



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 2686/3
Permit holder:	WestNet Rail Pty Ltd
Duration of Permit:	4 January 2009 – 4 January 2017

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 railway upgrades.

2. Land on which clearing is to be done

Lot 3000 on Plan 43387
Perenjori to Mullewa Railway Reserves
Mullewa to Geraldton Railway Reserves

3. Area of Clearing

The Permit Holder must not clear more than 157 hectares of native vegetation within the area shaded yellow on attached Plans 2686/3a, 2686/3b, 2686/3c and 2686/3d.

4. Clearing authorised

Clearing authorised under this Permit must be completed by 4 January 2014, being five years from the date from which this Permit becomes valid.

5. 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.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

6. 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:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared;
- (c) reduce the impact of clearing on any significant environmental value, specifically, areas of granite, laterite breakaways, deep yellow sand and drainage lines;
- (d) alignment through the Wicherina (Reserve No. 17711) and Canna (Reserve No. 29289) reserves to be on-formation;
- (e) undertake site surveys and implement habitat/population demarcation, avoidance, minimisation, habitat protection and monitoring actions for specified declared rare and priority flora populations as per attached maps Narngulu – Mullewa Alignment and Mullewa – Morawa Alignment

7. Weed control

- (a) When undertaking any clearing or other activity pursuant to 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 growing within areas cleared under this Permit.

8. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

- (a) Retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
- (b) At an optimal time within 12 months following completion of railway upgrades, *revegetate* and *rehabilitate* areas not required for future scheduled and approved development, by:
- (i) ripping the ground on the contour to remove soil compaction; and
 - (ii) laying the vegetative material and topsoil retained under condition 8(a) on the cleared area(s).
- (c) Within 18 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 8(b) of this Permit:
- (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
 - (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 8(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.

PART III – OFFSETS

9. Offsets

The Permit Holder must develop and implement an *offset* in accordance with conditions 9(a) and 9(b) of this Permit for that clearing that is at variance with *clearing principles* (a), (b), (c) and (e), including that native vegetation identified as requiring an *offset* in the *decision report* and indicated in Plans 2686/3e, 2686/3f, 2686/3g, 2686/3h and 2686/3i.

- (a) Determination of *offsets*:
- (i) in determining the *offset* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the Permit Holder must have regard to the *offset* principles contained in condition 9(b) of this Permit;
 - (ii) once the Permit Holder has developed an offset proposal, the Permit Holder must provide that offset proposal to the CEO for the CEO's approval by 7 June 2011 and prior to implementing the offset;
 - (iii) the Permit Holder shall implement the *offset proposal* approved under condition 9(a)(iii);
 - (iv) each *offset proposal* shall include a *direct offset*, timing for implementation of the *offset proposal* and may additionally include *contributing offsets*;

- (v) within two years of completing clearing of native vegetation authorised under this Permit, the Permit Holder must implement the *offset*; and
 - (vi) where, in the opinion of an *environmental specialist*, there is evidence that the *offset* is unlikely to achieve the targets specified in the CEO-approved *offset proposal*, the Permit Holder must undertake *remedial action* at an *optimal time* within the next 12 months to ensure successful establishment of the *offset* prior to expiry of this Permit.
- (b) For the purpose of this condition, the *offset* principles are as follows:
- (i) *direct offsets* should directly counterbalance the loss of the native vegetation;
 - (ii) *contributing offsets* should complement and enhance the *direct offset*;
 - (iii) *offsets* are implemented only once all avenues to avoid, minimise, rectify or reduce environmental impacts have been exhausted;
 - (iv) the environmental values, habitat, species, *ecological community*, physical area, ecosystem, landscape, and hydrology of the *offset* should be the same as, or better than, that of the area of native vegetation being *offset*;
 - (v) a ratio greater than 1:1 should be applied to the size of the area of native vegetation that is offset to compensate for the risk that the *offset* may fail;
 - (vi) *offsets* must entail a robust and consistent assessment process;
 - (vii) in determining an appropriate *offset*, consideration should be given to ecosystem function, rarity and type of *ecological community*, vegetation *condition*, habitat quality and area of native vegetation cleared;
 - (viii) the *offset* should either result in no net loss of native vegetation, or lead to a net gain in native vegetation and improve the *condition* of the natural environment;
 - (ix) *offsets* must satisfy all statutory requirements;
 - (x) *offsets* must be clearly defined, documented and audited;
 - (xi) *offsets* must ensure a long-term (10-30 year) benefit; and
 - (xii) an *environmental specialist* must be involved in the design, assessment and monitoring of *offsets*.

PART IV – RECORD KEEPING AND REPORTING

10. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

- (a) In relation to the clearing of native vegetation authorised under this Permit:
 - (i) the species composition, structure and density of the cleared area;
 - (ii) 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;
 - (iii) the date that the area was cleared; and
 - (iv) the size of the area cleared (in hectares).
- (b) In relation to the activities undertaken pursuant to condition 6(e) of this Permit:
 - (i) the species and/or habitat demarcated;
 - (ii) the location of demarcation, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (iii) the date that the species and/or habitat was demarcated; and
 - (iii) the size of the habitat demarcated.
- (c) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 8 of this Permit:
 - (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated* and *rehabilitated* (in hectares);
 - (iv) the species composition, structure and density of *revegetation* and *rehabilitation*, and
 - (v) a copy of the environmental specialist's report.

- (d) In relation to the *offset* of areas pursuant to condition 9:
- (i) the location of any area of *offsets* recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) a description of the *offset* activities undertaken; and
 - (iii) the size of the *offset* area (in hectares).

11. 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 10 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 4 October 2016, the Permit Holder must provide to the CEO a written report of records required under condition 10 of this Permit where these records have not already been provided under condition 11(a) of this Permit.

Definitions

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

condition means the rating given to native vegetation using the *Keighery scale* and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

contributing offsets has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9 Environmental Offsets*, January 2006;

Department means the Department of Environment and Conservation (Western Australia);

decision report means the decision report outlining the assessment of CPS 2686/3.

direct offsets has the same meaning as is given to that term in the Environmental Protection Authority's *Position Statement No.9 Environmental Offsets*, January 2006;

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

ecological community/ies means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999) – the scale at which ecological communities are defined will depend on the level of detail in the information source, therefore no particular scale is specified;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

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

Keighery scale means the vegetation condition scale described in *Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)* as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;

local provenance means native vegetation seeds and propagating material from natural sources within 10-40 kilometres of the area cleared.

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;

offset/s means an offset required to be implemented under Condition 8 of this Permit;

offset proposal means an *offset* determined by the Permit Holder in accordance with condition 8 of this Permit;

optimal time means the period from April to May for undertaking *direct seeding*, and the period from May to June for undertaking *planting*;

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

remedial action/s means, for the purpose of this Permit, any activity that is required to ensure successful establishment of an approved *offset*, and may include a combination of soil treatments and *revegetation*.

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

term means the duration of this Permit, including as amended or renewed;

weed/s 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 Agricultural and Related Resources Protection Act 1976.



Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

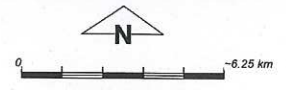
8 April 2011

Plan 2686/3a



LEGEND

- | | |
|--------------------------------|--|
| Clearing Instruments | Perenjori 50cm Orthomosaic - Landgate 2005 |
| ■ Areas Approved to Clear | Yandanooka 50cm Orthomosaic - Landgate 2005 |
| ■ Cadastre for labelling | Dongara 50cm Orthomosaic - Landgate 2006 |
| □ Local Government Authorities | |



