

# Oil Mallee

# Code of Practice

Oil Mallee Association of Australia Inc.



# Table of Contents

<b>1. Introduction</b>	<b>1</b>
Purpose	1
Overview	1
Implementation	2
Accreditation	2
<b>2. Location, Planning and Design</b>	<b>2</b>
2.1 Layout Considerations	3
2.2 Existing Native Vegetation	4
2.3 Planning Approvals and Planting on Zoned Agricultural Land	5
2.4 Planting in Public Drinking Water Source Areas	5
2.5 Enhancing Environmental Values	6
2.6 Aboriginal Heritage	6
2.7 Occupational Health and Safety	7
<b>3. Management Plans</b>	<b>8</b>
3.1 Private Roads and Tracks	8
3.2 Public Roads	8
3.3 Fire Management Plan	9
3.4 Animal Management Plan	9
3.5 Location Map	9
<b>4. Access</b>	<b>10</b>
4.1 Private Roads and Tracks	10
4.2 Public Roads	10
<b>5. Establishment</b>	<b>11</b>
5.1 Site Assessment	11
5.2 Species Selection	11
5.3 Site Preparation	12

<b>6. Carbon Sequestration</b>	<b>14</b>
6.1 Fertilising	14
6.2 Weed Control	14
6.3 Insect Control	15
6.4 Disease Control and General Health of Oil Mallee Plantings	15
6.5 Tending	16
<b>7. Carbon Abatement</b>	<b>17</b>
7.1 Oil Mallee Carbon Abatement Projects	18
7.2 CFI Methodologies	18
7.3 CFI Integrity standards	19
7.4 CFI Reporting	19
<b>8. Harvesting</b>	<b>20</b>
8.1 Harvest Plan	20
8.2 Harvesting Operations	21
8.3 Extraction and Haulage	21
<b>9. Supply of Biomass</b>	<b>22</b>
9.1 Contracting for Biomass Delivery	22
9.2 Withholding Periods	22
9.3 Delivered biomass	22
<b>10. Biomass Processing</b>	<b>24</b>
10.1 Records	24
<b>11. Storage and Handling of Chemicals Fuels and Oils.</b>	<b>25</b>
<b>12. Integrity in Forecasting</b>	<b>26</b>
<b>13. Incident Management</b>	<b>27</b>
<b>14. Neighbour Relations</b>	<b>28</b>
<b>15. Knowledge Management</b>	<b>29</b>
<b>16. Definitions</b>	<b>30</b>
<b>17. Acknowledgements</b>	<b>33</b>
<b>Appendix : Management Plan Template</b>	<b>35</b>

# 1. Introduction

## Purpose

The Oil Mallee Code of Practice ('the Code') provides management guidelines and minimum standards applicable to all Oil Mallee plantings, whether for natural resource management, biomass harvesting or carbon abatement.

The purpose of the Code is to provide growers, purchasers, regulatory authorities and the wider community with confidence in the environmental, social and economic aspects of Oil Mallee planting projects.

Adherence to the Code by growers will ensure the Oil Mallee industry is professional, accountable and credible.

## Overview

Under the Code **Oil Mallees** are any 'selected for purpose' mallee Eucalyptus species of known genetic origin. An **Oil Mallee planting** is any organised, contiguous planting of more than 0.2 hectares. An **Oil Mallee planting project** is a project involving the establishment and management of one or more Oil Mallee plantings to meet specified objectives.

Oil Mallee plantings provide an opportunity for farmers to diversify their activities while contributing significantly to the prevention of salinity and wind erosion, ameliorating degraded land, and developing sustainable land-use systems. One particular system widely adopted in WA is integrated tree cropping, where belts of Oil Mallees are planted across cereal crops or pasture. This Code provides managers of Oil Mallee plantings with a single reference document relating to Oil Mallee production systems in Western Australia. Adhering to the Code will assist growers to secure the sale of Oil Mallee products and generate revenue from their sustainable land practices.

The Code provides minimum standards for each step in the Oil Mallee supply chain, however production to a higher standard is always encouraged.

### Minimum Standard

The minimum standard details the lowest level at which a production stage meets the Code of Practice. The standards ensure product quality and safety. Each minimum standard implies record keeping of its fulfillment.

Throughout the Code reference is made to further "**Guidance Notes**" which are provided on-line at the OMA website: [www.oilmallee.org.au](http://www.oilmallee.org.au). These address specific practical aspects of each stage of production.

Also online are two maps, showing which sections of the Code are relevant for different planting purposes; either for carbon abatement or for harvested biomass. These are available at [www.oilmallee.org.au](http://www.oilmallee.org.au).

The Code does not include detailed prescriptions for works, which should generally reflect individual objectives and circumstances. Rather the Code provides a guiding framework under which site or project specific methods and approaches can be developed and implemented.

The Code recognises existing standards and protocols, and has been developed taking note of recognised certification programs such as ISO 14001 Environmental Management Systems, the Australian Forestry Standard (AS 4708—2007) and the Forest Stewardship Council (FSC) International Standard. It also takes particular notice of the Code of Practice for Timber Plantations in Western Australia 2006 (FICOP).

The preparation of this Code has been coordinated by the Oil Mallee Association of Australia Incorporated (OMA). It is necessarily a living document, and managers should be aware that versions of this Code might not reflect the current status of legislation and regulations, which can change over time. Relevant regulations should be checked when planning any mallee planting. Updates on the Code, associated guidelines and emerging best practice approaches will be provided on the OMA website on a periodic basis.

## Implementation

The Code primarily applies to Oil Mallee growers, whether in the public or private sectors. It is also intended to provide a reliable reference for land use planners, regulators, oil and biomass processors, and other participants in Oil Mallee production systems and supply chains.

Growers claiming to adhere to this Code must abide by the minimum standards, and maintain records that can be used to demonstrate this.

Achieving the principles and standards defined in this Code is a task for all parties associated with an Oil Mallee planting project. This includes the owner of the land, the owner of the mallees, the manager of the crop, processors, and the employees and contractors employed to work in the planted area and processing plants. Key responsibilities will generally rest with the manager/landowner.

If a dispute arises, for example during planning approvals process or in relation to the Code, an OMA representative can be contacted for advice.

## Disclaimer

This Code does not constitute a legal or statutory document. It is not intended to constitute legal advice. The Code complements relevant Commonwealth and State legislation, standards, codes of practice and guidelines. These change over time. It is the responsibility of every person potentially affected by legislation to determine the rights and responsibilities pertaining to their particular circumstances. A list of Acts, regulations and other reference documents which may be relevant to Oil Mallee plantings is set out in Guidance Note 1 online (see [www.oilmallee.org.au](http://www.oilmallee.org.au)). This list is not exhaustive and is intended as general guidance only. Project managers should consider obtaining legal advice in relation to the application of regulations to their particular project and in relation to contractual arrangements in connection with their project.

## Accreditation

There are no auditing processes in place at the time of publishing this Code, but the Oil Mallee Association anticipates establishing an accreditation process. Accreditation levels may include standards superior to the Minimum Standards, such as 'Industry Best Practice', and 'International Best Practice', with regular auditing.

