

MALLEE CROPPING

Code of Practice

October 2003



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For a complete list of individuals and organisations that were invited to contribute to the preparation of this Code refer to Attachment 3

MALLEE CROPPING CODE OF PRACTICE

SECTION 1 SCOPE

1.1 Introduction

Mallee **crops** provide an opportunity for farmers to diversify their activities while contributing significantly to the prevention of salinity, to the amelioration of degraded land, and to the development of a sustainable land-use system. The development and sustainability of the mallee industry is therefore contingent on the inherent economics of the industry, influenced by costs of production as well as productivity.

It is therefore important to ensure that this Code maintains a careful balance between economic, environmental and social factors in considering issues relevant to the mallee industry.

The mallee industry aims to develop a multi-product crop from selected eucalypt species across a range of wheatbelt conditions. These products may include activated carbon, bio-fuel, sequestered carbon, oils and environmental benefits.

The contribution to employment and the social fabric of local communities is likely to increase as the mallee industry matures and generates further harvesting, processing and value adding opportunities.

This Code recognises the benefits that mallees provide as a means of reversing land degradation such as salinisation and waterlogging caused by rising water tables. Mallee **crops** can add significantly to the biodiversity of privately owned land.

In particular, it is important to recognise the multiple benefits that mallee **crops** can provide in relation to environmental and commercial objectives, through the integration of products with other commercial systems such as cropping and grazing.

The **establishment** of mallees on cleared farmland complements the objectives of the State Government's salinity strategy, in particular the promotion of tree planting for the control of ground water levels.

If located and managed appropriately, mallees can benefit water resources by:

- reversing salinity and waterlogging by controlling ground water levels;
- assisting in the control of soil erosion;
- reducing nutrient inputs compared to other **crops**;
- reducing applications of pesticides in comparison to general agriculture.

The purpose of this Code is to provide goals and guidelines to **Managers** so that operations in mallee plantings in Western Australia are conducted in a manner that is in accordance with accepted principles for good management.

Achieving the goals and observing the guidelines defined in this Code is a task for all parties associated with a particular mallee crop. These parties may include the owner of the land on which the mallees are growing, the owner of the mallees, the **Manager** of the **crop** and the employees and contractors employed to work in the **planted area**. Key responsibilities will generally rest with the **Manager**.

The function of the Code may be summarised as follows:

- the Code is a guide for the development of **Management Plans** that form the basis of mallee **establishment** and include, **tending**, fire management and harvesting operations;
- the Code does not include detailed prescriptions for works, which it is acknowledged should generally reflect individual objectives and circumstances. Prescriptions also vary between growers and are the responsibility of individual **Managers**;
- the Code complements related Acts, Regulations, **Management Plans**, other relevant Codes of Practice, State policies, Local Government Planning Schemes and State and national statements that relate directly or indirectly to mallee **crops** (a list of relevant Acts, Regulations and other relevant reference documents is provided in Appendix 1);
- the Code applies to both public and private mallee growers on all land tenures;
- A committee representing the Oil Mallee Association, relevant government agencies and other stakeholders has developed the Code.

The Code of Practice also facilitates assessment of mallee management practices by the Commonwealth Government, particularly the provisions for ecological sustainability outlined in the *Renewable Energy (Electricity) Act 2000*.

The Western Australian Planning Commission Town Planning Schemes rely upon the adoption of and adherence to this Code of Practice by **Managers** as an integral part of the planning and land use process.

Compliance with this Code of Practice will provide the mallee industry with tangible benefits. These could include:

- adoption of this Code supports the sustainable management processes applied in the mallee industry by ensuring that growers apply best practice;
- adoption of this Code and adherence to this Code will ensure the industry is professional, accountable and credible;
- this Code provides increased confidence for investors dealing with **Managers** of mallee crops;
- confidence in securing opportunities for the export of mallee products without additional licenses or approvals;

- products produced from mallees managed in accordance with the Code will meet with the approval of an increasingly environmentally conscious market.
- Local Governments can rely on adherence to this Code where planning approval for the **establishment** of mallees is not required under a Town Planning Scheme (i.e. it is a permitted land use);
- this Code provides **Managers** of mallees with a single reference document encompassing all relevant rules and regulations relating to growing of mallees in Western Australia. However, **Managers** should be aware that this Code might not reflect the current status of regulations as they may change over time;

SECTION 2 PRINCIPLES OF MANAGEMENT

2.1 Principles of Environmental Management

Native vegetation should not be cleared for the **establishment** of 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 so as to enable land rehabilitation through replanting with mallees.

Values such as significant geomorphic, biological, or cultural heritage sites should be recognised in the planning of mallee operations.

Management of mallee **crops** should comply with state and regional conservation and catchment management objectives, relevant planning schemes and legislation.

Water quality (physical, chemical or biological) should be protected by measures controlling change resulting from activities in mallee **crops**.

Soil stability should be protected by measures that regulate site disturbance.

Fauna, floristic and landscape values should be protected by the careful planning of planting layout, **establishment** operations and the reservation and protection of appropriate areas of **native vegetation** - such values should be recognised in subsequent management of mallees.

Mallee **crops** and adjacent **native vegetation** should be protected from the adverse effects of fire and from the introduction and spread of plant, insect and animal **pests** and plant **diseases**.

Operators will be trained in the principles of environmental care.

2.2 Occupational Health and Safety

All mallee **establishment**, management, harvesting and transport will be conducted to comply with the relevant occupational health, safety and welfare legislation and policy. The mallee industry should aim to improve standards for occupational health, safety and welfare within the industry. These include;

- promoting and securing the health, safety and welfare of persons at work;
- assisting to secure safe and hygienic work environments;
- protecting persons at work against hazards;
- reducing, eliminating and controlling the hazards to which persons at work are exposed;
- fostering co-operation and consultation between and providing for the participation of employers and employees and the associations representing employers and employees in the formulation and implementation of health and safety standards to current levels of technical knowledge and development;
- providing the formulation of policies for the co-ordination of the administration of laws relating to occupational health safety and welfare;
- promoting education and community awareness on matters relating to occupational health, safety and welfare.

All people involved in the industry should be trained to designated standards in the safe and efficient use of equipment and machinery, and be responsible for safe working practices.

2.3 Planning

State and local governments should, with appropriate public involvement, pursue planning policies that provide zoning for commercial planting with the objective that mallee planting and subsequent harvesting for commercial products should be an 'as of right' use of land.

Strategic planning for the location of mallee **crops** should be developed in conjunction with regional Natural Resource Management Groups and key industry stakeholders, and should be consistent with regional development plans.

The environmental, social and economic effects of all mallee operations envisaged for an area will be considered during the planning process.

Individual operations will be conducted in accordance with relevant Codes of Practice.

2.4 Access

2.4.1 Private roads and tracks

Planning for the construction and maintenance of road and **track** systems on private property will be based on both the economic principle of minimising the combined cost of roading and extraction, and on the Principles of Environmental Management.

Road and **track** design will be to a standard consistent with the purpose for which the road is to be used, and capable of carrying the anticipated traffic with reasonable safety.

2.4.2 Public roads

Only vehicles that conform to the **specifications** for particular road usage will be used in mallee operations.

The grower or the grower's agent and a representative of Local Government should inspect roads prior to harvest operations to assess the condition of the road and to plan for notification of other road users of impending traffic.

2.5 Establishment and maintenance

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

Establishment of mallees may involve the introduction of selected species, provenances or populations to increase productivity or value. Management of these populations should aim to prevent the introduction of these cultivars into surrounding native vegetation.

2.6 Harvesting

Harvesting will be planned and carried out under conditions that meet the Principles of Environmental Management and occupational health and safety requirements.

