

Document:	Forest Management Plan
Client:	Cultura Australia Pty Ltd
Date:	16/05/2024



1. PURPOSE

The purpose of this forest management plan (**Plan**) is to outline the key features and characteristics of the property and document the sustainable forest management practices to be utilised in undertaking the development.

2. SCOPE

The Plan has been developed in accordance with the plantation management plan protocol in the Code of Practice for Timber Plantations in Western Australia and the Fire and Emergency Services Authority of Western Australia's (**FESA**) Guidelines for Plantation Fire Protection. The Plan is specific for the property and surrounding areas. The scope of work shall include but not be limited to management of non-plantation areas, soil amelioration, plantation establishment, ongoing management, thinning and final harvest of a softwood *Pinus radiata* pine plantation.

3. PROPOSED DEVELOPMENT

The establishment and harvesting of a *P. radiata* softwood plantation will help overcome the critical supply deficit of forest products to the domestic market (refer Attachment 1).

Furthermore, if this plantation development occurred it would also contribute to achieving Australia's goal of reducing greenhouse gas emissions by 43% below 2005 levels by 2030 and achieving net zero emissions by 2050 through sequestering carbon in trees, soil, and forest products.

4. PROPERTY DESCRIPTION

PLANNING

Title information	Lot 12667 on Deposited Plan 208996
Address	7691 Muir Highway, Frankland River
Occupation	Property not occupied
Shire	Cranbrook
Locality	Frankland River

Planning Scheme	Shire of Cranbrook Town Planning Scheme No. 4
Planning Zone	Rural
Planning overlays	Bushfire Prone Area

EXISTING LAND USE

The property is currently grazed by livestock on improved pastures. The livestock are not excluded from the waterways and allowed to graze through the unfenced remnant vegetation areas. Over 70% of the property was a *Eucalyptus globulus* plantation up until 2016. The property is surrounded by conservation, agriculture and forestry land uses. A property location plan is provided in Attachment 2.

PLANTATION DESIGN AND SETBACKS

Feature	Minimum Distance
Public roads	15
Title boundary	15
Compartment boundary	6
Remnant vegetation	6
Watercourses	6
Habitable buildings	100
Uninhabitable buildings	50
Powerlines	15

5. SITE DESCRIPTION

Feature	Description
Mean annual rainfall	704 mm
Geology	Granite and gneiss
Land unit	Frankland Hills subsystems 1-4, Bevan (Perup) subsystem, and Unicup 3 subsystem
Soils	Loamy to sandy duplex gravels
Topography	Flat to gentle slopes (3-15%)
Catchment	Frankland River and Lake Muir

BIODIVERSITY AND CONSERVATION

There are several highly degraded water courses running through the property, and isolated stands of short to medium marri and jarrah forest in various states of condition. These areas will be managed for their conservation and biodiversity values through the exclusion of grazing animals and with appropriate plantation setbacks and buffer design as contemplated in the Plan. In particular, the removal of grazing livestock from the property will aid recovery of riparian plant species along internal waterways and buffers. Carefully prepared and managed, the plantation will also moderate surface water flow towards waterway systems via drainage or cultivation which falls at 1:100. The establishment of a plantation on the property will also have a broader positive impact on local and landscape biodiversity and conservation values.

Feature	Description
Vegetation types	Short to medium marri and jarrah forests
Rare and threatened species	Carnaby Cockatoo, Forest Red-tailed Black Cockatoo, Australian Bittern
TEC ¹	None identified
Vegetation condition	Poor

¹ Threatened ecological community.

CULTURAL HERITAGE

Native Title Representative	South West Aboriginal Land and Sea Council
ILUA ³	Wagyl Kaip Southern Region
Regional corporation	Wagyl Kaip Southern Noongar Aboriginal Corporation
Local clan groups	Ganeang, Goreng and Menang

There are no cultural heritage sites located on the property. However, the area more broadly is recognised as an historic important hunting and camping area.

Feature	Description
Historic Place 21909	Yeriminup/Frankland Hunting and Camping Areas.

