



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4390/1
Permit Holder:	Futura Asset Pty Ltd
Duration of Permit:	28 November 2011 to 28 November 2016

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. Purpose for which clearing may be done

Clearing for the purpose of pastoral diversification (pivot irrigation) and associated infrastructure.

2. Land on which clearing is to be done

Lot 44 on Plan 238511, Eighty Mile Beach

3. Area of Clearing

The Permit Holder must not clear more than 25 hectares of native vegetation within the area hatched yellow on attached Plan 4390/1.

4. Application

This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. Type of clearing authorised

This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Land Administration Act 1997* or any other written law.

6. Compliance with Assessment Sequence and Management Procedures

Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. Avoid, minimise etc clearing

In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

8. Weed control

- (a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:
- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* or species permitted for planting under a Pastoral Diversification Permit which are growing within the 100 metre buffer of each pivot area.

PART III - RECORD KEEPING AND REPORTING

9. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit in relation to the clearing of native vegetation authorised under this Permit:

- (a) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
- (b) the date that the area was cleared; and
- (c) the size of the area cleared (in hectares).

10. Reporting

- (a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:
 - (i) of records required under condition 9 of this Permit; and
 - (ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 31 September 2014, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

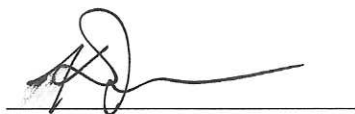
DEFINITIONS

The following meanings are given to terms used in this Permit:

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

weed/s, for the purpose of this permit, means a species listed in Appendix 3 of the *Environmental Weed Strategy* published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*, including those species permitted for planting under a Pastoral Diversification Permit, issued by the Department of Regional Development and Lands



Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

3 November 2011

Plan 4390/1



LEGEND

- Road Centrelines
- Cadastral for labelling
- Shocenta 50cm Orthomosaic - Landgate 2004_1
- Clearing Instruments
- Areas Approved to Clear

* Project Data. This data has not been quality assured. Please contact map author for details.



0 1 km

Scale 1:36578

(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: The data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

[Signature] Date 3/3/14

K Faulkner

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowledged by the agency acronym in the legend.



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1. Application details

1.1. Permit application details

Permit application No.: 4390/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Futura Asset Pty Ltd c/- Groundwater Consulting Services

1.3. Property details

Property: LOT 44 ON PLAN 238511 (House No. 44 GREAT NORTHERN EIGHTY MILE BEACH 6725)
Local Government Area: Shir e of Broome
Colloquial name: Wallal Downs Pastoral Station

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
25		Mechanical Removal	Pastoral Diversification

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 3 November 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
<p>Beard Vegetation Association - No. 32: Shrublands, pindan; acacia shrubland with scattered low trees over <i>Triodia</i> spp.</p> <p>Additional vegetation description: Secondary parallel, calcareous dune ridges and swales commonly feature scattered Dune Wattle (<i>Acacia bivenosa</i>). Important grasses include <i>Whiteochloa airoides</i> and the local endemic <i>Triodia epactia</i>, a resinous hummock-forming species. Inland grasslands have been extensively modified by intensive grazing and are dominated by introduced Buffel Grass (<i>Cenchrus ciliaris</i>) and Birdwood Grass (<i>Cenchrus setiger</i>). Saline grasslands feature Saltwater Couch (<i>Sporobolus virginicus</i>), often fringed by thickets of Salt Wattle (<i>Acacia ampliceps</i>) and Paperbark, (typically <i>Melaleuca acacioides</i>). Low open woodland with Poverty Bush (<i>Acacia translucens</i>) and scattered <i>Bauhinia cunninghamii</i> trees occurs on reddish pindan sandy soils inland. [Information Sheet on RAMSAR Wetlands (RIS). (DEC,</p>	<p>The proposal is to clear up to 25 hectares of native vegetation within Wallal Downs Pastoral Station (Lot 44 on Plan 238511, Eighty Mile Beach) for the purpose of pivot irrigation (pastoral diversification).</p> <p>The natural vegetation consists of scattered Acacia shrubland. The upper story species are scattered and consist mainly of shiny leaf wattle (<i>Acacia ancistrocarpa</i>), poverty bush (<i>A.stellaticeps</i>), miniritchie (<i>A.monticola</i>) and the occasional trees such as bauhinia (<i>Bauhinia cunninghamii</i>), and Broome bloodwood (<i>Corymbia zygophylla</i>). The upper story is relatively stunted with most trees being less than four metres tall. Shrubs include <i>Solanum</i> species, Flinders poison (<i>Tephrosia rosea</i>) and <i>Corchorus</i> species. The perennial grasses are typical of the region and are mainly Soft spinifex (<i>Triodia pungens</i>, and <i>T.epacita</i>), and Threeawn grasses (<i>Aristida</i> species).</p> <p>The vegetation condition was rated to be in a good</p>	<p>Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)</p>	<p>Vegetation condition obtained from Commissioner of Soil and Land Conservation (CSLC, 2011a) and determined from Department of Environment and Conservation site visit photographs (DEC, 2011b).</p>

