

WAIMATE DISTRICT COUNCIL

ATHLONE, CHARNWOOD AND WAIHAO FORESTS ESTATE DESCRIPTION

All estate descriptions given in this section are based on data as at 1 June 2009.

HISTORY OF FOREST ESTABLISHMENT

WDC's forestry resource on offer comprises the commercial forests of Athlone, Charnwood and Waihao.

Charnwood Forest is the oldest forest and was initially a joint venture signed in June 1981 between the New Zealand Forest Service and WDC. The Forest Service was the Lessor providing the land and WDC was the Lessee with a lease term of 66 years. With the demise of the Forest Service the land was retained as Crown land.

In June 2003 the land was sold to Ngai Tahu (subject to the stumpage share above) and subsequently a forestry right was put in place between the council and the new land owners. In executing the forestry right the Council purchased the land owners stumpage share so that it now owns 100% of the stumpage but pays a market rental for the use of the underlying land.

Prior to the forest land being leased from the Forest Service the property had been a grazing unit. At the start of the lease there was an area of 95 hectares of radiata that had been planted in 1974 and a small area of 4 hectares of regenerated radiata.

Athlone Forest is the largest forest comprising 788 hectares of mostly retired pasture purchased in June 1987. Only small quantities of super had been applied to the property and only a small area of approximately 80 hectares at low altitude near the homestead had been top-dressed and cultivated.

The first plantings were begun soon after purchase and continued at a rate of approximately 50 hectares per annum until the last plantings in July 2002.

Waihao Forest was purchased from Waihao Forest Ltd in 1999 as part of the WDC's expansion policy at that time. The forest consists of 105 hectares of Pinus radiata planted in 1996 on a former farm site.

LAND DESCRIPTION

LOCATION AND DISTANCE TO MARKETS

Waimate District - Centre of the South - is located halfway between Christchurch, Dunedin and Queenstown.

The Waimate District is bounded by the Pacific Ocean to the east, the Waitaki River in the south, the Pareora River in the north and the Hakataramea Valley to the west. The Hakataramea Valley runs north of Kurow on the Waitaki River.

The district is approximately 50 kilometres long and 50 kilometres wide. A strip of fertile plains borders the Pacific Ocean to the east and the topography progressively changes from plains to rolling hills then to steeper hill country moving from east to west.

Waimate is the main urban township and the service centre for the district. It is situated about 10 kilometres inland and 47 metres above sea level. The town has an urban base of 2,700 residents and a district rural population of 4,400.

WDC's three commercial forests are focused in a relatively tight cluster to the west and south of Waimate and are all within 10-30 kms of the town and 55 -75 kms of the log export port of Timaru to the north. Both Athlone and Charnwood forests are in the foothills whilst Waihao is on more gently rolling country.

Existing regional processing capacity is located in and around Waimate with the port of Timaru for log export options.

Average distances to Waimate and Timaru for each forest group are given below:

Forest Distances to Waimate and Timaru

Destination	Distance to Market (km)		
	Athlone	Charnwood	Waihao
Timaru	76	65	55
Waimate	30	19	9

These average distances to local and export markets are relatively short by New Zealand standards. It is noted though that Athlone, the largest single forest in the estate is also the furthest from log markets in Waimate and Timaru.

LAND OWNERSHIP

The land underlying the three forests is either freehold or occupied by a forestry right.

Ownership	Forest
Forestry Right	Charnwood
Freehold	Athlone
Freehold	Waihao

TOPOGRAPHY

The topography of the three forests is a mixture of easy rolling country suitable for ground based harvest through to steeper country requiring hauler logging.

Over the whole estate, approximately 60% of the net stocked area is able to be harvested by ground based operations and 40% by hauler.

CLIMATE

Athlone and Charnwood Forests: Average rainfall is around 600 to 900mm. Winds are predominantly light to moderate. Westerly and north-westerly winds are normal during the equinox with the occasional north-west winds during summer accompanied by high temperatures. The forest is exposed at higher altitudes and subject to some snow in winter.

Waihao Forest: Average rainfall is around 700 mm. Wind as per Athlone and Charnwood above.

