Attachment 8

Letter to DoE re Offsets (BES, 2016)

bayley environmental services

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Our Ref: J07013

12 October 2016

Department of the Environment
GPO Box 787
CANBERRA ACT 2601

Attention: Ms Dionne Cassanell

Dear Dionne

Clearing of native vegetation on Lots 313-316 Minninup Rd, Dalyellup, WA (EPBC 2012/6274)

Thank you for your e-mail of 6 November 2012 and subsequent correspondence regarding offsets in relation to the above proposal. On behalf of Mr Colin Piacentini, this letter presents details of the proposed measures in response to your queries and assesses the proposal against the Offsets Assessment Guide published by DoE.

The offset package proposed by Mr Piacentini consists of a mix of feeding habitat enhancement, creation of nesting sites and land purchase.

HABITAT ENHANCEMENT

As part of the rezoning of Lots 313-316 for urban use, the State government has acquired a total of approximately 96ha of land from Mr Piacentini, comprising all of Lot 317 and the parts of Lots 313-316 west of Minninup Road. This land will be reserved for conservation. The provisions of the amended Shire of Capel Town Planning Scheme (attached in Appendix A) require Mr Piacentini to undertake rehabilitation within the reserved area, as follows:

"15 The subdivider shall, prior to commencing subdivision works, provide a management plan for a 100m wide section of Regional Open Space to the satisfaction of the WAPC and the Shire of Capel and provide such rehabilitation and management infrastructure as are reasonably required to provide for a transition from the urban development to the core ecological habitat and linkage values in the reserves. This shall include but not be limited to the wetland west of and the wildlife corridor south of Development Precinct No. 5."

Mr Piacentini will undertake habitat enhancement for Black Cockatoos and Western Ringtail Possums on the reserved land. This will include:

- The planting of approximately 5,050 Banksia trees, 5,050 WA Peppermint trees and 1,100 Tuart trees over 28ha to create black cockatoo feeding and potential nesting habitat and a continuous interconnected peppermint canopy linking Western Ringtail Possum habitat in bushland reserves west and east of the subject land.

- The erection of a number of artificial black cockatoo nesting hollows that is at least 20% greater than the number of potentially usable nest hollows lost in the clearing, with a minimum number of twelve.

Location and Size of Offset

The area to be replanted within ROS adjacent to the development area is 28ha. Figure 1 shows the conceptual area to be replanted, based on our current understanding of what areas are likely to require management under State subdivision conditions. This conceptual area excludes a firebreak on the south-western boundary of Lot 317, which abuts ROS-zoned land that is still in private ownership. It also excludes a 50m low-fuel zone on the eastern side of the wetland adjacent to Maidment Parade. No other firebreaks will be required, as the land to the east and west of Lot 317 is Crown land and the replanting area within Lot 317 is well removed from the development area.

The revegetation area will be refined and finalised in consultation with the DPAW and DoE prior to subdivision and clearing, but will remain at least 28ha. The Department of Planning (DoP), on behalf of the WAPC, has given its agreement for Mr Piacentini to carry out the planting and nest box erection in the reserved land. The advice from the DoP is attached in Appendix B.

Vegetation Type and Condition

The reserved area consists of about 54ha of Tuart woodland and about 41ha of mostly cleared wetland. The condition of the vegetation ranges from Very Good to Completely Degraded, with most of the Tuart woodland being in Good to Degraded condition. The vegetation condition is detailed in the assessment reports.

The current value of the vegetation for black cockatoos is assessed as low to moderate, based on the near absence of cockatoo feed species and the presence of potential nesting trees. This vegetation has been assigned a value of 5 for black cockatoos in the Offsets Assessment Guide spreadsheet, as advised by the DoE.

The current value of the vegetation for Western Ringtail Possums (WRP) is assessed as low to very low, based on the absence of a connected canopy, the known presence of foxes and the lack of any evidence of current WRP occupancy from four site surveys. The vegetation has been assigned a value of 2 for WRP in the Offsets Assessment Guide spreadsheet.

Species and Number of Trees
The attached draft Planting Plan (Appendix C) sets out the species, number and density of trees to be planted as well as the methods of site preparation, planting and post-planting maintenance.

In essence, the plan states:

- Overstorey trees (Tuart and Jarrah) will be planted at 20m spacing (25/ha) over upland areas, for a total of about 360 trees.

- Banksia, Peppermint and Paperbark trees and understorey species will be planted over upland and wetland areas as appropriate at a 5m spacing (400/ha), giving a total of about 11,200 trees.

- These densities are based on existing and desired tree densities including:
  - existing Tuart density on vegetated parts of the development area;
  - typical Banksia density in the Perth region (150-200/ha; Bamford, 2012); and
  - known growth habits of Banksias and Peppermints, and the density required to create a connected canopy of Banksia and Peppermint across the site.

- The planting density allows for 80% long-term survival of seedlings, which will give a final density of 320 Banksias and Peppermints per hectare (5.6m spacing). Monitoring and infill planting as necessary will ensure that this survival rate is achieved.

The planted area will be monitored and managed for five years, after which it will be handed over to the DPAW. The DPAW has confirmed that it is prepared to take over the management of the site after five years, subject to the provision of State government funding for management of all State-owned conservation land in the greater Bunbury region. The DPAW advice is attached in Appendix D.

In the event that State government funding for management of conservation land was not provided to DPAW, then the management of the reserved land at Dalyellup would remain the responsibility of the WAPC. In that case, the management would consist mainly of those matters that the WAPC was legally required to attend to, including maintenance of perimeter firebreaks and boundary fences, control of declared weeds and management of public hazards. In practice, this would have little effect on the habitat value of the site, since the plantings are designed to be self-sustaining after the initial five-year establishment period. The planting of a mixture of local native species means that no irrigation will be required, and the dense peppermint canopy will suppress the growth of weeds.

Current and proposed tenure
Following the transfer of ownership, the area to be reserved is owned by the State government and will be managed as Regional Open Space for conservation.

Risk of damage

If the proposal did not proceed the land would continue in its present ownership and condition for the foreseeable future. Management by government agencies would likely be confined to fire hazard reduction through slashing of pasture grasses.

Funding

Mr Piacentini will fund the tree planting in the ROS area and its monitoring/maintenance for five years. The cost of these works is estimated (ex GST) at $128,000. This cost estimate is based on a preliminary quote from Tranen Revegetation Systems.

CREATION OF NESTING HABITAT

All Tuart trees felled during the clearing of the site will be inspected immediately after felling for hollows suitable for use by black cockatoos. The site personnel undertaking the clearing will be instructed in how to undertake these inspections by the fauna consultant. All hollows assessed as potentially suitable for black cockatoos will be inspected by the fauna consultant in consultation with DPAW officers and confirmed as suitable or unsuitable for black cockatoo nesting according to the following criteria:

- entrance diameter at least 100mm;
- internal diameter at least 300mm;
- depth at least 500mm;
- height at least 2m above ground;
- floor sufficiently solid to support nesting materials; and
- absence of feral bees and other competing species.

Hollows that meet these criteria will be replaced in the ROS by artificial nest boxes. The total number of nest boxes erected will be at least 20% greater than the number of confirmed suitable hollows removed from the development area, with a minimum of twelve.

The decision to replace rather than salvage suitable hollows is based on advice from the DPAW, which has found that properly designed artificial nest boxes are more durable and more reliable than salvaged hollows, and are equally attractive to black cockatoos.

The artificial nest hollows will be purchased from a professional manufacturer and will be of the “Cockatube” type. The construction, positioning and erection of the hollows will be in accordance with the DEC publication “Artificial Nests for Carnaby’s Black Cockatoos” (Groom, 2010).

The artificial nest boxes will require ongoing periodic (annual or less frequent) monitoring and maintenance to check for condition and evidence of black cockatoo breeding activity, repair of damage/deterioration, removal of bee colonies, replacement of mulch and/or sacrificial chewing posts. Boxes that are used by black cockatoos will require more frequent maintenance than unused boxes. Monitoring can be undertaken

from the ground using binoculars or a pole-mounted camera. Maintenance and repair will require a cherry picker or ladder, depending on the height of the box.

The cost of erecting twelve nesting boxes is estimated at $8,400 (ex GST), based on a quote from Serpentine-Jarrahdale Landcare. If more nesting boxes are installed the cost will increase accordingly. The cost of maintaining and monitoring twelve nesting boxes for five years is estimated at $7,500 (ex GST), based on two field staff and a hired cherry picker for one day each year.

Mr Piacentini will fund the establishment of the nesting boxes and their maintenance for five years. After five years, the responsibility for monitoring and maintenance of the nesting boxes will pass to the State agency in which the ROS has been vested. The DPAW has confirmed that it is prepared to take over the management of the site after five years, subject to the provision of State government funding for management of all State-owned conservation land in the greater Bunbury region. The DPAW advice is attached in Appendix D.

