



EAST COAST FOREST INDUSTRY AND WOOD AVAILABILITY FORECASTS 2008



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INTRODUCTION

1

The East Coast wood supply region has an extensive forest growing industry with considerable potential for future utilisation and development. To assist with future forest industry planning in this region, the Ministry of Agriculture and Forestry (MAF) has compiled wood availability forecasts covering the period 2008 to 2040. These forecasts indicate that the availability of radiata pine from the East Coast will gradually increase from 2008 through to 2013 from 1.1 to around 2.0 million cubic metres per year. The East Coast regional harvest has the potential to increase to around 3.4 million cubic metres per year after 2020 through to 2034, after which the total harvest is projected to decline if no new land planting occurs.

Five forecasts have been prepared for radiata pine, and one for Douglas-fir. They have been prepared in co-operation with major forest owners and forest harvesting consultants.

Descriptive information is also provided on the plantation forest and wood processing industries in the region. Opportunities and constraints facing the regional forest industries are discussed.

The information contained in this report is intended to assist the forestry industries, planning practitioners, and infrastructure and service providers in assessing wood processing opportunities, resource management planning, and infrastructure issues. It will also assist the public in understanding the nature of the forest industry in the East Coast.

References to the East Coast and the Gisborne region involve the land area of the Gisborne District.

This report is one of a series of publications on regional forestry industries and wood availability forecasts being produced by MAF.

Readers intending to use these wood availability forecasts for planning or investment decisions are urged to thoroughly review the forecasts or to engage the services of a professional forestry consultant who is able to review and interpret the forecasts in the context of specific planning or investment decisions.

OVERVIEW

2

The East Coast wood supply region has an established forest growing industry that was successful in attracting new investment for planting in the 1990s. It is worth noting that several of the larger forest owners on the East Coast have forest areas in the Wairoa District which forms a part of the Hawkes Bay wood supply region. While it is expected that forest produce from this area will be transported to the East Coast, wood availability in these areas has been addressed in the Hawkes Bay region forest industry and wood availability forecasts.

The main wood processors in the region are Juken New Zealand Ltd, which has a large laminated veneer lumber (LVL), plywood mill and sawmill complex in Gisborne, and Ernslaw One Ltd, which has a medium-sized sawmill. There are other private sawmills located in this area, and a new large wood processing development by Hikurangi Forest Farms Ltd is in the planning stage.

To assist with future regional forest industry planning, MAF has compiled wood availability forecasts in association with the region's major forest growers. The forecasts show the range of harvest volumes potentially available from the planted forest estate of both large and small-scale growers. The forecasts are supply-based, but incorporate the short to medium-term intentions of the large owners. In utilising these forecasts, users need to recognise that the ultimate determinant of harvesting activity at any particular point in time is the demand for logs.

The forecasts indicate that the availability of radiata pine from the East Coast forest estate will steadily increase over the next 12 years, despite a drop-off in the large-scale forest owners' harvest intentions for the period 2011–2013. While the overall forecasts indicate an increasing supply curve during this period, it is important to recognise that short-term fluctuations are possible as a result of changes in market conditions.

From 2007 to 2013 there is a gradual increase in the East Coast regional harvest from 1.1 to around 2.0 million cubic metres per year. The East Coast regional harvest has the potential to significantly increase to around 3.4 million cubic metres after 2020. Most of the potential increase in wood availability during this period is from the small-scale forest growers who established forests during the 1990s.

The actual timing of the harvest from these forests will depend on market conditions and the decisions of a number of small-scale owners. Market conditions and logistical constraints (availability of logging crews, transport capacity, and wood processing capacity) will limit how quickly the additional wood available from small-scale owners' forests can be harvested in that period.

In the later part of the forecast period (post-2034) the total harvest is projected to decline. This is in line with the age structure of the resource. The timing (and level) of decrease will depend on the rate at which the region's post-1990 forests are harvested, the extent to which they are replanted, and also the level of new land planting. The forecasts are based on no new land planting. There is no intention by large-scale forest owners to deforest in any area in the East Coast.

The existing total wood processing capacity¹ of the regional sawmills and the LVL plant is estimated to be about 447 000 cubic metres (roundwood equivalent) per year. This is an estimate of the sum of the individual processing plants' roundwood input capacities. A large proportion of logs are either exported through the Eastland Port or are taken through to the Bay of Plenty for processing, and this has been the case since harvesting started on the East Coast.

¹ Capacity is based on the "usual" number of working hours per day for a mill.

»» TABLE 2.1: KEY STATISTICS FOR THE EAST COAST FOREST INDUSTRY¹

STATISTIC	VALUE
Stocked plantation forest area as at 1 April 2007 (ha)	158 000
Harvest – estimated roundwood removals – year ending March 2007 ³ (m ³)	740 000
Area-weighted average age of plantation forest as at 1 April 2007 (years)	14.73
Sawn timber production – year ending March 2007 (m ³)	69 000
Estimated log input to sawmills – year ending March 2007 (m ³)	124 000
Laminated veneer lumber annual production capacity ² (m ³)	36 000
Estimated wood processing capacity ⁴ (m ³ roundwood)	447 000
Log exports – year ending December 2007 (m ³)	595 000
Sawn timber exports – year ending December 2007 (m ³)	4 000
Direct employment, forestry and first stage processing, February 2006 (FTE) ⁵	920

Sources

1 All statistics from Ministry of Agriculture and Forestry unless indicated otherwise.

2 Juken NZ Ltd.

Notes

3 Estimated roundwood removals are derived from processing outputs and log exports. They do not account for inter-regional log flows. See discussion under Historical Roundwood Removals (Chapter 3) for further explanation.

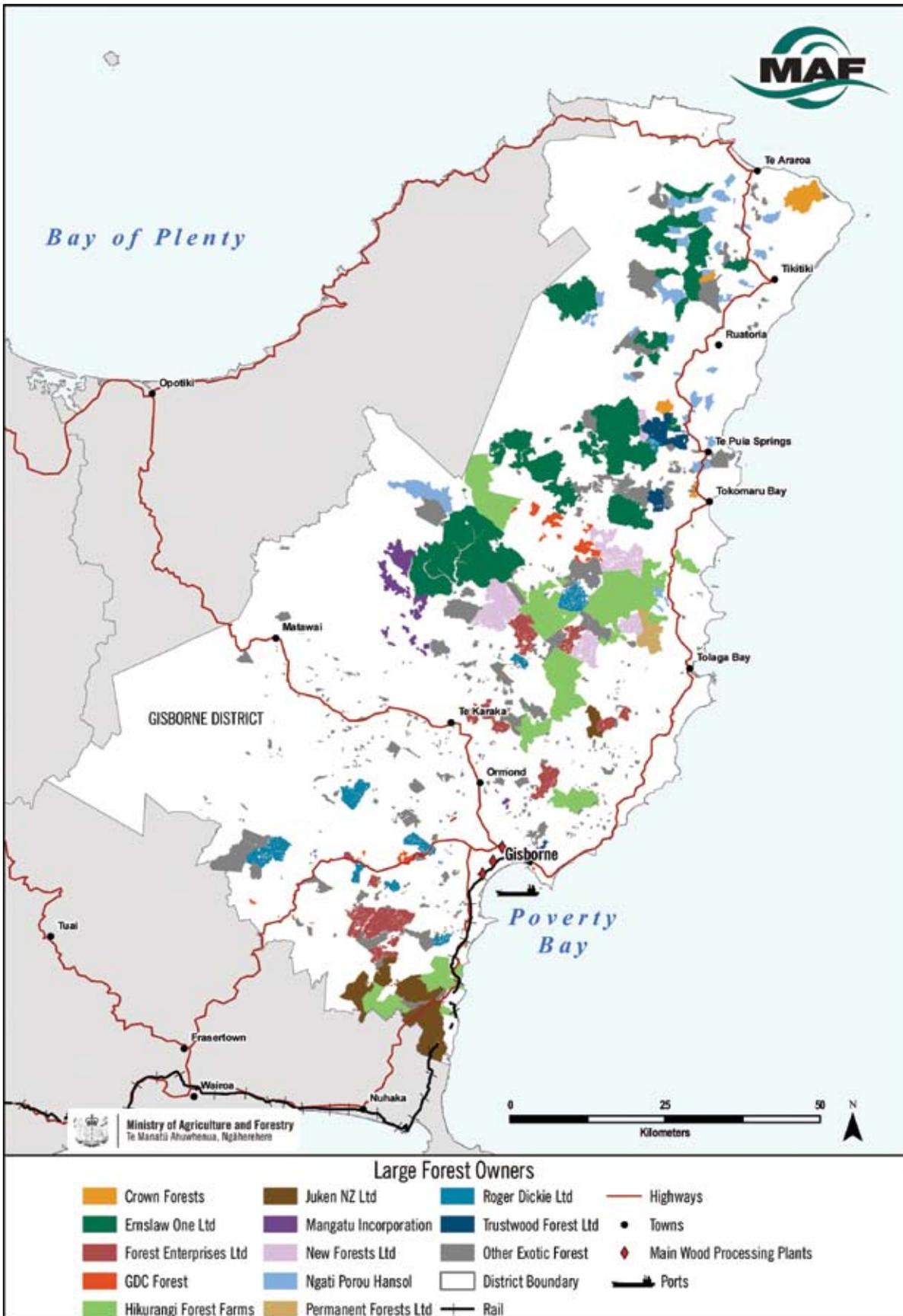
4 This is an estimate of the sum of the individual processing plants' roundwood input capacities.

5 Excludes employment associated with the transportation of logs and forest produce.



Ultra high pruning in Juken New Zealand forest.

»» FIGURE 2.1: MAP OF THE EAST COAST FOREST INDUSTRY



THE PLANTATION FOREST INDUSTRY

3

»»» BACKGROUND

The Gisborne district has a severe erosion problem: 26 percent of its land is susceptible to severe erosion, compared with only 8 percent of all land in New Zealand. Severe erosion includes large-scale gully erosion, earthflow erosion and deep-seated slumps, which cause long-term damage to the productivity of rural land. Severe erosion threatens communities and rural businesses, including farms and orchards, roads and bridges. It lowers water quality by contributing large amounts of sediment to river systems, and harms the natural values of the land and the coastal environment. Extreme weather, such as prolonged or intense rain, amplifies the impact of severe erosion. Cyclone Bola in 1988, and prolonged rain in 2005, caused significant damage in the Gisborne district. Erosion must be controlled to reduce the damage caused by extreme weather.

»»» NURSERIES

The East Coast has one forest nursery producing planting stock for the restocking of harvested areas and establishment of new forests.

» ARBORGEN AUSTRALASIA PUHA NURSERY

The Puha nursery is located on Whatatutu Road near Te Karaka and produces bare rooted radiata pine cuttings and seedlings, clonal and family treestock, Douglas-fir cuttings, redwood cuttings and seedlings. The 72-hectare nursery has a production capacity of between 8 and 10 million treestocks annually and also sells treestocks outside the region.

»»» FOREST OWNERS

The East Coast wood supply region extends from Hicks Bay in the north to the boundary with the Wairoa District Council in the south. This area is located between the Pacific Ocean to the east and the Ruakumara Ranges in the west. Table 3.1 identifies the larger plantation forest owners and managers in the East Coast region, and the

total area owned by the small-scale forest owners. Three forest owners control 44 percent of the total mature East Coast estate (Ernslaw One, Hikurangi Forest Farms and Juken New Zealand), but three of the larger managers are responsible for another 15 percent of younger forests (Forest Enterprises, Roger Dickie and New Forests Asset Management). The large area of younger forests is the driver of the increase in potential wood flows to come on-stream on the East Coast.

»»» TABLE 3.1: OWNERS AND MANAGERS OF PLANTATION FORESTS IN EAST COAST¹ (IN HECTARES)

OWNER/MANAGER	STOCKED AREA
Ernslaw One Ltd	33 700
Hikurangi Forest Farms Ltd	24 800
Forest Enterprises Ltd	10 500
Roger Dickie (NZ) Ltd	8 300
New Forests Asset Management Pty Ltd	8 300
Juken New Zealand Ltd	7 600
Ngati Porou Hansol Forestry Joint Venture	7 300
Mangatu Incorporation	5 000
Gisborne District Council	3 900
Crown Forestry	1 800
Trustwood Forests (Kiteroa) Ltd	1 600
Permanent Forests Ltd	1 300
Tauwhareparae Farms Ltd	1 300
Small-scale forest owners	41 600
Total²	157 000

Notes

1 Owners over 1300 hectares. Does not include Northern Forest Products Ltd's forestry blocks at Uruahi, Tutuokura and Waiorongamai covering 2165 hectares that were purchased earlier in 2008 from the receiver of Huaguang Forests Co. Limited that were not sold to Ernslaw One Ltd.

2 PF Olsen Ltd manages a total of 24 000 hectares of forest on the East Coast for a range of clients.

Sources

Individual forest owners and the Ministry of Agriculture and Forestry, 2007.

» ERNSLAW ONE LTD

Ernslaw One Ltd is a Malaysian-controlled company. It entered the New Zealand forest industry in 1990 when it purchased the cutting rights to some of the state forests in the North and South Islands, as well as the Conical Hill

sawmill near Tapanui. It has expanded through buying and establishing new land in forest, as well as buying existing forests. It is vertically integrated and owns sawmills in Gisborne, Tangiwai and Tapanui, plus a pulp mill at Tangiwai. Current forest holdings are 101 000 hectares, with the majority in three regions: East Coast, southern North Island, and Otago/Southland.

Ernslaw One started operating on the East Coast when it purchased farmland inland from Tokomaru Bay and planted it in trees in the late 1990s. It then purchased the East Coast assets of Huaguang Forests Co. Ltd after they were put into receivership in 2004. This estate consists of the Crown Forest Licences sold by the Crown to Rayonier in the early 1990s; it comprises Mangatu, Tokomaru and Ruatoria Forests in the central and northern parts of the region.

› HIKURANGI FOREST FARMS LTD

Hikurangi Forest Farms (HFF) is a medium-sized forestry company based in Gisborne. It is a member of TreeOne (NZ) Ltd, a subsidiary of Lingui Developments Berhad Ltd listed on the Kuala Lumpur stock exchange. HFF owns or manages 19 separate forests spread over a large geographic area within 100 kilometres of Gisborne. About 91 percent of the estate is freehold with the remaining area comprising a forestry lease and several forestry rights. The predicted annual harvest to the end of June 2008 is expected to be around 330 000 cubic metres. The majority of pruned and pulp logs are sold domestically, with the remainder going to export at the Eastland Port. HFF gained Forest Stewardship Council (FSC) certification in 2005.

www.hff.net.nz and www.samling.com

› FOREST ENTERPRISES LTD

Forest Enterprises is an investment company with more than 35 years experience growing forests. In 1972 the company pioneered forestry partnership investment in New Zealand's radiata pine plantation forests for both New Zealand and overseas investors. Nationally the company has over 6400 investors with 73 plantation investment forests under management comprising 22 000 hectares. Some of these forests, outside the East Coast, are now being harvested and replanted. Forest Enterprises manage forests located in Wairarapa, Gisborne and Hawkes Bay.

The company began planting forests in the Gisborne District in 1993 and by 2000 had 31 forests established in this area covering about 10 500 hectares. All of these forests have been intensively managed.

www.forestenterprises.co.nz

› ROGER DICKIE (NZ) LTD

Roger Dickie is a syndicated forest investment company which sells shares in forestry projects. Roger Dickie (NZ) Ltd began its operations in the Gisborne District in 1993 taking advantage of land that was available for sale and well suited to forest development. Since then, this company has established a forest resource of 8300 hectares, mainly in the southeast part of the Gisborne District. Roger Dickie's forests have all been intensively tended and the estate complements the 13 900 hectares established further south in the Hawkes Bay.

www.rogerdickie.co.nz

› NEW FORESTS ASSET MANAGEMENT PTY LTD

New Forests Asset Management (NFAM) represents the interests of the New Zealand Sustainable Forestry Investors 1 (NZSFI 1) in the predominantly radiata pine plantations that were purchased from Evergreen Forests Limited. NFAM is the asset manager for the forest estate, overseeing the 9500 hectares on the East Coast region. PF

Olsen Limited in Gisborne manages these forests on an operational day-to-day basis. This includes the Moonlight, Tolaga, West Ho and Waiiau Forests which are located inland between Tolaga Bay and Tokomaru Bay in the East Coast region.

www.newforests.com.au

› JUKEN NEW ZEALAND LTD

In 1990 Juken Nissho Ltd purchased the cutting rights to Crown forests in the East Coast, Hawkes Bay, Masterton and Northland regions during the first round of Crown Forest asset sales. Shortly afterwards the company embarked on a successful bid to purchase land at Matawhero and build a LVL plant which was completed in 1994. In 2004 the company changed its name to Juken New Zealand Ltd, and is now wholly owned by Wood One Company Ltd, a Japanese housing construction and building materials business based in Hiroshima.