## 2. Location, Planning and Design

Planning for the location of mallee crops should be undertaken with due recognition of local regional Natural Resource Management (NRM) strategies and plans. Carbon plantings are subject to the specific provisions of Section 7 of this Code and Commonwealth Carbon Farming Initiative (CFI) guidelines ([www.climatechange.gov.au/cfi](http://www.climatechange.gov.au/cfi)).

The environmental, social and economic effects of all Oil Mallee planting projects should be considered during the planning process. Values related to significant geomorphic, ecological, social or cultural heritage sites, processes or activities should be recognised.

The layout, density and spacing of Oil Mallee plantings is important for:

- meeting production system objectives; and
- effectively integrating with adjacent land use activities.

In most situations water is the limiting factor for mallee growth, and consideration should be given to maximising the availability of water through appropriate site selection and planting design.

### 2.1 Layout Considerations

The objectives and expected outcomes of an Oil Mallee planting project should be clearly specified at the outset of the project. This includes defining the target products, potentially including one or a combination of:

- harvested biomass (e.g. bioenergy feed stocks, Eucalyptus oil, biochar);
- carbon sequestration; and
- environmental services.

Depending on the grower's circumstances, complementarity with other farming system components may also have an important bearing on the project objectives (e.g. in relation to income diversification or risk management). Canopy and root competition should be considered.

Planting configurations will strongly influence Oil Mallee establishment, management and product delivery operations (e.g. harvesting). Designs should seek to optimise the efficiency and cost effectiveness of all aspects of the production system.

Planting sites have different capacities to support mallee growth, based on a complex assortment of climate, soil and land use history factors. Some site constraints can be overcome with appropriate site preparation techniques (e.g. ripping of agricultural hardpans, suitable control of weeds and pests), whilst other constraints are untreatable (e.g. depth to basement rock). Planting configurations and stocking rates should be matched to site capacity and the target product suite.

For planning and design purposes, it is useful to distinguish between belt and block planting configurations.

**Belts are narrow, linear plantings within a broader land use system.**

Individual belts are separated by **alleys**.

Belts can follow contours of the land, or go in straight lines across agricultural borders, but should avoid sharp bends for the sake of harvesting machinery. The use of perimeter plantings (*e.g.* along fence lines, internal farm tracks, laneways, firebreaks, banks and drains) is a strategy to minimise competition interactions with crops and pastures. Regular access breaks should be considered for vehicle and stock movements. This may be particularly important for fire management purposes.

**A block is a planting of more than 8 rows of trees, or where there is less than 60 m between belt units.** Experience suggests that closely spaced belts preclude the use of the alley for conventional agricultural activities. As such blocks are considered to be discrete land management units. Stocking rates for plantings intended for harvest are generally in the range of 500 to 2000 stems per hectare. 3 m between planting rows is recommended for plantings intended to be harvested, though historically they have been planted 2 m apart.

**Buffer zones** (the cleared areas around belts and blocks) should be wide enough to allow for maintenance, and for harvesting when intended. Buffer zones define land occupancy by the Oil Mallees for the purposes of covenanting and management.

Oil Mallee harvesting systems remain under development, but are likely to utilise precision agriculture technology.

**2.1 Minimum Standard – Layouts**

Identify whether the planting is a block or belt planting.

Planting configurations and stocking rates must be matched to site capacity and the target product suite.

Buffer zones around plantings must be at least 2 m wide from the stem of the tree and be designated as part of the planting.

A minimum of 3 m between planting rows is required for plantings intended to be harvested.

**See Guidance Note 2.1 online for further information on Oil Mallee planting designs and layouts.**

**2.2 Existing Native Vegetation**

Consider locating belts of Oil Mallees to buffer or link existing sites of native vegetation.

Native vegetation should not be cleared for the establishment of Oil Mallees where this would compromise regional conservation and catchment management objectives.

In some circumstances it may be appropriate to clear native vegetation that has been severely degraded by impacts such as disease, weed invasion, wind and fire in order to establish Oil Mallee plantings. Any clearing should be done

in accordance with a Native Vegetation Clearing Permit (NVCP) issued under the Environmental Protection Act 1986; or otherwise in accordance with the Environmental Protection (Clearing of Native Vegetation) Regulations 2004.

Note that any land cleared after 1990 is not eligible under the CFI legislation to create carbon rights.

#### 2.2 Minimum Standard – Existing native vegetation

Regulatory approvals must be obtained where native vegetation is proposed to be cleared.

### 2.3 Planning Approvals and Planting on Zoned Agricultural Land

State Planning Policy (SPP) 2.5 includes Section 5.3.2, dealing with regional development and tree farming; and Section 5.1, dealing with protecting food production on priority agricultural land. The SPP 2.5 is being reviewed at the time of writing this Code and should be considered when planning an Oil Mallee planting. The revised SPP 2.5 will be considered by the WAPC in early 2012 along with Draft Development Control Policy 3.4, with Section 5.5 dealing with subdivision of land for carbon abatement. Growers need to consider possible conflicting land use priorities for the land in question.

Local Government Authority (LGA) policies vary in the need for a formal development application for plantings. In a circumstance where approval to establish Oil Mallees is not required, the Manager may consider submitting a Management Plan and Property Map to the relevant LGA for record keeping purposes even where this is not a requirement.

There are some LGA's, members of SEAVROC for instance, who seek a Development Application process for any planting (harvest or non-harvest) under a certain threshold. Generally these LGA's are satisfied with a notification process rather than the more formal Development Application.

Practice, procedures and legislation may change in this area, and Local Government Authorities may set by-laws that differ from the SPP standards.

#### 2.3 Minimum Standard – Planning Approvals and Planting on zoned agricultural land.

Abide by the revised State Planning Policy 2.5 and any relevant local government regulations.

**See Guidance Note 2.3 online for further information regarding local and state approvals.**

### 2.4 Planting in Public Drinking Water Source Areas

Oil Mallee plantings should have no detrimental impact on raw water quality as a result of activities in mallee crops situated in Public Drinking Water Source Areas (PDWSAs) proclaimed under the Country Areas Water Supply Act 1947. Maps of PDWSAs are available online at the Department of Water (DOW) website: [www.water.wa.gov.au](http://www.water.wa.gov.au)

PDWSAs are managed in accordance with drinking water source protection objectives and plans (where prepared) administered by the DOW. Water quality values to be protected within PDWSAs include groundwater, watercourses, springs, wetlands and reservoirs. The water quality issues relevant to mallee cropping activities are pathogens, turbidity and erosion, nutrients and chemical applications and spills.

#### **2.4 Minimum Standard – Planting in Public Drinking Water Source Areas**

Mallee plantings situated in Public Drinking Water Source Areas must abide by the Country Areas Water Supply Act 1947, associated by-laws and drinking water source protection plans.

**See Guidance Note 2.4 online for further guidelines on PDWSA regulations.**

### **2.5 Enhancing Environmental Values**

Oil Mallee plantings should be located and designed to maintain or enhance environmental values including groundwater management (via recharge reduction), landscape protection and biodiversity protection.

