

SIGNIFICANT TREES – STATEMENT OF SIGNIFICANCE CARDINIA SHIRE COUNCIL

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PREPARED BY

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1 Executive summary

Ten significant tree nominations comprising eleven trees and a Hawthorn hedge were assessed against significance criteria developed and used in the Cardinia Shire Council Significant Tree Study (John Patrick Landscape Architects, 2009), which are based on the Department of Environment, Land, Water and Planning heritage criteria.

Seven nominations satisfy at least one significance criteria and are recommended for inclusion under the Heritage Overlay;

- *Eucalyptus dalrympleana* (Mountain White Gum) at Mountain Rd, Gembrook,
- 3 x *Sequoia sempervirens* (Coast Redwood) at 4 Dewhurst Rd, Emerald,
- *Sequoia sempervirens* at 44 Beaconsfield-Emerald Rd, Emerald,
- *Fagus sylvatica* 'Purpurea' (Purple Beech) at 8 Benson St, Emerald,
- *Quercus robur* (English Oak) at Cochrane Park, Koo Wee Rup,
- *Angophora costata* (Smooth-barked Apple) at 79 Emerald Monbulk Road, Emerald,
- *Eucalyptus sieberi* (Silvertop Ash) at 45 Mentiplay Rd, Gembrook.

Statements of significance for each of these trees are provided in the appendix to this report.

The nominated Hawthorn (*Crataegus monogyna*) Hedge at South Gippsland Highway, Lang Lang was also determined to be of heritage significance, however the weed status of the plant raises several management issues to be considered.

2 Introduction

Background

Cardinia Shire Council is undertaking ongoing efforts to identify trees of cultural or heritage significance within the Shire with a view to protecting these trees, recognising that the Shire is undergoing rapid development and change of land use.

Previous work has been undertaken, resulting in the protection under the Cardinia Planning Scheme Heritage Overlay of a number of trees identified in the Cardinia Significant Tree Study (May 2009). John Patrick Landscape Architects have been engaged by Cardinia Shire to review additional trees nominated by the community under broader significance criteria and subsequently refined in the Significant Tree Assessment prepared by Greenwood Consulting Pty. Ltd. (4 December 2019), to confirm that shortlisted trees are worthy of additional protection and to prepare a Statement of Significance for trees which are recommended for addition to the Heritage Overlay. The objective is to provide Council with information required for a Planning Scheme Amendment.

This study forms part of an ongoing review of the Cardinia Significant Tree Register that will be informed by community nominations. Following nomination, trees will be reviewed for potential inclusion under the Heritage Overlay.

Statutory protection of significant trees

A number of planning provisions are available within the Planning Scheme to provide vegetation protection, most notably overlays including Vegetation Protection Overlay (VPO), Significant Landscape Overlay (SLO) and Heritage Overlay (HO).

- A Vegetation Protection Overlay is designed to protect significant native and exotic vegetation in urban or rural environments. It can be applied to individual trees, stands of trees or areas of significant vegetation.
- A Significant Landscape Overlay is intended to identify and conserve the character of a significant landscape. It primarily covers the aesthetic or visual significance of a landscape of which trees are a significant component.
- Purposes of the Heritage Overlay include the conservation and enhancement of places of natural and cultural significance, and ensuring that development does not adversely affect the significance of the heritage place. A heritage place can include a tree, a group of trees, garden, park, reserve or significant landscape.

The *Cardinia Shire Council Significant Tree Study* (2009) determined the Heritage Overlay as the preferred planning overlay for protection of significant trees as it has decided advantages over the Vegetation Protection Overlay (VPO), which does not provide for the regulation of buildings and works, and over the Significant Landscape Overlay (SLO) which is more limited in scope applying only to trees that make a significant contribution in the context of a significant landscape.

Local Government Planning Scheme Heritage Overlays

At Local Government level, Planning Schemes provide for Heritage Overlay controls under *the Planning and Environment Act 1987*. Their stated purpose is to conserve and enhance heritage places of natural or cultural significance and ensure that development does not adversely affect that significance. The controls have statutory power.

A heritage place may be of state, regional or local heritage significance. Tree protection measures may be specified to apply to the whole of a heritage place (such as a park or garden), or to a single tree or group of trees (e.g. an Avenue of Honour).

Under this control a permit is required to remove, destroy, prune or lop a tree listed in the accompanying Schedule. It also requires a permit for buildings, works or subdivision within the heritage place.

The Overlay is not primarily intended to protect trees for their amenity value *per se*, but for their contribution to heritage significance. However, it could be argued that a tree which is significant for its aesthetic, historic, scientific or social significance does have cultural significance which constitutes heritage significance.

Tree controls do not automatically apply to a place affected by the Heritage Overlay. The controls only apply if specifically indicated in the Schedule for the place.

Several of the shortlist of nominated trees are already covered by the VPO or SLO. The current study specifically determines the appropriateness of the inclusion of the nominated trees under the schedule to the **Heritage Overlay** of the Cardinia Planning Scheme.

Reference documents

The following reports and documents were reviewed in the current study:

- *Cardinia Significant Tree Assessment* prepared by Greenwood Consulting, 2019
- *Cardinia Shire Council Significant Tree Study*, Volumes 1 & 2, prepared by John Patrick Landscape Architects Pty. Ltd. May 2009.
- Dept. of Environment, Land, Water and Planning, Victoria, *Applying the Heritage Overlay*, Planning Practice Note 1, August 2018.

3 Assessment

A review of the size and arboricultural condition of trees recommended in the Cardinia Significant Tree Assessment 2019 (Greenwood Consulting Pty. Ltd.) for protection under the Heritage Overlay was undertaken as a first step in assessment.

Table 1: The following shortlisted nominations are the subject of the current study:

Nomination	Botanical name, Common name	Location	Approx. GPS coordinates*
1	<i>Crataegus monogyna</i> Hawthorn	South Gippsland Highway, McDonalds track and surrounding roads, Lang Lang	-38.23432, 145.51305
5.1	<i>Eucalyptus dalrympleana</i> , Mountain White Gum	Road reserve, 185 Mountain Road, Gembrook	-37.92800, 145.52199
5.2	<i>Eucalyptus obliqua</i> , Messmate	Road reserve, 185 Mountain Road, Gembrook	-37.92779, 145.52208
6	<i>Sequoia sempervirens</i> , Coast Redwood	4 Dewhurst Road, Emerald	-37.94116, 145.44938
6	<i>Sequoia sempervirens</i> , Coast Redwood	4 Dewhurst Road, Emerald	-37.94125, 145.44970
6	<i>Sequoia sempervirens</i> , Coast Redwood	4 Dewhurst Road, Emerald	-37.94172, 145.45027
6.1	<i>Sequoia sempervirens</i> , Coast Redwood	44 Beaconsfield-Emerald Road, Emerald	-37.94139, 145.45047
8	<i>Fagus sylvatica</i> 'Purpurea', Purple Beech	8 Benson St, Emerald	-37.93483, 145.43895
9.1	<i>Quercus robur</i> , English Oak	Cochranes Park, Rossiter Road, Koo Wee Rup	-38.19921, 145.48650
10	<i>Quercus canariensis</i> , Algerian Oak	Road reserve, 5 Browning Road, Nar Nar Goon (opposite 22 Browning Road)	-38.08587, 145.57227
16.8	<i>Angophora costata</i> , Smooth- barked Apple	Chamomile Farm, 79 Emerald Monbulk Road, Emerald	-37.91517, 145.44525
17	<i>Eucalyptus sieberi</i> , Silvertop Ash	45 Mentiplay Road, Gembrook	-37.95321, 145.58864

*GPS coordinates from Cardinia Significant Tree Assessment 2019, Greenwood Consulting Pty. Ltd.

Following the arboricultural condition review, each tree was assessed against the criteria developed and used in the Cardinia Shire Council Significant Tree Study (John Patrick Landscape Architects, 2009). Assessment criteria are shown in Table 2, below. Only those trees which satisfy at least one of the assessment criteria to a level of local significance or higher were determined as to be significant.

Recommended curtilage

The recommended curtilage for trees to be included in the heritage overlay is based on AS4970-2009 *Protection of trees on development sites* which stipulates a maximum Tree Protection Zone (TPZ) of 15.0m as a radius from the centre of the trunk, calculated on the trunk diameter measured at 1.4m above ground level. The Standard indicates that *the TPZ is a combination of the root area and crown area requiring protection*, however a larger TPZ is allowed if required to encompass canopy spread.

A curtilage of 15m as a radius from the trunk centre of each tree is recommended. In the case of trees on public land for which the calculated TPZ based on current trunk size is less than 15m, the curtilage allows for future tree growth. A 15m radius is sufficient to protect the existing canopy of all trees assessed in the current study, however it is possible that with future growth in some cases the radius will be exceeded by canopy spread. In these instances, an increase of curtilage to the extent of the canopy is recommended.

For trees within private property, a curtilage equal to the Tree Protection Zone (TPZ) calculated as set out in AS4970-2009 *Protection of trees on development sites* (based on trunk diameter) is required, to be determined at the time of any proposed works which may impact on the tree.

It would also be appropriate to apply AS4970-2009 protection requirements as a curtilage for the Hawthorn Hedges, should it be decided that this nomination is to be included in the heritage overlay. For the majority of the plants comprising the hedge, which are on or adjacent to the site boundary of private properties, the minimum protection zone stipulated in the Australian Standard of 2.0m as a radius from the trunk would apply. Measurement of stem diameter is, however, recommended at the time of works to confirm the required protection zone size.

Table 2: Significance criteria developed for use in the Cardinia Significant Tree Assessment (2009).

Criterion	Description	Significance	Cultural significance		Natural significance	
			Code	Description	Code	Description
A	Importance to the course or pattern of our cultural or natural history	Historical	A1C	Trees with an association with the history of an historic object such as houses, buildings, town centres, streetscapes or parks.		N/A
			A2C	Trees with an historical importance, other than associations coming from A1C above or A3C below.		N/A
			A3C	Commemorative plantings. Includes trees planted by well-known public figures, or planted to mark an historic occasion, person or event.		N/A
			A4C	Trees or groups which demonstrate an historic planting style which is not of scientific significance. Implies a degree of rarity.		N/A
			A5C	Trees which are indicative of a past land use, with this land use being associated with the history of the area.	A6N	Trees which are indicative of a past natural vegetation cover, which is now largely removed.
B	Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity)	Aesthetic, Historic, Scientific & Social	B1C	Trees of a species, cultivar or sport which is rare/unusual and has a specific social or historic significance associated with this.	B1N	Trees of a species, cultivar or sport which is rare or unusual but which does not have a specific social or historic significance.
			B2C	Trees which are particularly old or venerable, in a social or historic context	B2N	Indigenous trees which are particularly old or venerable, but without a cultural connection. (Non-indigenous trees would fulfil criterion B2C).
				N/A	B3N	Trees of an outstanding size. This can be in terms of height, trunk girth or canopy spread. Smaller trees of an outstanding size for the species may also be considered.
				N/A	B4N	Trees located at the extremities of their natural range, and therefore of botanical interest. Includes disjunct communities.

