



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Area Permit Number: 3747 / 1
File Number: 2010/003417-1
Duration of Permit: From 19 September 2010 to 19 September 2020

PERMIT HOLDER

Kim Alexander Stephen
Carolyn May Stephen

LAND ON WHICH CLEARING IS TO BE DONE

LOT 59 ON PLAN 202708 (MOORINE ROCK 6425)

AUTHORISED ACTIVITY

1. Clearing of up to 10 hectares of native vegetation within the area cross-hatched yellow on attached Plan 3747/1.
2. Clearing authorised under this Permit must be completed by 19 September 2015, being five years from the date from which this Permit becomes valid.

CONDITIONS

1 Flora management

- (a) Prior to undertaking any clearing authorised under this Permit, the Permit Holder shall engage a *botanist* to inspect that area for the presence of *Eucalyptus crucis* subsp. *crucis* listed in the *Wildlife Conservation (Rare Flora) Notice 2010* and *Acacia crenulata* (*priority flora*).
- (b) Where rare flora or *priority flora* are identified in relation to condition 1(a) of this Permit, the Permit Holder shall ensure that:
 - (i) no clearing occurs within 50 metres of identified rare flora, unless approved by the CEO; and
 - (ii) no clearing of identified *priority flora* occurs and no clearing occurs within 10 metres of identified *priority flora*, unless approved by the CEO.

2 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* growing within areas cleared under this Permit.

3 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) Within 3 months following completion of gravel extraction, *revegetate and rehabilitate* the areas cross-hatched yellow on attached Plan 3747/1 by:
 - (i) ripping the pit floor and contour batters within the extraction site; and
 - (ii) laying the vegetative material and topsoil retained under condition 3(a) on the cleared areas.
- (c) within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 3(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 3(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.

4 Records must be kept

- (a) 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:
 - (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 flora management pursuant to condition 1 of this Permit:
 - (i) the location of each rare and/or priority flora species recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;
 - (ii) the species name of each rare and/or priority flora species identified; and
 - (iii) a copy of the botanists flora survey report.
- (c) In relation to the *revegetation and rehabilitation* of areas pursuant to condition 3 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;
 - (ii) a description of the *revegetation and rehabilitation* activities undertaken;
 - (iii) the size of the area *revegetated and rehabilitated* (in hectares); and
 - (iv) the species composition, structure and density of *revegetation and rehabilitation*.

5 Reporting

- (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 4 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
- (b) Prior to 19 June 2020 the permit holder must provide to the CEO a written report of records required under condition 4 of this Permit where these records have not already been provided under condition 5 (a) of this Permit.

Definitions

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

botanist means a person with specific training and/or experience in the ecology and taxonomy of Western Australian flora;

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;

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;

local provenance means native vegetation seeds and propagating material from natural sources within 20 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;

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

priority flora means those plant taxa described as priority flora classes 1, 2, 3 or 4 in the *Department's Declared Rare and Priority Flora List for Western Australia* (as amended);

regenerate/ed/ion means *revegetation* that can be established from in situ seed banks contained either within the topsoil or seed-bearing *mulch*;

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

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

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

weeds 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*.



Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

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

19 August 2010

Plan 3747/1



LEGEND

- Clearing Instruments
-  Areas Approved to Clear
 -  Road Centrelines
- Southern Cross 50cm
Orthomosaic - Landgate
2004



0 ~250 m

Scale 1:9206

(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.

 Date 19/3/10

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.



Department of
Environment and Conservation

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1. Application details

1.1. Permit application details

Permit application No.: 3747/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Kim Alexander and Carolyn May Stephen

1.3. Property details

Property: LOT 59 ON PLAN 202708 (MOORINE ROCK 6425)
LOT 59 ON PLAN 202708 (MOORINE ROCK 6425)

Local Government Area:

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
10		Mechanical Removal	Extractive Industry

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
Mapped Beard Vegetation Association 1413. Acacia mixed shrubland; casuarina and melaleuca thicket (Shepherd, 2009).	The proposal is to clear 10 hectares of native vegetation for the purposes of gravel extraction. The vegetation under application comprises 3 main vegetation types; Open Wandoo and Salmon Gum woodlands; very dense Casuarina and Melaleuca thicket; and Acacia mixed shrubland (DEC, 2010a). There is some disturbance from an access track.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Vegetation condition description based on aerial photography and a site visit (DEC, 2010a).

