

LOTS 12 AND 13 LODGE DRIVE EAST ROCKINGHAM

EPBC 2021/9069 PRELIMINARY DOCUMENTATION SECTION 5 - OFFSET STRATEGY

Prepared for: The Trustee for Hamersley Sub Trust

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The logo for pgv ENVIRONMENTAL is located at the bottom of the page. It features the letters 'pgv' in a large, bold, white sans-serif font. Below 'pgv', the word 'ENVIRONMENTAL' is written in a smaller, all-caps, white sans-serif font. The background of the bottom half of the page is a solid orange color with a subtle, curved white line arching over the logo.

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ENVIRONMENTAL

5 OFFSETS

5.1 Need for an Offset

The proposed re-development of the proposal site will have residual impacts on the *Tuart Woodlands and Forests of the Swan Coastal Plain Threatened Ecological Community* and on Carnaby's Black Cockatoo. According to the EPBC Act Environmental Offsets Policy an offset for each listed species and community is required.

5.2 Tuart Woodland TEC Offset

5.2.1 Strategy

The proposed offset strategy is to create a 3.5ha Tuart Woodland TEC in an area of bare ground within the Rockingham Lakes Regional Park that is in close proximity to existing areas of Tuart Woodland TEC as well as other Tuart revegetation sites. The revegetated area will contain Tuart trees, mid-storey and understorey native species that meet the definition of a Tuart Woodland TEC in Very High condition with at least 12 understorey species. The species mix will also include tree and shrub species suitable for Black Cockatoo foraging and potential breeding.

5.2.2 Offset Site

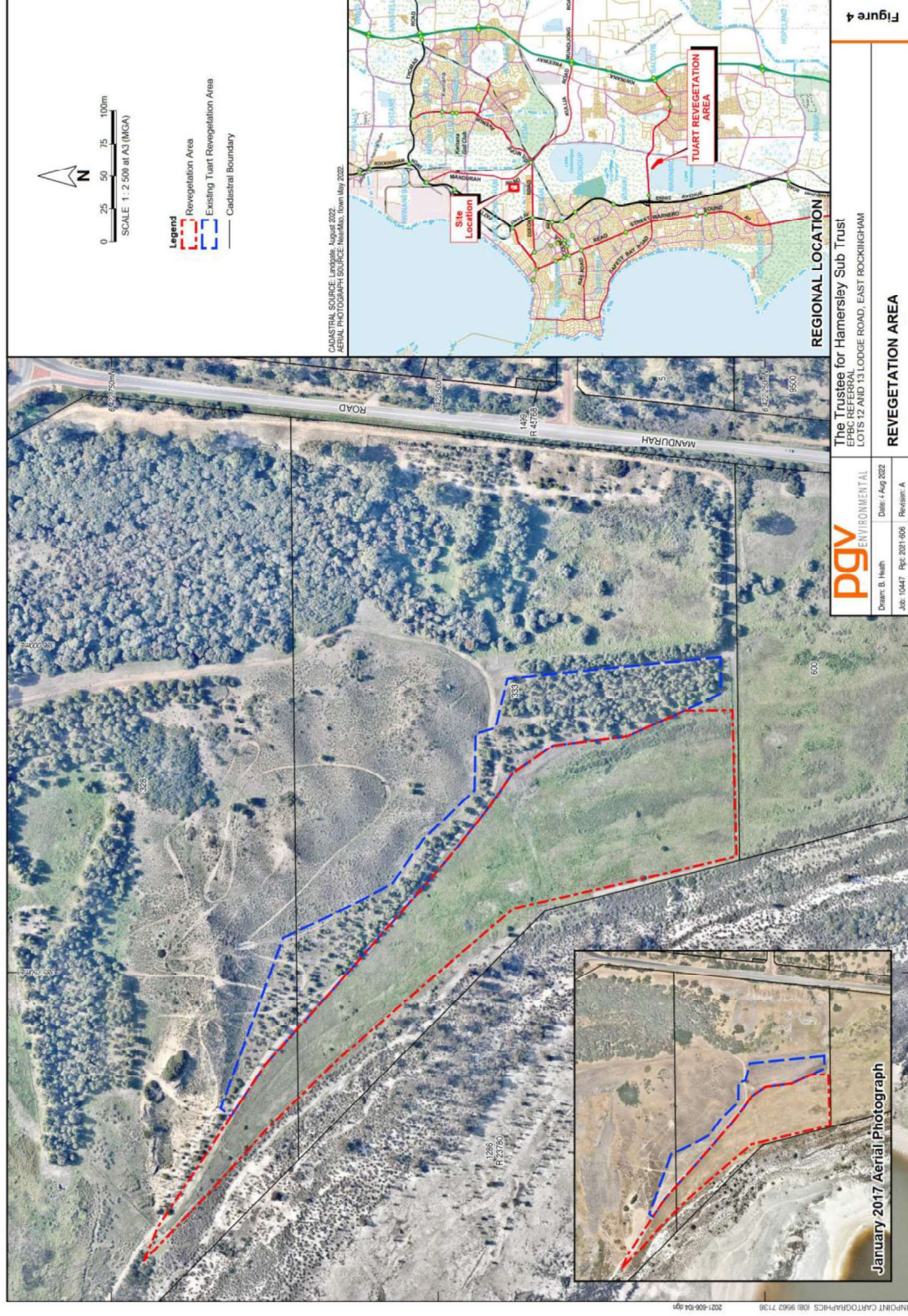
The offset site (Lot 333 Mandurah Road, WAPC REF 1386/2) is located 7km to the south of the Proposal Area and is within the Rockingham Lakes Regional Park (Bush Forever Site No. 356) at the corner of Safety Bay Road and Mandurah Road. The offset site is in the vicinity of large areas of mature Tuart woodland (Figure 4). The area to be revegetated was partly cleared prior to 1965 and completely cleared between 1965 and 1970 and used for grazing purposes. An existing successful Tuart rehabilitation project located immediately adjacent to the offset site is more than 6 years old and demonstrates that the site is suitable to be rehabilitated as a Tuart woodland.