Criterion	Description	Significance	Cultural significance		Natural significance	
			Code	Description	Code	Description
C	Potential to yield information that will contribute to understanding our cultural or natural history (research potential)	Scientific & Historic	C1C	Trees or groups which demonstrate an historic scientific planting style or husbandry technique. Implies a degree of rarity or uniqueness.		N/A
D	Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness)	Aesthetic	D1C	Tree is an outstanding example of a planting style or cultivation technique.	D1N	Tree is an outstanding example of the taxon
E	Importance in exhibiting particular aesthetic characteristics (aesthetic significance)	Aesthetic	E1C	Trees which make an aesthetic contribution to a culturally significant landscape in a way which adds to its cultural significance.	E1N	Trees which make a significant contribution to the aesthetics of a landscape which is not in itself culturally significant. Implies a degree of rarity or uniqueness.
			E2C	Trees of outstanding aesthetic value due to abnormal/curious growth as a result of human manipulation	E2N	Trees of outstanding aesthetic value due to abnormal/curious growth as a result of natural processes
F	Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance)	Scientific	F1C	Trees used in scientifically significant breeding programs. This includes rare examples of the developed plants.		N/A
			F2C	Trees associated with significant scientific studies or innovations.		N/A

Criterion	Description	Significance	Cultural significance		Natural significance	
			Code	Description	Code	Description
G	Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. (social significance).	Social	G1C	Trees which are important landmarks		N/A
			G2C	Trees which are important to a social or cultural group		N/A
H	Special association with the life or works of a person, or group of persons, of importance in our history (associative significance)	Aesthetic, Historic, Scientific & Social	H2C	Any other tree which is considered to be of aesthetic, historic, social or scientific cultural significance but does not fit one of the above categories.	H2N	Any other tree which is considered to be of aesthetic, historic or scientific natural significance but does not fit one of the above categories.

Significance Definitions

The definitions of cultural significance below are taken from the Heritage Victoria Landscape Assessment Guidelines with some modifications. The exception to this is the Natural Significance criteria, as items of natural significance are not recognised by Heritage Victoria which focuses on the cultural heritage significance as defined by the Heritage Act, 1995 and the Burra Charter.

Aesthetic significance accommodates all the sensory values of the place (but privileges the visual especially) and is often encapsulated in architectural terms, such as through a particular style.

Historical significance relates to the value of a place's association with important historical events, eras or individuals, people. Historic value 'underlies' aesthetic, social and scientific value.

Scientific significance relates to the technical achievements associated with a place, or for its educational potential. Generally, scientific significance may relate to a variety of places, from industrial sites such as mines to bridges or dams.

Social significance may include places of significance to groups and communities, especially through use.

Natural significance covers trees which fulfill the Aesthetic, Scientific or (natural) History criteria without and cultural (human) connections. Trees which fit the Social criteria, have by implication a connection to people.

4 Nominated trees

Nomination 1- *Crataegus monogyna*, Hawthorn

Location	Adjacent to South Gippsland Highway, McDonalds Track, Caldermeade Road, and several surrounding roads.
Setting	Boundary row planting extending over many properties.
Botanical name	<i>Crataegus monogyna</i>
Common name	Hawthorn
Origin	Planted
Size	Varies. Approx. 0.8m to 2m height x 0.5 – 1m width
Health	Fair
Structure	Varies dependant on how hedge has been maintained on each property.
ULE ^δ	20+ years
Existing statutory protection	None

^δULE: Estimated useful life expectancy



Figure 1: A portion of the Hawthorn hedge on Caldermeade Road near the intersection with South Gippsland Highway showing evidence of regular pruning over many years.



Figure 2: A further section of the hedge on Caldermeade Road has recently been pruned.



Figure 3: The degree of maintenance varies markedly between properties. This portion of the hedge has not been pruned for a number of years and some of the planting has died or been removed.

Taxon description

Native to Europe, *Crataegus monogyna* is a deciduous shrub or small tree to 8m tall if unpruned. The branches have many thorns 2-2.5cm long. Leaves are deeply cut or lobed. White flowers in flat clusters are borne October to November followed by red berries.

Weed status

C. monogyna was often planted as a hedgerow and is now naturalised in southern states of Australia. Declared a noxious weed in Victoria in 1965, the Dept. of Environment, Land, Water and Planning currently lists the taxon as an environmental weed which typically has a significant impact on natural systems, is highly invasive with a rapid rate of dispersal and an overall risk rating of high¹.

C. monogyna is included in the Cardinia Shire Council list of common weeds, in the 'regionally controlled' category. Council's Weed Management Strategy (2019) document states that *Regionally controlled weeds are usually widespread in a region. To prevent their spread, ongoing control measures are required. Landowners have the responsibility to take all reasonable steps to prevent the growth and spread of regionally controlled weeds on their land.*

The plant is dispersed by birds which consume the berries and subsequently defecate the seeds contained in the fruit, potentially over a wide area.

Location and description of nominated vegetation

The nominated Hawthorn hedge is extensive and, while not exhaustively mapped in the current study, was found to consist of a length of approximately 5km on the northern side of the South Gippsland Highway and McDonalds Track, Lang Lang. This 5km length extends from a point approximately 550m northwest from where the Monomeith Drain crosses the Highway, to the intersection with Caldermeade Road and then continuing to approximately 100m south-east of Jeetho Street, on the northern side of McDonalds Track.

In addition to the section on South Gippsland Highway/McDonalds Track, the hedge extends to the north-east from the Sth Gippsland Hwy-Caldermeade Road intersection on both sides of Caldermeade Road for approximately 7.8km, taking in the 'dogleg' portion of Caldermeade Road between Cameron Road and Edies Road and continuing north east to a point east of the intersection with Swamp Road where the survey was discontinued. The hedge was also noted to continue on both sides of several side roads from Caldermeade Road, namely Edens Road, Edies Road and Swamp Road, however the full extent to which the hedge continues on these roads was not determined. The extent of the hedge mapped in the current study is shown on the plan below (p. 17).

The condition and form of the hedge varies along the length surveyed, reflecting differences in the type and frequency of maintenance of the portions within various properties. The section bounding the South Gippsland Highway is intact, maintained at a height of approximately 1.0-1.5m. The McDonalds Track section is also largely intact, however several breaks are present.

¹ White M, Cheal D, Carr GW, Adair R, Blood K and Meagher D 2018, *Advisory list of environmental weeds in Victoria*. Dept. Environment, Land, Water & Planning.

In several locations in the Caldermeade Road portion, the hedge exists as a continuous planting for at least 1.7km, however there are breaks presumably where plants have been removed or have died due to a lack of maintenance.

The Hawthorn hedge is a dominant landscape feature, particularly where regularly maintained continuous growth is present on both sides of the relatively narrow Caldermeade Road.

Hawthorn hedges in Cardinia Shire

Previous heritage studies, notably the *Cardinia Shire Heritage Study* (1996) by Graeme Butler & Associates and the *Cardinia Local Heritage Study Review* (2017) prepared by Context Pty. Ltd., have identified the heritage significance of several remnant Hawthorn hedges, both within Cardinia Shire generally and as important landscape elements associated with particular properties.

Hawthorn hedges were extensively planted within Cardinia Shire from the late nineteenth century as a form of fencing, particularly by large pastoral estates². Hawthorn (*Crataegus monogyna*) became the most common hedging plant in Cardinia as it was particularly suitable as a fence to enclose livestock due to the presence of thorns and the densely branched form of the plant achieved by repeated pruning. The use of Hawthorn for hedging was a practice which settlers from England and Scotland continued in Victoria, both for practical reasons and a desire to recreate something of the landscape from which they originated.

Hawthorn hedges at several properties in Cardinia have been assessed in other heritage studies, including two which are continuous with the Caldermeade hedge which is the subject of the current study.

Remnant Hawthorn hedges are noted in the citation for Budgeree Homestead complex, 130 Swamp Road Yannathan, in the *Cardinia Shire (Emerald & Cranbourne Districts) Heritage Study* (Graeme Butler & Associates, 1999). Budgeree is located immediately north east of the Caldermeade Road-Swamp Road intersection which is next to the area surveyed in the current study. The 1999 study states that the Budgeree homestead and farm were built by James Smethurst in the 1880s on land selected by Thomas Smethurst in 1875. The hedges are not attributed any individual heritage significance in the abovementioned study, however Budgeree was assessed as significant to Cardinia Shire for its association with the Greaves family, a prominent family in the Shire who owned the property after the Smethursts. The Budgeree farmhouse is covered by Cardinia Planning Scheme's Heritage Overlay (HO119).

A series of Hawthorn hedges surrounding the property bounded by Caldermeade, Heads, Taplin and Walshes Roads, just south of the Catani township were assessed as significant in the *Cardinia Heritage Study* (Context Pty. Ltd., 2008) and are covered by the Heritage Overlay (HO163). This series of hedges are located immediately north-east of the extent of the survey of the current study. The citation notes that the exact date of planting of the Catani hedges is unknown, but that they appear to have been associated with the farm established by James Smethurst on Crown Allotment 21D, Parish of Yallock which was later sold to James Greaves. The report also states that the Catani hedges may have been planted by Smethurst as a condition of the Crown Grant of the property selected in 1888, or alternatively by the subsequent owner Greaves, after 1891.

² Context Pty. Ltd. 2017, *Cardinia Local heritage Study Review*, Vol. 3.

A further example of Hawthorn hedges assessed as significant in Cardinia, although not adjacent to the area of the current study are those associated with Corofin, a c.1912-constructed house at 2245 Ballarto Road, Cardinia. These hedges are specifically cited as historically significant in the *Cardinia Heritage Study* (Context Pty. Ltd, 2008) as a representative example of the practice of creating hedges to define and enclose the boundaries of properties in the late nineteenth and early twentieth centuries.

Establishment of the nominated Hawthorn hedge

'An impressive Hawthorn hedgerow' is noted in Niel Gunson's book *The Good Country Cranbourne Shire* (1968) as planted about 1882 at Caldermeade, a property established by Archibald McMillan (1789-1863) who bought part of the Tobin Yallock run previously owned by a group of selectors Mickle, Bakewell and Lyall known as the Western Port Stations. Caldermeade was managed by Archibald McMillan's son William until the death of Archibald's widow in 1880, when the properties comprising approximately 4,500 acres were auctioned and bought by Archibald's fifth son Alexander. The Caldermeade property under Alexander's management became known for fat cattle raising, though he also had an interest in Merino sheep breeding. Alexander's sons David and Alexander, junior managed the property from 1882, running both cattle and sheep on the highly praised estate.

W.C. Greaves (1866-1936), a prominent landholder in the area, bought and consolidated several old estates including Lyall's Warook property at Monomeith in 1904 and other neighbouring properties at Monomeith, Turkeith and Caldermeade in the years following³. Part of the McMillan family's Caldermeade estate including the homestead block was one of the properties acquired by Greaves in this period. The remaining portion of McMillan's Caldermeade property was sold to the Government Closer Settlement Board in 1921. Greaves' studs on his consolidated landholdings included pigs, several breeds of horses, and several breeds of sheep. Greaves was active in the community, in association with the Presbyterian Church at Lang Lang, and as a prominent member of the Royal Agricultural Society. The Greaves family was also represented on the Shire Council for several generations.

