

Statement of recommendation from the Executive Director, Heritage Victoria to the Heritage Council of Victoria

Name: Cement Creek Plantation
Address: Cement Creek Road, East Warburton
Local Government Authority: Yarra Ranges Shire
Provisional VHR No. PROV VHR H2439




Cement Creek Plantation, December 2022

Executive Director recommendation

Under Part 3, Division 3 of the *Heritage Act 2017* ('the Act') I recommend to the Heritage Council of Victoria (Heritage Council) that the Cement Creek Plantation, East Warburton should be included in the Victorian Heritage Register (VHR) in the category of registered place.

A handwritten signature in black ink, appearing to read 'Steven Avery'.

STEVEN AVERY
Executive Director, Heritage Victoria
DATE OF RECOMMENDATION: 16 January 2023




Statement of recommendation from the Executive Director, Heritage Victoria to the Heritage Council of Victoria

Executive Director recommendation to the Heritage Council

The Executive Director, Heritage Victoria ('Executive Director') recommends that the Heritage Council include the Cement Creek Plantation, Cement Creek Road East Warburton, in the VHR in accordance with section 49 of the Act by determining:

- That the Cement Creek Plantation is of State-level cultural heritage significance and should be included in the VHR in the category of registered place in accordance with section 49(1)(a) of the Act.
- That the proposed categories of works or activities which may be carried out in relation to the Cement Creek Plantation for which a permit under the Act is not required will not harm the cultural heritage significance of the place under section 49(3) of the Act.



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The process from here

1. The Heritage Council publishes the Executive Director's recommendation (section 41).

The Heritage Council will publish the Executive Director's recommendation on its website for a period of 60 days.

2. Making a submission to the Heritage Council (sections 44 and 45)

Within the 60 day publication period, any person or body with a real and substantial interest in the place or object can make a submission to the Heritage Council. This submission can support the recommendation, or object to the recommendation and a hearing can be requested in relation to the submission. Information about making a submission and submission forms are available on the Heritage Council's website:

<https://heritagecouncil.vic.gov.au/registrations-reviews/executive-director-recommendations/>

3. Heritage Council determination (sections 46 and 49)

The Heritage Council is an independent statutory body. It is responsible for making the final determination to include or not include the place or object in the VHR, or amend a place or object already in the VHR.

If no submissions are received the Heritage Council must make a determination within 40 days of the publication closing date.

If submissions are received, the Heritage Council may decide to hold a hearing in relation to the submission. If a hearing does take place, the Heritage Council must make a determination within 90 days after the completion of the hearing.


4. Obligations of owners of places and objects (sections 42 and 43)

The owner of a place or object which is the subject of a recommendation to the Heritage Council has certain obligations under the Act. These relate to advising the Executive Director in writing of any works or activities that are being carried out, proposed or planned for the place or object.

The owner also has an obligation to provide a copy of this statement of recommendation to any potential purchasers of the place or object before entering into a contract.

5. Further information

The relevant sections of the Act are provided at Appendix 1.



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Description

The following is a description of the Cement Creek Plantation at the time of the site inspection by Heritage Victoria in December 2022. It also draws on information in a recent assessment of this place by Extent Heritage for the Yarra Ranges Shire.

The Cement Creek Plantation comprises 13 planted plots containing over 1476 trees. There are 12 plots of non-native conifer tree plantings of various species ranging from 20 metres to 55 metres in height. There is also one plot of mixed scrub.

Plot 1: Coast Redwood (*Sequoia sempervirens*), 1929-1934

Plot 2: Douglas Fir (*Pseudotsuga menziesii*), 1924-1934

Plot 3: Monterey Pine (*Pinus radiata*), 1960s-1970s

Plot 4: Douglas Fir (*Pseudotsuga menziesii*), 1929-1934

Plot 5: Monterey Pine (*Pinus radiata*), 1929-1934

Plot 6: Douglas Fir (*Pseudotsuga menziesii*), 1960s-1970s

Plot 7: Coast Redwood (*Sequoia sempervirens*), 1929-1934

Plot 8: Mixed scrub

Plot 9: Douglas Fir (*Pseudotsuga menziesii*), 1960s-1970s

Plot 10: Douglas Fir / Monterey Pine (*Pseudotsuga menziesii* / *Pinus radiata*), 1960s-1970s

Plot 11: Western Red Cedar (*Thuja plicata*), 1960s-1970s

Plot 12: Monterey Pine (*Pinus radiata*), 1960s-1970s

Plot 13: Bishop Pine (*Pinus muricata*), 1929-1934

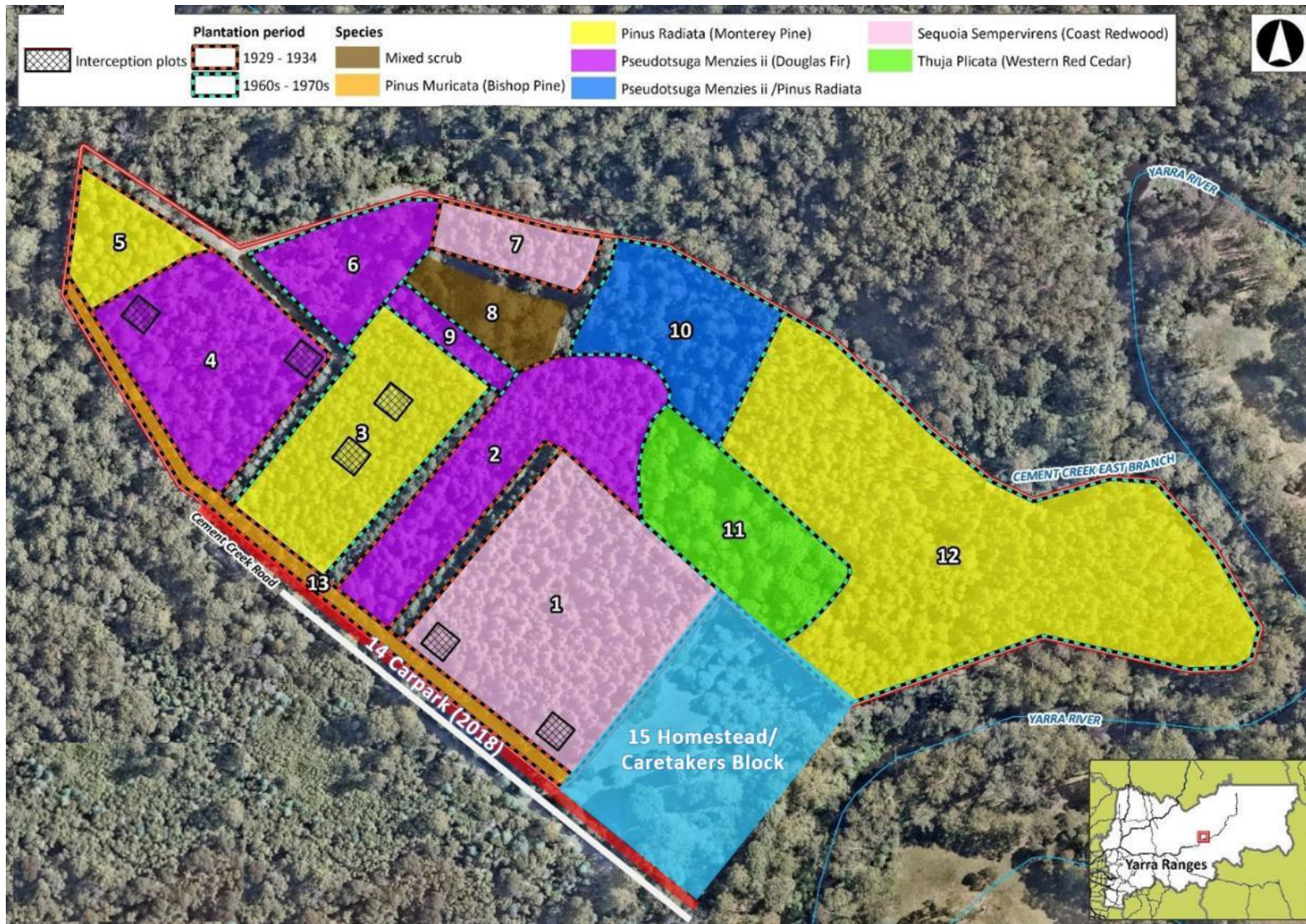
Detailed descriptions of each plot are available at **Appendix 1**.

A series of access tracks run between each plot. There is some extant paraphernalia associated with 1960s-1970s hydrological research, including collars and metal number tags on larger tree plantings. Plots 1, 3 and 4 feature interception plots associated with a forest hydrology program that was carried out during the 1960s-70s.

A long narrow carpark constructed in 2018 is situated along the southwest side of Plots 1, 2 and 3. There is a relatively open area southeast of Plot 1 which contains the site of a former caretakers residence. The whole plantation area is surrounded by the Yarra Ranges National Park.

A Note on Terminology

The species *Sequoia sempervirens* is native to California and the world's tallest tree species. It has a number of common names in English including Coast Redwood, Coastal Redwood, Coastal Sequoia, and Redwood. This report has adopted Coast Redwood as the preferred name, which is used in Hortflora, a guide to the cultivated plants of south-eastern Australia produced by the Royal Botanic Gardens Victoria.



Indicative Cement Creek Plantation map of planting and other areas (contains simplifications and distortions in relation to the aerial photo).
 Source: Based on map from Extent Heritage for Yarra Ranges Shire, Heritage Citation (Individual Place), Cement Creek Plantation, Sept 2022

Cement Creek Plantation
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Images



December 2022, Plot 1



December 2022, Plot 1



December 2022, Plot 1



December 2022, Former Homestead/Caretaker's Block

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December 2022, northern edge of the Coast Redwoods in Plot 7 with Cement Creek to the right



December 2022, the most easterly part of the extent. View towards the southeast along the track parallel to the Yarra River showing Plot 12 Monterey Pine (RHS). Note the failure and poor condition of some trees in senescence.



December 2022, view towards the carpark between Plot 1 Coast Redwoods (LHS) and Plot 2 Douglas Firs (RHS)



December 2022, view along carpark showing Plot 13 Bishop Pines (LHS) and a strip of native vegetation (RHS) which runs between the carpark and Cement Creek Road



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December 2022, track on the northern extent of the plantation looking west. Cement Creek is visible on the right of the photo under the tree ferns. Note the plantation conifers to the left of the creek, and native vegetation to the right of the creek.