There are three Juken New Zealand owned mills in New Zealand. The Gisborne LVL, plywood and sawmill plants are supplied almost exclusively by logs from the local Juken New Zealand estate. The company has a total of 18 200 hectare net stocked area located in the northern Hawkes Bay and southern Gisborne area. The Gisborne processing plant produces sawn timber, LVL and plywood primarily for export to a wide range of markets.

The Juken New Zealand management philosophy in New Zealand is to add value to their forests by targeting appearance and structural markets instead of the traditional packaging markets. In line with this philosophy, Juken New Zealand have managed their forests to achieve a minimum 30-year age at clearfell, and have undertaken an intensive silviculture regime which has included pruning to 8 metre height and more. The company cuts random length logs in their forests and carries out log making in its Matawhero mill log yard to minimise pulpwood, as there is no market for pulpwood

in the Gisborne District. Juken New Zealand is also able to fully utilise its pruned logs as a result of the wood processing options at its mill.

www.woodone.co.jp/company/english.html

› NGATI POROU WHANUI FORESTS LTD

The Ngati Porou Whanui Forests Ltd (NPWFL) began establishing forests throughout the East Coast region in 1993. In 1996 NPWFL entered into a venture with its Korean partner Hansol NZ Ltd. The joint venture offers landowners an alternative development option for undeveloped and unproductive land. To date a total of 10 000 hectares has been recruited into the joint venture, of which 7500 hectares is planted in radiata pine.

In addition to this joint venture, Ngati Porou Forests Ltd (NPFL) also acts as contract Forest Manager for MAF on the Crown's East Coast lease forests. This is a role the company has held since 1992. NPFL also offers management services to local landowners who wish to pursue forestry on their own accord.

The long-term vision of Ngati Porou is to establish 40 000 to 50 000 hectares of sustainable commercial forest within Ngati Porou. There are 135 000 hectares of Ngati Porou land, 60 percent of which has been independently assessed as being best suited to forestry. Erosion and scrub regeneration is prevalent on this land and generally presents a hindrance to economic development and land utilisation on the East Coast.

With the potential new market created through carbon sequestration, Ngati Porou land owners entered into a joint venture, Iwi Rakau Ltd, with SFM Australasia Pty Limited in 2006. The purpose of this joint venture is to establish and manage forests, as well as work with indigenous reversion areas to capture the value gained through carbon sequestration. This will be achieved through registration with the New Zealand Government's

forest sink mechanisms. NPFL is the forest manager for the new carbon forestry joint venture.

www.npwfl.co.nz

› MANGATU INCORPORATION

The Mangatu Incorporation forests have been established on the lands which were considered more suited to forest growing. The land has been farmed by the Mangatu Incorporation for the benefit of owners under the Te Ture Whenua Māori/Māori Land Act 1993. The incorporation currently has 5000 hectares of radiata pine. The objective is to integrate forested areas with farming operations to achieve sustainable land management and maximise returns. Trees are intensively tended wherever appropriate. Ruru Willis and Co. Ltd are the forestry management consultants of the Mangatu Incorporation forests.

› GISBORNE DISTRICT COUNCIL

The Gisborne District Council (GDC) commercial forestry woodlots produce a return from land that otherwise would not be utilised and provides protection from erosion for the Gisborne water supply. These blocks were largely established a number of years ago within the old Cook County areas of Gisborne District. These blocks are currently managed and maintained by Council's forestry consultants PF Olsen Ltd. GDC also has 1600 hectares of forest in the Pamoia block, in a joint venture between the Council and Juken New Zealand. The joint venture was established to protect the Gisborne City water pipeline from damage caused by events such as Cyclone Bola that resulted in the loss of the water supply. Juken New Zealand undertakes and funds all works associated with the management and maintenance of the Pamoia Joint Venture Forest.

A Conservation Forestry Scheme, administered by GDC, operated from 1989 to 1993. It focused on pastoral hill country with erosion problems in the Waipaoa and Uawa catchments. The scheme subsidised 95 percent of forest

establishment costs and was secured by a land improvement agreement. It resulted in approximately 13 400 hectares of new planting in the region, much of which was undertaken by investment groups, partnerships and individuals.

www.gdc.co.nz

› CROWN FORESTRY

The East Coast Crown Lease forests amount to a total of 2969 hectares and comprise the forests of Tokararangi, Mangaoporo, Waipiro A4B, Waipiro A5 and Mangahauini. MAF currently administers these forests on behalf of the Crown; they are managed under contract by Ngati Porou Whanui Forestry Ltd.

www.maf.govt.nz/forestry/crown-forestry/

› TRUSTWOOD FORESTS (KITEROA) LTD

Trustwood Forests is a private forest company with around 1600 hectares of plantings on the East Coast and is managed by Robert Hill of Trustwood Forests (NZ) Ltd with forestry operations undertaken by PF Olsen Ltd. Trustwood Forests (NZ) Limited is a forestry development, management and consultancy company specialising in the acquisition and development of land for the establishment of forests on the East Coast region of New Zealand.

www.trustwood.co.nz

› PERMANENT FORESTS LTD

Permanent Forests Paroa Forest is also managed by PF Olsen Ltd and is FSC certified.

› TAUWHAREPARAE FORESTS LTD

Tauwhareparae Forests Ltd is owned by Tauwhareparae Holdings Ltd (previously Port Gisborne Holdings Ltd) which is a wholly owned subsidiary of Gisborne Holdings Ltd that is 100 percent owned by the GDC. The Tauwhareparae Forest blocks are located inland from Tolaga and Tokomaru Bays. These blocks have been

planted for erosion control under the East Coast Forestry Project or earlier grant schemes. PF Olsen Ltd are the managers of these forestry blocks.

»» OTHER FOREST OWNERS

About 25 percent of the East Coast's plantation forest estate is held by an estimated 380 small-scale forest owners – mainly individuals, forestry partnerships and small companies – who own less than 1000 hectares each. The impact of these small-scale forest owners on the development of the local industry has been highlighted in the wood availability forecasts with their separation from the large-scale forest owners. Estates established by larger syndicated forest partnerships account for a further 17 percent of area. These partnerships have been designed to be autonomous and make their own decisions about harvesting timing; it is likely that those decisions will be based around maximising returns and not necessarily smoothing wood flows.

»» EAST COAST FORESTRY PROJECT

The East Coast Forestry Project (ECFP) was established to continue to address the wide-scale erosion problem in the district. The Gisborne District Council Conservation Forestry Scheme was replaced by the ECFP in 1992. Managed by MAF, the scheme has provided funding to landholders to prevent and control erosion on qualifying land. The ECFP grant can be used to control erosion on the worst eroding or erosion-prone land in the district

(MAF refers to this type of land as target land). The ECFP provides a grant to establish an effective tree cover through planting forests or wide-spaced poplar poles, or encouraging natural reversion to native bush.

The ECFP has established more than 33 000 hectares of forest on highly erosion-prone lands.

The GDC Sustainable Hill Country Project has identified land requiring erosion treatment as Overlay 3A land. GDC has notified a variation that requires effective tree cover on Overlay 3A land by 2021. Overlay 3A land is considered eligible land for the purposes of the ECFP.

»» SPECIES COMPOSITION

Radiata pine makes up 97 percent (154 000 hectares) and Douglas-fir, 2 percent (2500 hectares) of the forest area in the East Coast. Species other than radiata pine and Douglas-fir have not been modelled in this analysis. There are 2000 hectares of other exotic hardwood and softwood species in the East Coast. The forest areas (rounded to the nearest 1000 hectares) are from the *National Exotic Forest Description* (NEFD) as at 1 April 2007 (MAF 2008).

About 75 percent (116 000 hectares) of the radiata pine estate is, or is expected to be, pruned to a height of at least four metres. About 8 percent (9400 hectares) of pruned radiata pine is older than 25 years.

»» TABLE 3.2: PLANTATION FOREST AREAS BY SPECIES (HECTARES, AS AT 1 APRIL 2007)

TERRITORIAL AUTHORITY	RADIATA PINE	DOUGLAS-FIR	OTHER SOFTWOODS	HARDWOODS	TOTAL
Gisborne District	153 764	2 444	1 266	888	158 362

Source
Ministry of Agriculture and Forestry, 2008.

»» AREA-AGE CLASS DISTRIBUTION

The East Coast plantation forest area-age class distribution shows the peak in planting during the mid to late 1990s that resulted from the log price spike and specific incentives targeted at erosion control. There was also an increase in new forest area planted during the early 1980s, that enables the current increasing area available to be harvested.

For detailed information on forest areas and age class distributions by species, refer to the publication *NEFD as at 1 April 2007*, (MAF, 2008) accessible at: <http://www.maf.govt.nz/mafnet/publications/nefd/national-exotic-forest-2007/index.htm>

»» PLANTATION FOREST LOCATION

Historically forests have been established on failed or specifically purchased pastoral blocks, or as a part of the erosion control process which has been encouraged on the East Coast since Cyclone Bola in 1988. Forest establishment on highly productive pastoral hill country

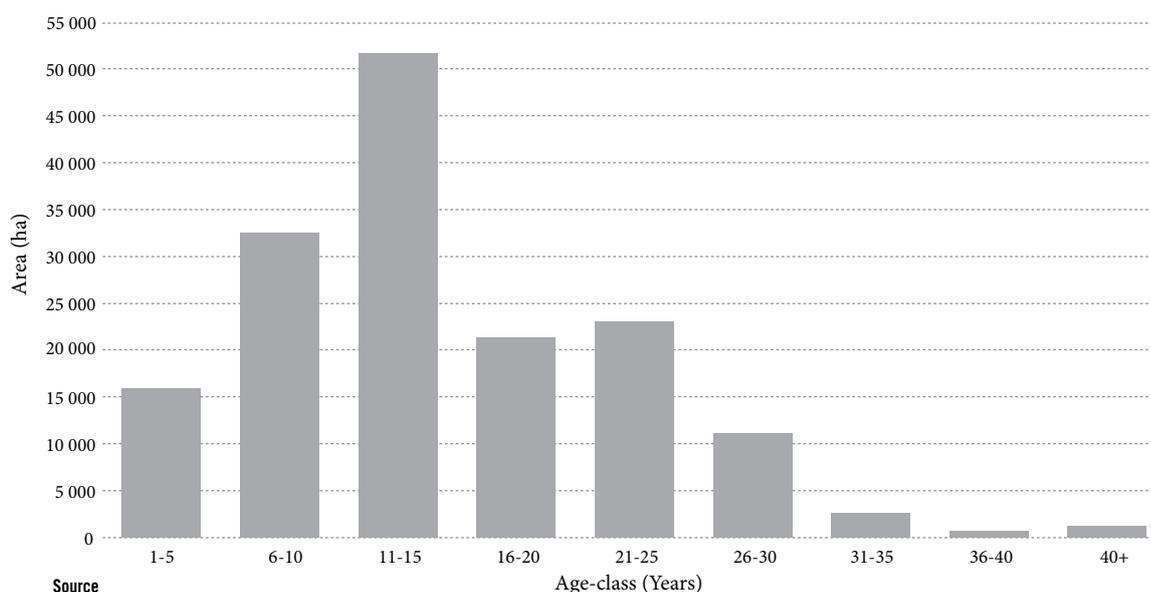
and fertile river flats is economically not viable because of high land values in these areas. The remaining land on the East Coast is generally either eroding or has the potential to erode and so the establishment of forests is allowed. The establishment pattern of forests on the East Coast has tended to follow more erosion-prone land in the past, but in more recent years forests have been established on lower-risk pastoral land.

»» HISTORICAL ROUNDWOOD REMOVALS

Estimated annual roundwood removals are derived from wood processing production data and the export of logs. They do not take account of inter-regional log flows, for which data are not readily available.

Early estimates are likely to have underestimated log removal, as extremely limited processing opportunities saw much of the volume from the East Coast forests either exported from the Eastland Port or shipped to the Central North Island. As the Juken New Zealand mill began operating the effect of wood “imports” from the Juken

»» FIGURE 3.1: AREA-AGE CLASS DISTRIBUTION FOR EAST COAST PLANTATION FORESTS (ALL SPECIES)



New Zealand northern Wairoa estate would have balanced exports to a degree. As bundled pulp exports commenced, the flow of material to the Central North Island would have further decreased.

Despite these uncertainties in the roundwood removals estimates, some data are available. Table 3.3 shows the impact of the opening of the Juken New Zealand LVL plant in 1994, the rapid increase in roundwood removals in the region from 1993 to 1995, and the steady increase to 2003 when Huaguang Forests Co. Limited was placed in receivership. Recent years have seen the harvest volume lifting again as more forest resource became mature, but the region is still exposed to the vagaries of the international log export markets, despite the previously troubled Prime Sawmill now operating consistently.

»»» TABLE 3.3: ESTIMATED ANNUAL ROUNDWOOD REMOVALS IN EAST COAST (IN CUBIC METRES)

YEAR ENDED 31 MARCH	VOLUME
1990	71 000
1991	98 000
1992	121 000
1993	101 000
1994	264 000
1995	412 000
1996	409 000
1997	531 000
1998	442 000
1999	545 000
2000	572 000
2001	647 000
2002	726 000
2003	827 000
2004	594 000
2005	612 000
2006	585 000
2007	740 000

Source
Ministry of Agriculture and Forestry.

»»» HARVEST INTENTIONS SURVEY

A harvesting intention survey of Ernslaw One, Hikurangi Forest Farms, Juken New Zealand, New Forests Asset Management Pty Ltd, Mangatu Incorporated, Permanent Forests Ltd, Trustwood Forests (Kiteroa) Ltd, and Ngati Porou Whanui Forests was undertaken in the first half of 2007, and this information was confirmed in July 2007. Data were provided on the actual level of harvest from these forests for 2005 and the expected harvest for 2006. The harvesting intentions for the next ten years were provided by species for pruned, unpruned and chiplogs, along with the area expected to be harvested.

Table 3.4 provides a summary of the harvest intentions data. For detailed data by log type, see Table 1 in the Appendix. These figures make up the first ten years of the wood availability forecasts for the large-scale forest owners on the East Coast. The harvest intentions show an increase in volumes from around 1 million cubic metres per annum in 2007 to 1.7 million cubic metres per annum in 2011 and stabilising at this level through to 2015.

»»» INDIGENOUS FORESTS

On the East Coast, natural forests and scrubland cover approximately 220 000 hectares, that is 26 percent of the region's area (Ministry of Forestry, 1997). Approximately 55 910 hectares are privately owned and available for sustainable forest management. Much of the Crown-owned land administered by the Department of Conservation is contained in Raukumara Forest Park and Te Urewera National Park.

Generally podocarp/hardwood forest occurs in the gullies and podocarp/hardwood/beech forest along the narrow ridges and steep, upper valley sides. The podocarp/hardwood forest usually contains scattered rimu and rata over abundant kamahi, tawa and tawari. Minor river flats and terraces carry denser rimu stands, with a local predominance of kahikatea or matai. Hard beech

dominates along ridges up to 700 metres above sea level, but above this the prevailing forest type is red and silver beech with a mixture of other species.

There are currently three MAF-approved Sustainable Forest Management Plans and 26 Sustainable Forest Management Permits covering 20 905 hectares (37 percent) of the private indigenous forest on the East

Coast. In keeping with this, Part IIIA of the Forests Act 1949 (the Forests Act) was enacted in 1993 to promote the sustainable management of indigenous forest land. There are currently three portable and two fixed sawmills on the East Coast registered to mill indigenous forest logs from forest land that is subject to a registered Sustainable Forest Management Plan, Sustainable Forest Management Permit, or any other milling provision listed in the Sawmill Controls section of Part IIIA of the Forest Act.

»» TABLE 3.4: HARVEST INTENTIONS SURVEY RESULTS (IN CUBIC METRES)

YEAR ENDING 31 DECEMBER	RADIATA PINE	DOUGLAS-FIR	OTHER SOFT-WOODS	HARDWOODS	TOTAL VOLUME	TOTAL AREA (HA)
2006	563 000	184			563 000	1 167
2007	949 000	28 000			977 000	1 846
2008	1 341 000	12 000	5 000	3 000	1 361 000	2 586
2009	1 488 000		20 000		1 508 000	2 693
2010	1 620 000		20 000	3 600	1 644 000	2 784
2011	1 704 000		20 000	4 400	1 729 000	2 657
2012	1 726 000		15 000		1 741 000	2 667
2013	1 663 000				1 663 000	2 596
2014	1 671 000				1 671 000	2 654
2015	1 701 000				1 701 000	2 689

Sources

Individual forest owners covered by the harvesting intentions survey.