In the event that State government funding was not provided to DPAW, then the management of the nest boxes would remain the responsibility of the WAPC as the owner of the land. If cockatoos had not begun using the nest boxes by that time the requirement for maintenance would be low and its usefulness limited. If cockatoos were found to be using the boxes, it would be expected that both DPAW and the WAPC would be keen to maintain and monitor that use, regardless of the funding situation.

LAND ACQUISITION

For the balance of the offset package, Mr Piacentini will provide funding to the Department of Parks and Wildlife (DPAW) to purchase approximately 113ha of black cockatoo habitat on farmland near Gingin, north of Perth, for inclusion in secure conservation reserve. The purchase and reservation will be undertaken by DPAW.

Gingin is within the known breeding and feeding range of Carnaby's Black Cockatoo (DPAW, 2013) and is within the known range of the Forest Red-tailed Black Cockatoo (DoE, 2016).

The area proposed for purchase is 113ha, based on the DoE's Offset Guide spreadsheet. The cost of the purchase, based on the upper price range of land purchased to date in Gingin by DPAW, is $189,500.

The DPAW has to date identified, negotiated and purchased more than 40 parcels of black cockatoo habitat totalling more than 24,500 hectares. The majority of these purchases have been north of Gingin, as shown on Figure 2. This has enabled the reservation of a significant habitat corridor linking Boonanarring Nature Reserve and the Moore River. The department also targets properties south of Perth, although the parcels are generally smaller and more costly to purchase.

All of the land parcels purchased to date have been uncleared portions of freehold farm land. DPAW's strategy is to purchase the best quality cockatoo habitat available. All of the parcels purchased to date have had very good to excellent habitat quality. Without reservation, these parcels would be expected to degrade over time as a result of incidental impacts from farming (e.g. cattle ingress, fire, weed invasion, dieback, edge effects) despite the restrictions on clearing under State legislation. Their purchase for conservation significantly improves their security and protection compared to being left as parts of operating farms.

DPAW's approach is to purchase the largest parcels available; eight of the 40 purchased to date have been in excess of 1,000 hectares, with the largest being 1,381ha. Where proponents need to provide smaller areas as offsets, the DPAW prefers to aggregate a number of smaller funding contributions together to fund the purchase of a single, larger parcel. For this reason, it is generally not possible to allocate such smaller contributions to a particular property. The DPAW is currently aware of or negotiating on six target properties north of Gingin, which it aims to acquire as funding becomes available.

The DPAW prefers the current model, where it receives external funding to undertake the purchases itself, to the alternative of having private companies purchase offset land and hand it to the DPAW for management. This is for several reasons:

- The DPAW is able to directly control which parcels it purchases, enabling it to acquire the highest quality habitat for conservation.
- The DPAW's status as a State government agency enables it to obtain subdivisions of rural properties that are not readily available to private purchasers.
- Pooling of funds enables the purchase of much larger land parcels than would be possible on a piecemeal basis.
- The DPAW is able to identify available land parcels and negotiate their purchase on a scale that would be impossible for individual proponents looking for single parcels.

Vegetation Type and Condition

The land to be acquired will be in very good to excellent condition with a high habitat value for black cockatoos, in line with the DPAW's policy for land acquisition as described above. The land to be acquired has been assigned a value of 7 in the Offsets Assessment Guide spreadsheet, as advised by the DoE.

Current and Proposed Tenure

The land to be acquired will be an uncleared portion of freehold farmland that meets the size and condition standards required by the DPAW. DPAW will purchase the land, arrange (if necessary) the creation of a separate freehold title and take responsibility for its ongoing management as part of the conservation estate.

Risk of Damage

Without reservation, the offset land would be expected to degrade over time as a result of incidental impacts from farming (e.g. cattle ingress, fire, weed invasion, dieback, edge effects) despite the restrictions on clearing under State legislation.

Funding
Funds for the purchase of the offset site will be provided by Mr Piacentini to DPAW. The cost of the purchase ($169,500) is based on the top range of the prices paid to date by DPAW for offset land in the Gingin area, which have ranged from $1,000 to $1,500 per hectare. If DPAW is able to find suitable land for a lower price, then a larger area may be purchased.

OFFSET GUIDE

A completed Offset Guide spreadsheet is attached in Appendix E, showing:

- Loss of 39ha of feeding and potential breeding habitat for black cockatoos is offset by planting 28ha of Tuart-Jarrah-Banksia-Peppermint woodland (40.72%) and purchasing another 113ha of Jarrah-Banksia woodland (56.75%).

- Loss of 39ha of poor-quality Western Ringtail Possum habitat is more than offset by planting 28ha of Tuart-Jarrah-Banksia-Peppermint woodland (192%).

- Loss of black cockatoo nesting hollows is offset by erecting at least 12 Cockatube nesting boxes (108%).

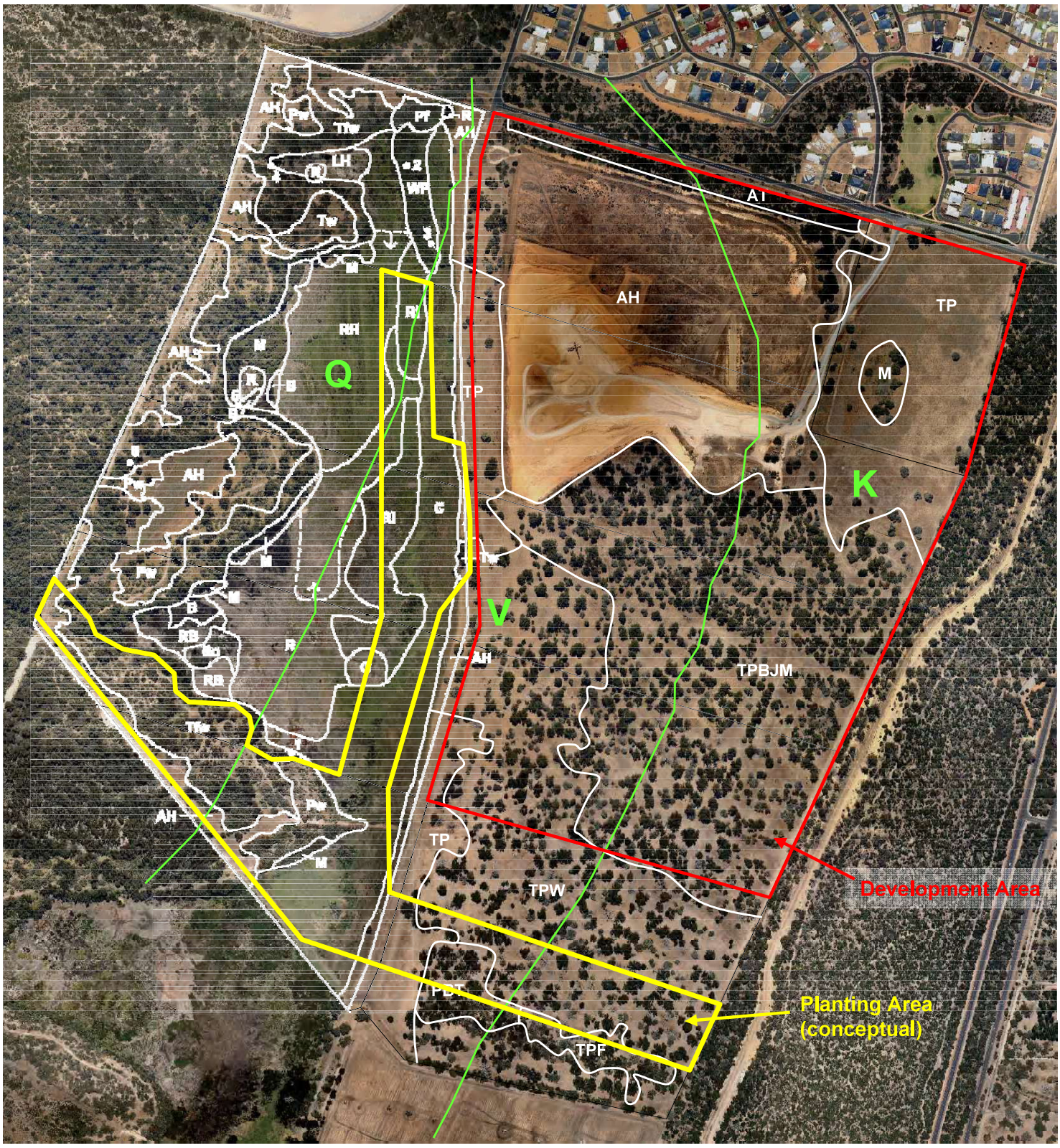
I trust the above and attached are now sufficient for you to complete your assessment of this proposal. Please don't hesitate to contact the undersigned if you wish to discuss any of the above.