If the nominated hawthorn hedge is remnant from that planted by Alexander McMillan junior in 1882 the planting is now approximately 138 years old. While the existing hedge is obviously of substantial age, an establishment period of around 1882 has not been confirmed in the current study. Often aerial photographs can assist in dating vegetation. An aerial photograph from 1947, the earliest available of the area, shows the hedge in the existing location, however as repeated pruning to maintain a hedge retains the approximate size of the planting it is not possible to infer the age of the planting from this photograph.

The Hawthorn hedges which are the subject of the current study appear to follow the roads and property boundaries of the Crown allotments, however similarly to the Context *Cardinia Heritage Study* (Context Pty. Ltd., 2008) conclusion regarding the Catani hedges, it is uncertain whether the planting was established by McMillan during the period prior to the sale of part of Caldermeade estate, or by Greaves following his purchase of part of the property.

³ Gunson, N 1968, *The Good Country Cranbourne Shire*, F.W. Publishing, Melbourne.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

The Hawthorn hedge is significant as a representative example of the use of hedges to define and enclose the boundaries of pastoral properties in Yallock in the late nineteenth and early twentieth centuries.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

The Hawthorn hedge is significant for its age and as one of the few remaining examples of the hedges established on pastoral properties in the area.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

The hedge demonstrates the use of Hawthorn (*Crateagus monogyna*), a previously commonly used hedge plant in the area which is generally no longer established for this purpose. It also demonstrates the management technique of repeated pruning to maintain a landscape feature on a large scale.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

The Hawthorn hedge represents the practice of creating hedges to enclose the boundaries of pastoral properties in the late nineteenth and early twentieth centuries.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

The hedges have aesthetic qualities as an important element in the cultural landscape that is distinctive to parts of Cardinia Shire.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

The Hawthorn hedge is significant for the association with pastoral properties of the late eighteenth and early nineteenth century, a dominant land use of the post-European settlement period.

Conclusion

The Hawthorn hedge is of local historic and aesthetic significance to Cardinia Shire.

Recommendation


Hawthorn hedges are a landscape feature of historical and aesthetic significance within Cardinia Shire. While the planting date of the nominated hedge has not been confirmed in the current study, it is thought to be either associated with the ownership of Caldermeade estate by the McMillan family in the late nineteenth century, or by the Greaves family in the early twentieth century. The weed status of Hawthorn (*Crataegus monogyna*) is of concern, however, particularly as it is included as a regionally significant weed in the Cardinia Shire Council *Weed Management Strategy 2019-29*. The problem of weed dispersal can be addressed by preventing fruit development by annual pruning either before or immediately after flowering, however this required maintenance may be impractical given the extent of the hedge.


While the assessed Hawthorn hedge is of local historic and aesthetic significance to Cardinia Shire, Council will have to consider whether application of the Heritage Overlay is appropriate given the weed status of the taxon and the resultant environmental and management issues.

It is noted that two instances of Hawthorn hedge in the immediate vicinity are covered by the Heritage Overlay: those at the property Budgerie (HO119) and at Catani (HO163). These hedges appear to be continuous with that assessed in the current study and were likely established at or around the same period. These hedges may be considered a sufficient representative sample of this landscape feature.



LEGEND

 Hawthorn hedge complete or partial planting

 End of survey

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CLIENT
CARDINIA SHIRE COUNCIL

PROJECT
CARDINIA SIGNIFICANT TREE ASSESSMENT

DRAWING
Hedge Location Plan-
Caldermeade/Lang Lang



SCALE 1:200 @ A3
DATE NOV 2020
DRAWN FW
CHECKED
JOB NO 20-078
DWG NO

Nomination 5.1 - *Eucalyptus dalrympleana*, Mountain White Gum

Location	Road reserve, outside 185 Mountain Road, Gembrook (Approx. GPS: -37.92800, 145.52199)
Access	Public - Unrestricted
Setting	Specimen in group/row of trees in road reserve, eastern side of Mountain Road.
Botanical name	<i>Eucalyptus dalrympleana</i>
Common name	Mountain White Gum
Origin	Uncertain
Height	33m
Canopy width	25m
Trunk diameter (DBH*)	199cm
Health	Good
Structure	Good
ULE [§]	20+ years
Existing statutory protection	Environmental Significance Overlay (ESO)

*DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

[§]ULE: Estimated useful life expectancy.



Figure 4: View of the nominated *E. dalrympleana* from the western side of Mountain Road. The driveway to 185 Mountain Road is visible at left of tree. March 2020.



Figure 5: Cream-pale grey smooth bark with grey patches and a basal stocking of persistent rough bark is characteristic of the taxon.

Specimen identification

While characteristics consistent with the stated taxon were observed during the site visit for the current study, identification was not confirmed as no buds or fruit were accessible. *Eucalyptus dalrympleana* is closely related to and easily confused with *Eucalyptus rubida*, an indigenous taxon in the location⁴ The National Trust of Australia (Victoria), which classified the nominated specimen in 2019 advised that identification was provided by John Hawker, previously of Heritage Victoria, and Assoc. Prof. Kevin Tolhurst, The University of Melbourne, School of Ecosystem and Forest Sciences. The identification undertaken for National Trust has been accepted by the current study.

⁴ Nicolle, D 2006, *Eucalypts of Victoria and Tasmania*, Bloomings Books, Melbourne.

Taxon description and distribution

Eucalyptus dalrympleana has two subspecies: subsp. *dalrympleana* and subsp. *heptantha*. Currently all plants in Victoria are referred to *E. dalrympleana* subsp. *dalrympleana*⁵

Eucalyptus dalrympleana subsp. *dalrympleana*, commonly named Mountain White Gum, or less frequently, Mountain Gum, White Gum or Broad-leaved Ribbon Gum, is a medium-sized to tall tree species (variously described as achieving a height of 25-35m⁶ and 15-40m⁷). The taxon is often of tall, straight form with an elongated to widely spreading crown. The deciduous bark is smooth throughout or with a short stocking of persistent rough greyish bark. Smooth bark is white to cream or pale grey with patches of grey, pink, brown and green to varying degrees.

Eucalyptus dalrympleana subsp. *dalrympleana* is naturally distributed in forest vegetation in mountainous regions, slopes and plateaux of Victoria, from the Daylesford area eastwards through the cooler and more alpine areas of the Great Dividing Range.

Various botanical references have been reviewed and experts consulted to determine whether the nominated specimen is within the natural distribution of the taxon. This information is vital in assessing whether the tree is remnant of indigenous origin as this would satisfy additional significance criteria. No consensus was obtained on this issue in the current study. In an email dated 5 May 2020, Neville Walsh (Senior Conservation Botanist, Royal Botanic Gardens Victoria) advised that there are specimens in herbaria that support the likelihood of the taxon occurring naturally in the area, but that further information would be required to confirm that the specimen is naturally occurring. Dean Nicolle (Currency Creek Arboretum), who is widely recognised as a leading authority on the genus *Eucalyptus*, advised in an email dated 5 May 2020 that he is unaware of the taxon occurring in the location.

Specimen location and description

The nominated tree is in the road reserve of Mountain Road, Gembrook, an unsealed road, and is one of group of trees, including a large Messmate (*E. obliqua*) and a smaller Mountain White Gum (*E. dalrympleana*).

In 2019 the specimen was classified by the National Trust of Australia (Victoria) as of scientific and social significance at a regional level based on outstanding size and landscape contribution. The classification states an approximate age of 200 years, indicating that the tree is of remnant indigenous origin.

The current study found the specimen is a mature, large, impressive tree of 33m height, 15m canopy width and 199cm trunk diameter at breast height. These dimensions place the specimen toward the larger extent of the range of expected mature size for the taxon. Cream-white smooth bark with grey patches, minor basal persistent rough bark and ribbons of deciduous bark within the canopy which are characteristic of the taxon are present. The tree exhibits spreading form, consistent with the form of this taxon in open situations noted by Elliot and Jones (1986, p. 72).

⁵ Royal Botanic Gardens Victoria 2019 Vicflora Flora of Victoria, *Eucalyptus dalrympleana*, viewed 25 March 2020, <<https://vicflora.rbg.vic.gov.au/flora/taxon/b1be1c09-c69b-4e2d-8d10-2aa76bae121e>>

⁶ Elliot, WR & Jones, DL 1986, *Encyclopaedia of Australian Plants*, Vol. 4, Lothian, Melbourne.

⁷ Nicolle, D 2006, *Eucalypts of Victoria and Tasmania*, Bloomings Books, Melbourne.

Determination of the age of the tree would resolve the question of whether it is naturally occurring, but outside the typical range, or planted. Age assessment of trees is, however, often difficult as the growth rate of a taxon can vary greatly between individual specimens, dependant on macro- and micro-environmental conditions, and genetic variation. The nominated tree is a large specimen, towards the top of the size range for the taxon, and is obviously of substantial age. Unsurprisingly, given the current size of the tree, a 1954 aerial photograph (Figure 6) shows a tree of form consistent with a eucalypt in the location, suggesting that the tree is at least 70 years old. No further detail on establishment period was obtained in the current study and the origin of the specimen was not determined.



Figure 6: A 1954 aerial photograph shows a tree of form consistent with a eucalypt is present in the location. Dandenong Ranges Project (3/1954) Run 7, Frame 2013.

Comparative analysis

Aside from the subject tree, one specimen of *Eucalyptus dalrympleana* is listed in Victoria by the National Trust, a tree of 41m height, 1m trunk diameter and unknown age, located on Gap Road, Bonang in East Gippsland. This tree is also classified as of regional significance. With a height of 33m the subject tree is comparable with the typical maximum height of the taxon and has a substantially greater trunk diameter than the Bonang specimen.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

Not applicable (see note below).

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

Not applicable (see note below).

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable (see note below).

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

Not applicable.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

As a large, impressive specimen in a prominent location on a roadside, the tree makes a significant contribution to the landscape.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Note: Should the tree be determined as naturally occurring and of remnant forest origin by further research, additional significance criteria A (historical significance) and B (rarity) would also be satisfied, however the current study was unable to confirm this.

Conclusion

The *Eucalyptus dalrympleana* specimen is of local aesthetic significance to the Shire of Cardinia.

A curtilage of 15m, as a radius from the trunk centre is required.

A Statement of Significance is provided in the appendix to this report.

Nomination 5.2 - *Eucalyptus obliqua*, Messmate Stringybark

Location	Road reserve, outside 185 Mountain Road, Gembrook. Approx. GPS (-37.92779, 145.52208)
Access	Public - Unrestricted
Setting	Specimen in group/row of trees in road reserve, eastern side of Mountain Road.
Botanical name	<i>Eucalyptus obliqua</i>
Common name	Messmate, Messmate Stringybark
Origin	Naturally occurring
Height	24m
Canopy width	22m
Trunk diameter (DBH*)	163cm
Health	Fair
Structure	Good
ULE ^δ	20+ years
Existing statutory protection	Environmental Significance Overlay (ESO)

*DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

^δULE: Estimated useful life expectancy.