All national parks, conservation parks, nature reserves, and other similar reserves are vested in the Conservation Commission of Western Australia (Conservation Commission). These reserves are managed on behalf of the Conservation Commission by the DBCA. The potential offset site has been discussed with DBCA, the land manager, and the Western Australian Planning Commission (WAPC), the landowner of the proposed offset site. The DBCA has confirmed that the proposed offset is satisfactory from their perspective and that the WAPC have agreed to the proposed revegetation of the offset site.

The revegetation of the offset site will increase the regional extent of Tuart Woodland ecological community protected in conservation estate by 3.5ha and complement the existing areas of Tuart Woodland in the Regional Park. The quality and value of the proposed offset will be greater than that being cleared as the ecological community will have a greater diversity of native species than the area proposed to be cleared and is in an area that is protected for conservation purposes. Creation of the TEC will also provide habitat suitable for Black Cockatoos.

The condition of the offset site is completely degraded as it was historically cleared for stock grazing purposes. A baseline Flora and Vegetation Survey of the offset site is not required as it only contains weed species as shown in Figure 4.

Figure 4: Proposed Offset Site



5.2.3 Previous Experience

PGV Environmental has previous experience in successfully creating Tuart Woodland communities on completely cleared paddocks.

The first example was undertaken in Yellagonga Regional Park as an offset for EPBC 2010/5777. The project rehabilitated two areas of Yellagonga Regional Park that were cleared paddocks. Initially topsoil from a recently cleared site was transferred onto the paddock and additional seed was spread onto the site. However, the results from that method did not meet the completion criteria. Therefore, the whole area was planted with tubestock in the following year. The results of that planting have been very successful, with the completion criteria being met after 5 years. Plate 10 shows one part of the site at the commencement of the rehabilitation programme with site works having just been finished. Plate 11 shows the exact same spot and angle in November. Plate 12 and 13 show another part of the site prior to rehabilitation Plate 12 and 3 years after planting tubestock (Plate 13).

