

Koala Connections

Cudgen Nature Reserve Revegetation

Final Report

June 2016

1.0 Scope of Works

Bushland Restoration Services (BRS) were contracted by Tweed Shire Council to fence, plant and maintain for a period of 12 months the old Hardy's banana land within Cudgen Nature Reserve.

NPWS Tweed Area office upgraded the three north south tracks to provide access to the site. The site was then fenced to restrict access by wallabies.

Prior to works, the site was dominated by dense Molasses Grass and woody weeds. The degraded banana land had slip areas along the upper tracks and erosion in gully lines.

2.0 Site preparation and planting

Prior to this project, large woody weeds such as Giant Devil's Fig were controlled by cut, scrape and paint. At commencement of this project there were two weed control treatments using power spray to control exotic grasses and small woody weeds. The planting of 5000 tubestock comprising koala food trees with rainforest trees and shrubs in the gully lines was undertaken between 29 May and 26 June 2014. Weed mats were placed around each plant and tubestock were well watered in.



Site preparation



Planting

3.0 Maintenance and fence removal

Year 1

Follow up control of weeds was undertaken in September and November 2014 and January/February and May 2015.

Year 2

Although the contract was only for a 12 month maintenance period, funds did allow for maintenance to extend a further five months. During this period follow up control of weeds was undertaken in September and October 2015 and January and February 2016. Funds also allowed for removal of fencing material in October 2015 so the planting could be accessed by koalas and other fauna.

4.0 Results

Year One - June 2015

Year one monitoring was undertaken by BRS in June 2015. Monitoring confirmed that all contract requirements were met, specifically:

- All woody and herbaceous weeds were treated on a regular basis during the 12 month period.
- No woody weeds remained on site. Herbaceous weed cover was estimated at <5% at completion of the 12 month period.
- No plants were replaced. Plant survival was high but variable throughout the site, estimated at 5% loss in upper areas and up to 15% loss in lower areas, averaging at 10% (therefore meeting the criteria of 90% survival rate of planted trees).
- The fence was in good condition with no breaches.

Monitoring undertaken by BRS found that the planting between the central and upper track had excellent growth of trees particularly koala food trees. Trees were in good condition with some trees over four metres in height and having a dense canopy. Weeds were minimal and were mainly confined to edges and there was evidence of natural regeneration.

The planting between the central track and lower track had lower success and growth of planted trees, with trees generally around two metres in height and with a more open canopy. Rainforest species were concentrated in this section as gullies were more defined and these areas more protected.

Year Two - May 2016

Monitoring was undertaken by Tweed Shire Council in May 2016. This monitoring found:

- Plant survivorship is similar or only marginally less than recorded in June 2015. Therefore plant survivorship across the whole site is approximately $\leq 90\%$ at year two.
- There is higher survivorship and growth in trees in the upper section of the planting when compared to the lower section of the planting. However planted tree canopy cover in the lower section of the planting is now starting to close/fill in and ranges from 50-90% across the site.
- Height of trees ranges from 1 to 10m, with rainforest spp and Forest Oak at the lower end of this scale and *Lophostemon* spp and *Eucalypt* spp at the upper end of this scale.
- Planted Swamp Mahogany is in flower and planted Pink Bloodwood have not long finished flowering and are now in fruit.
- Cover of ground cover weeds ranged from 5 to 80% across the site, obviously at the lower end of this scale where the canopy has closed and at the upper end of this scale where there are gaps in the canopy.
- Weeds are predominantly exotic grasses (Molasses Grass, Red Natal Grass, Vasey Grass, Whisky Grass, Carpet Grass, Rhodes Grass) and forbs (Balloon Cotton Bush, Milk Thistle, Blue Billy Goat Weed, Fleabane, Farmers Friend) with some Cuphea. However a few Giant Devils Fig, Guava and patches of Tobacco Bush were noted higher in the planting and it is likely bird dispersed woody weeds will start to recruit in the planting as the canopy closes and provides more bird roosting and foraging habitat.
- Native regeneration is relatively limited and comprises only a few species like Pratia, Blady Grass, Barbed Wire Vine and Blackwood. This is likely due to the disturbed nature of the site prior to planting. Ongoing weed control by experienced bush regenerators would be required at this site to result in the replacement of exotic groundcovers with native groundcovers.
- The best performing koala food tree in terms of growth is the Forest Red Gum, easily outperforming Tallowwood even on the upper slopes of the planting.
- The planting now appears to be supporting lots of small bird species. Whilst monitoring was undertaken early in the afternoon, large numbers of small birds of a variety of species were active at the site.
- Evidence of browsing by koalas has been observed throughout most of the site, although probably more on the southern half of the planting. Evidence of browsing has been observed primarily on Forest Red Gum and Swamp Mahogany, but some Tallowwood also have evidence of browsing. Evidence of browsing consists of scratches on tree stems, broken branches and crowns, browsed leaves and branches, and scats under trees.