SOILS

Soils of the three forests are as follows:

Waihao Forest: 15cH and 15c, Ngapara Soils and Hill Soils belonging to Yellow Grey Earths. They consist of greywacke loess over greywacke gravels, sandstone and limestone, are located on rolling to moderately steep country and have a natural nutrient status that is high.

Charnwood Forest: 41a: Hurunui Hill Soils belonging to Lowland Yellow Brown Earths. They consist of greywacke and weathered colluvium, some patches of loess, are located on moderately steep country and have a natural nutrient status that is medium.

Athlone Forest: 29cH and 29 c Kakahu Soils and Hill Soils belonging to Yellow – Grey to Yellow – Brown Earths. They consist of greywacke loess over greywacke and gravels, are located on rolling to moderately steep country and have a natural nutrient status that is low.

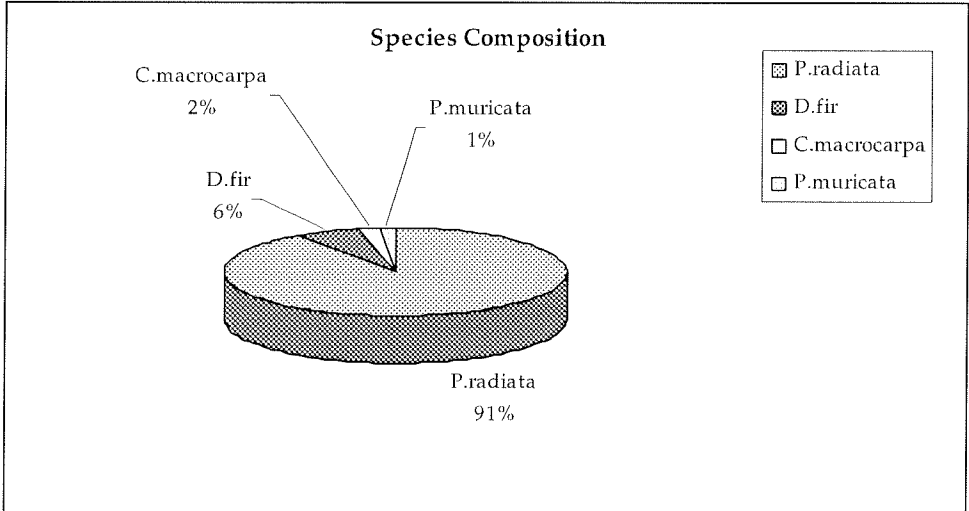
FOREST DESCRIPTION

CURRENT STOCKED AREA

	Athlone	Charnwood	Waihao	Totals
P.radiata	588.6	223.7	103.3	915.6
D.fir	55.2	7.5		62.7
C.macrocarpa	20.4			20.4
P.muricata		15.0		15.0
Total	664.2	246.2	103.3	1,013.7

