

**PASTORAL LAND BOARD**

*Pastoral Land Act – section 38(1)(h)*

**CONSENT TO CLEAR PASTORAL LAND**

**PERMIT NUMBER: PLC04/2**

**DESCRIPTION OF LAND THE SUBJECT OF THE PERMIT**

Station Name: Marrakai  
Pastoral Lease No: PPL 1131  
NT Portion: 1170  
Pastoral District: Darwin

**DETAILS OF APPROVED CLEARING**

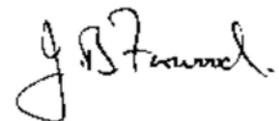
The Pastoral Land Board on 5 May 2004 granted consent to the clearing of approximately 3,627 hectares for the purposes of pasture improvement in accordance with the attached schedule of conditions and the endorsed plans.

**REASONS FOR DECISION**

1. The application is generally in accordance with the Land Clearing Guidelines 2002.
2. Soil types in the areas approved for clearing are suitable for improved pasture.
3. Clearing of drainage lines, wetlands and slopes greater than 3% are not to be cleared, as clearing could cause soil erosion, sedimentation of waterways and reduce water quality.
4. Areas of rock outcrops and soils not suitable for pasture establishment are not to be cleared as they are unsuitable for pasture development.
5. Retention of native vegetation buffers as outlined on the approved clearing plan is required to ensure there are no straight downslope runs of more than 300 metres for erosion control, and also to provide landscape connectivity to facilitate local wildlife movement and to protect biodiversity.
6. A buffer zone of 250 metres is to be retained as native vegetation between the cleared areas bordering the Djukbinj National Park to reduce the potential impact of improved pastures spreading into neighbouring land.

**PERIOD OF THE PERMIT**

This permit will lapse if clearing has not commenced within 2 years and/or has not been completed within 5 years of the date of this permit; and the lessee will need to seek an extension of time from the Pastoral Land Board to complete the clearing.



J B Forwood AM  
Chairman  
Pastoral Land Board  
24 / 5 /2004

# CONSENT TO CLEAR PASTORAL LAND

PERMIT NUMBER: PLC04/2

## SCHEDULE OF CONDITIONS

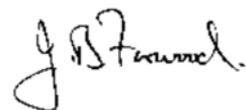
1. Clearing carried out under this permit shall be in accordance with drawing number 04/PPL1131/1 endorsed as forming part of this permit.
2. Clearing, erosion control, environmental protection and ongoing resource management shall be in accordance with the Property Management Plan for Land Clearing Development submitted by the lessee and endorsed as forming part of this permit.
3. All clearing is to be carried out on the contour.
4. A buffer zone of intact vegetation is to be left along watercourses to a minimum width of 50 metres adjacent to drainage lines, 100 metres adjacent to creeks and 250 metres adjacent to rivers.
5. A buffer zone of 250 metres is to be retained and maintained as native vegetation between the cleared areas bordering the Djukbinj National Park.
7. Areas of rock outcrops, monsoon vine forest, seasonally inundated areas and soils not suitable for pasture establishment are not to be cleared.
6. The Director Pastoral Land Management Branch, Department of Infrastructure, Planning and Environment is to be notified before the commencement of clearing and on completion of the clearing development.

## APPEAL

Under section 119 of the *Pastoral Land Act*, a pastoral lessee who is dissatisfied with a decision of the Pastoral Land Board may appeal to the Pastoral Land Appeal Tribunal against the decision of the Board. Appeals may be lodged with the Registrar of the Appeal Tribunal within 28 days of notification of the decision of the Board.