Yours sincerely
BAYLEY ENVIRONMENTAL SERVICES

Phil Bayley

PHIL BAYLEY

Figures



Upland Units

TPBJM	Tuart - Peppermint – Banksia – Jarrah – Marri Woodland
TPJ	Tuart – Peppermint – Jarrah Woodland
PBT	Peppermint – Banksia – Tuart Woodland
TPF	Tuart – Peppermint Open Forest
TPW	Tuart – Peppermint Woodland
TP	Tuart – Peppermint Open Woodland to Scattered Trees
AT	Tuart Woodland over Acacia Scrub
M	Paperbark Open Woodland
AH	Aliens – mixed grasses and other herbaceous plants
Pf	Peppermint Open to Closed Low Forest
Pw	Peppermint Woodland
Tfw	Tuart Open Forest to Woodland
Tw	Tuart Woodland
WP	*Acacia saligna* – Peppermint Closed Low Forest

Wetland Units

B	*Baumea articulata* Closed Tall Sedgeland
C	*Cirsium vulgare* – *Centella asiatica* Closed mixed, mostly alien Herbland
G	*Lepidosperma gladiatum* Open Sedgeland
So	Sumpland; open water in winter-spring; herbland in summer
M	*Melaleuca rhaphiophylla* Open to Closed Low Forest
R	*Typha orientalis* Tall Rushland; mainly Closed
RB	*Typha orientalis* Tall Rushland &/over mixed low herbs
RI	*Typha orientalis* Tall Rushland &/over *Isolepis prolifera* Clubrush
● **1**	Relevés 1 to 6

Vegetation Complexes
(Heddle *et al.*, 1978)

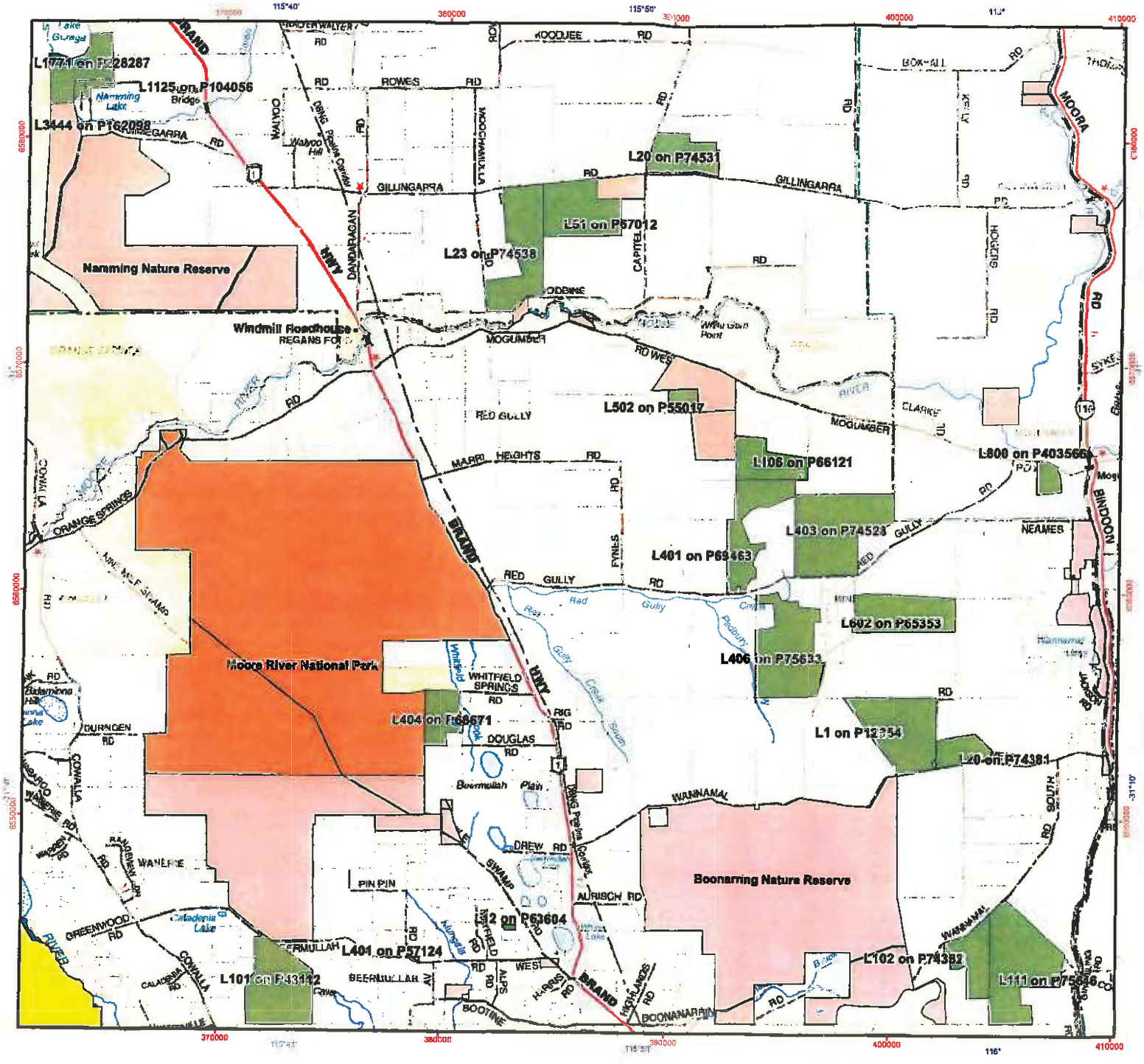
Q	Quindalup
V	Vasse
K	Karrakatta – Central and South

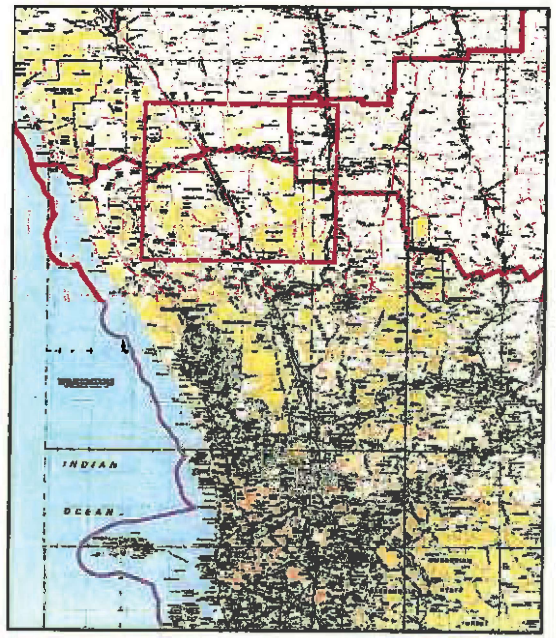
Figure 1

PLANTING SITE

bayley environmental services

DPaW Purchases North of Gingin 2008-2016





Legend

- DPaW Purchases - Crown Freehold
- National Park
- Nature Reserve
- 5(1)(g) Reserve
- State Forest

N

(A4)

1:170,000

0 1.5 3 6 9 12

Kilometres

Projection: Universal Transverse Mercator
MGA Zone 50. Datum: GDA94

Graticule shown at 10 minutes intervals

Grid shown at 10000 metre intervals

Produced by the Department of

Department of Parks and Wildlife

Produced at 10:31am, on Feb 23, 2016

Appendix A

Scheme Provisions

Western Australian Planning Commission

Our Ref: TPS/0864
Your Ref: C5.37.051
Enquiries: Heather Brooks (655 19436)

Chief Executive Officer
Shire of Capel
PO Box 369
CAPEL WA 6271

Dear Sir

TOWN PLANNING SCHEME No 7
AMENDMENT No 51

I refer to your letter of 23 January 2015 and advise that the Minister for Planning has granted final approval to the above amendment on 20 March 2015.

In accordance with section 87(3) of the *Planning and Development Act 2005* (the PD Act), the Western Australian Planning Commission (Commission) will cause the amendment to be published in the *Government Gazette*. The Commission has forwarded the notice to State Law Publisher and it is now the Council's responsibility to make arrangements with State Law Publisher for the payment of any costs involved in its publication in accordance with regulation 23(3) of the *Town Planning Regulations 1967 (as amended)*.

Council is also reminded of its obligations under section 87(4B) of the PD Act, that the amendment be advertised in accordance with the regulations and ensure that copies are available to the public.

If you require a purchase order number for payment for the publication of the notice in the Government Gazette, please contact State Law Publisher immediately to make arrangements for this, alternatively, if you don't require one you still need to contact State Law Publisher on 655 26012 or fax 9321 7536 to let them know and to go ahead and publish the notice.

State Law Publisher will not publish the notice until you contact them.

wa.gov.au

Postal address: Locked Bag 2506 Perth WA Street address: 140 William Street Perth WA 6000
Tel: (08) 655 19000 Fax: (08) 655 19001 TTY: 655 19007 Infoline: 1800 626 477
corporate@planning.wa.gov.au www.planning.wa.gov.au
ABN 35 482 341 493

One signed set of the amending documents is returned herewith.