Plate 10: Yellagonga Site 1 in 2016



Plate 11: Yellagonga Site 1 in 2022



Plate 12: Yellagonga Site 2 in 2015



Plate 13: Yellagonga Site 2 in 2018



The twice-yearly monitoring of the Yellagonga Regional Park rehabilitation project site over 6 years documented the survival of many native tree, mid-shrub and small shrub species. Tuart trees are surviving in all six monitoring plots and are up to 6m tall. Table 11 lists the native species present in each of the monitoring plots after 5 years. Each plot is 100m² in size. One plot meets the species diversity of a Tuart Woodland TEC in Moderate Condition, two meet the High Condition category and three meet the Very High condition threshold (Table 11). The Yellagonga Regional Park

rehabilitation project was only an offset for Carnaby's Black Cockatoo and not for the Tuart Woodland TEC. The results provided here demonstrate that it was possible to create a Tuart Woodland TEC without that being the objective of the programme. If the objective was to re-create the TEC the outcome would be superior with more focus on diversity and stratification of the planted vegetation.

Table 11: Species Recorded in Yellagonga Monitoring Plots

Species	Plot 1	Plot 2	Plot 3	Plot 4	Plot 5	Plot 6
<i>Eucalyptus gomphocephala</i>	4	3	5	1	2	2
<i>Acacia cyclops</i>	+					+
<i>Acacia huegelii</i>				+		
<i>Acacia lasiocarpa</i>		+				+
<i>Acacia pulchella</i>			+		+	+
<i>Allocasuarina fraseriana</i>	+	+				
<i>Allocasuarina humilis</i>	+	+				+
<i>Banksia attenuata</i>				+	+	+
<i>Banksia dallanneyi</i>						+
<i>Banksia menziesii</i>			+	+	+	+
<i>Banksia prionotes</i>		+		+	+	+
<i>Calothamnus quadrifidus</i>	+			+		
<i>Calothamnus sanguineus</i>	+		+	+		+
<i>Corymbia calophylla</i>	+			+	+	+
<i>Eucalyptus marginata</i>		+				+
<i>Eucalyptus totidiana</i>	+	+	+			+
<i>Hakea prostrata</i>	+			+		+
<i>Hakea lissocarpa</i>	+	+				+
<i>Hakea trifurcata</i>		+				+
<i>Jacksonia calcicola</i>	+	+			+	
<i>Jacksonia furcellata</i>					+	+
<i>Kunzea glabrescens</i>	+	+	+	+	+	+
<i>Lomandra maritima</i>	+					
<i>Melaleuca huegelii</i>	+					+
<i>Melaleuca systema</i>	+	+	+	+	+	+
Number of Native Species	15	12	7	11	10	20

The rehabilitated areas in the Yellagonga Regional Park are starting to provide foraging habitat for Black Cockatoos with foraging recorded in 2020 on Marri nuts (Plate 14) (four years after planting) and 2022 on Banksia species (Plate 15 and 16) (six years after planting). The rehabilitation undertaken on the Yellagonga site clearly shows that a rehabilitation program is capable of re-creating a Tuart Woodland that meet the criteria of a TEC in High condition, as well as provide foraging habitat from Black Cockatoos within 6 years.

