



LAND AND PROPERTY MANAGEMENT PLAN

St Clair Mt Olive



TABLE OF CONTENTS
Property Management Plan

1.0	PURPOSE	5
2.0	SCOPE	5
3.0	PLANNING	6
3.1	Integration of Land Management	6
3.2	Overview	6
3.3	Land Management Programmes	6
3.3.1	Developing Procedures and Strategies	6
3.3.2	Mitigation	7
3.3.3	Management Strategies	7
	• Soil	7
	• Surface Water	8
	• Erosion and Sediment Control	8
	• Grazing and Pasture Management	9
	• Noxious Weeds Eradication and Control	10
	• Bushfire Control and Mitigation	11
	• Feral Animal Control	11
	• Vegetation and Clearing management	12
	• Salinity management	13
4.0	TRAINING AND IMPLEMENTATION OF STRATEGIES	13
	• Education and Training	13
	• Checklist Inspection Training	14
5.0	OCCUPATIONAL HEALTH AND SAFETY	14
6.0	AUDIT	14
	• The Audit Process	14
	NOTES ON AUDITING THE EFFECTIVENESS OF STRATEGIES	15
	1. Soil	15
	2. Erosion and sediment control	15
	3. Grazing and pasture management	15
	4. Weed control and noxious weeds	15
	5. Bushfire management and control	15
	6. Feral animal control	16
	7. Vegetation clearing	16
	8. Dryland salinity	16

7.0 REPORTING ----- 16

- Checklist Inspections ----- 16
- Ensuring Management is well informed ----- 16
- Newsletter ----- 17
- Site tours ----- 17

8.0 APPENDICES ----- 18

- A. Stocking Capacity
- B. Land Register
- C. Water Titles
- D. Field Soil Test Results
- E. Cadastral Information
- F. St Clair Boundary Layout
- G. Schedule of Land Management Activity Strategies
- H. St Clair Land Management Checklist

Activity Strategy Table

List of Activity Tables

- a. Soil Management Strategies
- b. Surface Water Management Strategies
- c. Erosion and Sediment Control Strategies
- d. Grazing and Pasture Management Strategies
- e. Noxious Weed Management Strategies
- f. Bushfire Management and Control Management Strategies
- g. Feral Animal Management and Control management Strategies
- h. Vegetation and Clearing Management Strategies
- i. Salinity Management Strategies
- j. Education and Training Strategies
- k. Health and Safety Training and Operating Strategies



View back up Burkes Creek Valley

St CLAIR

LAND and PROPERTY MANAGEMENT

1.0 PURPOSE

The purpose of this plan relates to the Wonnarua Nation Aboriginal Corporation's, (WNAC), St Clair land holdings at Mt Olive in the Glennies Creek Valley. It aims to develop and implement sound policies and procedures for:

- The effective management and productive utilization of the land, and
- The conservation of all natural resources and promotion of productive intergenerational land use.

2.0 SCOPE

The scope of the plan is to ensure optimal management of the land and other natural resources constituting this holding. This involves establishing appropriate plans and procedures for all of the various aspects of this property. Important in this Programme is the integration of all of the various management practices and issues relevant to the land. It also must promote the understanding of specific land management issues existing in the area. The procedures and strategies outlined below are the basis of a training schedule to enable those working the property to become conversant with all of the aspects and strategies of this plan. Integral to this plan is a segment covering Occupational Health and Safety relevant to this type of operation. This will enable the ultimate utilization of a holistic approach to the management of all of the St Clair land at Mt Olive. There are many aspects requiring specific management processes;

These include;

- Soil conservation and management
- Surface water management
- Erosion and Sedimentation Control
- Grazing and Pasture Management
- Noxious Weed Eradication
- Bush Fire Prevention and Control
- Feral Animal Control
- Vegetation Management
- Dryland Salinity
- Education and Training
- Occupational Health & Training

3.0 PLANNING

3.1 Integration of Land Management

It is important to plan for the aspects mentioned above in a holistic manner. In order to achieve this, satisfactory integration of planning must be achieved by;

- Identifying specific Land Management Issues relevant to each of the above aspects,
- Ensuring the appropriate Management strategies for all the St Clair land at Mt Olive.
- promoting the understanding of these specific land management strategies
- Utilising an integrated approach to the Management of the land and other natural resources.
- Assisting with the periodic review of the land management strategies and contribute to their revision and implementation

3.2 Overview

Prior to acquisition the WNAC land holdings at Mt Olive have been grazed for many years as part of a former dairy farm. The area has been intensively grazed and farmed in the past. What value it may have had in terms of habitat with ecological value to natural faunal species has been lost, with the possible exception of the riparian zone.

Since acquisition, the grazing pressure has been lessened considerably. The land still shows evidence of the former wear. It has however responded to the lighter stocking regime. In general the quality of the fencing on the land is suboptimal. A recent fencing Programme has improved to some extent the protection of the riparian environment. There is still much fencing to be done to provide the capacity for efficient grazing and farming management. Some of this may be achieved by refurbishment of existing fences. Increasing the density of the native vegetation in the riparian zone would improve the protection and stability of the creek banks.

There is still much to be done in the weed eradication area. There is some evidence of rabbit infestation on the land that needs to be dealt with. This document creates plans and procedures to guide the overall management practices on this land.

The various management issues will be periodically reviewed with requisite upgrading of procedures where required.

3.3 Land Management Programmes

3.3.1 Developing Procedures and Strategies

The various procedures in this plan are integral parts of the land management process and represent the methods of suitable delivery. They discuss the relevant issues contained in the procedures. *For The establishment of specific business enterprises which may be compatible with this land, more detailed strategies will need to be separately documented. These would be incorporated in individual enterprise management/business plans. Business plans would have to be developed to thoroughly understand the*

complete physical and financial implications of a particular enterprise. This would enable a well informed decision to be made to pursue that particular enterprise or not.

These management practices are designed to avoid as far as possible adverse impacts to natural resources and prevent degradation occurring.

3.3.2 Mitigation.

This plan attempts to pre-empt adverse impacts that may occur on the land because of a particular land use. If there is a potential for adverse consequences; it then proposes appropriate mitigation measures to avoid them.