Geocentric Datum Australia 1994

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

K Faulkner Date 8/4/11
K Faulkner

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

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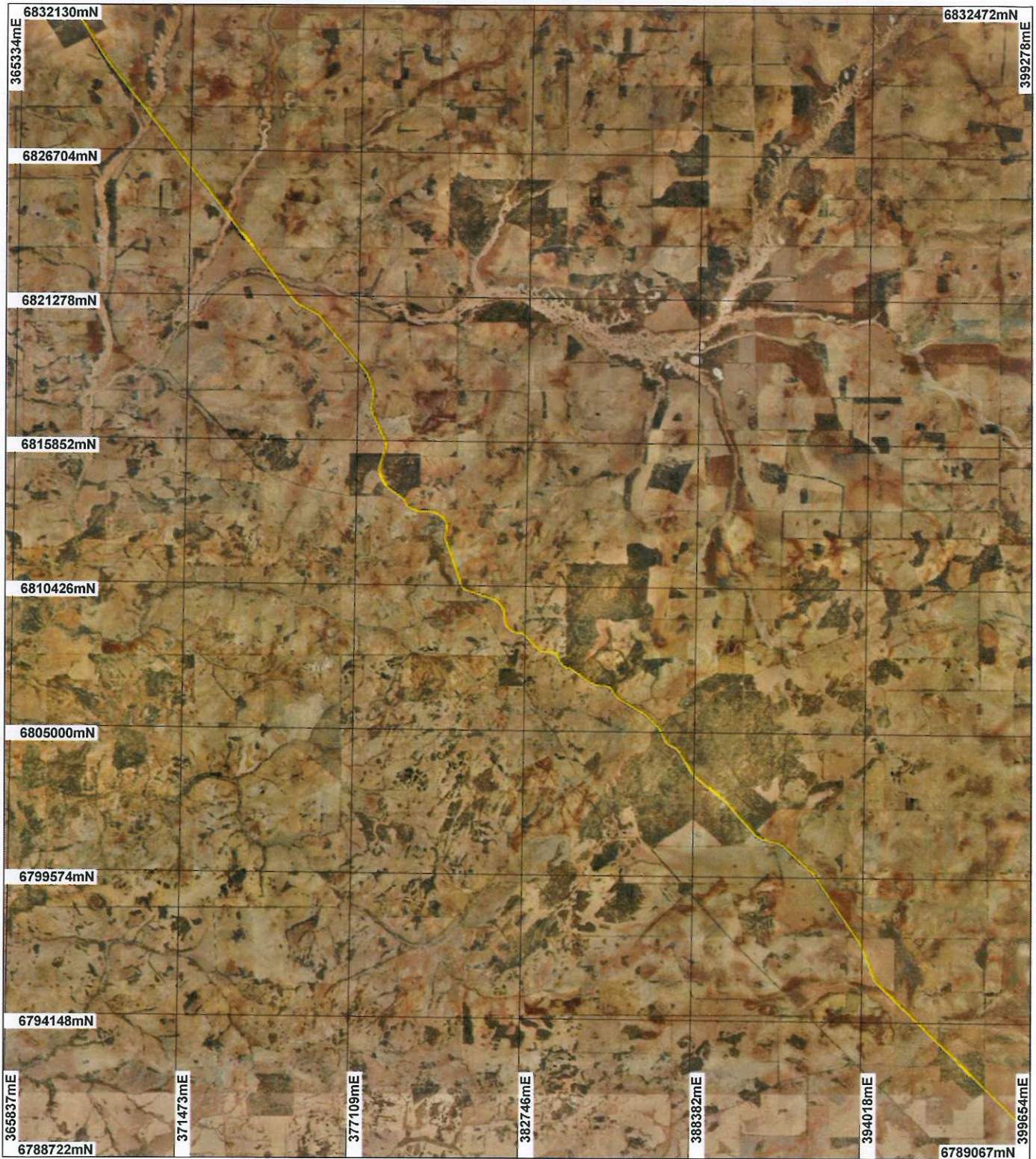


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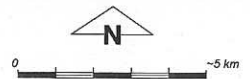
* Project Data is denoted by asterisk. This data has not been quality assured. Please contact map author for details.

Plan 2686/3b



LEGEND

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|--|---|
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| ■ Areas Approved to Clear | Dongara 50cm Orthomosaic - Landgate 2006 |
| □ Cadastre | Geraldton 50cm Orthomosaic - Landgate 2006 |
| □ Geraldton Yalgoo 1.4m Orthomosaic - Landgate | |



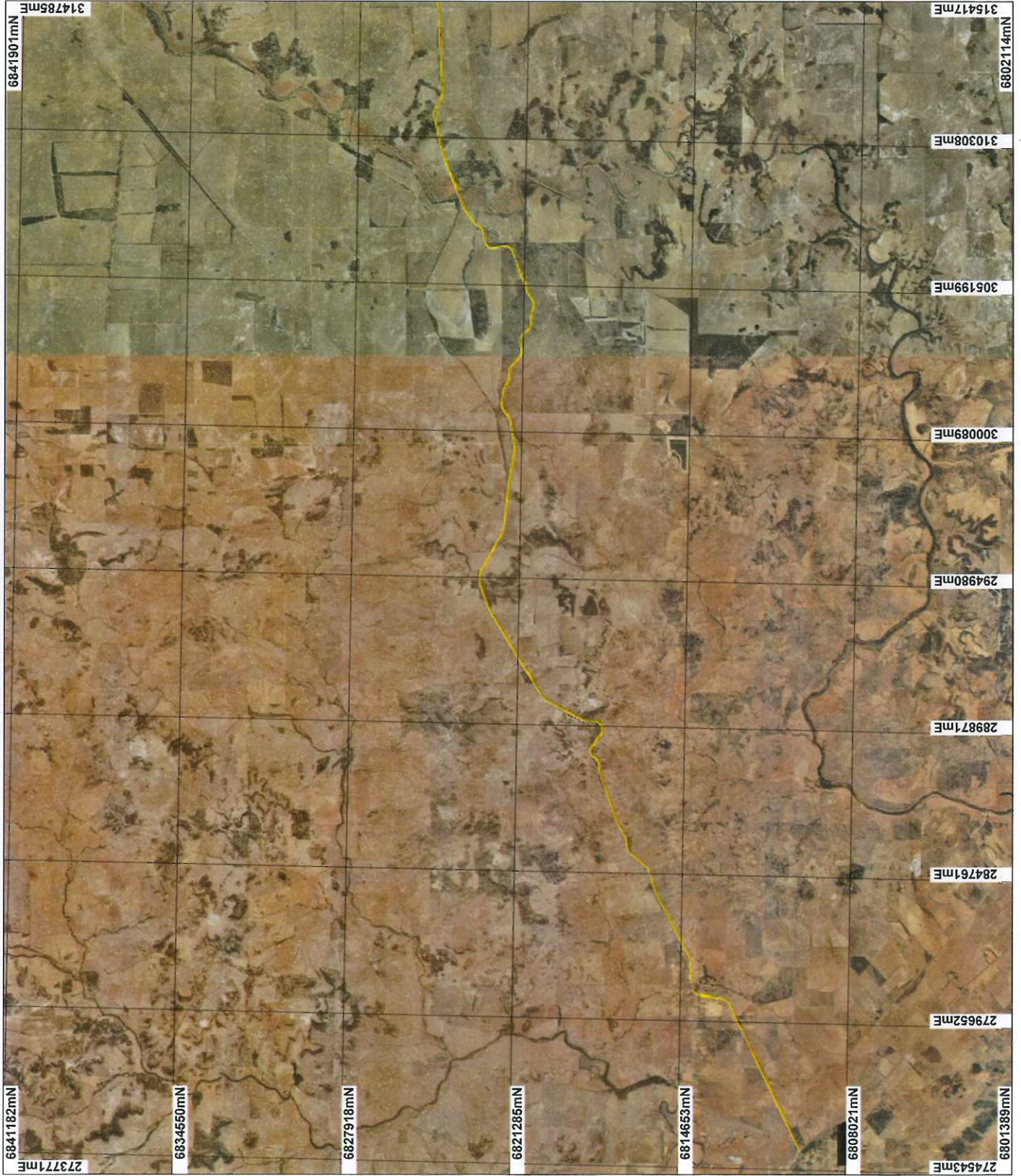
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[Signature] Date 8/4/11
 K Faulkner

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Plan 2686/3d



LEGEND

- Clearing instrument
- Areas Approved to Clear
- Cadastre
- Geraldton Yalgoo 1 Landgate 2006
- Geraldton 1m Ortho 1999
- Mungo 1.4m Ortho 2001
- Dongara 50cm Ortho 2006
- Dongara 50cm Ortho 2006
- Geraldton 50cm Ort 2006
- Mellenbye 1.4m Ord 2001
- Mullewa 50cm Ortho 2005
- Indarra 1.4m Ortho 2005
- Perenjori 50cm Ortho 2005
- Vandiemans 50cm I



0 5 km

Scale 1:194469
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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K Faulkner