Forest Enterprises Ltd Parehaka Block.

WOOD AVAILABILITY FORECASTS

4

The wood availability forecasts presented here show the range of harvest volumes potentially available from the planted production forests in the East Coast region for the period 2008–2040.

The forecasts have been developed by incorporating harvesting intentions of the region's large-scale forest owners. Large-scale owners with plans to harvest before 2015 are:

- › Ernslaw One Ltd;
- › Hikurangi Forest Farms Ltd;
- › New Forests Asset Management Pty Ltd;
- › Juken New Zealand;
- › Mangatu Incorporated;
- › Permanent Forests Ltd;
- › Trustwood Forests (Kiteroa) Ltd.

The small-scale owners' resource was defined using the most recent National Exotic Forest Description data: *NEFD as at 1 April 2007* (MAF 2008).

Five scenarios have been modelled to indicate the potential range of future wood availability. The scenarios indicate that there are many different ways for the forest estate in the East Coast to be harvested. A key issue is the timing of harvesting by the small-scale forest owners, which will be driven by a range of factors, such as individual forest owners' objectives, forest age, log prices, demand by local wood processing plants, and perceptions about future log prices and future wood supply.

It needs to be recognised that forests are managed to maximise the benefits to the enterprise that owns them. Each enterprise has its own harvest strategy based on the owners' objectives, market conditions and the forest estate that it owns or manages. Any change in harvesting strategies by forest owners affects the age-structure and maturity of the forests they own. This in turn feeds back directly into future wood availability.

There are different levels of certainty associated with the wood availability from each component of the estate. The volumes forecast from the large-scale owners' forests are subject to change because of changes in market conditions or changes in the resource description (areas and yields). Yet, they have greater certainty than those forecast from the small-scale owners' estate. Not only are harvest intentions less clear for small-scale owners, their resource descriptions are likely to be less accurate also. To improve the levels of certainty, the forecasts incorporate the views of the region's forest managers and consultants. This feedback was critical for ensuring that the forecasts represent a realistic range of future wood availability scenarios.

»» SCENARIOS FOR RADIATA PINE

Five wood availability scenarios have been modelled for radiata pine. These scenarios indicate the ways the forests in the region could be harvested in the future.

To ensure the scenarios presented here are reasonable, they were developed in consultation with the National Exotic Forest Description (NEFD) Steering Committee and feedback was received from major forest owners and consultants in the East Coast wood supply region.

Listed years are assumed to be to 31 December. For example, 2005 indicates the 12 months to 31 December 2005.

› SCENARIO 1: HARVEST ALL AREAS AT AGE 30

All owners are assumed to harvest their trees at age 30. This scenario shows the potential future harvest in any given year based on the area of radiata forest that reaches 30 years of age in that year.

› SCENARIO 2: LARGE-SCALE OWNERS HARVEST AT STATED INTENTIONS, SMALL-SCALE OWNERS HARVEST AT AGE 30

Large-scale owners' wood availability is assumed to be at stated harvest intentions for 2005 to 2015. After 2015, the large-scale owners' wood availability is assumed not to decrease. Small-scale owners are assumed to harvest trees at age 30.

› SCENARIO 3: NON-DECLINING YIELD (NDY) – TARGET ROTATION 30 YEARS

Large-scale owners' wood availability is assumed to be at stated harvest intentions (as for scenario 2). The total wood availability of radiata pine from the region is modelled to be non-declining in perpetuity.

› SCENARIO 4: SPLIT NON-DECLINING YIELD (NDY) – TARGET ROTATION 30 YEARS

This is the same as scenario 3 except that the total wood availability of radiata pine from the region is assumed to step down from 2034 (at the end of the current rotation). Thereafter, a reduction is assumed.

› SCENARIO 5: TARGET ROTATION AGE VARIATIONS

This is similar to scenario 4 except target rotation ages of 28 and 32 years are also modelled.

›› DISCUSSION ON SCENARIOS

With the exception of scenario 1, the small-scale forest owners have been modelled separately from the large-scale owners. This is because future harvesting by small-scale owners is generally less certain than by large-scale owners.

In scenarios 1 and 2 (Figures 4.1A and 4.1B, respectively), forests owned by small-scale owners are assumed to be harvested at age 30. In scenario 1 all forests (large and small-scale) are harvested at 30 years. In scenario 2, the small-scale forests are harvested at age 30, but the large-scale forests follow their owners' stated intentions. Both

scenarios show the "potential" availability of mature forest in any given year and reflect directly the area of forest in each age class in the East Coast. For practical reasons already described, it is unlikely that the future harvesting would occur this way. The two scenarios simply show the potential magnitude of harvesting under favourable market conditions in any given year.

Scenarios 3 to 5 (Figure 4.1C and 4.1D, respectively) are based on yield regulation. Under these scenarios, the future harvesting model is generally constrained to be non-declining; that is, each year the volume must either be the same or higher than in the previous year. Yield regulation provides a more orderly harvesting volume profile that takes logistical and market constraints into account, to some extent.

Scenarios 3 to 5 avoid the large year-to-year fluctuations seen in scenarios 1 and 2. A fundamental property of the forests in the East Coast (like many regions in New Zealand) is the large area of forests established during the 1990s. Scenarios 4 and 5 illustrate the harvesting of these forests by applying a non-declining yield constraint for the period 2006 to 2034. Then once the "bulge" of forests planted during the 1990s have been harvested, the model lets the volume decline again.

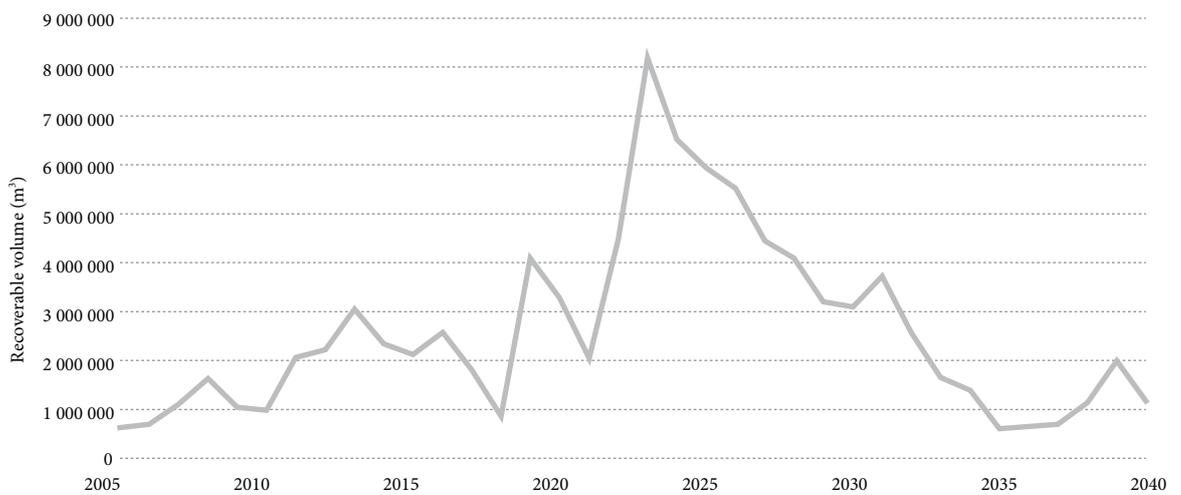
The main limitations of scenarios 3 to 5 are that log prices and other market factors significantly determine harvesting in any given year. When log prices go up, harvesting will generally increase. When log prices fall, the level of harvesting will generally decrease. It is beyond the scope of this analysis to predict future timber prices.

Figures 4.1A to 4.1D summarise the sequence of models that are presented in the remainder of this report.

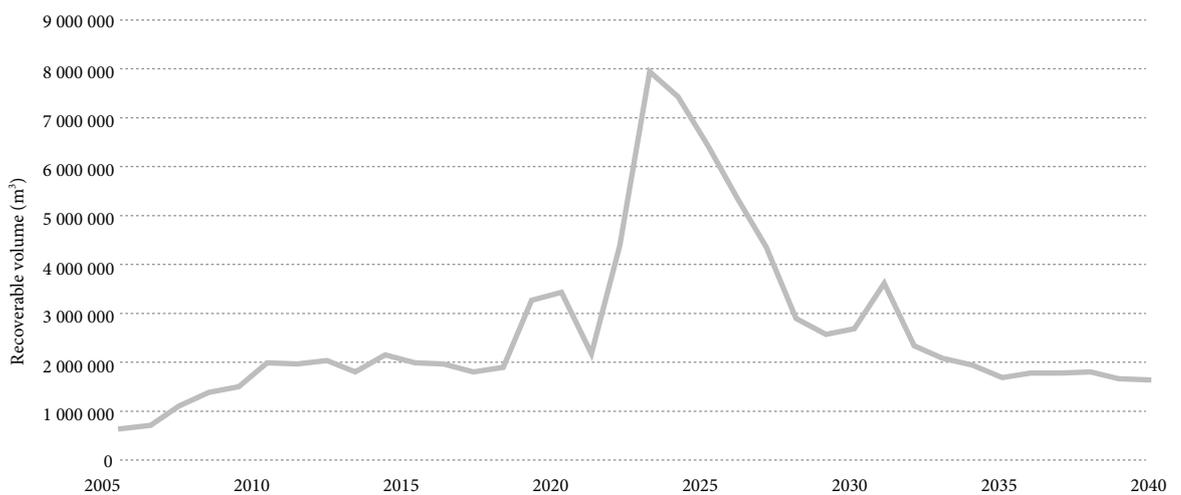
»» **FIGURE 4.1: THE SEQUENCE OF WOOD AVAILABILITY SCENARIOS PRESENTED IN THIS REPORT FOR RADIATA PINE**

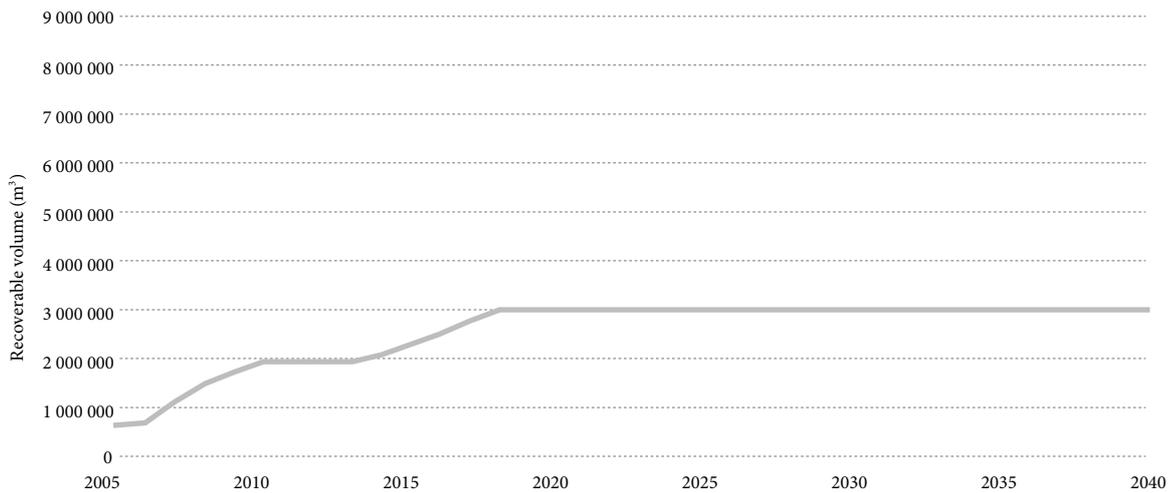
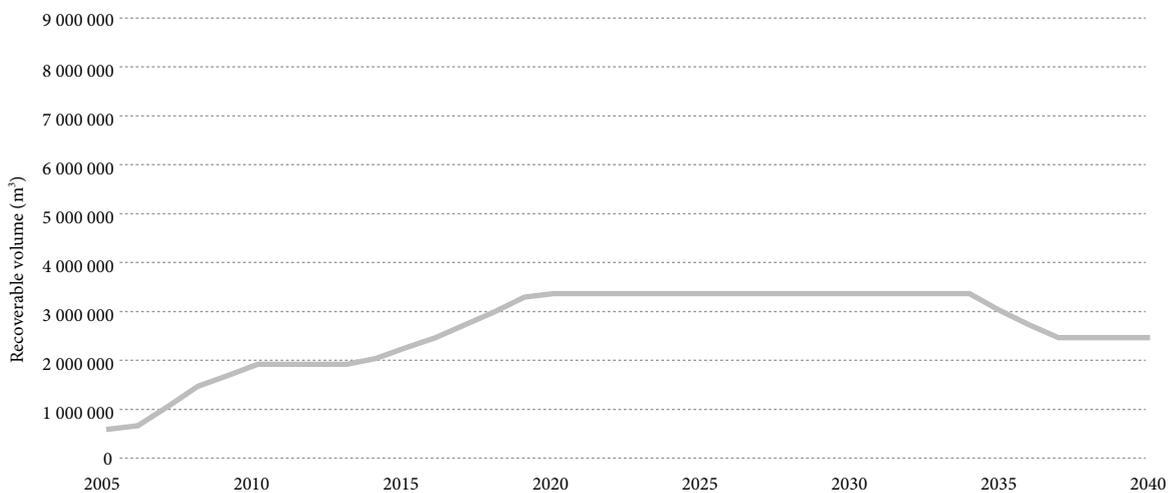
(Scenario 5 is the same as scenario 4 except it shows wood availability profiles of various harvesting ages.)

» 4.1A – SCENARIO 1 EXAMPLE: HARVEST ALL TREES AT AGE 30



» 4.1B – SCENARIO 2 EXAMPLE: LARGE-SCALE OWNERS HARVEST AT STATED INTENTIONS, SMALL-SCALE OWNERS HARVEST TREES AT AGE 30



› 4.1C – SCENARIO 3 EXAMPLE: NON-DECLINING YIELD WITH TARGET ROTATION 30 YEARS**› 4.1D – SCENARIO 4 EXAMPLE: SPLIT NON-DECLINING YIELD WITH TARGET ROTATION 30 YEARS**

»» SCENARIO FOR DOUGLAS-FIR

One scenario is presented for Douglas-fir (all owners) similar to scenario 4 for radiata pine. It is based on the harvest intentions of large-scale owners for 2005 to 2015 with yield regulated in subsequent years. Target rotation age is 45 years for Douglas-fir.

»» OTHER SPECIES

Wood availability from other species has not been modelled. The *NEFD as at 1 April 2007* (MAF 2008) records 2154 hectares of other species in East Coast, with 32 percent of this resource being less than 20 years old. In addition, markets are not well established for some of these species.

»» DATA

› METHOD USED TO OBTAIN FOREST AREAS

Area figures were obtained from the *NEFD as at 1 April 2005*. To reflect the regime split in the harvest intentions data, 1200 hectares in the large-scale owners' estate was

»» TABLE 4.1: AREAS OF "OTHER SPECIES" IN EAST COAST (HECTARES)

	AREA AGE 21-40 YEARS	TOTAL AREA
Cypress species	1	133
Other softwoods	258	1 133
Eucalypts	109	198
Other hardwoods	450	690
Total	818	2 154

Source
Ministry of Agriculture and Forestry, 2008.

transferred from the old pruned croptype into the old unpruned croptype. Area in age-classes 1 to 4 years in the large-scale owners' estate was reduced by 10 percent to allow for the expected reduction following remapping prior to silviculture.

In addition, the areas of the small-scale owners' estate (apart from the investment syndicates managed by Roger Dickie and Forest Enterprises) were reduced by 15 percent. This is because the area in this ownership category is often reported on a gross area rather than net stocked area basis (which excludes unplanted areas, areas not successfully established, streams, wetlands, and so on). In addition, reductions were made to the area of over-mature stands in the small-scale owner estate (as described later in the report).

› METHOD TO DEVELOP YIELD TABLES

In 2007 new yield tables for East Coast were developed in the following manner:

- › large-scale owners provided yield tables for their forest estates;
- › these tables were averaged on an area-weighted basis to get regional yield tables for each crop-type;
- › yield tables for old (age 16+ years, planted in 1989 and earlier) radiata pine and Douglas-fir were then calibrated to match the harvest intentions data provided by large-scale owners. The assumption is that the harvest intentions data provides the most accurate information available as it is based predominantly on detailed inventory;
- › yield tables for young radiata pine crop-types (planted in 1990 and later) were also adjusted in consultation with large-scale owners;
- › the yield tables developed for the large-scale owners' estate were also applied to the small-scale owners' estate.