Soil and water values should be protected by progressive rehabilitation and drainage of tracks, temporary roads and any other earthworks associated with harvesting operations

2.7 Protection

Fire protection planning should be undertaken on a regional basis in co-ordination with relevant land management agencies and with local bushfire control organisations.

Health surveillance of 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.

Use of chemicals, such as herbicides and insecticides, and other pest control methods in mallee operations will be in accordance with Codes of Practice, State policies, procedures and approved usage.

2.8 Monitoring and review

Best practice indicates that periodic assessment of compliance with this Code should occur. For large-scale commercial growers it is anticipated that periodic assessment of compliance will occur.

2.9 Integrity in Forecasting

Estimation of future yields of products from mallee plantings should be made using the best scientific information available. For large-scale plantings this information should be validated independently by professionally qualified people with good 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 good 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.

SECTION 3 REVIEW AND COMPLIANCE

3.1 Review of the Code

A review of this Code should be undertaken three years after the date of publication and then at least at five year intervals thereafter.

A permanent committee to be called the Mallee Code of Practice Administration Committee (MCOPAC) will be established to administer and review the Code. The composition of the committee should reflect grower, processor and Local Government interests.

3.2 Compliance with the Code

All members of the Oil Mallee Association and shareholders of the Oil Mallee Company will agree by formal sign-off to comply with this Code.

3.3 Audit of Practices against the Code

Audit of management practices of growers and harvesters will be the responsibility of MCOPAC.

3.4 Breaches of the Code

Where the Code is a condition of approval for development under the Town Planning and Development Act and/or a local town planning scheme, any alleged breaches of the Code should, in the first instance, be referred to the mallee owner or **Manager** for attention.

A government agency (local or State) with authority under a relevant act or regulation or town planning scheme can refer a matter by written notice for consideration of compliance with this Code to the mallee owner or **Manager**.

Where a written referral has been made, the mallee owner or **Manager** has an obligation under this Code to respond to the notice in an acceptable timeframe.

Alleged breaches that relate to a failure to comply with federal or state law that are not rectified within a reasonable timeframe should be referred to the relevant government agency for attention.

3.5 Documentation of Operational Procedures

All growers will keep written **specifications** for operations. These **specifications** should be reviewed regularly to bring them in line with research findings.

SECTION 4 GOALS AND GUIDELINES FOR MALLEE MANAGEMENT

4.1 Explanation

The terms used in this section are:

- **goal** - a desired outcome (economic, environmental and social);
- **guideline** - provides a recommended approach to achieve goals. Guidelines can be either quantitative or qualitative;
- **specifications** - detailed methods that are developed to suit regional requirements and specific conditions to achieve a nominated goal;

This section provides a higher level of detail for the development of **specifications** for **establishment**, management and harvesting of mallees. This is reflected by the use of goals and guidelines to achieve the intent of this Code.

4.2 Management Plans

Goals:

1. To establish and manage mallee crops according to **Management Plans**.
2. To efficiently integrate mallee into farming systems to encourage sustainability and enhance nature conservation.

Guidelines:

- a mallee crop shall be managed according to a **Management Plan**.

This includes but is not restricted to a:

- ◆ Silvicultural Plan,
- ◆ Fire **Management Plan**,

along with appropriate location maps;

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

Where this occurs, the properties to which the generic plan applies must be clearly identified, along with appropriate property related details being provided for each property;

- where possible **Management Plans** should complement and integrate with local **Catchment plans**;
- plans and maps are dynamic and may be updated from time to time to reflect changes in the plantings;

- **Managers** may require town planning approval for mallee **establishment** before specific **Management Planning** and mapping has been completed. This situation could arise where the land in question is in a special control area and/or is listed as a discretionary use under a local town planning scheme.
- management of a **planted area** over time may vary from that specified in the original **Management Plan**, to account for new techniques and procedures as well as to respond to new threats to the crop. **Management Plans** should therefore be seen as indicative rather than absolute in terms of actual management of a mallee crop.
- in a zone where approval to establish mallees is not necessary, the **Manager** should consider submitting a **Management Plan** and location map to the relevant Local Government for record purposes.
- **Managers** should consider developing **Management Plans** for mallee crops as a component of whole **Farm Plans**. Such plans could integrate conventional farming activities with conservation and biodiversity;
- an example of a **Management Plan** is presented in Attachment 2.

4.3 Location, Planning and Design of Mallee Crops

Goals:

1. To establish mallees on cleared agricultural land;
2. To locate and design mallee **crops** to achieve commercial viability;
3. To locate and design mallee **crops** to maintain or enhance **environmental values** including salinity control and biodiversity protection;

Guidelines: Mallee plantings should be designed taking into account the following:

- clearing of **native vegetation** for mallee **establishment** is contrary to the policy of State and the Federal governments. However, clearing for mallee **establishment** may be appropriate if the existing vegetation has been adversely effected by land degradation, disease or fire to the extent that revegetation with mallees is appropriate. Such clearing must only be carried out with the consent of relevant authorities;
- removal of native **vegetation** in proclaimed clearing control catchment areas requires a license from the Water and Rivers Commission under Part IIA of the *Country Areas Water Supply Act 1947*. Removal of **native vegetation** in **Public Drinking Water Source Areas** requires approval from the Water and Rivers Commission under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* and the *Country Areas Water Supply Act 1947*;
- areas of remnant **native vegetation** that are being considered for clearing must be checked for rare and endangered species subject to provisions of the *Wildlife Conservation Act 1950* and the *Environmental Protection and Biodiversity Conservation Act (1999)*;
- a Notice of Intention to clear an area is required from the Department of Agriculture under the

provisions of the *Soil and Land Conservation Act 1945*. Also, **Managers** should be aware of the provisions for clearing **native vegetation** under the Environmental Protection Act (as amended);

- **Managers** should determine if there are special Local Government Town Planning Scheme requirements regarding the removal of **native vegetation**;
- approval to lease land which is part only of a lot and where the term of the lease exceeds 10 years is required pursuant to Section 20 of the Town Planning and Development Act 1928 and the Local Government Act 1995;
- mallee plantings must be designed in accordance with the provisions of the Bushfires Act 1954, as amended by the Bushfires Amendment Act 1987; Fire and Emergency Services Authority of WA Guidelines for Plantation Fire Protection 2001 and relevant Local Government Firebreaks Notices;
- the **Manager** must establish whether sites of significant landscape value and cultural heritage value exist through consultation with the relevant authorities and assess whether development will impact on such values;
- water quality should be protected by careful planning and control of the location and timing of machine operations during **site preparation** and harvesting with the aim of not permitting disturbance of the watercourse or **wetland** and minimising the chance of soil or chemicals being transported to the watercourse or **wetland**;
- opportunities should be explored to integrate mallee plantings with conservation opportunities, such as establishing wildlife corridors and providing **buffers** adjacent to remnant vegetation.

4.4 Mallee Crops within Public Drinking Water Source Areas

Goal: To have no detrimental impact on raw water quality as a result of activities in mallee **crops** situated in **Public Drinking Water Source Areas** (PDWSAs).