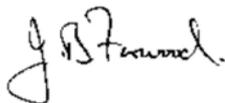
## NOTES:

1. The Aboriginal Areas Protection Authority recommends that the pastoral lessee obtain an Authority Certificate to indemnify against prosecution under the *Aboriginal Sacred Sites Act 1989*.
2. Fire prevention measures are to be implemented in accordance with the requirements of the *Bushfires Act*. Permits must be obtained from the Regional Fire Control Officer of the Department of Infrastructure, Planning and Environment (telephone 8976 0321) before ignition of any felled timber in this area.
3. The *Heritage Conservation Act 1991* protects archaeological places and objects, regardless of the level of documentation that the Office of Environment and Heritage has of such sites. It is an offence to undertake work on a place or object without the consent of the Minister for Environment and Heritage.
4. It is the responsibility of the pastoral lessee to refer the proposed development to the Commonwealth Department of the Environment and Heritage under the *Environment Protection and Biodiversity Conservation Act* should they believe the proposed development may have a significant impact on a matter of national environmental significance as outlined in that legislation.



J B Forwood AM  
Chairman  
Pastoral Land Board  
24 / 5 /2004

**This is the Property Management Plan for Land Clearing  
Development referred to in Pastoral Land Clearing Permit  
No: PLC04/02; issued on 24 May 2004**



**CHAIRMAN, PASTORAL LAND BOARD**

## **PROPERTY MANAGEMENT PLAN FOR LAND CLEARING DEVELOPMENT MARRAKAI STATION PPL 1131**

### **1.0 OVERVIEW OF CLEARING & DEVELOPMENT PROGRAM**

In February 2003 Marrakai Station commenced clearing 1000 hectares of land for the purpose of pasture improvement. Development of the land was stalled due to a poor finish to the wet season.

In June 2003 a second application was lodged to clear additional areas totalling approximately 3900 hectares in three strategic locations throughout the property.

A prerequisite to approval of the second clearing application was that a property management plan be prepared addressing land management in association with the development of the property.

It is anticipated that the second proposal for 3900 hectares of clearing and development will complement the previously cleared 1000 hectares and form an integral component of the overall property development plan. The initial 1000 ha will be utilised for production of hay and pasture seeds, most of which will be utilised on property.

Marrakai Station is a Darwin Pastoral District coastal property comprised of approximately 40% floodplain and 60% upland grazing lands.

During the dry season when flood waters have receded, floodplains provide high quality aquatic grass species for grazing of livestock.

During the wet season the floodplains are inundated with water for several months and can not be utilised for grazing livestock, subsequently stock must be confined to grazing the upland areas.

Marrakai shares a common problem with other Top End coastal properties in the Northern Territory in that the upland grazing lands are of inferior quality for grazing with poor quality native pastures.

Given that the upland provides inferior grazing in comparison to the floodplains it is necessary to significantly reduce overall property stock numbers for the wet season period.

The inferior upland in its native state is often susceptible to over utilisation during this period of reliance for grazing purposes.

Traditionally the months of January/February are a period of high prices for live export stock due mostly to non availability of suitable supplies within the NT. During this period some exporters are forced to source stock from as far away as NSW.

The establishment of improved pastures on the upland of coastal properties such as Marrakai can assist in reducing seasonal fluctuation in livestock numbers, reduce the grazing pressure placed upon traditionally grazed native pastures fringing the flood plain, and provide improved utilisation of the pastoral resource.

It is proposed to develop areas of upland on Marrakai by means of clearing selected areas and sowing more productive improved pastures to assist in overcoming some of the above mentioned problems.

Land clearing operations will incorporate some redesign of paddock infrastructure including fencing and waters, and a general change in management practices. It is proposed to link the north of the property to the south of the property via a series of laneways allowing stock to be walked from the northern region to the southern region improved pastures close to the Arnhem Highway for turn off in January.

Hay will be utilised for supplementation on station and seed will be utilised for establishment and maintenance of improved pastures.

A central laneway will link the north and south of the property and many paddocks will be redesigned, including Pams, Kathy, Shirley Ck Paddocks. The western sections of the above paddocks endure problems with zamia and will be fenced off.