Plate 14: Foraging on Planted Marri, 2020

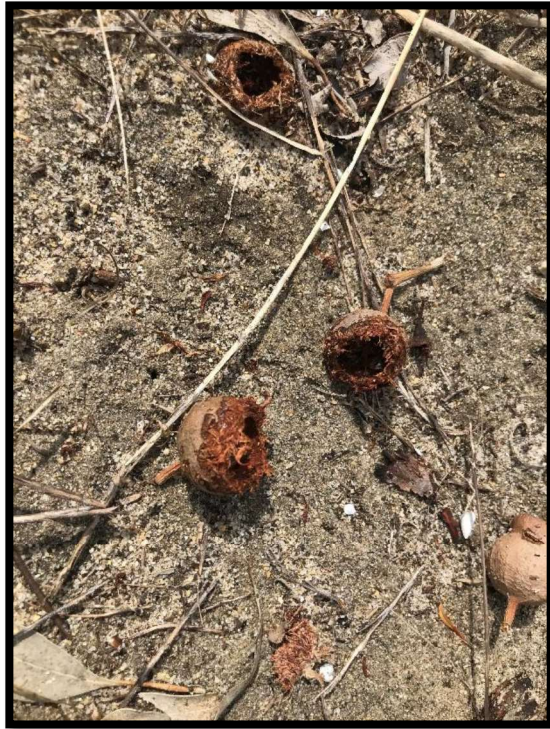


Plate 15: Foraging on Planted Acorn Banksia 2022



Plate 16: Foraging on Planted Parrot Bush 2022



The second example of successfully creating a Tuart woodland is located directly to the east of the proposed offset site as shown on Figure 4. The revegetation programme was an offset for Carnaby's Black Cockatoo in Rockingham (EPBC2010/5337). The revegetation project was undertaken over four areas of bare paddock within the Rockingham Lakes Regional Park. Rehabilitation work commenced in 2016 and by 2021 the project was deemed to have met the completion criteria due to the number of Tuart plants surviving.

Plate 17 shows one of the bare areas prior to planting. Plate 18 shows a healthy stand of Tuart trees 6 years after planting.

Plate 17: Cleared Paddock that was part of the Revegetation Project



Plate 18: Healthy Tuarts 6 Years Post Planting



The rehabilitation work was not undertaken to create a Tuart Woodland TEC, however some native understorey species were planted in the revegetation programme. Monitoring was only undertaken for Tuart tree survival therefore there are no monitoring data over the 5 year trial to assess against the Tuart Woodland TEC condition criteria. A site visit undertaken in January 2023 recorded eight native species in the understorey of one of the rehabilitated areas being:

- *Acacia pulchella* (Prickly Moses);
- *Acacia rostellifera* (Summer-scented Wattle);

- *Acacia saligna* (Coojong);
- *Daviesia* sp.
- *Hakea prostrata* (Harsh Hakea);
- *Jacksonia furcellata* (Grey Stinkwood);
- *Macrozamia riedlei* (Zamia Palm) (mature plants); and
- *Xanthorrhoea preissii* (Grass Tree) (juvenile plant).

As with the Yellagonga Regional Park project, the creation of a Tuart Woodland TEC in the Rockingham Lakes Regional Parks site was not the objective. Had it been, a greater number of understorey species would have been planted. The results here demonstrate that Tuarts can be established easily on this site as well as understorey species.

Previous experience on both sites shows that the use of tubestock over planting seed is more successful in these weedy paddock situations. The use of watering over at least two summers after planting was shown to greatly improve the seedling survival over summer on one site and result in healthy growth in the tubestock. These learnings as well as the use of current best practice management will be utilised in the establishment of the Tuart Woodland TEC vegetation for this project.

The ease at which Tuart trees and many of the Tuart Woodland TEC understorey species are able to be grown on bare sites indicates the completion criteria to meet the definition of the Tuart Woodland TEC would not be difficult to obtain. The following section provides further detail on a Rehabilitation Plan that will guide the site preparation, planting and maintenance of the rehabilitation area in order to meet the objective of restoring the bare paddock to a Very High condition Tuart Woodland TEC.

5.2.4 Proposed Rehabilitation Plan

5.2.4.1 Objective

The proposed Rehabilitation Plan for the offset site would be prepared using the learnings from previous experience. The overarching objective of the Plan will be to establish vegetation in the cleared area that meets the definition of a Tuart Woodland TEC in Very High condition as defined by the Tuart Woodland Listing advice. The listing advice states:

Very High condition

≥80 % of all understorey^ vegetation cover is native# Or At least 12 native understorey^ species per 0.01 ha (10 m x 10 m plot or equivalent sample unit)

The proposed rehabilitation will have completion criteria that will ensure that the vegetation meets, or will meet when mature, both of these criteria by establishing at least 12 native species in the understorey and establishing an understorey that is at least 2 native plants per square metre that are likely to reach maturity. These completion criteria have been far exceeded in the Yellagonga Regional Park.