Vegetation, fauna and landscape values should be protected, and where possible enhanced, through carefully considered planting designs. This includes identifying opportunities to create buffers and linkages to remnant vegetation, and integrate with mixed species revegetation plantings.

Water quality should be protected by careful planning and control of the location and timing of machine operations during site preparation and harvesting. Measures for minimising erosion and off-site movement of chemicals should be instituted. Disturbances to watercourses or wetlands should be prevented.

#### **2.5 Minimum Standard – Enhancing environmental values**

Oil Mallee plantings must be sensitive to local environmental values, and enhance environmental values to some extent.

### **2.6 Aboriginal heritage**

The legal and customary rights of indigenous peoples should be recognised and respected.

Oil Mallee planting projects should comply with the provisions of the Aboriginal Heritage Sites Act 1972. When planning the location of a planting, a search of the Aboriginal heritage sites database of the Department of Indigenous Affairs should be conducted to ensure that there is no encroachment on a registered Aboriginal heritage site.

Positive engagement with Indigenous populations is regarded as a co-benefit under the Carbon Farming Initiative.

#### **2.6 Minimum Standard – Aboriginal heritage**

Perform a database search with the Department of Indigenous Affairs to determine whether there is an Aboriginal heritage interest intersecting with proposed Oil Mallee planting sites.

### **2.7 Occupational Health and Safety**

All mallee establishment, management, harvesting and transport should be conducted to comply with relevant occupational health, safety and welfare legislation, policies and guidelines.

The mallee industry should aim to improve standards for occupational health, safety and welfare within the industry.

#### **2.7 Minimum Standard – Occupational health and safety**

All people involved in the industry must be suitably instructed in the safe and efficient use of equipment and machinery.

## 3. Management Plans

An Oil Mallee crop should be established and managed according to its Management Plans. These include establishment, maintenance and harvest plans, and if required, a fire management plan and animal management plan.

Managers with plantings spread over a number of properties may develop generic plans that apply to a number of properties.

Plans and maps are dynamic and may be updated from time to time to reflect changes in the plantings.

### 3.1 Planting Objectives

The objectives and rationale of Oil Mallee planting projects should be identified and reflected in a Management Plan.

#### 3.1 Minimum Standard – Planting objectives

The objectives of Oil Mallee planting projects must be clearly stated in a Management Plan.

### 3.2 Management Plan

A key component in product quality control is to have a fully traceable production system with effective records and possibly an audit trail. The starting point for this is documentation of the smallest definable production units. These units - whether a belt or block or a series of belts and blocks within a title - should be clearly identified by the grower. A Management Plan sets out the inputs and outputs of these units. A Management Plan addresses the objectives and design of its associated Oil Mallee planting.

Managers may consider developing Management Plans for Oil Mallee plantings as a component of whole-farm plans. Such plans could integrate conventional farming activities with conservation and biodiversity values.

It is advisable to maintain a risk register, acknowledging the various risks associated with an Oil Mallee planting, such as those related to fire, pests and disease, covered elsewhere in the Code.

If you have to conform to the Code of Practice for Timber Plantations in Western Australia 2006 for planning approval, you will require higher level management plans, including an Establishment Plan, Maintenance Plan, and Harvest Plan.

#### 3.2 Minimum Standard – Management plan

Management Plans will be developed for Oil Mallee plantings, addressing the establishment and maintenance of the plantation.

**See Appendix I for a Management Plan template.**

**See Guidance Note 3.2 for an example of a Management Plan.**

### 3.3 Fire Management Plan

A Fire Management Plan is necessary to ensure the integrity of a mallee planting.

It may be appropriate to provide gaps in mallee belts to prevent fire fighters being trapped against a belt with their vehicles by a fast crop fire. Systems for fire detection and suppression should be identified.

Firebreaks, water points and compartments should be shown on the Location Map (refer to Section 3.5).

#### 3.3 Minimum Standard – Fire management

A Fire Management plan will be developed in accordance with the scale of the Oil Mallee planting project, meeting any Local Government Authority requirements.

**See Guidance Note 3.3 online for further information on fire management.**

### 3.4 Animal Management Plan

An animal management plan may be necessary for any Oil Mallee planting, whether a belt or block, to ensure it does not become a refuge for pest animals. The risks and impacts of pest animals may increase for block plantings.

#### 3.4 Minimum Standard – Animal management

Establish an Animal Management Plan.

**See Guidance Note 3.4 online for further information on animal management.**

### 3.5 Location Map

A Location Map will form the basis of traceability of Oil Mallee products. The individual production units should be of known area, and the map should identify relevant topographical features.

The Location Map should include MGA co-ordinates, a scale bar, cadastral boundaries, significant topographical features, access roads and surrounding landholders where appropriate.

For carbon abatement plantings also refer to Section 7.

#### 3.5 Minimum Standard – Location Map

The Location Map will identify the property location number and relevant shire, MGA co-ordinates, a scale bar, significant topographical features and access roads.

## 4. Access

Oil Mallee plantings are unlikely to require extra roads or tracks, but where these are necessary the guidelines in the Code of Practice for Timber Plantations in Western Australia 2006 (Section 4.5) should be consulted.

### 4.1 Private Roads and Tracks

Access within plantations should ensure that plantation establishment, tending, fire management and harvesting can be carried out efficiently and safely, without adverse impact on environmental values.

#### 4.1 Minimum Standard – Private roads and tracks

Private roads and tracks must be clearly identified and maintained for fire management and harvesting.

### 4.2 Public Roads

The integrity of the public road system used for the haulage of wood products should be maintained whilst ensuring public safety.

Haulage routes should be identified in collaboration with the Local Government and where necessary, permits to use roads will be obtained.

#### 4.2 Minimum Standard – Public roads

Haulage operations must comply with State legislative and Local Government Authority requirements.

## 5. Establishment

Establishment methods should be economically and environmentally appropriate for the species of mallee and the specific site conditions.

### 5.1 Site Assessment

All land proposed for establishing Oil Mallee plantings should be assessed to determine site suitability. The assessment should include consideration of climate, soil types, production objectives and integration with adjacent land uses. The assessment should also address the identification and protection of environment, heritage and cultural values on or adjacent to the land.

The site assessment should be undertaken in accordance with accepted site selection methods to ensure that limitations to growth are identified. Planting sites should have soil of adequate depth and sufficient rainfall to sustain the planting, consistent with the planting objectives.

Site constraints requiring modification (i.e. ripping, mounding/scalping and draining) should be identified to ensure acceptable establishment and growth, as well as protection from wind and water erosion hazards.

Saline soils should be assessed using an electrical conductivity meter or by soil sampling techniques and managed accordingly. Consider the risk to mallee growth and survival posed by rising saline ground waters in the future.

#### 5.1 Minimum Standard – Site assessment

Undertake a site assessment based on accepted methodology, considering at least climate, soil type, soil depth, site constraints and site risks.

**See Guidance Note 5.1 for further information on site assessment.**

### 5.2 Species Selection

Oil Mallee species or cultivars should be appropriately matched to site conditions, to best meet the Oil Mallee planting project objectives.

Oil Mallee species selection criteria could potentially include:

- vigour and growth rates;
- leaf oil content;
- biomass qualities (e.g. biomass partitioning characteristics); and
- ability to survive long term.