2011a)] range condition (equivalent to Keighery's scale of 'very good condition') (CSLC, 2011a).

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

Comments **Proposal is not likely to be at variance to this Principle**

The area of proposed clearing is unlikely to comprise a high level of biodiversity compared to any other area in the Dampierland Bioregion or the local area (30km).

Historically, the majority of the vegetation within the local area once comprised a single, relatively uniform community represented by Beard Vegetation Association 32. Typically, this vegetation is described as 'Pindan shrubland' and comprises acacia species over Spinifex grasses. This association is sufficiently represented in the Bioregion (between 99-100% of the vegetation type remains) (Shepherd, 2009).

The area under application is regularly stocked with cattle and has a moderate level of grazing pressure; the vegetation is rated to be in a good range condition (equivalent to Keighery's scale of 'very good condition') (CSLC, 2011a).

Two priority three flora species have been recorded in the vicinity - *Keraudrenia katatona* and *Phyllanthus aridus*. These occur on the same soil type and within the same Beard Vegetation Association No. 32. It is possible these species may have once persisted, or may be present onsite, however the historical grazing pressures may impact the species long term survival within the area under application. Each of these flora species are sufficiently distributed over the Kimberley Region, (WAH, 1998-2011) as such the proposed clearing is not likely to impact on their conservation status.

Given the above, the clearing of 25ha is unlikely to have any impact on the biodiversity of the local area.

Methodology References:
- CSLC (2011a)
- WAH (1998-2011)
- Shepherd (2009)

GIS data:
- SAC Biodata set accessed June 2011

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Comments **Proposal is not likely to be at variance to this Principle**

There are two records of threatened (Wildlife Conservation Act 1950) species, being *Macrotis lagotis* (Bilby) and *Notoryctes caurinus* (Northern Marsupial Mole), and one Priority 4 species, *Ardeotis australis* (Australian Bustard) within the local area (30km radius) (DEC, 2007-2011).

The vegetation under application has an altered structure as a result of moderate grazing pressure (CSLC, 2011a), although the remaining native vegetation is well represented in the surrounding Bioregion (close to 100% remaining) (Shepherd, 2009).

Given the above, the vegetation under application is not likely to be of significant habitat for these fauna species.

Methodology References:
- CLSC (2011a)
- DEC (2007-2011)
- Shepherd (2009)

GIS data:
- SAC Biodata set accessed June 2011

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Comments **Proposal is not likely to be at variance to this Principle**

There are no recorded occurrences of declared rare flora within the area under application, or within the local area (30km radius).

Methodology GIS data:

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

Comments Proposal is not likely to be at variance to this Principle

There are no recorded occurrences of threatened or priority ecological communities within the area under application, or within the local area (30km radius).

Methodology GIS data:

- SAC Biodata set accessed June 2011

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments Proposal is not at variance to this Principle

The area under application is represented by Beard vegetation association 32 (Shrublands, pindan; acacia shrubland with scattered low trees over *Triodia* spp.) and is sufficiently represented in the Bioregion (between 99-100% of the vegetation type remains) (Shepherd, 2009). The pastoral lease also includes Beard Vegetation Association Nos. 80 (Hummock grasslands, low tree steppe; desert walnut over soft spinifex between sandridges) and 101 (Hummock grasslands, shrub steppe; *Acacia pachycarpa* over soft spinifex) (Shepherd, 2009).