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 may be at variance to this Principle**

The proposed clearing consist of 10 ha of native vegetation in an approximately 1600 ha remnant of native vegetation for the purpose of Extractive Industry.

The remnant is made up of private property, Crown, road and rail Reserves.

The vegetation under application comprises three main vegetation types; Open Wandoo and Salmon Gum woodlands; very dense Casuarina and Melaleuca thicket; and Acacia mixed shrubland in very good condition (DEC, 2010a, Keighery 1994).

There are three known records of Priority 3 Flora within the local area (10 radius). Of these, Acacia crenulata (which has one known population located approximately 4.7km west of the applied area) occurs in the same vegetation type as the area under application. The only way to determine the presence or absence of this species is through a targeted flora survey.

One rare flora species, namely Eucalyptus crucis subsp. crucis, has been recorded within the local area. This species occurs in the same soil association as the area under application, but a different vegetation complex.

It is noted that the area under application is within the IBRA Avon Wheatbelt Bioregion which has 25.75%

vegetation remaining (Shepherd2009). However, the area to be cleared is surrounded by native vegetation in similar or better condition as the area proposed to be cleared.

Given the area under application may provide habitat for rare and priority flora, the area may be considered to be an area of high biological diversity and as such is considered to be may be at variance to this principle.

Weed control and flora management conditions will minimise the impacts on the biodiversity of the remnant vegetation.

Methodology References:
- DEC (2010a)
- Keighery (1994)
- Shepherd (2009)
GIS Datasets
- Soils, Statewide DA 11/99
- SAC Bio Datasets (16/06/10)

(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 not likely to be at variance to this Principle

Within the local area (10km radius) there is one known recorded species of Threatened Fauna: the Malleefowl (*Leipoa ocellata*), one known recorded species of Priority 1 Fauna: a crustacean (*Parartemia contracta*) and one known recorded species of Priority 4 Fauna: the Crested Bellbird, southern (*Oreoica gutturalis gutturalis*). It is not likely that the vegetation under application is significant for *P. contracta* as this species is associated with Lake O'Grady or *O. gutturalis gutturalis* as this species prefers dry mallee woodlands.

The Malleefowl (*Leipoa ocellata*) has been recorded approximately 6 km to the west of the area applied to be cleared. It prefers woodland or shrubland with an abundant litter layer that provides essential material for the construction of its nest mound. DEC does not consider that the application area provides this habitat.

Given the above, the area under application is not considered to be a significant habitat for fauna indigenous to Western Australia and is therefore not likely to be at variance to this Principle.

Methodology GIS Databases:
SAC Bio datasets (16/06/10)

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

Comments Proposal may be at variance to this Principle

Within the local area (10km radius) there is one known record of rare flora, *Eucalyptus crucis* subsp. *crucis*. This species occurs in similar soil types as the area under application, but occurs within a different vegetation complex. Given the similar soil types and that the species has been recorded 2 km from the area under application there is a possibility that it may occur within the area under application. The only way to determine the presence or absence of this species within the application area is through a targeted flora survey.

Given the above, the proposal may be at variance to this Principle. Flora management conditions requiring a species specific survey and not allowing clearing within 50 metres of this species will mitigate this impact.

Methodology GIS Databases:
Declared Rare and Priority Flora List - DEC 16/06/10
SAC Bio datasets 16/06/10

(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 known occurrences of threatened ecological communities (TEC) within the local area (10km).

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

Methodology GIS Database:
SAC Bio datasets 16/06/10

(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 may be at variance to this Principle

The area under application comprises of 10 ha within a 1600ha remnant within the Avon Wheatbelt Bioregion.

The national objectives and targets for biodiversity conservation in Australia has a target to prevent clearance of ecological communities with an extent below 30% of that present pre-1750, below which species loss appears to accelerate exponentially at an ecosystem level (Commonwealth of Australia, 2001).

The application falls within a local area (10km radius) that has been extensively cleared with approximately 15% remaining, and contains Beard Vegetation Association 1413, which has less than the recommended 30% minimum of pre-European extent remaining (25.75% remaining) within the Avon Wheatbelt Bioregion (Shepherd, 2009). This vegetation association is restricted to the Avon-Wheatbelt Bioregion with only 7.67% currently protected in conservation estate.

It is noted that 140,769 hectares of this vegetation association remain in the Avon Wheatbelt Bioregion. The clearing of up to 10 ha will reduce the vegetation remaining in this vegetation association by 0.007%.