Oil Mallee species will commonly be endemic to the locality, although this may not always be the case.

Nursery stock should be grown in nurseries accredited under the Nursery Industry Association of Australia scheme.

Seed should be purchased from nurseries where seed lots are accompanied with collection information, including the seed origin and date of picking. Seed collection should comply with recognised protocols. Oil Mallee seed can be purchased from a variety of sources, including the Department of Environment and Conservation (DEC), the Forest Products Commission, and other private suppliers. Seed should not be collected from farm plantings, unless these are purposefully established as seed production areas.

#### 5.2 Minimum Standard – Species selection

Select species or cultivars appropriately matched to site conditions, to best meet economic and environmental objectives.

Seedlings must be sourced from nurseries accredited under the Nursery Industry Association of Western Australia scheme. Seed lots must be accompanied with collection information, including the seed origin and date of picking.

**See Guidance Note 5.2 for further information on seed collection and procurement.**

### 5.3 Site Preparation

Use appropriate site preparation procedures to achieve desired establishment standards, while having due consideration for the protection of specific land and water values.

Key considerations for effective site preparation include:

- providing a suitable land surface for planting activities;
- optimising seedling survival and growth; and
- alleviating site constraints.

Sites should be prepared by ripping, cultivating and mounding or scalping as required to improve establishment and achieve stocking levels.

Burning of debris during initial clean-up must be carried out in accordance with Local Government Authority fire control by-laws and fire ban notices.

Cultivation and mounding or scalping should be aligned to minimise the risk of erosion. In some situations it may be desirable to collect and retain surface water on the site to enhance the productivity of the mallee crop, but if it is necessary, cultivation and mounding should facilitate the orderly transfer of excess surface water from the site into natural or constructed drainage channels. Grade banks should be considered and constructed at appropriate intervals to transfer excess surface water from the site into areas of undisturbed vegetation, filter strips or back into the planted area as appropriate.

When necessary, owners of Oil Mallee crops should cooperate with Local Government, State agencies and other land owners to develop drainage management strategies for the sub-catchments on which their mallees are located. Owners should be familiar with local and regional catchment management strategies.

Site preparation activities must adhere to the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 and the Soil and Land Conservation Act 1945.

To minimise the risk of erosion, broad scale cultivation should be avoided on steep slopes (i.e. where slope >18°).

For each Oil Mallee planting, a site preparation prescription should be developed prior to site establishment activities, noting any exceptions to standard site establishment practices (See Guidance Note 5.3).

### 5.3 Minimum Standard – Site preparation

Site preparation must be appropriate to the site, and must appropriately address the risks identified in the Site Assessment. A site preparation prescription must be developed and followed.

**See Guidance Note 5.3 for further information on site preparation methods and developing a site preparation prescription.**

## 6. Maintenance

### 6.1 Fertilising

Soils with a history of agricultural land use are characterised by accumulated nutrient stores relative to native soils. In the years immediately following mallee establishment, it is unlikely that fertiliser additions will improve mallee growth on farmland sites.

Mallee biomass harvesting will result in the export of nutrients off-site. The leaf and bark fractions in particular contain significant concentrations of nutrients and trace elements. After multiple harvesting events, some soils may become depleted to the point where growth becomes limited by nutrient deficiencies. This will need to be corrected by the application of fertilisers.

Impacts of Oil Mallee plantings on the nutritional requirements of adjacent crops and pastures should also be considered.

Where used fertilisers should not adversely impact on environmental values. Application rates should be matched to mallee crop requirements. Methods to prevent nutrient transport into water bodies should be applied.

The use of fertilisers in Public Drinking Water Source Areas must be in accordance with the Health Department, Department of Environment and Conservation, Department of Water, and Environmental Protection Authority policies and guidelines.

#### **6.1 Minimum Standard – Fertilising**

Monitor the nutritional status of Oil Mallee plantings that are repeatedly harvested, and apply fertilisers where necessary to maintain productivity.

### 6.2 Weed Control

Competing vegetation in Oil Mallee plantings must be controlled during the establishment phase to promote seedling survival and early growth, and at later stages to improve yields and enable unimpeded access for management and monitoring activities.

Due consideration should be given to the protection of environmental values when undertaking weed control activities. Integrated weed management strategies should be employed, with judicious herbicide use complemented with other methods such as scalping, slashing, and strategic grazing with stock.

Where herbicides are used, low environmental impact product options should be selected. Herbicide application methods should be selected and implemented to prevent off-target movement.

Competing vegetation in Oil Mallee plantings must be controlled during the establishment phase to promote seedling survival and early growth, and at later stages to improve yields and enable unimpeded access for management and monitoring activities.

Due consideration should be given to the protection of environmental values when undertaking weed control activities. Integrated weed management strategies should be employed, with judicious herbicide use complemented with other methods such as scalping, slashing, and strategic grazing with stock.

Where herbicides are used, low environmental impact product options should be selected. Herbicide application methods should be selected and implemented to prevent off-target movement.

#### **6.2 Minimum Standard – Weed control**

Control weeds to enable effective Oil Mallee establishment and management, taking into account the Site Assessment.

Herbicide application methods must be selected and implemented to prevent off-target movement. Herbicide use must be minimised and complemented with other strategies.

**See Guidance Note 6.2 for further information on weed control practices.**

### **6.3 Insect Control**

Minimise the impact of insect damage to Oil Mallee plantings where appropriate by the use of insecticide sprays and biological or physical control techniques.

Due consideration should be given to the protection of environmental values when undertaking insect control activities, and neighbouring activities that may be sensitive to insecticides.

Where insecticides are used, low environmental impact product options are preferable. Insecticide application methods should be selected and implemented to prevent off-target movement.

#### **6.3 Minimum Standard – Insect control**

Insect control methods must be selected and implemented to prevent off-target movement and impacts to neighbouring activities.

**See Guidance Note 6.3 for further information on insect control practices.**

### **6.4 Disease Control and General Health of Oil Mallee Plantings**

The health and vigour of Oil Mallee plantings should be monitored and promoted through appropriate management practices to reduce disease impacts.

Health surveillance of Oil Mallee crops should be undertaken on a regular basis. Where weeds, pests or disease cause significant damage, decline or death of trees, prompt specialist advice should be sought to address the problem.

Special measures may need to be implemented at a regional scale to manage future threats to the health of Oil Mallee crops. Where practicable, this should be achieved through cooperation and collaboration within the industry.

Hygiene techniques should be implemented where the need is identified to stop the spread of any pest, disease or weed. If the introduction of an exotic pest disease or weed is suspected, notify relevant government authorities and the OMA.

If the introduction of an exotic pest, disease or weed is suspected and triggers an 'incursion' response, notify the relevant authorities.

Growers should familiarise themselves in advance with actions that can be taken in response to disease outbreak.

#### **6.4 Minimum Standard – Disease control**

Oil Mallees must be monitored periodically for outbreaks of pathogens and remedial action taken where feasible. Notify relevant government authorities and the OMA when a disease outbreak takes place.