STAKEHOLDERS

Property Identification	Land Use
7431 Muir Highway	Softwood plantation
420 Noobijup Road	Cropping and grazing
58 Noobijup Road	Hardwood plantation
8005 Muir Highway	Hardwood plantation
Lot 12663 Noobijup Road	Hardwood plantation
7608 Muir Highway	Grazing
7744 Muir Highway	Grazing
7918 Muir Highway	Hardwood plantation
Lot 12691 Noobijup Road	Nature reserve

6. FOREST DESCRIPTION

AREA STATEMENT

Feature	Area
Area Waiting Planting	348
Native vegetation	58
Buffers and watercourses	33
Firebreaks and tracks	27
Dams	3
Total	469

7. SILVICULTURE AND MONITORING

Activity	Year	Comments
Road infrastructure	<1	Where possible, existing access points and roads will be used to minimise disturbance. Where required, new access points and roads will be established to allow for the safe access and egress through the plantation
Weed management	<2	Generally, occurs in the first 18 months of plantation establishment, weeds will be managed to minimise competition within the tree crop using appropriately qualified organisations and operators and will comply with the Australian Pesticides and Veterinary Medicines Authority regulations. Firebreaks may be sprayed annually using the same techniques
Site preparation	<1	Planting lines will be designed to follow closely to the contour at 4 metre intervals using either rip/mound or straight rip soil amelioration techniques. Site preparation is required to optimise tree growth
Planting	<1	Seedlings will be planted by hand using spades or pottiputki planting tubes during the winter period at 1,100 stems per hectare
Pest management	As required	Undertaken where plantation damage is occurring that will lead to economic loss. Applications will be ground based
Monitoring	<6 months weekly and at least annual thereafter	Access, hazards, weeds, pests and diseases, survival, firebreaks, and water points
Nutrition	As required	Based on precision forestry principles the nutrition status will be monitored and any economic imbalances remedied by the application of fertiliser
Road maintenance	As required	Roads will be inspected and maintained to ensure access and to minimise any adverse impacts (e.g., erosion, poor drainage)
Firebreak maintenance	Annual	Firebreaks will be maintained in accordance with this Plan and the relevant firebreak and fuel reduction notice published by the Shire of Cranbrook
Declared plants and animals	As required	Declared plants and animals will be identified through monitoring and declarations and control will be in accordance with the Biosecurity and Agricultural Management Act 2007
Inventory	>10	Undertaken to monitor plantation performance and forward planning

8. FIRE MANAGEMENT

Protecting the plantation from fire is critical given *Pinus radiata*'s inability to cope with severe fire events. An overarching annual fire management plan will be prepared for the fire control activities within the plantation and all activities undertaken will comply with:

- DFES Guidelines for Plantation Fire Protection;
- Shire of Cranbrook Firebreak and Fuel Hazard Reduction Notice; and,
- Code of Practice for Timber Plantations in Western Australia.

Notwithstanding the landowner or contracted third-party fire patrols in periods of increase fire risk, fire events within the plantation area are likely to be detected by Department of Biodiversity, Conservation and Attractions' (DBCA) aerial fire surveillance, neighbouring landowners and members of the public.

Plantation GIS data sets will be supplied to DFES and DBCA for inclusion in emergency service directories and for fire coordination centres. In addition, plantation signposting will have relevant fire contact information and location details for efficient fire notifications.

In the event of a wildfire within the plantation area, the following suppression methods will be considered along with fire suppression priority values.

Fire Danger Index	Suppression Type	Management Unit
Low	Direct attack on head fire and flank fire – earthmoving machines and aerial water bombing assisted	Small fire area confined within a compartment cell
Low - Moderate	Flank fire attack – earthmoving machine and aerial water bombing assisted	Fire area confined to a single compartment cell
Moderate - High	Tail fire suppression – earthmoving machine and, aerial water bombing assisted	Fire area confined to multiple compartment cells or perimeter breaks
High	Aerial water bombing and machine assisted suppression	Fire area confined to low fuel areas within or outside the plantation area

Should a plantation fire occur, the landowner will be responsible for mop up and ongoing monitoring within the property boundaries once the wildfire has been brought under control and running fire is contained with mineral earth firebreaks.