»»» LARGE-SCALE OWNERS HARVEST INTENTIONS

Large-scale owners were asked to provide details of planned harvest volume by log grade and area from 2005 to 2015. These harvest intention values were then included to provide the most realistic wood availability forecasts over this period.

»»» ASSUMPTIONS

The wood availability forecasts for the East Coast are based on the following assumptions:

› REPLANTING

- All the area that is harvested is replanted (with a regeneration lag of 1 year).
- The area awaiting replanting as at 31 March 2005 is included as area at age 0 (the area to be replanted in the 2005 planting season).
- No new land planting is included.

› SPECIES/REGIME

All area is replanted back into the same species and regime, except Douglas-fir in the large-scale owners' estate that is replanted to radiata pine following harvest.

› OVER MATURE STANDS

It was assumed that any area of radiata pine in the small-scale owners' estate that was aged over 40 years would not be harvested, so forests aged 41 years or older (38 hectares total) were removed from the model.

»»» HARVEST FOR 2005–2007

The total volumes of radiata pine harvested by large and small-scale owners in 2005–2007 are shown in Table 4.2. The large-scale owners' returns are based on the harvest intentions data supplied to MAF. The small-scale owners'

estimates are based on feedback from consultants in the East Coast wood supply region.

»»» TABLE 4.2: VOLUMES OF RADIATA PINE HARVESTED IN 2005–2007

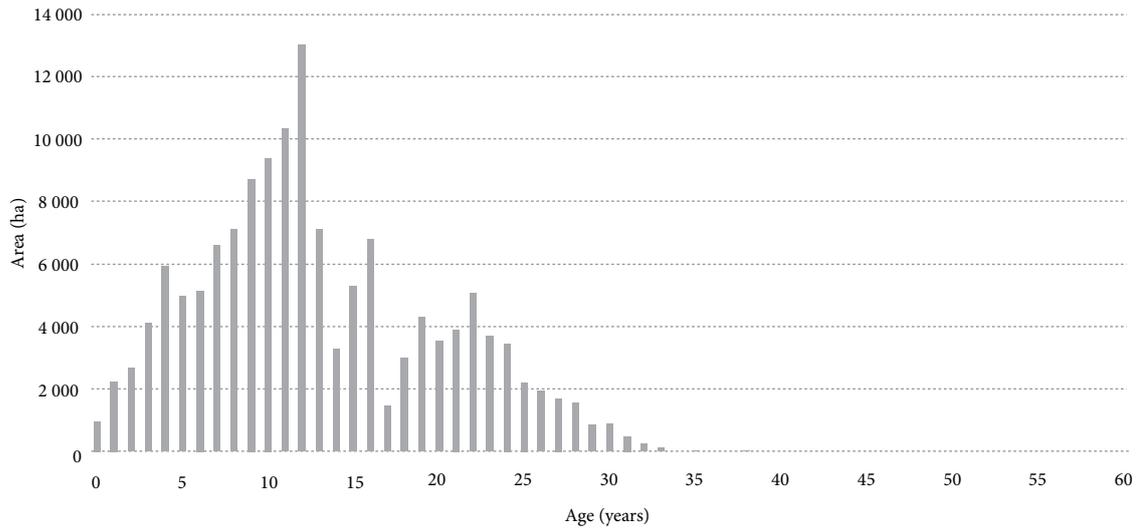
HARVEST YEAR	LARGE-SCALE OWNERS (M ³)	SMALL-SCALE OWNERS (M ³)
2005	481 000	148 000
2006	563 000	129 000
2007	949 000	152 000

»»» EAST COAST WOOD AVAILABILITY FORECASTS

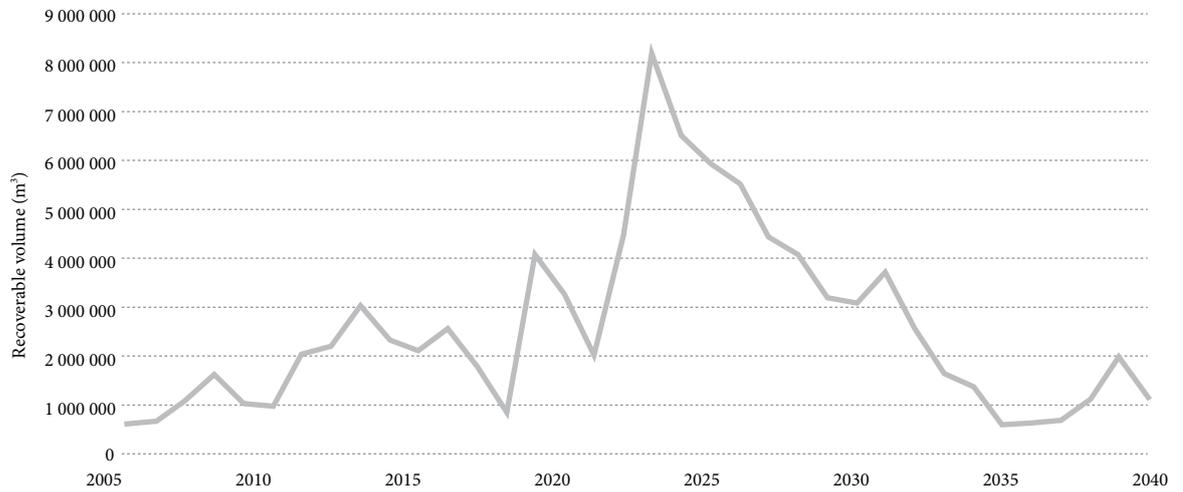
› SCENARIO 1: HARVEST ALL AREAS AT AGE 30

In this scenario, all trees harvested at age 30 indicating the “pure” (unconstrained) availability of wood from the East Coast. This means wood availability reflects the age-class distribution. Figure 4.2 shows the age-class distribution of radiata pine in the East Coast, and Figure 4.3 shows the wood availability. The low point of 30-year-old trees in 2018 in Figure 4.3 occurs because of the small area (1450 hectares) at age 17 (planted in 1988) in Figure 4.2. Conversely, the high point at 2023 (Figure 4.3) occurs because of the large area (13 044 hectares) at age 12 (planted in 1994) in Figure 4.2.

»» FIGURE 4.2: AGE-CLASS DISTRIBUTION OF EAST COAST RADIATA PINE – COMBINED ESTATE AS AT 1 APRIL 2005



»» FIGURE 4.3: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 1



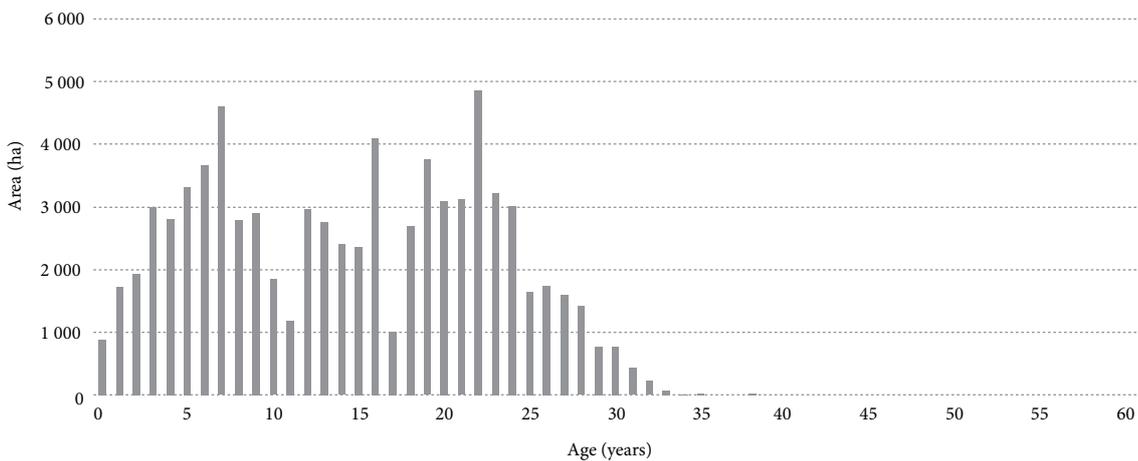
► SCENARIO 2: LARGE-SCALE OWNERS HARVEST AT INTENTIONS, SMALL-SCALE OWNERS HARVEST AT AGE 30

In this scenario, large-scale owners harvest in line with their stated intentions and small-scale owners harvest trees at age 30.

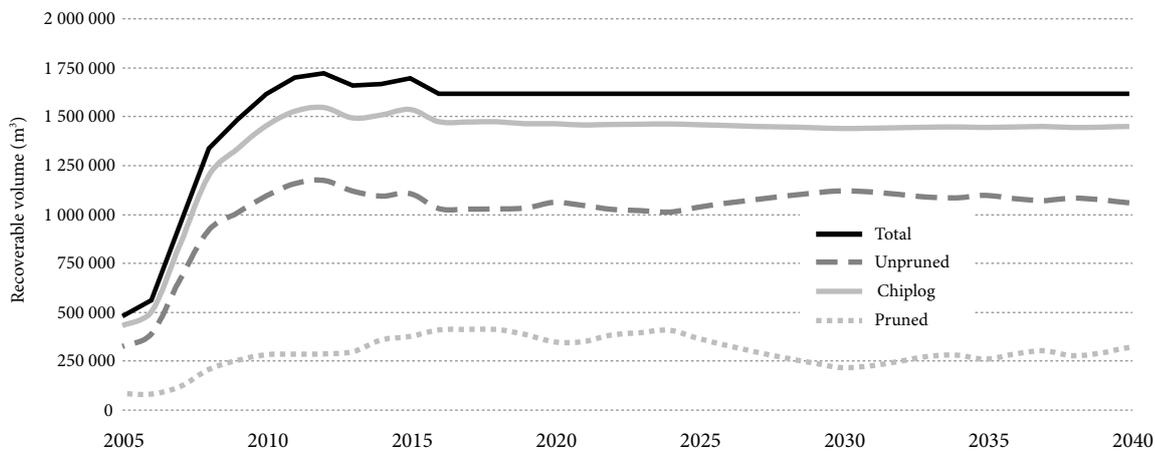
LARGE-SCALE OWNERS

The age-class distribution of the large scale owners' estate (Figure 4.4) is reasonably uniform at least between ages 4 and 24. The area at age 0 is the area awaiting replanting as at 31 March 2005 (to be replanted in the 2005 planting season).

►► FIGURE 4.4: AGE-CLASS DISTRIBUTION OF THE EAST COAST RADIATA PINE ESTATE – LARGE-SCALE OWNERS AS AT 1 APRIL 2005



►► FIGURE 4.5: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 2 – LARGE-SCALE OWNERS



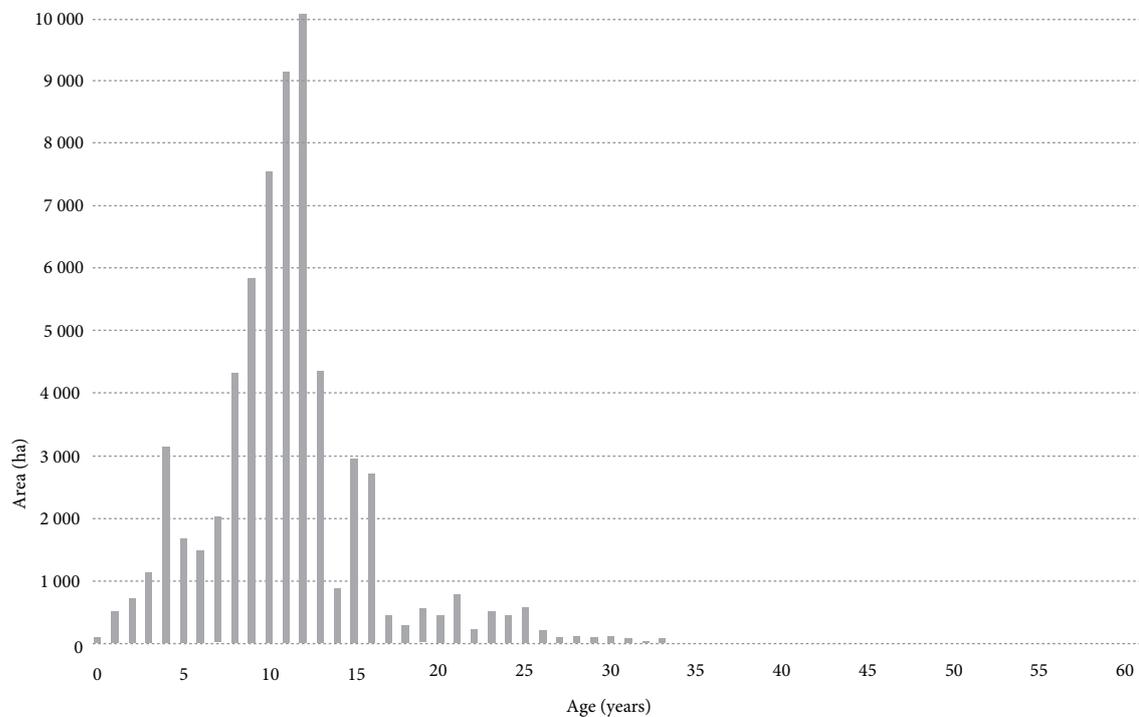
For this scenario, the availability of wood from large-scale owners is based on stated harvest intentions for 2005 to 2015. Thereafter the availability is constrained to be non-declining with a target rotation age of 30 years. The wood availability of large-scale owners (Figure 4.5) is forecast to increase rapidly and to exceed 1.6 million cubic metres per year from 2010.

SMALL-SCALE OWNERS' ESTATE

The age-class distribution of the small-scale owners' estate (Figure 4.6) is very irregular with over 4000 hectares in each of ages 8 to 13 years (planted in 1992 to 1997) and much less in all other age-classes. Forecasting the availability from this estate depends on how the large area in ages 8 to 13 will be harvested:

- › at a fixed rotation age (scenario 2);
- › spread over many years (scenario 3);
- › spread over an intermediate number of years (scenario 4).

»» FIGURE 4.6: AGE-CLASS DISTRIBUTION OF THE EAST COAST RADIATA PINE ESTATE – SMALL-SCALE OWNERS AS AT 1 APRIL 2005



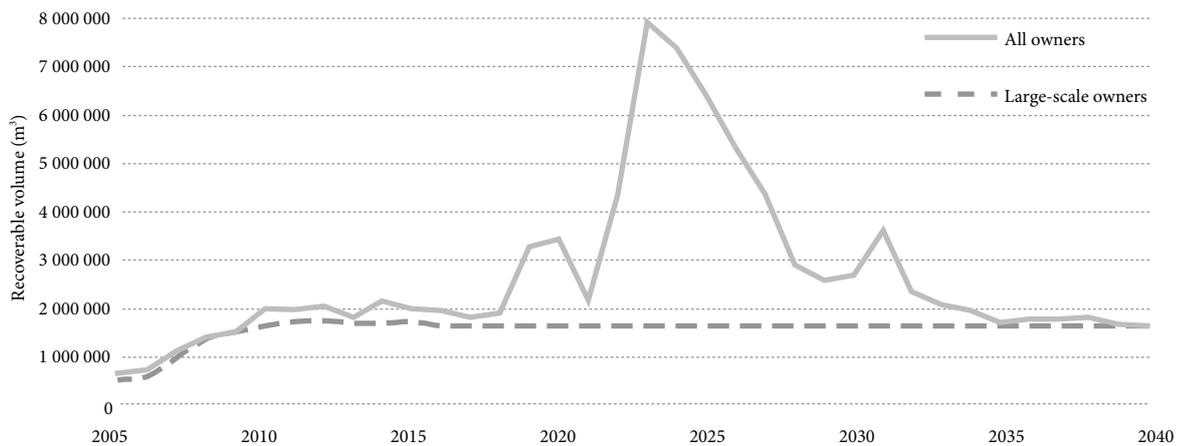
COMBINED ESTATE

The wood availability from all owners is presented in Figure 4.7. For the large-scale owners' estate, it is the same as in Figure 4.5 (scenario 2 where the entire small-scale owners' estate is assumed to be harvested at age 30). The fluctuations in the total volume harvested reflect the variation in the age-class distribution of the small-scale owners' estate.

The large increase in volume from 2022 (Figure 4.7) occurs when the large areas from the small-scale owners' estate in young age-classes (8–13) is harvested. For example, the increase in 2022 is a consequence of the 4356 hectares planted by small-scale owners in 1992 (age 13 in Figure 4.6) being harvested at age 30 years.

Fluctuations in harvest volumes of the magnitude shown in Figure 4.7 would be impractical because of marketing and logistics realities.