September 2022, Detail of a collar marking on a Coast Redwood



September 2022, Detail of monitoring tag

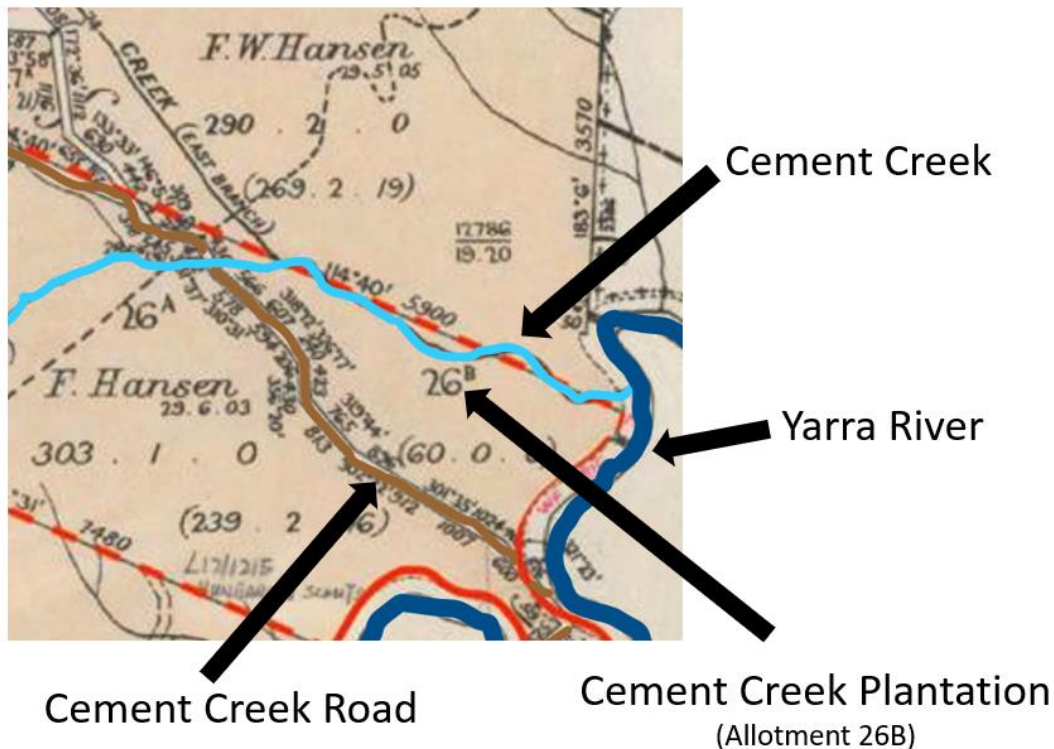
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History


Hansen's Myrtlebrook Farm

The Cement Creek Plantation is located at the confluence of the Yarra River and Cement Creek. It is on the land of the Wurundjeri Woi Wurrung people and has been a source of fresh water, plant and animal resources. The Cement Creek waterway and surrounds retains many of its pre-European settlement ecological values, especially native riparian vegetation which includes areas of cool temperate rainforest, wet forest and riparian forest. It is also known to be habitat for Platypus and River Blackfish.

During the nineteenth century, the site came into the possession of selector Frederick Hansen as part of a larger 303-acre farm (Allotment 26). In 1891 Cement Creek Road was constructed through Hansen's land and Allotment 26 was divided into Allotment 26A and Allotment 26B. Allotment 26B (later the location of the Cement Creek Plantation) became 'Myrtlebrook Farm' and was converted to freehold title in 1903. All of Hansen's farming land was purchased by the Melbourne Metropolitan Board of Works (MMBW) in two stages between 1913 and 1928 and became part of 45,000 acres held by the MMBW in the Upper Yarra Water Catchment area.



Marked up Plan of Parish of Yuonga showing site of the Cement Creek Plantation (Allotment 26B), Cement Creek, Yarra River and Cement Creek Road. *Source:* Extent Heritage for Yarra Ranges Shire, Heritage Citation, Cement Creek Plantation, September 2022. Department of Lands and Survey, Melbourne. VPRS 16171/P0001/11. Public Record Office Victoria.



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MMBW acquisition

The purchase of Hansen's farm was part of a larger plan of the MMBW to acquire all land north of the Yarra River to protect water catchment areas.¹ Established in 1891, one of the key responsibilities of the MMBW was to ensure the supply of Melbourne's clean water supply. During the early twentieth century, it became increasingly concerned that the water catchment areas were being affected by silt and impurities. By 1910, there were 123,227 connections to the system and water purity became an issue as the system became larger. Since the nineteenth century, the clearing of land for farming, logging for timber, introduced animal species and weeds, and the devastation of vegetation due to bushfires, had damaged natural ecosystems and affected water purity. There was also a fierce debate regarding the need to grow timber for harvesting and the protection of water catchments.

At that time, conifer plantations were thought to prevent soil erosion and also assist with the regeneration of native eucalypt forests. In addition, conifer plantations provided trees for the commercial timber industry, one of the aims of the newly created Forests Commission Victoria (FCV). Responsible for conserving native forests, preventing bushfires and ensuring the supply of plantation softwoods, the FCV had a target of creating 80,000 hectares of softwood plantations across Victoria from 1925.

MMBW conifer plantations

During the 1920s, the MMBW was engaged in an extensive reforestation and revegetation program to rehabilitate the land in water catchment areas. This became urgent after the 1926 bushfires. Species such as conifers and cottonwoods were preferred as they were thought to regenerate the land and promote waterway flows. The planting of conifers – for land regeneration, aesthetic reasons and as a timber resource – was evident in Victoria from the late nineteenth century. Coast Redwood (*Sequoia sempervirens*) had been cultivated in New South Wales since 1851. Considered a 'clean tree', the conifers were thought to 'conserve the rain water and preserve its purity'.² Pines, chiefly *Pinus radiata*, were widely planted in reservoir parks, along open channels, and in water catchment areas across Victoria. In the 1920s, the MMBW Water Supply Engineer explained the benefits of closely planted evergreen trees to protect water supplies by providing shade, lessening evaporation, binding the soil thereby providing 'more reliable and regular' flows into catchment waterways.³

This preference for 'clean' conifers was based on forestry principles from Britain and North America. The MMBW and FCV had a limited understanding of the ecological balance in Victoria's native forests and waterways, a balance that was well understood by First Nations people who had been managing the land for thousands of years. From the early 1800s, European settlement in Victoria was based on taming the natural environment and exploiting its resources. Harnessing clean and reliable water supplies was central to this. Efforts to improve the water supply were couched in language about progress and the resourcefulness and stoicism of the white Australian settler battling with a 'harsh' land.⁴

The MMBW Plantation at Cement Creek

Between 1929 and 1934, the MMBW established an experimental plantation at Cement Creek. The site was an experiment to gather data on the use of conifer species for land regeneration in water catchment areas, weed control as well as timber growing purposes.⁵ Originally covered by native eucalypt forest, the land had been cleared, presumably when a farm in Hansen's possession, and had become overgrown with scrub and weeds such


¹ Extent Heritage for Yarra Ranges Shire, Heritage Citation, Cement Creek Plantation, September 2022, p.13.

² Charles A Clamp, 'The Ballarat Water Commissioners', *Victoria's Resources*, vol. 1, no. 2, June – August 1959, p. 25, quoted in Context (for Heritage Victoria), *Victorian Water Supply Heritage Study Volume 1: Thematic Environmental History Final Report*, 31 October 2007, p. 59.

³ E.G. Ritchie, 'Water conservation', in James Barrett (ed.), *Save Australia Save Australia: A plea for the proper use of our flora and fauna*. MacMillan & Co. Ltd, Melbourne, 1923, pp. 163 & 170, quoted in Context (for Heritage Victoria), *Victorian Water Supply Heritage Study Volume 1: Thematic Environmental History Final Report*, 31 October 2007, p. 59-60.

⁴ See Context (for Heritage Victoria), *Victorian Water Supply Heritage Study Volume 1: Thematic Environmental History Final Report*, 31 October 2007, p. xv.

⁵ See Joy McCann, *Melbourne Water Historic Places Report: A Study of Melbourne Water and Relative Places in the Forests of the Central Highlands of Victoria*, A Report Prepared for the Australian Heritage Commission and Department of Conservation and Natural Resources, November 1993.



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as blackberries. The MMBW progressively planted conifers in clearly delineated plots which could be monitored and generate data about each species. At Cement Creek there were three main phases of planting:

Phase	Date	Plantings
1	1929-34	The first conifer plantings were carried out between 1929 and 1934 and included plantations of Coast Redwood (<i>Sequoia sempervirens</i>) (Plot 1 and 7); Douglas Fir (<i>Pseudotsuga menziesii</i>) (Plot 2 and 4); Monterey Pine (<i>Pinus radiata</i>) (Plot 5); plus, a narrow boundary planting of Bishop Pine (<i>Pinus muricata</i>) (Plot 13).
2	1960-63	The second conifer plantings were carried out between 1960 and 1963. They included further plantings of Monterey Pine (Plot 3 and 12), Douglas Fir (Plot 6 and 9) and a mix of Monterey Pine and Douglas Fir (Plot 10).
3	1970s	The Western Red Cedar (<i>Thuja plicata</i>) (Plot 11) appears to have been planted in the early 1970s.

Hydrology research and canopy interception

During the 1960s and 1970s, the Cement Creek Plantation was selected to be part of MMBW's forest hydrology research project in the field of canopy interception. Commencing in Coranderk in 1954, this research program aimed to study the effects of timber harvesting on water yield and quality, as well as to establish the relationship between vegetation type and water yield. Such research was prompted by a debate about whether commercial timber growing should be allowed in water catchment areas. The MMBW argued that logging would reduce water yields, and the timber industry argued that increased water yields could result from the reduction of vegetation which accompanied logging. This particular experiment at the Cement Creek Plantation appears to have concluded by the late 1970s. This phase is reflected in remnant research fixtures on some trees, including collars and metal number tags at the interception plots.

1980s to early 2020s

From the 1980s, limited scientific activity took place at the Cement Creek Plantation. Sometime between 1983 and 2009, Hansen's former farm homestead turned caretaker's cottage was removed. The plantation was effectively abandoned and became known for its aesthetic qualities as a picturesque forest, particularly the main Coast Redwood plantings in Plot 1. Since the creation of the Yarra Ranges National Park in 1995 the plantation has predominantly been a place of public recreation managed by Parks Victoria. It remains in the Yarra River catchment area (4,110 km²) located in the Yarra River Upper (Rural) sub-catchment area.⁶ The plantation was not affected by the 1939, 1983 or 2009 bushfires.


The ecology of forest management in 2022

In 2022 Victoria's water supply systems are managed with a greater understanding of Victoria's ecological systems and different land management approaches. It is understood that the Yarra Ranges National Park is replete with carbon-rich forests, and home to the Mountain Ash Tree, one of the tallest tree species in the world. The conservation of native forests is a central principle in the forestry and the ecological sciences. There is evidence that water catchments covered with native old-growth mountain ash yield almost twice the amount of water annually as those covered with twenty-five-year-old regrowth.⁷ The Melbourne Water Corporation (the successor to the MMBW) has an active engagement with Traditional Owners to manage catchment areas, and recognises Aboriginal knowledge about preserving land and water quality.⁸ Some of the threats to catchments remain the same as the 1930s – bushfire, erosion, human and animal contamination and damage to land. In addition, new threats have emerged such as rapid population growth and higher demand for water, the impact of cars and other

⁶ Melbourne Water Corporation, *Co-designed Catchment Program for the Yarra Catchment: Working Together for Healthy Waterways*, 2018.