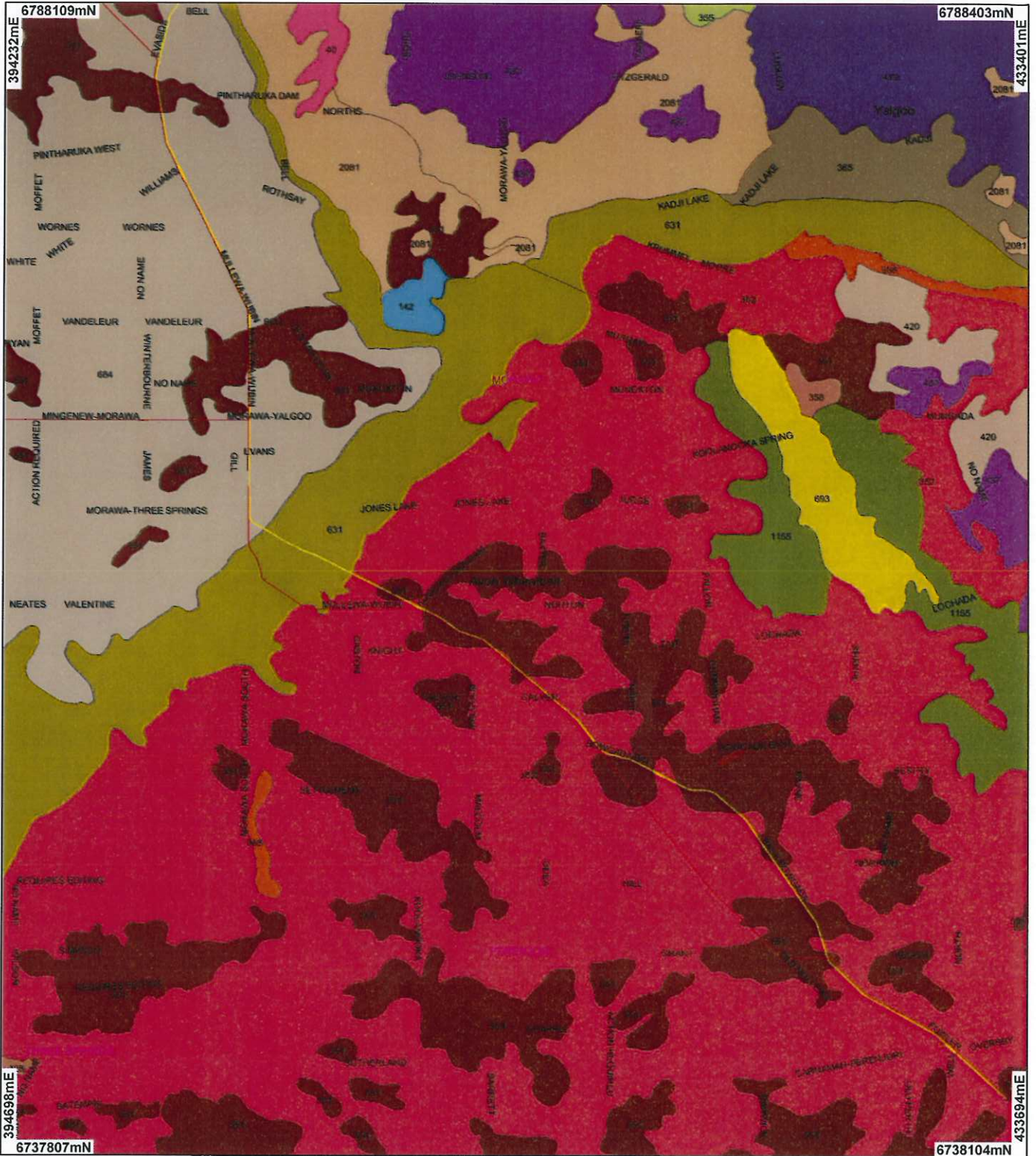
Date 8/4/11

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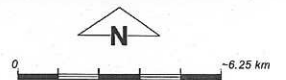
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Plan 2686/3e



LEGEND

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Scale 1:224897
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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K Faulkner Date 8/4/11
K Faulkner

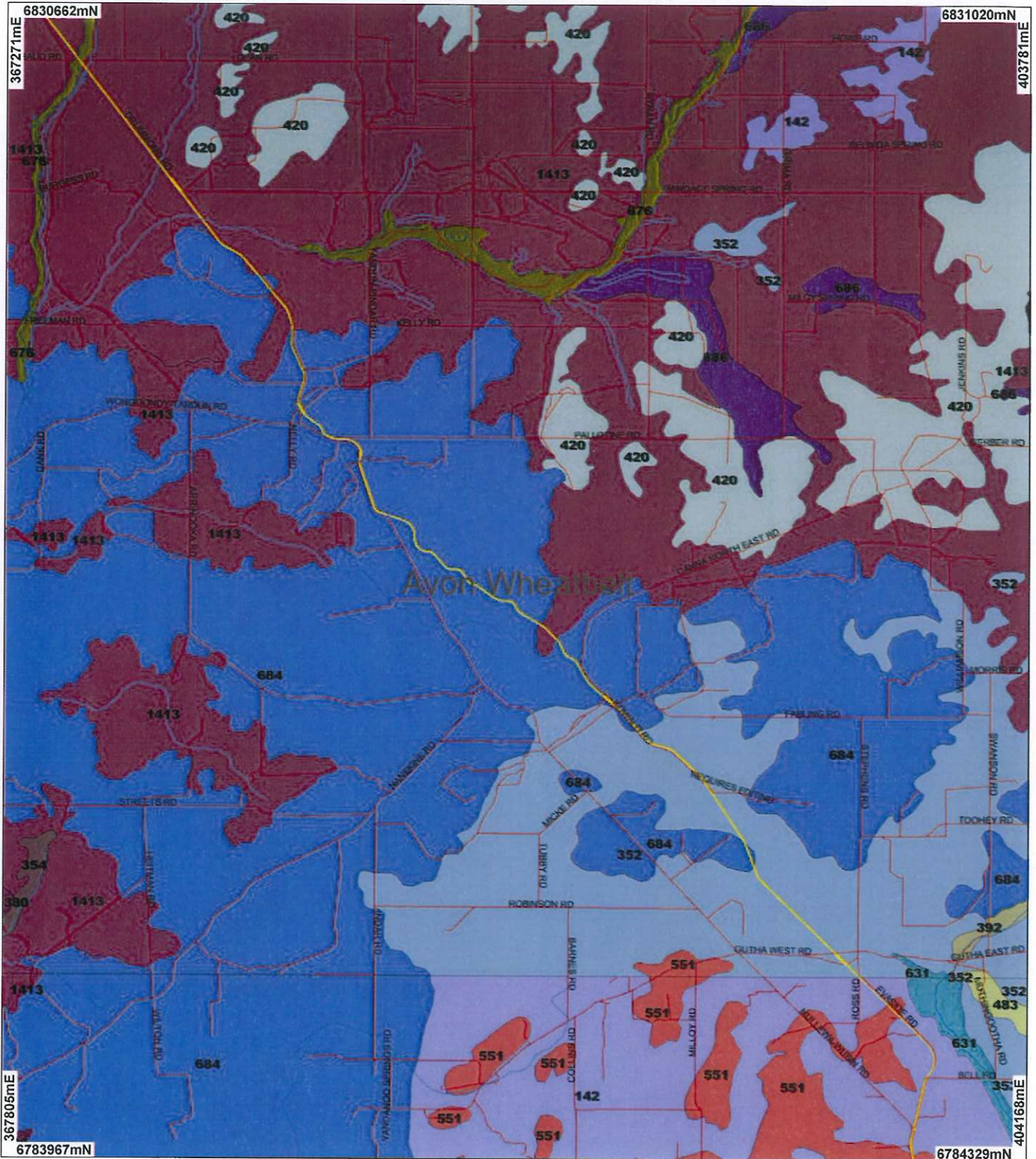
Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

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




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Plan 2686/3f



LEGEND

Interim Biogeographic Regionalisation of Australia	■ Areas Subject to Conditions
Pre-European Vegetation	■ Areas Approved to Clear
Road Centrelines	— Hydrography, linear (hierarchy)



0 — 6.25 km

Scale 1:209058
(Approximate when reproduced at A4)