»» FIGURE 4.7: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 2 – COMBINED ESTATE



► **SCENARIO 3: NON-DECLINING YIELD (TARGET ROTATION 30 YEARS)**

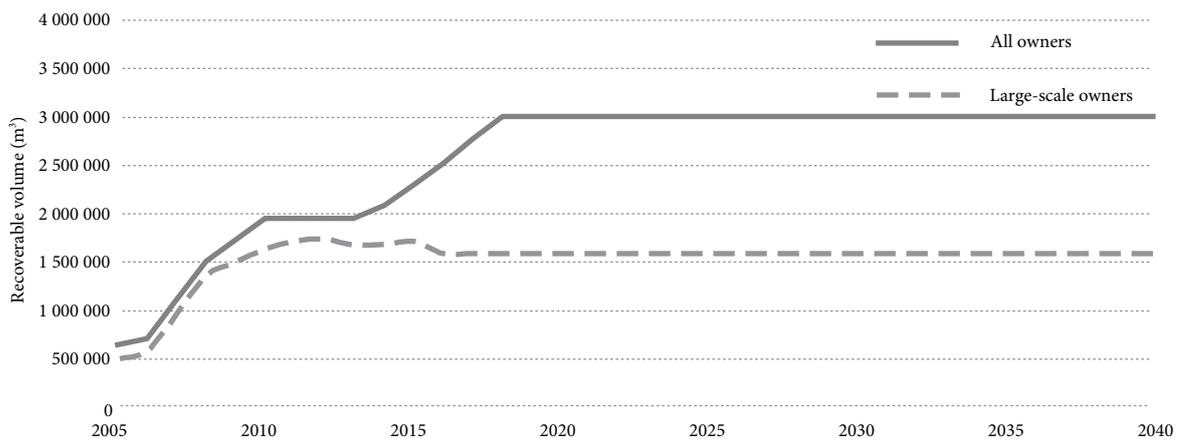
The third scenario assumes a non-declining yield, with a target rotation age of 30 years. An extra constraint was modelled so the total volume could not increase by more than 10 percent annually from 2014 on.

Figure 4.8 indicates that when the small-scale owners' estate is harvested to complement the large-scale owners' estate, the total volume (of radiata pine) has the potential

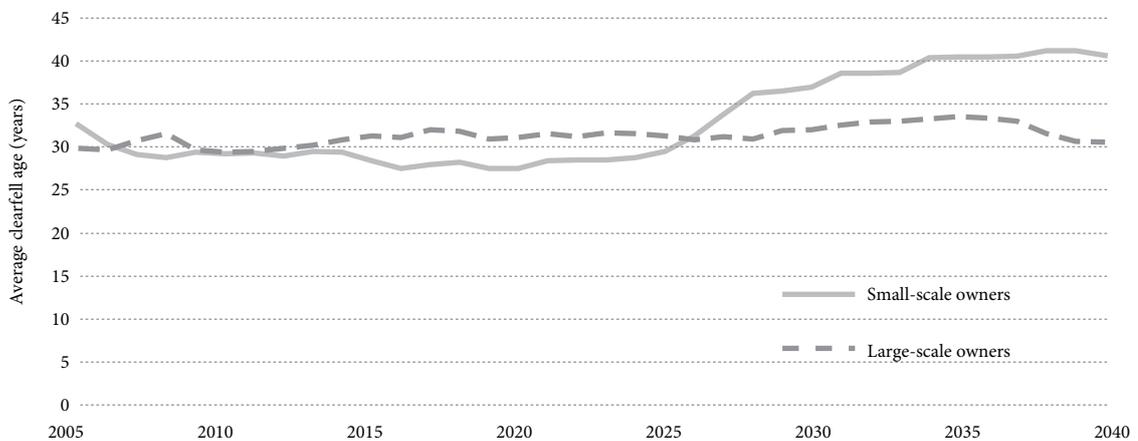
to increase substantially. The potential volume available increases to 3 million cubic metres per year from 2018.

This scenario is similar to the base case scenario adopted in the *National Exotic Forest Description, National and Regional Wood Supply Forecasts* (MAF 2000). However, it results in the small-scale owners' estate being harvested at rotation ages that differ markedly from 30 years (Figure 4.9).

►► **FIGURE 4.8: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 3**



►► **FIGURE 4.9: AVERAGE RADIATA PINE CLEARFELL AGE BY OWNERSHIP CATEGORY UNDER SCENARIO 3**

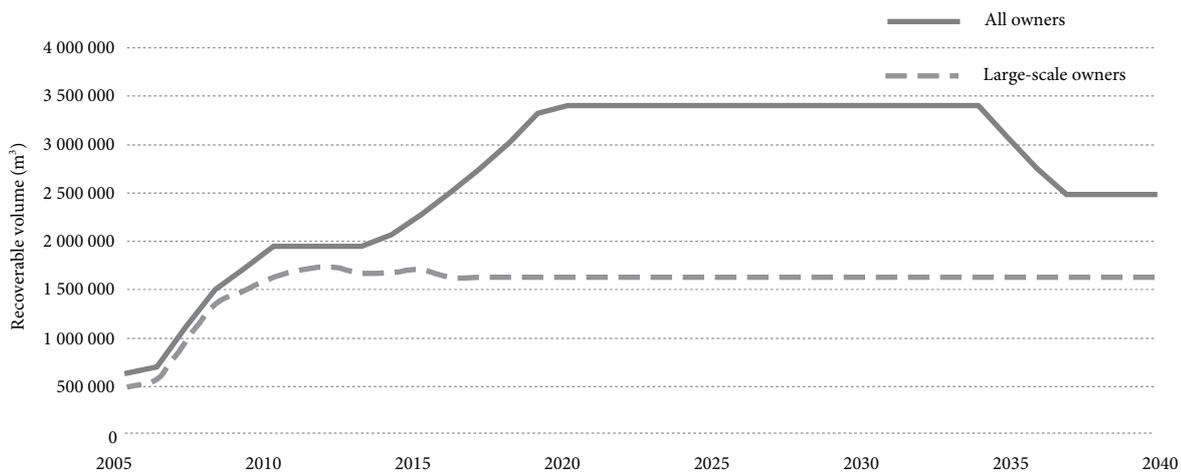


► SCENARIO 4: SPLIT NON-DECLINING YIELD (TARGET ROTATION 30 YEARS)

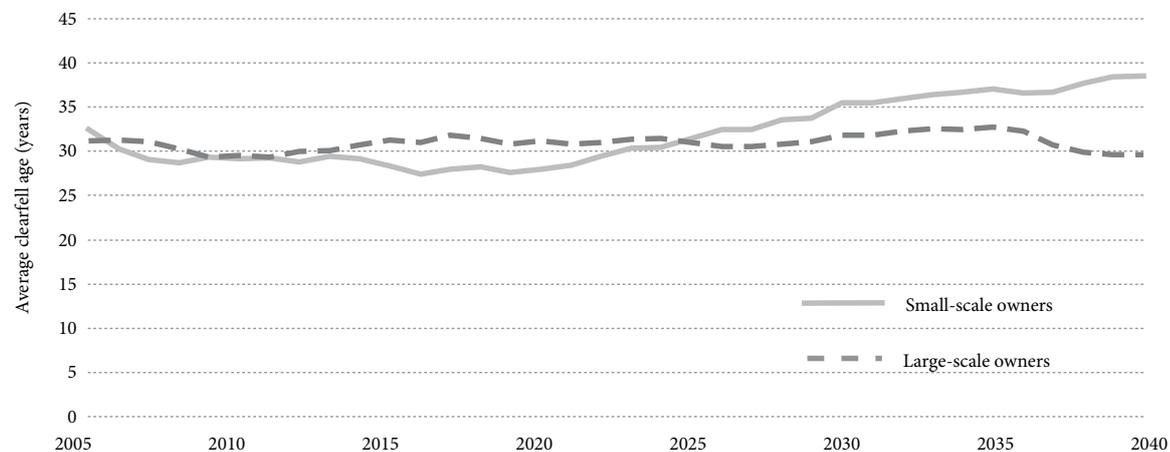
The fourth scenario is based on a split non-declining yield, with a rotational age of 30 years. This scenario gives a forecast wood availability that is similar to scenario 3 through to 2018 (Figure 4.10). Wood availability increases to 3.4 million cubic metres per year from 2020 before reducing to 2.5 million cubic metres per year from 2037.

The main difference from scenario 3 is that the large area of young stands in the small-scale owners' estate is assumed to be harvested over a shorter period of time. As a consequence the total volume was modelled to be non-declining from 2007 to 2034 for the current rotation. Thereafter an annual reduction of up to 10 percent was assumed, with the yield to be non-declining for the next rotation (from 2037). As a consequence, the average clearfell age for small-scale owners stays closer to the target of 30 years than in scenario 3 (Figure 4.11).

►►► FIGURE 4.10: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 4



►►► FIGURE 4.11: AVERAGE RADIATA PINE CLEARFELL AGE BY OWNERSHIP CATEGORY IN THE EAST COAST UNDER SCENARIO 4

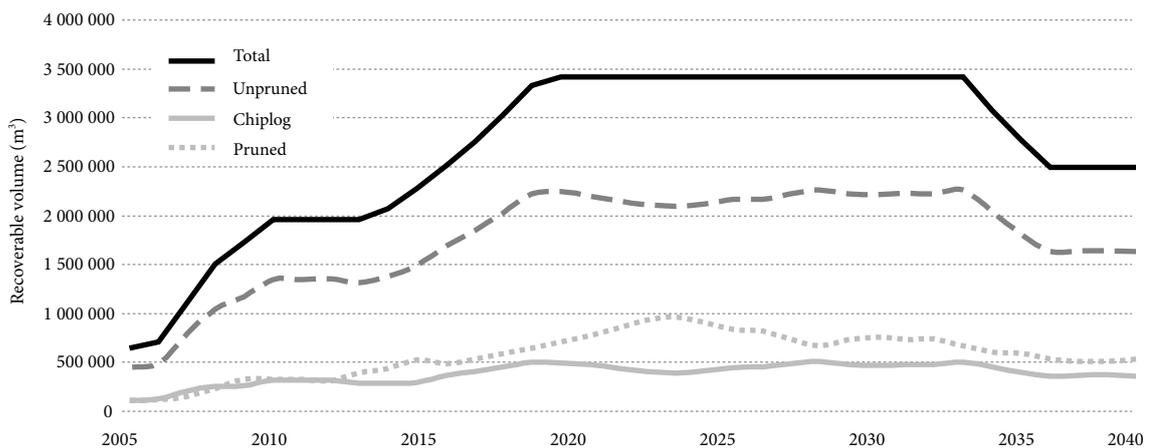


The total volume forecast for scenario 4 is broken down by log grade in Figure 4.12.

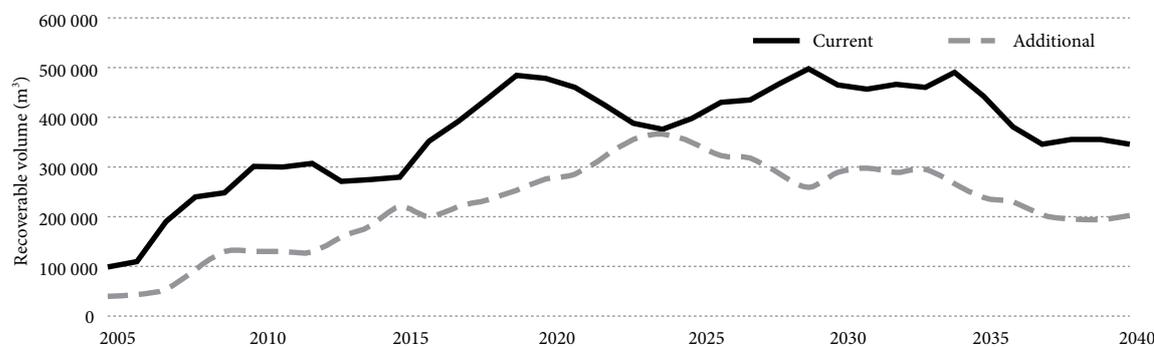
In calibrating the intensively managed radiata pine yield tables to match harvest intentions, the chiplog volume was approximately halved. This reflects the limited markets for chiplogs/pulplogs that are currently within an economic cartage distance on the East Coast so the current intention is not to extract substantial volumes of chiplogs (Figure 4.13 shows the scale of this). These volumes are potentially

available for utilisation in the future. The “current” volume is the same as in Figure 4.11 and the “additional” volume is what is potentially available (in addition to the volume that owners currently intend recovering).

»» FIGURE 4.12: EAST COAST RADIATA PINE AVAILABILITY BY LOG GRADE UNDER SCENARIO 4



»» FIGURE 4.13: POTENTIAL EAST COAST RADIATA PINE CHIPLOG AVAILABILITY UNDER SCENARIO 4



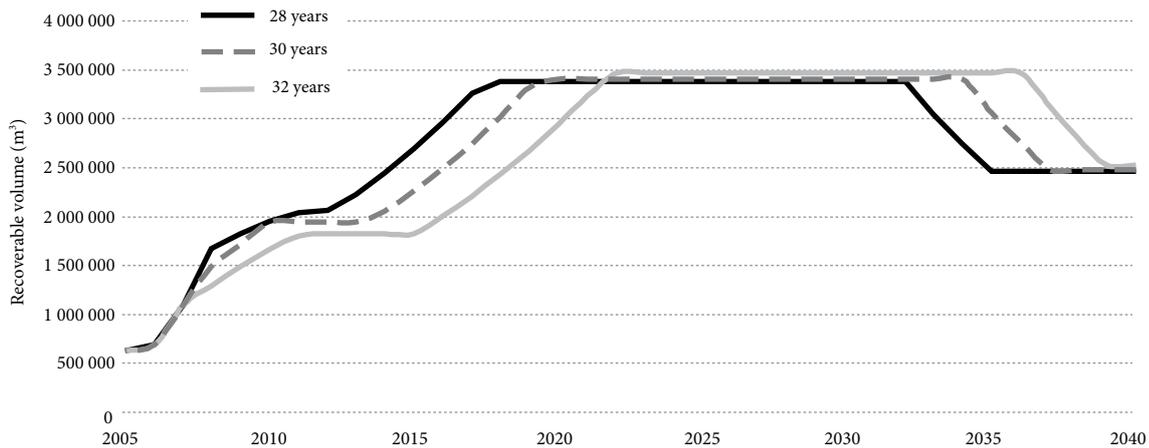
► SCENARIO 5: TARGET ROTATION AGE VARIATIONS

Different wood availability profiles are generated if target rotation age is changed from 30 years to either 28 or 32 years (Figure 4.14). Because of the limitations imposed by the current age-class distribution and large-scale owners' stated harvest intentions, it takes some time to achieve separation of average clearfell age (Figure 4.15). No increase was assumed from 2012 to 2015 (and the

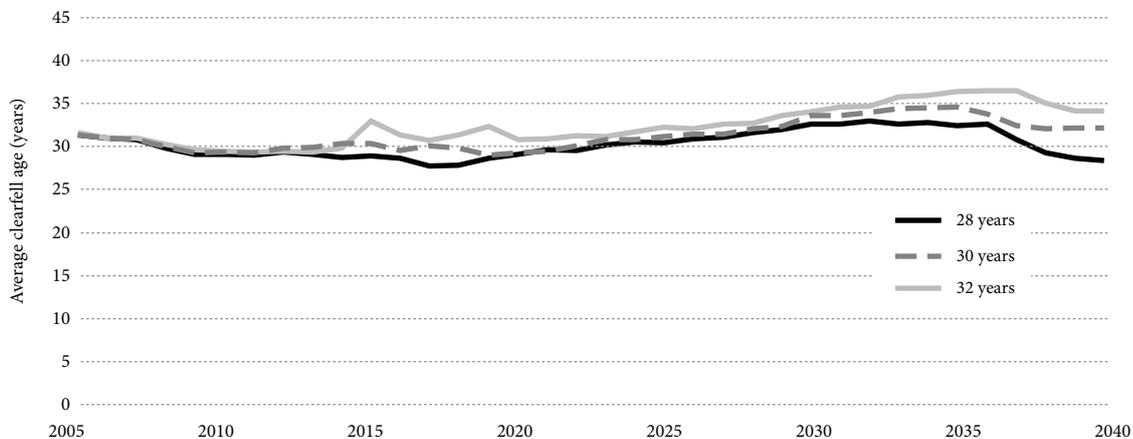
harvest intentions of large-scale owners were reduced) for the 32-year variation in order to get separation in harvest volumes.

Figure 4.14 shows that there is the potential for a significant increase in the East Coast harvest volumes. However, there is a range of possibilities for the timing of the increase and the level of the potential harvest volume.