Figure 7: The nominated *Eucalyptus obliqua*, adjacent to the nominated *E. dalrympleana* is a large tree with wide-spreading canopy.

Taxon description

Eucalyptus obliqua, commonly known as Messmate Stringybark or Messmate, is endemic to south-eastern Australia. The taxon is one of the tallest of eucalypts, with trees in sheltered sites within the distribution range commonly attaining heights over 60m.

Specimen description

The nominated tree is a mature specimen of unknown age, in good health, with fair structure. The taxon is indigenous, however whether the tree is of remnant indigenous origin is unknown. The tree is located on the road reserve of Mountain Road, Gembrook, adjacent to nomination 5.1, *Eucalyptus dalrympleana*.

The two nominated trees in the location are of comparable size, suggesting establishment within a similar period, and possible planting by an interested person.

Comparative analysis

National Trust registered trees

Four *Eucalyptus obliqua* in Victoria are registered by the National Trust. Three of these are significant at regional level;

- A specimen of 20m height and 1m trunk diameter in Clarendon, near Ballarat is of aesthetic significance for its unusual growth form.
- A 150-year-old specimen of 28m height and 2m trunk diameter in Gordon, also near Ballarat, which is of scientific significance for its age and as an outstanding example of the species, and of social significance for its location in a school complex.
- A specimen of 30m height and 2m trunk diameter, of unknown age, in a road reserve in Terip Terip in the Strathbogie Ranges, which is of scientific significance for its outstanding size, and aesthetic significance for its appearance and location.

One example is of State significance, a 42m height and 5m trunk diameter specimen in Ba Road, Orbost is of scientific significance as a massive specimen, stated in the registration as 'possibly the largest girth of any forest tree in Gippsland'.

Within Cardinia Shire

In Cardinia Shire, a large, remnant specimen in the road reserve of Ure Road, Gembrook has been determined of local significance as an outstanding example of the taxon notable for its size, and as an example of remnant pre-settlement vegetation in a Stage 2 study. The tree has not been included in the heritage overlay.

Nominated tree

At 24m height and trunk diameter of 163cm, the nominated tree is smaller than the two examples of National Trust registered trees of regional significance which are significant for their outstanding size.

No size information was found by the current study for the Ure Road, Gembrook specimen, and no comparison against this tree has been possible.

While the tree is a reasonably large specimen of some landscape contribution, the requirement for a finding of aesthetic significance has not been satisfied.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

Not applicable.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

Not applicable.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

Not applicable.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

Does not satisfy this criterion.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Conclusion

The nominated tree does not satisfy the significance criteria at any level. Inclusion in the heritage overlay is not recommended.

Nomination 6.0 – *Sequoia sempervirens*, Coast Redwood.

Nomination 6.1 - *Sequoia sempervirens*, Coast Redwood.

Nominations 6 (three specimens within 4 Dewhurst Road, Emerald) and 6.1 (a single specimen within 44 Beaconsfield -Emerald Road, Emerald) are described in a single section of this report as they are likely of similar age, origin and significance.

Location	4 Dewhurst Road, Emerald (x3 trees) & 44 Beaconsfield-Emerald Road, Emerald (x1 tree) (Approx. GPS coordinates for each tree are listed below)			
Access	Private property			
Setting	Within native and exotic vegetation adjacent to a gully creek.			
Botanical name	<i>Sequoia sempervirens</i>			
Common name	Coast Redwood, Californian Redwood			
Origin	California, USA			
Tree data	Tree 6*	Tree 7*	Tree 8*	Tree 9*
Approx. GPS coordinates	(-37.94116, 145.44938).	(-37.94125, 145.44970)	(-37.94172, 145.45027)	(-37.94139, 145.45047)
Height	43m	43m	42m	40m
Canopy width	20m	18m	20m	17m
DBH	218cm	190cm	210cm	242cm
Health	Good	Good	Good	Good
Structure	Good	Good	Good	Fair
ULE	20+ years	20+ years	20+ years	20+ years
Comments				Multi-stemmed from near base.
Existing statutory protection	Environmental Significance Overlay (ESO)			

*Tree numbering adopted from Cardinia Significant Tree Assessment 2019 prepared by Greenwood Consulting Pty. Ltd.

DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

ULE: Estimated useful life expectancy.



Figure 8: Tree 6, westernmost tree of nomination 6, within 4 Dewhurst Road, Emerald.



Figure 9: View to north from within 4 Dewhurst Rd, Emerald of Tree 7 (approx. centre of frame), the second specimen within the property. Tree 6 is just visible to left of Tree 7.



Figure 10: Tree 8, the third *Sequoia sempervirens* specimen within 4 Dewhurst Road, Emerald. Tree 9 (nom. 6.1), within neighbouring property to the east, 44 Beaconsfield-Emerald Road is visible at left of frame.



Figure 11: Nomination 6.1 (Tree 9), multi-stemmed *Sequoia sempervirens* within 44 Beaconsfield-Emerald Road.



Figure 12: Nomination 6.1 is multi-stemmed from the base.



Figure 13: View to the southwest from an elevated position in the neighbouring property of the three nominated trees within 4 Dewhurst Rd, Emerald (right to left Trees 6, 7 & 8). Nomination 6.1 (Tree 9) is obscured by a Eucalypt to left of frame.

Taxon description

Sequoia sempervirens is a very large, long-lived, evergreen coniferous species to 100m tall and 8m trunk diameter in its natural Pacific coast habitat. Strongly buttressed trunks are a common feature as too are basal suckers. The tallest trees in the world, the taxon grows naturally in coastal California, USA below an altitude of 1000m, usually in areas protected from winds and where ocean fogs occur, by streams and in deep gullies.

Specimen location and description

The four *Sequoia sempervirens* specimens which comprise nominations 6 and 6.1 appear to be of the one group, with three of the trees in an approximately linear arrangement adjacent to the north of a seasonal creek in a gully between the rear boundaries of 4 Dewhurst Road and 44 Beaconsfield-Emerald Road, Emerald. The fourth specimen sits as a single specimen south of the creek. Locations are indicated in Figure 14, below. The gully contains native vegetation, mainly tree ferns and other native riparian species, and a notable occurrence of a range of exotic trees and shrubs including a row of White Poplar, several Maple (*Acer* sp.), Apple (*Malus domestica* CV) and Magnolia. A large overgrown Kiwifruit vine (*Actinidia deliciosa*) is also present.

The topography is steeply sloped to the creek gully, with the exception of an almost flatly graded linear area several metres wide roughly parallel to the creek, with the appearance of possibly a degraded path.

The trees are large, impressive specimens in good health. The three specimens of nomination 6 are of good structure with a strong central leader and symmetric canopy. The specimen within 44 Beaconsfield-Emerald Road, Emerald (nomination 6.1) is multi-stemmed from the base. Strong basal buttresses are present on all four specimens. The aesthetic contribution to the surrounding landscape for all four trees is somewhat reduced as the lower canopy is obscured by surrounding vegetation, however the upper canopy of strongly conical form is distinctive when viewed from an elevated position and this is likely to become more obvious over time.

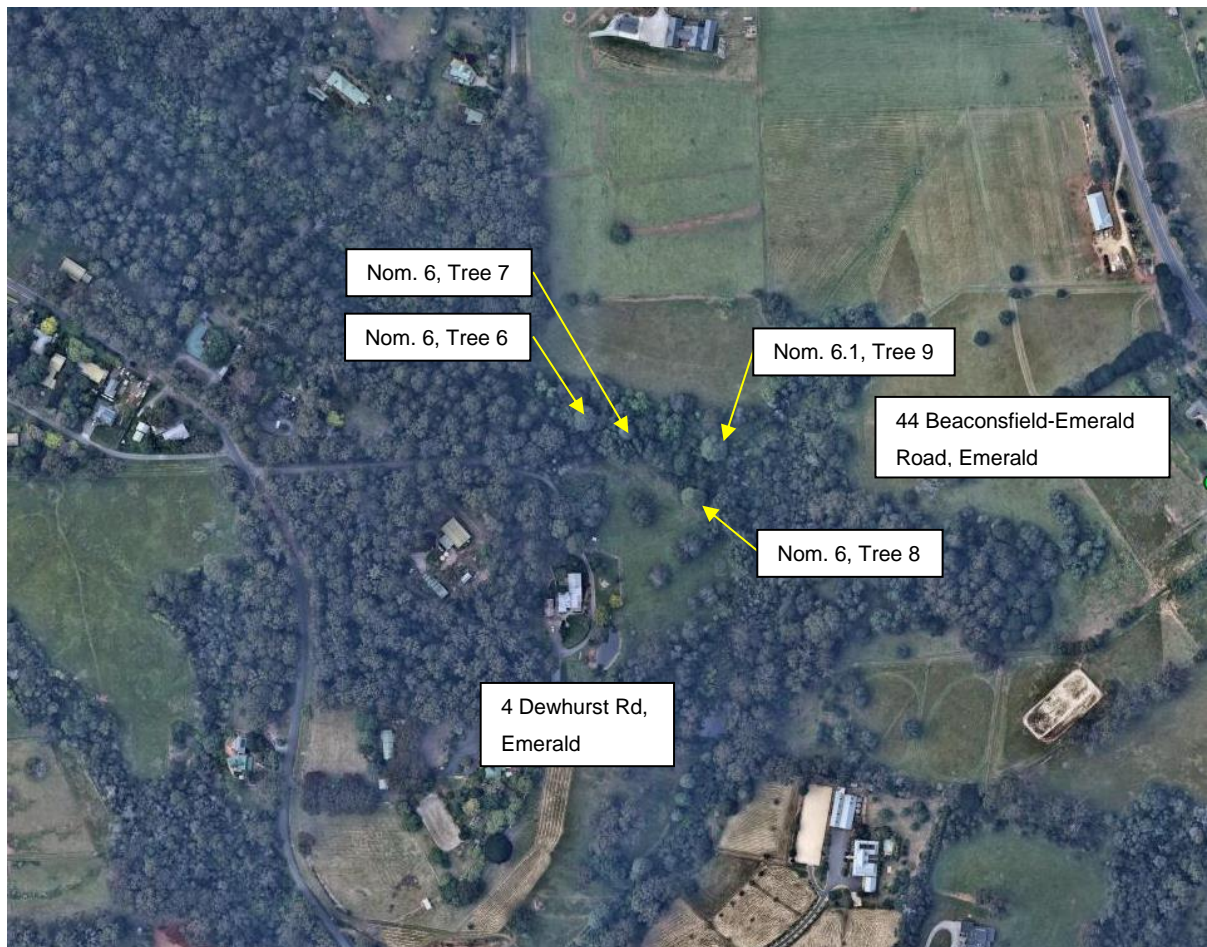


Figure 14: Aerial view of nominated *Sequoia sempervirens*, Dec. 2019. Source: Nearmap. Tree numbering as per Cardinia Significant Tree Assessment 2019, Greenwood Consulting Pty. Ltd.