The strategies utilised are specifically proposed to ensure mitigation of impacts that may have adverse consequences on natural resources. It is also intended that they should mitigate adverse consequences on developed resources and improvements to the land. Minimum till cultivation is a strategy that can reduce adverse impacts on the soil. Judicious use of chemical management methods in weed control mitigates against a build up of undesirable residues in soil and vegetation.

Ongoing feral animal control and weed eradication programmes are mitigation strategies to protect natural resources. So it can be seen that mitigating measures represent a significant part of the management strategies used in this plan.

Mitigation measures enhance land care in a manner that is essential to the holistic management of the property.

3.3.3 Management Strategies

• Soil

Soil is a valuable natural resource containing critical structure, organic matter, Nutrients and water necessary to sustain productive vegetation growth.

Eight samples of soil were taken from the St Clair land. Field tests for pH, texture and Dispersability were conducted on these samples. These tests indicated that the soil has a pH on the acidic side of the scale ranging from 4.5 to 6.5. Texture falls within the sandy clay loam category. The structure of this soil was generally weak. The exception to this were the samples taken from the alluvial deposits along the bank of Glennies Creek which showed better structure. None of the samples showed any evidence of Dispersability. Indications are that this soil is relatively low in organic matter. It is relatively shallow. It is very prone to deterioration if not handled in a satisfactory manner. It would “powder up” if excessive cultivation was used. The use of minimal till practices should be undertaken as far as possible. This will avoid excessive degradation of the already frail soil structure. Cultivation should be done only when there is good soil moisture present. Minimal till also assists the accumulation of organic matter on the soil surface. This has a mulching effect assisting in the protection of the soil. Cultivation should also be undertaken with consideration being given as to the vulnerability of the soil to erosion both by wind and water. Excessive breaking up of the soil structure by cultivation will create serious problems from erosion.

Strategies:

1. Land use requiring cultivation such as crops, dryland or irrigated should be restricted to the better quality soil types on the land.
2. All other areas where seeding is required, the use of direct drilling of seed and fertiliser is advised. This would follow an application of a spray for weed control. Good soil moisture for this process is essential.
3. Ensure optimal vegetation cover of the soil at all times.
4. Never burn dead vegetation always allow it to decompose as mulch to enhance organic matter.

(See Activities Plan A in Appendices)

• Surface water

The management of surface water on the land is an important aspect of natural resource management. From the production angle there must be a water supply for animals where livestock grazing is proposed. As discussed later inadequate management of water drainage can lead to serious gully erosion developing with accompanying turbidity problems. Dams constructed for sediment control double as a livestock water supply.

The design of existing dams is an aspect that is sometimes less than ideal. One problem that occurs is dams constructed with an unnecessarily large surface area. This allows excessive evaporation to occur which depletes stock water reserves. Maintenance of dams is important. Issues that require attention include, excessive amounts of sediment collecting in dams, erosion occurring around the perimeter bank of dams that eventually extend back onto the paddock.

The dams on the St Clair land may have a surface area larger than ideal, this is not something that can be altered. It is important to ensure that they are desilted as required. The Desilting operator should place the silt removed from the dam in a position where it does not get washed back into the dam.

Strategies:

1. Remove sedimentation from the dams as required
2. Maintain the structural integrity of the dams
3. Ensure drainage management minimises sediment mobilisation

(See Activities Plan B in Appendices)

• Erosion and Sediment Control**Erosion**

The surface soil on this land is relatively shallow. It has poor structure with little evidence of organic matter content. This makes it particularly susceptible to erosion if insufficient ground cover vegetation is present. Cultivation practices that have been excessive, will lead to a further breakdown of surface soil structure.

If bare, the alluvium on the creek is very prone to erosion from water during periods of very high flow. It is therefore important to maintain and improve the soil structure and keep good vegetation cover. This can be achieved by avoiding over cultivation or excessive grazing. Maintaining and improving organic matter in the soil is also important in improving structure. To this end every possible effort should be made to increase a layer of rotting vegetation on the soil surface.

Controlling the velocity of runoff water is essential to minimise water erosion. Correct gradient of drains on the property will keep the runoff velocity down to a level that minimises erosion. For this purpose contour drains can be used. A review of the drainage on the property is required with remediation measures if required. This would help prevent erosion and excessive sediment mobilisation into the catchment dams on the property and subsequently into the creek.

Sediment Control

With effective erosion prevention measures sedimentation would be minimised. There will always tend to be some sediment collected in run off during heavy rainfall events. Decreasing the velocity of this run off will enable this sediment to settle out of the water. There are two dams on the property which act as stilling ponds and do a good job of settling this sediment. As mentioned it is important to desilt these dams when required to maintain their volume for collected water. This is essential to maximize stock water availability as well as providing stilling for run off to drop sediment loads. Adequate sediment control will prevent undue turbidity in Glennies Creek, which would in turn be hazardous to aquatic animals in the creek.

Strategies:

1. Avoid excessive cultivation over all of the property.
2. Utilise minimum till cultivation
3. Establish and maintain good vegetative cover of the soil
4. Prevent excessive grazing
5. Ensure timely dam maintenance eg. Desilting when required.
6. Repair and maintain water management structures particularly low velocity drains
7. Protect aquatic habitat from excessive turbidity

(See Activities Plan C in Appendices)

• Grazing and Pasture Management

The property has been heavily grazed over many years until recent times when stocking pressure has been decreased. Given the fragile nature of the relatively shallow topsoil over most of the block the cattle stocking rates would appear to have been excessive.

Grazing pressure should be conservative in order to enable some pasture regeneration. The establishment of improved pasture species would be very beneficial if grazing is to be conducted over the majority of the property. The employment of a rotational grazing system known as time controlled

Cell Grazing may be the most beneficial grazing method to use. This consists of subdividing the property into a series of smaller paddocks of equal size. Stock is rotated around these paddocks on a strictly controlled basis. The important aspect of this system being the rigidly controlled time the stock is left in each paddock. Regardless of stocking method used a maximum of one head (dry adult cattle) per 3.0 hectares of land is recommended as the stocking rate used. With cows and calves lower stocking densities are advised. In addition the stocking density must be re-assessed periodically according to the prevailing seasonal conditions. Supplementary feeding of grazing stock in dry times will enable stocking numbers to be maintained. The stocking rate must be adjusted according to these conditions. An important aspect of stocking land is to allow recovery time following stressful seasonal conditions. De-stocking completely may be necessary during drought.

