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Provisional Estimates of Tree Stock Sales and Forest Planting in 2017

Purpose

1. *This report provides the provisional estimates of the sales of tree stocks and the areas of commercial forest planted in 2017. It also provides an estimate of mānuka seedling sales and the area planted.*

Background

2. Each spring the Ministry for Primary Industries (MPI) undertakes a survey of tree stock sales from commercial forestry nurseries. Data are then aggregated to produce estimates of total national sales, and modelled to generate estimates of planting by species or species groups, and the total area planted.
3. In 2017, 25 of the 26 commercial forestry nurseries completed the survey. Estimates of sales from the outstanding nursery, which is a small-scale supplier, were based on its 2016 return.

Tree Stock Sales

4. Tree stock sales reported in 2017 totalled 51.3 million seedlings, compared to 52.7 million seedlings sold in 2016. The main decrease was in radiata pine where sales declined by 1.3 million (2%), and in particular, in open pollinated radiata pine (15%), previously categorised as Growth and Form (GF)¹ ≤ 19. Table 1 provides a breakdown of sales since 2010, by species and species groups.

Table 1: Tree Stock Sales from 2010 to 2017 (millions)

	2010	2011	2012	2013	2014	2015	2016	2017 ^p
Radiata pine	46.4	58.9	64.6	48.5	47.2	45.8	49.3	48.0
Douglas-fir	3.6	5.1	4.0	3.1	1.9	2.0	2.2	2.0
Other softwoods	1.3	1.3	1.3	0.7	0.8	0.5	0.4	0.7
All hardwoods	1.9	2.3	2.6	1.9	0.9	1.3	0.8	0.7
TOTAL	53.2	67.6	72.5	54.1¹	50.8	49.5¹	52.7	51.3¹

p Provisional.

Note 1: individual entries do not add up to totals due to rounding to the nearest 100,000.

¹ Growth and Form (GF) rating – where the higher the rating the greater potential gain in tree growth and form from the genetic improvement.

Radiata Pine

5. Annual radiata pine tree stock sales by categories are shown in Table 2.

Table 2: Radiata Pine Tree Stock Sales from 2003 to 2017 (millions)

Year		GF < 14	GF 14 - 19	GF > 19	Cuttings	GF Plus	Total ¹
2003		0.1	14.6	7.6	14.0	11.2	47.4
2004		less than 0.1	13.8	4.8	16.0	8.8	43.5
		GF < 14	GF 14 - 19	GF > 19	Cuttings/clones		
2005		less than 0.1	9.0	10.6	12.9		32.6
2006 ²		less than 0.1	7.6	11.3	9.9		28.8
2007		0.1	11.2	17.2	8.1		36.7
2008		0.3	11.7	15.4	8.8		36.2
2009		0.2	10.9	17.0	9.6		37.7
		Stand Select ²	GF < 14	GF 14 - 19	GF > 19	Cuttings/clones	
2010	1.9	1.1	17.6	13.2	12.6		46.4
2011	12.2	0.4	16.1	16.8	13.4		58.9
2012	16.6	0.7	15.1	20.3	11.9		64.6
2013	9.9	less than 0.1	9.1	17.1	12.3		48.5
2014	5.8	0.2	11.6	14.5	15.1		47.2
2015	4.4	0.2	10.1	17.1	14.0		45.8
2016	3.4	less than 0.1	11.0	20.6	14.3		49.3
		(Under open pollinated)	Open pollinated	Control pollinated	Cuttings/clones		
2017	3.1		9.4	21.3	14.2		48.0

Note:

1. Individual entries may not add up to totals due to rounding to the nearest 100 000.

6. Estimates of the proportions of the area planted with control pollinated (previously GF > 19 and cuttings and clones) and open pollinated (previously GF ≤ 19 and Stand Select²) radiata pine are provided in Table 3. The trend towards using control pollinated seedlings, cuttings and clones, has continued in 2017. Three-quarters of radiata pine sales were in this category in 2017, compared to an almost even split in 2011 and 2012.

Table 3: Estimated Percentages of Total Area of Radiata Pine Planting by Categories

Radiata pine GF Rating	2010	2011	2012	2013	2014	2015	2016	2017 ^p
Open pollinated seedlings	44	49	48	38	36	31	28	25
Control pollinated seedlings, cuttings/clones	56	51	52	62	64	69	72	75

p Provisional.

² Stand select seed is collected by a Radiata Pine Breeding Company shareholder in accordance with a set of criteria that authenticate the seed source and the genetic quality of that source.

Forest Planting

7. The total area of forest planting in the winter of 2017 is provisionally estimated from the nursery survey data and associated modelling to be 49,000 hectares.

Table 4: Estimated Areas Planted in 2017 by Species and Species Groups

Species / species group	Area (hectares)	Percentage of total area
Radiata pine	47 000	96
Douglas-fir	1 000	2
Other exotic softwoods	less than 1,000	1
All exotic hardwoods	less than 1,000	1
Total	49 000	100

Note: The estimated areas in Table 4 have been rounded to the nearest 1,000 hectares or recorded as less than 1000 hectares where the area is between 1 and 999 hectares.

