

Eucalyptus Species for Taranaki

Sustainable Land Management Programme

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Introduction

This information sheet follows on from the information sheet, 'Eucalyptus' (No.13), which discusses general management issues such as siting, selecting tree stocks, planting regimes, silviculture, establishment, weed control, planting technique, fertiliser requirements, and pest and disease control.

As no one species of eucalypt will thrive over the range of sites in a similar manner to *Pinus radiata*, selecting the most suitable species for a particular site is of critical importance. Species selection is just as important, if not more, than issues associated with their subsequent management.

A lack of objective, accessible, practical local knowledge and experience of eucalypt growing in Taranaki makes it difficult for people seeking advice on correct species to plant. This is compounded when considering the wide range of individual mature trees scattered around the region's landscape, outdated and/or inappropriate written material on species selection, and the introduction of new pests and diseases that now affect species that were once suitable.

This information sheet sources local knowledge of eucalypt growing in Taranaki, and advises on what have proven to be reliable species in different climatic zones found within the region. It also identifies more specific site requirements for the species advocated, and what species are most suited to different purposes, ie, shelter, timber and aesthetics.

Extreme Coastal

The extreme coastal marine immediately adjacent to the foreshore is not recommended for eucalypt planting. This area is extremely exposed and resources would almost certainly be wasted if establishment was attempted. Hardy natives, such as flax and toetoe should be considered instead.

Saline Wind-Run - Exposed

This area extends from the South Taranaki Coast (including a narrow belt commencing near Waverley) to Stratford, and around to Oakura. It also includes a narrow 1 km belt that continues north from Oakura, widening to 7-8 km wide at Tikorangi, and narrowing again through to North Taranaki.

Timber species

Eucalyptus fraxinoides **white mountain ash** *E. fraxinoides* prefers well drained sites, although appears to tolerate ordinary winter wet soils. It tolerates frost and windy

conditions. Especially suited to saline winds. This species holds its form, mills extremely well at a young age, and is largely unaffected by pests and diseases.

Eucalyptus nitens **shining gum** *E. nitens* is more tolerant to wet sites and is suited to planting in all damper sites that *E. fraxinoides* won't tolerate, for example, low lying damper areas along streambanks and on hillsites affected by springs. It is also equally suited to drier 'fraxinoides' sites. Generally, *E. nitens* is suited to planting in soils that are a bit damper than pine will tolerate. Furthermore, the tree has good form, a fast growth rate, and is resistant to cold. It has a good reputation for milling and exceptional peeling properties (better than radiata pine), although more trial work on drying properties is required. *E. nitens* used to be affected by the paropsis tortoise beetle (*Paropsis charybdis*), but since that beetle has been controlled, the species is largely free of pest and disease problems.

Shelter

The most appropriate species suited to shelter planting are also *E. fraxinoides* and *E. nitens*. In the past, *E. botryoides* has been recommended for planting in coastal saline situations and in very wet ground.



However, *E. botryoides* is now very susceptible to sawfly, ophilemus and lacy leaf lerp.

Those insects are killing some trees in places throughout Taranaki. Parasites for sawfly and lacy leaf lerp are established in NZ and are and effective as a

means of control. It should also be noted that this species is also no longer considered suitable due to recent evidence of trees displaying non-resistance to salt wind in this region.

Eucalyptus johnstonii **Tasmanian alpine yellow gum**

This species is used for coastal shelter in Southland and is likely to be suited to this purpose in Taranaki, although hasn't been trialled extensively. *E. johnstonii* tolerates any amount of frost and in some areas it has been grown successfully on wetter soils for shelter. The timber is reputed to be dense and ground-durable.

Saline Wind-Run -- more sheltered sites

Timber species

Eucalyptus fastigata **brown barrel**

E. fastigata possesses the best milling and drying properties of the ash group. It is the best timber species for Taranaki and was grown on a large scale here, and milled for flooring purposes until the resource ran out. Recent work has proved that *E. fastigata* can grow more larger logs/ha than *P. radiata*, ie higher volumes of sawlogs. This species is suited to deep volcanic soils, but not sticky clays or coastal sites. It displays fast vigorous growth on good soils. Although it does best in more sheltered sites, such as behind trees, or in a gully, *E. fastigata* does not require complete shelter. For best results, it is advised to locate this species where it will not be affected by the worst winds experienced in a given location. *E. fastigata* has proved to be the healthiest eucalypt in New Zealand, and reaches its optimal height of around 65m in Taranaki. Its only faults are large branching that occurs at wider spacings, and damage by rhinoceros beetle that occasionally occurs when planted near native bush inhabited by this beetle.

Eucalyptus obliqua **messmate**

E. obliqua has not been researched well in Taranaki, but has displayed good results. This species is suited to some of the more sheltered sites in the saline wind-run zone. It is suited to planting on rich clay-loam soil types, and has proved especially useful in areas that experience a warm dry summer. It has good timber properties and is generally straight grained and easily split, however, care is needed in drying, especially in hot dry weather. The timber has a wide range of end uses.