### **6.5 Tending**

Oil Mallee crops are robust and require relatively little maintenance. However, appropriate planning and management is necessary to minimise the risks of fire damage (e.g. from stubble burning), herbicide drift, grazing, and root and canopy competition.

Young seedlings and mallee coppice are more susceptible to browsing damage. As a general rule, stock should be excluded from Oil Mallee plantings for a minimum of 12 to 24 months during initial seedling establishment and following mallee harvesting events.

#### **6.5 Minimum Standard – Tending**

Exclude stock from Oil Mallee plantings for a minimum of 12 months during initial seedling establishment and following mallee harvesting. Records of tending operations must be maintained.

## 7. Carbon Abatement

Oil Mallee plantings remove carbon dioxide from the atmosphere and store the carbon in the mallee biomass. This process is referred to as carbon sequestration, and is a form of greenhouse gas (GHG) abatement. The stored carbon can be used to create carbon credits, which are eligible for offsetting GHG emissions produced by industrial or commercial activities. Hence carbon credits represent the abatement of greenhouse gases achieved as a result of an eligible offset project.

Carbon credits are purchased by companies or utilities required to account for, or reduce, their emissions; or who choose to do so on a voluntary basis. The Department of Climate Change and Energy Efficiency website provides an example:

“... an electricity company can compensate for its emissions by buying offsets from a farmer who has planted a native vegetation windbreak on his/her property. The farmer receives credits for the carbon stored in the trees and the electricity company can buy them to offset the emissions from its electricity plant.”<sup>1</sup>

The Carbon Farming Initiative (CFI) provides the mechanism for enabling the creation of carbon credits in Australia using mallee plantings. The CFI covers land based activities that reduce or avoid GHG emissions and/or increase carbon sequestration. This includes “increased carbon sequestration through reforestation, revegetation and improved soil management”.

Note that eligible CFI plantings must be on agricultural land which was cleared prior to 1990. Clearing forests or native vegetation for future reforestation projects is restricted. However, it may be possible to obtain credits for avoided deforestation under the CFI.

The process for creating carbon credits under the CFI is set out in the CFI legislation referred to as the Carbon Credits (Carbon Farming Initiative) Act 2011 (‘the CFI legislation’), and associated Carbon Credits (Carbon Farming Initiative) Regulations 2011.

The steps involved in establishing and operating a CFI offsets project include:

- the project manager needs to become a recognised offsets entity;
- there needs to be an approved methodology for the type of project;
- the project must be undertaken in accordance with the methodology and comply with other scheme eligibility requirements;
- the project proponent reports on their project and the Carbon Credits Administrator issues Australian Carbon Credit Units (ACCUs) into their Australian National Registry of Emissions Units account; and
- projects can be transferred or terminated. The scheme includes enforcement provisions.

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<sup>1</sup> (note that the eligibility of “windbreaks” is subject to approval)

## 7.1 Oil Mallee Carbon Abatement Projects

Farmers can use oil mallee plantings to create carbon credits through:

- permanent block plantings;
- permanent belt plantings; and
- a “for harvest” model whereby carbon sequestration is achieved in the below ground portion of the mallees, whilst retaining the opportunity to harvest the trees for biomass (subject to obtaining an approved CFI methodology, see Section 7.2).

The fit and proper person test in the CFI legislation enables farmers and land owners to become a recognised entity for trading carbon.

### 7.1 Minimum Standard – Oil Mallee Carbon Abatement Projects

An Oil Mallee carbon abatement project must meet the eligibility requirements of the Carbon Credits (Carbon Farming Initiative) Act 2011 (‘the CFI legislation’).

**See Guidance Note 7.1 on Oil Mallee Carbon Abatement Projects.**

## 7.2 CFI Methodologies

Offsets project methodologies establish procedures for estimating carbon sequestration (or emissions reductions) and project specific rules for monitoring, record keeping and reporting on carbon sequestration/abatement. Under the CFI, offsets methodologies are legislative instruments issued as determinations by the Minister for Climate Change and Energy Efficiency.

Landowners or other project proponents participating in the CFI must utilise an existing approved methodology, or submit a proposed methodology for endorsement by the Domestic Offsets Integrity Committee (DOIC). The assessment of the DOIC involves a public review phase. Once endorsed by the DOIC, the CFI methodology can be approved for use by Ministerial determination. Approved methodologies will be published on the Department of Climate Change and Energy Efficiency (DCCEE) website and can be used by any CFI project proponent.

CFI methodologies must contain:

- a description of the abatement activities, GHGs, and sources and sinks affected by a project;
- procedures for determining the baseline GHG emissions and storage for the project against which project abatement will be estimate;
- procedures for identifying any GHG effects of the project outside of its boundary; and
- procedures for measuring and monitoring project emissions.

At the time of publication of this Code, a methodology covering both blocks and belts, and harvested and non-harvested trees is being submitted to DOIC.

### 7.2 Minimum Standard – CFI Methodologies

An Oil Mallee carbon abatement project must use an approved methodology issued by Ministerial determination under the CFI legislation.

**See Guidance Note 7.2 for further information on CFI methodologies.**

### 7.3 CFI Integrity standards

A key element of the CFI is the incorporation of internationally consistent “integrity standards”, which are the criteria a carbon offset must satisfy to ensure real reductions in GHG emissions are achieved. The integrity standards include:

- **Additionality** – to ensure that credits are only issued for abatement that would not normally have occurred under common practice;
- **Measurable and verifiable** – sequestration/abatement estimates must be measurable and capable of being verified;
- **Leakage** – the sequestration/abatement must not be offset by increases in emissions elsewhere as a result of the project;
- **Internationally consistent** – the sequestration/abatement estimates must meet internationally recognised accounting standards;
- **Supported by peer-reviewed science** – the sequestration/abatement estimates must have scientific credibility; and
- **Accounting for cyclical variability** – the estimation methods must account for significant variations in carbon stocks that are likely to occur as a result of climatic cycles.

Carbon offsets created under the CFI must also constitute permanent reductions in GHG emissions. Sequestration is generally regarded as permanent if it is maintained on a net basis for 100 years.

### 7.3 Minimum Standard – CFI Integrity standards

Oil Mallee carbon abatement projects must comply with the Carbon Farming Initiative integrity standards of the CFI legislation.

### 7.4 CFI Reporting

The CFI includes a robust reporting framework, designed to ensure that ACCUs represent genuine abatement. This includes the requirement for independent audits prepared by registered greenhouse and energy auditors. The reporting framework provides the basis for the CFI Administrator to issue credits and for compliance purposes.

### 7.4 Minimum Standard – CFI Reporting

Reporting for Oil Mallee carbon abatement projects must be done in accordance with the CFI legislation reporting requirements for eligible projects.

## 8. Harvesting

Harvesting should be planned and carried out to minimise environmental impact.

Harvesting should be carried out by suitably qualified persons, and harvesting equipment maintained in good working order.

### 8.1 Harvest Plan

Prior to harvesting, all options need to be considered to ensure maximum utilisation of biomass and sustainable development of the project and the industry as a whole.

Managers must prepare a Harvest Plan, with the aim of maximising biomass recovery without detrimental impacts on the environment and public safety. The Harvest Plan must identify Oil Mallee plantings that will be subject to harvesting operations, and include a resource inventory of these plantings.