Guidelines:

- the quality of public drinking water sources is protected by proclaiming and managing land use activities within Underground Water Pollution Control Areas, **Catchment** Areas or Water Reserves under the *Country Areas Water Supply Act 1947* (CAWS) and the associated By-laws;
- the By-laws under the CAWS Acts enable the Water and Rivers Commission to control potentially polluting activities, to regulate land use, inspect premises and to take steps to prevent or clean up pollution in PDWSAs;
- the Water and Rivers Commission has defined three levels of priority classification in "Water Quality Protection Note: Land Use *Compatibility in Public Drinking Water Source Areas*". Determination of the acceptable activity must occur before operations commence;
- the application of chemicals, including fertiliser and pesticide in PDWSAs should be in accordance with Health Department, Water and Rivers Commission and Environmental Protection Authority policies and guidelines. The interpretation of policies and guidelines should be achieved in partnership between the relevant government agency and the **Manager** of the mallee **crop**;

- if an area of mallees within a PDWSA is to be harvested and not re-established, a plan addressing subsequent land use activities (where the development of such activities is the responsibility of the mallee grower) should be developed in consultation with the Water and Rivers Commission. While reversion to the previous land use is acceptable, any changes to the use of the land prior to the **establishment** of the mallee **crop** should be compatible with water source objectives for that **catchment**;
- harvesting of mallee crops established on land that was previously cleared will not be restricted, either within or outside the influence of a PDWSA,

4.5 Roads

4.5.1 Farm Roads

Goals:

1. to provide access of an adequate standard to ensure that **establishment, tending**, fire management and harvesting can be carried out efficiently and safely, without adverse impact on **environmental values**;
2. Machinery used in mallee operations, including harvesting will be designed such that **soil damage** will not occur in wet conditions, thus negating the need to construct roads.

Guidelines:

- access should be identified before major activities occur to achieve safe, efficient and environmentally sound operations;
- harvesting operations should utilise existing farm road systems and be timed such that the integrity of the soil and water quality is not compromised;
- new roads should be kept to a minimum necessary to satisfy management requirements, be located in an appropriate position (e.g. avoiding watercourse crossings where possible), be constructed under suitable weather conditions at a time reasonably close to their intended use, and be well consolidated before use;
- where practical roads and **tracks** should be constructed on the contour to minimise the need for drainage works;
- road construction should avoid conservation areas and restrict or minimise the amount of vegetation clearing necessary for road construction, safe operation, and maintenance;
- where access roads to properties must be constructed across vegetated verges on public land, a declared rare flora check must be done before clearing any vegetation;
- roads and **tracks** should be located to minimise the spread of declared weeds. **Hygiene** practices must be implemented to prevent the spread of soil-borne pathogens and declared weeds;
- access by heavy traffic should be restricted in conditions when structural damage to the road may occur.

4.5.2 Public roads

Goal: To maintain the integrity of the **public road** system used for the haulage of mallee products while ensuring public safety.

Guidelines:

- haulage operations will comply with the State legislative requirements;
- haulage routes should be identified in collaboration with the Local Government and where necessary, permits to use roads will be obtained;
- routes to be used by vehicles hauling mallee products to their destination will be shown on the **Harvest Plan** or associated document;
- where local roads have been designated by the relevant Local Government to be below standard appropriate for the haulage vehicle being used, traffic management measures are to be implemented following consultation with Local Government to minimise damage to the road and ensure safety requirements are met;
- **Managers** of mallee crops should be aware that Local Government may require some modification or restrictions to the proposed haul route to ensure the safety of other road users;

4.6 Silviculture of Mallee Crops

4.6.1 Site Assessment

Goals:

1. To assess potential sites for mallee **establishment** in accordance with accepted site selection methods to ensure that limitations to growth are identified.
2. To identify sites, using the assessment system, that require modification (i.e. ripping, mounding and draining) to ensure acceptable **establishment** and growth, as well as predicting wind and water erosion hazards.

Guidelines:

- all proposed mallee plantings should be subjected to site assessment based on accepted methodology;
- site surveys should be carried out with trained staff using accepted standards;
- saline soils should be assessed using an electrical conductivity meter or by soil sampling techniques and managed accordingly. The risk to mallee growth and survival posed by rising saline ground waters should be considered.

4.6.2 Species Selection

Goal: To use endemic Western Australian species, where possible selected to achieve the best economic and environmental outcome.

Guidelines:

- species of mallee should be selected for their vigour, oil content and other products, adaptability to particular sites, environmental benefit and resistance to **pests**;
- species will commonly be endemic to the locality although this may not always be the case;

4.6.3 Site preparation

Goal: To use appropriate **site preparation** procedures to achieve desired **establishment** standards while having due consideration for the protection of specific land and water values.

Guidelines:

- **site preparation** activities must adhere to the *Soil and Land Conservation Act 1945*;
- burning of debris during initial clean up must be carried out in accordance with Local Government Fire Law and Firebreak Notices;
- sites should be prepared by ripping, cultivating and mounding as appropriate to improve **establishment** and achieve stocking levels that are acceptable to the **Manager**;
- cultivation and mounding should be aligned to minimise the risk of erosion and 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;
- on slopes (>18°) broad-scale cultivation should be avoided;
- when necessary, owners of 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 **catchment** management strategies by approaches to Local Government.

4.6.4 Fertiliser application

Goal: To apply nutrients to correct deficiencies and to stimulate growth to ensure productivity and economic viability is maintained. The use of fertilisers should not adversely impact on **environmental values**.

Guidelines:

- mallees should be monitored for nutrient deficiencies and fertilisers applied as considered appropriate by the **Manager**;
- fertilisers, particularly nitrogen, are best applied when soils are moist rather than saturated;
- treated municipal wastewater should only be applied to mallee **crops** where the soils and substrates have been demonstrated to be suitable for such disposal, and approval from the Health Department and the Department of Environmental Protection has been granted;

- the use of fertilisers in PDWSAs must be in accordance with the Water and Rivers Commission and Environmental Protection Authority policies and guidelines, the *Country Areas Water Supply Act 1947* and related Environmental Protection Policies for water **catchments**;
- methods to prevent nutrient transport into water bodies should be applied.

4.6.5 Weed Control

Goals:

1. To encourage the control of competing vegetation in mallee **crops** at the **establishment** phase to ensure good initial survival of trees, and at later stages to promote efficient and economic growth as well as unimpeded access in **planted areas**.
2. To prevent noxious weeds establishing in mallee **crops**.
3. To minimise the use of herbicides by the application of **integrated weed management** systems.
4. To use herbicides to control weeds within accepted guidelines and prevent off-target movement.

Guidelines:

- weeds should be controlled using appropriate methods at the time of **establishment** or at any other time during the life of the mallee **crop** as deemed appropriate by the **Manager**;
- chemicals used to control weeds must be used in accord with the Public Health Guidelines on the use of chemicals in rural areas contained in the *Health Act (1911) - Health (Pesticides) Regulations 1956, the Agricultural & Related Resources Protection (Spraying restrictions) Regulation*;
- mallee growers must abide by the provisions of the "*Code of Practice For Use of Agricultural and Veterinary Chemicals in Western Australia*";
- the application of herbicides in PDWSAs must be in accordance with Health Department, Water and Rivers Commission and Environmental Protection Authority policies and guidelines;
- rates and methods of application must be in accordance with approved procedures and specifications on the product label;
- particular care should be taken to prevent herbicides being washed or leached into watercourses, **wetlands** or reservoirs;
- unwanted vegetation, including declared plants, should be controlled by methods that do not adversely impact on **environmental values**. **Integrated weed management** systems should be considered where possible;
- disposal of all chemical containers should be as specified by the chemical manufacturer;
- where a new incursion of a declared weed is suspected, the location should be reported to the relevant authority;
- the vicinity of mallee **crop** areas, particularly adjacent to areas of **native vegetation**, should be inspected annually to detect any escape of an **exotic** mallee species, which if found should be controlled in the same way as other unwanted vegetation or declared weed;

- only herbicides that are registered for use in mallee **crops** or have been permitted for use by the National Registration Authority, under the national "off label" permit scheme, are to be used;
- only trained competent operators (holders of current accreditation or certification), using appropriate equipment will be employed to apply herbicides. Operators must be familiar with the relevant requirements of this Code;

4.6.6 Control of Insects

Goals:

1. To minimise the impact of insect damage to mallee **crops** by the use of insecticide sprays or biological or physical control techniques to ensure that plantings are not adversely affected and remain commercially viable.
2. To minimise the use of insecticides by applying **integrated pest management** systems where practicable.
3. To use insecticides within accepted guidelines and prevent off-target effects.
4. To use insecticides with due consideration for the preservation of **environmental values**.
5. To use insecticides with due consideration for neighbouring activities that may be sensitive to insecticides.