Eucalyptus regnans **mountain ash**

E. regnans is the world's tallest hardwood species. Because it is prone to Barrons Road Dieback, this species should only be planted where few alternatives exist. Regnans is also particularly sensitive in terms of site. as with many other eucalypts, it seems to benefit from being mix planted with pine. It is a species needing cool temperatures and fertile but not necessarily friable soils. It dislikes acid clays, coastal sites and long periods of drought. In drying trials, this species has not performed as well as *E. fastigata*.

Eucalyptus pilularis **blackbutt**

This species has excellent heavy duty durable timer properties and is most suited to sheltered warmer sites within the saline coastal wind-run zone, especially in North Taranaki and in South Taranaki. It is only moderately frost tolerant, therefore, siting must take this factor into account. Best growth has been obtained on well-drained north facing slopes with reasonably deep soils, but it has performed well on a range of soil types. It has demonstrated tolerance to lower soil phosphate levels than radiata pine, provided it is given a good boost of nitrogen and phosphorus at the time of planting to get it successfully established. Plants grown in root trainers are more preferable for planting. *E. pilularis* is probably the best milling eucalypt species planted in New Zealand. Provenance is very important, therefore, planting stock should be carefully selected.

Eucalyptus pyrocarpa **pear-fruited blackbutt**

E. pyrocarpa was originally listed as a variant of *E. pilularis*, but is now considered a separate species. This species is closely related to *E. pilularis* and is showing promise on sheltered sites within the saline wind-run zone in Taranaki. It is more wind tolerant and provides better timber yields than *E. pilularis*. Provenance and selection of planting stock is once again very important.

Eucalyptus laevopinea **silvertop stringybark**

E. laevopinea is another stringybark. In its natural habitat the tree has good form, producing a light brown timber of moderate strength and

durability suitable for general building purposes. This species is showing promise in Taranaki and is suited to planting in sheltered sites, away from full wind exposure, within the saline wind-run zone. One of its most valuable attributes is its tolerance to frost. *E. laevopinea* is the most site tolerant of the stringybark group and the most rapid growing. In Australia it has the best reputation for timber properties of the stringybark group.

High ringplain

The high ringplain area can be considered to include areas above Inglewood, around the Wiremu Road, and other similar altitudes that experience higher than average rainfall and colder temperatures. Species suited



Eucalyptus microcorys (tallow-wood) being trialled by a farm forestry enthusiast

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to planting in these areas are quite limited, although if a site is free draining the following species are suited:

Eucalyptus fastigata brown barrel

This species is moderately tolerant of wetness and wind exposure, therefore, is most suited to the lower portion of the upper ringplain.

Eucalyptus fraxinoides

white mountain ash

This species tolerates rain, but not wet soil conditions. It has done well on exposed sites on the upper Taranaki ringplain.

Eucalyptus nitens shining gum

This species will tolerate wetter soil conditions than *E. fraxinoides*.

Eucalyptus johnstonii Tasmania alpine yellow gum

This species is possibly suited to the upper Taranaki ringplain, although it is uncertain whether or not it will tolerate high rainfall and wet soils.

Eastern Taranaki Hill Country

This zone includes all areas not subject to saline coastal winds, in particular the eastern Taranaki hill country. Includes all southern and northern areas of Taranaki hill country.

Timber species

Eucalyptus fastigata brown barrel

This species is described above in the saline wind-run section. It is to date the most successful timber eucalypt in Taranaki. In the hillcountry, it is most useful for planting in areas affected by frost as it is frost tolerant. It does not like extra wet soils, although tolerates about the same soil wetness as radiata pine. Most suited to mid to lower slope planting.

Eucalyptus fraxinoides

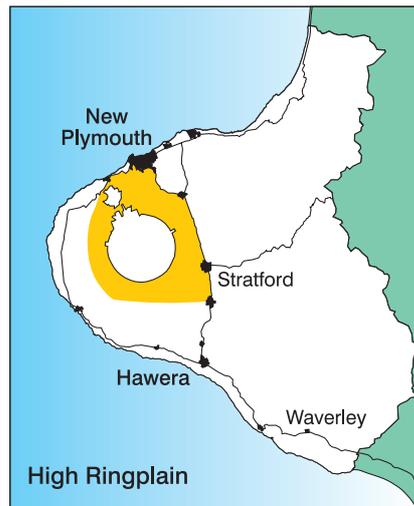
white mountain ash

Described above, this species is suited to planting on or near exposed ridge tops and drier upper slopes.

Eucalyptus nitens shining gum

This species is also described above.

E. nitens is excellent for planting in the hill country from top slopes right down to lower slopes and valley bottoms. Most useful for planting in wet gully bottoms and



or in locations exposed to wind. Belongs to the Ash timber group.

Eucalyptus oliqua messmate

Eucalyptus regnans mountain ash

These two species are also described above and are suitable for planting in the hill country, although should be considered second choice to *E. fastigata*, *E. fraxinoides*, and *E. nitens*. Keep *E. obliqua* away from ridge tops.

Eucalyptus laevopinea

silvertop stringybark

Described above. Keep away from most wind exposed sites and wetter than normal soils. Moderate exposure

to wind is OK. This species has very good timber properties and is durable. This stringybark is closely related to *E. muelleriana* (see below), a yellow stringybark that has a fast growth rate, higher tolerance to frost, and is very versatile and quick growing. *E. muelleriana* should be considered second choice to *E. laevopinea*.