The proposed clearing is to occur in three separate areas within the property, and as such each area has been examined separately as follows:

**Area A** comprises approximately 2186 ha located in the mid west of the property in the vicinity of Road Paddock and the Woolner access road. Clearing in this area is broken by minor drainage lines and wetter areas of heavier vegetation including rather large ironwoods. Area A is dominantly listed as land unit 3 C1 which is reddish to yellow earths with potential for permanent improved pastures.

**Area B** comprises approximately 1080 ha located in the East of Kathy Creek and Shirley Ck Paddocks adjacent floodplain. Clearing in this region will be confined to land of low slope and appropriately located away from any drainage lines. Soil type is dominantly yellow – brown earths associated with landtypes 3 C1 and 4a and have potential for establishment of permanent improved pastures. Much of Area B comprises dense scrub not accessible to livestock, and is of low pastoral productivity and difficult to manage eg; mustering and weed control.

**Area C** comprises approximately 644 ha located in the north of the property in the Alligator Head Region. Area C gently slopes towards the floodplain and is dominated by soil type 4b1 and 4c2 comprising gravelly yellow brown earths and some sandy earths. The land is heavily infested with weeds such as Hyptis, Sida, and Senna.

Much of this area comprises relatively open woodland/scrubland and extensive clearing practices are not required. It is anticipated that selective clearing of this land will allow for ease of management with regards to stock/weed control and establishment of improved pastures to increase productivity. Following development the area will provide a point for holding stock mustered off of the floodplains prior to walking stock via a laneway system to other areas of the property including areas A and B outlined above.

Marrakai currently supports a herd of approximately 4,500 head. Stock numbers fluctuate substantially between the wet & dry seasons due to the inability of the less productive uplands to support livestock. The fluctuating stock numbers are a result of 9,000 head of agistment stock depastured on the property at strategic times during the season.

## **2.0 DETAILS OF CLEARING METHODS**

Clearing method will initially involve chaining of timber on the contour utilising two appropriately sized bulldozers.

The chained land will be left in a felled condition for approximately a 12 month period prior to burning followed by raking of remaining dead vegetation.

It is believed that allowing the felled timber to remain on ground not disturbed for a period of one year helps decrease any erosion potential that may result from the initial ground disturbance.

The practice of leaving the felled timber for some time prior to burning and raking also allows for utilisable timber to be recovered and thus allowing a secondary industry to benefit and best utilise the resource resulting from the development works. If the felled timber was immediately raked/burnt etc; then this resource would be lost.

Improved pastures comprising Humidicola, Arnhem Grass, and Cavalcade will be sown at the recommended rates in association with appropriate fertilisers/rates.

Soil tests will determine maintenance applications of fertiliser possibly on an annual basis pending pasture species/type eg, phosphate/trace element/potash on legume pasture, D.A.P for grasses etc. Technical staff from DBIRD will be providing assistance with seed/fertiliser rates etc.

It is anticipated that appropriate machinery recently purchased interstate will provide a mechanical means of controlling sucker regrowth. It is believed that the sucker regrowth problem will be minimised through appropriate timing of land clearing operations eg; soil moisture at chaining etc.

Chemical control of weeds will be deployed on an as need basis.

## **3.0 BENEFIT/COST OF DEVELOPMENT**

Indicative costs for development are as follows :-

Chaining, Raking, Burning	\$350.00/hectare
Planting and preparation	\$180.00/hectare
Seed/Fertiliser	\$160.00/hectare

Anticipated cost of maintenance :-

Fertiliser	\$40.00/hectare
Herbicides	\$5.00/hectare

Marrakai presently has an ESCC of approximately 4200 head total.

Estimated Safe Carrying Capacities range from approximately 20.0 plus head km<sup>2</sup> (1 beast/4 to 5 hectares) on the floodplains to 2 or less beasts per km<sup>2</sup> (1 beast: 50 hectares) on the more inferior upland native pastures. The difference in pastoral productivity between the productive floodplains and the inferior upland is demonstrated above.