Guidelines:

- mallee **crops** should be monitored regularly for insect **pests**, particularly at times when insect **pests** are known to be active;
- the **Manager** should where practicable implement control measures when threshold levels are reached and/or when the level of damage is considered to be unacceptable;
- aerial spraying activities are to be managed according to an aerial spray application **Management Plan** which should outline a process of communication between the mallee grower/**Manager** and neighbours, to ensure that neighbours (1) are aware of planned spray activities, (2) have the opportunity to comment on the development of a spray plan and (3) take any precautionary measures they choose;
- insecticides should not be applied by air unless all adjacent landholders are notified;
- aerial application of insecticides must adhere to the provisions of the *Aerial Spraying Control Act 1966 and the Health (Pesticide Regulations) Act*;
- particular care should be taken to avoid insecticides being washed or leached into water bodies;
- chemicals used to control insect **pests** must be used in accord with the Public Health Guidelines on the use of chemicals in rural areas contained in the *Health Act(1911) - Health (Pesticides) Regulations 1956*;
- mallee growers must abide by the provisions of the *"Code of Practice for the Use of Agricultural and Veterinary Chemicals in Western Australia"*;

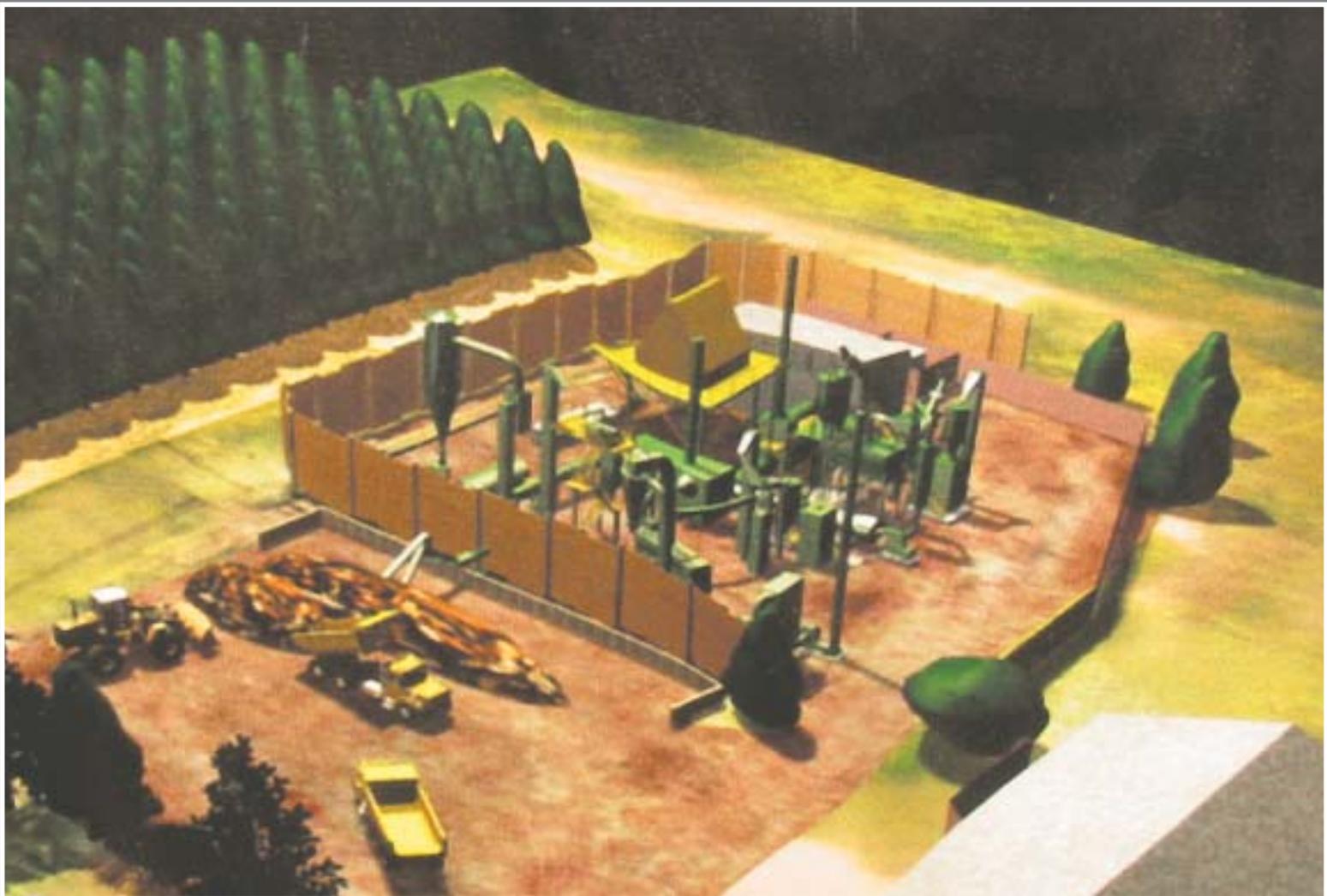
- the application of insecticides in PDWSAs must be in accordance with the Health Department, Water and Rivers Commission and Environmental Protection Authority policies and guidelines;
- **integrated pest management** systems should be considered to help reduce insect populations and to complement other insect control techniques;
- growers are encouraged to collaborate when implementing regional spray programs to assist the implementation of **integrated pest management**;
- where insecticides are used they must be registered by the National Registration Authority or used under permit according to the national "off label" permit scheme;
- rates and methods of application of insecticides must be according to accepted industry **specifications** and the product label specification;
- measures to prevent the introduction of **exotic** insects into Western Australia should be addressed by the implementation of a **Management Plan** developed by the **Manager**. Early warning systems to identify outbreaks of **exotic** insects should be implemented and control systems for immediate deployment should be in place;
- the mallee industry should undertake Pest Risk Assessments for potential harmful **exotic** organisms and develop Risk **Management Plans** to mitigate against the introduction of an **exotic** organism;
- disposal of all chemical containers should be as specified by the chemical manufacturer;
- only trained, competent operators (holders of current accreditation or certification) will be employed to apply insecticides;

4.6.7 Control of Vertebrate Pests

Goal: To control vertebrate **pests** in mallee **crops** using only accepted methods.

Guidelines:

- control of animals (native and feral) must adhere to the *Wildlife Protection Act 1950*, and the *Agriculture and Related Resources Protection Act 1987*;
- native vertebrates that impinge on the productivity of mallee **crops** may be controlled under damage permits issued (if required) by the Department of Conservation and Land Management using methods stipulated on the permit.
- chemicals used to control **pests** must be used in accordance with the Public Health Guidelines on the use of chemicals in rural areas contained in the *Health Act (1911) - Health (Pesticides) Regulations 1956*;
- rabbits should be controlled prior to the **establishment** of mallees and in existing areas, if the **Manager** considers control to be necessary;
- Growers are encouraged to develop regional collaborative strategies to control vertebrate pest populations;
- the application of pesticides in PDWSAs must be in accordance with the Health Department, Water and Rivers Commission and Environmental Protection Authority policies and guidelines;



Artists impression of the Western Power Integrated Wood Processing (IWP) Plant at Narrogin, scheduled to commence operations in 2003. Such plants will be capable of 100% utilisation of mallee biomass to produce activated carbon, eucalyptus oil and electricity.