⁷ Robert Vertessy, Fred Watson & Sharon O'Sullivan, 'Factors determining relations between stand age and catchment water balance in mountain ash forests', *Forest Ecology and Management*, Volume 143, Issues 1–3, 1 April 2001, pp. 13-26.

⁸ Melbourne Water Corporation, *Co-designed Catchment Program for the Yarra Catchment: Working Together for Healthy Waterways*, 2018.



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technologies, and climate change.⁹ The impact of tourism in some water catchment areas has also become an issue.

Aesthetic qualities and tourism since 2016

Cement Creek Plantation is now a popular tourist destination in the Yarra Ranges National Park and receives many visitors. The place was relatively unknown until featured on television show *Better Homes and Gardens* in 2016 and photographs quickly circulated on social media and tourism websites. The aesthetic qualities of the place have been widely acclaimed by the public. The close planting of Coast Redwoods in Plot 1 at 3.3 metres apart has created a closed canopy far above that prevents much light from reaching the ground. This dark cathedral-like space is silent. The thick Redwood bark absorbs sound, and few native birds or animals are attracted to these conifers. The plantation's aesthetic qualities have seen it become a popular wedding venue, and location for fashion and music videos. In 2016, local Warburton artist David Digapony created a series of artworks within the main Redwood Forest. Taking the form of huge circular creations made from fallen branches, they attracted greater visitation to the plantation.

As the Cement Creek Plantation has only become popular recently, most of the public acclaim of its aesthetic qualities can be found online. The following public comments from the travel website 'Trip Advisor' provide evidence of this. They, like much of the commentary on the internet, offer insight into the visual and non-visual sensory aspects of the plantation which inspire emotions such as awe, fear, peace as well as a sense of mystery and magic:

- The tranquillity of this place is hard to describe. The moment you step inside, the outside world is left behind and all you can hear is nothing. (26 November 2018)
- It's hard to explain what happens upon entering this magical forest of towering Redwoods. (21 February 2019)
- This is a magical place to visit. (13 March 2019)
- Although a planted forest, you still get the feeling of the awesome grandeur.... (9 March 2020)
- It is incredibly quiet. (12 March 2020)
- [The] utter silence in that very place can devour your feelings the moment you step in to the middle of those giants. Peacefulness in one word (16 April 2020)
- Spooky ambience... (19 January 2021)
- Mesmerisingly beautiful! (9 July 2021)
- Highly recommend as it is very surreal and beautiful! (3 January 2022)
- Stunning place to visit. (9 January 2022)
- The place was aesthetically pleasing. I love how the redwood trees were arranged. (20 February 2022)
- It's not until you enter the near perfectly planted forest that the grandeur overcomes you. Wow, simply, WOW. (24 May 2022).

⁹ Melbourne Water Corporation, [Our Water Supply Challenges](#), accessed 19 December 2022.

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Images



1946, aerial photograph showing plantation areas and site of Hansen's homestead which became the plantation caretaker's residence. Source: Extent Heritage for Yarra Ranges Shire, *Heritage Citation: Cement Creek Plantation*, September 2022.



1970, aerial photograph Source: Extent Heritage for Yarra Ranges Shire, *Heritage Citation: Cement Creek Plantation*, September 2022.

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c.1960s/70s, Hydrological research through paired catchment studies with trees at Corranderrk
Source: Extent Heritage for Yarra Ranges Shire, *Heritage Citation: Cement Creek Plantation*, September 2022.



Undated, Former homestead turned caretaker's cottage.
Source: Extent Heritage for Yarra Ranges Shire, *Heritage Citation: Cement Creek Plantation*, September 2022.

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2016, David Digapony, 'Magic Portal' Sequoia circle
Redwood Forest, Warburton

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Robert Vertessy, Fred Watson & Sharon O'Sullivan, 'Factors determining relations between stand age and catchment water balance in mountain ash forests', *Forest Ecology and Management*, Volume 143, Issues 1-3, 1 April 2001, pp. 13-26.


Melbourne Water Corporation, *Co-designed Catchment Program for the Yarra Catchment: Working Together for Healthy Waterways*, 2018.

Melbourne Water Corporation, *Our Water Supply Challenges*, accessed 19 December 2022.

Contacts

The Executive Director thanks the following people for their contribution to this assessment:

- Hannah Elliott, Strategic Planner, Design & Place, Yarra Ranges Shire
- Vivian Lu, Heritage Advisor, Extent Heritage
- Paul Roser, Manager Heritage Partnerships, Parks Victoria
- Melissa Tuliranta, Ranger, Yarra Ranges National Park
- Kim Wilson, Statewide Heritage Advisor, Parks Victoria



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Further information

Relevant Authority	Yarra Ranges Shire
Heritage Overlay	Yarra Ranges HO353 The mapping of this HO is unclear. The extent and citation is currently being amended.
Other Overlays	Bushfire Management Overlay (BMO) Environmental Significance Overlay (ESO) Land Subject to Inundation Overlay (LSIO)
Other Listings	National Trust (Victoria) State-level Classification (T12138)
Other Names	Warburton Redwood Forest Warburton Redwoods
Date of creation	Planting phases: 1929-34, 1960-63 & 1970s
Designer and maker	Melbourne Metropolitan Board of Works (MMBW)

Traditional Owner Information

The Cement Creek Plantation is located on the traditional land of the Wurundjeri Woi Wurrung people. Under the *Aboriginal Heritage Act 2006*, the Registered Aboriginal Party for this land is the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation.

Victorian Aboriginal Heritage Register

The Cement Creek Plantation is in an area of Aboriginal cultural heritage sensitivity associated with water courses.

Integrity

The integrity of the place is excellent. The cultural heritage values of the place can be easily read in the extant fabric. (December 2022).

Intactness

Both the 1929-34 and 1960s-70s plantings are substantially intact and have not altered much apart from the growth of understorey particularly on the boundary edges where more light has penetrated. The exception may be the Douglas Fir plantations which seem to have been replanted or added to sometime after 1930s and before 1970. Not all plantations have fared so well in terms of growth and condition. The 1930s plantations have survived relatively well with the Coast Redwood almost totally intact. The original 1930s Douglas Fir plantation is also well established (Plot 2) but elsewhere exhibit poor growth. The Monterey Pine plantations of all ages have become well-established, outer rows of Bishop Pine have similarly prospered. As a whole, the visual contrast in form, foliage and condition across these uniformly planted conifer species reflect the experimental nature of the plantation (October 2022). Some of the trees are nearing the end of their life and there have been some tree losses in recent years, particularly around the perimeter of the plantation where trees can be more exposed.

Condition

The condition of the place is very good. There are some trees, particularly the pines, that are beginning to lose condition. (December 2022).

Note: The condition of a place or object does not influence the assessment of its cultural heritage significance. A place may be in very poor condition and still be of very high cultural heritage significance. Or a place may be in excellent condition but be of low cultural heritage significance.

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Statutory requirements under section 40

Terms of the recommendation (section 40 (3)(a))

The Executive Director recommends that the Cement Creek Plantation is included in the VHR in the category of Registered Place.

Information to identify the place or object (section 40(3)(b))

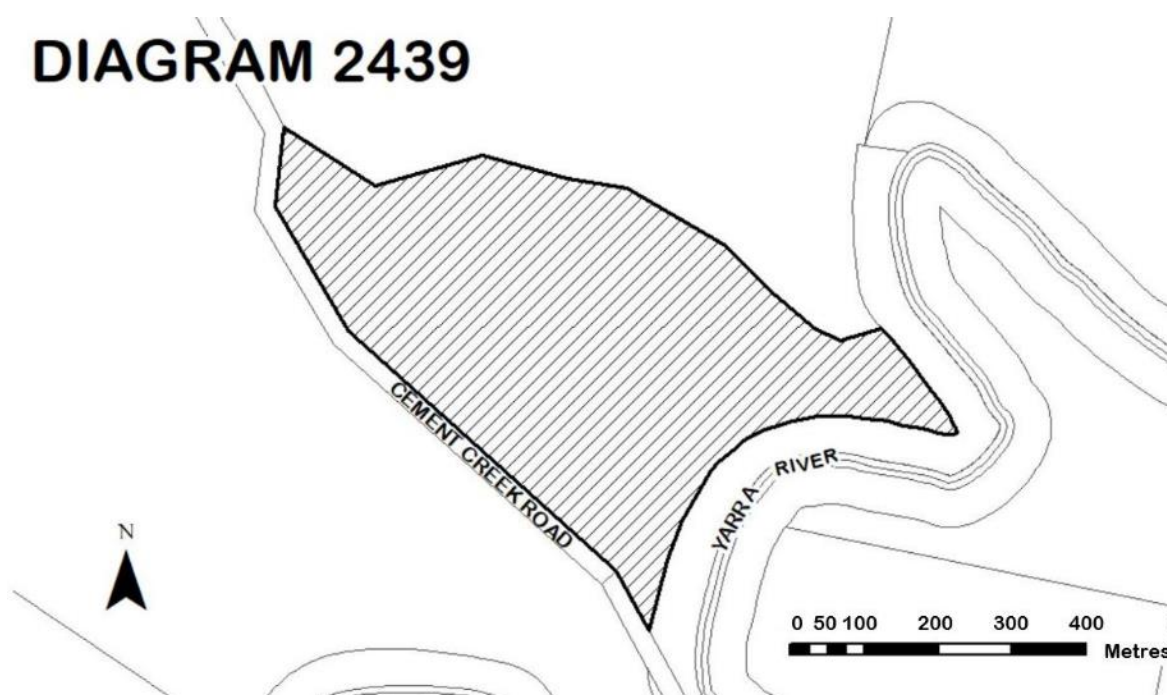
Name: Cement Creek Plantation

Address: Cement Creek Road, East Warburton

Proposed extent of registration

The Executive Director recommends that the extent of registration for the Cement Creek Plantation be gazetted as:

All of the place shown hatched on Diagram 2439 encompassing that part of Allotment 2038 Parish of Yuonga bounded by the outer edge of the access track to the north, Cement Creek East Branch to the northeast, and the lot boundary to the east, south, and west.



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Aerial Photos of the Place Showing Proposed extent of registration

It is useful to understand the proposed extent of the place through aerial photos from 2022 and 1970.




Aerial photo 2022



Aerial Photo 1970

These photographs provide indicative visual representations of the place. They are not a precise representation of the recommended extent of registration. Due to distortions associated with aerial photography some elements of the place may appear as though they are outside the extent of registration.



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Rationale for the extent of registration


The Cement Creek Plantation is a cultural feature within the 76,003 hectares Yarra Ranges National Park.