If parts of the upland can be economically developed with improved pastures to rival the productivity of the floodplain pastures then the benefits are substantial, especially given that the floodplains can not be grazed during the wet season.

#### **4.0 EROSION CONTROL**

All clearing will occur on the contour.

Clearing will be confined to low slope land.

Retention of fallen timber for several months will decrease potential for soil erosion as a result of any initial soil disturbance.

100 metre buffers will be retained along the length of all drainage lines.

Improved pastures will provide sufficient ground cover thus reducing soil surface erosion and assist in controlling excessive run off as a result of high intensity tropical storms.

#### **5.0 ENVIRONMENTAL & HERITAGE PROTECTION**

In an attempt to promote and maintain biodiversity in the region, extensive buffer zones/wildlife corridors have been retained ranging in up to approximately 1 kilometre in width.

The buffer zones/corridors comprise a good representation of the upland vegetation of the region and provides a corridor from upland regions (including Djukbinj National Park) to the coastal floodplains.

A 250 metre buffer zone of native vegetation is to be maintained inside of the Marrakai Pastoral Lease boundary adjoining the Djukbinj National Park.

The on property environmental planning on Marrakai Station attempts to achieve a balanced approach to land development and the requirement for maintaining environmental biodiversity.

Sufficient ground cover will be maintained at all times to assist in prevention of soil erosion and associated problems.

#### **6.0 ONGOING RESOURCE MANAGEMENT**

Marrakai Station is an active participant in the Tier 1 Pastoral Land Monitoring Program.

The Tier 1 monitoring program involves a process of periodically recording and comparing the condition of pastures/land condition over time for the purpose of understanding any changes and using this information to assist in making management decisions for sustainable land use.

An extension of the Tier 1 monitoring program into the more intensively developed regions of the property would assist in improving the knowledge of plant species and pasture behaviour including weed management and provide a useful tool for future planning.

DBIRD & DIPE Parks Division also have monitoring programs in place to assess the behaviour including possible spread of improved pastures such as Arnhem and Parra Grass. It is anticipated the program of monitoring improved pasture behaviour by the relevant government departments will be ongoing and provide valuable information to assist management.

Marrakai currently has a weed control program in place.

The weed control program for 2003 comprised a budget of \$80,000.00, and represents a steady increase during past years parallel to additional property development.

The weed control budget will continue to steadily increase in line with property development and the requirement for on going weed control.

Steps will be taken to exclude the potential for weed infestation of new country via use of only clean high quality pasture seeds, exclusion of weed infested hay being brought on property, thorough cleaning of all plant and machinery prior to entry into new clean paddocks.

Any weeds that become present will be eradicated in the first instance by mechanical means or spot sprayed by quad bike prior to seed set.

Most of the cleared land will be fenced into smaller paddocks subject to more intensive management practices.

Paddocks will have maintained cleared areas of approximately 5 metres width either side of fencelines thus providing a buffer zone between different improved pastures and native vegetation, and also provide adequate fire protection.

The above buffer zones will be regularly patrolled and fringing native pastures monitored for encroachment of exotic pasture species for subsequent control.

A similar buffer has been successfully utilised on Arnhem Grass Paddock near the Marrakai Yards.

All native vegetation buffer zones/corridors will be regularly patrolled for weed control purposes.

The present property weed control program will continue.

Pastures will be appropriately stocked so as to prevent their degradation and to maintain appropriate ground cover. It is anticipated that the maximum stocking rate will be approximately 1 beast to 2 hectares (DBIRD have successfully trialed stocking rates of 1 beast/hectare).

Stock will be grazed on a rotational basis allowing for sufficient spelling and pasture regeneration.