Strategies:

1. Strictly control stock numbers grazed according to the area of land they are using
2. Regularly re-assess stocking rates against seasonal conditions
3. Supplementary feed stock if seasonal conditions dictate
4. De-stock completely if necessary during drought
5. Ensure adequate stock containment.
6. Investigate and implement a pasture improvement Programme
7. Maintain regular surveillance of grazing areas

(See Activities Plan D in Appendices)

• Noxious Weeds Eradication and Control

There is a policy of Noxious Weed eradication on the St Clair property. Prevention and early intervention are the most cost effective and efficient means of weed management. Persistent surveillance and prompt attention to regrowth of weeds is essential for continuing control. Effective weed control is essential to achieving a satisfactory management of feral animal populations, particularly rabbits. Many weed species provide excellent cover and protection for rabbits. This is particularly the case with weeds such as Lantana. Eradication and control should therefore be prominent in the land management strategies of the St Clair land.

As previously mentioned a weed control spraying Programme has been commenced with good effect. It is imperative that this Programme is continued. The completion of this process will see the Lantana (*Lantana camara*) removed from the property. Other noxious weeds remain. These include False Castor Oil plant or Thornapple, (*Ricinus communis*), Prickly Pear, (*Cactaceae opuntia*), and some Briar Rose, (*Rosa rubiginosa*) infestation is evident. African Olive is also evident on the land. This is an invasive undesirable species which should be eradicated. The Thornapple is regenerating vigorously where Lantana has been removed on the first terrace of the creek bank below the creek crossing. Earth moving machinery coming onto the property should be inspected for signs of weeds being carried on them. Some aquatic weeds are noxious and can spread on farm dams. These need to be carefully controlled as well.

There is some rapidly increasing regeneration of eucalypt suckering on the pasture land which needs to be controlled for the property to effectively be utilised as pasture for a grazing venture.

Strategies:

1. Maintain an effective and timely noxious weed eradication Programme
2. Instigate prompt control measures
3. Consider a pasture improvement Programme
4. Control suckering of eucalypt vegetation on the property.
5. Ensure adequate surveillance for noxious weeds
6. Develop a calendar to guide weed control programmes.

(See Activities Plan E in Appendices)

• Bushfire Control and Mitigation

Bush Wild Fire has a devastating effect on the vegetation and productivity of an area. Fires are a natural occurrence in the bush. There is in relation to some flora species, a beneficial aspect to fires. In native bushland the process of burning has a place in the ecological cycle of regeneration. Some native seed species cannot for instance germinate unless they are subject to the smoke from a bush fire. There are others that need heat to promote seed germination. However intense bush fire storms are often very detrimental to native species of both fauna and flora. This of course also applies to productive farm land. Generally the lighting of fires on site is not permitted on the St Clair land. With regard to particular circumstances management may consider exceptions to this policy. Certainly burning without rigid controls is not allowed on the St Clair site. This control and mitigation procedure relies on strict adherence to the requirements of the Rural Fire Regulations. Were burning is permitted it must be in accord with these regulations. The regulations require a permit at various times of the year to light a fire. These are issued by the Rural Fire Service. During periods of “Total Fire Ban” no burning is allowed under any circumstances.

Strategies

1. Maintain fire breaks in the summertime
2. Prevent excessive buildup of flammable material on the Land.
3. Maintain good access to water supply points for fire fighting purposes
4. Maintain membership of local Bush Fire Brigade

(See Activities Plan F in Appendices)

• Feral Animal Control

The presence of feral animals on the St Clair land is not a significant problem. Very often some types of feral animals are not seen on the land but they are present. Animals such as wild dogs are seldom seen but can be heard howling at night or their tracks can be seen on sandy patches of ground. The principal

feral animals present in the area are rabbits, foxes and cats. There is evidence of rabbits on the property. In order to keep the rabbit presence to a minimum periodic poison baiting is the recommended strategy. The presence of rabbits in an area attracts feral cats and foxes both being undesirable species. These in turn take a toll on native fauna such as small mammals and birds. Should the feral cat population increase then a trapping Programme should be considered. Foxes are controlled by baiting programmes conducted with the Mid Coast Livestock Health and Pest Authority (LHPA) Wild dogs can and have been a problem from time to time. Should they be considered a problem then the (LHPA) should be contacted. Feral, Pigs, Goats and Deer although not seen in this area can also become a problem in some circumstances.

Strategies:

1. Undertake Rabbit control campaign when rabbits are evident.
2. Participate in Fox baiting programmes.
3. Consider feral cat trapping if evidence indicates a problem
4. Maintain constant surveillance regarding feral animals
5. Confer with the Rural Lands Protection Board in regard to feral animal problems

(See Activities Plan G in Appendices)

• Vegetation Clearing Management

Vegetation clearing is not permitted. The past has seen removal of trees to increase grazing and farming capacity leaving few trees across the majority of the property.

Recent fencing to exclude the riparian zone from the grazing/farming areas has created an area within this zone where vegetation can be enhanced. A tree planting project is planned for this area. This will establish a greater density of local provenance native vegetation along the creek. Other areas are being investigated with a view to conducting further tree planting.

Weed invasion has been an ongoing problem over many years. This has been discussed earlier in the Noxious Weed section of this document. Lantana particularly adjacent to the creek is a significant concern. A recent spraying Programme has made great strides in controlling this weed. There is need for further control measures to be undertaken before the Lantana is eliminated. (See noxious weed section)

Strategies:

1. No further clearing of trees in undertaken
2. Some consideration be given to establishing native trees along fence lines
3. Eradication of all eucalypt suckering on pasture land
4. Continue eradication of all noxious weeds

(See Activities Plan H in Appendices)

• **Salinity Management**

Dry Land Salinity is not generally a serious problem on the St Clair Land. There is evidence in some areas of salinity indicated by the presence of sedges growing on the top water level lines of the farm dams on the property. There is a patch of apparent saline ground in the south west corner of the property. This is evidenced by a clump of sedge thriving there. It is not considered a widespread problem at this time.