Yours faithfully

Tim Hillyard
Secretary
Western Australian Planning Commission

Attach

23 March 2015

Postal address: Locked Bag 2506 Perth WA Street address: 140 William Street Perth WA 6000
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PLANNING AND DEVELOPMENT ACT 2005

APPROVED LOCAL PLANNING SCHEME AMENDMENT

SHIRE OF CAPEL

TOWN PLANNING SCHEME No. 7 - AMENDMENT No. 51

Ref: TPS/0864

It is hereby notified for public information, in accordance with section 87 of the *Planning and Development Act 2005* that the Minister for Planning approved the Shire of Capel local planning scheme amendment on 20 March 2015 for the purpose of:

1. Amending the Scheme Map to rezone:

   a) Portions of Lots 313, 314, 315 and 316 east of Maidment Parade, Dalyellup from "Rural" to "Urban Development Zone" and including the lots within Development Precinct 5.
   b) Lot 1 Harewoods Road, Dalyellup from "Special Use" to "Urban Development Zone" including it within Development Precinct 5.

2. Amend Clause 5.10.3 to read as follows:

   5.10.3 a) No development shall be approved within the Urban Development Zone unless it is generally in accordance with an approved Outline Development Plan approved by Council and the Western Australian Planning Commission.

   b) The provisions of Clause 5.1 DEVELOPMENT OF LAND apply in the Urban Development Zone. Permitted uses of land are those uses nominated on the approved Outline Development Plan.

   c) Subdivision, development and the use of land shall comply with any Land Use and Implementation Notes recorded on or attached as a schedule to an adopted Outline Development Plan.

3. Amending Appendix 16 - Development Precinct of the Scheme Text by introducing under the 'Development Precinct' column 'Development Precinct No. 5 – Dalyellup South' and introducing under the 'Specific Conditions' column provisions which will apply to the design, subdivision and development of the precinct to read as follows:

APPENDIX 16

DEVELOPMENT PRECINCTS – SPECIFIC PROVISIONS (CLAUSE 5.10.13)

DEVELOPMENT PRECINCT	SPECIFIC PROVISIONS
Development Precinct 5 Dalyellup South as depicted on the Map in Scheme Amendment No 51	Subdivision 1 Subdivision shall be generally in accordance with the endorsed (or subsequently amended) Dalyellup South Local Structure Plan for the Precinct prepared in accordance with clauses 5.10.1 to 5.10.13 of the Scheme. 2 The subdivider shall provide the Shire of Capel with construction and landscape design drawings for public streets, drainage basins and public open space for approval prior to such works being undertaken. 3 The subdivider shall make arrangements, to the satisfaction of the Shire of Capel, to advise purchasers of lots that the Shire of Capel may impose a specified area rate within the Precinct for the purpose of assisting with the maintenance of Public Open Space and other infrastructure within the locality. 4 The subdivider shall, prior to undertaking subdivision works, prepare a local mosquito management plan to the satisfaction of the Shire of Capel to address the control of mosquitos within Development Precinct 5 and the immediately adjoining wetland areas having regard to any District level mosquito management program run by the Shire. The local mosquito management plan may be required among other things to provide an equitable method of making a financial contribution to the funding of mosquito breeding control as a per lot contribution to be made at the time residential lots are created and establish a suitable information program for public education about the risk of mosquito borne diseases. 5 The subdivider shall, at the time of creating new lots, contribute to a community facilities development fund such funds as are reasonably assessed by the Shire of Capel to be an equitable share of meeting the cost of implementing an adopted community infrastructure development plan. 6 The subdivider shall prepare a Local Water Management Strategy consistent with the guidance provided by WAPC Planning Bulletin 92 prior to final adoption of a Local Structure Plan for the Precinct. 7 The subdivider shall, prior to undertaking subdivision works, submit to the Shire of Capel for its approval an Urban Water Management Plan. The plan shall include but not be limited to a water balance and open space reticulation master plan to the satisfaction of the Shire of Capel and the Department of Water. 8 The subdivider shall, prior to commencing the first stage of subdivision, provide a strategy, to the satisfaction of the Shire of Capel and Main Roads WA, to ensure that the district distributor and

DEVELOPMENT PRECINCT	SPECIFIC PROVISIONS
	neighbourhood connector roads and associated intersections as shown on the local structure plan for the Precinct are upgraded or constructed in a timely manner at the subdividers cost. The strategy shall include the requirement to program and pay for the installation of traffic signals and/or other traffic infrastructure at the junction of Harewoods Road and Bussell Highway. 9 The subdivider shall, prior to undertaking subdivision works, provide to the Shire of Capel a plan to its satisfaction showing the cross-section design and pavement treatments of roads to demonstrate that they are consistent with the need to cater for predicted traffic volumes and will provide a satisfactory level of safety and service. 10 The subdivider shall, prior to undertaking subdivisional works, submit to the Shire of Capel a shared path and pedestrian path plan which is connected to the existing network in the locality and which can be implemented in stages that provides a satisfactory level of service to the community. 11 The subdivider shall set aside land for public open space consistent with the intention to provide for active public open space and drainage functions in an endorsed structure plan or in a strategy endorsed by the Western Australian Planning Commission. Land required for drainage functions will be considered for credit as public open space in accordance with Western Australian Planning Commission policies and guidelines. 12 The subdivider shall make arrangements, to the satisfaction of the Shire of Capel, to advise purchasers of lots that some portions of public open space will be subject to occasional inundation as part of the functioning of the local stormwater drainage system and to advise them of action that should be taken to minimise the release of nutrients to the local environment from their premises. 13 The subdivider shall, at the time of creating new lots, ensure that finished ground levels within the subdivision are at a minimum of 0.5m above the predicted 100 year ARI level for the Five Mile Brook Diversion Drain adjacent to the Precinct. 14 The subdividing land owner shall provide utility services to the sites nominated for Community Purposes, on an adopted local structure plan for the Precinct, prior to such site being reserved. 15 The subdivider shall, prior to commencing subdivision works, provide a management plan for a 100m wide section of Regional Open Space to the satisfaction of the WAPC and the Shire of Capel and provide such rehabilitation and management infrastructure as are reasonably required to provide for a transition from the urban development to the core ecological habitat and linkage values in the reserves. This shall include but not be limited to the wetland west of and the wildlife corridor south of Development Precinct No 5. Development: 16 The Shire of Capel shall amend the adopted Dalyellup Community

DEVELOPMENT PRECINCT	SPECIFIC PROVISIONS
	Facilities Development Plan for the Dalyellup locality to have regard to the potential population increase created by the subdivision of the Development Precinct No. 5 – Dalyellup South and shall make available details of estimated costs of implementing the plan. 17 Prior to the subdivision and development of the land identified as the Local Centre, an Outline Development Plan shall be prepared in accordance with the provisions of the Urban Development Zone and such plan shall include detailed urban design standards/guidelines for matters including, but not limited to, building design, height, bulk, siting and finishes, traffic and pedestrian movement and management, car parking, landscaping, street furniture, pavement treatments, control of advertisement signs, mixed residential-commercial development and the intended staging and the requirement for retail modelling of development to the satisfaction of the Shire of Capel and the Western Australian Planning Commission. 18 Upon adoption of the Development Plan for the Local Centre, any person undertaking the development of land within the centre shall comply with the use and development standards set out in the adopted Plan. 19 Prior to development commencing on lot 1 Harewoods Road for the purpose of Education, Church Purposes and Residential R40, an Outline Development Plan shall be prepared to identify development standards, the distribution of land uses, suitable provision of open space and design guidelines to ensure that the development of the site is integrated with adjoining land uses and into the urban design and community infrastructure of the locality. Implementation: 20 The Shire of Capel may require the subdivider to enter into a Deed of Covenant to require the subdivider do such things and meet such costs as are reasonably required to ensure that the subdivision and development of the land within the Precinct takes place in a coordinated manner and all aspects of a structure plan for the Precinct are completed. 21 Prior to final adoption of a Local Structure Plan for the Precinct the subdivider shall submit to the Shire of Capel a project management schedule setting out all of the plans, strategies and actions required by various agencies of government with particular attention to when they need to be delivered and approved relative to key steps in the land development assessment processes. 22. The proponent shall prepare and submit a Fire Management Plan with the Structure Plan. The Local Structure Plan shall demonstrate appropriate fire protection measures to mitigate the threat of fire from adjacent land without imposing any negative environmental impact external to the Structure Plan Precinct. 23. At the subdivision stage the proponent shall demonstrate the staged and orderly continuation of any extractive industry on the land for the purposes of sand extraction.

M T SCOTT
PRESIDENT

P F SHEEDY
CHIEF EXECUTIVE OFFICER

Appendix B

Department of Planning Advice

From: Uhe, Kevin
To: bayley@iinet.net.au
Cc: La Nauze, Kath
Subject: RE: WAPC owned land at Lots 313 - 317 317 Minninup Rd, Dalyellup
Date: Monday, 5 September 2016 9:50:35 AM
Attachments: image001.png

HI Phil,

Regarding the rehabilitation of the lots above I have no issues with this occurring as I see it greatly enhancing the conversation values of the area given that the eastern portion of Lots 313-316 have been degraded around the swamp edges.

If you need any access to the site please let me know – more than happy to work in with you once the approvals stage is in order.