The proposed clearing is not likely to be at variance to this principle as the area under application, and relatively small amount proposed to be cleared, is not considered to be significant in an otherwise well vegetated region.

Methodology References:

- Shepherd (2009)

GIS data:

- Biodata set accessed June 2011

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is not likely to be at variance to this Principle

The application area is within 5km of the Eighty Mile Beach RAMSAR which is approximately 175,487ha in size.

No rivers, creeks or other defined water courses occur within the area under application, or within the local area (30km). The vegetation under application is not riparian.

It is unlikely the removal of vegetation as proposed would impact the values of the RAMSAR.

Methodology GIS data:

-Biodata set accessed June 2011

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal is not likely to be at variance to this Principle

The site is located on the Nita land system which is common in the region. Nita land system is characterised by sandplains and dunes with acacia shrublands and spinifex.

The soil of the area under application is described as 'Pindan country'. These soils are typically red deep sands with low salinity levels (ground water salinity is 500-1000mg/L) and are well drained.

Rainfall for the area averages 300-315mm. There is no defined surface drainage on the area proposed to be cleared or within the local area (30k radius) so very little runoff from heavy rainfall events would occur. The site is located on flat country that generally has a slope of less than 0.5%. There is very little overland flow due to the porous nature of the soils and the flat topography.

It is possible surface runoff and soil erosion could occur under intense rainfall conditions that the region experiences with some frequency. With the adoption of minimum cultivation and retention of stubbles, the soil erosion risk can be managed.

Given the above, the proposal is not likely to be at variance to this principle.

Methodology References:

- CSLC (2011a)

GIS data:
- Biodata set accessed June 2011

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments **Proposal is not likely to be at variance to this Principle**
The area of the proposed clearing is 5km south of the Eighty Mile Beach RAMSAR.

Given this distance, it is unlikely the loss of the vegetation within the area under application would have any influence as a physical buffer to the RAMSAR.

Given the above, the proposal is not likely to be at variance to this principle.

Methodology GIS data:
- Biodata set accessed June 2011

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments **Proposal is not likely to be at variance to this Principle**
The area under application is within the Canning-Kimberley Groundwater sub area, proclaimed under the Rights in Water and Irrigation (RIWI) Act 1914.

The removal of the existing shallow-rooted vegetation, combined with the fact the application area lies over sandstone aquifers the proposed clearing is unlikely to cause deterioration in groundwater quality (DoW, 2011a and 2011b).

The proposal to clear could potentially expose the disturbed areas to soil erosion, and hence surface water quality, if the land is left bare, particularly over the wet season. This is due to a combination of sandy texture of the soils and the gentle slopes encountered on the site. However, with the adoption of minimum cultivation and retention of stubbles, the soil erosion risk will be manageable (CSLC, 2011a).

Given the above, the proposal to clear is not likely to be at variance to this principle.

Methodology References:
- CSLC (2011a)
- DoW (2011a and 2011b)

GIS data:
- Biodata set accessed June 2011

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments **Proposal is not likely to be at variance to this Principle**
The area under application is relatively flat and comprises red sandy-earth soils that are well drained with high infiltration rates (CSLC, 2011a).

Given the above, the proposal to clear is not likely to be at variance to this principle.

Methodology References:
- CSLC (2011a)

GIS data:
- Biodata set accessed June 2011

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments
One important environmental feature near the area under application is the Eighty Mile Beach RAMSAR, located 5km to the north.

This RAMSAR is 175,487ha in size and consists of a 220km section of coastline and adjacent mudflats, together with two large ephemeral lakes and a series of springs occurring in marshland 120km to the east (Sandfire Roadhouse). More than 472,000 migratory waders have been counted on the mudflats during the September to November period. The site is one of the three most important for migratory shorebirds in Australia. It is considered to be one of the major arrival and departure areas for migratory shorebirds visiting Australia (DEC, 2011a).