5.2.4.2 Initial Planting Phase

The Rehabilitation Plan will be a technical document that provides detail for the following pre-planting, planting and post-planting phases of the project:

- Weed management including weed treatments specific to the weeds that are present on the site and those of weed species known to be emergent in the area that may colonise the prepared site as per previous experience;
- Management of pest fauna such as rabbits that may impact on the success of the rehabilitation, likely to include fencing as well as use of tree guards when appropriate;
- Soil management including areas in which light scarifying or deeper ripping are required and the directionality of furrows to prevent the causing of soil erosion as well as to collect water, directing it to the root-zone of seedlings by ensuring the spoil will be hilled on the down-slope side to better trap and retain water.
- Soil Hygiene measures to prevent the spread of soil borne pathogens, particularly *Phytophthora multivora*, commonly known as Tuart Dieback, which, while not often causing the death of Tuarts unless the tree is already stressed, can impact on the health of Tuart trees;
- The final species list to be used in the rehabilitation will be endorsed by DBCA. The list is most likely to include species as used in the adjacent area of the Regional Park in the previous rehabilitation efforts which include:
 - *Acacia pulchella* (Prickly Moses);
 - *Acacia lasiocarpa*;
 - *Acacia saligna* (Coojong)
 - *Banksia menziesii* (Firewood Banksia);
 - *Rytidosperma occidentale*;
 - *Austrostipa flavescens*;
 - *Banksia sessilis* (Parrot Bush);
 - *Conostylis aculeata* (Prickly Conostylis);
 - *Hakea prostrata* (Harsh Hakea);
 - *Hardenbergia comptoniana* (Native Wisteria);
 - *Jacksonia furcellata* (Grey Stinkwood);
 - *Macrozamia riedlei* (Zamia Palm);
 - *Olearia axillaris* (Coastal Daisybush);
 - *Templetonia retusa* (Cockies Tongues); and
 - *Xanthorrhoea preissii* (Grass Tree)
- Tubestock will be sourced using local provenance seed where possible;
- Timing of planting to ensure the planting of tubestock takes place at the optimal time to enhance the possibility of tubestock survival; and
- Density of planting of each strata to establish vegetation that is varied to have a level of naturalness as well as to ensure the overstory, understory and climbing species are evenly distributed throughout the rehabilitated area.

5.2.4.3 Monitoring and Follow-up Management

The Rehabilitation Plan will also detail the management of the rehabilitation area once the initial planting is complete including:

- Specifying a 5 year monitoring program which is the length of time it took the Yellagonga project and the Tuart planting project to reach a point at which there is confidence in the final outcome that will meet the objective of the project;
- A monitoring regime to guide management actions to ensure the rehabilitation will meet completion criteria and meet the overall objective;
- Ongoing weed management measures after the planting is complete to prevent weeds impacting on the planted vegetation; and
- Trigger levels that require infill planting to be undertaken to ensure that the quality of the rehabilitated vegetation meets the completion criteria.

5.2.4.4 Completion Criteria

Completion criteria to be achieved will ensure the recreation of the TEC meets the definition of High quality as per the listing advice and will include:

- Survival of, on average, 1.6 Tuart trees every 100m²;
- Diversity of at least 12 understorey species in each monitoring quadrat (10 m x 10 m plot or equivalent sample unit);
- Weed coverage of less than 20% of the overall vegetation cover (in each 10 m x 10 m plot or equivalent sample unit); and
- Native vegetation coverage of 80% of the overall vegetation cover or maturing to a cover of 80%.

5.2.4.5 Contingency Planning

Contingency planning will detail trigger levels that would require the contingency plan to be implemented that will be measured during monitoring or if an event occurred such as fire or vandalism.

- If there is a decline in the vegetation health or condition within rehabilitation site as measured during monitoring and compared to previous monitoring results, the following contingency plan will be implemented:
 1. Consider potential causes for decline in vegetation health or increase in weed cover.
 2. Determine if the decline may be within normal limits, ie a result of seasonal fluctuations or timing of scheduled weed control.
 3. If decline in health is not within normal limits, determine the most likely cause of this decline.
 4. Prepare a management plan to remediate and mitigate the impacts on the vegetation once the source of the decline is known, for example if the site becomes infested with dieback prepare a dieback management plan detailing the treatment using phosphite and ongoing monitoring and testing to ensure the disease does not cause the loss of Tuarts.
 5. Undertake infill planting and weed management once the source of the decline has been mitigated.