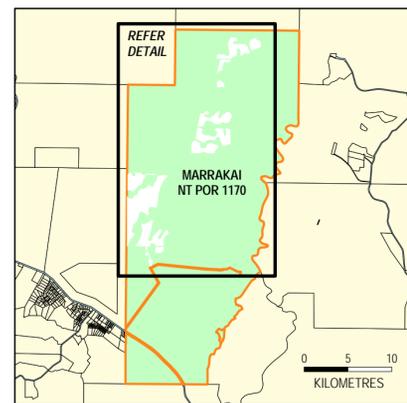
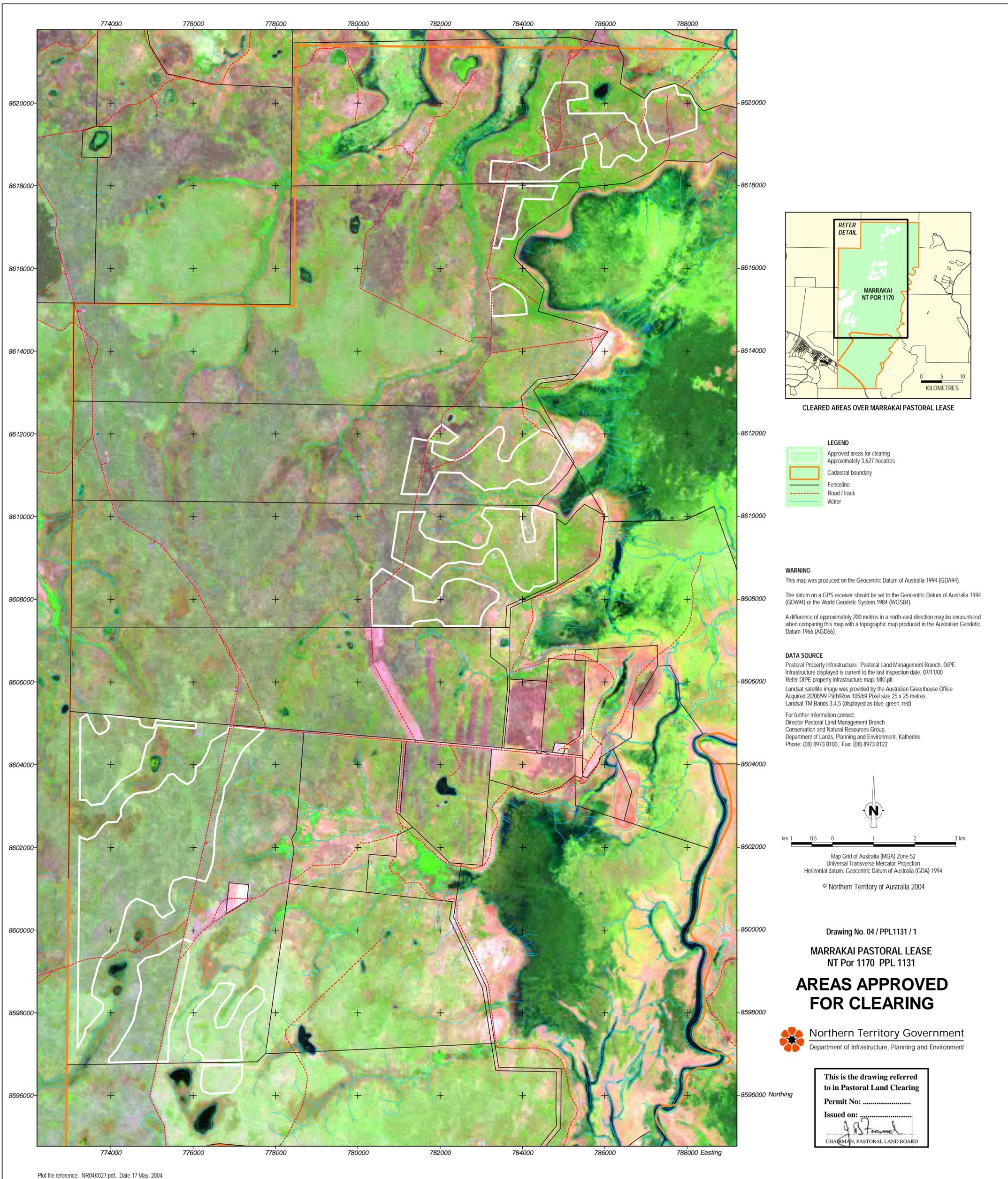
D Walker  
Marrakai Pastoral Company  
April 2004