5.0 Photo monitoring and reporting

Photopoints were set up and fifteen baseline photographs were taken by BRS in April 2014 prior to commencement of site preparation and planting (Figure 1).

The contract required BRS to repeat eight photographs at the end of the 12 month period. Eight selected photopoints were repeated by BRS in June 2015.

These photopoints were repeated by Tweed Shire Council for the purposes of this report in May 2016.

The series of photopoints is provided as Attachment 1.

6.0 Recommendations

The following recommendations are made with regard to ensure the ongoing success of the planting:

- If possible, slash and maintain the mid and top tracks before and during fire season. These now comprise dense grass to 1.2m in height. Slashing tracks will reduce bushfire hazard and improve access in the event of a fire.
- If possible, continue periodic follow up weed control at the site. This is essential to ensure woody weeds like Giant Devils Fig and Camphor Laurel do not establish. The selective control of exotic grasses and forbs is recommended to encourage the regeneration of native groundcovers.
- Record all koala sightings and evidence of koala activity. Additional observation of native fauna to be recorded if possible.
- If possible, continue monitoring of the planting on an annual basis to assist with the planning and implementation of future revegetation projects. It will be interesting to compare the longer term results of this planting to other koala food tree planting projects concurrently being undertaken in Cudgen Nature Reserve.