The Harvest Plan shall include information, where necessary, relating to the location of the area(s) to be harvested:

- the type of harvesting system to be used;
- the period (dates) during which harvesting is to occur;
- haulage route to be used on public roads;
- fire protection preparedness and response;
- seasonal and wet weather restrictions;
- restrictions and methods to prevent the spread of pests diseases and weeds;
- consideration of biosecurity issues; and
- post-harvest operations:
  - equipment repairs
  - site clean up
  - coppice management
  - consideration of post-harvest nutritional requirements (likely to be a function of the frequency and timing of harvest)
  - post-harvest sign-off.

Where a number of Oil Mallee plantings are proposed to be harvested over a one year period, the Manager may develop a single Harvest Plan designed to cover all the areas instead of developing plans for individual planting sites.

In circumstances where harvesting is necessary following a natural disaster, the Manager may need to make special representation to the relevant Local Government Authority to facilitate harvesting and transport procedures.

Contracts for harvesting should contain details on specific requirements of the Manager, including whether a harvesting code of practice is available.

It is preferable, where possible, to provide Local Government Authorities with information relating to the use and management of local roads for harvest. Where practicable, notify Local Governments of the schedule of harvesting and the intention to use public roads at least 3 months prior to harvesting operations.

### 8.1 Minimum Standard – Harvesting Plans

Develop a Harvest Plan prior to implementing harvesting operations.

**See Guidance Note 8.1 further guidance on Harvest Plans.**

## 8.2 Harvesting Operations

Harvesting should be carried out in accordance with the Harvest Plan.

Conservation values should be protected during harvesting operations.

Measures should be taken to minimise grit and earth contamination in the harvested product.

All persons employed in harvesting operations must be suitably instructed and use appropriate equipment with due care for safety and the environment.

Due consideration should be given to the retention of adequate nutrients on site for future crop growth.

Harvested sites should be left in a good state amenable to ongoing management.

### 8.2 Minimum Standard – Harvesting operations

Harvesting must be done in accordance with the Harvest Plan.

## 8.3 Extraction and Haulage

Safety of operations is a high priority for mallee harvesting and biomass extraction activities. Special attention should be given to the location of entry points from the farm onto public roads, taking into account traffic safety and maintaining road serviceability. Signage indicating truck movements needs to be erected, and measures taken to avoid school bus routes.

All persons employed in extraction and haulage operations should be suitably instructed, using vehicles and equipment appropriate for the task.

Where appropriate, extraction should be along tracks and roads designated by the Manager in the Harvest Plan.

Soil erosion associated with tracks and roads used for extraction and haulage should be minimised by the use of appropriate construction, maintenance and drainage techniques.

Hygiene measures should be employed, where appropriate, to prevent the spread of pests, diseases and weeds to the standards consistent with best practice.

### 8.3 Minimum Standard – Extraction and haulage

Extraction and haulage must be done by suitably trained operators using vehicles and equipment appropriate for the task.

Entry points onto public roads must be managed in order to ensure traffic safety and maintain road serviceability.

## 9. Supply of Biomass

### 9.1 Contracting for Biomass Delivery

A formal contract for supply should specify the form, mix and estimated quantity (volume/tonnage) and price of the biomass.

Requirements in relation to biomass collection and delivery, including moisture content, should be clearly specified. The contract should describe the pick-up location and access arrangements, and contain provision for weighing of the biomass, for example with a weighbridge ticket.

Any biomass stockpiling arrangements should be specified in the contract.

The Manager should have the right to postpone harvesting under certain circumstances: for example when the paddocks are wet; when there is a fire ban; or when an extreme drought threatens the viability of the remaining coppice.

#### 9.1 Minimum Standard – Contracting for biomass delivery

When selling biomass a formal supply contract must be established, describing requirements associated with the transfer of mallee biomass from the producer to the customer.

### 9.2 Withholding Periods

Where the biomass is intended for eucalyptus oil production, Withholding Periods for pesticides must be observed prior to harvesting where they apply. The Withholding Period refers to the time that must be allowed from the last application of a specific pesticide prior to harvesting that particular production unit. Withholding periods are based on customer needs and end use.

Failure to observe Withholding Periods exposes growers to the risk of pesticide contamination of the oil they produce.

Records of pesticide application and harvesting must be retained to provide evidence of compliance with Withholding Periods.

#### 9.2 Minimum Standard – Withholding periods

Harvesting biomass for eucalyptus oil production must comply with relevant Withholding Periods, and records must be kept to demonstrate this.

### 9.3 Delivered biomass

Delivered biomass must be clearly labelled: including details of the Oil Mallee species, source location and biomass mix. The chain of custody needs to be reflected in the description, using a suitable delivery note system which reflects all stages of biomass handling.

Records should be kept with details of the biomass delivered.

The key principle is to ensure the customer receives quality product as expected.

### **9.3 Minimum Standard – Delivered biomass**

Delivered biomass must be clearly labelled, indicating the chain of custody.  
Records of delivered biomass must be maintained.

## 10. Biomass Processing

The processing of biomass may not be under the direct control of growers. However it is sometimes necessary to consider post-harvest processing which requires basic standards of growers to ensure the Oil Mallee product is not unduly compromised.

Various aspects of Oil Mallee processing are outlined below.

There are several processes that have been in use for some time, and more in development. Some examples are:

- Distillation – where steam is generally used to extract oils from the leaves.
- Pyrolysis – Pyrolysis involves heating woody biomass under controlled oxygen and temperature conditions. Volatiles are extracted to leave a char (charcoal/biochar) and/or tar. The volatiles can be captured for refining as gas and further treated and stored or utilised on site.
- Combustion – for use in such applications as co-firing and steam generation.

### 10.0 Minimum Standard – biomass processing

Biomass for processing must be handled and delivered in the condition specified in the supply contract, according to industry standards, and in a timely fashion.

**See Guidance Note 10.0 for a diagram of biomass processing pathways.**

### 10.1 Records

Specific and detailed records need to be kept to demonstrate quality and consistency of output, enabling pricing for repeat orders and associated outputs such as Renewable Energy Credits.

#### 10.1 Minimum Standard – Processing records

A record log must be retained to ensure traceability of biomass from the paddock to the product, covering the steps involved in creating the product.

## 11. Storage and Handling of Chemicals, Fuels & Oils

Transport, storage and handling of chemicals, fuels and oils should be in accordance with relevant State statutory requirements.

Transport, storage and handling of pesticides, fuels and fertilisers in PDWSAs must be in accord with relevant regulations.

Disposal of pesticide containers must be in accordance with the instructions on the label and in accordance with Health (Pesticides) Regulations 2011.

The discharge of engine oil or fuel onto the ground should be avoided. If an accident occurs, clean-up systems should be applied immediately. Fuel drums should be located so that there is no possibility of contamination of waterways. Waste oil, empty drums and discarded machinery parts and other waste should be removed from the planted area at the completion of the operation.

To avoid spills of fuel and oil reaching dams, watercourses, wetlands and reservoirs, re-fuelling, lubrication and degreasing of machinery should be undertaken well away from these areas.

