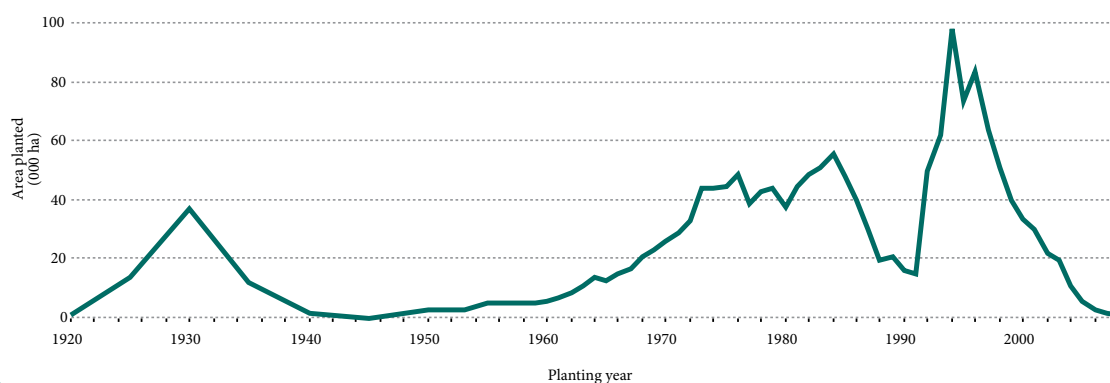
**Note**

<sup>1</sup> Percentage may not add to 100 percent due to rounding.

▶▶ FIGURE 2.3: RADIATA PINE BY TENDING REGIME – 2008



▶▶ FIGURE 2.4: NEW FOREST PLANTING 1920–2008



»» TABLE 2.1: NATIONAL EXOTIC FOREST ESTATE STATISTICS

AREA AND STANDING VOLUME STATISTICS	AS AT 1 APRIL 2007 <sup>1</sup>	AS AT 1 APRIL 2008	DIFFERENCE
<b>FOREST AREA</b>			
Net stocked area (ha)	1 790 000	1 761 000	-29 000
Harvested area awaiting restocking (ha)	35 600	47 500	11 900
<b>Total forest area</b>	<b>1 825 600</b>	<b>1 808 500</b>	<b>-17 100</b>
<b>GROWTH CHARACTERISTICS</b>			
Standing volume (000 m <sup>3</sup> )	434 039	445 933	11 894
Average standing volume (m <sup>3</sup> /ha)	242	253	11
Area-weighted average age (years)	14.8	15.2	0.4
<b>AREA BY SPECIES</b>			
Radiata pine (ha)	1 597 000	1 575 000	-22 000
Douglas-fir (ha)	113 000	111 000	-2 000
Cypress species (ha)	8 000	9 000	1 000
Other softwoods (ha)	27 000	26 000	-1 000
Eucalyptus species (ha)	29 000	25 000	-4 000
Other hardwoods (ha)	16 000	15 000	-1 000
<b>RADIATA PINE AREA BY TENDING REGIME</b>			
Pruned with production thinning (ha)	218 000	213 000	-5 000
Pruned without production thinning (ha)	758 000	706 000	-52 000
Unpruned with production thinning (ha)	37 000	34 000	-3 000
Unpruned without production thinning (ha)	584 000	622 000	38 000
<b>PLANTING STATISTICS</b>			
	<b>YEAR ENDED 31 DECEMBER 2006<sup>1</sup></b>	<b>YEAR ENDED 31 DECEMBER 2007</b>	<b>DIFFERENCE</b>
<b>NEW PLANTING</b>			
Total estimated new planting (ha) <sup>2</sup>	2 600 <sup>3</sup>	2 400	-200
Restocking (ha)	34 400 <sup>3</sup>	34 700	300
<b>HARVESTING STATISTICS<sup>4</sup></b>			
	<b>YEAR ENDED 31 MARCH 2007<sup>1</sup></b>	<b>YEAR ENDED 31 MARCH 2008</b>	<b>DIFFERENCE</b>
<b>HARVESTING</b>			
Area clear felled – all species (ha)	43 000 <sup>3</sup>	41 400	-1 600
Area clear felled – radiata pine (ha)	38 700 <sup>3</sup>	38 500	-200
Volume clear felled – all species (000 m <sup>3</sup> )	19 075 <sup>3</sup>	18 663	-412
Volume production thinned – all species (000 m <sup>3</sup> )	251	195	-56
Total volume removed – all species (000 m <sup>3</sup> )	19 326	18 858	-468
Average clear fell yield – all species (m <sup>3</sup> /ha)	444	451	7
Volume clear felled – radiata pine (000 m <sup>3</sup> )	17 906 <sup>3</sup>	17 753	-153
Average clear fell yield – radiata pine (m <sup>3</sup> /ha)	463	461	-2
Area-weighted average clear fell age for radiata pine (years)	28.1	27.9	-0.2
Estimated planted forest roundwood removal (000 m <sup>3</sup> ) <sup>5</sup>	19 897 <sup>R</sup>	20 388	491