**TABLE 1**  
**OUTLINE OF PROPERTY MANAGEMENT PLAN**  
**LAND CLEARING – PPL 1131 MARRAKAI STATION**

*(NB : The following table is to be read in conjunction with the Property Management Plan at pages 1 - 5)*

ITEM No	MANAGEMENT ISSUE	ACTION PLAN TO ADDRESS MANAGEMENT ISSUES
1	<p><b><i>Overview of Program</i></b></p> <ul style="list-style-type: none"> <li>• summary clearing/development</li> <li>• area to be cleared</li> <li>• soils/landtype</li> <li>• purpose of clearing</li> <li>• long term development aims</li> <li>• livestock numbers</li> </ul>	<p><b><i>Detailed explanation &amp; overview of clearing/development</i></b></p> <ul style="list-style-type: none"> <li>• future clearing to complement previous clearing</li> <li>• production of hay &amp; pasture seed on property.</li> <li>• rectify current property and management/production problems</li> <li>• Reduce impact fluctuating stock No's and associated marketing</li> <li>• Reduce grazing pressure on upland native pastures</li> <li>• Suitability of soil types</li> <li>• current mustering problems : reduce thick scrub</li> <li>• Restructure property : new infrastructure &amp; development</li> </ul>
2	<p><b><i>Details of Clearing Methods</i></b></p> <ul style="list-style-type: none"> <li>• method &amp; timing</li> <li>• post clearing methodology</li> <li>• regrowth control measures</li> <li>• improved pasture development</li> </ul>	<p><b><i>Clearing method : proposed actions &amp; management</i></b></p> <ul style="list-style-type: none"> <li>• chaining on contour with appropriate sized machinery</li> <li>• chain with adequate soil moisture : reduce regrowth</li> <li>• leave felled timber for 12 months : reduce erosion risk</li> <li>• salvage utilisable timber : secondary industry : increase resource efficiency</li> <li>• machinery purchased for efficient raking post burn</li> <li>• Humidicola, Arnhem, Cavalcade sown &amp; fertilised as per DBIRD recommendations</li> <li>• Follow up soil testing/nutrient analysis for maintenance</li> <li>• Sucker regrowth : mechanical control (chemical if necessary)</li> </ul>