Regards

Kevin

Kevin Uhe | Asset Management Officer | Business and Corporate Support
Department of Planning | 140 William Street | Perth WA 6000
T (08) 6551 9020 | **F** 6551 9001
E Kevin.Uhe@planning.wa.gov.au | **W** www.planning.wa.gov.au

From: La Nauze, Kath
Sent: Monday, 29 August 2016 8:54 AM
To: Uhe, Kevin
Cc: Dandridge, Marion; Phil Bayley
Subject: FW: WAPC owned land at Lots 313 - 317 317 Minninup Rd, Dalyellup

Hi Kevin,

Can you please liaise with Phil in order for the necessary access approvals/arrangements to be made as per the request below.

Please feel free to contact me if you have any questions.

(Phil please note Kevin is out of the office this week, so will not respond until next week).

Regards,

Kath La Nauze | Senior Planning Officer | Regional Planning
Department of Planning | Bunbury Tower, Level 6, 61 Victoria Street | Bunbury WA 6230

T (08) 9791 0575 | **F** 9791 0576
E Kath.LaNauze@planning.wa.gov.au | **W** www.planning.wa.gov.au

From: Phil Bayley [mailto:bayley@iinet.net.au]
Sent: Thursday, 25 August 2016 4:24 PM
To: La Nauze, Kath
Subject: WAPC owned land at Lots 313 - 317 317 Minninup Rd, Dalyellup

Dear Kath,

As per our conversation of a week or so ago, I am seeking endorsement from the WAPC for proposed rehabilitation of native vegetation on Lots 313-317 Minninup Rd, Dalyellup. The lots were formerly owned by Mr Colin Piacentini, who in 2012 successfully applied for a part of the lots to be rezoned from Urban Deferred to Urban in the Greater Bunbury Region Scheme and from Rural to Urban in the Shire of Capel TPS.

As part of the rezoning, the WAPC purchased all of Lot 317 and the parts of Lots 313-316 west of Minninup Road for conservation. I understand the intention is to vest the land in the DPAW; however, this has not yet occurred to my knowledge.

One of the provisions of the amended TPS requires the developer of the Urban zone to undertake rehabilitation within the reserved land. This is in line with commitments made by Mr Piacentini to undertake plantings within the reserve to increase its habitat value for Western Ringtail Possums and black cockatoos. The specifics of the rehabilitation are expected to be set out in future subdivision conditions and corresponding management plans.

We are currently negotiating with the Commonwealth Department of Environment (DoE) over offsets under the EPBC Act for clearing within the development zone. The proposed rehabilitation of about 28ha within the reserved land forms a part of the offset package. The attached figure shows the reserved land and a preliminary indication of the area to be planted.

The DoE has advised that it requires confirmation from the WAPC, as owner of the reserved land, that it will allow the rehabilitation works to be carried out. Given that this rehabilitation is a requirement of the Scheme, I am assuming that this will not be a problem for the WAPC.

I expect that formal agreements regarding access to the reserved land will be drawn up in the process of subdivision approvals, along with detailed plans for the rehabilitation. At this stage, to enable the EPBC assessment to proceed, I would be grateful if you or another on behalf of the WAPC could provide an "in principle" endorsement of the use of the land for this purpose.

I would be happy to provide any further information you may require; please don't hesitate to

call me if you have any questions.

Thanks and regards,

Phil Bayley
BAYLEY ENVIRONMENTAL SERVICES
30 Thomas Street
SOUTH FREMANTLE 6162
tel: 08 9335 9160
fax: 08 9335 9160
mob: 0427 808 633
www.bayleyenvironmental.com.au

Appendix C

Draft Planting Plan

LOTS 313 – 316 MINNINUP RD, DALYELLUP

OFFSET PLANTING PLAN

Prepared for

[redacted]

Draft Report No. J07013
26 August 2016

BAYLEY ENVIRONMENTAL SERVICES
30 Thomas Street
SOUTH FREMANTLE WA 6162

Sundowner Nominees Pty Ltd as trustee for the Bayley Cook Family Trust ABN 20 822 598 897
trading as Bayley Environmental Services

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1.0 INTRODUCTION

1.1 Background

Mr Colin Piacentini is proposing to clear 39ha of native vegetation on Lots 313-316 Minninup Road, Dalyellup. The vegetation consists of parkland-cleared Tuart woodland in Degraded to Completely Degraded condition, which has been identified as poor quality feeding habitat for Carnaby's and Forest Red-tailed Black Cockatoos and Western Ringtail Possums. It includes 292 Tuart trees with diameter at breast height (dbh) of at least 0.5m. Of these, 54 have visible hollows or spouts with openings large enough (>100mm) to be potentially suitable as nesting sites for black cockatoos, plus another 74 with smaller hollows that might be potential future nest sites. Figure 1 shows the area to be cleared.

The site would formerly have supported a mid-storey including Banksia (*B. attenuata* and *B. grandis*) and Peppermint (*Agonis flexuosa*), which would have provided feeding habitat for Black Cockatoos as well as feeding and nesting habitat for Western Ringtail Possums.

As part of his clearing proposal, Mr Piacentini has undertaken to plant 28ha of Tuart-Banksia-Peppermint woodland on land recently transferred to the ownership of the WAPC, comprising Lot 317 Minninup Rd and the western parts of Lots 313 to 316. This land is zoned Parks & Recreation and will be vested in the Department of Parks & Wildlife (DPAW) for conservation. The WAPC has agreed to the proposed planting within the ROS. A letter from the WAPC confirming this agreement is attached in Appendix A.

1.2 Objectives

The objective of the planting is to offset the loss of black cockatoo feeding and breeding habitat and Western Ringtail Possum habitat resulting from the clearing of 39.2ha of vegetation. The offset is required under the *Environment Protection and Biodiversity Conservation Act 2000* (EPBC Act). The size of the offset has been determined using the Offset Guide provided by the Department of Environment (DoE).

2.0 SITE DESCRIPTION

2.1 Location and Tenure

The proposed planting site is located in Lot 317 and the western parts of Lots 313-316 Minninup Road, Dalyellup, about 10km south of Bunbury and immediately south and west of the site of the proposed clearing. Figure 1 shows the location and layout of the planting site.

The planting site has an area of 28ha and is owned freehold by the WAPC. It will be vested in the Department of Parks and Wildlife (DPAW) to be managed for conservation in accordance with a management agreement under the *Conservation and Land Management Act 1984.*

2.2 Existing Vegetation

2.2.1 Overview

The planting site has been used for grazing for a considerable period, with the result that the remaining vegetation consists largely of widely-spaced mature trees over pasture grasses.

Heddle *et al*. (1978) mapped the following vegetation complexes within the planting site (Figure 1):

- Quindalup Complex – A variable coastal dune complex consisting mainly of two alliances: the strand and foredune alliance and the mobile and stable dune alliance. The latter is the only one represented within the planting site, and consists of *Eucalyptus gomphocephala* open woodland over an understorey including *Agonis flexuosa, Acacia cyclops, Lepidosperma gladiatum, Myoporum insulare and Olearia axillaris.*

- Vasse Complex – Typically consists of closed scrub of *Melaleuca* species in low-lying wet areas with fringing woodlands of *Eucalyptus rudis – Melaleuca* spp. and open forest of *Eucalyptus gomphocephala – E marginata – Corymbia calophylla*. This complex is mapped on the western half of the site.

- Karrakatta Complex - Central and South – Predominantly open forest of *Eucalyptus gomphocephala*, *E. marginata*, *Corymbia calophylla* and *E. marginata - Banksia* spp. woodlands. This complex is mapped on the eastern half of the site.

The Heddle *et al.* (1978) mapping is broad-scale and generally follows the landform-soil boundaries mapped by Churchward and McArthur (1978). Closer examination of the vegetation on the site suggests that the Quindalup Complex is restricted to the dunes

west of the wetland, the Vasse Complex to the wetland itself and the Karrakatta Complex-Central and South to the area east of the wetland.

2.2.2 Vegetation Type and Condition

The eastern part of the planting site supports an open forest of *Eucalyptus gomphocephala* with *Eucalyptus marginata* and *Corymbia calophylla* over a woodland of *Banksia attenuata* and *B. grandis* over scattered native understorey species including *Hibbertia cuneiformis*, *Jacksonia furcellata*, *Macrozamia reidlei*, *Lepidosperma gladiatum* and *Pteridium esculentum* over pasture grasses and weeds including *Lagurus ovatus*, *Avena barbata*, *Bromus diandrus*, *Briza maxima* and *Lupinus cosentinii*.

The low-lying central and northern part contains the wetland and is largely cleared, with scattered paperbarks (*Melaleuca preissiana*) over pasture grasses with scattered native species including *Baumea articulata*.