Geocentric Datum Australia 1994

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K Faulkner Date: 2/1/11

K Faulkner

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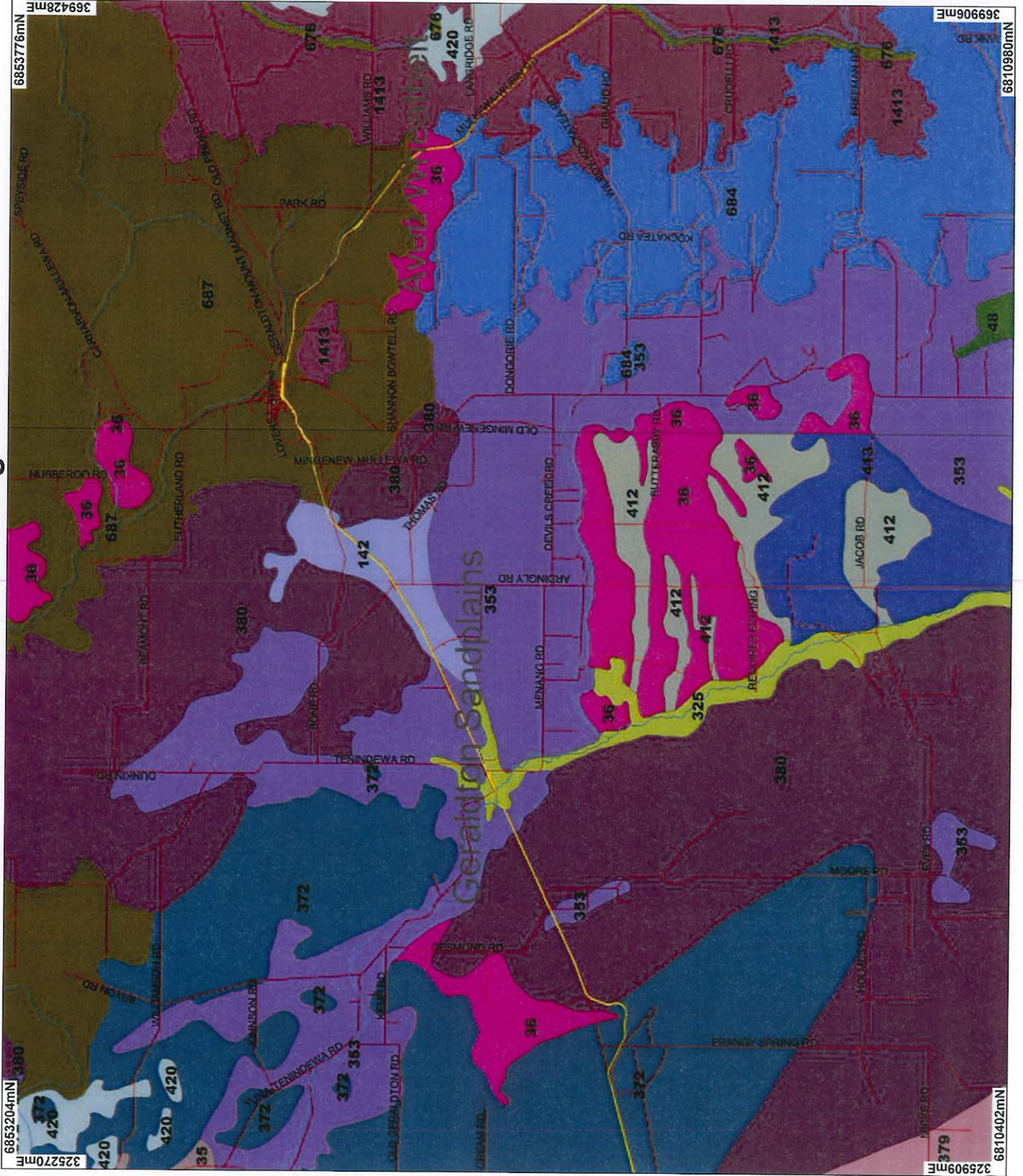


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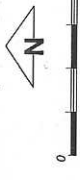
Plan 2686/3g



LEGEND

- Interim Biogeography Australia
- Pre-European Vegetation Road Centralines
- Clearing Instrument
- Areas Applied to Clear
- Areas Subject to Condition
- Areas Approved to Clear
- Hydrography, linear
- Towns
 - A
 - B
 - C

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



Scale 1:209297
 (Approximate when reproduced at A4)

Geocentric Datum Australia 1994

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 distortion or measurement inaccuracies.

K Faulkner Date: 2/4/11

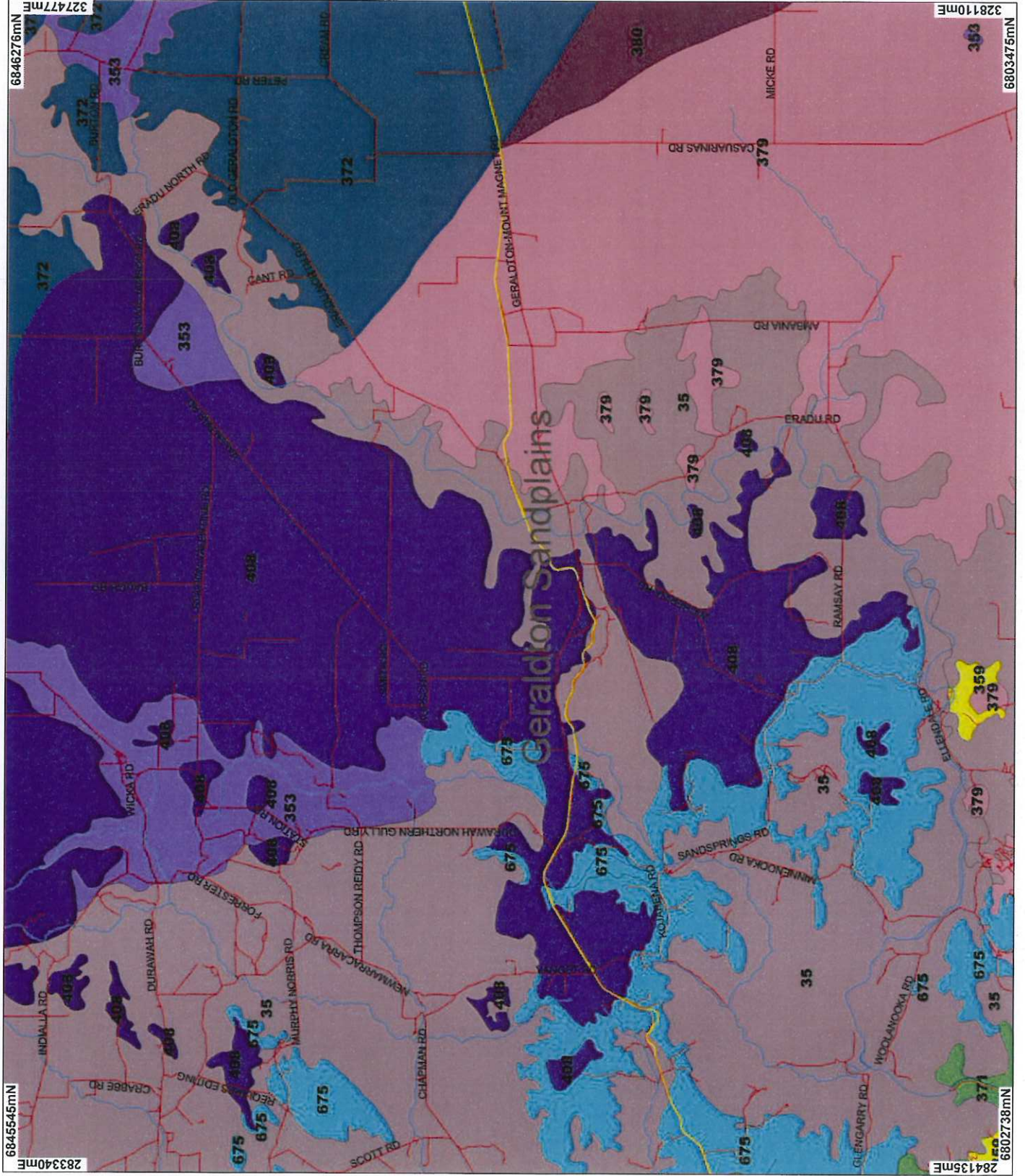
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Plan 2686/3h



LEGEND

- Interim Biogeography Australia
- Pro-European Veg Road Centralines
- Clearing Instrument
- Areas Subject to Clear
- Areas Approved to Clear
- Hydrography, linear
- Towns
- A
- B
- C

* Project Data is denoted by asterisk.
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0 6.25 km