Machine planting undertaking operations near Kalannie, WA. All operations associated with the establishment, management and utilisation of the mallee resource will provide positive benefits to regional communities including employment and income generation.



Hand planting near Koorda, WA.



A machine planting operator preparing to load trees for planting near Koorda, WA.



5 year old mallees planted in contoured alleys near Narrogin, WA.



*Three month old mallee coppice (*Eucalyptus polybractea*) regrowth after harvesting has occurred.*



Hand planting crew undertaking operations near Three Springs, WA.



Linear alley plantings are easily integrated with existing agricultural systems and provide shelter for stock and crops, windbreaks, utilise excess groundwater and provide a potential commercial resource.



Nurseryman Keith Parnell at his nursery with a seedling ready for planting, Tincurrin WA.



Mallees (Eucalyptus polybractea) planted in linear alleys, Kalannie, WA. This planting will protect the soil from potential wind erosion during the extended dry period after harvest is complete.



Newly established mallee seedlings (Eucalyptus loxophleba subsp. Lissophloia), Koorda WA.



Mallee growers discussing the quality of seedlings delivered on site in advance of planting. Regular consultation and feedback is essential to improve the quality of work undertaken, ensuring 'best practices' are implemented and high standards maintained.



Establishment methods will vary depending on site and soil conditions. Here seedlings have been planted using a machine planter capable of undertaking ripping, scalping and planting as a single pass operation.



One year old mallee planting (Eucalyptus loxophleba subsp. lissophloia), Narrogin, WA.



Mallee grower and nursery staff undertaking a regular inspection of seedlings, Tuncurrin WA.



Prototype mallee harvester undertaking operations, Tuncurrin WA.



*Three year old planting of mallees (*Eucalyptus horistes*), Canna WA.*



Ripping, scarifying and rolling attachment. Ripping disturbs agricultural compaction and hardpans allowing rapid early root development, scarifying assists with weed control and allows water harvesting and rolling seals air pockets. Combined, these measures will create a suitable planting bed for mallees.



Harvested mallee biomass available for either oil production or for use in an IWP plant.



Recently harvested mallee - harvesting required the tree to be cropped as low to the ground as possible to encourage coppice regrowth.



Mallees planted in linear alleys 80 metres apart, Kalannie WA.

- other **pests** should be controlled in **planted areas** using methods recommended by the Agricultural Protection Board of Western Australia;
- damage to mallee **crops** or seed orchards by birds may be addressed by use of deterrents or a combination of control strategies. Where control of protected species becomes necessary, permits must be obtained from the Department of Conservation and Land Management.

4.6.8 Disease Control and General Health of Mallee Crops

Goal: To maintain mallee **crops** free of **disease**;

Guidelines:

- health and vigour should be monitored and promoted through appropriate management practices to reduce **disease** impacts in the mallee estate;
- mallees should be monitored periodically for outbreaks of pathogens and remedial action taken where feasible;
- special measures may need to be implemented at a regional scale to manage future threats to the health of mallee **crops**. Where practicable, this should be achieved through cooperation and collaboration within the industry;
- it is preferable that nursery stock should be grown in nurseries accredited under the *Nursery Industry Association of Australia* scheme;
- **hygiene** techniques should be implemented, where appropriate, to stop the spread of any pest, **disease** or weed. If the introduction of an **exotic pest disease** or weed is suspected the relevant authority should be notified .

4.6.9 Tending

Goal: To manage mallee **crops** to achieve specific objectives by the use of appropriate silvicultural strategies.

Guidelines:

- mallee crops are robust and low maintenance but do require careful planning and management to minimise the risks of fire (from stubble burning), herbicide drift and grazing (especially in the first year after establishment or for the first few months of coppice growth).
- it is recommended that records of **tending** operations be maintained to support any future requirements for certification of **crops** for sustainability and product quality.

4.7 Harvesting

4.7.1 Planning

Goals:

1. To plan harvests to achieve maximum productivity while integrating input to processors to achieve maximum efficiency.
2. To harvest mallees based on a **Harvest Plan**, with the aim of maximising biomass recovery without detrimental impacts on the environment and public safety.

Guidelines:

- notify Local Governments of the schedule of harvesting and the intention to use **public roads** prior to intended harvesting operations, if practicable;
- the **Harvest Plan** should 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.
- where appropriate, the **Harvest Plan** must comply with the provisions of the *Occupational Safety and Health Act 1988* and associated *Regulations*, the *Bush Fires Act 1954*, the *Soil and Land Conservation Act 1945*, and any planning requirements of Local Governments if required as a condition of **establishment** of an mallee **crop**;
- where a number of 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 **crops**.

4.7.2 Harvesting Operations

Goal: For harvesting operations to be carried out by competent operators using appropriate equipment with due care for safety and the environment.

Guidelines:

- all persons employed in harvesting operations in mallee **crops** must be competent;
- harvesting should be carried out in accordance with the **Harvest Plan**;
- conservation values should be protected during harvesting operations.

4.7.3 Extraction and Haulage

Goal: To extract products from mallee plantings and transport these products to processing centres deploying experienced and adequately trained operators, using appropriate vehicles suited to the conditions, to achieve acceptable standards of safety, environmental care and economic efficiency.

Guidelines:

- all persons employed in extraction and haulage operations must be competent;
- where appropriate, extraction should be along tracks and roads designated by the **Manager** in the **Harvest Plan**;
- special attention should be given to the location of entry points from the farm onto **public roads** for reasons of safety and road maintenance;
- 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 reduce the spread of **pests, diseases** and weeds to the standards consistent with best practice.

4.8 Fire Prevention and Suppression

4.8.1 Fire Prevention

Goal:

1. To prevent wildfires entering or escaping from mallee **crops** consistent with State and Local Government requirements.
2. To protect mallee **crops** from the threat of fire.

Guidelines:

- the size of compartments and firebreak **specifications** should comply with the *Bush Fires Act (1954)*, the *Guidelines for Plantation Fire Protection (2001)* issued by the Fire and Emergency Services Authority of Western and Local Government *Firebreak Notices*;
- vehicles and machinery travelling in mallee crops during the fire season must comply with Australian Standard 1687-1991 and *Bush Fires Act (1954)*;
- firebreaks, water points and compartments will be shown on the **location map**;
- refueling of machinery should not occur within the **planted area**, but should be carried out on a firebreak or area free of flammable material. For more guidelines on the storage and handling of fuels, refer to Section 5.9;
- firebreaks, roads and **tracks** should be maintained free of flammable material on steep slopes, provided measures to minimise erosion and preserve water quality are also implemented;

- roads and internal breaks within **planted areas** should be maintained in a trafficable condition and must allow through traffic;
- grazing should be considered where appropriate to reduce fuel loads in **planted areas**. Grazing in PDWSAs should be consistent with water quality objectives. **Managers** should consider erecting fences to prevent animals straying into **riparian zones** and adjoining properties;
- avoid locating firebreaks in the **riparian zone** and as a minimum, firebreaks should not be located in the part of the **riparian zone** subject to flood flows;

4.8.2 Fire Suppression

Goal: In the shortest time possible, identify and control fires that start in mallee **crops** or threaten **crops**

Guidelines:

- fire suppression activities must adhere to the *Bush Fires Act 1954*;
- personnel employed in **tending** and harvesting operations should be trained in fire control to a level that meets the minimum standards prescribed by the Fire and Emergency Services Authority of Western Australia;
- water points must be established and maintained in or near **planted areas** at a density consistent with the *Guidelines for Plantation Fire Protection (2001)*;
- fire suppression equipment should be available and maintained consistent with the *Guidelines for Plantation Fire Protection (2001)*;
- owners and **Managers** of mallee **crops** should participate in local fire brigades to assist in fire prevention planning and control activities;
- the use of fire retardants in PDWSAs must be in accordance with the Water and Rivers Commission and Environmental Protection Authority regulations, policies and guidelines where they exist, or otherwise be negotiated with the Commission.