Figure 15: 1978 aerial photo cropped to centralise 4 Dewhurst Rd, Emerald. Yellow indicates nominated trees. Western Port Foreshores Project, Jan 1978, Run 13, Frame: 120.

History

The *Cardinia Significant Tree Assessment* (2019) indicates that the trees may be remnant stock of well-known historic local nursery Nobelius Nursery. The presence of exotic vegetation of species grown at Nobelius⁸, the apparent rows in which the adjacent vegetation and subject trees are aligned, and the possible presence of a degraded path between tree rows tends to support the assertion that the planting is a remnant of the nursery.

Contrary to this, research undertaken in the current study indicates that Nobelius Nursery, while occupying a substantial area of land at the peak of operations immediately prior to World War 1 (Figure 16), did not extend to the western side of Beaconsfield-Emerald Road (P Murphy 2020, pers. comm., 14 April).

It is almost certain that the nominated trees were planted, possibly with stock sourced from Nobelius Nursery, along with the other adjacent exotic vegetation. Based on the current size of the trees and the substantial canopies visible in a 1978 aerial photograph (Figure 15) it is possible that the trees were established as early as 1900, however in the protected location with available water, conducive to rapid growth, planting as late as 1930 is considered possible. An example of the growth rate of the taxon in comparable conditions is a stand of National Trust-registered Coast Redwood in Beech Forest, Victoria of known 1936 planting date which are noted in the registration to have reached a height of 43m by 1997⁹.

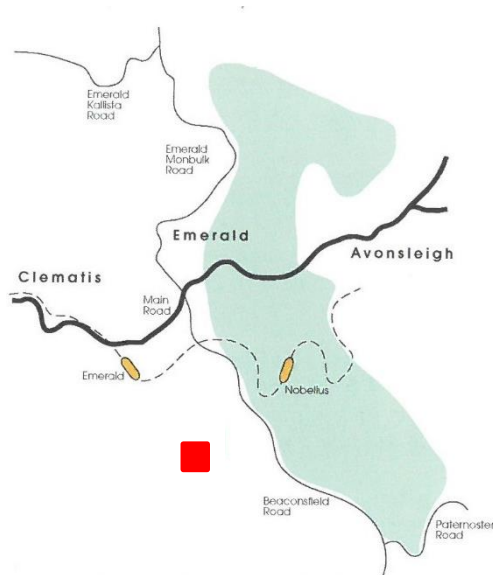


Figure 16: Diagram of the extent of Nobelius Nursery (indicated by green shading) at its peak just before World War 1. Source: Jenkinson, J 2002¹⁰ (L. Cope from a sketch by Gus Ryberg.) The approximate location of the nominated trees is indicated in red.

⁸ Jenkinson, J 2002, *Nobelius Heritage Park: an illustrated guide*, Emerald Museum, Emerald Victoria.

⁹ National Trust of Australia 2015, Register of significant trees, viewed 1st May 2020, <https://trusttrees.org.au/tree/VIC/Beech_Forest/Aire_Valley_Road>

¹⁰ Jenkinson, J 2002, *Nobelius Heritage Park: an illustrated guide*, Emerald Museum, Emerald Victoria.

Comparative analysis

National Trust registered trees

Ten trees or tree groups of the taxon in Victoria are listed by the National Trust. Five of these are of state significance;

- a plantation of 100-200 trees of 43m height and 1m trunk diameter at the Old Aire Valley Camp, Beech Forest which are of scientific significance due to their outstanding size and as outstanding examples of the species,
- a 30m height and 2m trunk diameter specimen in the Ballarat Botanical Gardens which is of aesthetic significance and historic and social significance for its location in the Gardens,
- a 52m height and 2m trunk diameter specimen at Perrins Creek Road, Kallista. This tree is of scientific significance for its outstanding size and as an outstanding example of the taxon at state level and of historic significance for the association of the property on which it is located and with the history of the area.
- a stand of some 1476 trees, known as the Redwood Forest, at Cement Creek, Warburton of 54m height and 2m trunk diameter which are of aesthetic, social, scientific and historic significance,
- a large specimen (40m height, trunk diameter 1m) planted in 1874 in the grounds of the Ovens District Hospital, Church Street, Beechworth of aesthetic, social and historic significance.

Four listed trees are of regional significance;

- a 24m height, 1m trunk diameter specimen at Smeaton House, Smeaton which is of aesthetic, historic and scientific significance,
- a 27m height, 1m trunk diameter specimen in the Kyneton Botanic Gardens which is of historic significance for its association with the Gardens,
- a stand of trees in Fernshaw Reserve, Maroondah Highway, Healesville of 31m height and 1m trunk diameter, significant for outstanding size and as outstanding examples of the taxon,
- a single tree of 48m height and 2m trunk diameter at Bright Country Golf Club, Bright which is of scientific significance for its outstanding size and example of the taxon and of social significance for its contribution to the landscape.

A 100-year-old tree of 32m height and 1m trunk diameter, at Mayday Hills (former asylum), Beechworth is of local significance for its outstanding size and example of the taxon, and of historic significance for its association with the site.

Trees within Cardinia Shire

Sequoia sempervirens in Gembrook Park, Gembrook are covered by a Heritage Overlay (HO37) of the Cardinia Planning Scheme due to their significance to the Shire as evidence of mature ornamental planting in one of the district's popular resorts, as symbolic of the development of the park as a recreational centre and for their

association with a locally prominent person, Harry Knight, who ran the general store which was important in the Gembrook area¹¹. Gembrook Park as a whole is subject to the Heritage Overlay (HO38).

Also within the Shire, two *Sequoia sempervirens* are among trees on the property 'Gorongu', Mann Road, Pakenham which is subject to the Heritage Overlay (HO69). The trees are a part of the typical hill station garden which is of significance to Cardinia Shire and contributory to both the house and property¹².

Nominated trees

At a height of 43m and trunk diameter 190 – 242cm, the nominated specimens are of comparable size with several trees listed as of state significance by the National Trust, however the state level trees are not only of aesthetic significance for their landscape contribution, but the majority are also of historic or social significance.

No finding of significance of the nominated trees for an association with Nobelius Nursery, which is listed by Heritage Victoria and is the subject of the heritage overlay of Cardinia Shire (HO273) has been determined in the current study.

Significant specimens of the taxon are well represented across Victoria, indicated by the number of specimens registered by the National Trust, however only two instances of the taxon are subject to the Cardinia Planning Scheme Heritage Overlay. While other examples would exist, such as the specimen at Emerald Lake (Bunurong Amphitheatre), the taxon is relatively uncommon in Cardinia Shire. In contrast, many notable specimens are present within adjacent Shire of Yarra Ranges.

Assessment against criteria

The following assessment relates to all trees of nominations 6 and 6.1.

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

Not applicable (see note below).

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

The trees are outstanding examples of the taxon which is relatively uncommon within Cardinia Shire and are of outstanding size, comparable to several instances of National Trust-registered trees of state significance.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

The trees are outstanding examples of the taxon, comparable in size to the largest examples in Victoria.

¹¹ Butler, G 1996, 'Californian Redwoods', *Cardinia Shire (North) Heritage Study*, pp.125-126.

¹² Butler, G 1996, 'Gorongu', *Cardinia Shire (North) Heritage Study*, pp.238-241.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

Visible above the surrounding vegetation, the distinctive conical form is visible from elevated vantage points and makes a significant contribution to the landscape.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Note: Should further research determine that the nominated trees are remnants of Nobelius Nursery, additional significance criteria would be satisfied.

Conclusion

The four *Sequoia sempervirens* specimens, which comprise nominations 6 and 6.1, are of local aesthetic and scientific significance to Cardinia Shire.

A curtilage of 15m, as a radius from the trunk centre for each tree is required, as per AS4970-2009 *Protection of trees on development sites*.

Statements of Significance for the nominations are provided in the appendix to this report.

Nomination 8 – *Fagus sylvatica* 'Purpurea' Purple Beech

Location	8 Benson Street, Emerald. (Approx. GPS coordinates: -37.93483, 145.43895).
Access	Private property - restricted
Setting	Residential garden
Botanical name	<i>Fagus sylvatica</i> 'Purpurea'
Common name	Purple Beech/Copper Beech
Origin	Exotic
Height	20
Canopy width	18
DBH (cm)	117
Health	Good
Structure	Fair
ULE	20+ years

DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

ULE: Estimated useful life expectancy.



Figure 17: View of the nominated tree from Benson Street.

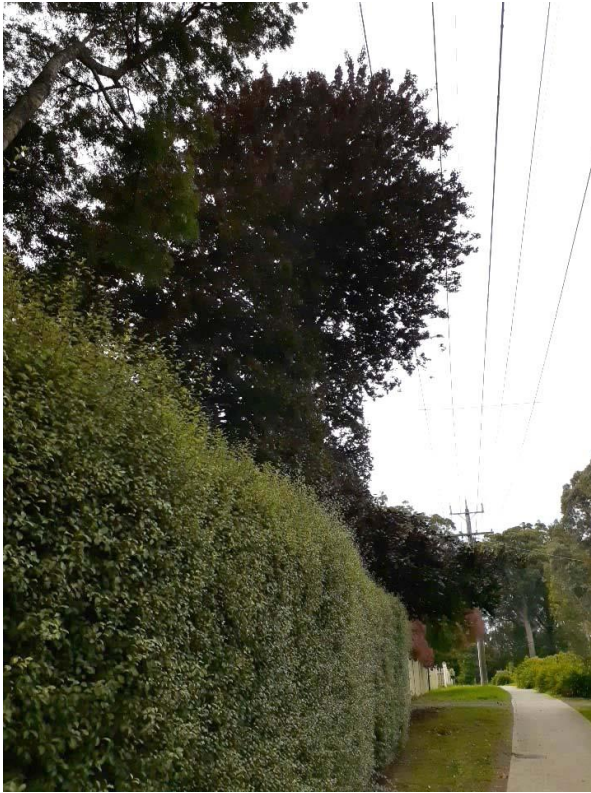


Figure 18: The southern canopy has been heavily pruned for powerline clearance.

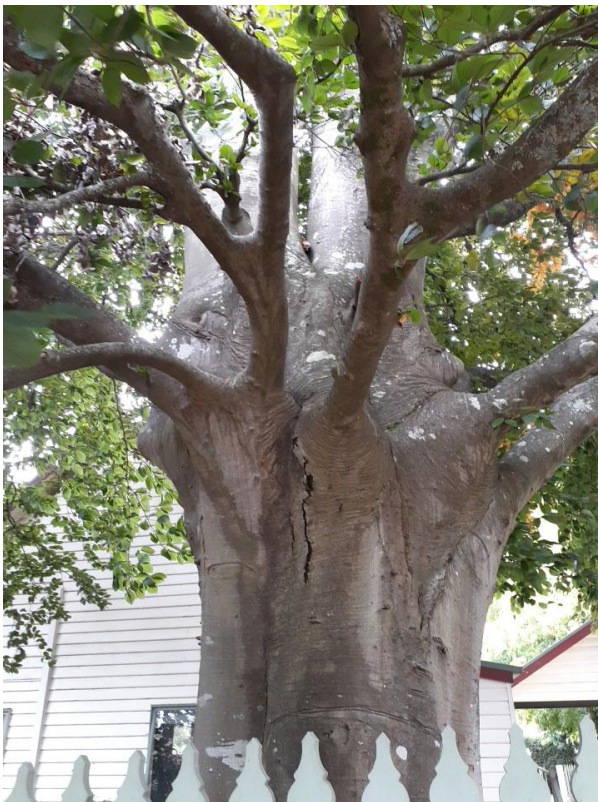


Figure 19: The large trunk has codominant leaders from approximately 4m height.