### **11.0 Minimum Standard – Storage and handling of chemicals, fuels & oils**

Transport, storage and handling of fuels and oils must be done in accordance with relevant State statutory requirements.

## 12. Integrity in Forecasting

Estimation of future yields of products from Oil Mallee plantings should be made using recognised methodologies, such as AS 4978.1-2006 or IPCC Good Practice Guidance. Carbon projects methodologies used in the Carbon Farming Initiative require detailed explanation of the procedures used in estimating future growth, which must be based on peer reviewed science.

For large-scale plantings this information should be validated independently by professionally qualified people with suitable knowledge of localised growing conditions and factors affecting productivity.

Estimation of future prices and availability of markets should be made from the best information available. For large scale plantings this information should be validated independently by professionally qualified people with suitable knowledge and understanding of market and economic trends.

Wherever possible, forecasts related to large-scale plantings should include an analysis of the integrity of predictive models, identify risks that affect the outcome, and include a statement of the likelihood of the forecasted outcome being achieved.

### **12.0 Minimum Standard – Integrity in forecasting**

Estimation of future yields of products from Oil Mallee plantings must use recognised methodologies, and must be undertaken by professionally qualified people with suitable knowledge.

## 13. Incident Management

Oil Mallee growers should have in place response procedures that address the environmental, economic and human health effects of incidents related to Oil Mallee activities.

Prepare and maintain procedures to effectively minimise the detrimental impacts of incidents that may have a localised effect on the environment, human health or the economy.

Designated staff should be trained and equipped to effectively deal with foreseeable incidents.

Any spill of pesticide, fuel or oil to the environment in a Public Drinking Water Source Area should be reported on discovery to the Water Corporation.

Procedures that specify the action to be taken in the event of an incident should also specify remedial action and rehabilitation procedures after the event.

### 13.0 Minimum Standard – Incident management

Oil Mallee growers must prepare and maintain an effective Incident Management Plan to respond to incidents that are likely to have national, State or regional significance. This may be in the form of a generic plan that can be activated in the event of any type of incident.

**See Guidance Note 13.0 for further information on incident management systems.**

## 14. Neighbour Relations

Oil Mallee growers should respect neighbouring properties and relations.

Where boundary fences are constructed, managers of Oil Mallee plantings should maintain them in a stock-proof condition in accordance with the provisions of the Dividing Fences Act 1961.

Any unauthorised stock in Oil Mallee plantings may be removed in accordance with the provisions of the Local Government (Miscellaneous Provisions) Act 1960. In instances where the owner of the stock is known, the Manager should notify the owner and arrange for the stock to be removed. Where ownership of the stock is not known, efforts should be made to identify the owner before the stock is removed.

Managers or owners should cooperate with State agencies and Local Government to control pests, diseases and weeds.

### 14.0 Minimum Standard – Neighbour relations

Contact must be made with neighbours, and contact details must be provided on the planting site.

**See Guidance Note 14.0 online for further information on maintaining good neighbour relations.**

## 15. Knowledge Management

It is a constant endeavour to gain knowledge and demonstrate the commercial, environmental and social benefits that Oil Mallee crops may provide.

Managers and owners are encouraged to maintain a research capacity or support external research agencies such as CSIRO, Cooperative Research Centres and local research groups as appropriate.

Research capacity improves the economic efficiency of Oil Mallees, develops new technologies and ensures that individual and industry objectives are met.

The owner or the manager of any Oil Mallee planting is encouraged to join the Oil Mallee Association of Australia.

## 16. Definitions

<b>Belt</b>	A narrow, linear planting within a broader land use system (2 to 8 rows of trees). Individual belts are separated by alleys.
<b>Block</b>	A planting of more than 8 rows of trees, or where there is less than 60 m between belt units. Blocks are considered to be discrete land management units.
<b>Buffer Zone</b>	The cleared area around a belt or block, usually 2 m, between the stem boundary and the project boundary.
<b>Catchment</b>	A discrete area of land that drains water into a watercourse or water body. A water catchment may be a series of sub-catchments feeding a major river or a single sub-catchment feeding a watercourse.
<b>Catchment plan</b>	A plan that details the strategy to protect and improve a catchment.
<b>Disease</b>	Any disease that attacks a plant and includes any plant, fungus, bacteria, virus, nematode or other biological entity that may be found in or on a plant and genetic diseases and defects.
<b>Environmental Value</b>	Human and environmental uses of water and land resources. Also includes aesthetic and cultural values as defined in the Environmental Protection (EP) Act.
<b>Establishment</b>	A period of development of an oil mallee crop including site preparation, weed control, planting, fertilising, infill planting and seedling protection takes place - nominally a period up to two years.
<b>Exotic</b>	Introduced, not native to the area.
<b>Filter Strip</b>	A piece of vegetated land used specifically to filter out sediments and chemicals from water before entering a water body.
<b>Farm Plan</b>	A plan developed by the property owner that details management strategies. Such a plan might include proposals for infrastructure, commercial opportunities and environmental enhancement.
<b>Harvest Plan</b>	A plan developed prior to harvesting a crop detailing the time of harvest, procedure for harvesting and the route by which the products will be transported to a processor.
<b>Hygiene</b>	Biosecurity actions that decrease the risk of undesirable pests, diseases and weeds from being introduced, enabled to survive, spread or intensified.
<b>Incident</b>	A significant chemical, oil or fuel spill in a place of environmental sensitivity or where there are implications on human health. An incident may also be a serious accident, an exotic pest, disease or weed incursion or natural disaster.

<b>Incident Management Plan</b>	A plan that details the procedure to minimise any detrimental impact of an unwanted incident.
<b>Integrated Tree Cropping</b>	A system where tree crops (Oil Mallees) are incorporated into farm operations to complement normal agricultural activities and to improve environmental values.
<b>Integrated Pest Management</b>	A system or systems that utilise two or more methods to control pests in a synergistic way to achieve the objective.
<b>Integrated Weed Management</b>	A system that utilises two or more methods of weed control in a synergistic way to achieve the objective.
<b>Location Map</b>	A map that details location of a planting on a property, with MGA co-ordinates, a scale bar, cadastral boundaries, significant topographical features, access roads and surrounding landholders where appropriate.
<b>Oil Mallee Harvesting</b>	Operations involving the removal of Oil Mallee biomass from a planting site for a productive purpose.
<b>Management Plan</b>	Specified details of the management of an Oil Mallee planting, identifying the objectives of the planting, and including details of the establishment and maintenance of the planting.
<b>Manager</b>	The person or organisation that has responsibility for the implementation and control of all aspects of the management of an Oil Mallee planting.
<b>Native Vegetation</b>	Native vegetation with an indigenous understory.
<b>Native Vegetation, clearing of.</b>	To cause or permit the indigenous undergrowth, bush, or trees on the land to be removed or destroyed, or so damaged as to eventually be destroyed, or to cause the removal from the land of vegetation not under cultivation.
<b>Oil Mallee</b>	A 'selected for purpose' mallee Eucalyptus species of known and recorded genetic origin.
<b>Oil Mallee Planting</b>	Any organised, contiguous planting of Oil Mallees greater than 0.2 hectares in size.
<b>Oil Mallee Planting Project</b>	A project involving the establishment and management of one or more Oil Mallee plantings to meet specified objectives.
<b>Pathogen</b>	An agent of disease; an infectious organism.
<b>Pests</b>	Include insects, fungi and animals that cause injury to Oil Mallee plantings.
<b>Planted Area</b>	That part of a land area that is established to Oil Mallees.
<b>Public Drinking</b>	Existing and future drinking water sources, proclaimed as Underground Water