6. Continue monitoring vegetation health and the effectiveness of remedial actions.
- If new infestations of invasive weeds are recorded in the rehabilitation site the following will be undertaken:
 1. Investigation of the potential sources of the weeds.
 2. If the weeds originate in adjacent areas:
 - Liaison with DBCA to manage the weeds in the adjacent area; and
 - The weeds occurring on the site will be managed by an appropriate weed contractor that is proficient in managing weeds in bushland.
 3. Follow-up monitoring will be undertaken on a monthly basis to ensure the weeds have been managed.
 - If the site is damaged by fire the following will be undertaken:
 1. Consider potential causes of the fire and liaise with DBCA if the cause can be mitigated to prevent further fires.
 2. Review the recovery of the vegetation including weed emergence and resprouting.
 3. Manage any weed emergence in accordance with the weed contingency plan.
 4. If the planted tubestock don't survive then arrangements to be made for replanting in the following autumn.
 5. Ongoing monitoring of recovering and/or planted tubestock until the completion criteria are met.
 - If the site is damaged by vandalism the following will be undertaken:
 1. Consider potential access point and liaise with DBCA if additional fencing or other access restriction methods should be employed.
 2. Repair any fences that could have provided the access point.
 3. Review the recovery of the vegetation including weed emergence and resprouting.
 4. Manage any weed emergence in accordance with the weed contingency plan.
 5. If the planted tubestock don't survive then arrangements to be made for replanting in the following autumn.
 6. Ongoing monitoring of recovering and/or planted tubestock until the completion criteria are met.

All contingency actions and outcomes, if required, will be reported in the annual compliance report.

5.2.5 Assessment Against DCCEE's Offset Assessment Guide

Table 12 is an assessment of the proposed Tuart Woodland Offset site utilising the parameters in the Offset Assessment Guide (DCCEE, 2021). The complete calculator spreadsheet is provided as Attachment 5 and achieves a 109.07% value for the offset.

Table 12: Assessment Using Offsets Guide for Tuart Woodland TEC

Parameter	Value	Justification
Impact Site		
Area of Community	5.49ha	As determined by the Tuart Woodland TEC assessment
Quality of Community	2	The condition of the vegetation on the site was assessed as Completely Degraded (Keighery scale) and Low quality (Conservation Advice) and contains a high percentage of weed species and very low native species richness (3 species).
Offset Site		
Time over which loss is averted	20	The maximum 20 years has been applied
Time until ecological benefit	5	Five years is considered an adequate time for Tuart trees and understorey species to have been revegetated to the required completion criteria necessary to obtain a high degree of confidence that the vegetation will continue to grow into a mature Tuart Woodland TEC
Area of habitat	3.5ha	The revegetation area will be approximately 3.5ha in size. Provides a 109.07% outcome for the offset.
Start quality of habitat	0	The proposed area for revegetation is currently a bare paddock located in a Regional Park that is zoned for Parks and Recreation.
Future quality of habitat without offset	0	There are no plans to revegetate the area according to DBCA and the WAPC.
Future quality of habitat with offset	7	7 is considered realistic given that many of the understorey species typical of Tuart Woodland TEC, such as ephemeral species and sedges will likely not be able to be propagated and planted in the revegetation exercise. The mid a lower stratum will include greater than 12 species and will include Black Cockatoo foraging species.
Risk of loss without offset	N/A	There is no TEC in the area, therefore this value is not relevant to a revegetation exercise
Risk of loss with offset	N/A	As above
Confidence in result (bottom row)	75%	Tuart trees are one of the easiest Eucalypts to grow and have been used in revegetation programmes in the Rockingham Lakes Regional Park with success for other EPBC Act offsets. A wide range of Tuart woodland understorey species are also readily used in revegetation projects. The project examples provided confirm the ability to recreate a High condition Tuart Woodland TEC is absolutely possible.

5.2.6 Assessment Against EPBC Act Offsets Policy

Table 13 assesses the proposed offsets for the Tuart Woodland TEC against the EPBC Act Offsets Policy.