►► FIGURE 4.14: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 5



►► FIGURE 4.15: AVERAGE RADIATA PINE CLEARFELL AGE IN THE EAST COAST BY TARGET ROTATION AGE UNDER SCENARIO 5



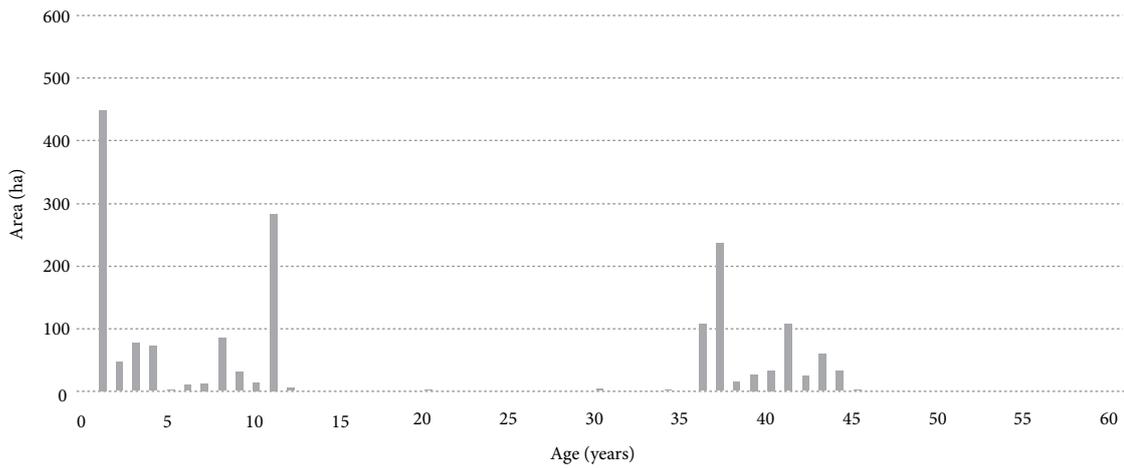
»» OTHER SPECIES

» DOUGLAS-FIR

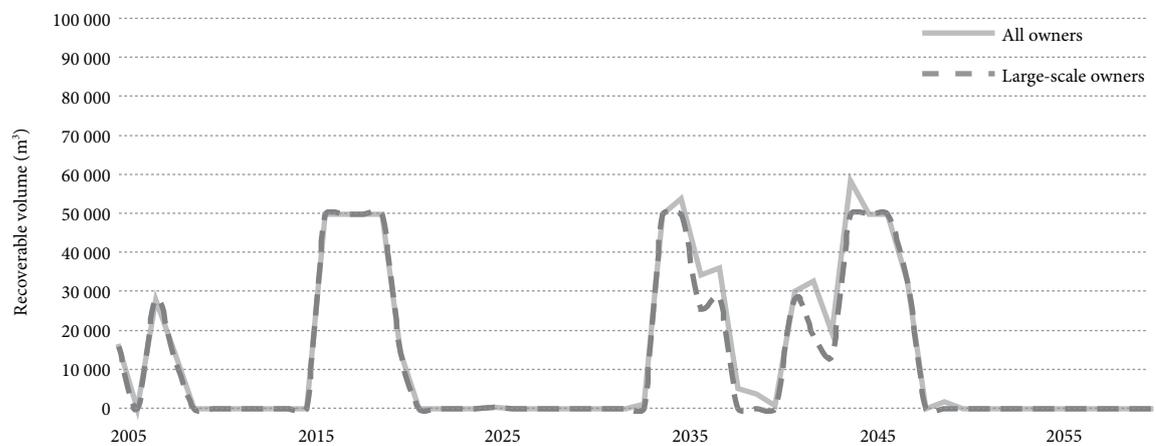
The area of Douglas-fir on the East Coast is about 1800 hectares. The age-class distribution of Douglas-fir is far from uniform (Figure 4.16).

The Douglas-fir harvest for the large-scale owners' estate is based on intentions for 2005 to 2015. From 2015 to 2049 clearfell volume for large-scale owners is limited to an upper limit of 50 000 cubic metres per year (Figure 4.17).

»» FIGURE 4.16: AGE-CLASS DISTRIBUTION OF EAST COAST DOUGLAS-FIR – COMBINED ESTATE AS AT 1 APRIL 2005



»» FIGURE 4.17: EAST COAST DOUGLAS-FIR AVAILABILITY – COMBINED ESTATE AS AT 1 APRIL 2005



THE WOOD PROCESSING INDUSTRY

5

»» SAWMILLING

The total installed sawmill capacity in the East Coast region is estimated to be 100 000 cubic metres of sawn timber, based on mills' usual hours of operation.

Individual sawmillers are listed in table 5.1 and discussed in more detail below.

> PRIME SAWMILLS LTD

This mill was originally built in the mid 1980s to take advantage of the expected log harvest out of East Coast forests. The mill has been mothballed several times during its life owing to wood supply and market issues. The mill was purchased by Ernslaw One once they established themselves on the East Coast after the acquisition of the cutting rights to the Crown forests from the Huaguang receivers. The site includes a sawmill, drymill facilities, kiln drying, preservative treatment and machine stress-grading capability.

In late November 2007 the company announced it was reducing production from two shifts to one as a result of the high dollar and a downturn in demand from key markets in the US and Asia. Another reason quoted at the

time was the company's inability to fill the second shift with skilled workers.

In early 2008 Ernslaw One purchased the forest and processing assets of Winstone Pulp International (WPI), these processing assets being the Karioi Pulp Mill and Tangiwai Sawmill.

Ernslaw One has since combined all of its processing assets with those of WPI forming a company focused on processing. Prime Sawmills Ltd is now a subsidiary of WPI, and WPI is in turn a subsidiary of Ernslaw One.

WPI is now reviewing the operations at Prime Sawmills Ltd with a view to lifting its present single shift capacity of 110 cubic metres sawn output per day to 210 cubic metres sawn output, and secondly to see if the sawmill originally planned by Ernslaw One for the Coromandel Peninsula, for which the equipment has been purchased, could be installed on this site. Such an installation would see this site's capacity lifted to over 100 000 cubic metres on a single shift basis. Logs for the site would be supplied from Ernslaw One's large forestry holdings on the East Coast.

»» TABLE 5.1: SAWMILLS OPERATING IN EAST COAST (FIXED MILLS)

SAWMILL

Production level: 25 000–50 000 m³ sawn timber per annum

Prime Sawmills Ltd

Production level: 10 000–24 999 m³ sawn timber per annum

Juken New Zealand Ltd

Production level: less than 9 999 m³ sawn timber per annum

A Nolan Richardson Ltd

Ron Hedley Ltd

JA Larsen

Sources

Individual sawmillers.

LOCATION

Matawhero

Matawhero

Gisborne

Ruatoria

Makaraka

› JUKEN NEW ZEALAND LTD

Juken New Zealand added a \$10 million sawmill to its processing facility in 2006 to produce sawn lumber for export to Japan. This mill saws premium logs producing quarter-sawn appearance lumber for high-quality finishing such as solid timber flooring, doors and other high-value end products.

www.jnl.co.nz

› A NOLAN RICHARDSON LTD

A Nolan Richardson is a small custom-cutting mill that saws radiata pine for the domestic market and for the horticultural export sector.

››› LAMINATED VENEER LUMBER AND PLYWOOD

› JUKEN NEW ZEALAND LTD

The Juken New Zealand Gisborne plant was opened in 1994 to produce structural LVL, sliced veneer and sawn laminated lumber. Additional expansion in 2000 doubled production and took investment at the site to well over \$100 million, adding a new plywood line and veneer drier. The plant, including the sawmill, currently consumes around 200 000 tonnes of logs per annum, and the majority of the production is destined for export to Japan and a range of other international markets. This plant can make large LVL dimensions (150 mm thick) and specialises in producing structural beams and posts to customised lengths. Currently, the plant doesn't produce sliced veneer.

››› CHIP EXPORT

East Coast Pulp Processing operated a bundled pulp and log chip export operation out of Gisborne from 1996 to 2003, for the Marubeni Corporation. It attained annual volumes approaching 40 000 cubic metres per year before the operation ceased in 2003. Since then the plant has been sold, dismantled and exported to Fiji. Gisborne has not exported any log chip since. A combination of factors – higher logging, cartage and wharfage costs – and a declining international market meant that log chip from

Gisborne was no longer competitive on the world chip market.

› HIKURANGI FOREST FARMS – FUTURE PROCESSING PLANS

Hikurangi Forest Farms lodged a consent with the GDC in mid 2008 to build a major state-of-the-art wood processing plant on a 57-hectare site zoned rural industrial at Matawhero near Gisborne. It was reported in July 2008 that the new plant could eventually be capable of processing around 940 000 cubic metres per year utilising the majority of the cut from HFF Forests. It will include facilities for log processing, veneer and plywood manufacture and sawmilling. Full construction of the plant will be developed in stages over five years once consents have been issued and the company's board have

››› TABLE 5.2: SAWN TIMBER PRODUCTION IN EAST COAST

YEAR ENDED 31 MARCH	INDIGENOUS FORESTS (M ³)	PLANTATION FORESTS (M ³)	TOTAL (M ³)
1990	126	3 948	4 074
1991	0	8 810	8 810
1992	75	3 840	3 915
1993	14	4 577	4 591
1994	70	4 832	4 905
1995	306	22 584	22 890
1996	1 714	21 963	23 677
1997	407	20 319	20 726
1998	75	17 652	17 727
1999	467	15 194	15 661
2000	0	25 931	25 931
2001	55	25 416	25 471
2002	0	20 850	20 850
2003	194	34 765	34 959
2004	136	29 750	29 886
2005	67	42 664	42 731
2006	0	65 632	65 632
2007	2	68 586	68 588

Source
Ministry of Agriculture and Forestry.

given their final approval for the project. HFF announced on 18 September 2008 that it had received the resource consents from the GDC for the construction and operation of a wood processing facility in Gisborne. Initial plans are for a veneer and plywood mill. It is estimated this first phase would require 120 personnel.

»»» PRODUCTION AND EXPORT DATA

» SAWN TIMBER PRODUCTION

Sawn timber production on the East Coast has increased significantly since the early 1990s. This reflects the increase in the log harvest, recommissioning of the Prime Sawmill and start-up of Juken New Zealand's sawmill.

»»» TABLE 5.3: SAWN TIMBER EXPORTS FROM EASTLAND PORT

YEAR ENDED 31 DECEMBER	TOTAL (M ³)
1990	5 175
1991	0
1992	0
1993	0
1994	1 418
1995	2 102
1996	3 414
1997	2 723
1998	2 042
1999	3 996
2000	6 972
2001	7 397
2002	4 687
2003	4 281
2004	5 127
2005	5 170
2006	8 925
2007	4 402

Source
Ministry of Agriculture and Forestry.

» SAWN TIMBER EXPORTS

Export volumes of sawn timber from the Eastland Port have not been significant: either as a result of sawn product being transhipped out of the region via the Port of Tauranga or Port of Napier. There were sporadic increases in export volumes in 2000, 2001 and 2006.

»»» LOG EXPORTS

Exports ex Gisborne peaked at 567 000 cubic metres around 2002 and then dropped off before increasing again to 595 000 cubic metres in 2007. Variation in log exports reflected international market trends and opportunities at the time, availability of forest woodlots for harvesting and the early felling of non-radiata stands and replanting with

»»» TABLE 5.4: LOG EXPORTS FROM EASTLAND PORT

YEAR ENDED 31 DECEMBER	TOTAL (M ³)
1990	63 016
1991	62 309
1992	57 366
1993	202 953
1994	271 645
1995	393 727
1996	398 194
1997	381 575
1998	346 957
1999	365 994
2000	457 652
2001	518 346
2002	566 475
2003	408 618
2004	358 477
2005	334 265
2006	409 114
2007	595 224

Source
Ministry of Agriculture and Forestry.

radiata pine. The demand for export logs is variable; in recent years the high exchange against the US dollar and high shipping costs have depressed log exports.

»» LOCAL FOREST INDUSTRY ASSOCIATIONS

» EASTLAND WOOD COUNCIL

Eastland Wood Council (EWC) is a coherent local industry group that cooperates on common issues and industry promotion. It has a strong mutual support ethic without compromising a fully competitive approach to markets. Members of the EWC are: A Nolan Richardson Ltd, Ernslaw One Ltd, Forest Enterprises Ltd, Hikurangi Forest Farms Ltd, Juken New Zealand Ltd, Kohntrol Forest Services Ltd, Ngati Porou Whanui Forests Ltd, PF Olsen Ltd, Prime Sawmills Ltd, Roger Dickie Ltd and Eastland Infrastructure Ltd.

As well as working to significantly improve the image of forestry in the East Coast region, a major goal of the EWC's strategic plan is to have 60 percent or more of logs that are harvested on the East Coast, processed locally within 10 years.

To achieve this, the key initiatives that EWC has been taking are:

- › supporting the upgrading of the access road to the Eastland port;

- › supporting the continuation of the Regional Development Roding Programme (RDRP) to complete essential access requirements;
- › developing a constructive long-term relationship with both the Wairoa and Gisborne District Councils to ensure the best use of resources and to minimise impediments to forestry and wood processing development;
- › implementing the process agreed with the Tertiary Education Commission for industry input into decisions on priorities for funding industry training;
- › working with the Forest Industries Training and Education Council (FITEC) to implement training programmes and initiatives in the region;
- › developing a support programme with regional secondary schools to build long-term awareness of the importance of wood to the region and range of career opportunities available;
- › undertaking a regional branding and marketing strategy;
- › providing potential new processing investors with information on wood availability.

www.eastlandwoodcouncil.co.nz



The Juken New Zealand mill at Matawhero, Gisborne.

EDUCATION AND TRAINING

6

»» FITEC

The Forest Industries Training and Education Council (FITEC) is the forest industry-owned training organisation covering:

- › forest establishment, silviculture and harvesting;
- › solid wood processing;
- › pulp and paper converting;
- › wood panel manufacturing;
- › forest health and biosecurity; and
- › credit and finance.

FITEC also has responsibilities that include:

- › setting national standards and qualifications and developing learning resources;
- › developing training programmes for employers and employees;
- › developing arrangements for training delivery;
- › maintaining a database of trainees and their learning records;
- › arranging quality assurance of training producers, industry trainers and assessors; and
- › providing leadership in industry on skills and learning issues.

FITEC has a training advisor covering the East Coast.
www.fitec.org.nz

»» TAIRĀWHITI POLYTECHNIC

Tairāwhiti Polytechnic's School of Forestry, Papatoa, is one of the leading providers of forest harvesting training in New Zealand. Due to industry demand the programmes continue to grow and are now offered on 19 campuses around the North Island.

Papatoa has built long-term relationships with industry employers and the programme is currently offered in Gisborne and Tokomaru Bay on the East Coast. The Certificate in Cable Logging has a strong history, servicing the demand for well-trained crews.

Tairāwhiti Polytechnic also offers courses in forestry driving and heavy-vehicle driving.

www.tairawhiti.ac.nz and www.papatoa.co.nz

»» TURANGA ARARAU

Turanga Ararau, the iwi tertiary education provider for Te Runanga o Turanganui a Kiwa, offers the first year of the Diploma in Forestry (Forestry Management) – Level 6 in Gisborne and works closely with the Waiariki School of Forestry, Wood Manufacturing and Biotechnology at Waiariki Institute of Technology based in Rotorua. Arrangements with Waiariki enable Turanga Ararau graduates to enter directly into the second year of the National Diploma in Forestry (Forest Management) course in Rotorua. Turanga Ararau first year students can also complete a certificate in Technical Forestry Level 3 that is aligned to local industry needs.

In addition, Turanga Ararau offers a Forestry Logging and Chainsaw Skills programme, with unit standards leading to the National Certificate in Forest Foundation skills (Level 2) with strands in Establishment, Pruning, Chainsaw Operations, Breaking Out and Landing Operations. Learners can complete the full national certificate on entering the industry through the Modern Apprenticeship programme and traineeships.

Turanga Ararau also offers forestry courses to local secondary schools and on and off job training through FITEC.

www.turanga-ararau.org.nz

INFRASTRUCTURE

7

»» PORTS

» EASTLAND PORT (PORT OF GISBORNE)

Eastland Port Limited is owned by the Eastland Community Trust (ECT) and operated by Eastland Infrastructure Limited (EIL). EIL is also owned by ECT and took over management of the port in 2003 following ECT's purchase of the port assets from the Gisborne District Council (GDC).