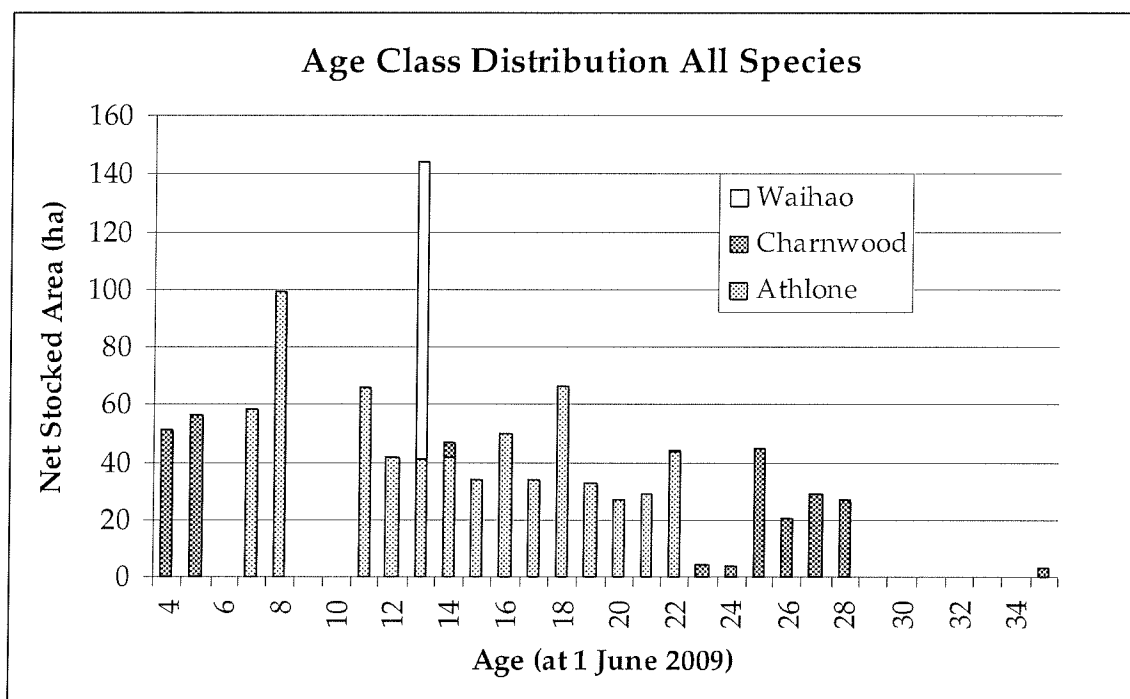
PRODUCTIVE FOREST SPECIES COMPOSITION

The productive forest resource is dominated by one main species; Pinus radiata, which makes up 91% of the stocked estate. Three minor alternative species; Cypress, Pinus muricata and Douglas fir make up the remaining 9% of the net stocked area.



AGE CLASS DISTRIBUTION OF CURRENT ESTATE

In common with most forest estates in New Zealand the WDC tree crop age class distribution is irregular as shown in Table 8.



The large spike in area in the 9 year old age class is due to 1996 plantings in Waihao Forest.

Charnwood Forest is a transition forest. The age class distribution shows that as this forest is being harvested and replanted for a second rotation. The replanting undertaken dominates the 4-5 year age class.

Athlone forest is a young forest with all plantings spread between ages 3 to 18. There is a relatively even age class distribution between ages 3 and 18 years except the forest lacks any plantings aged 9 to 10.

The age class distribution can be further broken down by species. Results are presented as follows:

Species	Area by Age Class (ha)							Total
	0-5	5-10	10-15	15-20	20-25	25-30	31+	
C.mac				20.4				20.4
D.fir	7.5		41.1	14.1				62.7
P.mur					10.5	4.5		15
P.rad	100.3	157.2	291.1	176.4	115.1	72.1	3.4	915.6
Total	107.8	157.2	332.2	210.9	125.6	76.6	3.4	1013.7

The majority of the alternative species planted are under the age of 20, with the exception of two stands of *P. muricata* which are 25 and 28 years old respectively.

TENDING STATUS

Over an estate the mix of clearwood and framing regimes achieved, the height of pruning, current stand stocking and maximum average DOS's achieved are a key relative performance indicators. These are detailed below.

The current pruning status of the whole WDC estate is:

Current Pruning Status - Whole Forest

Species	Pruned Height Category			
	Unpruned	<3.0m	3.0-4.5m	4.5+m
P radiata	41%	6%	8%	45%
D fir	100%			
C macrocarpa	0%	0%	66%	34%
P Muricata	100%			
Total	45%	6%	4%	45%

For the whole estate 45 % of the area is untended and 45% is pruned more than 4.5m.

Included in the above statistics are young stands that are yet to be tended. These skew results, hiding a much higher level of tending in the mature crop.

If just stands older than 10 years (these are likely to have had their pruning completed) are selected the pruned status improves markedly. For the P radiata resource the information is as follows:

P radiata Pruning Status for Stands over 10 years

Forest	P radiata Pruned Height Category Stand Over 10 years			
	Unpruned	<3.0m	3.0-4.5m	4.5+m
Athlone	37%		7%	56%
Charnwood	9%		2%	89%
Waihao	42%			58%
All	32%		5%	63%

Sixty three percent of this semi mature and mature crop has been high pruned.