The proposed extent includes:

- All of the plantation (13 planting plots and access tracks between and around them).
- Hansen's homestead block (later caretakers hut block) to the southeast of the plantation.
- The carpark constructed along the southwest side of Plots 1, 2 and 3 in 2018 of ~10m x 350m.
- The strip of native vegetation between the car park and Cement Creek Road. This land has been included for mapping purposes as Cement Creek Road provides a fixed point along the southwest extent. This strip of native vegetation is not of cultural heritage significance in the context of this place. A Specific Permit Exemption has been provided which allows on this land all processes of land, water and animal management that are permitted within the Yarra Ranges National Park under the *Parks Victoria Act 2018* and associated regulations and guidelines issued by Parks Victoria.

The recommended extent of the registration is the same as the nominated extent of registration.

It should be noted that the proposed extent of registration includes all the land, all soft and hard landscape features, trees, vegetation and tracks. A permit or permit exemption from Heritage Victoria is required for any works within the proposed extent of registration, apart from those identified in the categories of works or activities in this recommendation.



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Reasons for the recommendation, including an assessment of the State-level cultural heritage significance of place/object/object integral (section 40(3)(c))

Following is the Executive Director's assessment of the Cement Creek Plantation against the tests set out in *The Victorian Heritage Register Criteria and Thresholds Guidelines 2023*. A place or object must be found by the Heritage Council to meet Step 2 of at least one criterion to meet the State level threshold for inclusion in the VHR.

CRITERION A: Importance to the course, or pattern, of Victoria's cultural history.

Step 1 Test for Criterion A

No.	Test	Y/N	Reason
A1)	Does the place/object have a clear association with an event, phase, period, process, function, movement, custom or way of life in Victoria's cultural history?	Yes	The place has a clear association with the following historical phase which is of importance in Victoria's cultural history: ensuring a clean water supply for Melbourne.
A2)	Is the event, phase, period, process, etc of historical importance, having made a strong or influential contribution to Victoria?	Yes	This phase is of historical importance having made a strong and influential contribution to Victoria.
A3)	Is there evidence of the association to the event, phase, period, process, etc in Victoria's cultural history?	Yes	There is evidence of the association between the place and historical phase. This is evident in the fabric of the place as well as documentary and photographic evidence.
If A1, A2 AND A3 are satisfied, then Criterion A is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		Yes	Criterion A is likely to be relevant.

Step 2 State-level test for Criterion A

No.	Test	Y/N	Reason
SA1)	Does the place/object allow the clear association with the event, phase, period, process, function, movement, custom or way of life of historical importance to be understood better than most other places or objects in Victoria with substantially the same association?	Yes	As an experimental plantation, this place allows the association with the history of Melbourne's clean water supply to be better understood than most other similar places. Ensuring the quality of water in Melbourne's catchment areas is a key part of Victoria's water history. This place allows the scientific endeavours of the MMBW from the 1920s and 1930s to ensure water purity in catchment areas to be comprehensively understood, in particular its testing of various species of conifers. The plantation facilitated experiments in water, land and quality as well as hydrology. The form and high levels of integrity and intactness of thirteen plots to test the properties of different species allows these scientific processes to be comprehensively understood.
If SA1 is satisfied, then Criterion A is likely to be relevant at the State level			
Executive Director's Response:		Yes	Criterion A is likely to be relevant at the State level.

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CRITERION B: Possession of uncommon, rare or endangered aspects of Victoria's cultural history.

Step 1 Test for Criterion B

No.	Test	Y/N	Reason
B1)	Does the place/object have a clear association with an event, phase, period, process, function, movement, custom or way of life of importance in Victoria's cultural history?	Yes	The place has a clear association with the following historical phase which is of importance in Victoria's cultural history: ensuring a clean water supply for Melbourne.
B2)	Is there evidence of the association to the event, phase, period, process etc at B1)?	Yes	There is evidence of the association between the place and the historical phase. This is evident in the fabric of the place as well as documentary and photographic evidence.
B3)	Is there evidence that the place/object is rare or uncommon, or has rare or uncommon features? <u>See definition of 'rare' on p.6 of the guidelines.</u>	No	There is evidence that the place is rare as an experimental conifer plantation in a water catchment area. <i>The Executive Director is of the view that this place is uncommon by virtue of it being one in a small class. He considers that the historical significance of this place is better assessed under other Criteria, such as 'notable [pivotal]' under Criterion D.</i>
If B1, B2 AND B3 are satisfied, then Criterion B is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		No	Criterion B is not likely to be relevant.

CRITERION C: Potential to yield information that will contribute to an understanding of Victoria's cultural history.

Step 1 Test for Criterion C

No.	Test	Y/N	Reason
C1)	Does physical fabric and/or documentary evidence and/or associated oral history or cultural narratives relating to the place/object indicate a likelihood that the place/object contains evidence of cultural heritage significance that is not currently visible and/or well understood or available from other sources?	No	The physical fabric and/or documentary evidence and/or associated oral history or cultural narratives relating to the place does not indicate a likelihood that it contains evidence of cultural heritage significance that is not currently visible and/or well understood or available from other sources (such as archaeology). The plantation <ul style="list-style-type: none"> The plantation has had significant subsurface disturbance, and it is likely that any sub-surface archaeology has been destroyed. The former homestead/caretaker's cottage <ul style="list-style-type: none"> There is no evidence to suggest that this structure would yield any evidence about the plantation that is not already available.
C2)	From what we know of the place is the physical evidence likely to be of an integrity and/or condition that it could yield information through detailed investigation?	NA	The integrity and/or condition may be good, but it is unlikely to yield information through investigation that is not currently visible and/or well understood or available from other sources (see C1).
If C1 and C2 are satisfied, then Criterion C is likely to be relevant (but not necessarily at the State level)			
Executive Director's Response:		No	Criterion C is not likely to be relevant.

Statement of recommendation from the Executive Director, Heritage Victoria to the Heritage Council of Victoria

CRITERION D: Importance in demonstrating the principal characteristics of a class of cultural places and objects.

Step 1 Test for Criterion D

No.	Test	Y/N	Reason
D1)	Is the place/object one of a class of places/objects that has a clear association with an event, phase, period, process, function, movement, custom or way of life in Victoria's history? <u>See definition of 'class' on p.6 of the guidelines.</u>	Yes	The Cement Creek Plantation is one of the class 'experimental plantation'. This class has a clear association with the following in Victoria's history: ensuring a clean water supply for Melbourne.
D2)	Is the event, phase, period, process, function, movement, custom or way of life of historical importance, having made a strong or influential contribution to Victoria?	Yes	The historical processes 'ensuring a clean water supply for Melbourne' has made a strong and influential contribution to Victoria.
D3)	Are the principal characteristics of the class evident in the physical fabric of the place/object?	Yes	The principal characteristics of the class 'experimental plantation' are evident in the physical fabric of the place. The place consists of thirteen clearly delineated planting plots established for the purposes of gathering forestry and later hydrological data.

If D1, D2 AND D3 are satisfied then Criterion D is likely to be relevant (but not necessarily at the State level)

Executive Director's Response:	Yes	Criterion D is likely to be relevant.
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Step 2 State-level test for Criterion D

No.	Test	Y/N	Reason
SD1)	Is the place/object a notable (fine, influential or pivotal) example of the class in Victoria? <u>See definition of 'notable' see Reference Tool D on p.14 of the guidelines.</u>	Yes	The Cement Creek Plantation a historically notable example of an experimental plantation. It is: A fine example: The place displays a large number or range of characteristics that are typical of the class in a way that allows the class to be easily understood and appreciated. The characteristics are of a higher quality or historical relevance than are typical of places in the class. The intactness of the plantation layout, trees and tracks means that it has retained its principal characteristics. As an 'abandoned' site it has been relatively free from tourism and development until 2016, allowing the features to retain their integrity. A pivotal example: The place encapsulates a key evolutionary stage in the development of the class. This experimental plantation represents a key moment in the management of Melbourne's clean water supply and the application of forestry principles to this endeavour. Although it is now understood that the cultivation of native forests has a greater positive impact on land and water quality, the experiments with conifers represent an evolutionary phase in forestry science.

If SD1 is satisfied, then Criterion D is likely to be relevant at the State level

Executive Director's Response:	Yes	Criterion D is likely to be relevant at the State level.
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Statement of recommendation from the Executive Director, Heritage Victoria to the Heritage Council of Victoria

CRITERION E: Importance in exhibiting particular aesthetic characteristics.

Step 1 Test for Criterion E

No.	Test	Y/N	Reason
E1)	Does the physical fabric of the place/object exhibit particular aesthetic characteristics?	Yes	The physical fabric of the place exhibits aesthetic characteristics particular to a mature conifer plantation (which some people experience as a forest).

If E1 is satisfied then Criterion E is likely to be relevant (but not necessarily at the State level)

Executive Director's Response:	Yes	Criterion E is likely to be relevant.
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Step 2 State-level test for Criterion E

No.	Test	Y/N	Reason
SE1)	<p>The aesthetic characteristics are 'beyond the ordinary' or are outstanding as demonstrated by:</p> <ul style="list-style-type: none"> Evidence from within the relevant discipline (architecture, art, design or equivalent); and/or Critical recognition of the aesthetic characteristics of the place/object within a relevant art, design, architectural or related discipline within Victoria; and/or Wide public acknowledgement of exceptional aesthetic qualities of the place/object in Victoria expressed in publications, print or digital media, painting, sculpture, songs, poetry, literature, or other media. 	Yes	<p>There is evidence that the aesthetic characteristics at the place are 'beyond the ordinary' or are outstanding. The place has received wide public acknowledgement of exceptional aesthetic qualities in Victoria, largely expressed in publications and digital media.</p> <p>The plantation is a visually stunning place. Containing over 1476 trees from 20 metres to 55 metres in height planted in regular formations, the place has a cathedral-like atmosphere. In particular, the close planting of Redwoods in Plot 1 has created a closed canopy which prevents light from reaching the ground. The place is noticeably quiet. The thick Redwood bark absorbs sound, and few native birds or animals are attracted to these conifers.</p> <p>The plantation's aesthetic qualities have seen it become a popular wedding venue, and location for fashion and music videos.</p> <p>The place only become widely known from 2016, and most of the public acclaim about its aesthetic qualities can be found online. They offer insight into the visual and non-visual sensory aspects of the plantation which inspire emotions such as awe, fear, peace as well as a sense of mystery and magic.</p>

If SE1 is satisfied, then Criterion E is likely to be relevant at the State level

Executive Director's Response:	Yes	Criterion E is likely to be relevant at the State level.
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CRITERION F: Importance in demonstrating a high degree of creative or technical achievement at a particular period.

Step 1 Test for Criterion F

No.	Test	Y/N	Reason
F1)	Does the place/object contain physical evidence that clearly demonstrates creative or technical achievement for the time in which it was created?	Yes	The Cement Creek Plantation contains physical evidence which demonstrates technical achievement for the time in which it was created. It was an achievement for the MMBW to establish this large experimental plantation in a relatively isolated location.
F2)	Does the physical evidence demonstrate a high degree of integrity?	Yes	The physical evidence at the place demonstrates a high degree of integrity. The plantation retains its layout, trees and tracks and has been relatively free from tourist visitation until 2016.