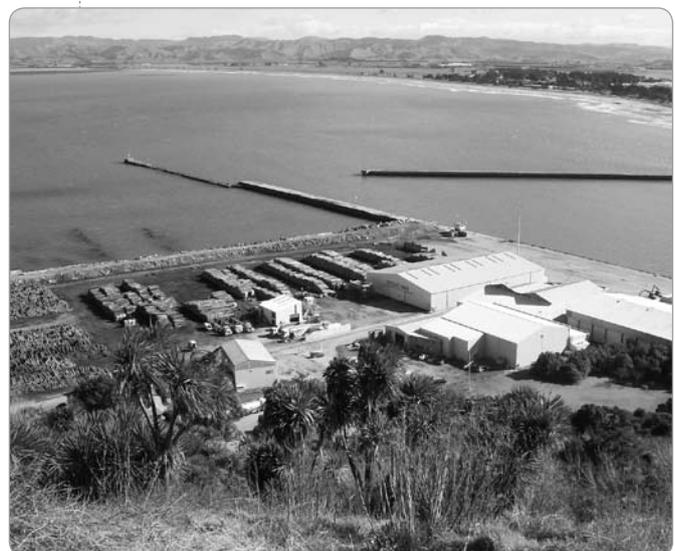
Eastland Port Ltd is situated on a harbour with a depth at its entrance of 10.5 metres providing for a maximum permissible draft of 10 metres. The port operates two tugs, has a turning basin of 255 metres, and will allow a vessel of a maximum of 200 metres overall length to enter the port. The length of entrance is 1.6 km and the width is 92.4 metres. The port has a tidal range of 1.8 metres. The port has two international wharves (seven and eight), which have a combined length of 363 metres. These are general purpose berths, which may be utilised for container shipments. Container capable vessels need to be self-contained with cranes for the discharge and loading of containers, as at this stage Eastland Port does not have any shore-based container cranes (refer to www.eastland.co.nz/Port/About-EPL/business.asp for more information.)

A major realignment of the public road through the port has been completed, enabling the redevelopment of the port footprint to increase wharfside space for warehousing, and improve the efficiency of log handling. Available storage at the port includes 13.5 hectares of paved and unpaved open storage, a 9 hectare log storage area with a capacity of about 79 000 tonnes, and three dry storage buildings with a joint capacity of 6700 square metres.

In the light of the recently announced \$36 million injection over four years into coastal shipping under the Government's Sea Change Strategy, EIL is working towards providing a feeder container service from Gisborne based on a regular service between Eastland Port and the Port of Napier. This strategy would meet the forest product industry's requirement for more container capacity at Eastland Port, while allowing the port to move cargo onto increasingly larger ships without the requirements to deepen the depth of the channel. It is anticipated that some processed wood products will continue to be shipped directly from Eastland Port to offshore markets via customer chartered vessels.

»» BARGING

Barging options out of Hicks Bay have been examined several times in the last two decades as a cost-effective means of transporting logs to Tauranga and Gisborne ports. To date the road transport option seems to have been the preferred outcome because of the additional costs associated with double handling the logs off a truck and onto a barge. A further issue is difficult open sea conditions off Hicks Bay.



Eastland Port, Gisborne.

»» ROAD TRANSPORT

In 2002, the Government established a Regional Development Fund (RDF) for roading. It was made available to the Northland and Tairāwhiti regions specifically to fund developing the infrastructure necessary for forestry and wood processing development. This RDF has subsequently enabled the GDC to undertake improvements to district roads in advance of increases in traffic flow that relate to encouraging regional wood processing developments. Some concerns have been expressed about how the maintenance of secondary roads that service forests will be funded.

In late 2007, the Ministry of Transport carried out a stocktake of the RDF programme in Northland and Tairāwhiti. The stocktake identified that a number of key projects remained in these two regions, which has resulted in Government allocating \$30 million of RDF funding over three years in the 2008 Budget to complete these high-priority projects in Northland and Tairāwhiti. The amount of money allocated will require some prioritisation of work as the East Coast share of the \$30 million will not complete all the projects requested by GDC. Northland and Tairāwhiti are the only regions to have qualified for funding under the RDF process. Under the RDF programme the entire critical roading infrastructure on the East Coast will have been upgraded to allow all year log transport. While more could be done, local public roads will no longer be a constraint on harvesting and processing potential.

Since the RDF criteria were developed in 2002 another funding mechanism, called “R-funding” (for “regional”), has been developed to fund land transport projects that have a high regional priority. Using R-funds, which are allocated according to regional population projections, regions have been able to advance their high-priority transport projects for the period 2005–2014. As at 1 April 2008 the East Coast region had been allocated \$23 million.

The unstable nature of the East Coast landscape and the location of many of the newer forests in less accessible areas of the region will pose a challenge for the future expansion of forestry operations. The cost of obtaining and carting roading materials will also affect profitability of operations.

Local forest growers have expressed concern at the council application of a rating differential on forest land for road maintenance. The differential is intended to balance the impact on roads from harvesting activities with the lower value of forest land compared to other more valuable rural land.



»» RAIL TRANSPORT

The Gisborne to Napier rail service is of little strategic significance to current forestry operations within the region. This is mainly because there is no existing rail infrastructure north of Gisborne to service the vast forest estates in that area. The declining utilisation of the Gisborne to Napier freight line reflects market demand and lower costs, reduced handling, and greater reliability of road transport. On 1 July 2008 the Government purchased the Toll Holdings railway interests and placed them under the management of a new company called KiwiRail. This change is not expected to change the attitude of the forest industry towards rail usage for forest and wood products on the East Coast.

»» ENERGY

In 2006, the maximum demand from all electricity users in the district was 65 MW (Gisborne and Wairoa). This is expected to grow substantially if processing facilities are built in response to the forecast increasing wood availability. Installed generation capacity in the region is low (11 MW) compared with demand, and options exist for more generation capacity. Electricity in the region is supplied via the Tuai hydroelectricity scheme, backed up by an emergency generator at Whirinaki and the

Whakamaru hydro scheme in the Central North Island. Energy availability is considered suitable for ongoing forecast requirements, but the lines into Gisborne are vulnerable to interruption from a natural disaster, and are restricted owing to thermal capacity and voltage control issues. Transmission capacity north of Gisborne is also limited. Additional and expanded processing capacity appears not to be included in the Transpower energy use forecasts and, in the absence of additional lines, will need to be substantially supported by generation capacity from within the Gisborne region. This would effectively rule out processing plants that were unable to substantially meet their own energy requirements, for example, a medium density fibreboard plant or thermo-mechanical pulp mill.

The Gisborne/East Coast network is owned and operated by Eastland Network Ltd, 100-percent owned by the ECT. Eastland Network Ltd, managed by EIL, owns and operates the electricity distribution lines. The local distribution system is sound and recent upgrading of substations will meet the forecast growth in domestic, commercial and industrial demand for the next 15 to 20 years.

Reticulated gas is available in Gisborne via a pipeline through the Waioeka Gorge from the Bay of Plenty.

8

OPPORTUNITIES AND CONSTRAINTS

»»» OPPORTUNITIES

» WOOD AVAILABILITY

Opportunities presented on the East Coast relate primarily to the immediately increasing wood availability from the region. The extent to which the region is able to benefit from this wood availability will depend on the ability of processing facilities, port facilities and regional infrastructure to support an increase in harvest activity. Market forces will play a role in this, but there is always room within the industry for the exploration of new products and new markets.

These forecasts indicate that the availability of radiata pine from the East Coast forest estate will steadily increase over the next 12 years. Between 2007 and 2013 there is an overall increase in the East Coast regional wood availability from 1.1 million cubic metres to around 2.0 million cubic metres per year. After 2013, increases in wood availability are expected to result in increased log supply with the potential for significant volume increases to around 3.4 million cubic metres per year after 2020.

Most of the potential increase in wood availability from 2013 will come from the region's small-scale forest growers who established forests during the 1990s. The actual timing of the harvest from these forests will depend on market conditions and the decisions of a large number of small-scale owners.

Depending on the rate of harvesting from the region's post-1990 forests, wood availability is expected to decrease after 2034 leading to a drop in log volumes once the post-1990s forests have been harvested. These MAF forecasts were based on no new land planting.

» NEW PROCESSING

Although sufficient supplies of logs are available for additional small to medium processors to establish in the region, what is really required is a world-scale solid wood

processing plant along the lines proposed by Hikurangi Forest Farms. Juken New Zealand and Ernslaw One will undoubtedly be in the best position to expand capacity at their existing plants as more wood resources become available and export market conditions become favourable.

The proactive approach taken by the GDC to set up a large area of land zoned for forestry processing in the Dunstan Road area with full services in place has been very useful.

» NEW PLANTING

Considerable potential exists for carbon sequestration-related production forestry over large areas of the East Coast, particularly in conjunction with the ECFP and the Permanent Forest Sinks Initiative (PFSI). On the East Coast there has been identified a large area of land that would be desirable for expanding plantation forest estates. This would fulfil the additional functions of providing land stabilisation and carbon sequestration.

» BIOFUELS AND COGEN POTENTIAL

A very large resource of pulpwood and other by-products are potentially available – subject to the economics of use – for biofuels, cogeneration or other reconstituted wood products. When landing slash is counted, the potential volume is much greater than that shown in this report; this could be particularly significant for the East Coast communities north of Gisborne who are currently serviced with electricity via limited infrastructure.

The current lack of a local market for pulp wood and other by-products is a constraint on harvest profitability and limits the maximum utilisation of forest production. It is unlikely that cut-over recovery of residues will be economic, owing to the predominantly very steep topography of much of the production forests and the distance to a potential plant in one of the main centres on the East Coast.

EIL is actively investigating several local generation options. In the future wood processing residues could provide fuel for up to 60 MW of cogeneration; about 10 MW of this would be electricity, with the balance being process heat.

The EWC has identified that there is a real potential to use wood wastes to generate electricity and use low-grade heat for downstream wood processing operations such as kiln drying, as the two existing and one proposed wood processing sites are in close proximity.

› EMPLOYMENT

The general New Zealand-wide forest industry skill shortage is noticeable in Gisborne, but no worse than in most other areas. A local advantage is a unique demographic bulge moving into and through the local secondary schools. This provides a potential source of future skilled workers. The industry needs innovative skilled people and targeted training and education programmes to utilise this resource. A defined career pathway in the local forest industry will assist in ensuring individuals enter the industry with a view to keeping their skills within the local industry. The greater range of forestry roles available as the industry develops will assist with these opportunities.

› SUPPORT SERVICES

Opportunities for the provision of direct and indirect support services to the expanding harvesting and processing activities will increase as the industry builds. It is desirable that the rate of development of support services for the increased harvesting and processing industries does not become a constraint to the industry. An example of such a support service would be the container handling service offered by Eastland Port.

››› CONSTRAINTS

› GENERAL CONSTRAINTS

Several factors are constraining the development of the forest industries across New Zealand. The most prominent include: skill shortages; distance from markets; shipping costs; strength of the New Zealand dollar; requirements under the Resource Management Act 1991; uncertainty associated with climate change policy development; compliance costs; fragmentation of the industry; increased competition from low cost overseas producers; non-tariff barriers; and increased competition from wood substitutes.

Constraints for the East Coast are primarily related to the scale of harvesting, processing and marketing of the resource becoming available in the next 20 years; these are described below.

› SKILLED LABOUR AND HARVESTING CAPACITY

The industry has an ongoing challenge to attract and retain motivated skilled and qualified workers right across the employment spectrum – particularly in those areas with new forests from Tolaga Bay north. This situation is not peculiar to the East Coast; it is also difficult to attract skilled technical and management staff to Kawerau in the Bay of Plenty.

Much of the increase in volume (as highlighted earlier in this report) will come from forest sites that require cable-hauler harvesting systems. A harvesting crew of this nature represents about nine skilled personnel and a capital structure of around \$2 million in specialist machinery in order to produce 50 000 tonnes of logs per annum. This represents a considerable investment in capital plant and skilled labour following a period of instability and uncertainty in the industry. Greater certainty will be required before harvesting companies are prepared to expand.

Existing and planned expansion in wood processing near Gisborne would suggest a further 200 to 300 skilled personnel will be required in this area over the next five years. The challenge is to train local people to meet these skill gaps and not rely on labour from other regions or overseas. This is going to put substantial pressure on the employment market in the East Coast.

› HARVESTING AND TRANSPORT COSTS

An estimated 85 percent of the exotic plantation forest in the Gisborne District is classed as cable-hauler harvesting country on steep, erodable soils. Cable hauling costs in this region are very high. As mentioned, skilled hauler crews are in short supply and can command higher prices – especially when the operations are in isolated areas. On top of this, internal roading and landing construction are comparatively expensive, depending on accessibility, availability of aggregate, existing roading infrastructure within the forest and total volumes to be harvested. In July 2008, the cost of transporting logs from the Hicks Bay area at the top of the East Cape to the Eastland Port (covering 176 kilometres) was around \$42 per tonne. Distance from other population centres and the relatively poor standard of the state highways coming into the region will be an ongoing constraint to transporting logs out of the region to the Bay of Plenty or Hawkes Bay.

› HOUSING

It has been reported that accommodation for loggers and their families north of Gisborne is limited and the distances are becoming too far for daily commuting. Housing availability and pricing may become a problem in the short-term if there is a sudden influx of workers associated with new or expanded wood processing in the Gisborne area.

› EASTLAND PORT

The Eastland Port and its predecessors have been well aware of the increasing wood flows coming on stream. However, there has been some uncertainty about how new developments should be timed to coincide with these flows and new processing development. Eastland Port, like any commercial business, needs assured revenue flows to underpin any major expenditure in port improvements. The recent upgrading of Hirini Street and associated storage facilities is a major step forward.

The EWC has identified that the two immediate constraints for the Eastland Port are: achieving the critical volume to initiate container services at the port; and increasing the volume of product and size of ship that the port can handle. Therefore, the Eastland Port is certainly going to encounter increasing capacity challenges, although it is well located to handle the increasing volumes of forest products that will come on stream from the region's maturing forests. Any constraints will act as a bottleneck to the region achieving the full potential from the upcoming harvest. The maximum permissible draft of 10 metres and maximum ship length of 200 metres currently limits the port to bulk carriers Handysize with a full cargo (40 000 tonnes), and a partial cargo Handymax (full draft 11.6 metres). The current port configuration would only allow Handy Average container vessels (1000–2000 units). To accommodate fully laden Handymax log vessels (up to 60 000 tonnes) and sub Panamax container vessels (2000–3000 units) the draft would need to be 11.6 metres and the turning bay extended to accommodate a 230-metre long ship.

www.shipfinance.dk/Shipping-Research/Dry-Bulk-Ships.aspx

› RISK FROM CLIMATIC EVENTS

Future climate change impacts on the East Coast region can briefly be summarised as follows (see Ministry for the Environment, 2008): *The region will become drier as a result of less rainfall, decreased run-off in rivers, increased evaporation and incidence of draught. However, the region will experience an increase in tropical cyclones resulting in increased wind and rainfall events and associated tree and land damage.*

Some of the implications for commercial forestry from these projected changing weather patterns could include increased tree growth rates, damage from wind events and possibly increased pest problems. However, the projected climatic patterns will potentially increase erosion from hill country, making forestry a more sustainable land use over a greater land area on the East Coast. The more severe cyclonic events could put the infrastructure under greater risk of failure – water, power and road access. If forest processing is to gain prominence in the region, these basic requirements need to be safeguarded.

www.mfe.govt.nz/publications/climate/preparing-for-climate-change-guide-for-local-govt

› RESOURCE MANAGEMENT ACT 1991

As a unitary authority, the GDC is required to perform all the functions and duties of a regional and a district council. Soil conservation is a statutory requirement under the Resource Management Act 1991 and in the Gisborne district soil erosion is the foremost resource management issue.

The GDC maintains a carefully considered suite of policies and rules in its plans designed to minimise the adverse effects of forestry activities without excessively impacting on forest operations. For soil and water protection the GDC requires resource consents for most land disturbance and vegetation clearance activities associated

with forest harvesting operations, including roading and tracking and ground-based and cable-hauler extraction.

Consents are required for scrub clearance if the area to be cleared exceeds certain thresholds and depending on the height and the mix of species, the GDC may also have to notify the Department of Conservation as an affected party.

The consent process associated with the harvesting of forests on the East Coast has generally not been an issue.

A zone for heavy industrial development has been set up by the GDC. However, new developments in this area must obtain council consent. Regional rules also apply if the proposed development results in discharges to land, water or air. Applicants must demonstrate how adverse events will be avoided, mitigated or prevented. The level of mitigation proposed and the promptness of information supplied will determine the speed of the consent process that follows.

› SECURITY OF ENERGY SUPPLY

A stable and secure supply of electricity is critical to the viability of expanding or establishing new processing capacity in Gisborne. The additional processing capacity planned for Gisborne is expected to considerably exceed Transpower's 2010 projected peak demand forecasts, placing strain on the transmission lines into Gisborne. The lines into Gisborne are subject to a thermal capacity constraint and a voltage support constraint. The voltage issue is expected to be addressed by 2009, but the thermal constraint requires either an additional transmission line or increased generation capacity from within the East Coast. All new wood processing sites are expected to install cogeneration plant when they install new heat plant. Future new processing capacity will be constrained by the requirement for additional electricity.