**Notes**

1. Source: *A National Exotic Forest Description as at 1 April 2007*, Ministry of Agriculture and Forestry, 2008.

2. The method used to estimate new planting is described on page 6 of this report.

3. Estimates from 2007 NEFD survey and Statistics New Zealand, *Agricultural Production Census 2007*.

4. All volumes are reported as recovered volumes inside bark.

5. Source: *Annual log and roundwood removal statistics*, Ministry of Agriculture and Forestry, 2008. This is an indirect estimate that uses conversion factors for each forestry product to estimate the total roundwood input that would be required to produce total forest product outputs. It is included here as a comparison with the direct estimate of the total volume removed from the 2008 NEFD Survey.

**Symbols**

R Revised.

37 500 hectares per year. In the period 1992 to 1998, new planting rates were high – averaging 69 000 hectares per year. Since 1996, new planting has declined. At 1000 hectares in 2008, new planting is at its lowest level since 1945.

It is estimated that between 1990 and 2008, about 683 000 hectares of new forest were established. While new entrants have planted a significant area of this new forest during the 1990s, 70 percent (1.23 million hectares) of the entire forest resource is owned by growers with more than 1000 hectares of forest.

### »» DEFORESTATION<sup>1</sup>

The trend of not replanting forest after harvesting, and in a number of cases converting immature forest to pasture, continues. This started on a larger scale in 2004. New Zealand has always had a dynamic landscape so changes in land use are not unusual. However, historically little conversion of planted production forest land has occurred. It is estimated that approximately 15 600<sup>2</sup> hectares of forest was converted to another land use in the year ended 31 March 2008.

In a separate *2008 Deforestation Survey*, Manley (2009) commissioned by MAF and conducted in the period December 2008 to February 2009, it was estimated that 20 000 hectares of deforestation occurred in the year ended 31 December 2007. Further information on this and past deforestation surveys are available on [www.maf.govt.nz/climatechange/reports/deforestation](http://www.maf.govt.nz/climatechange/reports/deforestation)

<sup>1</sup> The time periods for the two deforestation estimates differ. The NEFD estimate is for the year ended 31 March 2008 while the *2008 Deforestation Survey* estimate is for the year ended 31 December 2007.

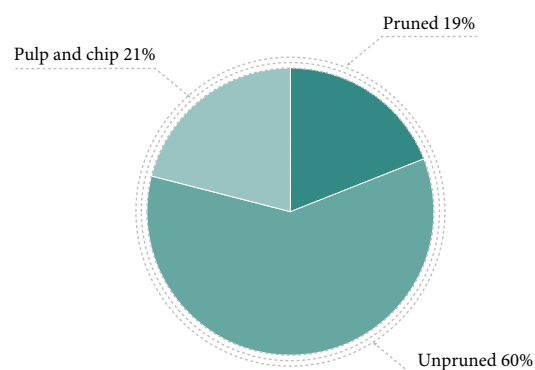
<sup>2</sup> The deforestation estimate is indicative only and has been compiled using a combination of returned 2008 NEFD survey information and input from forestry experts.

### »» HARVESTING

An estimated 18.9 million cubic metres of roundwood (as on page 11) were harvested from New Zealand's planted production forests in the year ended 31 March 2008. An estimated 18.7 million cubic metres came from clear felling 41 400 hectares of planted forest, and 0.2 million cubic metres from production thinning. Some of the clear felled area was converted to pasture.

Of the radiata pine harvest, approximately 19 percent of the volume was sold as pruned logs, 60 percent as unpruned logs and 21 percent as pulp and chip logs. About 34 700 hectares of previously clear felled planted forest were replanted in the year ended December 2007.

»» FIGURE 2.5: RADIATA PINE HARVEST VOLUME BY LOG GRADE, YEAR ENDED 31 MARCH 2008



**Source**  
Estimates from 2008 NEFD survey only.