If F1 and F2 are satisfied then Criterion F is likely to be relevant (but not necessarily at the State level)

Executive Director's Response:	Yes	Criterion F is likely to be relevant.
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Statement of recommendation from the Executive Director, Heritage Victoria to the Heritage Council of Victoria

Step 2 State-level test for Criterion F

No.	Test	Y/N	Reason
SF1)	The nature and/or scale of the achievement is of a high degree or 'beyond the ordinary' for the period in which it was undertaken as demonstrated by one or more forms of evidence: a) evidence from within the relevant creative or technological discipline that recognises the place/object as a breakthrough in terms of design, fabrication or construction techniques and/or as a successful solution to a technical problem that extended the limits of existing technology; b) critical acclaim of the place/object within the relevant creative or technological discipline as an outstanding example in Victoria; c) wide acknowledgement of exceptional merit in Victoria in media such as publications or print/digital media; d) recognition of the place/object as an outstanding example of the creative adaptation of available materials and technology of the period.	Yes	The nature and scale of the achievement evident at the Cement Creek Plantation is of a high degree or 'beyond the ordinary' for the period in which it was undertaken as demonstrated by: a) evidence from within the relevant technological (scientific) discipline that recognises the place as a breakthrough in terms of <i>design and fabrication</i> . The establishment of such a large experimental plantation with numerous conifer species was a breakthrough in terms of its design and fabrication for the 1920s and 1930s. It is thought to be one of the largest, most ambitious and systematically laid-out scientific plantations of the twentieth century in Victoria. That said, in some circles, the Cement Creek Plantation is considered a 'failure' because conifers were not subsequently taken up as a mainstay of reforestation. Abandoned from the 1980s, the plantation represents a phase in the history of water management and reforestation. The data ultimately contributed to a wider body of knowledge that now understands the value of reforestation with native species. During the 1960s/70s, the pairing of trees at the Cement Creek Plantation with those at Coranderrk (established in the 1950s) for hydrological research in canopy interception, lasted for around 10 years. This pairing has been reported to be the longest in Victoria.

If SF1 is satisfied, then Criterion E is likely to be relevant at the State level

Executive Director's Response:

Yes Criterion F is likely to be relevant at the State level.

CRITERION G: Strong or special association with a particular present-day community or cultural group for social, cultural or spiritual reasons.

Step 1 Test for Criterion G

No.	Test	Y/N	Reason
G1)	Does the place/object demonstrate social value to a community or cultural group in the present day in the context of its cultural heritage significance? Evidence must be provided for all three facets of social value listed here: <u>See definition of 'social value' and Criterion G terms in the guidelines.</u>		
	(i) existence of a community or cultural group; and	Yes	There is evidence that the place has social value in the present day to: <ul style="list-style-type: none"> The local Yarra Ranges community Victorians who visit it for recreation and to enjoy its aesthetic aspects.
	(ii) existence of a strong attachment of a community or cultural group to the place or object; and	Yes	There is evidence of a strong attachment to this place by: <ul style="list-style-type: none"> The local Yarra Ranges community Victorians who visit it for recreation and to enjoy its aesthetic aspects.
	(iii) existence of a time depth to that attachment.	Yes	There <u>is</u> existence of a time depth to that attachment for: <ul style="list-style-type: none"> The local Yarra Ranges community who have been visiting this place for recreation since its abandonment as an experimental plantation after the 1980s. There <u>is not yet</u> the existence of a time depth to that attachment for: <ul style="list-style-type: none"> Victorians who visit it for recreation and to enjoy its aesthetic aspects. Evidence of the attachment dating to 2016 (seven years ago) when the place was featured on television and 'went

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viral' on social media. Prior to that the place was relatively unknown except by locals.

If G1 is satisfied, then Criterion G is likely to be relevant (but not necessarily at the State level)

Executive Director's Response: Yes Criterion G is likely to be relevant.

Step 2 State-level test for Criterion G

No.	Test	Y/N	Reason
SG1)	Is there evidence that the social value resonates across the broader Victorian community as part of a story that contributes to Victoria's identity?	No	The social value of the Cement Creek Plantation does not resonate beyond the local community across the broader Victorian community. Given the level of tourism since 2016 this resonance may well grow.

If SG1 is satisfied, then Criterion G is likely to be relevant at the State level

Executive Director's Response: No Criterion G is not likely to be relevant at the State level.


CRITERION H: Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

Step 1 Test for Criterion H

No.	Test	Y/N	Reason
H1)	Does the place/object have a direct association with a person, or group of persons?	Yes	There is a direct association between the Cement Creek Plantation and the MMBW.
a)	Has the person, or group of persons, made a strong or influential contribution in their field of endeavour?	Yes	The MMBW made a strong and influential contribution to its field of endeavour which was the provision of water supply and sewerage systems from 1891. In 1992, the MMBW was merged with a number of smaller urban water authorities to form Melbourne Water.
H2) b)	Is there evidence of the association between the place/object and the person(s)?	Yes	There is evidence of the association between the Cement Creek Plantation and the MMBW. This takes the form of archival evidence.
H3)	Does the association:		
a)	relate directly to achievements of the person(s)?	Yes	The association between the place and the MMBW relates directly to the achievements of the MMBW as it was part of their program to revegetate water catchment areas from the 1920s.
b)	relate to an enduring and/or close interaction between the person(s) and the place?	Yes	The association relates to a close interaction between the organisation and the place and an enduring interaction between the organisation and the place.

If H1, H2 AND H3 are all satisfied, then Criterion H is likely to be relevant (but not necessarily at the State level)

Executive Director's Response: Yes Criterion H is likely to be relevant.



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Step 2 State-level test for Criterion H

No.	Test	Y/N	Reason
SH1)	Are the life or works of the person/persons important to Victoria's history?	Yes	The life and works of the MMBW are important to Victoria's history. From 1891 this organisation managed the vital services of sewerage and water supply for Melbourne.
SH2)	Does this place/object allow the association between the person or group of persons and their importance in Victoria's history to be readily appreciated better than most other places or objects in Victoria?	Yes	The place does allow the clear association with the MMBW to be readily appreciated more than most other places or objects in Victoria. The Cement Creek Plantation was an important experimental plantation which demonstrates the MMBW's plan to adopt scientific forestry principles in order to revegetate water catchment areas and increase the purity of Melbourne's drinking water. It is one of the few places that demonstrates this connection between the MMBW and its forestry program to this degree.
If SH1 and SH2 are satisfied, then Criterion H is likely to be relevant at the State level			
Executive Director's Response:		Yes	Criterion H is likely to be relevant at the State level.

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Comparisons

These places were selected as comparators to the Cement Creek Plantation because they relate to its historical significance in relation to the history of Victoria's water supply, plantations, plantings, environmental science and the MMBW.

Places related to the history of Victoria's water supply

YAN YEAN WATER SUPPLY SYSTEM, 42 LEATHER STREET BREAKWATER AND 91-97 TANNERY ROAD MARSHALL, GREATER GEELONG CITY

VHR H2333

The Yan Yean Water Supply System is of historical, archaeological, technical significance to the State of Victoria. Constructed from 1853, is the oldest surviving water supply system in Victoria and still forms part of Melbourne's water supply today. It was the first large scale engineered water supply in Victoria and introduced a number of engineering innovations that were to be influential in the design and construction of later systems in Victoria and Australia.



WATER TANK, COCOROC ROAD COCOROC, WYNDHAM CITY

VHR H1416

This Water Tank – originally constructed in 1854 in East Melbourne – is of historical and architectural importance to the State of Victoria. It served as the first public water supply system in Victoria. Its design is significant as a particularly early example of an engineering structure in Victoria. The tank is rare because of its combination of form, size and method of construction. The tank is illustrative of design and construction practice in the 1850s and is a notable example of an early Victorian engineering structure.



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BENALLA WATER SUPPLY DEPOT, 1-3 RIVERVIEW ROAD BENALLA, BENALLA RURAL CITY

VHR H1048

The Benalla Water Supply Depot is of historical and technological significance to the State of Victoria. It is a rare surviving example of a nineteenth century municipal water supply complex containing all the elements needed to supply a rural town in that period: an iron water tower, blacksmith's shop, carpenters shop and pumphouse. It demonstrates the changes in water tower design since the 1880s.



MAROONDAH WATER SUPPLY SYSTEM (UPPER AND CENTRAL SECTIONS)

VHR H2381

The Maroondah Water Supply System was operational from 1891. It is Melbourne's second large scale water supply system and one of Victoria's earliest major infrastructure projects. It is a notable example of the class of 'water supply systems' and displays most if not all of the principal characteristics of such a system. The plantings and hard landscaping created from 1927 as the Maroondah Reservoir Park, as well as the valve houses, outlet tower and dam wall balustrading are a fine example of the MMBW's philosophy of combining functionality with beauty.



Plantations in the VHR

CUNNACKS VALONIA OAK PLANTATION, ELLIOT STREET CASTLEMAINE, MOUNT ALEXANDER SHIRE

VHR H1422

The Cunnack's Valonia Oak Plantation is of historic aesthetic and scientific importance to the State of Victoria. Valonia Oaks (*Quercus ithaburensis subsp. macrolepis* (syn. *Q. aegilops*) produce tannin for tanning leather. The first Valonia Oak acorns were imported into Australia by George Cunnack who planted them in Castlemaine in 1879. The trees first produced acorns in about 1893 which were distributed around the country. The plantation of fourteen Valonia Oaks is of aesthetic significance due to their landscape value, attractive woodland setting, canopy shape and size.



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SAWPIT GULLY NURSERY AND PLANTATION, SAWPIT GULLY ROAD CRESWICK, HEPBURN SHIRE

VHR H1951

The Sawpit Gully Plantation is of historical, aesthetic, archaeological, and scientific significance to the State of Victoria. Established on a highly degraded landscape, the Plantation represents a very early example (1888) of land rehabilitation using exotic and native trees. The Sawpit Plantation forms an important reference point to the origins of State-organised forestry practice in Victoria and the work of John La Gerche, one of the State's first foresters. The Plantation is of aesthetic value for the deliberate selection of species and planting locations to maximize the trees form and plantation aesthetic qualities.



SEQUOIA SEMPERVIRENS, AIRE VALLEY ROAD, BEECH FOREST, COLAC OTWAY SHIRE

Not in the VHR

Classified by the National Trust (State Level)

The Forests Commission Victoria (FCV) plantation program in the Otways started in the 1930s to test timbers for their potential. Six trial plots of Coast Redwoods were planted 1929-36. At the head of the Aire River, a Redwood plantation was established in 1936. This plantation was primarily experimental and initiated in response to the growing need for timber following the war. It was hoped that redwoods would be useful for light construction, durable cladding, and roof shingles. The Aire Valley plantation is now a popular tourist destination in the Great Otway National Park.