4.9 Storage and Handling of Chemicals, Fuels and Oils

Goal: To prevent **incidents** involving the storage, transport and handling of chemicals, fuels and oils used in activities associated with mallee activities.

Guidelines:

- transport, storage and handling of fuels and oils should be in accord with Department of Minerals and Energy regulations and WRC By-laws, policy and guidelines (including Water and Rivers Commission Water Quality Protection Notes: Temporary Above Ground Chemical Storage in **Public Drinking Water Source Areas** and Above Ground Chemical Storage Tanks in **Public Drinking Water Source Areas**. Current versions can be located at [www.wrc.wa.gov.au/protecting/water/policies/water quality protection notes](http://www.wrc.wa.gov.au/protecting/water/policies/water%20quality%20protection%20notes);

- transport, storage and handling of pesticides, fuels and fertilisers in PDWSAs must be in accord with Health Department, Water and Rivers Commission and Environmental Protection Authority policies and guidelines (including the Statewide Policy No. 2: *Pesticide Use in **Public Drinking Water Source Areas***, the Water Quality Protection Notes: *Toxic and Hazardous Substance Storage and Toxic and Hazardous Substances in **Public Drinking Water Source Areas***);
- disposal of pesticide containers must be in accordance with the instructions on the label and in accordance with *Health (Pesticides) Regulations 1956* and not to be disposed of in **Public Drinking Water Source Areas**;
- 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 herbicide, pesticide, fuel and oil reaching dams, watercourses, **wetlands** and reservoirs, refueling, lubrication and degreasing of machinery should be undertaken well away from these areas.

4.10 Incident management

Goal: To have in place response procedures that address the environmental, economic and human health affects of an unwanted **incident** relating to activities in or associated with mallee activities.

Guidelines:

- mallee growers should 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**;
- mallee growers to 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 PDWSA 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.

4.11 Agriculture Protection and Neighbour Relations

Goals:

1. prevent unauthorised or **disease** carrying domestic stock from residing in mallee plantings.
2. manage declared plants and weeds in mallee **crops** to meet legal obligations and manage other environmental weeds to minimize threats to neighbouring properties and natural areas, including woodlands, wetlands and watercourse corridor.
3. endeavour to prevent mallee **crops** becoming a refuge for feral animals.
4. foster good relations between **Managers/owners** and neighbours.

5. provide neighbours with adequate notice of impending, significant silvicultural activities, which will allow both parties to take any necessary action to avoid detrimental impacts as a result of these activities.
6. provide all neighbours with adequate notice of any proposed aerial spraying.

Guidelines:

- where boundary fences are constructed, **Managers** of mallee **crops** should maintain them in a stock-proof condition in accordance with the provisions of the *Dividing Fences Act 1961*;
- any unauthorised stock in mallee **crops** may be removed in accordance with the provisions of the Local Government Act. 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;
- **Managers** or owners should make themselves known to neighbours;
- **Managers** or owners should erect notice boards at the entrance to farms on which mallees are established stating the name of the owner, the name of the **Manager** or owner, and a contact telephone number.

4.12 Knowledge Management

Goals

1. To maintain an adequate research capacity to improve economic efficiency of mallees, develop new technologies and to ensure that individual and industry objectives are met.
2. To gain knowledge and demonstrate the commercial, environmental and social benefits that mallee **crops** may provide.

Guidelines:

- **Managers** and owners are encouraged to maintain a research capacity or support external research agencies such as CSIRO, Cooperative Research Centres and local research cooperatives as appropriate.
- install piezometers prior to planting mallees, across a range of site types and planting arrangements to monitor water tables;
- undertake economic analyses at appropriate intervals to provide growers with objective commercial information;
- conduct social research to gauge public opinion and to enunciate the social benefits that the mallee industry provides to communities;
- the vicinity of mallee **crop** areas, particularly adjacent to areas of **native vegetation**, should be monitored to detect any escape of an **exotic** mallee species, which if found should be controlled in the same way as other unwanted vegetation or declared weeds.

4.13 Safety

Goal: To carry out operations in mallee **crops** as safely as possible and in accordance with all relevant regulations detailed in occupational health and safety legislation.

Guidelines:

- mallee **establishment**, management, harvesting and fire protection activities must comply with the Occupational Safety and Health Act 1988 and associated Regulations;
- people operating in mallee **crops** must be trained and certified to accepted standards in the safe use of equipment, materials and machinery;
- **Managers**, contractors and workers should be jointly responsible for determining and implementing safe work practices;
- all operators must wear specified personal safety equipment for the operation.

4.14 Competency and Training

Goal: To employ competent personnel to operate in mallee **crops** and carry out the duties prescribed in accordance with best practice for mallee management.

Guidelines:

- training of personnel engaged in mallee activities is the collective responsibility of **Managers**, owners, contractors and subcontractors;
- training should be based on the provisions of **Competency Based Training (CBT)** adopted in *National Competency Standards, Policy and Guidelines 1992* to ensure recognition for practitioners against the Australian Qualifications Framework;
- personnel required to operate in the mallee industry should be competent to carry out the tasks according to accepted **competency** standards;
- training should be available to all personnel involved in the mallee industry according to the need to improve **competency**;
- personnel required to operate in mallee **crops** located in PDWSAs should be aware of requirements for management of these areas.

4.16 Investment in the Mallee industry

Goal: To ensure that investors are aware that mallee **crops** are managed according to best practice.

Guidelines:

- information provided to prospective investors must be in accordance with the *Trade Practices Act 1974*, the *Corporations Law* and the *Managed Investments Act 1998*;
- investors should be made aware of the environmental, management requirements for the development of mallee **crops** and adherence to this Code, and the obligations of their **Managers** to maintain environmental and investment standards.

SECTION 5 DEFINITIONS

Buffer - a strip of land abutting a feature including (1) the **riparian zone** of a watercourse, swamp, water body or (2) an area of environmental significance that provides a **buffer** zone between the mallee **crop** and the feature or (3) a dwelling, urban or special rural area.

Catchment - 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.

Catchment plan - a plan that details the strategy to protect and improve a **catchment**.

Competency - a concept that focuses on what is expected of an employee in the workplace rather than on the learning process; and embodies the ability to transfer and apply skills and knowledge to new situations and environments. **Competency** will normally be supported by accreditation from a recognised training authority or recognition by an appropriate professional body.

Crop - defined as a stand of mallees that has been established by sowing or planting species selected and managed intensively for their commercial and/or **environmental value**. A planting includes roads, **tracks**, firebreaks and small areas of **native vegetation** surrounded by plantings. Implicit in this definition is the recognition that mallee plantings will be harvested.

Disease - any **disease** that attacks a plant; this 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.

Environmental value - human and environmental uses of water and land resources. Also includes aesthetic and cultural values as defined in the Environmental Protection (EP) Act.

Establishment - a period of development of a mallee **crop** including **site preparation**, weed control, planting, fertilising, infill planting and seedling protection - nominally a period up to two years.

Exotic - introduced, not native to the area.

Filter strip - a piece of vegetated land used specifically to filter out sediments and chemicals from water before entering a water body.

Farm Plan - a plan developed by the property owner that details management strategies. Such a plan might include proposals for infrastructure, commercial opportunities and environmental enhancement.

Harvest Plan - 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.

Hygiene - biosecurity actions that decrease the risk of undesirable **pests, diseases** and weeds from being introduced, abled to survive, spread or intensity.