Taxon description

Exotic deciduous tree to 15-30m tall. The form 'Purpurea' has purple foliage of variable size and colour intensity.

Specimen description

The nominated tree is a large specimen, within private property, immediately adjacent to the Benson Street site frontage. The tree is visually prominent from the street and is in good health. Codominant leaders are present from 4m height, a structural fault often associated with a higher probability of trunk failure and an associated reduced useful life expectancy. A substantial portion of the southern canopy has been pruned for powerline clearance, resulting in asymmetrical canopy form.

Existing protection

The property is covered by the Significant Landscape Overlay (SLO1 – Puffing Billy tourist railway scenic corridor) and the Vegetation Protection Overlay (VPO2 – Hills townships) of the Cardinia Planning Scheme, the objective of which is to protect the landscape and environmental qualities of the railway scenic corridor, and to protect remnant indigenous and mature exotic vegetation which are important elements of the character of the residential areas, respectively.

It is noted, however that exemptions listed at Clause 52.48 (Bushfire Protection) would allow removal of the tree with no requirement for a permit under the relevant overlays.

Comparative analysis

National Trust registered trees

Five specimens of *Fagus sylvatica* within Victoria are registered by the National Trust. Of these, three are Purple Beech (*Fagus sylvatica* 'Purpurea') with the remainder Common Beech. Two of the registered Purple Beech are of regional significance; a very large example (20m height and 2m trunk diameter) in the Geelong Botanic Gardens which is of scientific significance for its outstanding size and as an outstanding example of the taxon, and of social and historic significance for the location and association with the Gardens, and a specimen at 'Arden', Main Road, Toolangi which is of historic significance as it was planted by John Masefield, poet laureate, in 1934 on the occasion of the centenary of the founding of Melbourne, at the property of CJ Dennis, a notable Australian poet.

The only Purple Beech of National Trust state significance is a specimen at the former Mayday Hills Hospital, Beechworth, which is of scientific significance for its horticultural value, outstanding size (15m height, 18m canopy spread and 80cm trunk diameter), and as an outstanding example of the taxon.

Trees within Cardinia Shire

Several *Fagus sylvatica* 'Purpurea' (Purple Beech) specimens have been identified as significant in heritage studies;

- A specimen which is one of a number of trees which are contributory to the importance of 'Carramar', the 1888-constructed former house of important Emerald nurseryman Carl Axel Nobelius and his family. Carramar is included in the Cardinia Shire Heritage Overlay (HO29).

- A specimen which is among mature trees (planted c.1900) which are of contributory significance to the Tivoli Berry Farm which has been identified as significant to the Shire in the Cardinia Shire (Emerald & Cranbourne Districts) Heritage Study 1998. The place is not subject to the Heritage Overlay.
- The Emerald Country Club Estate, Lakeside Drive, Emerald, and the associated landscape were recommended for inclusion in the Heritage Overlay in the Cardinia Heritage Study 2006 (Context Pty. Ltd.). A *Fagus sylvatica* 'Purpurea' at 38 Lakeside Drive, Emerald, is mentioned in the report as an element of the Estate landscape. The place has not been included in the Heritage Overlay.

A Common Beech specimen (the standard green form of *Fagus sylvatica*) at 'Alton', Sellers Road, Emerald has been determined as of local aesthetic significance to Cardinia Shire in a Stage 2 heritage study.

No examples of the taxon are mentioned in the Victorian Heritage Registration for the Former Nobelius Nursery, Packing Shed and Railway Siding, Emerald, however several Purple Beech are present at the site.

Nominated tree

At 20m height, 18m canopy spread and 117cm trunk diameter, the nominated tree at 8 Benson Street, Emerald is of similar height, but substantially smaller trunk diameter, compared to the Purple Beech at the Geelong Botanic Gardens which is National Trust-registered for its outstanding size.

The nominated tree is, however, larger than the Mayday Hills Hospital, Beechworth specimen, which is significant for its outstanding size. A limited review of *Fagus sylvatica* 'Purpurea' specimens at the Alfred Nicholas Memorial Garden, Sherbrooke, a location noted as containing notable examples of the taxon¹³, found that the nominated tree is of comparable or larger trunk diameter.

All the examples of Purple Beech which have been identified as significant within Cardinia Shire in heritage studies are significant due to their association with a historic place, rather than as individual specimens of outstanding size. The National Trust-registered trees are significant for their association with a historic site or person, in addition to their size. No historical association has been found for the subject tree.

The subject tree, at 8 Benson Street, Emerald is prominent in the landscape, however extensive canopy pruning to the southern portion of the canopy for powerline clearance has substantially reduced its aesthetic value. The reduction in visual aesthetics is, however, compensated for by the relatively large size of the specimen compared to others in the area.

Assessment against criteria

Criterion A: *Importance to the course or pattern of our cultural or natural history (historical significance).*

Demonstrates the style of exotic tree planting in Emerald and surrounds which contributes to the character of the landscape and reflects the impact of the local Nobelius Nursery on the availability and selection of unusual plant taxa for inclusion in local domestic gardens.

Criterion B: *Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).*

¹³ Spencer, R 1997, *Horticultural Flora of South-Eastern Australia*, Vol. 2, UNSW Press, Sydney.

The tree is of outstanding size for the taxon in Cardinia Shire.

Criterion C: *Potential to yield information that will contribute to understanding our cultural or natural history (research potential).*

Not applicable.

Criterion D: *Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).*

Not applicable.

Criterion E: *Importance in exhibiting particular aesthetic characteristics (aesthetic significance).*

The tree is a large specimen which makes a substantial contribution to the streetscape.

Criterion F: *Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).*

Not applicable.

Criterion G: *Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).*

Not applicable.

Criterion H: *Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).*

Not applicable.

Conclusion

The nominated *Fagus sylvatica* 'Purpurea' specimen is of local historic and aesthetic significance to the Shire of Cardinia. The tree demonstrates exotic tree planting which contributes to the landscape character of Emerald, a style linked to the historic Nobelius Nursery. The large tree is prominent in the streetscape.

A curtilage equal to the Tree Protection Zone (TPZ) calculated as set out in AS4970-2009 *Protection of trees on development sites* (based on trunk diameter) is required, to be determined at the time of any proposed works which may impact on the tree.

A Statement of Significance is provided in the appendix to this report.

Nomination 9.1 – *Quercus robur* English Oak

Location	Cochrane Park, Koo Wee Rup. (Approx. GPS coordinates: -38.19921, 145.48650)
Access	Public- unrestricted
Setting	Single specimen in grassed area of public park
Botanical name	<i>Quercus robur</i>
Common name	English Oak, Common Oak
Origin	Exotic
Height	12m
Canopy width	17m
DBH	98cm
Health	Good
Structure	Fair
ULE	20+ years
Comments	Exhibits branch fusion (inosculation).

DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

ULE: Estimated useful life expectancy.



Figure 20: The English Oak in an open grassed area of Cochrane Park has a wide spreading canopy, the northern side of which extends to the ground.



Figure 21: The English Oak has fused branches, an interesting growth phenomenon.

Taxon description

Exotic, deciduous, broad-crowned tree to 20m or taller. Branches can be massive and wide spreading. Bark is grey and furrowed. Leaves are variable in size and shape with shallow lobes on each side, larger at the leaf tip. Native to most of Europe west of the Caucasus.

Q. robur is historically one of the most widely planted oaks in South-eastern Australia.

Specimen description

The nominated specimen is one of a few scattered trees in a large grassed area of Cochrane Park, a large public recreation reserve in Koo Wee Rup. Of wide spreading form, the canopy extends to the ground on the northern side, a typical form for the taxon. An interesting growth form is present where codominant stems have fused to

form a hole, at approximately 1m height, a phenomenon known as inosculation, where stems grow separately in proximity to each other until they touch. The bark is then gradually abraded due to movement, exposing the cambium which self-grafts. The occurrence of this growth form is uncommon, however it has been observed in trees of various taxa. A notable example is an oak at Coombe Cottage, the home of Dame Nellie Melba in Coldstream, Victoria.

Comparative analysis

National Trust registered trees

A review of National Trust registered *Quercus robur* in Victoria found that of the trees which are significant for their size, those of Regional significance are generally in the size range 18-22m height, 0.6-1m trunk diameter, and those of State significance substantially larger, at 24-29m height and 0.9-2m trunk diameter.

Trees within Cardinia Shire

Two instances of English Oak are included in the Cardinia Shire Heritage Overlay;

- A single tree at the Princes Highway-Oak Tree Drive intersection, Pakenham of local significance for its contribution to the amenity of the local landscape and its notable upright form (HO263).
- A single tree on the north-eastern corner of Syme and Toomuc Valley Roads, Pakenham of local significance for its amenity value and position as a landmark tree in the local precinct (HO265).

In addition, English Oaks are present within historic sites which are included in the Heritage Overlay;

- Three English Oaks probably associated with the Kennelly family's dairy farm at 195 Browning Road, Tynong South, in association with several Bunya Bunya (*Araucaria bidwillii*) at a presumed early house site. The oaks are in poor condition, but the trees were determined as significant for their age, landmark quality and added potential to allow interpretation of the historic house site, as well as their rarity in the Shire (HO26).
- A specimen which is one of several trees which are contributory to the importance of 'Carramar', the 1888-constructed former house of important Emerald nurseryman Carl Axel Nobelius and his family. Carramar is included in the Cardinia Shire Heritage Overlay (HO29).
- A specimen among trees on the property 'Gorong', Mann Road, Pakenham which is subject to the Heritage Overlay (HO69). The trees are a part of the typical hill station garden which is of significance to Cardinia Shire and contributory to both the house and property.
- Eight English Oaks, in association with eight Elms at The Grange, an early homestead in the area at 15 Huxtable Road, Upper Pakenham (HO48). The trees, of estimated planting period c.1880s, are significant for their association with the history of the property.

Nominated tree

The nominated specimen contributes to the amenity of the landscape of Cochrane Park, however it is not a particularly large or venerable specimen. At 12m height it is less tall than National Trust registered trees, although the trunk diameter is comparable with trees of Regional significance. The nominated tree does not satisfy the aesthetic significance criterion based on size or landscape contribution alone. It does, however, exhibit the

interesting and relatively uncommon growth form of fused branches, which satisfies criterion E, *Importance in exhibiting particular aesthetic characteristics*.