ITEM No	MANAGEMENT ISSUE	ACTION PLAN TO ADDRESS MANAGEMENT ISSUES
3	<p><b><i>Benefit/Cost of Development</i></b></p> <ul style="list-style-type: none"> <li>• Development costs / hectare</li> <li>• Maintenance costs/hectare</li> <li>• Increase in carrying capacity</li> <li>• Income/productivity increase</li> </ul>	<p><b><i>Cost/Benefit Analysis</i></b></p> <ul style="list-style-type: none"> <li>• \$ cost for development &amp; maintenance (refer page 3 of Property Management Plan)</li> <li>• improve production &amp; equity between floodplains and uplands. Improve overall property viability.</li> </ul>
4	<p><b><i>Erosion Control</i></b></p> <ul style="list-style-type: none"> <li>• erosion control methods</li> </ul>	<p><b><i>Measures/Management for control &amp; minimisation of potential erosion</i></b></p> <ul style="list-style-type: none"> <li>• clear on contour</li> <li>• clear low slope land only</li> <li>• initial retention felled timber post chaining : reduce erosion</li> <li>• buffer zones in association with drainage lines</li> <li>• maintain sufficient ground cover : reduced run-off</li> </ul>
5	<p><b><i>Environmental &amp; Heritage Protection</i></b></p> <ul style="list-style-type: none"> <li>• environmental/heritage issues</li> <li>• biodiversity conservation</li> <li>• watercourse degradation</li> </ul>	<p><b><i>Management Actions to Protect Environment &amp; Heritage</i></b></p> <ul style="list-style-type: none"> <li>• retention of sufficient width buffers/wildlife corridors between land types &amp; vegetation communities</li> <li>• 250 metre buffer zone of native vegetation adjoining National Park</li> <li>• maintenance of ground cover</li> <li>• attempt to balance development with maintaining environmental diversity.</li> </ul>
6	<p><b><i>On Going Resource Management</i></b></p> <ul style="list-style-type: none"> <li>• weed management</li> <li>• spread of exotic pastures</li> <li>• grazing/pasture management</li> <li>• woody regrowth</li> <li>• management of native buffers</li> <li>• fire</li> </ul>	<p><b><i>Resource Management Plan</i></b></p> <ul style="list-style-type: none"> <li>• extend Tier 1 monitoring program to more intensely developed areas</li> <li>• continued DBIRD/DIPE monitoring of improved pastures</li> <li>• continued support for weed control budget (currently \$80,000)</li> <li>• exclusion of weed infested hay and seed from transport on to property.</li> <li>• vigilant cleaning of plant &amp; machinery prior to entry</li> <li>• mechanical/chemical control measures in place</li> <li>• Non vegetation buffer/firebreak</li> </ul>

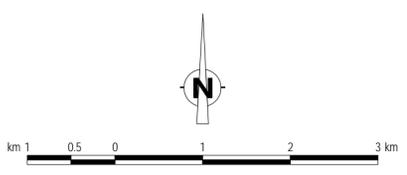


CLEARED AREAS OVER MARRAKAI PASTORAL LEASE

- LEGEND**
- Approved areas for clearing  
Approximately 3,627 hectares
  - Cadastral boundary
  - Fenceline
  - Road / track
  - Water

**WARNING**  
 This map was produced on the Geocentric Datum of Australia 1994 (GDA94).  
 The datum on a GPS receiver should be set to the Geocentric Datum of Australia 1994 (GDA94) or the World Geodetic System 1984 (WGS84).  
 A difference of approximately 200 metres in a north-east direction may be encountered when comparing this map with a topographic map produced in the Australian Geodetic Datum 1966 (AGD66).

**DATA SOURCE**  
 Pastoral Property Infrastructure: Pastoral Land Management Branch, DIPE  
 Infrastructure displayed is current to the last inspection date, 07/11/00  
 Refer DIPE property infrastructure map: MK1.plt  
 Landsat satellite image was provided by the Australian Greenhouse Office  
 Acquired 20/08/99 Path/Row 105/69 Pixel size 25 x 25 metres  
 Landsat TM Bands 3,4,5 (displayed as blue, green, red)  
 For further information contact:  
 Director Pastoral Land Management Branch  
 Conservation and Natural Resources Group,  
 Department of Lands, Planning and Environment, Katherine  
 Phone: (08) 8973 8100, Fax: (08) 8973 8122



Map Grid of Australia (MGA) Zone 52  
 Universal Transverse Mercator Projection  
 Horizontal datum: Geocentric Datum of Australia (GDA) 1994  
 © Northern Territory of Australia 2004

Drawing No. 04 / PPL1131 / 1  
**MARRAKAI PASTORAL LEASE**  
**NT Por 1170 PPL 1131**  
**AREAS APPROVED**  
**FOR CLEARING**

Northern Territory Government  
 Department of Infrastructure, Planning and Environment

This is the drawing referred to in Pastoral Land Clearing  
 Permit No: .....  
 Issued on: .....  
  
 CHAIRMAN, PASTORAL LAND BOARD