The establishment of trees along fence lines may be considered. This would assist with the management of the surface ground water table by enhancing evapotranspiration. This in turn would decrease the rise in the surface ground water table and minimising the potential for dryland salinity down slope. This would have a dual beneficial purpose as it would enable the re-establishment of native vegetation in strategic areas.

Clearing of well established vegetation is not permitted.

Strategies:

1. Do not clear any long established native vegetation
2. Consider native vegetation establishment along fence lines
3. Maintain regular surveillance of suspected saline areas

(See Activities Plan I in Appendices)

4.0 TRAINING AND IMPLEMENTATION OF STRATEGIES

• **Education and Training**

The implementation Programme consists of a schedule of activities which are based on the various strategies outlined above (See APPENDIX G). The schedule of activities contains the Activity Plans relevant to each strategy. Each Activity Plan in turn outlines the main points for implementing the management strategies. It is important that those who will be implementing the management strategies should have a good understanding of the activities involved.

An operation that may affect aspects of land/property management is noted. Prior to the commencement of this work, personnel are advised to refer to the relevant activity plan to ensure they understand the management strategy involved. This applies equally to St Clair employees and contract personnel. This enables personnel who may not fully understand the various issues involved, to follow through the activities in the plan to the desired result. This will ensure the most effective measures are employed to promote appropriate work practices relative to the best land management.

The overall aim is to present a process that is as practical as possible. Periodic reviews of the various aspects of the Management Plan's effectiveness will provide the material necessary to modify the management strategies/procedures as and when required.

- **Checklist Inspection Training**

Personnel who are responsible for the regular checklist inspections are trained to undertake these in an effective manner. This involves recognition of various aspects of the site operations that can have adverse affects on the efficient management of the area. Matters covered in this regard include field recognition of noxious weed species and the evidence of feral animals.

(See Activities Plan J in Appendices)

5.0 OCCUPATIONAL HEALTH AND SAFETY

The terms of this management plan do not specifically mention Occupational Health and Safety (OH&S), as part of its coverage. It is important however to cover this aspect to some extent. More in depth coverage of this subject is best left to specialists in that field. The occupational health and safety of the personnel employed on this land is of the utmost importance. Every effort must be made to ensure the operation of this land is conducted in a way that safeguards the health and safety of employees.

All health and safety risk associated with this enterprise should be very thoroughly assessed and understood. Personnel employed should be specifically trained in the OH&S aspects of the business.

Strategies

1. People suitably trained and experienced in OH&S should be engaged to provide appropriate direction and training in occupational health and safety matters
2. All risks should be well assessed and understood
3. Training should include identification of all hazardous plants, animals, reptiles and insects.
4. Meet all statutory requirements regarding OH&S.
5. Incorporate all required documentation of training into management records.
6. Ensure appropriate Personal Protective Equipment (PPE) is issued to all employees.
7. Use of PPE is required and complied with.
8. Where required issue appropriate Material Safety Data Sheets (MSDS)
9. Ensure that a minimum team of two is present whenever machinery is being operated.

(See Activities Plan K in Appendices)

6.0 AUDIT

- **The Audit Process**

This entire management plan will come under review on an annual basis. This will ensure a continuing critical appraisal of the entire process.

This review will consist of an audit of the management plan. That combined with the regular ongoing appraisal process based on the check list inspections will ensure that this land/property management plan remains relevant to its aims over time.

NOTES ON AUDITTING THE EFFECTIVENESS OF STRATEGIES

1. Soil

Soil becoming very dusty is a good indicator of a serious breakdown of soil structure. The surface of the soil being quite bare of any vegetation or dead decomposing grass shows poor soil management. Badly managed soil indicates a reduction of soil biota, (micro organisms that keep the soil “alive”). Small wet “swampy” patches show poor soil drainage. This may be caused by a hard layer of soil under the surface that will not let the water soak down into the soil. The development of gullies shows poor drainage when it rains.

2. Erosion and sediment control

Very muddy water running around after rainfall is a good indicator of soil erosion. Gullies forming are showing a serious impact of erosion. Gully formation is the result of water running too fast over bare or broken ground. Bare patches encourage wind erosion. Excessive stocking numbers damages the surface soil and assists erosion to start. Water control drains that have burst or washed out create erosion and increase sediment build up.

3. Grazing and Pasture Management

Grazing stock too heavily will create bare paddocks because the stock walking over the land kills all the grass that they haven't already eaten. Poor pasture will not even stand up to fairly light stocking rates. Poor quality fences mean the grazing of the pasture cannot be properly controlled. Increasing weed growth will crowd out the good pasture. Well located shade areas will control where stock camp and cause some serious ground wear.

4. Weed control and Noxious Weeds

The effectiveness of weed control is evident from continuing observation. Seasonal variations occur with different species evident depending on the season. Along with eradication campaigns the encouragement of a vigorous ground cover of beneficial species lessens the likelihood of weed incursion. Timely observation and control of weed spread is absolutely necessary.

Noxious weeds are self evident. They are destructive to all aspects of good property management. Increasing weed population may mean control measures have been too late and the weeds were killed after they had gone to seed. This allows these seeds to germinate and grow more weeds.

5. Bush Fire Management and Control

The effective prevention, management and control of wild fire presents few indicators of good management. One is obviously that there have been no fires. Adequate evidence of the satisfactory upkeep of fire breaks is a positive sign. This needs to be done on an annual basis at least. There is a fine line between allowing satisfactory build up of beneficial ground surface mulch and an excessive amount of fuel for wild fire. Over time a successful accumulation of surface mulch protects an under story in the pasture sward which is usually green. This creates a fire inhibiting layer. Excessive fuel accumulation should be avoided.

6. Feral Animal Control

The ongoing success of feral animal control is best judged by observation over time. Rabbits are the principle concern they have a devastating effect on the land and vegetation. They also attract other feral animals hazardous to native fauna e.g. feral cats and foxes.