8. A survey of large-scale forest owners and managers indicates new planting of about 1,800 hectares. A further 2,500 hectares of plantations are estimated to have been established by small-scale owners under MPI's forestry schemes. The total area of new planting in 2017 is assumed to be in the order of 4,300 hectares.
9. Replanting of harvested areas is provisionally estimated to be 44,700 hectares in 2017. This is the residual area from the estimated total area of planting (49,000 hectares) minus the estimated area of new planting (4,300 hectares).
10. The total areas of new planting and replanting by species and species groups for 2017 are provided in Table 5. These allocations are based on the estimated percentage of total planting accounted for by each species or species group.

Table 5: Estimated Areas¹ (hectares) of New Planting and Replanting for 2017 (provisional)

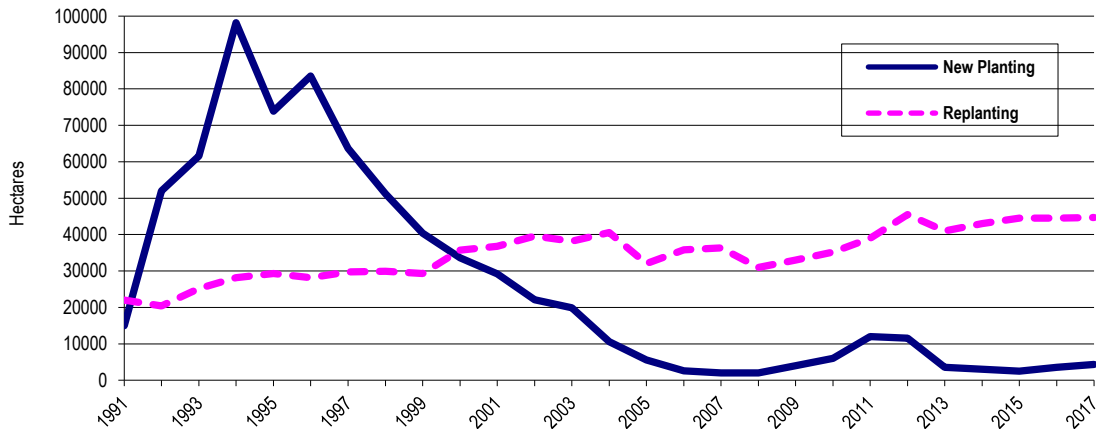
Species / species group	New Planting	Replanting
Radiata pine	4 000	43 000
Douglas-fir	less than 1000	1000 ²
Other exotic softwoods	less than 1000	less than 1000
All exotic hardwoods	less than 1000	less than 1000
Total³	4 300	44 700

Notes:

1. The estimated areas are either rounded to the nearest 1,000 hectares or recorded as less than 1,000 hectares where they are between 1 and 999 hectares.
2. May include harvested areas of radiata pine replanted with Douglas-fir.

11. Figure 1 provides a visual outline of the estimated areas of new planting and replanting since 1991.

Figure 1: Estimated Areas of New Planting and Replanting



Estimates for 2017 are provisional.

Fewer Seedlings Sold – Larger Area Planted

12. About 1.4 million fewer seedlings were sold in 2017 compared to 2016, but the total area estimated to have been planted has increased by 1,000 hectares in 2017. This is due to the increasing use of control pollinated radiata pine, and the rounding down of the area estimate in 2016.
13. The use of control pollinated planting stock, along with developments in plantation management, has enabled some growers to plant at lower stocking rates than was previously the case. This has produced small adjustments in some regional stocking rate assumptions for radiata pine, and resulted in the modelled national average decreasing from 1,032 to 999 stems per hectare.
14. The 2016 total planting estimate of 48,690 hectares was rounded down to 48,000 hectares as MPI takes a conservative approach to evaluating the planting estimates. The total modelled planted area in 2017 was 49,060 hectares.

Looking Towards 2018

15. The 2017 nursery survey asked nursery managers whether they expect sales in 2018 to be similar to, lower, or higher than 2017. Of the 20 commercial forestry nurseries that responded, one indicated that they expect sales to be lower, seven indicated they expect sales to be at similar levels, and twelve indicated they expect sales to be higher in 2018.

Review of 2017 Planting Estimates

16. The nursery survey and the associated modelling are only intended to provide early approximations of the areas of total planting and planting by species or species groups for the year. These are subsequently reviewed and revised as necessary

when data are received directly from forest owners through the annual survey for the National Exotic Forest Description (NEFD).

Provisional Estimates for Mānuka

17. This is the second year that MPI has attempted to gather information on mānuka seedling sales and to estimate the area planted. Ten nurseries were identified as undertaking bulk sales of mānuka. It is estimated that 9.2 million seedlings were sold and about 5,900 hectares were planted, mostly for the honey industry, some for revegetation, and a small area for investigating mānuka oil production.
18. These estimates are similar to those reported for 2016 (9.8 million seedlings and 6,300 hectares). They should be used cautiously.

2017 Stocking Rates Survey

19. In 2017 MPI surveyed forest owners, managers and consultants for advice on regional stocking rates at forest establishment. The information is used in a model that applies “averaged” regional stocking rates to seedling sales data to estimate the nationally planted area. As noted earlier, the 2017 model recorded a reduction in the national stocking rate for radiata pine from 1,032 to 999 stems per hectare.

Acknowledgements

20. MPI thanks all the nursery managers, forest owners, forest managers and consultants who supplied information in 2017 that enables these estimates of tree stock sales and planted areas to be made.

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