The opportunities for wood residue-based energy facilities throughout the region are significant. Current economics for bioenergy plants are such that heat production from on-site processing residues is justified as long as facilities are not constrained by residue quantities. Within some localities in the region it will be economic to produce electricity from forest residues initially in cogeneration applications and then for electricity generation solely.

› LIMITED WOOD PROCESSING CAPABILITY

The current lack of local processing is a constraint that leaves forest owners with few options other than to export large volumes of logs. This leaves the region exposed to the log export market and limited port facilities. With transport costs making the long cartage of lower value material marginal or unprofitable, the regional harvest is at risk of losing potential added-value through the processing or utilisation of this material as it gets left on the cut-over. A greater number of competitive options for the full range of log products on the East Coast will contribute considerably to the region's forestry success.

››› CONCLUDING COMMENTS

The East Coast exotic wood availability is increasing, putting significant pressure on forest growers in the region to maximise the return from their forests. Large volumes of wood are becoming available over the next few years with an increasingly significant proportion of the volume uncommitted.

Over the last decade, most forest growers in this region have been at the mercy of the log export trade or distant domestic markets. Substantial investment in upgrading road and bridge infrastructure has occurred, better enabling the transport of logs to Gisborne for processing and export, and the region now has the wood availability to support a substantial wood processing as well as forest harvesting industry.

Labour, skills and capital investment in forest harvesting equipment will remain an ongoing issue, and will require support and commitment from the local forest industry and training institutions.

The Eastland Port will be pivotal to the long-term success and viability of the East Coast forest industry by providing access to domestic and international markets for logs and forest products. Increasing the capability of the port to be cost-effective in transporting processed products will provide security to potential and existing wood processing operators. The maintenance and upgrade of infrastructure will be critical if further processing options are to be encouraged.

There is still substantial potential for expansion of the existing forest estate on the East Coast, although all this may not necessarily be for production purposes, but for other values such as watershed management, erosion control and carbon sequestration.

Without understating some of the future challenges facing the industry in this region, there appears to be a unified resolve amongst the major forest growers that forestry has a good future on the East Coast.

WEBSITE ADDRESSES

FOR MORE INFORMATION

FOREST NURSERIES

www.arborgen.co.nz/puhanursery.htm

FOREST OWNERS/MANAGERS

www.hff.net.nz and www.samling.com

www.forestenterprises.co.nz

www.rogerdickie.co.nz

www.newforests.com.au

www.woodone.co.jp/company/english.html

www.npwfl.co.nz

www.gdc.co.nz

www.maf.govt.nz/forestry/crown-forestry/

www.trustwood.co.nz

www.pfolsen.com

www.kohntrol.co.nz

WOOD PROCESSORS

www.jnl.co.nz

www.hff.net.nz

PORT COMPANY

www.eastland.co.nz/port/

EDUCATION AND TRAINING

www.fitec.org.nz

www.papatoa.co.nz

www.tairawhiti.ac.nz

www.turanga-ararau.org.nz

EAST COAST FORESTRY INDUSTRY ORGANISATIONS

EASTLAND WOOD COUNCIL

Chairman: Julian Kohn

email: julian@kohntrol.co.nz

CEO: Peter Farley (Trevor Helson after 1 October 2008)

Email: p.farley@xtra.co.nz

www.eastlandwoodcouncil.co.nz

NEW ZEALAND FARM FORESTRY ASSOCIATION – GISBORNE/EAST COAST

Branch Secretary: Kees Weytmans

Email: kees@knapdale.co.nz

www.nzffa.org.nz

NEW ZEALAND INSTITUTE OF FORESTRY – GISBORNE

Contact person: Marty Watson

Email: marty.watson@pfolsen.com

www.nzif.org.nz

GOVERNMENT DEPARTMENTS

DEPARTMENT OF CONSERVATION

www.doc.govt.nz

MINISTRY OF AGRICULTURE AND FORESTRY – HOME PAGE

www.maf.govt.nz/mafnet/index.htm

MINISTRY OF AGRICULTURE AND FORESTRY – FORESTRY STATISTICS

www.maf.govt.nz/statistics/forestry/index.htm

MINISTRY FOR THE ENVIRONMENT

www.mfe.govt.nz

STATISTICS NEW ZEALAND

www.stats.govt.nz/default.htm

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Gisborne District Council (2006), *Long Term Council Community Plan* (LTCCP) adopted 29 June 2006.

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Ministry of Agriculture and Forestry (2008). *A National Exotic Forest Description as at 1 April 2007*, Ministry of Agriculture and Forestry, June.

Ministry for the Environment (2008). *Preparing for climate change. A Guide for local government in New Zealand*. Ministry for the Environment, July.

Ministry of Forestry (1997). *New Zealand's Forest Growing and Wood Processing Sector Regional Studies EAST COAST*, Ministry of Forestry, June.

Transpower New Zealand Ltd (2008). *Annual Planning Report 2008 (Incorporating the Grid Reliability Report and the Grid Economic Investment Report)*, Ministry of Forestry, June 1997, Transpower New Zealand Limited, March 2008.



Aorangi Forest near Ruatoria.

APPENDIX

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►►TABLE 1: EAST COAST HARVEST INTENTIONS SURVEY RESULTS, LARGE-SCALE OWNERS

	EXPECTED HARVEST 2005	HARVEST INTENTIONS FOR SUBSEQUENT 10 YEARS									
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
RADIATA PINE											
Pruned (m ³)	85 493	81 590	120 526	208 621	255 122	283 534	287 433	288 005	299 792	360 056	378 152
Unpruned (m ³)	327 420	410 954	679 406	914 511	1 001 274	1 097 207	1 173 160	1 167 370	1 103 245	1 103 926	1 093 880
Pulp (m ³)	67 804	70 148	149 170	218 007	231 396	239 516	243 511	270 916	259 489	207 235	228 652
Total (m³)	480 717	562 692	949 101	1 341 139	1 487 792	1 620 257	1 704 103	1 726 291	1 662 526	1 671 217	1 700 683
Area radiata (ha)	1 053	1 167	1 776	2 539	2 653	2 732	2 598	2 637	2 596	2 654	2 689
DOUGLAS-FIR											
Unpruned (m ³)	14 159	184	22 400	9 600	0	0	0	0	0	0	0
	2 161	0	5 600	2 400	0	0	0	0	0	0	0
Total (m³)	16 320	184	28 000	12 000	0						
OTHER SPECIES											
Unpruned (m ³)	2 700	0	0	1 500	6 000	6 000	6 000	4 500	0	0	0
Pulp (m ³)	156	0	0	6 500	14 000	17 600	18 400	10 500	0	0	0
Total (m³)	2 856	0	0	8 000	20 000	23 600	24 400	15 000	0	0	0
TOTAL ALL SPECIES (M³)	499 893	562 876	977 101	1 361 139	1 507 792	1 643 857	1 728 503	1 741 291	1 662 526	1 671 217	1 700 683

»» TABLE 2: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 1 (UNCONSTRAINED CUT), FOR ALL OWNERS

YEAR ENDING DECEMBER	RECOVERABLE VOLUME (000 M ³ IB)
2005	629
2006	692
2007	1 101
2008	1 631
2009	1 040
2010	984
2011	2 060
2012	2 222
2013	3 049
2014	2 341
2015	2 124
2016	2 574
2017	1 804
2018	864
2019	4 090
2020	3 282
2021	2 042
2022	4 489
2023	8 181
2024	6 521
2025	5 938
2026	5 520
2027	4 446
2028	4 090
2029	3 202
2030	3 098
2031	3 726
2032	2 568
2033	1 650
2034	1 390
2035	606
2036	647
2037	696
2038	1 138
2039	1 994
2040	1 169

Note

IB denotes inside bark: the recoverable volume of wood excluding bark.

►►TABLE 3: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 2

Scenario 2 assumes that large-scale owners cut at stated intentions, and small-scale owners cut at 30 years.

YEAR ENDING DECEMBER	RECOVERABLE VOLUME		
	LARGE-SCALE OWNERS (000 M ³ IB)	SMALL-SCALE OWNERS (000 M ³ IB)	ALL OWNERS (000 M ³ IB)
2005	481	148	629
2006	563	129	692
2007	949	152	1 101
2008	1 341	37	1 378
2009	1 488	0	1 488
2010	1 620	345	1 965
2011	1 704	258	1 962
2012	1 726	299	2 025
2013	1 663	130	1 793
2014	1 671	469	2 140
2015	1 701	269	1 970
2016	1 622	320	1 942
2017	1 622	173	1 795
2018	1 622	256	1 878
2019	1 622	1 633	3 255
2020	1 622	1 794	3 415
2021	1 622	531	2 153
2022	1 622	2 740	4 362
2023	1 622	6 315	7 937
2024	1 622	5 785	7 407
2025	1 622	4 788	6 410
2026	1 622	3 706	5 328
2027	1 622	2 737	4 358
2028	1 622	1 264	2 886
2029	1 622	937	2 559
2030	1 622	1 055	2 677
2031	1 622	1 985	3 607
2032	1 622	711	2 333
2033	1 622	447	2 069
2034	1 622	319	1 941
2035	1 622	56	1 677
2036	1 622	139	1 760
2037	1 622	134	1 756
2038	1 622	165	1 787
2039	1 622	36	1 658
2040	1 622	0	1 622

Note

IB denotes inside bark: the recoverable volume of wood excluding bark.

»»TABLE 4: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 3

Scenario 3 assumes a non-declining yield with target rotation of 30 years.

YEAR ENDING DECEMBER	RECOVERABLE VOLUME		
	LARGE-SCALE OWNERS (000 M ³ IB)	SMALL-SCALE OWNERS (000 M ³ IB)	ALL OWNERS (000 M ³ IB)
2005	481	148	629
2006	563	129	692
2007	949	152	1 101
2008	1 341	152	1 493
2009	1 488	228	1 716
2010	1 620	318	1 938
2011	1 704	234	1 938
2012	1 726	212	1 938
2013	1 663	275	1 938
2014	1 671	408	2 079
2015	1 701	586	2 287
2016	1 576	939	2 515
2017	1 576	1 191	2 767
2018	1 576	1 425	3 001
2019	1 576	1 425	3 001
2020	1 576	1 425	3 001
2021	1 576	1 425	3 001
2022	1 576	1 425	3 001
2023	1 576	1 425	3 001
2024	1 576	1 425	3 001
2025	1 576	1 425	3 001
2026	1 576	1 425	3 001
2027	1 576	1 425	3 001
2028	1 576	1 425	3 001
2029	1 576	1 425	3 001
2030	1 576	1 425	3 001
2031	1 576	1 425	3 001
2032	1 576	1 425	3 001
2033	1 576	1 425	3 001
2034	1 576	1 425	3 001
2035	1 576	1 425	3 001
2036	1 576	1 425	3 001
2037	1 576	1 425	3 001
2038	1 576	1 425	3 001
2039	1 576	1 425	3 001
2040	1 576	1 425	3 001

Note

IB denotes inside bark: the recoverable volume of wood excluding bark.

►►► **TABLE 5: EAST COAST RADIATA PINE AVAILABILITY UNDER SCENARIO 4, BY LOG GRADE, FOR ALL OWNERS**

Scenario 4 assumes a split non-declining yield with target rotation of 30 years.

YEAR ENDING DECEMBER	RECOVERABLE VOLUME BY LOG GRADE			
	TOTAL (000 M ³ IB)	PRUNED LOGS (000 M ³ IB)	UNPRUNED LOGS (000 M ³ IB)	CHIP LOGS (000 M ³ IB)
2005	629	97	434	99
2006	692	104	479	110
2007	1 101	133	779	190
2008	1 493	220	1 034	239
2009	1 716	311	1 157	248
2010	1 946	309	1 335	301
2011	1 946	313	1 333	300
2012	1 946	298	1 340	307
2013	1 946	374	1 301	271
2014	2 063	425	1 364	274
2015	2 269	514	1 476	279
2016	2 496	472	1 674	351
2017	2 746	519	1 836	391
2018	3 020	571	2 012	437
2019	3 322	628	2 208	485
2020	3 406	691	2 236	478
2021	3 406	760	2 184	460
2022	3 406	836	2 140	426
2023	3 406	920	2 098	388
2024	3 406	947	2 084	376
2025	3 406	896	2 109	398
2026	3 406	821	2 153	430
2027	3 406	809	2 159	435
2028	3 406	728	2 212	467
2029	3 406	656	2 253	497
2030	3 406	721	2 215	465
2031	3 406	743	2 203	456
2032	3 406	717	2 218	466
2033	3 406	730	2 212	460
2034	3 406	657	2 254	491
2035	3 066	591	2 029	442
2036	2 759	574	1 800	381
2037	2 483	516	1 619	345
2038	2 483	496	1 630	355
2039	2 483	494	1 631	356
2040	2 483	517	1 619	346

Note

IB denotes inside bark: the recoverable volume of wood excluding bark.

►►► **TABLE 6: EAST COAST RADIATA PINE RECOVERABLE VOLUME AND AVERAGE CLEARFELL AGE FOR EACH TARGET ROTATION AGE UNDER SCENARIO 5, FOR ALL OWNERS**

Scenario 5 assumes a split non-declining yield with target rotations of 28, 30 and 32 years.

YEAR ENDING DECEMBER	28-YEAR ROTATION		30-YEAR ROTATION		32-YEAR ROTATION	
	RECOVERABLE VOLUME (000 M ³ IB)	AVERAGE AGE (YEARS)	RECOVERABLE VOLUME (000 M ³ IB)	AVERAGE AGE (YEARS)	RECOVERABLE VOLUME (000 M ³ IB)	AVERAGE AGE (YEARS)
2005	629	32	629	32	629	32
2006	692	31	692	31	692	31
2007	1 101	31	1 101	31	1 101	31
2008	1 680	30	1 493	30	1 293	30
2009	1 827	29	1 716	29	1 490	30
2010	1 959	29	1 946	30	1 672	30
2011	2 043	29	1 946	29	1 806	30
2012	2 065	30	1 946	30	1 828	30
2013	2 230	29	1 946	30	1 828	30
2014	2 453	29	2 063	31	1 828	30
2015	2 698	29	2 269	31	1 828	33
2016	2 968	29	2 496	30	2 011	32
2017	3 265	28	2 746	30	2 212	31
2018	3 388	28	3 020	30	2 433	32
2019	3 388	29	3 322	29	2 676	33
2020	3 388	29	3 406	29	2 944	31
2021	3 388	30	3 406	30	3 238	31
2022	3 388	30	3 406	30	3 474	31
2023	3 388	30	3 406	31	3 474	31
2024	3 388	31	3 406	31	3 474	32
2025	3 388	31	3 406	31	3 474	32
2026	3 388	31	3 406	32	3 474	32
2027	3 388	31	3 406	32	3 474	33
2028	3 388	32	3 406	32	3 474	33
2029	3 388	32	3 406	33	3 474	34
2030	3 388	33	3 406	34	3 474	34
2031	3 388	33	3 406	34	3 474	35
2032	3 388	33	3 406	34	3 474	35
2033	3 049	33	3 406	35	3 474	36
2034	2 744	33	3 406	35	3 474	36
2035	2 470	33	3 066	35	3 474	37
2036	2 470	33	2 759	34	3 474	37
2037	2 470	31	2 483	33	3 127	37
2038	2 470	29	2 483	32	2 814	35
2039	2 470	29	2 483	32	2 533	34
2040	2 470	29	2 483	32	2 533	34

Note

IB denotes inside bark: the recoverable volume of wood excluding bark.

»» TABLE 7: WOOD AVAILABILITY AND AVERAGE CLEARFELL AGE FOR OTHER SPECIES IN EAST COAST

YEAR ENDING DECEMBER	RECOVERABLE VOLUME (000 M ³ IB)	AVERAGE AGE (YEARS)
2005	16	44
2006	0	0
2007	28	45
2008	14	48
2009	0	0
2010	0	0
2011	0	0
2012	0	0
2013	0	0
2014	0	0
2015	0	0
2016	50	52
2017	50	50
2018	50	51
2019	50	51
2020	14	51
2021	0	0
2022	0	0
2023	0	0
2024	0	0
2025	0	0
2026	0	0
2027	0	0
2028	0	0
2029	0	0
2030	0	0
2031	0	0
2032	0	0
2033	1	41
2034	50	41
2035	54	42
2036	34	42
2037	36	41
2038	5	41
2039	4	41
2040	1	41

Note

IB denotes inside bark: the recoverable volume of wood excluding bark.