During the early to mid-twentieth century, Forests Commission Victoria also established conifer/pine plantations at Stanley, Narbethong, Mount Macedon and Wallaby Creek.

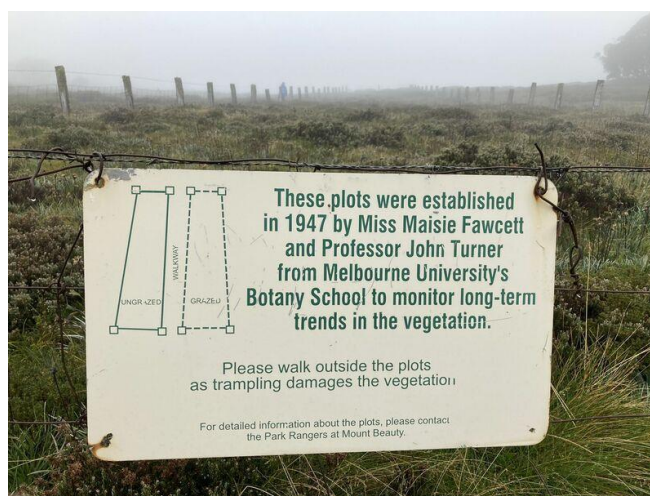
Statement of recommendation from the Executive Director, Heritage Victoria to the Heritage Council of Victoria

Places associated with environmental science

MAISIE'S PLOTS, BOGONG HIGH PLAINS ROAD FALLS CREEK, ALPINE SHIRE

VHR H2424

Maisie's Plots is of historical, scientific and social significance to the State of Victoria. Established in the 1940s, they are one of the longest continual ecological monitoring experiments in Australia. They have yielded valuable data about the impact of cattle grazing on alpine vegetation and soils. The plots demonstrate a high degree of scientific achievement by pioneering ecologist Maisie Fawcett. Her use of the enclosure technique was highly innovative for its time and facilitated robust, long-term data collection. Her work has been pivotal in developing a sound ecological understanding of alpine vegetation dynamics.



Plantings with aesthetic significance

BACCHUS MARSH AVENUE OF HONOUR, BACCHUS MARSH ROAD BACCHUS MARSH, MOORABOOL SHIRE

VHR H2238

The Bacchus Marsh Avenue of Honour is of historical and aesthetic significance to the State of Victoria. It comprises 281 Dutch elms and Huntington elms planted in pairs approximately 20 metres apart. It is aesthetically significant for the dramatic, continuous and unbroken cathedral-like arching of the canopy, making it one of the most distinctive elm avenues in Victoria. The trees form a visually impressive colonnade effect in all seasons. The regular spacing and pairing of trees on either side of the road is a strong design element reflecting the dual purposes of commemoration and amenity enhancement.



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Places associated with the MMBW

FORMER METROPOLITAN FARM (WERRIBEE SEWERAGE FARM), FARM ROAD COCOROC, WYNDHAM CITY

VHR H2400

The Former Metropolitan Farm is of historical, archaeological and technical significance to the State of Victoria. The Former Metropolitan Farm is significant for its association with the Melbourne Metropolitan Board of Works (MMBW) which provided sewerage and water services for the city until 1992. The MMBW established and developed the Metropolitan Farm from 1890 to 1992 and is widely associated with the place. In addition to being a key functional element of Melbourne's sewerage system, the Former Metropolitan Farm was a 'government town' for a large community of resident MMBW workers.



Summary of Comparisons


In the VHR, places related to the Melbourne's water supply include hydrological infrastructure, like Melbourne's first Water Tank (VHR H1416). It also includes large water supply systems, established in the nineteenth century, with closed catchment areas to protect water purity, such as the Yan Yean Water Supply System (VHR H2333) and Maroondah Water Supply System (VHR H2381). The Cement Creek Plantation demonstrates another phase in the protection of Melbourne's water quality through scientific efforts to reforest degraded water catchment landscapes from the late 1920s.

Sawpit Gully Nursery and Plantation (VHR H1951) compares as a highly intact experimental plantation, but it relates to general land rehabilitation, rather than the protection of a water supply system. The National Trust classified *Sequoia sempervirens* in the Aire Valley Plantation, Otway National Park (T11056) was experimental but relates to an increasing need for timber. It is also smaller than the Cement Creek Plantation and lacks the striking aesthetic qualities evident at Cement Creek.

The Cement Creek Plantation is a highly intact historically and aesthetically significant experimental MMBW plantation in a water catchment area. Its association with the MMBW speaks to the continuing history of water and its management in Victoria, and various phases of water and forestry sciences which have informed approaches.

The plantation was one of the largest and systematically laid out scientific plantations of the twentieth century in Victoria. Like Maisie's Plots it was conceived as a long-term environmental monitoring experiment and informed by scientific methods of its era. Maisie's Plots are still yielding data today, but Cement Creek Plantation was abandoned due to a growing body of evidence about the ecological benefits of native, rather than conifer, forests.

The Cement Creek Plantation survives as an aesthetically beautiful place for visitors. Like the Avenues of Honour in the VHR, the striking plantings in regular formations at the Cement Creek Plantation create particular aesthetic effects visually and emotionally.



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Summary of cultural heritage significance (section 40(4)(a))

The Executive Director recommends that the Cement Creek Plantation be included in the VHR as a Registered Place.

Statement of significance

What is significant?

The Cement Creek Plantation, created by the Melbourne Metropolitan Board of Works (MMBW) from 1929 including 13 planted plots containing over 1476 trees, fixtures on some trees including collars and metal number tags, access tracks, the former caretaker's residence block.

How is it significant?

The Cement Creek Plantation is of historical and aesthetic significance to the State of Victoria. It satisfies the following criterion for inclusion in the Victorian Heritage Register:

Criterion A

Importance to the course, or pattern, of Victoria's cultural history.

Criterion D

Importance in demonstrating the principal characteristics of a class of cultural places and objects

Criterion E

Importance in exhibiting particular aesthetic characteristics.

Criterion F

Importance in demonstrating a high degree of creative or technical achievement at a particular period.


Criterion H

Special association with the life or works of a person, or group of persons, of importance in Victoria's history.

Why is it significant?

The Cement Creek Plantation is historically significant for its association with the provision of Melbourne's clean water supply. It demonstrates the MMBW's scientific endeavours from the 1920s and 1930s to ensure water purity in catchment areas which had been degraded through decades of farming, fires and logging of native forests. Part of an extensive revegetation program, this experimental plantation tested the potential of conifer species to improve land and water quality, as well as for their commercial timber potential. By the 1960s and 1970s, it was the site of the MMBW's hydrological research to establish the impact of commercial timber growing in water catchment areas. [Criterion A]

The Cement Creek Plantation is a historically significant as a notable experimental plantation in a water catchment area. It represents a key moment in the management of Melbourne's clean water supply when conifer species were tested for their capacity to improve land and water quality from the 1920s and 1930s. Although it is now understood that Victoria's land, water and forest ecology is better served by revegetation with native species, the MMBW's conifer experiments represent an evolutionary phase of water and forestry science. [Criterion D]




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The Cement Creek Plantation is aesthetically significant for its cathedral-like atmosphere created by the over 1476 trees up to 55 metres high systematically planted in regular formations. The place is noticeably quiet as few native birds or animals are attracted to non-native conifers. The visual and non-visual aspects of this commanding landscape inspire emotions including awe, fear, peace and mystery. The close planting of Coast Redwoods in Plot 1 has particularly unusual sensory qualities, being dark due to its closed canopy and silent as a result of the thick Redwood bark absorbing sound. The plantation has achieved widespread public acclaim for its aesthetic qualities. [Criterion E]

The Cement Creek Plantation is of scientific significance as one of the largest and systematically laid out scientific plantations of the twentieth century in Victoria. Although it may now be considered a 'failure' because scientific evidence currently demonstrates that native species, rather than non-native conifers, have greater ecological benefits for land and water quality, the design and planting of such an ambitious experimental plantation was a breakthrough for the 1920s and 1930s. The pairing of trees at the Cement Creek Plantation with those at Coranderrk for hydrological research in canopy interception has been reported to be the longest in Victoria, lasting for around 10 years. [Criterion F]

The Cement Creek Plantation is historically significant for its association with the Melbourne Metropolitan Board of Works (MMBW). From 1891 the MMBW was responsible for providing the vital public health services of sewerage and clean water supply for Melbourne. The plantation was an important experimental plantation to test conifer species in water catchment areas from the 1920s and 1930s to ensure the purity of Melbourne's drinking water. Abandoned for this purpose from the 1980s and largely undisturbed until 2016, it is one of the few places that demonstrates the MMBW and its scientific approaches to reforestation during the twentieth century. [Criterion H]



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Recommended permit exemptions under section 38

INTRODUCTION

A heritage permit is required for all works and activities undertaken in relation to VHR places and objects. Certain works and activities are exempt from a heritage permit, if the proposed works will not harm the cultural heritage significance of the heritage place or object.

PERMIT EXEMPTIONS

General Exemptions

General exemptions apply to all places and objects included in the Victorian Heritage Register (VHR). General exemptions have been designed to allow everyday activities, maintenance and changes to your property, which don't harm its cultural heritage significance, to proceed without the need to obtain approvals under the Heritage Act 2017.

Specific exemptions may also apply to your registered place or object. If applicable, these are listed below. Specific exemptions are tailored to the conservation and management needs of an individual registered place or object and set out works and activities that are exempt from the requirements of a permit. Specific exemptions prevail if they conflict with general exemptions.


Find out more about heritage permit exemptions [here](#).

Specific Exemptions

The below permit exemptions are not considered to cause harm to the cultural heritage significance of the Cement Creek Plantation, subject to the following guidelines and conditions:

Guidelines

1. Where there is an inconsistency between permit exemptions specific to the registered place or object ('specific exemptions') established in accordance with either section 49(3) or section 92(3) of the *Heritage Act 2017* (Vic) and general exemptions established in accordance with section 92(1) of the *Heritage Act 2017* (Vic) specific exemptions will prevail to the extent of any inconsistency.
2. In specific exemptions, words have the same meaning as in the *Heritage Act 2017* (Vic), unless otherwise indicated. Where there is an inconsistency between specific exemptions and the *Heritage Act 2017* (Vic), the *Heritage Act 2017* (Vic) will prevail to the extent of any inconsistency.
3. Nothing in specific exemptions obviates the responsibility of a proponent to obtain the consent of the owner of the registered place or object, or if the registered place or object is situated on Crown Land the land manager as defined in the *Crown Land (Reserves) Act 1978* (Vic), prior to undertaking works or activities in accordance with specific exemptions.
4. If a Cultural Heritage Management Plan in accordance with the *Aboriginal Heritage Act 2006* (Vic) is required for works covered by specific exemptions, specific exemptions will apply only if the Cultural Heritage Management Plan has been approved prior to works or activities commencing. Where there is an inconsistency between specific exemptions and a Cultural Heritage Management Plan for the relevant works and activities, Heritage Victoria must be contacted for advice on the appropriate approval pathway.
5. Specific exemptions do not constitute approvals, authorisations or exemptions under any other legislation, Local Government, State Government or Commonwealth Government requirements, including but not limited to the *Planning and Environment Act 1987* (Vic), the *Aboriginal Heritage Act 2006* (Vic), and the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). Nothing in this declaration exempts owners or their



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agents from the responsibility to obtain relevant planning, building or environmental approvals from the responsible authority where applicable.