Scale 1:209231
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

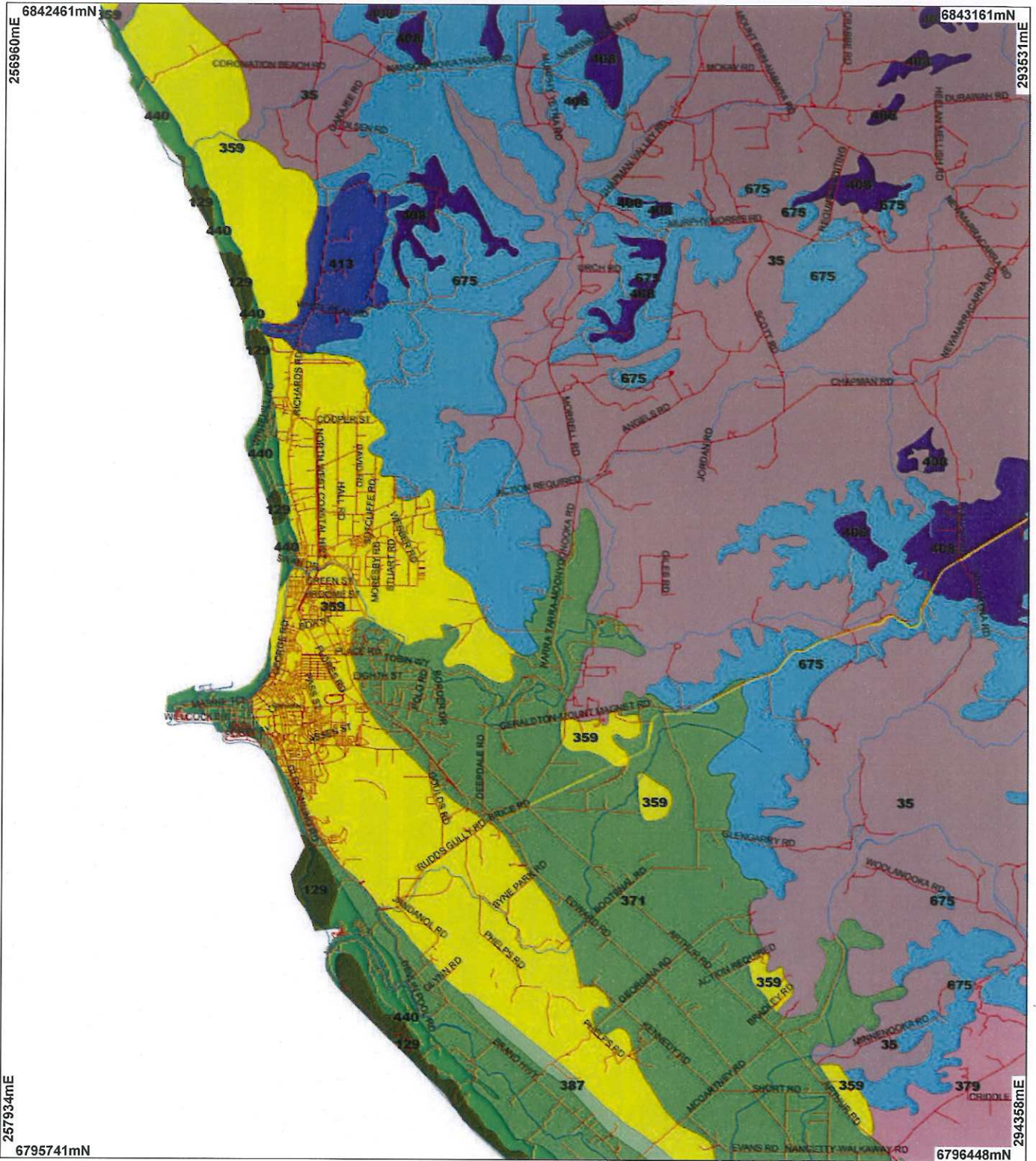
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K Faulkner Date: 8/11/02

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Plan 2686/3i



LEGEND

- Interim Biogeographic Regionalisation of Australia Pre-European Vegetation
- Areas Subject to Conditions
- Areas Approved to Clear
- Hydrography, linear (hierarchy)
- Road Centrelines



0 ————— 6.25 km

Scale 1:209188

(Approximate when reproduced at A4)

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[Signature] Date: 8/6/11
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Westnet Rail Upgrade

DRF and Priority Flora

Mullewa - Morawa Alignment



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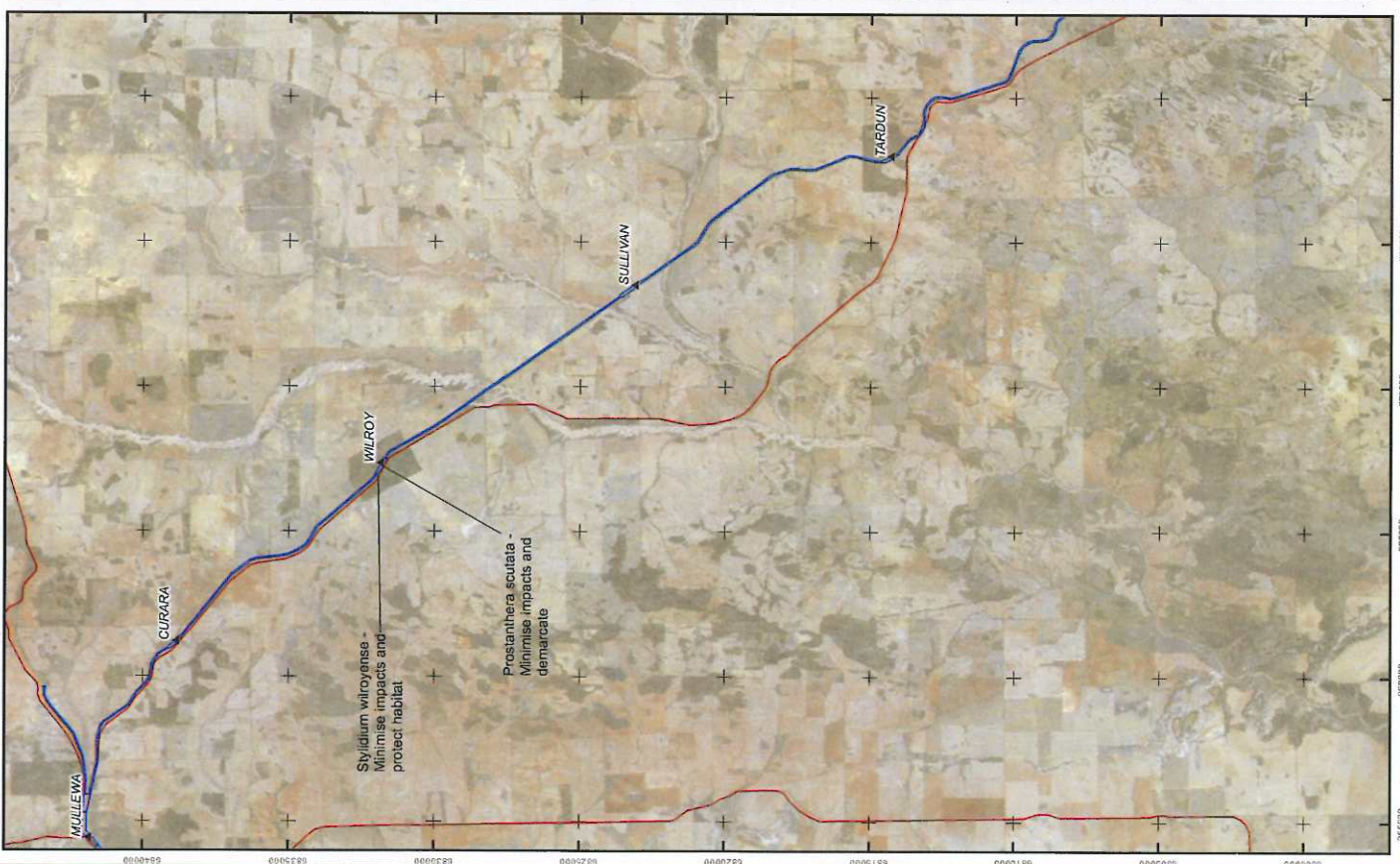
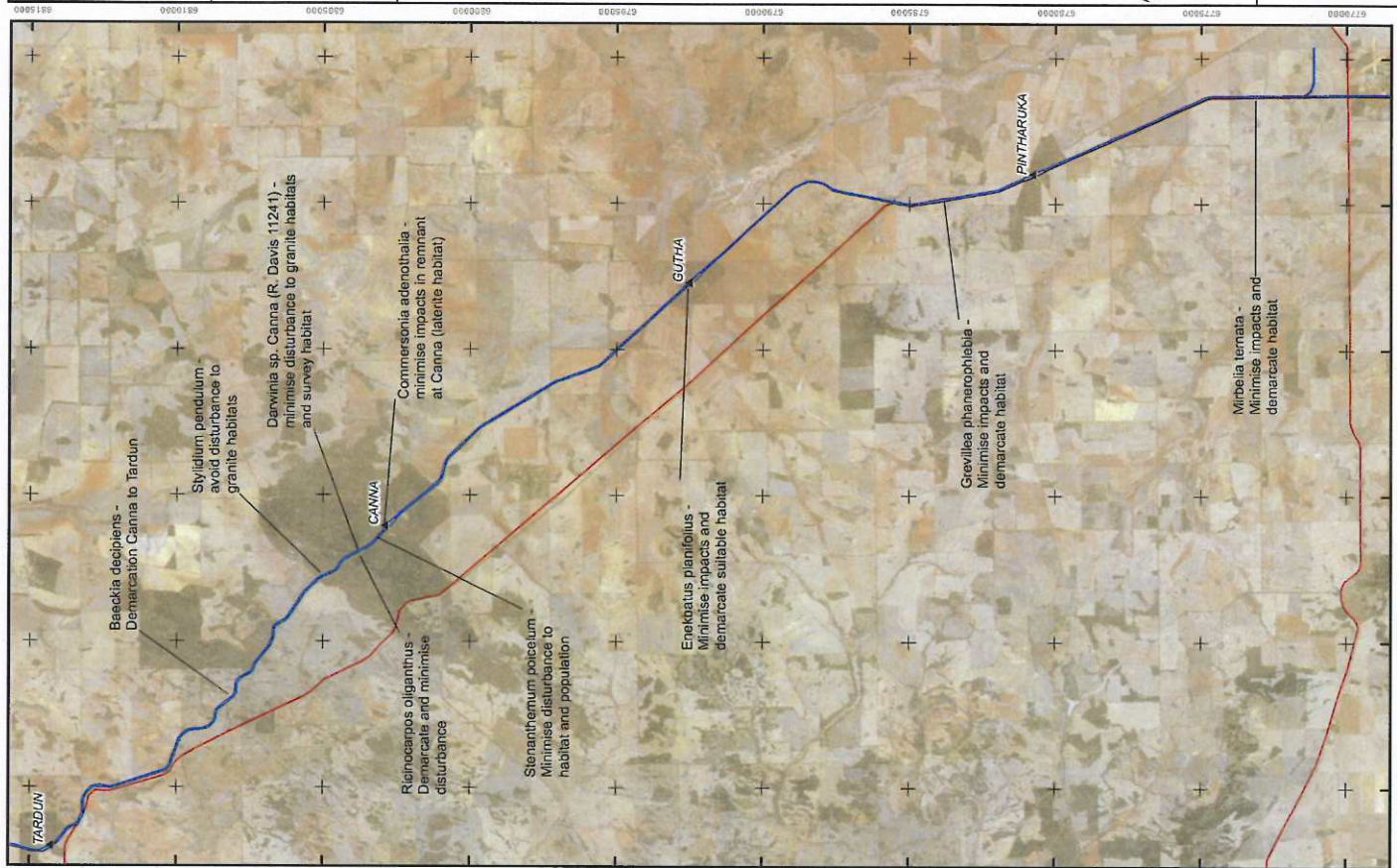
Datum: GDA94 Projection: MGA200