Eucalyptus muelleriana yellow stringybark

Yellow stringybark requires well drained soils. It will grow on clay over sandstone, on warm sand dunes and old rain forest soils. It needs sheltered moist valleys, with surrounding vegetation to help draw the stems up and reduce its tendency to form multiple leaders. It grows best on slopes with north and west aspects. Initial close stocking rates are beneficial if planted as a pure stand, alternatively, planting in a mixture of pine is an advantage. Yellow stringybark will emerge well through openings cut in scrub or gorse, or low broadleaf cover. It is possum resistant in most districts.

Eucalyptus pilularis blackbutt

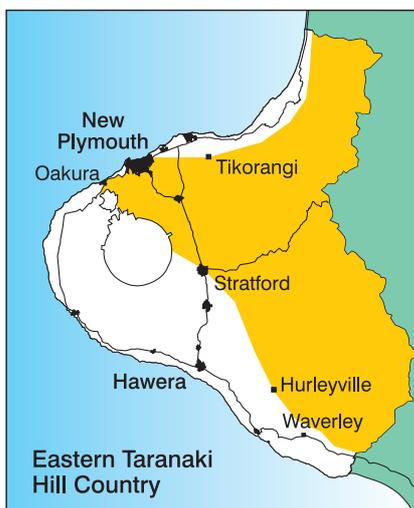
Also described above. This species is suited to well sheltered north and west facing slopes, that experience warmer temperatures and lighter frosts. It must have a warm site, and can be considered an equal to *E.*

muelleriana in terms of preference to *E. laevopinea*.

Eucalyptus globoidea

white stringybark

This is usually a tall tree of pole form, although with space it can grow to a large diameter producing good sound sawlogs. This species rates along with *E. muelleriana* for planting in the hill country. *E. globoidea* tends to form multiple leaders in some areas. This species will tolerate more frost than will *E. pilularis*, but not as much as *E. laevopinea*. Despite its higher frost tolerance, it is still recommended for



warmer, north and west facing sheltered sites. Timber from this species displays good drying properties.

Eucalyptus johnstonii

Tasmanian alpine yellow gum

This species has been acknowledged above as a possibility for coastal shelter. It is also considered suited to planting on hill country, and for shelter where soils are wetter. Johnstonii tolerates any amount of frost.

Aesthetic & Ornamental purposes - whole region

A number of eucalypt species are suitable for aesthetic purposes, and many of these can be found scattered throughout the Taranaki region in gardens and on farms. Dampness and wet weather conditions affect flowering species. Numerous species have been tried which do tolerate frost, although cool long wet winters are not beneficial. Two of the more attractive reliable species are as follows:

Eucalyptus ficifolia **red flowering gum**

This is a well known flowering gum that varies in colour from cream through orange to deep red. This species is the most reliable eucalypt planted for aesthetic purposes in Taranaki. It is moderately frost tolerant, and moderately tolerant to wind, although must be kept away from high exposure to salt wind. It has unknown or unreliable possum preference.

Eucalyptus leucoxylon **yellow gum**

Another eucalypt species suited to planting in Taranaki for aesthetic purposes. There are some excellent examples of this species growing around the region, although sources of good planting stock are unreliable. Due to the unreliable availability of good planting stock, flower displays are often disappointing. As the species comes from a much drier climate, it can be affected by black spot and defoliate here in winter. Timber is ground durable and the foliage very palatable to possums.

Eucalyptus nicholii **Sydney peppermint**

This species is moderately wind hardy and is not suited to planting on totally exposed sites. Its small attractive shape and foliage make it an ideal tree to plant for ornamental purposes. Provenance is important.

Eucalyptus cinerea **silver dollar**

Is an attractive tree with blue/grey foliage that has been widely planted for ornamental purposes. It is not suited

to planting in windy conditions as it is easily damaged.

Firewood

The following species are all suited to planting for firewood purposes:

Eucalyptus fastigata **brown barrel**

This species coppices well and is suited for firewood-lots.

Eucalyptus fraxinoides **white mountain ash**

This species is not meant to coppice but does in Taranaki conditions.

Eucalyptus ovata **swamp gum**

This species coppices and has attractive white flowers that attract Tuis and Bell Birds. It tolerates wet sites, especially swamps, but not suited to ridge tops or drier areas.

Eucalyptus saligna **Sydney blue gum**

This species is not suited to windy sites. It is most suited to sites that are wetter than those recommended for *E. nitens*, but not as wet as those recommended for *E. botryoides* (as below). Although this species is considered good species for firewood purposes, it is currently affected by pest and diseases.

Eucalyptus botryoides **southern mahogany**

This species is suited to planting in wet soil conditions for timber purposes, although is once again currently affected by pest and diseases.

Eucalyptus nitens **shining gum**

This species coppices, but is not the best choice for this purpose.

For further advice or information contact:

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Acknowledgement: Tim Rose, Taranaki Farm Forestry and Shelter Association, for species and site selection information.