Therefore, the proposal is may be at variance to this Principle.

Conditions for revegetation of the cleared area once the proposed clearing for temporary land use has been completed is likely to mitigate the impacts of clearing.

Methodology References
- Commonwealth of Australia (2001)
- Shepherd et al (2009)

(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**
There is no watercourse or wetland within the proposal area, therefore, the proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
Hydrography, linear - DOW

(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**
Soils within the area under application are described as hard alkaline yellow mottled soils and hard alkaline red soils, either of which may be dominant locally. Acid lateritic strata are common below 4-5 ft. Mapped, lateritic mesas and buttes of unit Ms8 soils are a constant feature, as are small granitic bosses and tors of unit JJ16 and minor valleys of units Sl28, Oc31, and Vb2 (Northcote et al., 1960-1968).

The landform is described as gently undulating to rolling terrain with some ridges and uneven slopes; and with the variable presence of lateritic mesas and buttes and granitic tors and bosses.

The area under application is associated with a low-medium risk of salinity and the proposed 10 ha within a 207 hectare remnant is not likely to impact on the salinity risk due to the remaining native vegetation surrounding the application area.

The main land degradation risk associated with the removal of vegetation on the identified soil type is considered to be wind and water erosion. Given that the area under application is surrounded by shrubland which will reduce wind velocity, it is considered that the risk of wind erosion is low.

Therefore, the proposal is not likely to be at variance to this Principle.

Methodology Reference:
Northcote et al. (1960-1968)
GIS Databases:
Salinity Risk LM 25m - DOLA 00
Soils, Statewide - DA 11/99

(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**
Crown Reserve 27422 is located adjacent to the northern boundary of Lot 59 and 80m north of the area under application, Crown Reserve 21766 is located 800m north-west, and Crown Reserve 2863 is located 1.1km north-east of the area under application. Given that a vegetated buffer zone will exist between the proposal site and the nearest conservation area (Crown Reserve 27422), and the distance to the other conservation areas, it

is not considered likely that the proposed clearing would impact on the environmental values of the nearby conservation reserves.

Methodology GIS Database:
CALM Managed Lands and Waters - DEC 28/10/09

(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 not located within a Public Drinking Water Source Area (PDWSA) and has a low to medium risk of salinity. The proposed clearing is therefore not likely to have an impact on ground water quality.

The nearest watercourse is situated approximately 540m to the south of the area under application. Given the buffer zone of native vegetation surrounding the proposal site, it is not considered likely that the proposed clearing would have an impact on the surface water quality of this water body.

Therefore, the proposed clearing is not considered likely to cause deterioration in the quality of surface or underground water, and the proposal is not likely to be at variance to this Principle.

Methodology GIS Databases:
Groundwater Salinity, Statewide - DOW
Hydrography, linear - DOW
Public Drinking Water Source Areas (PDWSAs) ? DOW
Salinity Risk LM 25m - DOLA 00

(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

There are no major watercourses located within the region of the proposal site and it is not considered likely that the proposed removal of vegetation would impact on peak flood height or duration. Given the proposed area is located within a vegetated remnant the clearing as proposed is not likely to cause, or exacerbate, the incidence or intensity of flooding and is not likely to be at variance to this principle.

Methodology GIS Databases:
Hydrography, linear - DOW
Topographic Contours, Statewide - DOLA

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

Comments

No submissions received.

The area under application is part of the Rights in Water and Irrigation Act 1914 area (Westonia) and if groundwater is to be extracted a Groundwater Licence would be required (Department of Water, 2010).

The area under application does not encroach upon a Proclaimed watercourse and does not intercept groundwater.

Methodology References:
- Department of Water (2010)
GIS Databases:
- Hydrography, linear - DoW

4. References

- Commonwealth of Australia (2001) National Objectives and Targets for Biodiversity Conservation 2001-2005, Canberra.
DEC (2010a) Site Inspection Report for Clearing Permit Application CPS 3747/1, Lot 59 South Moorine Road, Moorine Rock. Site inspection undertaken 27/07/2007. Department of Environment and Conservation, Western Australia (DEC Ref: A324117).
Department of Water (2010) pers. comm. 18/06/10.
EPA (2000) Environmental protection of native vegetation in Western Australia. Clearing of native vegetation, with particular reference to the agricultural area. Position Statement No. 2. December 2000. Environmental Protection Authority, Western Australia.
Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-

68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

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.

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)