Reassessment of the specimen in 10-20 years is recommended as the tree may become significant for its outstanding size and as an example of the taxon with further growth.

No historic associations of the nominated tree were determined in the current study.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

Not applicable.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

Not applicable.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

Not applicable.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

The tree exhibits the curious growth form of fused branches. It also contributes to the landscape and amenity of Cochrane Park.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Conclusion

The English Oak in Cochrane Park, Koo Wee Rup is of local aesthetic significance to Cardinia Shire for the unusual growth characteristic of grafted stems.

Reassessment against significance criteria is recommended in 10-20 years.

A curtilage of 15m, as a radius from the trunk centre is recommended.

A Statement of Significance is provided in the appendix to this report.

Nomination 10 – *Quercus canariensis*, Algerian Oak

Location	Road reserve, opposite 22 Browning Rd, Nar Nar Goon. (Approx. GPS coordinates: -38.08587, 145.57227).
Access	Public – unrestricted
Setting	Single specimen in grassed road reserve
Botanical name	<i>Quercus canariensis</i>
Common name	Algerian Oak
Origin	Exotic
Height	13m
Canopy width	15m
DBH	109cm
Health	Good
Structure	Fair – Multistemmed/codominant from base
ULE	20+ years

DBH: Trunk diameter at breast height. The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

ULE: Estimated useful life expectancy.



Figure 22: The Algerian Oak specimen on the roadside provides some landscape contribution but does not meet the threshold for aesthetic significance.

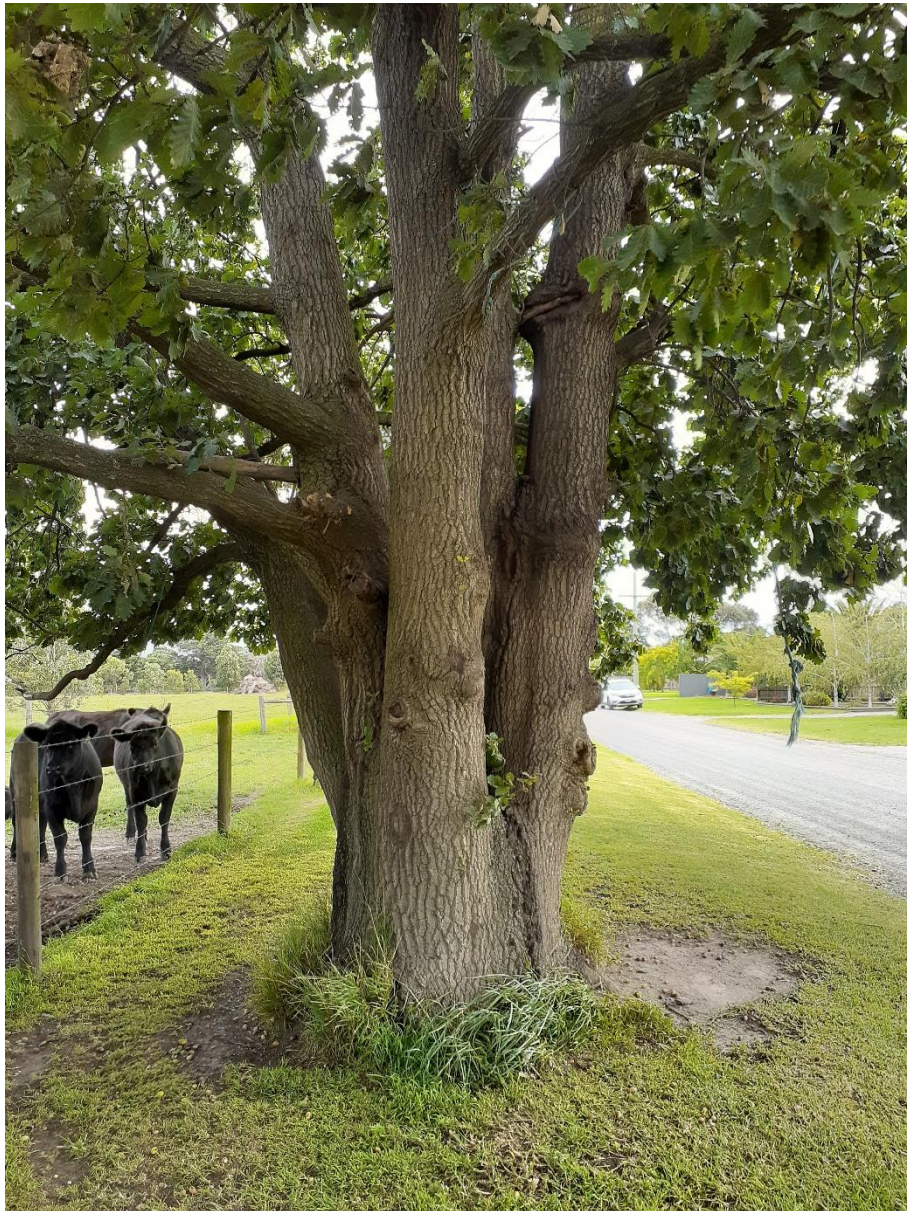


Figure 23: The nominated Algerian Oak is multi-stemmed from the base.

Taxon description

A large, broad-crowned, semi-deciduous tree (naturally deciduous but often retaining some leaves. In much of its habitat, northern Africa for example, it tends towards evergreen. In Victoria leaves tend to be retained to varying degrees), to 20m or taller. Bark is dark brown and fissured. Branches are large and often wide spreading. Native to southern Portugal, Spain, Tunisia, Algeria and Morocco. In Australia the taxon displays great variation in leaf size, shape and lobing, and is often present as an hybrid form with *Q. robur*..

Specimen description

Located on the side of a road which divides a residential area from farmland, the tree provides some landscape contribution but is not a particularly large or venerable example of the taxon. The tree has multiple, upright

codominant stems from the base, which is considered a structural fault from an arboricultural viewpoint as it generally reduces the life expectancy due to an increased probability of stem failure.

Comparative analysis

National Trust registered trees

National Trust registered *Quercus canariensis* which are significant for their size, their height ranges from 19-28m and trunk diameter from 1.4-2.5m. Other registered specimens are significant for their historic association.

Trees within Cardinia Shire

Two examples of the taxon are included in the Heritage Overlay;

- A single specimen within a vacant block at 9 Main Street, Pakenham which is of regional significance to Cardinia Shire as a commemorative planting to mark the federation of Australia in 1901. The tree is also of significance due to amenity provision (HO264).
- A semi-continuous avenue of mature Algerian Oak along Main Street, Gembrook is of local significance to Cardinia Shire as a venerable street tree planting and for their contribution to the streetscape and the heritage character of the town (HO268).

Nominated tree

At 13m height and 109cm trunk diameter, the nominated tree is substantially smaller than National Trust registered specimens of the taxon. From a visual perspective, the multi-stemmed form of the nominated tree is not as impressive as single-trunked specimens. With additional growth the tree may achieve a size comparable with National Trust registered examples.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

Not applicable.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

Not applicable.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

Not applicable.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

The tree provides a degree of aesthetic contribution to the landscape, but does not meet the threshold for significance based on size or landscape contribution.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Conclusion

The Algerian Oak in the road reserve on the southern side of Browning Road, Nar Nar Goon does not satisfy significance criteria based on size or landscape contribution and is not recommended for inclusion under the heritage overlay.

Reassessment of the tree against significance criteria in 10-20 years is recommended.

Nomination 16.8 – *Angophora costata*, Smooth-barked Apple

Location	'Chamomile Farm' 79 Emerald-Monbulk Road, Emerald. (Approx. GPS coordinates: -37.91517, 145.44525).
Access	Private property - restricted
Setting	Adjacent to driveway in private property which previously operated as a commercial plant nursery (Chamomile Farm)
Botanical name	<i>Angophora costata</i>
Common name	Smooth-barked Apple
Origin	Australian native – NSW and Queensland
Height	22m
Canopy width	17m
DBH	130cm
Health	Good
Structure	Fair
Planting date	1973
ULE	20+

DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

ULE: Estimated useful life expectancy.



Figure 24: The nominated *Angophora costata* is a large, impressive specimen in a location of importance to the area.



Figure 25: The tree exhibits a natural growth form of epicormic branches at the base retained.

Taxon description

Native to New South Wales and Queensland, the taxon is commonly cultivated as an ornamental tree. Typically, specimens are 15-30 high, often with crooked branches, a spreading crown and smooth pink to orange bark which weathers to grey, shedding in small scales.

Specimen description

The tree is located between the Emerald-Monbulk Road front site boundary and the dwelling of Chamomile Farm adjacent to an area which was formerly used for production of nursery stock. It is a large, impressive specimen which dominates this area of the property as a prominent landscape feature.

Formative pruning to encourage development of a central leader by removal of basal branches and competing stems has not been undertaken, resulting in a natural form.

History

The nominated *Angophora costata* was planted at 'Chamomile Farm' by Lyle and Elvie Williams in 1973 as part of early native and exotic tree plantings following establishment of the property in 1972¹⁴.

¹⁴ Williams, L 1987, *Chamomile Farm*, Hyland House, Melbourne.

'Chamomile Farm' was established on six acres of turnip weed and blackberries and developed into a commercial production nursery, initially specialising in herbs, including as a supplier to the restaurant industry, and later diversifying to production of annuals, perennials and shrubs. The business also operated as a wholesale florist.

'Chamomile Farm' is an example of the proliferation of the plant nursery industry which developed in the Dandenong Ranges in the twentieth century. The property remains in the ownership of the Williams family.

The nominated tree was classified by the National Trust in 2019, registered as being of regional significance.



Figure 26: 1981 photograph of a portion of Chamomile Farm nursery with the *Angophora costata* specimen visible to right of frame. Source: Williams 1987, p.56.



Figure 27: 1999 aerial view towards Emerald-Monbulk Rd (top of frame). A yellow rectangle indicates the *Angophora costata* specimen.

Comparative analysis

Nine *Angophora costata* in Victoria are on the National Trust Significant Tree Register, including the nominated tree. Six of the trees are classified as of regional significance, including the specimen at Chamomile Farm. These are all significant for their outstanding size and as outstanding examples of the species. Several of these specimens are also significant for their contribution to the landscape as they are in prominent locations, and for their aesthetic qualities.

The three trees of the taxon which are listed as being of state significance are additionally significant for their association with a historic institution, unusual growth form or as a commemorative planting.

With a trunk diameter of 130cm, the nominated tree is larger in this respect than all the other National Trust trees except for one specimen which is of state significance. The tree at Chamomile Farm has codominant stems which is generally considered a structural fault, resulting in a reduction in the structure category to 'fair', however the tree nevertheless provides substantial amenity and is a prominent landscape feature.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

Not applicable.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

Not applicable.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

The tree is an outstanding example of the taxon in Cardinia Shire.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

The tree is a large specimen of high aesthetic value and landscape contribution.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Conclusion

The *Angophora costata* specimen at Chamomile Farm is of local aesthetic significance to Cardinia Shire.