CONTACT INFORMATION

Organisation	Management Unit
Fire Emergency Line	000
Delta Forestry 24 hour line	08 9778 9995
DFES Region	Great Southern 08 9845 5000
Local Brigade	Frankland River
Fire Control Officer	P Ettridge 0458 552 271

FIREBREAK AND FUEL MANAGEMENT

Firebreaks will be inspected annually and maintained in a trafficable condition. External firebreaks will have a clearance of 15 metres and 5 metres vertical height, allowing the safe passage of fire-fighting appliances. Internal firebreaks will have a clearance 6 metres and 5 metres vertical.

Plantation compartments will be no greater than 30 hectares in size. Mineral earth firebreaks will be installed prior to the onset of the fire season and ahead of the Shire of Cranbrook's compliance period and maintained throughout the prohibited fire season.

Native vegetation within the plantation area will be monitored for fuel loads during the plantation's rotation. If native vegetation fuel loads exceed 8 tonnes per hectare, the use of prescribed burning or mechanical fuel management will be considered if the native vegetation area is deemed to be of a high risk to the plantation area.

Building setbacks will be observed for sheds and outbuildings. There is one dwelling onsite. No flammable hydrocarbons are to be stored on the property.

WATER SUPPLIES

The property has several water points strategically located across the land for the purpose of watering grazing animals. These water points were assessed in late April 2024 following a seven-month dry period and one water point was deemed to be summer reliable under extreme conditions. Accessways from firebreaks or compartment boundaries will be installed to access reliable water points for fire control purposes. The water point volume, access and egress will be monitored prior to and during the fire season. In addition, a c. 150,000 litre water tank is located at the sheds adjacent to the dwelling on the main entrance off Muir Highway and is a reliable supplementary source. Reliable water points will be marked on maps and by signage on the property (refer Attachment 1 and below).

The landowner may engage the services of third-party providers to increase the availability of resources during the fire season, and particularly on extreme and catastrophic fire danger rating days.

RESOURCES

Resource	Location
400 litre slip on	Busselton
400 litre slip on	Dardanup
500 litre slip on	Manjimup

The landowner will review its resourcing requirements from time to time and may engage the services of third-party providers to increase the number and availability of resources during the fire season. Future resourcing, which may include local contractors, will be detailed in the annual fire management plan.

RESPONSE

If not on patrol, there will be a 60 minute response time from the closest available resource from the property.

FIRE DANGER PERIODS

Alertness will be increased as required during bushfire season, particularly on extreme and catastrophic fire danger rating days. A response to increased fire risk may include standby of additional resources and fire detection patrols and will be detailed in the annual fire management plan.

MAPS

Once the plantation is established, fire management maps will be prepared and reviewed annually to reflect the current forest condition and the latest contact information. Fire maps will be made available to DFES, DBCA, Forest Industries Federation of Western Australia (FIFWA) Fire Co-operative Group and local Volunteer Fire Brigades. Fire maps will also be held at the property's main entrance point in red coloured waterproof fire tubes.

9. HARVEST

The intent is to deploy a cut-to-length harvest system to produce logs for delivery to local and export markets. Prior to any harvest operations a harvest management plan will be developed for endorsement by the Shire of Cranbrook and communication to stakeholders. The harvest management plan shall include appropriate traffic, water, dust and noise management plans to adequately manage potential adverse impacts to the environment and stakeholders.

Around the final clear-felling of the plantation an assessment will be made on the future use of the property including the appropriate management of harvest debris.

10. HAULAGE AND MARKET INFORMATION

The proposed future haulage route can be found in Attachment 3.

Forest products	Environmental credits, fence posts, pulplogs and sawlogs
Destinations	Bunbury Port, Wespine, Koppers, and Laminex in the Dardanup, Albany Port, local sawmillers and Timber Treaters in Bridgetown

11. ATTACHMENTS

1. Development plan
2. Location plan
3. Haulage route