LEGEND

- ▲ Railway Stops
- Rail Corridor
- Road

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1. Application details

1.1. Permit application details

Permit application No.: 2686/3
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: WestNet Rail

1.3. Property details

Property: RAILWAY RESERVE (PERENJORI 6620)
RAILWAY RESERVE (BOWGADA 6623)
RAILWAY RESERVE (KOOLANOOKA 6623)
RAILWAY RESERVE (MORAWA 6623)
LOT 3000 ON PLAN 43387 (Lot No. 3000 TILLEY MORAWA 6623)
RAILWAY RESERVE (PERENJORI 6620)
LOT 6137 ON PLAN 167067 (CRANBROOK 6321)
LOT 6139 ON PLAN 169089 (Lot No. 6139 SWALLOW KENTDALE 6333)

Local Government Area:

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
157		Mechanical Removal	Railway construction or maintenance

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 8 April 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>The vegetation present within the area under application is mapped as 17 Beard (1980) vegetation associations:</p> <ul style="list-style-type: none"> - 35: shrublands; Acacia acuminata (Jam) scrub with scattered Eucalyptus loxophleba (York Gum); - 36: shrublands; thicket, Acacia spp. - Allocasuarina spp. alliance; - 142: medium woodland; Eucalyptus loxophleba (York Gum) and Eucalyptus salmonophloia (Salmon Gum); - 325: succulent steppe; saltbush and samphire; - 352: Medium woodland; york; - 353: shrublands; mallee and Acacia spp. scrub with scattered Eucalyptus loxophleba (York Gum); - 359: shrublands; Acacia spp. and Banksia spp. scrub; - 371: low forest; Acacia rostellifera (Summer-scented Wattle); - 372: mosaic: shrublands; scrub-heath on deep sandy flats / shrublands; thicket, Acacia spp. - Allocasuarina spp. alliance; - 379: shrublands; scrub-heath on lateritic sandplain in the central Geraldton Sandplain bioregion; - 380: shrublands; scrub-heath on sandplain; - 408: shrublands; scrub-heath on coastal association, yellow sandplain; - 551: shrublands; Allocasuarina campestris (Tamma) thicket; 	<p>The application is for the clearing of approximately 157 hectares of native vegetation along the existing railway lines for the upgrade of this railway.</p>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)</p>	<p>The vegetation condition ranges from 'excellent' to 'completely degraded' (as per the Keighery 1994 scale).</p>

- 675: Hummock grasslands, shrub steppe; bowgada & snakewood over *Triodia basedowii*;
- 676: succulent steppe; samphire;
- 684: mosaic: shrublands; shrublands; *Acacia acuminata* (Jam) scrub with scattered *Eucalyptus loxophleba* (York Gum) in the valleys / *Allocasuarina campestris* (Tamma) thicket;
- 687: shrublands; *Acacia ramulosa* var. *linophylla* (Bowgada Bush) and *Acacia acuminata* (Jam) scrub with scattered *Allocasuarina heugelliana* (Rock Sheoak) and *Eucalyptus loxophleba* (York Gum); and
- 1413: Shrublands; acacia, casuarina & melaleuca thicket

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 at variance to this Principle

The proposed amendment of Clearing Permit CPS 2686/2 is to change the permit holder to WestNet Rail and increase the proposed clearing by 126 hectares of native vegetation within the Morawa, Mullewa and Geraldton Railway Reserves. The total proposed clearing area is now 157 hectares.

The proposal is for the clearing of 157 hectares of native vegetation within the Morawa, Mullewa and Geraldton Railway Reserves. The application falls within the Avon Wheatbelt and Geraldton Sandplains bioregions which have 18.24% and 44.99% of the pre-European extent of native vegetation remaining (Shepherd, 2009).

Of the 18 mapped Beard vegetation associations (Shepherd 2009) within the area under application, those occurring within the Avon Wheatbelt bioregion and the Geraldton Sandplains bioregion have less than 30% of their pre-European extent remaining. In addition, 3 of these have less than 12% of their pre-European extent remaining. The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). It is recommended that impacts to highly cleared Beard vegetation associations (a23Lc; e6MreaSi; abSi; c3Sc; e6,8Mi; e6c5Mr a9,19Si; e6Mr a19Si; e6Mr a19Si/c3Sc; mhSc; and x4SZc) be avoided, where practical (ENV, 2010).

There are 2 known rare and four priority flora species along the length of the rail reserve. In a survey undertaken in September 2010 (ENV, 2010b) 3 rare flora (DRF) and 27 priority flora species were recorded. The survey area included a 1km buffer either side of the railway line. A number of the priority flora species recorded are ranked Priority 1 or 2, which are of high conservation concern. The area around Canna and Wilroy are of concern as there are a number of priority 1 flora species that are only known from one location or are located in a very restricted area (*Stylidium wilroyense*, *Darwinia* sp Canna, *Ricinocarpos oliganthus*, *Scholtzia* sp. *Kojarena*, *Petrophile pilostyla* subsp. *syntoma* and *Stylidium pendulum*). The proposed clearing is highly likely to impact on solitary populations of a number of priority flora species. The applicant has advised that the project will be on formation through Canna and Wilroy. Additionally, there will be some impact on *Stylidium wilroyense* (P1) and *Enekbatus planifolius* (P2) priority flora species. These priority species will be demarcated in the field to ensure disturbance is minimised.

There are 10 known records of conservation significant fauna species along the length of the rail reserve. A fauna survey undertaken in September 2010 (ENV, 2010a) identified four main fauna habitat types, ranging from excellent to completely degraded (Keighery, 1994) condition. There were 88 species of fauna recorded during the (ENV, 2010a) survey, 13 reptiles, 3 amphibians, 63 bird species and 9 mammal species. Two of these species were of conservation significance, the Malleefowl and the Rainbow Bee-eater (ENV 2010a). The clearing of proteaceous heath, Salmon Gum and York Gum should be avoided or minimized as these areas have potential value as feed sites, and potential feed sites for Carnaby's Black Cockatoo and offset conditions may mitigate impacts to this species habitat.

The local area is highly cleared, and the native vegetation within the rail reserves provides significant ecological linkages between remnant vegetation. Disruption of this ecological linkage may further isolate the vegetation on either side of the railway, which will place more pressure on fauna within the region (ENV 2010a).