Table 13: Assessment Against EPBC Act Offsets Policy for Tuart Woodland TEC

EPBC Act Environmental Offsets Policy Principles	Assessment of proposed offset strategy against principles
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action	The offset will create 3.5ha of high quality Tuart Woodland TEC within a Regional Park and Bush Forever Site managed by DBCA/DPLH to offset the clearing of 5.49ha (Poor Quality) Tuart Woodland on the proposal site.
Be built around direct offsets but may include other compensatory measures	The proposed offset for Tuart Woodland TEC is a direct offset
Be in proportion to the level of statutory protection that applies to the protected matter	The area of revegetation, 3.5ha has been calculated based on the Critically Endangered status of the Tuart Woodland TEC
Be of a size and scale proportionate to the residual impacts on the protected matter	The area of revegetation, 3.5ha provides a 109.07% outcome for the offset which is over and above the required 100% offset.
Effectively account for and manage the risks of the offset not succeeding	The revegetation programme will have completion criteria that require infill planting if the requisite criteria are not being met.
Be additional to what is already required, determined by law or planning regulations or agreed to under other scheme or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action)	The 3.5ha of bare land in the Regional Park/Bush Forever Site is not proposed for revegetation by DBCA/DPLH in the long-term. Therefore, the proposed offset is additional to the management of the Regional Park/Bush Forever Site already being undertaken by DBCA/DPLH.
Be efficient, effective, timely, transparent, scientifically robust and reasonable	Planning for the proposed revegetation plan can commence immediately upon approval of the Action. The land is available as it is already part of the Regional Park/Bush Forever Site and owned by the WA Government.
Have transparent governance arrangement including being able to be readily measured, monitored, audited and enforced.	The progress of the revegetation works will be reported on in the annual compliance reporting required under the EPBC Act approval and will be available for public viewing on the proponent's website.

5.2.7 Implementation

The offset site is part of the Rockingham Lakes Regional Park/Bush Forever Site and is owned by the WAPC. Therefore, preparations for revegetating the 3.5ha site can commence if the Proposal is approved under the EPBC Act. The Proponent will undertake all revegetation works and manage the site for the required number of years until the completion criteria are met.

The revegetation will create a Tuart Woodland TEC of Very High condition. The revegetation will be undertaken in consultation with DBCA and will comprise of a Tuart overstorey, mixed with other tree

species with Black Cockatoo habitat value, and planted native understory with at least 12 different species. The understorey species to be used will be determined from the surrounding native vegetation.

5.3 Black Cockatoos

5.3.1 Strategy

The proposed offset strategy is to include quality foraging species in the Tuart revegetation project.

5.3.2 Offset Site

The same offset site identified in 5.2.2 will be used for the foraging revegetation project.

5.3.3 Assessment Against DCCEE's Offset Assessment Guide

The proposed offset was assessed using the DCCEE Offset Assessment Guide. The offset spreadsheet is shown in Attachment 7. Justification for the parameters used in the offset spreadsheet are provided in Table 14.

Table 14: Assessment Using Offsets Guide for Black Cockatoos

Parameter	Value	Justification
Impact Site		
Area of Habitat	1.5ha	As determined in the Black Cockatoo habitat assessment
Quality of Habitat	6	The foraging habitat on the proposal site is limited to Tuart Trees. The condition of the vegetation on the proposal site is rated as Completely Degraded as there is no structure or diversity of flora species. Tuarts provide a moderate quality foraging habitat. The foraging quality scoring tool and the habitat quality scoring tool provided by DCCEE both gave a score of 6 to the impact site (Attachment 7 and 8). The tools use site and regional context for assessing the value of a site.
Offset Site		
Time over which loss is averted	20 years	The maximum 20 years has been applied.
Time until ecological benefit	5 year	5 years is considered an adequate time for Tuart, Banksia spp. and understorey species to have been revegetated to the required completion criteria necessary to obtain a high degree of confidence that the vegetation will continue to grow into a mature Tuart Woodland TEC supplemented with quality foraging habitat (Banksia spp.) for Black Cockatoos. The 5 year timeframe has been based on recent experience in two other EPBC offset revegetation projects (2010/5777 and 2010/5337) for creating black cockatoo foraging habitat in areas that were bare paddocks.
Area of habitat	3.5ha	As determined by the spreadsheet to achieve the minimum 137.39%.
Start quality of habitat	0	The revegetation site is largely bare paddock with weeds and is zoned for Parks and Recreation and is within a large Regional Park next to two lakes.