<b>Water Source Area (PDWSA)</b>	Pollution Control Areas, Water Reserves or Catchment Areas under the Country Areas Water Supply Act 1947.
<b>Public Road</b>	A sealed or unsealed road that is the responsibility of a Local Government.
<b>Riparian Zone</b>	The zone adjacent to or surrounding a water body where the vegetation and natural ecosystems benefit from and are influenced by the passage and storage of water. For information on how to define the riparian zone, see the Water and Rivers Commission Water Note: Identifying the Riparian Zone.
<b>Site Preparation</b>	The preparation of a site in order to establish an Oil Mallees planting.
<b>Tending</b>	Treatment of an Oil Mallee planting to maintain, improve and protect the planting.
<b>Thinning</b>	Removal of a portion of the trees in a crop to increase the growth rate on selected retained trees.
<b>Track</b>	A permanent road that is not surfaced that provides access to a crop for tending and fire related activities, and extraction of products.
<b>Watercourse</b>	A linear landform feature ranging from a well-defined channel to an ill-defined depression which conveys the flow of water, at least intermittently.
<b>Wetlands</b>	Area of seasonal, intermittent or permanent waterlogged soils or inundated land, whether natural or otherwise, fresh or saline, e.g. lake, swamp, dampland. Typically, in the context of the Code, the types of wetlands that require consideration are Ramsar Convention, Australian Nature Conservation Agency's Directory of Important Wetlands in Australia, National Estate listings Conservation Category and Resource Enhancement wetlands. The recommended management measures in this Code do not apply to multiple use wetlands. Contact the Water and Rivers Commission regional office for management categories, boundaries and locations of wetlands.

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CARING  
FOR  
OUR  
COUNTRY

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### Sponsors

The logo for Clayton Utz, consisting of the text "CLAYTON UTZ" in white, uppercase, sans-serif font on a black rectangular background.

Clayton Utz provided pro bono advice on the documentation.

### Working Group Responsible

This Code was first developed in 2003 by a committee representing the Oil Mallee Association, relevant government agencies and other stakeholders.

It was reviewed in 2010 – 2011 by the Oil Mallee Association with the help of a Reference Committee and relevant stakeholders.

### Individuals and Organisations who provided critical commentary

Phil Andrew, Oil Mallee Association Committee

John Bartle, Department of Environment and Conservation

Simon Dawkins, Oil Mallee Association

Tym Duncanson, Elementree

Rick Giles, Department of Conservation, WA.

Scott Girdler, Clayton Utz

Lex Hardie, Oil Mallee Association Committee

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## Review and Revision Table

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## Appendix : Management Plan Template

(Provided by Dan Wildy, Elementree Group Limited, Jan 2012)

A Management Plan is prepared to provide the relevant information in respect of the way in which an Oil Mallee planting will be developed and managed, and to demonstrate the means by which the principles of environmental care and objectives of silviculture and fire protection are achieved.

Preparation of a Management Plan ensures that all aspects of the project have been considered during the planning phase, and reduces the likelihood of costly mistakes.

Plantation Management Plans are 'live' documents and evolve over time.

The following Management Plan guide is consistent with the recommendations of the *Code of Practice for Timber Plantations in Western Australia*.

A Management Plan may include some or all of the following:

- site-specific information
- statement of objectives
- a location map (map of plantation and associated area)
- an establishment plan
- a maintenance plan
- a harvest plan
- a fire management plan
- an animal management plan
- work standards and compliance with codes

### 1. Site-specific information

The management plan requires some or all of the following information:

- Local Government Authority
- land owner
- Oil Mallee planting project manager
- broad planting ownership details
- subject of management plan (Oil Mallee planting areas only, whole farm etc)
- date
- land title details
- nearest road, locality
- rainfall and soil information
- general description of site prior to establishment
- proposed establishment year

### 2. Statement of objectives

The objectives of the Oil Mallee planting should be stated. This should cover products to be produced, and silvicultural, economic, environmental and social aspects.

### 3. Location Map

A map of the plantation should include the following information

- landowner and Oil Mallee planting project manager details
- an area statement showing Oil Mallee planting categories and areas
- buffer zones
- a locality plan and access roads
- cadastral boundaries and lot numbers
- improvements such as buildings, roads, tracks, firebreaks, bridges, creek crossings, fences, gates, utilities and water points
- natural features such as remnant vegetation, watercourses and wetlands, and significant features
- name of relevant local government
- access points
- hazards
- MGA or Lat/Long coordinates
- scale and north arrow
- details of map creator and date of map production

### 4. Establishment

An establishment plan should cover the following topics over the first 12-24 months of the planting and how they will be addressed:

- areas of native vegetation
- buffer zones, between the stem boundary and the project boundary
- setback distances to watercourses, wetlands and significant features
- statutory setback distances to dwellings and gazetted infrastructure
- control of declared animals, declared plants and pest plants
- areas to be planted
  - associated compartment sizes
  - generalised belt configuration and dimensions
  - spacing of access breaks through long belts
- species to be planted
- direction of planting lines in relation to contours or natural drainage
- description of soil preparation methods
- pest and weed control prescriptions and monitoring post planting
- principal soil types and planting prescription
- integration issues between agriculture and Oil Mallee plantings, such as potential spray drift from agricultural activities
- cultural heritage sites
- access and firebreaks
- fertilising prescription
- grazing strategy (if not covered elsewhere)

## 5. Maintenance

A maintenance plan should cover the following topics, where relevant, and how they will be addressed during the life of the Oil Mallee planting:

- native vegetation management
- pruning, thinning or harvest regimes
  - Note that a separate harvest management plan would be prepared prior to harvest
- control of declared animals, declared plants and pest plants
- weed and pest control monitoring and prescriptions
- forest health surveillance
- fertilising prescriptions
- grazing strategy (if not covered elsewhere)
- inventory
- bio-security issues
- integration issues between agriculture and Oil Mallee plantings, such as competition or chemical drift; managing the buffer zone
- infrastructure and significant feature management
- impact on non-plantation assets (water, biodiversity, landscape)

## 6. Fire management

Fire management details to be included are:

- contact names, telephone numbers, and radio channels of
  - land owners
  - Oil Mallee planting project managers
  - neighbours
  - local fire control agencies and personnel
  - regional fire agencies
- methods of access and firebreak maintenance
- specific measures to protect services eg. power lines
- a register of fire fighting equipment available
- water points, and direction indicators to water points
- fuel reduction measures, if applicable

A separate fire map can also be produced, or the required information can be included on the location map.

## 7. Animal management

It may be necessary to include a separate section on animal management to cover the following issues:

- livestock grazing at planting and after harvest
- harbouring of pest animals in larger plantings