6. Care should be taken when working with heritage buildings and objects, as historic fabric may contain dangerous and poisonous materials (for example lead paint and asbestos). Appropriate personal protective equipment should be worn at all times. If you are unsure, seek advice from a qualified heritage architect, heritage consultant or local Council heritage advisor.
7. The presence of unsafe materials (for example asbestos, lead paint etc) at a registered place or object does not automatically exempt remedial works or activities in accordance with this category. Approvals under Part 5 of the *Heritage Act 2017* (Vic) must be obtained to undertake works or activities that are not expressly exempted by the below specific exemptions.
8. All works should be informed by a Conservation Management Plan prepared for the place. The Executive Director is not bound by any Conservation Management Plan, and permits still must be obtained for works suggested in any Conservation Management Plan.


Conditions

1. All works or activities permitted under specific exemptions must be planned and carried out in a manner which prevents harm to the registered place or object. Harm includes moving, removing or damaging any part of the registered place or object that contributes to its cultural heritage significance.
2. If during the carrying out of works or activities in accordance with specific exemptions original or previously hidden or inaccessible details of the registered place are revealed relating to its cultural heritage significance, including but not limited to historical archaeological remains, such as features, deposits or artefacts, then works must cease and Heritage Victoria notified as soon as possible.
3. If during the carrying out of works or activities in accordance with specific exemptions any Aboriginal cultural heritage is discovered or exposed at any time, all works must cease and the Secretary (as defined in the *Aboriginal Heritage Act 2006* (Vic)) must be contacted immediately to ascertain requirements under the *Aboriginal Heritage Act 2006* (Vic).
4. If during the carrying out of works or activities in accordance with specific exemptions any munitions or other potentially explosive artefacts are discovered, Victoria Police is to be immediately alerted and the site is to be immediately cleared of all personnel.
5. If during the carrying out of works or activities in accordance with specific exemptions any suspected human remains are found the works or activities must cease. The remains must be left in place and protected from harm or damage. Victoria Police and the State Coroner's Office must be notified immediately. If there are reasonable grounds to believe that the remains are Aboriginal, the State Emergency Control Centre must be immediately notified on 1300 888 544, and, as required under s.17(3)(b) of the *Aboriginal Heritage Act 2006* (Vic), all details about the location and nature of the human remains must be provided to the Secretary (as defined in the *Aboriginal Heritage Act 2006* (Vic)).

Exempt works and activities

The strip of native vegetation between the 2018 carpark and Cement Creek Road

1. All processes of land, water and animal management that are permitted within the Yarra Ranges National Park under the *Parks Victoria Act 2018* and associated regulations and guidelines issued by Parks Victoria.



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Appendix 1

Heritage Council determination (section 41)

The Heritage Council is an independent statutory body that will make a determination on this recommendation under section 49 of the Act. It will consider the recommendation after a period of 60 days from the date the notice of recommendation is published on its website under section 41.

Making a submission to the Heritage Council (section 44)


Within the period of 60 days, any person or body with a real and substantial interest in the place or object may make a submission to the Heritage Council regarding the recommendation and request a hearing in relation to that submission. Information about making a submission and submission forms are available on the Heritage Council's website.

Consideration of submissions to the Heritage Council (section 46)

- (1) The Heritage Council must consider—
 - (a) any written submission made to it under section 44; and
 - (b) any further information provided to the Heritage Council in response to a request under section 45.
- (2) The Heritage Council must conduct a hearing in relation to a submission if—
 - (a) the submission includes a request for a hearing before the Heritage Council; and
 - (b) the submission is made by a person or body with a real or substantial interest in the place or object that is the subject of the submission.
- (3) Despite subsection (2), the Heritage Council may conduct a hearing in relation to a submission in any other circumstances the Heritage Council considers appropriate.

Determinations of the Heritage Council (section 49)

- (1) After considering a recommendation that a place or object should or should not be included in the Heritage Register and any submissions in respect of the recommendation and conducting any hearing into the submissions, the Heritage Council may—
 - (a) determine that the place or part of the place, or object, is of State-level cultural heritage significance and is to be included in the Heritage Register; or
 - (b) determine that the place or part of the place, or object, is not of State-level cultural heritage significance and is not to be included in the Heritage Register; or
 - (c) in the case of a recommendation in respect of a place, determine that the place is not to be included in the Heritage Register but—
 - (i) refer the recommendation and any submissions to the relevant planning authority for consideration for an amendment to a planning scheme; or
 - (ii) determine that it is more appropriate for steps to be taken under the Planning and Environment Act 1987 or by any other means to protect or conserve the place; or
 - (d) in the case of a recommendation in respect of additional land which has been nominated to be included in the Heritage Register as part of a registered place in accordance with section 32, determine that the land be included in the Heritage Register if—




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- (i) the State-level cultural heritage significance of the place would be substantially less if the land or any part of the land which is or has been used in conjunction with the place were developed; or
 - (ii) the land surrounding the place is important to the protection or conservation of the place or contributes to the understanding of the place; or
 - (e) determine that the object is integral to understanding the cultural heritage significance of a registered place or a place the Heritage Council has determined to be included in the Heritage Register.
- (2) The Heritage Council must make a determination under subsection (1)—
- (a) within 40 days after the date on which written submissions may be made under section 44; or
 - (b) if any hearing is conducted into the written submissions, within 90 days after the completion of the hearing.
- (3) A determination that a place or part of a place, or object, should be included in the Heritage Register may include categories of works or activities which may be carried out in relation to the place or object for which a permit under this Act is not required, if the Heritage Council considers that the works or activities would not harm the cultural heritage significance of the place or object.
- (4) If the Heritage Council determines to include a place in the Heritage Register, with the consent of the owner of the place, the Heritage Council may determine to include in the Heritage Register additional land of the owner that is ancillary to the place.
- (5) If a member of the Heritage Council makes a submission under section 44 in respect of a recommendation, the member must not take part in the consideration or determination of the Heritage Council.
- (6) The Heritage Council must notify the Executive Director of any determination under this section as soon as practicable after the determination.

Obligations of owners of places and objects (section 42)

- (1) The owner of a place or object to whom a statement of recommendation has been given must advise the Executive Director in writing of—
- (a) any works or activities that are being carried out in relation to the place or object at the time the statement is given; and
 - (b) any application for a planning permit or a building permit, or for an amendment to that permit, that has been made in relation to the place but not determined at the time the statement is given; and
 - (c) any works or activities that are proposed to be carried out in relation to the place or object at the time the statement is given.
- (2) An advice under subsection (1) must be given within 10 days after the statement of recommendation is given under section 40.
- (3) The owner of a place to whom a statement of recommendation has been given must advise the Executive Director in writing of an application, permit or amendment if, before a determination under section 49 or 52 in respect of a place—
- (a) an application for a planning permit or a building permit or for an amendment to that permit in relation to the place is made; or
 - (b) a planning permit or building permit or an amendment to that permit in relation to the place is granted.
- (4) An advice under subsection (3) must be given within 10 days after the making of the application or the grant of the permit or amendment.




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- (5) The owner of a place or object to whom a statement of recommendation has been given must advise the Executive Director in writing of the following activities or proposals if, before a determination is made under section 49 or 52 in respect of a place or object—
 - (a) any activities are carried out in relation to the place or object that could harm the place or object;
 - (b) any activities are proposed to be carried out in relation to the place or object that could harm the place or object.
- (6) An advice under subsection (5) must be given within 10 days after the owner becomes aware of the activity or the proposal, as the case requires.
- (7) If, before a determination is made under section 49 or 52 in respect of a place or object, a proposal is made to dispose of the whole or any part of the place or object, the owner of the place or object must advise the Executive Director in writing of that proposal.
- (8) An advice under subsection (7) must be given at least 10 days before entering into the contract for the disposal of the place or object.
- (9) The owner of a place or object who proposes to dispose of the whole or any part of the place or object before a determination is made under section 49 or 52 in respect of the place or object must, before entering into a contract for that disposal, give a copy of the statement of proposed contract, is to acquire the place or object or part of the place or object.

Owners of places and objects must comply with obligations (section 43)

An owner of a place or object to whom section 42 applies must comply with that section.

Penalty: In the case of a natural person, 120 penalty units;
 In the case of a body corporate, 240 penalty units.



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Appendix 2

Cement Creek Plantation description of the 13 planting areas.

Plot 1: Coast Redwood (*Sequoia sempervirens*), 1929-1934

An extensive stand of very tall trees planted on a grid pattern of 3.5 metres spacings (approximately 11 to 12 feet) on ground gently sloping down to the Cement Creek. The plantation covers roughly 18,000m² (approximately 1.8 hectares or 4½ acres) and the trees total just under 1500 trees (1,476). Trees are mostly straight with no side branches, some with bifurcated trunks, and some showing stunted growth. The tallest are over 50 metres in height. The plantation forms an enclosed canopy with no groundcover, apart from leaf litter due to heavy shading. There is evidence of former hydrological research work in the form of the remains of 'collars' around the tree trunk of a select group of trees. What looks like a bitumen base to which a tube would have been attached (now gone) is angled to a point to collect run-off via a hose into a measuring drum (also now gone). There are two interception areas, which roughly accord with the location of the 'Interception Plots' marked on the Langford and O'Shaughnessy sketch plan of 1977. Marking tape and numbered plot pegs, observed in 1977, are no longer present.

Alterations and additions: There have been no apparent alterations or additions to this plot.

Integrity: This Coast Redwood plantation is fully intact, with the original planting grid in place and readily observable. Evidence also remains of the collars used to collect water for the hydrological research being undertaken by the MMBW in the 1970s.

Plot 2: Douglas Fir (*Pseudotsuga menziesii*), 1924-1934

A large stand of Douglas Fir planted in the early 1930s and forming a largely uniform plantation occupying gently sloping ground, which becomes steeper towards the creek. Originally planted on a noticeable grid pattern at approximately 3.5 metre spacing (11 to 12 feet in old measurements). The size of trees varies with larger trunked specimens on the edge of the plantation. The Douglas Fir trees have noticeable side branches which have become deadwood, in contrast to the neighbouring Monterey Pine and Coast Redwood plantations. The usual understorey of native shrubs is present, which tends to be more prominent where greater light penetrates the tree canopy. There is no evidence of the paraphernalia associated with former hydrological research.