Parameter	Value	Justification
Future quality of habitat without offset	0	The revegetation site would remain in its current state as DBCA don't anticipate a revegetation project being implemented in the future.
Future quality of habitat with offset	5	5 is considered realistic given that many of the understorey species typical of Banksia woodland, such as ephemeral species and sedges will likely not be able to be propagated and planted in the revegetation program. The focus for the revegetation is to provide habitat for Black Cockatoos and the mid and lower strata will include foraging species whilst the Tuart Trees will provide future roosting habitat once they mature.
Confidence in result (top row)	90%	DBCA/WAPC don't have any plans to revegetate the area.
Risk of loss without offset	N/A	There is no foraging habitat in the area, therefore this value is not relevant to a revegetation exercise
Risk of loss with offset	N/A	As above
Confidence in result (bottom row)	75%	Tuart trees are one of the easiest Eucalypts to grow and have been used in revegetation programmes in the Rockingham Lakes Regional Park with success for other EPBC Act offsets. A range of Black Cockatoo foraging species will be planted amongst the Tuarts to provide quality foraging habitat. Woodland understorey species are also readily used in revegetation projects.

5.3.4 Assessment Against EPBC Act Offsets Policy

Table 15 assesses the proposed offsets for Carnaby's Black Cockatoos against the EPBC Act Offsets Policy.

Table 15: Assessment Against EPBC Act Offsets Policy for Black Cockatoos

EPBC Act Environmental Offsets Policy Principles	Assessment of proposed offset strategy against principles
Deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected by national environment law and affected by the proposed action	The offset will create 3.5ha of Tuart Woodland TEC including Black Cockatoo foraging species within a Regional Park/Bush Forever Site managed by DBCA to offset the clearing of 1.5ha of poor foraging habitat in the offset area.
Be built around direct offsets but may include other compensatory measures	The proposed offset for Carnaby's Black Cockatoo is a direct offset
Be in proportion to the level of statutory protection that applies to the protected matter	The area of revegetation, 3.5ha has been calculated based on the Endangered status of the Carnaby's Black Cockatoo.
Be of a size and scale proportionate to the residual impacts on the protected matter	The area of revegetation, 3.5ha provides a 137.39% outcome for the offset which is more than the required 100% offset.
Effectively account for and manage the risks of the offset not succeeding	The revegetation programme will have completion criteria that require infill planting if the required criteria are not being met.
Be additional to what is already required, determined by law or	The 3.5ha of bare land in the Regional Park/Bush Forever Site is not proposed for revegetation by

EPBC Act Environmental Offsets Policy Principles	Assessment of proposed offset strategy against principles
planning regulations or agreed to under other scheme or programs (this does not preclude the recognition of state or territory offsets that may be suitable as offsets under the EPBC Act for the same action)	DBCA/DPLH in the long-term management. Therefore, the proposed offset is additional to the management of the Regional Park/Bush Forever Site already being undertaken by DBCA/DPLH.
Be efficient, effective, timely, transparent, scientifically robust and reasonable	Planning for the proposed revegetation plan can commence immediately upon approval of the Action. The land is available as it is already part of the Regional Park/Bush Forever Site and owned by the WA Government (WAPC).
Have transparent governance arrangement including being able to be readily measured, monitored, audited and enforced.	The progress of the revegetation works will be reported on in the annual compliance reporting required under the EPBC Act approval and will be available for public viewing on the proponent's website.

5.3.5 Implementation

The proposed revegetation site is part of the Rockingham Lakes Regional Park and is owned by the W.A. Government. Therefore, preparations for revegetating the 3.5ha site can commence as soon as EPBC approval is given for the action. The Proponent will undertake all revegetation works and manage the offset site for the required number of years until the completion criteria are met.

The revegetation will create a Tuart Woodland TEC of High condition and will provide good quality foraging habitat through the planting of forestry tubestock Banksia species. The revegetation will be undertaken in consultation with DBCA and will comprise of a Tuart overstorey, Banksia dominated midstory and planted native understory. The understory species to be used will be determined from a spring survey in similar surrounding native vegetation.