The most effective method of monitoring the success of rabbit control measures is visual observation. The existence of Lantana or Blackberry provides the most common form of rabbit harbour (shelter for rabbits). Observation of rabbits, the presence of rabbit burrows and other protection used by them indicates a possible problem. The most telling evidence of rabbits in an area is the presence of “Dung Hills”. Rabbits in their particular area always defecate in the one spot creating small mounds of scats, these dung hills are used over long periods by rabbits in that area. These are excellent indicators; old dung hills with no evidence of recent use indicate no rabbits in this particular area. The presence of foxes is evident by visual observation and the evidence of tracks in sandy or dusty areas, eg, tracks on sandy gully beds. Evidence of feral cats is most commonly a small forlorn scattering of feathers or fur where a cat has made a meal of a small bird or mammal.

7. Vegetation Clearing

The effectiveness of this strategy is very much self evident. There are a number of statutory requirements regarding clearing trees from land that are quite strongly regulated.

8. Dry Land Salinity

The most effective manner in which to monitor dry land salinity is to make photographic records of any obviously saline areas on a six monthly basis. This enables a comparative record to be kept over time and shows any reduction or escalation of this problem.

7.0 REPORTING

• Checklist Inspections

The concept of inspections is seen by some as a very rigid formal process. Particularly in relation to a farming property. It is never the less a very useful tool for measuring how effective management policies and practices have been over time. If management relies on memory then there is a probability that some aspects of the management will tend to be left behind. This document has in the appendices an inspection report sheet listing the relevant aspects of the management process. It is recommended that a quick look around every three months or so while filling out this check list will be a very valuable management tool. A few digital photos can be added to it to aid memory. Once completed and filed it can then be referred to along with others at a later stage for comparative analysis.

• Ensuring management is well informed

The monthly checklist inspection reports are filed by management. As mentioned some photos may be included and if necessary some explanatory notes as well. Should there be a requirement these records can accompany reports going to a higher level of management.

Any noteworthy results achieved during the relevant period are recorded with photos on this document. Where and when it is considered appropriate site tours, (see below) may be offered to the community. This would assist in educating it in the benefits of the management strategies employed on the St Clair land. Demonstrating the land holdings are being managed in a proactive and effective manner.

- **Newsletter**

Articles specific to the St Clair Land can be included in the community newsletter. These would contain material explaining the high lights and achievements at St Clair. Or perhaps some of the problems that are being encountered, during the period, such as drought. This enables the community to be aware of the progress in this regard.

- **Site Tours**

From time to time tours of the site may be conducted for individuals or small groups. An occasional invitation to the immediate neighbours in the area to have a look at the strategies being employed would be good policy. This creates an opportunity to explain the various activities in all aspects of Land/Property Management.



Across toward Mt Dyrring

9.0 APPENDICES

Appendix A.

Stocking Capacity

Total Area of the St Clair Property is 35.35 Hectares (Ha)

(Suggested maximum stocking rate on unimproved pastures is 1 dry adult Beast to 3 Ha)

Suggested Indicative Stocking Rates (using unimproved pastures, on an Annual Basis)

Type of Stock	Total Number of Stock
Cows & Calves	8
Weaners	14
Yearlings	11
Bullocks	10
Dry Cows	10
Bulls	9

NOTE: An arbitrary stocking rate such as this is at best a “rough estimate” It is shown here to give some indication only of the number of stock that can be productively carried on this land in its current unimproved state. Pasture conditions will always vary continually with the seasons. It should be closely monitored at all times and amended when necessary. Improved pasture establishment would improve to some extent the carrying capacity.

Appendix B.

LAND REGISTER

First schedule	Lot	DP	Parish	County	Area Hectares	Local Govmt
Wonnarua Nation Aboriginal Corp	901	977154	Shenstone	Durham	25.70	Singleton
Wonnarua Nation Aboriginal Corp	902	977154	Shenstone	Durham	09.65	Singleton

Appendix C.

WATER TITLES

Title Holder	Area	Water Access Licence	Lot & DP	No.
Wonnarua Nation Aboriginal Corp	Mt Olive	WAL 10537	901/877154	T 7077081
Wonnarua Nation Aboriginal Corp	Mt Olive	WAL 10537	902/877154	T 7077081

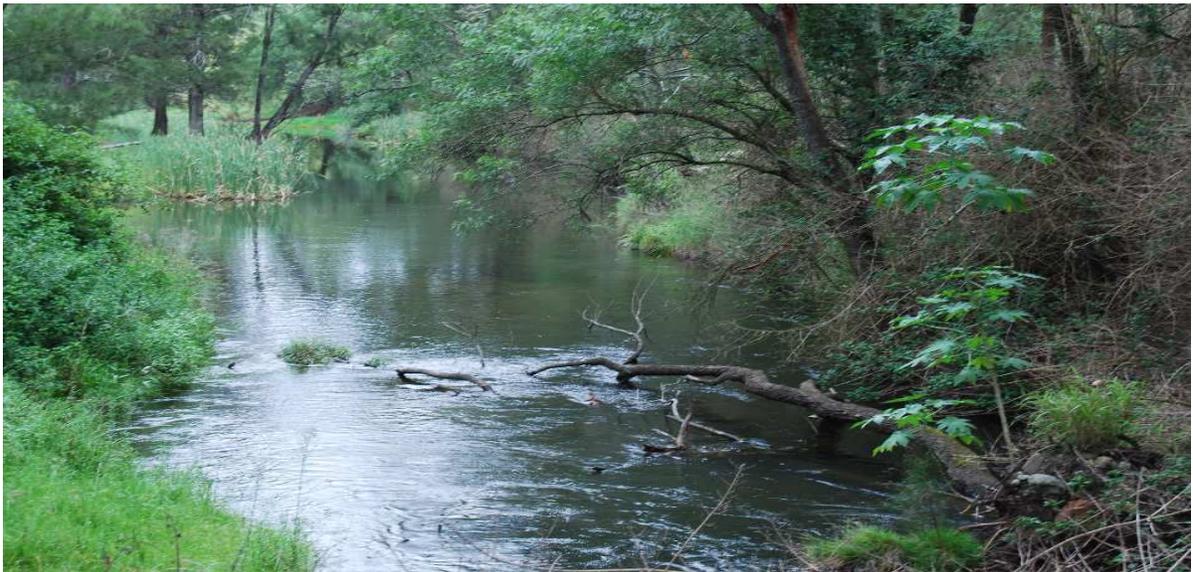
Appendix D.