The dunes west of the wetland support a mosaic of Tuart (*Eucalyptus* gomphocephala) open forest to woodland with a middle storey of Peppermint (*Agonis flexuosa*). Except for a few small areas, the understorey comprises various mixtures of pasture grasses and other established alien grasses and herbaceous weeds. The most common or conspicuous native understorey species include the shrubs *Rhagodia baccata, Diplolaena dampieri, Myoporum caprarioides, Templetonia retusa, Leucopogon parviflorus* and *Spyridium globulosum*, the lianes *Hardenbergia comptoniana* and *Clematis linearifolia*, the herbs *Acanthocarpus preissii* and the *sedge Lepidosperma gladiatum*. Significant areas west of the wetland have been cleared and consist only of pasture grasses and weeds.

Figure 1 shows a vegetation map of the planting site. Tuart (*Eucalyptus gomphocephala*) is the dominant tree in all of the native upland units shown on the map, and Peppermint (*Agonis flexuosa*) is a common tree in all of them. *Hibbertia cuneiformis*, a shrub under 2m tall, and *Lepidosperma gladiatum*, a large broad-leafed sedge, are the most common and widespread upland native species. *Trachyandra divaricata* and *Zantedeschia aethiopica* are conspicuous weeds.

The wetland units, with one exception (Paperbark Open Woodland) are all dominated by alien species including *Typha orientalis* (Asian Bulrush).

The mapped vegetation units within the planting site are:

Upland Units

TPW Tuart (*Eucalyptus gomphocephala*) Woodland over Peppermint (*Agonis flexuosa*) Low Woodland.

TP Tuart (*Eucalyptus gomphocephala*) Open Woodland to Scattered Trees over Peppermint (*Agonis flexuosa*) Low Open Woodland to Scattered Trees.

TPF Tuart (*Eucalyptus gomphocephala*) Open Forest over Peppermint (*Agonis flexuosa*) Low Open Forest.

PBT Peppermint (*Agonis flexuosa*) – *Banksia attenuata* Low Open Forest to Woodland, with Tuart tree(s).

Tfw Tuart Open Forest to Woodland.

Pw Peppermint Woodland.

AH Aliens – mixed grasses and other herbaceous plants.

Wetland Units

M Paperbark Open Woodland.

R *Typha orientalis* Tall Rushland, mainly Closed.

RI *Typha orientalis* Tall Rushland and/over *Isolepis prolifera* Clubrush.

G *Lepidosperma gladiatum* Open Sedgeland

C *Cirsium vulgare* – *Centella asiatica* Closed mixed, mostly alien Herbland.

The condition of all of the vegetation is assessed as Degraded or Completely Degraded based on the condition scale of Keighery (1994). Disturbance to the vegetation structure has been caused by partial clearing, grazing, weed invasion, tree deaths and disease. The eastern part of the wetland is particularly severely degraded, having been used for several decades as cleared grazing land and regularly slashed.

2.2.3 Flora

One hundred and four native plant species were recorded during a series of traverses conducted in the planting site and surrounds, as well as 63 introduced weed species. Table 2.1 shows the native species recorded on the site. The species list for planting will be drawn from this list, with individual species targeted to the appropriate wetland or upland situation.

Table 2.1 Native Flora Species List – Planting Site and Surrounds

Acacia alata	Hibbertia hypericoides
Acacia cochlearis	Hibbertia racemosa
Acacia pulchella	Hovea trisperma
Acacia rostellifera	Isotropis cuneifolia
Acacia saligna	Jacksonia ?sternbergiana
Acanthocarpus preissii	Jacksonia furcellata
Agonis flexuosa	Kennedia prostrata
Apium prostratum	Lagenophora huegelii
Austrostipa ?compressa	Lasiopetalum membranaceum
Banksia attenuata	Lepidosperma ?gracile
Banksia grandis	Lepidosperma ?longitudinale
Baumea articulata	Lepidosperma ?tenue
Baumea juncea	Lepidosperma angustatum
Baumea rubiginosa	Lepidosperma gladiatum
Burchardia congesta	Leucopogon propinquus
Caesia ?micrantha	Lobelia anceps
Caladenia flava	Logania vaginalis
Caladenia hirta	Lomandra sp.
Caladenia latifolia	Luzula meridionalis
Cassytha ?racemosa	Macrozamia riedlei
Centella asiatica	Melaleuca rhaphiophylla
Chamaescilla corymbosa	Monadenia bracteata
Clematis linearifolia	Myoporum caprarioides
Clematis pubescens	Olearia axillaris
Conostephium preissii	Opercularia ?hispidula
Conostylis aculeata subsp. ?preissii	Opercularia vaginata
Corymbia calophylla	Orthrosanthus laxus
Corynotheca micrantha	Oxalis ?perennans
Craspedia variabilis	Oxalis corniculata
Cyathochaeta avenacea	Oxalis pes-caprae
Daucus glochidiatus	Parietaria debilis
Daviesia divaricata	Patersonia occidentalis
Desmocladus sp.	Pelargonium ?littorale
Dichondra repens	Pelargonium australe
Dichopogon preissii	Persoonia longifolia
Diplolaena dampieri	Phyllanthus calycinus
Drosera ?menziesii	Pteridium esculentum
Drosera macrantha subsp. macrantha	Ptilotus drummondii var. drummondii
Drosera stolonifera	Rhagodia baccata subsp. baccata
Epilobium ?billardiereanum	Senecio ?pinnatifolius
Eryngium pinnatifidum subsp. ?pinnatifidum	Sherardia arvensis
Eucalyptus gomphocephala	Sowerbaea laxiflora
Eucalyptus marginata	Spyridium globulosum
Exocarpos sparteus	Templetonia retusa
Ficinia nodosa	Tetraria capillaris
Fumaria capreolata	Thysanotus ?manglesianus
Gahnia ?trifida	Trachymene pilosa
Geranium solanderi	Tricoryne elatior
Haemodorum spicatum	Villarsia violifolia
Haloragis ?brownii	Xanthorrhoea brunonis
Hardenbergia comptoniana	Xanthorrhoea gracilis
Hibbertia cuneiformis	Zz ‘strap leaves’

3.0 PLANTING PLAN

3.1 Implementation

The planting will be undertaken by a professional rehabilitation specialist engaged by Mr Piacentini. The rehabilitation contractor will be accredited with the Revegetation Industry Association of Western Australia or equivalent.

3.2 Site Preparation

Site preparation will consist of broadacre weed control using an appropriate herbicide such as Roundup Biactive®. The weed control will be undertaken at the appropriate time for each species, at least one month before the planting. Due to the proximity of the site to wetlands, no residual herbicides will be used.

Given the sandy soils of the site, no ripping or other soil preparation will be required before planting.

3.3 Species Selection and Source

Tuart, Jarrah, Banksias, Peppermint and Paperbarks will be the primary species used in the planting. Understorey species will be included in the planting to maximise the sustainability and habitat value of the planting. These will be a mixture of species drawn from the local species listed in Table 2.1.

All plants will be supplied as nursery tube stock from the Leschenault Community Nursery, grown from seed collected on or within 5km of the planting site. The exact understorey species grown will depend upon the species in fruit at the time of the seed collection.

3.4 Planting Density

Planting will be undertaken at approximately a 5m spacing, giving a density of 400 seedlings per hectare and a total of about 11,200 seedlings over the 28ha planting site. Overstorey trees (Tuart and Jarrah) will be planted at a spacing of about 20m in upland areas (25/ha, 360 overall), with the remainder being mid-storey (Banksia and Peppermint in uplands, Paperbarks in wetland) and understorey species.

The planting density is designed to allow for 20% attrition over the first few years of growth, leading to an ultimate density of about 320 trees per hectare and a spacing of about 5.6m. This compares favourably with the typical Banksia density in the Perth region of about 150-200 trees/ha (Bamford, 2012). It will also create a continuous

mixed tree canopy throughout the rehabilitated area, thus providing high-quality habitat for possums.

3.5 Timing of Planting

The planting will be undertaken in about June 2017 after the first significant winter rains. Pre-planting weed control will occur one month before planting.

3.6 Planting Method

A hand planter ("Pottiputki" or similar) will be used to drill a hole approximately 175mm deep and 55mm wide for each seedling. Each seedling will be planted with a slow-release native plant fertiliser pill.

3.7 Protection of Seedlings

Plastic Corflute tree guards will be placed around the seedlings to protect them from grazing by rabbits and kangaroos. The tree guards will be left in place for two years.

4.0 POST-PLANTING MAINTENANCE

4.1 Weed Control

Follow-up weed treatments using an appropriate herbicide applied by hand sprayer or wand will be undertaken in August-September 2017 and 2018.

4.2 Monitoring

The condition of the tree guards will be monitored every two months for the first two years after planting. Any guards that become displaced or damaged will be repositioned or replaced.

The success of the plantings will be monitored annually for five years after the completion of the planting programme. For the first two years this will be undertaken by the planting contractor; thereafter it may be done by the planting contractor or by a botanist contracted by Mr Piacentini.

The monitoring will be undertaken by means of fixed quadrats selected and set out during the planting works. The identity, height, width and condition of all plants within the quadrats will be recorded to give data on species composition, cover, structure and health. Photographs will be taken at fixed points in each quadrat. Comparison between monitoring dates will provide data on survival rates.