Incident - an **incident** may be a significant chemical, oil or fuel spill in a place of environmental sensitivity or where there are implications for human health. An **incident** may also be a serious accident, an **exotic** pest, **disease** or weed incursion or natural disaster.

Incident Management Plan - a plan that details the procedure to minimise any detrimental impact of an unwanted **incident**.

Integrated tree cropping - a system whereby tree crops (mallees) are incorporated into **farm operations** to complement normal agricultural activities and to improve **environmental values**.

Integrated pest management - a system or systems that utilise two or more methods to control **pests** in a synergistic way to achieve the objective.

Integrated weed management - a system that utilises two or more methods of weed control in a synergistic way to achieve the objective.

Location map - a map that details location on a property of compartments, infrastructure, firebreaks, water points, power lines, entry points and permanent access roads and **tracks**.

Management Plan - specified details of the management of a mallee **crop**.

Manager - the person or an organisation that has responsibility for the implementation and control of all aspects of the management of mallee **crops**.

Native vegetation – remnant original with an indigenous understory.

Native vegetation (clearing of) – to clear means 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.

Pests – include insects, fungi and animals that cause injury to mallee **crops**.

Planted area - defined as that part of a land area that is established to mallees.

Public Drinking Water Source Area (PDWSA) - is the collective term given to existing and future drinking water sources, identified by proclaiming Underground Water Pollution Control Areas, Water Reserves or **Catchment** Areas under the *Country Areas Water supply Act 1947*.

Public road - a sealed or unsealed road that is the responsibility of a Local Government.

Riparian zone - 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*.

Site preparation - the preparation of the site in order to establish mallees.

Soil damage - soil damage is defined as:

the 'A' soil horizon (topsoil) is removed, and or,

the 'A' soil horizon (topsoil) is mixed with the 'B' horizon (sub-soil usually containing clay) and or severe compaction (normally meaning compaction which will affect germination or plant growth).

Specifications - detailed methods that are developed to suit regional requirements and specific conditions to achieve a nominated goal.

Stream - the watercourse created by a channeled surface or sub surface water as it leaves a **catchment** area. The flow may be permanent (all year flow) or temporary (intermittent flow in wet periods). Features typically expressed by **streams** include an expression of a valley and a defined channel bed that displays signs of water flow.

Tending - the treatment of a mallee **crop** to maintain, improve and protect the stand.

Thinning - the removal of a portion of the trees in a **crop** to increase the growth rate on selected retained trees.

Track - a permanent road that is not surfaced that provides access to a **crop** for **tending** and fire related activities, and extraction of products.

Watercourse - a linear landform feature ranging from a well-defined channel to an ill-defined depression which conveys the flow of water, at least intermittently.

Wetland - area of seasonal, intermittent or permanent waterlogged soils or inundated land, whether natural or otherwise, fresh or saline, e.g. lake, swamp, dampland. However, 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 or 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**.

Attachment 1

ACTS AND REGULATIONS THAT APPLY TO THE GROWING OF MALLEES

State Government Legislation

Aboriginal Heritage Act 1972

Protects Aboriginal cultural material, Aboriginal sites and declared protected areas.

Aboriginal Affairs Department

Native Title Act 1993

Protects native title. Aboriginal Affairs Department

Aboriginal Affairs Department

Agriculture and Related Resources Protection Act 1976

Control of declared animals (vermin) and declared plants (e.g. noxious weeds), spraying restrictions, fencing and accreditation for use and storage of 1080 poison.

Department of Agriculture

Plant Diseases (Regulations) Act 1968

Regulates the movement of plant species and timber products into Western Australia from interstate and within the state.

Department of Agriculture

Exotic Diseases of Animals Act 1993

The eradication of major exotic animal diseases.

Department of Agriculture

Stock Diseases Act

The prevention, control and eradication of animal diseases not included in the Exotic Diseases of Animals Act

Department of Agriculture

Bush Fires Act 1954

- ***Fire and Emergency Services Authority of Western Australia: Guidelines for Plantation Fire Protection (1998)***

- ***Local Government Firebreak notices***

Planting design, compartment size and layout, firebreak design and minimum firebreak widths, water point requirements, fire equipment requirements, public utility firebreak easements, burning off, restricted and prohibited burning seasons, permit to set fire to bush, planting within town site influence zones.

Fire and Emergency Services Authority

Wildlife Conservation Act 1950

Issue of damage licenses for management of native fauna damaging mallee crops, taking of protected flora and fauna, protection of rare flora and fauna.

Department of Conservation and Land Management

Water and Rivers Commission Act 1995

Under the Water and Rivers Commission Act (WRC Act), the Commission has responsibility for the conservation, protection and management of the State's water resources.

Water and Rivers Commission

Country Areas Water Supply Act 1947

The CAWS Act covers the protection of water quality for country surface water and groundwater sources used for public supply. The Regulations and By-laws only relate to proclaimed Catchment Areas or Water Reserves. The By-laws of the Act give the Commission, or its delegated representative, the power to take steps to protect raw drinking water sources and to control activities within catchment areas.

Regulations require licenses for removal of native vegetation within proclaimed clearing control areas.

Waterways Conservation Act 1976 (WC Act) & Swan River Trust Act 1988 (SRT Act)

Under the provisions of these Acts, the Commission has a waterways management and protection function and associated powers in respect of designated waterways (Swan River, Avon River, Peel Inlet, Leschenault Inlet, Albany Waterways, Wilson Inlet) and adjoining land in management areas declared under the Acts. This adjoining land extends to the entire catchments of the Avon River, Albany Waterways and Wilson Inlet.

Rights in Water and Irrigation Act 1914 (RIWI Act)

The RIWI Act 1914 covers riparian rights, irrigation districts management, the licensing of bores for water table aquifers and abstraction of water from proclaimed rivers and watercourses. Licenses are only required in proclaimed areas. In addition, all artesian wells need to be licensed by the Water and Rivers Commission

Environmental Protection Act 1986

State legislation, which facilitates environmental impact assessment of any proposals that may significantly affect the environment. Environmental Protection policies and pollution prevention via various regulatory processes.

Department of Environmental Protection

Heritage of Western Australia Act 1990

Protects places of significant cultural heritage.

Western Australian Heritage Commission

Town Planning and Development Act 1928

Preparation and administration of district planning schemes and scheme amendments to incorporate zones, provisions, policies and strategies relevant to mallee crops (schemes and amendments are prepared by Local Governments, assessed by the Western Australian Planning Commission (WAPC) and approved by the Minister for Planning). Approval for subdivision or for the lease of portions, lots or locations for periods in excess of ten years on freehold land by the WAPC.

Assessment of development applications for mallee establishment (where required under the district planning scheme) by the Local Government.

Western Australian Planning Commission

Local Government Act 1995

Subdivision 4 of the Act provides for the impoundment of straying stock. Regulations have been made under this section and Local Governments have the power under the Act to make local laws regarding straying stock.

Department of Local Government and regional development

Dividing Fences Act 1961

Adjoining landowners are required to share the cost of erection and maintenance of dividing fences. The Act provides the process for owners of land to serve notices for erection and maintenance of fences, means of recovery of costs and the formula for cost sharing between tenants and landlords.

Department of Agriculture

Occupational Safety and Health Act 1984

Employee and employer obligations and duties relating to safety, training and workplace practices.

Department of Consumer and Employment Protection

Soil and Land Conservation Act 1945

Procedures for the administration and assessment of clearing, and protection of soil and native vegetation in Western Australia. Clearing of native vegetation on agricultural land, Agreements to Reserve. Soil conservation notices. Drainage and pumping of water from owner's land to other land or water course.

Department of Agriculture

OTHER LEGISLATION OF RELEVANCE TO MALLEE CROPS

Commonwealth Government Legislation

Australian Heritage Commission Act 1975

Assessment and listing of lands on a Register of the National Estate and management to protect National Estate values in those areas.