Soil Field Test Results

Sample	pH	Texture	Dispersible
1	6.0	Silty sandy clay loam	no
2	6.5	Sandy loam	no
3	5.5	Sandy clay	no
4	5.0	Clay loam	no
5	6.0	Sandy clay	no
6	4.5	Sandy clay loam	no
7	4.5	Sandy clay loam	no
8	5.5	Clay loam	no



Burkes Creek Paddock



Glennies Creek



No.1 Dam



No.2 Dam



Appendix F

St Clair Boundary Layout

Appendix G.

Implementation Programme

Schedule

Of

MANAGEMENT ACTIVITY STRATEGIES

St CLAIR PROPERTY

St CLAIR PROPERTY

LAND MANAGEMENT

IMPLEMENTATION

STRATEGIES TABLE

MANAGEMENT PROCEDURES	TABLE	MANAGEMENT STRATEGY STATEMENT
Soil Management	A	SOIL
Surface water management	B	SURFACE WATER
Erosion & Sediment Control Management	C	EROSION & SEDIMENT CONTROL
Grazing & Pasture Management	D	GRAZING & PASTURE
Noxious Weed Eradication	E	NOXIOUS WEEDS
Bushfire Control & Mitigation	F	BUSHFIRE
Feral Animal Control	G	FERAL ANIMALS
Vegetation & clearing management	H	VEGETATION & CLEARING
Salinity Management	I	SALINITY
Education and Training	J	EDUCATION AND TRAINING
Occupational Health & Safety	K	HEALTH AND SAFETY

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN a. SOIL MANAGEMENT STRATEGIES

Planning	Timing	Responsibility
Utilise soil according to suitability e.g. Alluvial creek flats for intense cultivation	Ongoing	Management
Ensure all soil management procedures consider preservation of soil organic matter	Planning & Ongoing	Operational Personnel
Operations		
Consider chemical weed control to reduce cultivation	As required	Management
Direct drill seed and fertiliser avoiding soil disturbance	For crop establishment	Management
Minimise mechanical pulverization of the soil during cultivation procedures	During cultivation	Operation supervisor
Only work the soil if good moisture levels are present	Ongoing	Operation supervisor
Arrange adequate suitable drainage to prevent soil erosion	Planning Phase, ongoing	Management
Design to minimise wind and water erosion and provide appropriate sediment control	Initially and as required	Management
Deep Rip to assist water percolation into long grazed soil to break up impacted layer	Initially and as required	Management
Maintain good vegetation cover on the soil	Ongoing	Operation supervisor
Avoid burning dead vegetation. Allow it to decompose and improve organic matter	Ongoing	Operation supervisor
Training		
Ensure relevant personnel understand optimal soil management techniques and handling procedures	As required	Management
Vary procedures if monitoring indicates	If required	Management
Monitoring Effectiveness of Procedures		
Effectiveness of vegetation germination and establishment	Following establishment	Management
Density of Revegetation	Ongoing	Management
Effectiveness of pasture species establishment	1 year after Establishment	Management

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN b. SURFACE WATER MANAGEMENT STRATEGIES

Planning	Timing	Responsibility
Ensure adequate water for livestock	Ongoing	Management
Adequate effective drainage established and maintained	Planning & Ongoing	Operational Personnel
Operations		
Undertake timely removal of sediment from dams	As required	Management
Maintain structural integrity of dams	Ongoing	Operation supervisor
Utilise drainage management to minimise erosion and sediment mobilisation	Ongoing	Operation supervisor
Avoid silt removed from dams being washed back into dam	As required	Operation supervisor
Deep Rip to assist water percolation into long grazed soil to break up impacted layer	Initially ,and as required	Operation supervisor
Maintain good vegetation cover on the soil to assist clean run off water	Ongoing	Operation supervisor
Training		
Ensure relevant personnel understand optimal water management techniques and storage facilities	As required	Management
Vary procedures if monitoring indicates	If required	Management
Monitoring Effectiveness of Procedures		
Effectiveness of drainage control measures	Ongoing	Management
Extent of turbidity evident	Ongoing	Management
Effectiveness of vegetation cover on the ground	Ongoing	Management

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN c. EROSION & SEDIMENT CONTROL STRATEGIES

Planning & Design	Timing	Responsibility
Design to Protect terrestrial and aquatic habitat from erosion and turbidity impact	Planning Phase	Management
Utilise adequate low velocity drainage, contour banks, collection ponds etc	Planning Phase	Management
Initial Establishment		
Drainage infrastructure to a proven design specification	Development	Management
Provide adequate stilling measures, ponds, etc to settle out entrained sediment	Development	Management
Ensure adequate energy dissipation in flow lines	Development	Management
Provide flow line protection for "High Flow" outfalls	Development	Management
Operation		
Provide appropriate and timely inspection and repair processes for drainage infrastructure	Ongoing operational	Operations supervisor
Ensure adequate maintenance for drainage management infrastructure	Ongoing operational	Operations supervisor
Arrange timely de-silting of sediment control ponds	Ongoing operational	Management
Ensure long term stability of retained Drainage and flow control infrastructure	Planning Phase	Management
Utilise minimum till cultivation and direct drill seed and fertiliser application	Ongoing operational	Operations supervisor
Establish and maintain good vegetative cover of soil	Ongoing operational	Operations supervisor
Prevent excessive grazing	Ongoing operational	Operations supervisor
Training		
Ensure appropriate personnel are adequately trained in erosion & sediment control management	As and when required ongoing	Management
Monitoring		
Maintain annual surveillance, of drainage control network	Ongoing operational	Management
Check for turbidity outfall to local streams	Ongoing operational	Management
Inspect general landform stability	Ongoing operational	Management

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN d. GRAZING & PASTURE MANAGEMENT STRATEGIES