The proposed location of the 2 pivots has been determined by the location of the existing artesian bore (originally developed as a cattle watering point) which draws from the Wallal Sandstone System; this system extends from 130-270m below the area under application. Another aquifer, the Broome Sandstone aquifer (water source for Broome Townsite and other bores near Broome), extends from near-surface to 70m also below the application area. These two aquifers are separated by the Jarlemai Siltstone at 70m below the application area; consequently extracting water from the Wallal Sandstone aquifer will not impact the Broome aquifer (Groundwater Consulting Services, 2011).

This application has been assessed in conjunction with the Department of Environment and Conservation's recently released "Proposed Eighty Mile Beach Marine Park - indicative management plan 2011". No environmental values of the proposed marine park are likely to be affected by the location of the proposed clearing on Wallal Downs nor the intended end land use (pivot irrigation). The section of Wallal Downs where the clearing is proposed is aligned with a proposed 'general purpose use zone'. The indicative management plan has identified that further research is required into the areas hydrology and the function of freshwater seeps along the proposed marine park (DEC, 2011c).

Department of Water advice received for a similar proposal 25km to the west of this proposal confirms the existing bore to be used in this project passes through (and isolates) the overlaying (shallower) aquifers and taps into the deeper Wallal Sandstone artesian aquifer. As such the abstraction of groundwater from this aquifer poses minimal risk to the surface hydrology of the RAMSAR area (DoW, 2011a and 2011b).

With regards weeds (sorghum crop species has been selected) and nutrient spread, previous advice from the Commissioner of Soil and Land Conservation suggested that it is unlikely sorghum will spread beyond the pivot area as it can't persist without regular water and fertiliser. Given the soil type and soil structure the spread of nitrogen and phosphate fertilisers either by surface or the watertable should be negligible (CSLC, 2011b).

The area under application will be fenced off to allow grazing to continue in the remainder of the paddock. The area under application is considered suitable for the establishment of a pivot irrigation system provided that minimum tillage cultivation techniques are used, and that stubble at least 150mm high is retained to prevent wind erosion (CSLC, 2011a).

A water allocation licence from Department of Water (as per the RIWI Act, 1914) has been granted. A pastoral diversification permit from Department of Regional Development and Lands is required.

An Indigenous Land Use Agreement is in place (registered 24 January 2011) for the project.

No public submissions have been received.

Methodology

References:

- CSLC (2011a, 2011b)
- DEC (2011a, 2011c)
- DoW (2011a, 2011b)
- Groundwater Consulting Services Pty Ltd (2011)

4. References

- CSLC (2011a), Commissioner of Soil and Land Conservation; Land Degradation Advice Report for clearing permit application CPS 4390/1 received 28/06/2011; Department of Agriculture and Food Western Australia (DEC Ref. A409109)
- CSLC (2011b), Commissioner of Soil and Land Conservation; Land Degradation Advice Report for clearing permit application CPS 4207/1 received 25/03/2011; Department of Agriculture and Food Western Australia (DEC Ref. A378908).
- DEC (2007-2011) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: <http://naturemap.dec.wa.gov.au/>. (Accessed June 2011)
- DEC (2011a), Department of Environment and Conservation, Information Sheet on RAMSAR Wetlands (RIS) n.d. Retrieved 1 March 2011, from http://www.dec.wa.gov.au/pdf/national_parks/wetlands/fact_sheets/eighty_mile_beach1.doc
- DEC (2011b), Department of Environment and Conservation, Regional advice received 30 June 2011 (DEC Ref: A409217).
- DEC (2011c), Department of Environment and Conservation, Proposed Eighty Mile Beach Marine Park indicative management plan 2011. Retrieved 13 October 2011, from http://www.dec.wa.gov.au/component/option,com_docman/task,doc_details/Itemid,/gid,5635/
- DoW (2011), Department of Water; water extraction from bore advice report for clearing permit application CPS 4390/1 received 6/7/2011; (DEC Ref. A410272).
- DoW (2011a), Department of Water; water extraction from bore advice report for clearing permit application CPS 4207/1 received 22/03/2011; (DEC Ref. A382498).
- Groundwater Consulting Services Pty Ltd (2011), Application for a permit to clear native vegetation. (CPS 4390/1, DEC Ref A399012).
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- WAH (1998-2011), Western Australian Herbarium. FloraBase ? The Western Australian Flora. Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/>

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)