Alterations and additions: The 1946 aerial photograph shows the Douglas Fir plantation in tight rows and in the 'axe like' shape that still exists. However, there appears to be some gaps in the plantation at the western end. These have been filled in by the time of the 1970 aerial photograph.

Integrity: With the exception of additional plantings between 1946 and 1970, this plantation is largely intact with good tall growth and with the original planting grid pattern still observable.

Plot 3: Monterey Pine (*Pinus radiata*), 1960s-1970s

An extensive plantation on gently sloping ground with a denser crown canopy than the neighbouring Douglas Fir plantation. Being planted in 2.5-metre-wide rows at 2 metres spacing would account in part for the dense canopy. The plantation exhibits good growth with very tall trees up to 50 metres in height. There has been some loss of trees. Like the Coast Redwoods, but in contrast to Douglas Fir, the Pines have mostly clear trunks with no side branches. A native understorey has developed with groves of Tree Fern and the occasional Blackwood being prominent. There is some evidence of former research operations in the form of remnant tree collars, tree tag numbers and star pickets. The remains of a banded tree within an area of tree tags marks the eastern interception area as denoted on the Langford and O'Shaughnessy sketch plan of 1977.

Alterations and additions: The 1946 aerial photograph appears to show the plot recently planted which could suggest the plantation is older than the 1960s as denoted on the 1977 sketch plan. However, the contrast with the 1970 aerial photograph could equally suggest that the area was replanted in the early 1960s (along with the adjacent narrow Douglas Fir plantation Plot 9) the plantation having a well-defined and slightly reduced length.



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Integrity: Largely intact plantation that can best appreciated from the tracks on either side of the plot.

Plot 4: Douglas Fir (*Pseudotsuga menziesii*), 1929-1934

A large stand of very tall trees planted in a discernible grid pattern of 3-metre-wide rows and planted at 4 metre spacings, as observed where the original sections remain. On gently sloping and well-drained ground, the trees form a thinner canopy than other species and the plantation has now developed a fairly dense understorey of native shrubs where the Douglas Fir trees have been lost. Some trees have denser foliage but those in the middle have thinner tops, and some are dead but still standing. The girth measurements of trees in the middle of the plantation are noticeably smaller. Fallen logs are common. There is evidence of former hydrological research in the form of remnant collars and metal number tags on the larger trees. A small metal notice plate, attached to a star picket, also remains in one location. Rusting barbed wire also present but its source is unknown.

Alterations and additions: The 1930s plantation appears somewhat patchy on the 1946 aerial photograph but has been filled in completely by the time of the 1970 aerial photograph possibly indicating some replanting between the 1930s and the early 1960s.

Integrity: The plantation is only partially intact with many areas of fallen or missing trees where native understorey has developed, such as clumps of Tree fern and the occasional Blackwood. Some evidence of former hydrological research work present but largely hidden within the plantation.

Plot 5: Monterey Pine (*Pinus radiata*), 1929-1934

A mature plantation at the northern tip of the Cement Creek Plantation occupying gently sloping but uneven ground and forming a fairly dense canopy. The planting pattern, based on intact areas, shows 2.5-metre-wide staggered rows, with individual trees planted at 5 metre intervals. The pines form large trees and dominate the plot but the overall composition is not totally uniform with some gaps forming within the plantation. Interestingly, there are 4 large Coast Redwoods in the middle of the plantation which may have been part of the original plantation, accidentally or on purpose. The denser canopy of the Redwoods has shaded out any understorey/groundcover.

Elsewhere, the understorey and groundcover include tree ferns and ground ferns and native shrubs including some holly invasion. There is evidence of possible drainage channels and sedges found in the wetter areas. No evidence of former research operations was found.

Alterations and additions: There have been few alterations or additions since originally planted, as shown by the series of aerial photographs from 1946 to the present day.


Integrity: A largely intact plantation which seems to have been well- established from the early beginnings of Cement Creek Plantation.

Plot 6: Douglas Fir (*Pseudotsuga menziesii*), 1960s-1970s

This plot occupies gently sloping ground on the north-east corner of the Cement Creek Plantation. There is no discernible planting pattern and few of the Douglas Fir trees appear to remain. A poor survival rate is noticeable as evidenced by large gaps and the presence of dead trees, reflecting the experimental nature of the plantation. There are a few large specimens scattered throughout and particularly on the edge. There is also an intact portion in the middle of the plot with thin straight trunks and a diffuse canopy. Amongst the scrub are fine Mountain Ash trees and dense areas of Tree Fern and even self-sown Western Red Cedar, particularly in the wetter areas. The northern portion of the plot is particularly dominated by scrub. There is no evidence of former hydrological research, and the area does not readily register as a plantation, in contrast to the other plots.

Alterations and additions: It is difficult to appreciate the plantation design of this plot. The sequence of aerial photographs from 1946 onwards show no regular pattern of planting and the 1977 sketch map refers to an area of Douglas Fir planted in 1962 amongst the scrub. The Douglas Fir, where planted, has not really been successful and its subsequent development has largely reverted to a mixed bushland.

Integrity: The integrity of this mixed plot has changed over time with scrub becoming more dominant.



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Plot 7: Coast Redwood (*Sequoia sempervirens*), 1929-1934

This plot is almost identical to Plot 1 in terms of layout dimensions, being planted in parallel rows approximately 3.5 metres apart. There are 9 rows, with 32 individual trees in each row, giving a total of 288 trees in an area of 3,550 square metres. The long rectangular plantation has been established on raised ground slightly above the adjacent creek. Trees have grown extremely well and are mostly straight with no side branches, some with bifurcated trunks, and some showing stunted growth. The plantation forms an enclosed canopy with no groundcover, apart from leaf litter due to heavy shading. There is no physical evidence of former hydrological research.

Alterations and additions: There have been no apparent alterations or additions to this plot.

Integrity: High – The integrity of this Coast Redwood plantation is fully intact, with the original planting grid in place and readily observable.

Plot 8: Mixed scrub

A low-lying wet area with a Mountain Ash canopy and an understorey of other native shrubs particularly tree ferns, tea tree, ground ferns, and sedges.

Alterations and additions: As a predominantly low-lying wet area, continues to display the characteristics of the surrounding native Mountain Ash Forest.

Integrity: This plot originally deemed unsuitable for replanting as a coniferous plantation remains intact as an area of recovering forest.

Plot 9: Douglas Fir (*Pseudotsuga menziesii*), 1960s-1970s

A narrow rectangular plantation planted between the larger Monterey Pine plantation to the west and the area of native bush on the low-lying area to the east. The trees have been planted very close together, based on a 2-metre grid, and have notably thin trunks and thin canopies, although there are occasional larger girthed trees on the plantation edge. With light penetration and a thin canopy cover, large areas of tree fern have grown especially on the eastern side next to the recovering forest plot.

Alterations and additions: A smaller plantation that has not grown successfully and has now been invaded by large areas of shrub understorey.


Integrity: Partially intact plantation with many areas of shrub infill and with no physical evidence of the former hydrological research program.

Plot 10: Douglas Fir / Monterey Pine (*Pseudotsuga menziesii* / *Pinus radiata*), 1960s-1970s

A mixed plantation of Douglas Fir and Monterey Pine planted on level, low-lying ground adjacent to the creek, and often wet in places. Over time the plot has become dominated by the Monterey Pine with no evidence of the Douglas Fir surviving. Where gaps have occurred in the canopy, possibly with the failure of the Douglas Fir, tree ferns and other native understorey has been established. There is no discernible grid pattern remaining within the plantation, but there is evidence of former management operations as evidenced by an area of tree tags similar to the other interception plots in the Cement Creek Plantation. This plot gradually merges into the extensive Monterey Pine plantation (Plot 12) that dominates the south-eastern portion of Cement Creek Plantation.

Alterations and additions: The 1970 aerial photograph shows a clear planting design of mixing the two species in a chequerboard pattern with subsequent aerial photos and on the ground evidence revealing that the Monterey Pine has clearly out competed the Douglas Fir.

Integrity: The Monterey Pine trees are largely intact but the Douglas Fir is no longer present.



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Plot 11: Western Red Cedar (*Thuja plicata*), 1960s-1970s

This plantation of Western Red Cedar has been laid out in an area of former scrub in diagonal rows 2 to 3 metres apart. Several areas of the regular grid pattern remain as evidence of the original intentions. The plantation forms a dense canopy with almost no understorey and the trees are very thin with no apparent management since planting. There are 6 mature Mountain Ash trees scattered through the middle of the plantation, probably pre-dating the plantation and several clumps have infiltrated the corners of the plot. Drainage ditches are present on the eastern side and ground conditions are generally very wet. There is no apparent evidence of hydrological research remaining, although the water interception of a conifer species with dense spreading foliage may have provided an interesting contrast to the other species in the Cement Creek Plantation.

Alterations and additions: The early 1946 aerial photograph shows the plot as an area of scrub surrounded by pasture land, no doubt due to its low-lying and wet ground, noticeable present today. The 1970 aerial photograph clearly shows scattered trees amongst rough ground cover and a network of paths and indicates that the Western Red Cedar plantation was planted post 1970 and probably before 1980. The presence of several Mountain Ash trees would accord with this.

Integrity: The plantation is partially intact with poor growth/form probably due to the very wet ground conditions.

Plot 12: Monterey Pine (*Pinus radiata*), 1960s-1970s

An extensive and largely successful plantation, well established by the 1980s and continuing to thrive in this corner of Cement Creek Plantation. Planted on fairly level and mostly drier ground, the trees on the edge of the plantation have particularly grown well with large girths and heights up to 50 metres. Evidence of the original planting grid can be found in parts showing a very closely spacings of 2 to 2.5 metres. Although the pines are dominant there is a healthy mix of native understorey developing under the canopy. There is also potential evidence of past management as the appearance of rigid lines has largely gone especially within the interior of the plantation. There is no apparent evidence of hydrological research remaining in the plantation.

Alterations and additions: An extensive plantation at the south-eastern end of the site which has grown into a mature woodland area, dominated by the Monterey Pine but with lots of native understorey and groundcover.

Integrity: A largely intact although modified through possible management and/or naturally occurring thinning during its growth period.

Plot 13: Bishop Pine (*Pinus muricata*), 1929-1934

A narrow boundary plantation of Bishop Pine planted in a grid pattern of 3 rows at 3.5 metre spacings. The trees have grown well with large specimens particularly on the outer row. Like all other plantations, with the exception of the Coast Redwoods and to a lesser extent the Western Red Cedars, a patchy shrub understorey has developed over time in certain areas. There is no evidence that this original plantation played a part in the former hydrological research work, but rather played a role in providing shelter to the adjacent plantations.

Alterations and additions: The outer boundary planting has been a constant since the inception of Cement Creek Plantation and was probably chosen as a screen to the site as well as for its growth potential.

Integrity: An almost intact boundary planting.