Planning & Design	Timing	Responsibility
Regularly re-assess stocking rate policy on grazing livestock on land	Ongoing	Management
Ensure stocking rates are kept below one dry adult beast to three hectares (annual average)	Ongoing	Management
Operation		
Allow land time to recover (3to6 months) following climatic stress e.g. drought	As required	Management
Destock land during severe drought conditions	As required	Management
Ensure adequate livestock containment with appropriate fencing properly maintained	Ongoing	Management
Ensure agistees compliance with grazing density policies	Ongoing	Management
Maintain vigilance for livestock health problems	Ongoing	Operational supervisor
Training		
Ensure those responsible for grazing oversight are sufficiently competent	Ongoing	Management
Monitoring		
Maintain regular surveillance over grazing areas	Ongoing	Management
Record anomalies such as weed encroachment soil erosion or feral animal intrusion	Ongoing	Management
Ensure prescribed stocking rates are maintained	Ongoing	Operational supervisor

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN e. NOXIOUS WEED MANAGEMENT STRATEGIES

Planning	Timing	Responsibility
Develop a calendar to guide weed control programmes following seasonal occurrence of weeds	Initially and review regularly	Management
Ensure best weed management procedures are conducted on Property.	Ongoing	Operations supervisor
Ensure weed eradication procedures are planned in a timely fashion	Ongoing	Operations supervisor
Ensure any earth moving machinery coming to site is clean and free of possible weed contaminated material.	As appropriate	Operations supervisor
Minimise extent of any vegetation clearing and surface soil disturbance in areas not needed for cultivation activities	Ongoing	Operations supervisor
Consider a pasture improvement Programme	Initially	Management
Operation		
Conduct adequate control measures in a timely manner	Ongoing	Operations supervisor
Control suckering of woody weed vegetation on property	Ongoing	Operations supervisor
Avoid inclusion of weeds in material assigned to be mulched	Ongoing	Operational Personnel
Chemicals used in weed control/management must be used strictly in accordance with the Pesticides Act 1999. MSDS will be available to all personnel involved in weed control	As required	Management
Ensure any introduced crop seed is verified free of weed seed contamination	Ongoing	Management
Should prolific weed infestation occur isolation measures will be considered e.g. fencing	Ongoing	Management
Training		
Ensure weed awareness in appropriate personnel	Ongoing	Management
Develop, maintain and distribute a register of weeds occurring on site	Ongoing	Management
Promote adequate weed recognition skills in operational personnel	As required	Management
Monitoring		
Include weed surveillance in regular site inspections	Ongoing	Operations supervisor
Monitor weed control measures and modify if judged inadequate	Ongoing	Operations supervisor

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN f. BUSHFIRE PREVENTION & CONTROL MANAGEMENT STRATEGIES

Planning & Design	Timing	Responsibility
Ensure fire fighting access to all areas and water supply points on land	Planning & Ongoing	Operation supervisor
Flammable substances stored appropriately	Planning & Ongoing	Operation supervisor
Liaise with local bush fire brigade and develop appropriate co-operative measures and procedures for fire prevention and control	Planning & Ongoing	Management & Operation supervisor
Maintain membership of local bush fire brigade	Ongoing	Management
Operational		
In the event of fire prioritize animal safety	As required	Operations supervisor
Provide for hazard reduction and adequate fire break construction	Ongoing	Operation supervisor
Avoid activities which may provide accidental ignition eg. Welding in paddock	Ongoing	Operation supervisor
Facilitate access to dams and the creek for availability to fire teams	Ongoing	Management
Control fuel levels in all areas	Ongoing	Operation supervisor
Fuel will be reduced in consultation with Rural Fire Service	Ongoing	Operation supervisor
Store any vegetative mulch such that there is minimal risk of it igniting by spon com	Ongoing	Operation supervisor
Ensure minimal potential for possible ignition and propagation of fire	Ongoing	Management & Operation supervisor
Training		
Have suitable equipment and trained personnel available	Ongoing	Management
Ensure personnel awareness of current fire danger status	Ongoing	Management
Fire hazard and control awareness training shall be held for all personnel	Ongoing	Management

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN g. FERAL ANIMAL CONTROL MANAGEMENT STRATEGIES

Operations	Timing	Responsibility
Rabbits		
Conduct rabbit baiting campaigns with the assistance of the Livestock Health & Pest Authority	Ongoing	Operations supervisor
Use follow up control measures to achieve eradication	Ongoing	Operations supervisor
Destroy rabbit harbour, burrows blackberry/Lantana bushes and similar	Ongoing	Operations supervisor
Feral Cats		
Conduct a cage trapping Programme for feral cats.	As required	Operations supervisor
Trapping may bring to notice other feral predators that are found in the traps	Respond as required	Operations supervisor
Foxes		
Undertake a fox baiting Programme with the assistance of the Livestock Health & Pest Authority	As required	Operations supervisor
Other Feral Animals		
Be aware of the potential for incursion of other feral species such as pigs, goats and deer	Ongoing	Operational Personnel
Training		
Train relevant personnel on appropriate surveillance techniques for detection of feral animals	Ongoing	Operations supervisor
Ensure adequately trained personnel are used for feral animal baiting programmes	Ongoing	Operations supervisor
Monitoring		
Maintain adequate feral animal surveillance and adjust control measures as the surveillance suggests	Ongoing	Operations supervisor
Surveillance may also indicate the presence of other feral pest species such as pigs, deer or goats.	Ongoing	Operations supervisor

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN h. VEGETATION & CLEARING MANAGEMENT STRATEGIES

Planning & Design	Timing	Responsibility
No further clearing of mature trees to be undertaken	Ongoing	Management
Collect seed from local vegetation to ensure local provenance seed source for propagation	Planning phase	Operations supervisor
Operation		
No mature vegetation clearing permissible	Ongoing	Management
Eradication of all eucalypt suckering on pasture land	Ongoing	Management
Consider establishing native trees along fence lines	As required	Management
Maintain adequate surveillance weed encroachment	Ongoing	Operations supervisor
Control weed infestation on all land	Ongoing	Operations Personnel
Training		
Ensure appropriate personnel have adequate understanding of vegetation clearing policies	Ongoing	Management
Monitoring		
Maintain vigilant surveillance of all areas for weed encroachment	Ongoing	Operations supervisor
Be aware of eucalypt regeneration on pasture land	Ongoing	Operations supervisor