Australian Heritage Commission

Civil Aviation Regulations (various)

Limitations on obstacles surrounding aeroplane landing areas (e.g. airstrips). Limitations on construction of airstrips or runways within five nautical miles of existing aerodromes.

Civil Aviation Authority

Corporations Law

• ***Managed Investments Act 1988***

• ***Trade Practices Act 1974***

Public accountability of commercial forest operations. Several State and Commonwealth Acts and codes cover capital raising and formation provisions for mallee investment companies including joint venture arrangements between mallee companies and landowners.

**Australia Securities and Investment Commission and
Australian Competition and Consumer Commission**

Environmental Protection and Biodiversity Conservation Act (1999)

Environmental impact assessments for proposals that require a Commonwealth decision that may have an impact on the environment.

Department of Environment and Heritage

Wildlife Protection (Regulation of Exports and Imports) Act 1982

Oil distilled or otherwise extracted from a plant other than a plant of the genus *Eucalyptus*

Department of Environment and Heritage

Quarantine Act 1908

Customs Act 1901

Import of plants and forest products into Western Australia from overseas.

Australian Quarantine and Inspection Service

National Competency Standards, Policy and Guidelines 1992

Forest and Forest Products Training Package – Forest Growing and Management (1999)

Training and competency.

Australian National Training Authority

Renewable Energy (Electricity) Act 2000

Renewable Energy (Electricity) Regulations 2001

Provides the conditions under which biofuels can be used for electricity generation

The Office of the Renewable Energy Regulator

Reference Documents

Reference documents guiding policy towards mallee management activities include the following:

- *Intergovernmental Agreement on the Environment (1992)*;
- *National Competency Standards, Policy and Guidelines (1992)*;
- *State Salinity Strategy (2000)*;
- *State Greenhouse Strategy*; and
- *National Low Rainfall Farm Forestry Strategy*.

Attachment 2

A LIST OF FACTORS TO CONSIDER IN THE DEVELOPMENT OF A MANAGEMENT PLAN

Mallee crop management

A **Management Plan** is prepared to provide the relevant information with respect to the way in which mallee crops are developed and managed, and to demonstrate the means by which the principles of environmental care and objectives of silviculture and fire protection are achieved.

A **Management Plan** comprises:

- a Silviculture Plan,
- a Fire **Management Plan**,
- a **Harvest Plan**.

1. Silviculture Plan

Documents and maps should provide the following information:

Land Information:

- ◆ area
- ◆ locality plan and access roads
- ◆ natural features:
 - watercourses, rivers, lakes, ponds, swamps, drains, etc,
 - principal soil types,
 - slope
 - areas of **native vegetation**,
 - significant landscape, cultural and heritage values.
- ◆ improvements:
 - buildings,
 - roads, bridges, creek crossings,
 - fences, gates, powerlines, dams.

Mallee Establishment:

- ◆ areas to be cleared of **native vegetation**, including paddock trees,
- ◆ proposed **buffer** distances to watercourses, **wetlands** and reservoirs and environmentally significant features,

- ◆ proposed **buffer** distances to dwellings, aquacultural and horticultural activities, tourist resorts and attractions,
- ◆ extent of existing **native vegetation** and proposals to reinstate vegetation in water **body buffers** and **riparian zones**,
- ◆ management of harvest residue,
- ◆ control of declared animals, declared plants and pest plants,
- ◆ areas to be planted,
- ◆ species to be planted,
- ◆ direction of planting lines in relation to contours and natural drainage,
- ◆ description of soil preparation methods,
- ◆ description of weed control methods, including rate of herbicides application and **buffer** zones,
- ◆ planting technique,
- ◆ access roads and firebreaks,
- ◆ grazing strategy,
- ◆ fertilising schedule,
- ◆ weed management,
- ◆ monitoring and contingencies for **pests** and **diseases**, road and break maintenance.

2. Fire Management Plan:

- ◆ property details:
 - contact names and telephone numbers,
 - names and telephone numbers of adjacent land holders,
 - names and addresses of local fire agencies,
 - locality plans showing access roads, firebreaks, water points etc,
- ◆ fire prevention details:
 - method of road, **track** and firebreak maintenance,
 - specific measures to protect powerlines and gas pipelines,
 - fire fighting equipment register for locality and details of cooperative arrangements,
 - direction indicators of water points, road signs and other features,
 - fuel reduction program (if applicable).

Harvest Plan

- ◆ location of harvesting operations:
map showing area to be harvested, extraction tracks and off-site haulage routes,
- ◆ timetable:
period in which harvesting will occur,
- ◆ product specifications,
- ◆ location of roads and tracks in the mallee crop to be used and the direction of travel,
- ◆ harvesting operations:
felling and extraction procedures,
type of harvesting system to be used.
- ◆ processing:
management of waste,
- ◆ machinery and transport:
types of trucks to be used for transport,
type of harvesting system to be used,
- ◆ silvicultural system to apply after harvest,
- ◆ environmental safeguards:
fire protection restrictions, seasonal and weather restrictions, road maintenance procedures,
fuel storage and containment, buffers to watercourses, wetlands and reservoirs,
- ◆ safety:
minimum safety requirements.

Attachment 3

LIST OF INDIVIDUALS AND ORGANISATIONS INVITED TO CONTRIBUTE TO THE PREPARATION OF THIS CODE

Acacia Environmental Consulting (WA)
Australian Forest Growers (WA)
Avon Catchment Council (WA)
Biomass Mallees (WA)
Carbon Credits International (WA)
Commissioner of Soil Conservation (WA)
Department of Agriculture (WA)
Department of Conservation and Land Management (WA)
Department of Local Government and Regional Development (WA)
Department of Water, Land and Biodiversity Conservation (SA)
Enecon Pty Ltd (Victoria)
Environment and Natural Resources (WA)
Esperance Farm Trees (WA)
Forest Products Commission (WA)
Kalannie Distillers (WA)
Kalannie Tree Supplies (WA)
Kulin Plant Farm (WA)
Lomond Nominees (WA)
Metasource Pty Ltd (WA)
Natural Resource Management Council (WA)
Newdegate Nursery (WA)
Northern Agricultural Catchments Council (WA)
Office of the Renewable Energy Regulator (ACT)
Oil Mallee Association (all regions – WA)
Pastoralists and Graziers Association (WA)
Receiver and Manager APT Oil Mallees (WA)
Shire of Dalwallinu (WA)
Shire of Koorda (WA)
Shire of Narrogin (WA)
South Coast Regional Initiative Planning Team (WA)
South East Forest Foundation (RPC - WA)
South West Catchment Council (WA)
Temple Farm Trading (WA)
Timber 2020 (RPC – WA)
Water and Rivers Commission (WA)
West Australian Local Government Association
Western Australian Farmers Federation (WA)
Western Power (WA)
Wheatbelt Development Commission (WA)
Wongan Hills Nursery (WA)

Photographs courtesy of: Oil Mallee Company, Western Power, John Bartle, Oil Mallee Association, Professor Syd Shea.

Front Cover pictures clockwise from top left: Five year old mallees (*Eucalyptus polybractea*) Kalannie, WA., Oil mallee leaf, Linear alleys set against the green crops of the WA wheatbelt, Koorda WA., Strategically located block planting, Narrogin WA., Machine planting contractor undertaking operations, Kalannie WA., Sheep utilising a mallee planting for shelter, Katanning WA., Nursery workers undertaking thinning operations, Newdegate WA.

Back Cover pictures clockwise from top left: Harvested mallees on left unharvested on right, Tincurrin WA., Planting machine frequently used throughout the WA wheatbelt, Nursery workers undertaking thinning and sorting operations, Tincurrin WA.



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