The results of each round of monitoring will be reported to the DoE and the Regional Parks Unit of DPAW.

4.3 Success Criteria

The planting density is designed to allow for 20% attrition of seedlings. Success of the planting will therefore be defined as a density of at least 320 trees per hectare after five years.

4.4 Contingencies

If at any time within five years after planting, monitoring shows that the survival rate of any planted species or area is approaching or below 80%, infill planting of the same species will be undertaken. If a particular species appears to be suffering high mortality then, subject to DoE and DPAW agreement, an alternative local species with similar habitat value may be used for the infill planting for the remainder of the five-year maintenance period.

5.0 IMPLEMENTATION SCHEDULE

Mr Piacentini will undertake and fund the revegetation work described in this plan. Following planting, Mr Piacentini will monitor and maintain the revegetation for five years, undertaking infill planting as necessary to achieve the completion criteria.

After five years, assuming the completion criteria as set out in this report have been achieved, Mr Piacentini will hand the rehabilitation over to the DPAW, which will take responsibility for future management. Confirmation from the DPAW of this arrangement is attached in Appendix B.

Table 5.1 summarises the schedule of implementation of the plan.

Table 5.1 Implementation Schedule

Date	*Activity*
April-May 2017	Pre-planting weed control with knockdown herbicide.
June 2017	Plant seedlings, install tree guards.
September 2017	Weed inspection and control if required.
June 2018	Monitor transects, report results to DER and DPAW.
June 2018	Infill planting if necessary.
September 2018	Weed inspection and control if required.
June 2019	Monitor transects, report results to DoE and DPAW.
June 2019	Infill planting if necessary.
June 2020	Monitor transects, report results to DoE and DPAW.
June 2020	Infill planting if necessary.
June 2021	Monitor transects, report results to DoE and DPAW.
June 2021	Infill planting if necessary.
June 2022	Monitor transects, final report of results to DoE and DPAW.
June 2022	Handover to DPAW (if completion criteria met).

6.0 REFERENCES

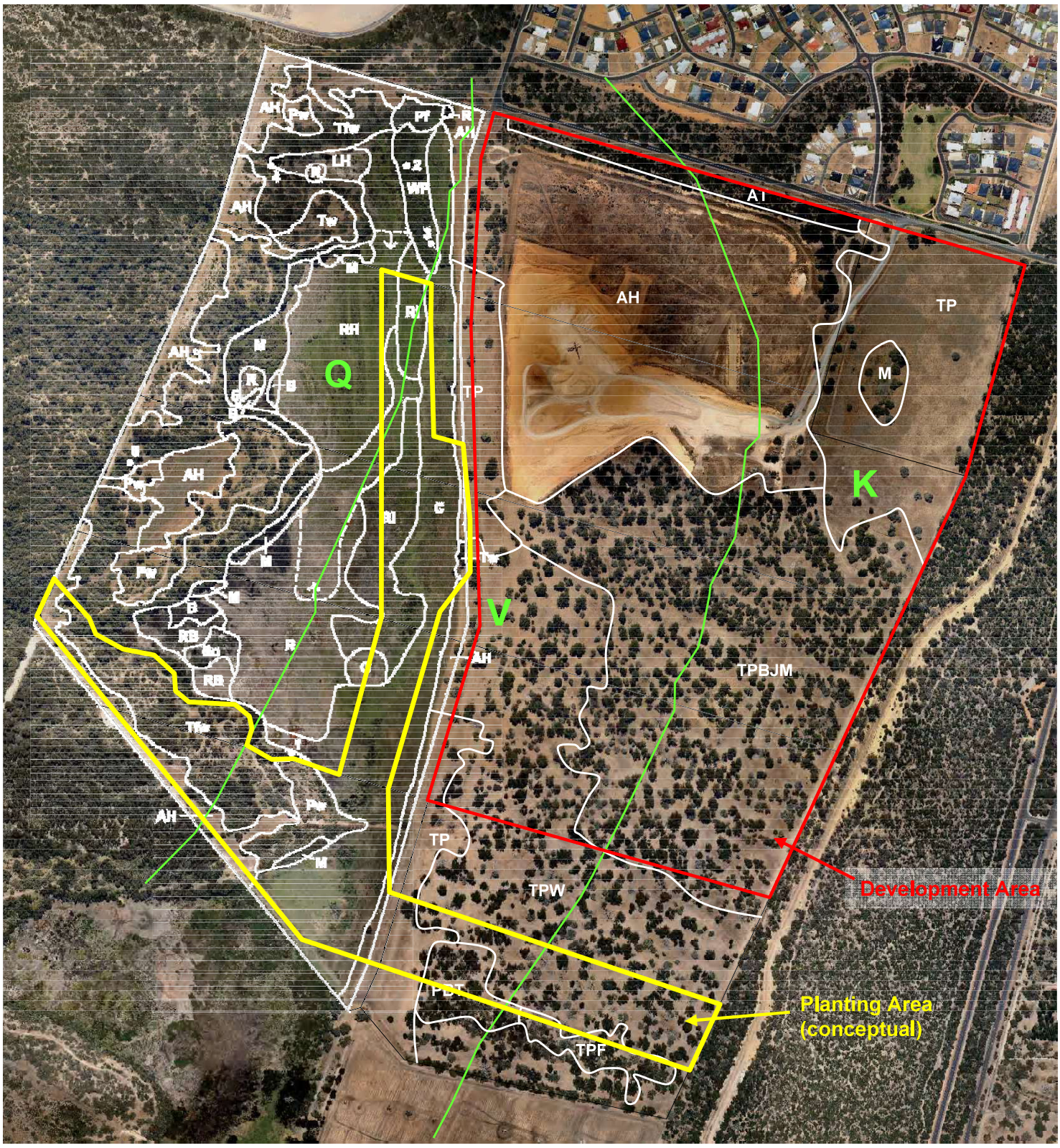
MJ & AR Bamford Consulting Ecologists (2012). *Assessment of Habitat for Black-Cockatoos and Western Ringtail Possums at Harewoods Road, Gelorup.* Report prepared for Bayley Environmental Services, South Fremantle.

Bayley Environmental Services (2010). Lots 313 to 316 Harewoods Road, Gelorup: Environmental Summary Report. Report No. J07013a prepared for Piacentini & Son Pty Ltd, Bunbury.

Beard J.S. (1981). *Vegetation Survey of Western Australia, Swan 1:1,000,000 Vegetation Series*. University of Western Australia Press.

Heddle E.M., Loneragan O.W. and Havel J.J. (1980). Vegetation Complexes of the Darling System, Western Australia. In: *Atlas of Natural Resources Darling System, Western Australia*. Department of Conservation and Environment, Perth.

Figures



Upland Units

TPBJM	Tuart - Peppermint – Banksia – Jarrah – Marri Woodland
TPJ	Tuart – Peppermint – Jarrah Woodland
PBT	Peppermint – Banksia – Tuart Woodland
TPF	Tuart – Peppermint Open Forest
TPW	Tuart – Peppermint Woodland
TP	Tuart – Peppermint Open Woodland to Scattered Trees
AT	Tuart Woodland over Acacia Scrub
M	Paperbark Open Woodland
AH	Aliens – mixed grasses and other herbaceous plants
Pf	Peppermint Open to Closed Low Forest
Pw	Peppermint Woodland
Tfw	Tuart Open Forest to Woodland
Tw	Tuart Woodland
WP	*Acacia saligna* – Peppermint Closed Low Forest

Wetland Units

B	*Baumea articulata* Closed Tall Sedgeland
C	*Cirsium vulgare* – *Centella asiatica* Closed mixed, mostly alien Herbland
G	*Lepidosperma gladiatum* Open Sedgeland
So	Sumpland; open water in winter-spring; herbland in summer
M	*Melaleuca rhaphiophylla* Open to Closed Low Forest
R	*Typha orientalis* Tall Rushland; mainly Closed
RB	*Typha orientalis* Tall Rushland &/over mixed low herbs
RI	*Typha orientalis* Tall Rushland &/over *Isolepis prolifera* Clubrush
● **1**	Relevés 1 to 6

Vegetation Complexes
(Heddle *et al.*, 1978)

Q	Quindalup
V	Vasse
K	Karrakatta – Central and South

Figure 1

PLANTING SITE

bayley environmental services

Appendix D

DPAW Advice

From: Hanly, Peter
To: Phil Bayley
Cc: Teede, Tracy
Subject: RE: Replanting in Lots 313-317 Harewoods Rd, Dalyellup
Date: Friday, 26 August 2016 10:53:16 AM

Phil Bayley
Bayley Environmental Services
30 Thomas Street
SOUTH FREMANTLE 6162

Dear Phil

RE: Pt Lots 313-316 and Lot 317 Minninup Rd, Dalyellup

Further to our conversations in reference to your email below, I understand that Mr Colin Piacentini is proposing to undertake rehibilitation plantings and erection of a number of black cockatoo nesting boxes within the above lots, in accordance with the provisions of Capel TPS Amendment 51 and with undertakings given to the Commonwealth Department of Environment. I also understand that Mr Piacentini is proposing to maintain the planted vegetation and the nesting boxes for five years after the completion of the rehabilitation works.