The ENV (2010b) report also refers to the high conservation value of the vegetation within the railway reserve as a corridor and refers to the vegetation being in better condition on the east side compared to the west. This high value of the corridor should be maintained as is it of primary importance for the maintenance of biodiversity values in the Avon Wheatbelt. Any clearing should be on the side with least vegetation width and quality. Impacts should be minimised on vegetation categorised in an excellent (Keighery 1994) condition.

Therefore, given the information stated above, the 157 hectares of vegetation under application is considered to be locally significant in terms of biological diversity, and therefore the proposal is at variance to this principle. Weed management and offsetting will mitigate the impacts of the proposed clearing.

Methodology **References**
ENV (2010a):
ENV (2010b)
Keighery (1994)
Shepherd (2009)
Commonwealth of Australia (2001)
GIS Databases:
- IBRA Regions
- Pre European Vegetation
- SAC Biodatasets - accessed 11/10

(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 at variance to this Principle**

The proposed clearing of a corridor either side of the current railway track will have an impact on the ecological linkage between areas of remnant vegetation by causing fragmentation of habitats.

Ten conservation significant fauna species have been recorded along the length of the rail reserve:

- *Idiosoma nigrum* (Shield-backed Trapdoor Spider)
- *Myrmecobius fasciatus* (Numbat)
- *Leipoa ocellata* (Malleefowl)
- *Teyl* sp. (Minnivale Trapdoor Spider)
- *Aganippe castellum* (Tree-stem Trapdoor Spider)
- *Egernia stokesii badia* (Western Spiny-tailed Skink)
- *Caluortorhynchus latirostris* (Carnaby's Black Cockatoo)
- *Pezoporus wallicus flaviventris* (Western Ground Parrot)
- *Oreoica gutturalis gutturalis* (Crested Bellbird Southern - P4)
- *Areotis australia* (Australian Bustard - P4)

There were 88 species of fauna recorded during a survey undertaken in September 2010 (ENV, 2010). These were 13 reptiles, 3 amphibians, 63 bird species and 9 mammals. Two of these species were of conservation significance, the Malleefowl and the Rainbow Bee-eater (ENV 2010a). A total of 54 conservation significant fauna have previously been recorded within the vicinity of the survey area, 15 of these species were assessed to 'likely' or 'possibly' occur in the survey area. The conservation significant fauna at most risk from the proposed clearing are those species that have limited dispersal capacity and/or are ground dwelling. These species include the Gilled Slender Blue-tongue, Western spiny-tailed Skink, Woma, Carpet Python, Malleefowl, Western Brush Wallaby, Tree-stem Trapdoor Spider and Shield-Back Trapdoor spider (ENV 2010a).

The closest known nesting record for Carnaby's black cockatoo is 23km south of the application area although the species has been sighted in the area. The ENV (2010a) survey area contained 69.31 hectares of foraging habitat and four stands of trees that contain three or more trees with diameters larger than 50cm at breast height. These trees are classified as Future Breeding Habitat for Carnaby's black cockatoo. The rail reserve thus has potential value as a feed site, movement corridor and future breeding site for Carnaby's Black Cockatoo and the clearing of proteaceous heath, Salmon Gum and York Gum should thus be avoided or minimised.

Critical habitats for the Malleefowl include shrublands dominated by *Acacia*, and occasionally in woodlands dominated by *Eucalypts* such as Wandoo, Marri and Mallet. These types of habitats are present within the application area and with recent records suggest this species occurs in the impact area. During the fauna survey (ENV, 2010a), Malleefowl were recorded in the Shrubland and Woodland habitats, which ranged from excellent to degraded (Keighery, 1994) condition and comprised of 64.2% of the survey area. The fauna species most at risk from the proposed clearing is the Malleefowl (ENV, 2010a). There were no nests recorded within the survey area and both Malleefowl recorded within the survey area were within nature reserves where there is substantial remnant vegetation surrounding the rail reserve (ENV 2010a). The rail reserve is most likely acting as a corridor with potential feeding value for the Malleefowl, therefore retention of the high values of the corridor is recommended.

Four rainbow Bee-eaters were recorded within the survey area (ENV, 2010a), two of the recorded locations were on the Woodland habitat type, and two were in the Shrubland habitat type. The Rainbow Bee-eater is commonly recorded during fauna surveys and likely to be found in Shrubland, woodland and Riverrine habitat which cover 64.2% of the survey area. The Rainbow Bee-eater can easily move to other habitat types and therefore the proposed clearing is not likely to impact this species.

The shield-backed trapdoor spider is known from disjunct populations in the Midwest and Wheatbelt, the main threats to the population is clearing and mining. This species is highly likely to be in the proposed impact area given that there are records within 2.5km of the application area. The Tree-stem Trapdoor Spider is also likely to be present in the application area, given the records within the local area. A survey for the presence of burrows is required to confirm presence of these species. These species have low dispersal capability a

maximum of approximately 500 metres. It has recently been noted that burrows can look similar between myglomorph species and therefore it is very important that camera equipment is utilised to identify and confirm species during surveys. The size/aperture of the burrow (to differentiate between adults and juveniles) and also whether they are occupied, that is, an active/inactive burrow is important information required to make an assessment of the impact on the population. The Shield-back trapdoor spider or the Tree-stem trapdoor spider burrows or individuals were not recorded during the ENV (2010a) survey. Both of these trapdoor spider species are vulnerable to disturbance the removal of this ecological linkage may isolate populations and decrease their capacity for population growth (ENV 2010a).

The vegetation within the proposed clearing area acts as a corridor and an ecological linkage between areas of remnant vegetation within the local area. The vegetation within the railway reserve is of high conservation value as a corridor and refers to the vegetation being in better condition on the east side compared to the west (ENV, 2010b). This high value of the corridor should be maintained and any clearing should be on the side with least vegetation width and quality.

Given the extent of clearing within the local area and within an extensively cleared landscape, and the low representation of many of the vegetation associations under application, the vegetation proposed for clearing is likely to be significant habitat for fauna, including fauna of conservation significance and act as an ecological linkage within a fragmented landscape. Therefore the proposed clearing is considered to be at variance to this principle.

Offsetting the proposed clearing will mitigate the impacts to fauna and fauna habitats.

Methodology References
ENV (2010a)
ENV (2010b)
GIS database:
- NLWRA, Current Extent of Native Vegetation
- SAC Biodatasets - accessed 11/10

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

Comments **Proposal is at variance to this Principle**
During a flora survey undertaken in September 2010 (ENV, 2010b) three rare flora species were recorded within the application area, namely *Caladenia wanosa*, *Grevillea bracteosa* subsp. *Howatharra* and *Grevillea phanerophlebia* (ENV 2010b).

G. bracteosa subsp. *howatharra* is ranked Critically Endangered and is known from 5 populations within the Geraldton District, consisting of approximately 348 plants. The taxon has a restricted range of approximately 30km. One population is located within the rail reserve at Northern Gully and also includes a discrete subpopulation in the adjacent gravel reserve. The population at Northern Gully is disjunct with the nearest known population more than 24km away. Clearing of subpopulation which occurs in the rail reserve would potentially result in a 22% impact to the largest known population, as well as a significant reduction of suitable habitat for the taxon and cause further fragmentation of the subpopulation which occurs in the adjacent road and gravel reserves.

G. phanerophlebia is also ranked Critically Endangered and is known from 5 populations and only 11 plants within the Geraldton District. One population occurs within the rail reserve, however there are currently no living plants recorded at this site (in 2006 four plants were recorded however monitoring in 2008 indicated these plants had died from drought stress). This population is not considered extinct as the species may still be present in the soil seed bank. This species is on the verge of extinction with all populations having 7 or less plants recorded. The protection of suitable habitat is therefore of the utmost importance for the continuing existence of this species.

During the flora survey (EMV, 2010) only single plants of *C. wanosa* and *G. phanerophlebia* were found, so the significance of these populations to the conservation of these species is not known.

However there were 9 occurrences of *G. bracteosa* subsp. *Howatharra* recorded, making this a potentially important location for this species.

Although these rare flora species will not be directly impacted by the proposed clearing, disturbance close to these populations will occur. *Drakaea concolour* may also be located near disturbance areas. A licence to take rare flora has been sought to cover inadvertent taking.

Therefore, the proposal is considered to be at variance to this principle. Offset conditions will mitigate the impacts of the proposed clearing of rare flora habitat and inadvertent taking.