A curtilage of 15m, as a radius from the trunk centre is required, as per AS4970-2009 *Protection of trees on development sites*.

A Statement of Significance is provided in the appendix to this report.

Nomination 17 – *Eucalyptus sieberi*, Silvertop Ash

Location	45 Mentiplay Road, Gembrook. (Approx. GPS coordinates: -37.95321, 145.58864).
Access	Private property - restricted
Setting	Specimen on the edge of natural vegetation area (forest)
Botanical name	<i>Eucalyptus sieberi</i>
Common name	Silvertop Ash, Coast Ash, Ironbark
Origin	Indigenous, naturally occurring
Height	36m
Canopy width	25m
DBH	250cm
Health	Fair
Structure	Fair. Large hollow at base.
ULE	20+ years

DBH: Trunk diameter at breast height The DBH of trees was measured using a diameter tape measure at 1.4m above ground level in accordance with AS-4970.

ULE: Estimated useful life expectancy.



Figure 28: The nominated tree is on the edge of cleared forest, larger than any adjacent specimen.



Figure 29: The tree has a large hollow from the base to approximately 6m height.

Taxon description

Eucalyptus sieberi, commonly known as Silvertop Ash, is a species of medium-sized to tall tree (20-45m) that is common in south-eastern Victoria, occurring in undulating to mountainous terrain at low to medium altitudes where it grows on slopes, hill and ridges in forest vegetation, often as the dominant species.

It has hard, rough, dark grey, fissured bark on the trunk and larger branches. Bark on smaller branches is smooth and creamy white.

Specimen description

The nominated tree is a large, mature *E. sieberi* on a private property three lots from the Bunyip State Park, a large bushland reserve. The tree, which is situated on the edge of a cleared area, is much larger than the trees in

the immediately adjacent forest. The tree exhibits the tall, narrow form characteristic of the taxon. A large, burnt hollow is present on the trunk from the base to approximately 6m.

Comparative analysis

Despite the extensive distribution of the taxon across south-eastern Victoria, only one specimen is National Trust registered, a tree of 30m height, 28m canopy spread and 172cm trunk diameter, at the former Mayday Hills Hospital, Beechworth. The tree is significant at State level as a particularly old tree, at an estimated age of 80 years, for its outstanding size, as an outstanding example of the species and for its aesthetic value. Additional significance is due to the association with the landscape of an historic garden.

At 36m height, 25m canopy width and 250cm trunk diameter, the nominated tree is larger than the tree at Beechworth.

Forest around the Gembrook area has been cleared for farming and timber since the early land selections in the 1870s. The age of the nominated tree is not known, however it appears to have been retained during logging and clearing of the adjacent forest, where the trees are substantially smaller.

It is likely that other large examples of the taxon exist within the Bunyip State Forest, not recognised due to their inaccessible location, however the nominated tree is within the upper range of the known mature size of the species. It is an outstanding example of the species due to its size and form.

Assessment against criteria

Criterion A: Importance to the course or pattern of our cultural or natural history (historical significance).

The tree is indicative of a past vegetation cover which is now largely removed over much of the Shire.

Criterion B: Possession of uncommon, rare or endangered aspects of our cultural or natural history (rarity).

The tree is of outstanding size.

Criterion C: Potential to yield information that will contribute to understanding our cultural or natural history (research potential).

Not applicable.

Criterion D: Importance in demonstrating the principal characteristics of a class of cultural or natural places or environments (representativeness).

The tree is an outstanding example of the taxon.

Criterion E: Importance in exhibiting particular aesthetic characteristics (aesthetic significance).

As a large specimen, particularly in comparison to tree of the adjacent forest, the nominated tree makes a significant contribution to the aesthetics of the landscape.

Criterion F: Importance in demonstrating a high degree of creative or technical achievement at a particular period (technical significance).

Not applicable.

Criterion G: Strong or special association with a particular community or cultural group for social, cultural or spiritual reasons. This includes the significance of a place to Indigenous peoples as part of their continuing and developing cultural traditions (social significance).

Not applicable.

Criterion H: Special association with the life or works of a person, or group of persons, of importance in our history (associative significance).

Not applicable.

Conclusion

The *Eucalyptus sieberi* specimen is of local historic and aesthetic significance to Cardinia Shire due to its outstanding size, as an outstanding example of the taxon, as an example of indigenous vegetation which is now largely removed, and for its contribution to the landscape.

A curtilage of 15m, as a radius from the trunk centre is required, as per AS4970-2009 *Protection of trees on development sites*.

A Statement of Significance is provided in the appendix to this report.

5 Appendix: Statements of Significance

**Statement of Significance: *Eucalyptus dalrympleana*,
Mountain White Gum
Road reserve, 185 Mountain Rd,
Gembrook**

Heritage Place:	<i>Eucalyptus dalrympleana</i> specimen GPS: -37.92800, 145.52199	PS ref no:	TBC
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What is significant?

A *Eucalyptus dalrympleana* (Mountain White Gum) in the road reserve outside 185 Mountain Road, Gembrook.

How is it significant?

The *Eucalyptus dalrympleana* specimen is of local aesthetic significance to Cardinia Shire.

Why is it significant?

The tree is a large, impressive specimen of high aesthetic value and landscape contribution as an outstanding example of the taxon in a prominent location.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.

Statement of Significance: *Sequoia sempervirens*, Coast Redwood 4 Dewhurst Rd. Emerald

Heritage Place:	<i>Sequoia sempervirens</i> (Coast Redwood) x 3 specimens	PS ref no:	TBC
GPS:	-37.94116, 145.44938 -37.94125, 145.44970 -37.94172, 145.45027		



Westernmost *S. sempervirens* specimen.



Second (central) specimen.



Easternmost specimen.



View to the southwest of the three *S. sempervirens*

What is significant?

Three *Sequoia sempervirens* specimens within 4 Dewhurst Road, Emerald.

How is it significant?

The three *Sequoia sempervirens* specimens are of local aesthetic significance to Cardinia Shire.

Why is it significant?

The trees are large, impressive examples of the taxon which is relatively uncommon in Cardinia Shire. The trees are of high aesthetic value and make a significant contribution to the landscape.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.

**Statement of Significance: *Sequoia sempervirens*,
Coast Redwood
44 Beaconsfield-Emerald Road,
Emerald**

Heritage Place:	<i>Sequoia sempervirens</i> (Coast Redwood) GPS: -37.94139, 145.45047	PS ref no:	TBC
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What is significant?

A *Sequoia sempervirens* specimen within 44 Beaconsfield-Emerald Road, Emerald.

How is it significant?

The *Sequoia sempervirens* specimen is of local aesthetic significance to Cardinia Shire.

Why is it significant?

The tree is a large, impressive example of the taxon which is relatively uncommon in Cardinia Shire. Although of multi-stemmed form, the tree is of high aesthetic value and makes a significant contribution to the landscape.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.

**Statement of Significance: *Fagus sylvatica* 'Purpurea',
Purple Beech
8 Benson Street, Emerald**

Heritage Place:	<i>Fagus sylvatica</i> 'Purpurea' (Purple Beech) GPS: -37.93483, 145.43895	PS ref no:	TBC
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What is significant?

The *Fagus sylvatica* 'Purpurea' (Purple Beech) specimen within 8 Benson Street, Emerald.

How is it significant?

The Purple Beech is of local, historic and aesthetic significance to Cardinia Shire.

Why is it significant?

The tree demonstrates the style of exotic tree planting characteristic of Emerald and surrounds, which contributes to the landscape character and reflects the impact of the local Nobelius Nursery on the availability and selection of unusual plant taxa for inclusion in local domestic gardens.

The tree is of outstanding size for the taxon in Cardinia Shire and makes a substantial contribution to the streetscape.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.

This document is an incorporated document in the Cardinia Planning Scheme pursuant to section 6(2)(j) of the *Planning and Environment Act 1987*

**Statement of Significance: *Quercus robur*, English Oak
Cochranes Park, Rossiter Road,
Koo Wee Rup**

Heritage Place:	<i>Quercus robur</i> (English Oak, Common Oak) GPS: -38.19921, 145.48650	PS ref no:	TBC
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What is significant?

A *Quercus robur* (English Oak, Common Oak) specimen in Cochrane Park, Koo Wee Rup.

How is it significant?

The *Quercus robur* specimen is of local aesthetic significance to Cardinia Shire.

Why is it significant?

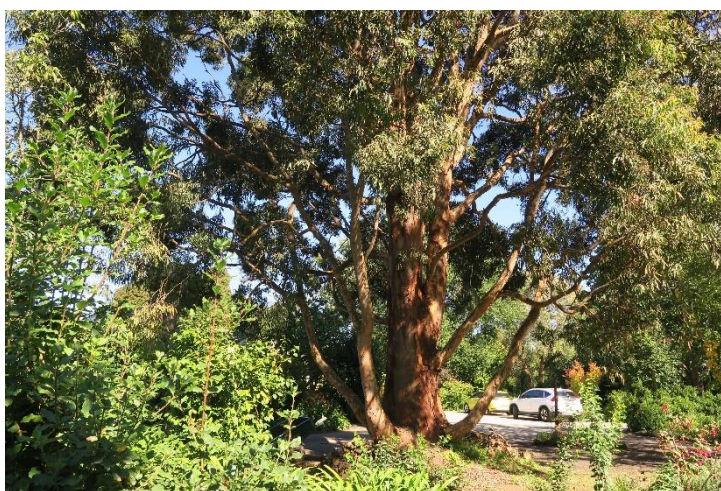
The tree is significant for the presence of fused branches, an interesting and unusual growth form.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.

**Statement of Significance: *Angophora costata*,
Smooth-barked Apple
79 Emerald Monbulk Road, Emerald**

Heritage Place:	<i>Angophora costata</i> (Smooth-barked Apple) specimen GPS: -37.91517, 145.44525	PS ref no:	TBC
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What is significant?

An *Angophora costata* (Smooth-barked Apple) specimen within 'Chamomile Farm', 79 Emerald-Monbulk Road, Emerald.

How is it significant?

The *Angophora costata* specimen is of local aesthetic significance to Cardinia Shire.

Why is it significant?

The tree is a large specimen of high aesthetic value and landscape contribution. It is an outstanding example of the taxon and exhibits natural form with several branches of basal epicormic origin.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.

Statement of Significance: *Eucalyptus sieberi*, Silvertop Ash 45 Mentiplay Rd, Gembrook

Heritage Place:	<i>Eucalyptus sieberi</i> , Silvertop Ash GPS: -37.95321, 145.58864	PS ref no:	TBC
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What is significant?

A *Eucalyptus sieberi* (Silvertop Ash) specimen within 45 Mentiplay Road, Gembrook.

How is it significant?

The *Eucalyptus sieberi* specimen is of local historic and aesthetic significance to Cardinia Shire.

Why is it significant?

The tree is significant due to its outstanding size, as an outstanding example of the taxon, as an example of indigenous vegetation which is now largely removed, and for its contribution to the landscape.

Primary source

Significant Trees – Statement of Significance Cardinia Shire Council, 2021, John Patrick Landscape Architects Pty. Ltd.