The subject land is currently owned by the Department of Planning Western Australia having been purchased as Regional Open Space for natural environment conservation purposes. It is envisaged that in due course it will be vested in the Department of Parks & Wildlife, with funding being provided to Parks and Wildlife for management of this site and other regional parks in the Greater Bunbury Region. Provided that the vesting and funding provision occur as expected, I confirm that Parks and Wildlife will be prepared to take over the ongoing management of the rehabilitated area and the nesting boxes at the end of the five-year maintenance period.

Yours sincerely

Peter Hanly
Senior Regional Planning Officer
South West Region
Department of Parks and Wildlife
PO Box 1693
BUNBURY WA 6231
Ph (08) 97255900
Mob 0407 198 589
Fax (08) 97254351
Email: peter.hanly@dpaw.wa.gov.au

PARKS AND WILDLIFE

Appendix E

Offset Guide

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

This guide relies on Macros being enabled in your browser.

Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Matter of National Environmental Significance	
Name	Carnaby's/Feeding
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	1.2%

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Clearing 39ha of Tuart woodland	**Area**	39	Hectares	DoE
			Quality	6	Scale 0-10	
			Total quantum of impact	23.40	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	0.0	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	23.40	Adjusted hectares	Planting Banksias, Tuarts and Peppermints; monitoring and maintenance for 5 years.	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	28	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	30% 19.6	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	5% 26.6	7.00	90%	6.30	4.96	9.53	40.72%	No	$128,000.00	Tranen quote
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	5	**Future quality without offset (scale of 0-10)**	4	**Future quality with offset (scale of 0-10)**	8	4.00	90%	3.60	2.84				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	23.4	9.53	40.72%	**No**	$128,000.00	$1,767,670.96	$1,895,670.96
Area of community	0				$0.00		$0.00
					$128,000.00	**$1,767,670.96**	**$1,895,670.96**

Offsets Assessment Guide

For use in determining offsets under the *Environment Protection and Biodiversity Conservation Act 1999*
2 October 2012

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Drop-down list
Calculated output
Not applicable to attribute

Matter of National Environmental Significance	
Name	Carnaby's/Feeding
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	**1.2%**

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Clearing 39ha of Tuart woodland	**Area**	39	Hectares	DoE
			Quality	6	Scale 0-10	
			Total quantum of impact	23.40	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	0.0	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	23.40	Adjusted hectares	Purchase Jarrah-Banksia woodland through DPAW	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	113	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	15% 96.1	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	5% 107.4	11.30	90%	10.17	8.01	13.28	56.75%	No	$169,500.00	DPAW; upper range of land prices in Gingin ($1,500/ha)
					Time until ecological benefit	10	**Start quality (scale of 0-10)**	7	**Future quality without offset (scale of 0-10)**	6	**Future quality with offset (scale of 0-10)**	7	1.00	90%	0.90	0.80				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	23.4	13.28	56.75%	**No**	$169,500.00	$757,707.16	$927,207.16
Area of community	0				$0.00		$0.00
					$169,500.00	**$757,707.16**	**$927,207.16**

Offsets Assessment Guide

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2 October 2012

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Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Matter of National Environmental Significance	
Name	WRP Habitat
EPBC Act status	Vulnerable
Annual probability of extinction Based on IUCN category definitions	0.2%

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		**Area**			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	Yes	Clearing 39ha of Tuart woodland	**Area**	39	Hectares	BES (2010)
			Quality	2	Scale 0-10	
			Total quantum of impact	7.80	Adjusted hectares	
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No					
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)		Start area and quality		Future area and quality without offset		Future area and quality with offset		Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																				
Area of community	No				**Risk-related time horizon (max. 20 years)**		**Start area (hectares)**		**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	0.0	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	0.0								
					Time until ecological benefit		**Start quality (scale of 0-10)**		**Future quality without offset (scale of 0-10)**		**Future quality with offset (scale of 0-10)**									
Threatened species habitat																				
Area of habitat	Yes	7.80	Adjusted hectares	Planting Banksias, Tuarts and Peppermints, monitoring and maintenance for 5 years.	**Time over which loss is averted (max. 20 years)**	20	**Start area (hectares)**	28	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)**	30% 19.6	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)**	5% 26.6	7.00	90%	6.30	6.05	15.01	192.46%	Yes	$128,000.00	Tranen quote
					Time until ecological benefit	20	**Start quality (scale of 0-10)**	2	**Future quality without offset (scale of 0-10)**	2	**Future quality with offset (scale of 0-10)**	8	6.00	90%	5.40	5.19				
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**		**Start value**		**Future value without offset**		**Future value with offset**		**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	No																			
Condition of habitat Change in habitat condition, but no change in extent	No																			
Threatened species																				
Birth rate e.g. Change in nest success	No																			
Mortality rate e.g Change in number of road kills per year	No																			
Number of individuals e.g. Individual plants/animals	No																			

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	0				$0.00		$0.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	7.8	15.01	192.46%	**Yes**	$128,000.00	N/A	$128,000.00
Area of community	0				$0.00		$0.00
					$128,000.00	**$0.00**	**$128,000.00**

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Key to Cell Colours
User input required
Drop-down list
Calculated output
Not applicable to attribute

Matter of National Environmental Significance	
Name	Carnaby's Hollows
EPBC Act status	Endangered
Annual probability of extinction Based on IUCN category definitions	1.2%

Impact calculator

Impact calculator

Protected matter attributes	Attribute relevant to case?	Description	Quantum of impact		Units	Information source
Ecological communities						
Area of community	No		Area			
			Quality			
			Total quantum of impact	0.00		
Threatened species habitat						
Area of habitat	No		Area			
			Quality			
			Total quantum of impact	0.00		
Protected matter attributes	**Attribute relevant to case?**	**Description**	**Quantum of impact**		**Units**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	ckatoo nesting hollo	10		Count	Bamford (2012), estimated
Condition of habitat Change in habitat condition, but no change in extent	No					
Threatened species						
Birth rate e.g. Change in nest success	No					
Mortality rate e.g Change in number of road kills per year	No					
Number of individuals e.g. Individual plants/animals	No					

Offset calculator

Offset calculator

Protected matter attributes	Attribute relevant to case?	Total quantum of impact	Units	Proposed offset	Time horizon (years)	Start area and quality	Future area and quality without offset	Future area and quality with offset	Raw gain	Confidence in result (%)	Adjusted gain	Net present value (adjusted hectares)	% of impact offset	Minimum (90%) direct offset requirement met?	Cost ($ total)	Information source
Ecological Communities																
Area of community	No				**Risk-related time horizon (max. 20 years)**	**Start area (hectares)**	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)** 0.0	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)** 0.0								
					Time until ecological benefit	**Start quality (scale of 0-10)**	**Future quality without offset (scale of 0-10)**	**Future quality with offset (scale of 0-10)**								
Threatened species habitat																
Area of habitat	No				**Time over which loss is averted (max. 20 years)**	**Start area (hectares)**	**Risk of loss (%) without offset** **Future area without offset (adjusted hectares)** 0.0	**Risk of loss (%) with offset** **Future area with offset (adjusted hectares)** 0.0								
					Time until ecological benefit	**Start quality (scale of 0-10)**	**Future quality without offset (scale of 0-10)**	**Future quality with offset (scale of 0-10)**								
Protected matter attributes	**Attribute relevant to case?**	**Total quantum of impact**	**Units**	**Proposed offset**	**Time horizon (years)**	**Start value**	**Future value without offset**	**Future value with offset**	**Raw gain**	**Confidence in result (%)**	**Adjusted gain**	**Net present value**	**% of impact offset**	**Minimum (90%) direct offset requirement met?**	**Cost ($ total)**	**Information source**
Number of features e.g. Nest hollows, habitat trees	Yes	10	Count	Erection of Cockatubes	0	0	0	12	12	90%	10.80	10.80	108.00%	Yes	$15,900.00	SJLC quote
Condition of habitat Change in habitat condition, but no change in extent	No															
Threatened species																
Birth rate e.g. Change in nest success	No															
Mortality rate e.g Change in number of road kills per year	No															
Number of individuals e.g. Individual plants/animals	No															

Summary

Summary

Protected matter attributes	Quantum of impact	Net present value of offset	% of impact offset	Direct offset adequate?	Cost ($)		
					Direct offset ($)	Other compensatory measures ($)	Total ($)
Birth rate	0				$0.00		$0.00
Mortality rate	0				$0.00		$0.00
Number of individuals	0				$0.00		$0.00
Number of features	10	10.80	108.00%	**Yes**	$15,900.00	N/A	$15,900.00
Condition of habitat	0				$0.00		$0.00
Area of habitat	0				$0.00		$0.00
Area of community	0				$0.00		$0.00
					$15,900.00	**$0.00**	**$15,900.00**