Methodology References
DEC (2010b)

DEC (2010c)
 DEC (2010d)
 ENV (2010b)
 GIS database:
 - Pre European Vegetation
 - SAC Biodatasets - accessed 10/11
 - Soils, Statewide

(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

Two threatened ecological communities occur within the local area of the proposed clearing. Moonagin System 3km east, and Koolanooka System 11km east of the application area. The proposed clearing is outside the buffer of both systems and as such is not likely to impact on either of these TEC. Therefore, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Database:
 - SAC Biodatasets - accessed 11/10

(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 at variance to this Principle

The area under application falls within the Avon Wheatbelt and Geraldton Sandplains bioregions which have approximately 18.24% and 44.99% of their pre-European extent of vegetation coverage remaining (Shepherd, 2009).

Aerial photography indicates that the rail reserve is within an extensively cleared landscape. Of the 17 mapped vegetation associations (Shepherd 2009) within the area under application, 10 have less than 30% of their pre-European extent remaining. In addition, 2 of these vegetation complexes have less than 10% of their pre-European extent remaining. The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30 per cent of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia 2001). Additionally, the Shire of Geraldton-Greenough has less than 30% of their pre-European extent of vegetation coverage remaining (Shepherd, 2009)

Due to the impact to extensively cleared vegetation associations within the extensively cleared agricultural landscape, in particular vegetation in good or better condition with less than 10% remaining and vegetation in degraded or better condition with less than 5% remaining, some of the proposed clearing is considered to be at variance to this principle.

An offset condition will minimise and mitigate the residual impacts of the proposed clearing to under represented vegetation complexes (less than 30% vegetation remaining).

	Pre-European (ha)	Current extent (ha)	Remaining (%)
BIOREGIONS			
Avon Wheatbelt (AW)	9 517 109.61	1 736 214.56	18.24
Geraldton Sandplains (GS)	3 136 025.34	1 410 755.15	44.99
LOCAL GOVERNMENT AUTHORITIES			
Shire of Geraldton - Greenough	177 234.54	36 228.62	20.44
Shire of Morawa	351 033.55	113 798.18	32.42
Shire of Mullewa	811 058.96	395 441.96	48.76
VEGETATION ASSOCIATIONS			
Beard association: 35*	184 501.78	31 395.00	17.02
Beard association: 36*	495 430.68	221 131.97	44.63
Beard association: 142*	711 262.40	198 846.21	27.96

Beard association: 325*	64 629.39	60 864.87	94.18
Beard association: 352*	724,272.97	144,969.89	20.02
Beard association: 353*	97 371.14	7 785.34	8.00
Beard association: 359*	44 417.37	11 081.73	24.95
Beard association: 371*	32 807.57	3 238.50	9.87
Beard association: 372*	82 083.78	31 782.77	38.72
Beard association: 379*	547 736.95	130 484.07	23.82
Beard association: 380*	580 374.88	355 648.99	61.28
Beard association: 408*	328 527.29	149 761.22	45.59
Beard association: 551*	302 423.09	75 660.97	25.02
Beard association: 675*	51 850.63	14 208.55	27.40
Beard association: 676*	2 061 210.54	1 963 654.86	95.27
Beard association: 684*	213 758.83	43 723.81	20.45
Beard association: 687*	56 441.21	15 889.00	28.15
Beard association: 1413*	1 679 916.99	1 252 585.65	74.56

* Shepherd 2009

Methodology References
Commonwealth of Australia (2001)
Shepherd (2009)
GIS Databases:
- IBRA Regions
- Local Government Authorities
- Pre European Vegetation
- SAC Biodatasets - accessed 11/10
- NLWRA, Current Extent of Native Vegetation

(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 at variance to this Principle**
The Greenough River crosses the application area 36 km from the western end of the application. There are also two areas subject to inundation, one major non-perennial watercourse (Irwin River) and one major drain just north of the town of Morawa. There are also multiple minor non-perennial watercourses over the entire application area. Therefore, sections of vegetation to be cleared are growing in association with a watercourse.

The proposed clearing is considered to be at variance to this principle. The application is for upgraded of existing infrastructure and therefore limited impacts to these watercourses are anticipated.

Methodology GIS database:
- Hydrography linear

(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**
Given the nature of the application, localised land degradation is likely to occur during the works, however this is likely to be only short term. However these issues should be minimal as the existing rail already has infrastructure in place to prevent land degradation associated with railways.

Given the linear nature of the application area, it is unlikely that the proposed clearing of native vegetation would cause appreciable land degradation. Therefore this principle is not likely to be at variance.

Methodology GIS database:
- Soils, Statewide
- Topographic contours statewide -
- Hydrogeology, Statewide

(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 may be at variance to this Principle

The application area is adjacent to 4 nature reserves including The Forty Four Mile Nature Reserve (R1017), Wilroy Nature Reserve (R26196), Canna Nature Reserve (R29289), and an unnamed Nature Reserve (R24185). The clearing may impact on environmental values and could increase the intrusion of weed species into these conservation areas. Therefore the proposed clearing may be at variance to this principle.

Weed management conditions will manage the impacts of the proposed clearing.

Methodology GIS Databases:
- DEC Tenure

(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 clearing application passes through four catchments: Chapman River, Greenough River, Irwin River and Yarramonger Catchment.

The proposed clearing may cause some short term water quality issues in terms of localised surface water sedimentation during works. However, these issues should be minimised with the inclusion of infrastructure to prevent water quality issues associated with tracks and railway (ie table drains and culverts).

Due to the linear nature of the areas proposed to be cleared, it is unlikely that the clearing of native vegetation will cause significant deterioration in the quality of surface water or groundwater within the local area. Therefore the proposed clearing is not likely to be at variance.

Methodology GIS database:
- Hydrographic catchments, catchments

(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

As the proposal is for the clearing of 157 hectares within rail reserves along an existing railway, the clearing will be linear and as such unlikely to cause or exacerbate flooding. The proposal is not likely to be at variance to this proposal.

Methodology GIS database:
- Hydrography, linear

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

Comments

The proposed amendment of Clearing Permit CPS 2686/2 is to change the permit holder to WestNet Rail and increase the proposed clearing by 126 hectares of native vegetation within the Morawa, Mullewa and Geraldton Railway Reserves. The total proposed clearing area is now 157 hectares.

The proposed clearing is restricted to railway reserves and land vested with Westnet Rail under the Rail Freight Corridor Land use Agreement (Narrow Gauge) and Railway Infrastructure Lease (2000) and the Rail Freight Corridor Land use Agreement (Standard Gauge) and Railway Infrastructure Lease (2000).

In the past, permits to take rare flora have been issued to WestNet Rail to cover only inadvertent/accidental taking of above along their rail line during maintenance activities as required under the Rail Safety Act 1998. District Conservation Officers have demarcated areas allowing a 20m buffer around all known plants to minimise the risk of accidental taking. The conditions of past permits to take rare flora have stated that works are to be undertaken in accordance with regular liaison with the DEC Geraldton staff. WestNet Rail's current permit for maintaining existing cleared zones within the rail line between Narngulu and Perenjori is valid until 31 December 2010 (DEF permit 98-0910). This permit would not cover the deliberate taking of known rare flora during maintenance activities (DEC 2010b).

The application falls under the EPA Position Statement No.2, however clearing is not for agriculture.

Town Planning Scheme Zone: Railway Reserve

The area lies within a Public Drinking Water source area, the 'Wicherina Catchment area' (Not assigned).

There are multiple Aboriginal sites of significance throughout the application area.

Application area falls within the groundwater 'Gascoyne' area and the 'Greenough River' area covered by the Rights in Water and Irrigation Act 1914.

An application for a licence to take rare flora has been applied for with the Department of Environment and Conservation's Species and Communities Branch.

Methodology

References

DEC (2010b)

GIS Databases

- EPA Position Paper No. 2 Agricultural Region

-Town Planning Scheme Zones

-Public Drinking Water Source Areas

-Aboriginal Sites of Significance

- RIWI Act, Groundwater areas

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
- DEC (2010a) Species and Communities Advice Request - Proforma - Fauna. DEC ref: A352824
- DEC (2010b) Species and Communities Advice Request - Proforma - Flora. DEC ref: A352822
- DEC (2010c) Regional Advice for Clearing Permit 4020/1 - WestNet Rail Pty Ltd. DEC ref: A359782
- DEC (2010d) Species and Community Advice Request - Flora 5/1/11. DEC ref: A359774
- DEC (2010e) Species and Community Advice Request - Fauna 5/1/11. DEC ref: A359775
- ENV (2010a) WestNet Rail Upgrade - Narngulu to Tilley (Morawa) Fauna Assessment. ENV Australia Pty Ltd, Perth. DEC ref: A357255
- ENV (2010b) WestNet Rail Upgrade - Narngulu to Tilley (Morawa) Flora and Vegetation Assessment. ENV Australia Pty Ltd, Perth. DEC ref: A357256
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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)