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN i SALINITY MANAGEMENT STRATEGIES

Planning	Timing	Responsibility
Dry land salinity is given appropriate consideration in the planning of any vegetation clearing or planting	Ongoing	Management & Planning personnel
Operational		
Develop appropriate control and mitigation measures should saline areas appear to show signs of increasing	Ongoing	Management
Consider planting native trees along fence lines	As appropriate	Management
Monitoring		
Annual inspections of land showing evidence of surface salinity to note any amplification of the problem over time. (photographic evidence)	Ongoing	Management

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN j. EDUCATION AND TRAINING STRATEGIES

Planning & Design	Timing	Responsibility
Design a specific education and training Programme for all personnel	Planning Phase	Management
Have appropriate Occupational Health and Safety training included in the Programme	Planning Phase	Management
Provide comprehensive training covering all facets of the operation	Planning Phase	Management
Ensure training is modified as needs demand	Planning Phase	Management
Conduct adequate training in recognition of plants(weeds etc) and feral animal signs	As required	Management
Incorporate a training capability in the supervisors role	Development	Management
Incorporate documentation of training into management records	Development	Management
Operation		
Insist that all site Occupational Health and Safety requirements are met by employees	Ongoing Operational	Management
Provide appropriate and timely training for newcomers	Ongoing operational	Operations supervisor
Incorporate training updates when circumstances require	Ongoing operational	Operations supervisor
Ensure statutory requirements for capability certification for employees are met. Eg. Approved Training in handling farm chemicals	Ongoing operational	Operations supervisor
Training		
Ensure appropriate personnel are adequately trained in erosion & sediment control management	As and when required ongoing	Management
Monitoring		
Maintain annual surveillance of training programmes.	Ongoing operational	Management
Check for employee's compliance with safe work practice.	Ongoing operational	Management
Inspect regularly structures and mechanical appliances to ensure their safety	Ongoing operational	Management

St CLAIR LAND MANAGEMENT

ACTIVITIES PLAN k. HEALTH AND SAFETY TRAINING AND OPERATIONAL STRATEGIES

Planning & Design	Timing	Responsibility
Ensure risk associated with the enterprise is adequately assessed and understood	Initially and as required	Management
Implement a specific OH&S training Programme for all personnel based on assessed risk	Planning Phase	Management
Have Occupational Health and Safety training included with the training Programme	Planning Phase	Management
Provide comprehensive OH&S training covering all facets of the operation	Planning Phase	Management
Ensure OH&S training is modified as needs demand or risk alters	Planning Phase	Management
Conduct adequate training in recognition of poisonous plants(weeds etc) and potentially dangerous feral animals, reptiles, insects etc.	As required	Management
Incorporate documentation of training into management records	Development	Management
Operation		
Appropriate Personal Protective Equipment (PPE) is provided for employees	Ongoing operational	Management
Ensure appropriate Material Safety Data Sheets (MSDS) are issued when required	Ongoing operational	Management
Insist that all site Occupational Health and Safety requirements are met by employees	Ongoing operational	Operations supervisor
Provide appropriate and timely OH&S training for newcomers	Ongoing operational	Operations supervisor
Incorporate OH&S training updates when circumstances require	Ongoing operational	Operations supervisor
Ensure statutory requirements for capability certification for employees are met. Eg. Approved Training in handling farm chemicals, operating machinery and wherever else appropriate.	Ongoing operational	Operations supervisor
Ensure machinery operation only happens when at least two people are present on farm	Ongoing operational	Management
Ensure all structures meet OH&S statutory requirements	Ongoing operational	Management
Training		
Ensure appropriate personnel are adequately trained in all aspects of Occupational Health and Safety specific to the operation	As and when required ongoing	Management
Monitoring		
Maintain annual surveillance of relevance of OH&S training programmes.	Ongoing operational	Management
Check for employee's compliance with safe work practice.	Ongoing operational	Management
Inspect regularly structures and mechanical appliances to ensure their safety	Ongoing operational	Management
Ensure various certification requirements are met and updated	Ongoing operational	Management

APPENDIX H

**St CLAIR LAND MANAGEMENT
CHECK LIST**

Inspected by: _____ Date Inspected: _____

ITEM	COMMENTS	OK √ or X
SOIL		
No weeds evident		
Protective vegetation		
Erosion		
Dust control		
Drainage systems		
Sediment control		
EROSION and SEDIMENT		
Drainage & run-off systems stable		
Maintenance systems up to date		
Sediment control satisfactory		
Erosion damage repaired		
Has turbidity been exported		
High flow outfalls intact		
General landform stable		
GRAZING & PASTURES		
Stocking densities compliant		
Stock in good healthy condition		
Stocking appropriate to seasonal conditions		
Control fencing in good condition		
Water points adequate		
Pastures adequate for stock numbers		
Weeds under control		
NOXIOUS WEEDS		
Control & eradication measures adequate		
No re-infestation occurring		
Appropriate personnel trained in identification		
BUSHFIRE CONTROL & MITIGATION		
Adequate hazard reduction		
Appropriate control measures in place		
Fire breaks well maintained		
Hot work restricted in sensitive areas		
Spontaneous combustion controlled		
Fire fighting facilities/equipment serviceable		
Personnel adequately trained		
FERAL ANIMALS		
Rabbit control effective		
Rabbit surveillance effective		
Appropriate surveillance for cats & foxes		
Timely control of foxes and cats		
Adequate surveillance for other ferals,goats,deer		

St CLAIR LAND MANAGEMENT CHECK LIST

VEGETATION CLEARING		
Clearing has managers authority		
Areas to be cleared accurately indicated		
Endangered species identified		
Cleared timber stockpiled for chipping		
Clearing process has adequate supervision		
SALINITY		
Evidence of dryland salinity noted and recorded		
EDUCATION AND TRAINING		
Training Programme up to date		
Specialized task certification current		
OCCUPATIONAL HEALTH & SAFETY		
OH&S Records up to date		
Machinery in safe working condition		
All employees have been trained in OH&S aspects of their job.		
Machinery operated with two persons present		
Employees using appropriate PPE		

GENERAL COMMENTS: _____

Inspected by: _____ Date Inspected: _____