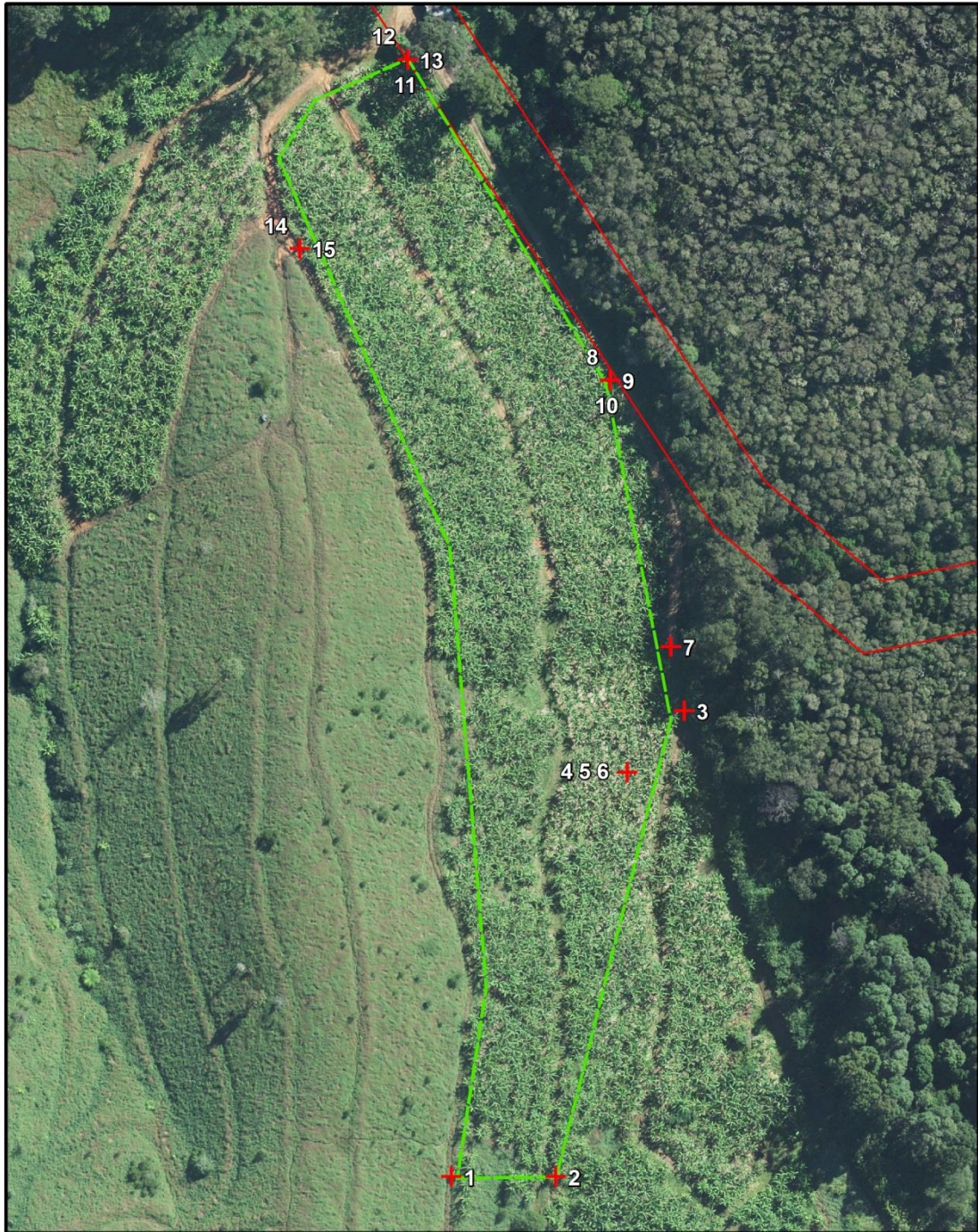


Figure One
Monitoring points

- Property boundaries
- Planting boundaries
- + Monitoring locations

0 20 40 60 80 Meters

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Attachment 1: PHOTOPOINTS

BASELINE - April 2014

YEAR 1 - June 2015

YEAR 2 – May 2016



PP1 (553495/6865351)



PP3 553564/6866489 Looking west from lower track.

BASELINE - April 2014



YEAR 1 - June 2015



YEAR 2 – May 2016



PP4 553564/6866489 Looking south west from lower track.



PP7 553560/6865508 Looking west from lower track.

BASELINE - April 2014



YEAR 1 - June 2015



YEAR 2 – May 2016



PP11 553482/6865682 Looking south from lower track.



PP13 553482/6865682 Looking south west.

BASELINE - April 2014



YEAR 1 - June 2015



YEAR 2 – May 2016



PP14 553450/6865626 Looking north east from upper track.



PP15 553450/6865626 Looking south east from upper track.

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Your Reference: D544-18



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Dear Independent Planning Commission

Supplementary TSC Comments on Applicants Response to Submissions and revised Koala Plan of Management - Kings Forest Modification MP08/0194 MOD 4 (Council reference DA11/0565.03)

As a result of our meeting with the Independent Planning Commission on 12 March 2019, the Commissioners requested additional information on a number of matters:

1. Further comments on the proponent's response to 62 specific issues raised by Council in its submission to DP&E of October 2018 (see Table 1 below where only the contested matters are now discussed).
2. Electronic versions of handouts relating to proposed fauna exclusion fencing arrangements for the proposed golf course, specifically:
 - a. Figures 28 and 40B of the draft revised KPoM of October 2018 showing fauna exclusion fencing between the golf course and the adjacent environmental area
 - b. Figure 9 of the draft revised KPoM of October 2018 showing Concept Plan incorporating the Ecological Buffers within the proposed golf course
 - c. Major Projects SEPP (Part 6 – Kings Forest) which sets out the requirements for Ecological Buffers on the Kings Forest site (see attached)
 - d. Excerpts from the draft KPoM of June 2011 that accompanied Concept Plan Mod 2 showing koala tree planting (Fig 20) in the proposed golf course and discussion of the need for future fauna exclusion fencing between the golf course (Precinct 14) and the adjacent urban areas Precincts 12 and 13 (p24).
3. Details of Koala Connection work/success levels in Cudgen Nature Reserve (see attached report)

Additionally, during discussion Council officers noted:

4. an omission in its recommended amendments to proposed Condition 45A(4)(a)ii. See the recommended revised Condition 45A(4)(a)ii below.

This information is provided below and in the associated attachments.

Table 1 Further comments on the proponent’s response to 62 specific issues raised by Council in its submission to DP&E of October 2018.

Dot point	Disputed Council Comment of November 2018	Proponent response of February 2019	Further Council comments March 2019
11	P40, second para – delete – 190ha of 255ha (71% of 358ha, Table 5) of available koala habitat at Kings Forest is not insignificant as implied by the sentence.	DP11: The comment was meant to state that the amount of primary Koala habitat on the Kings Forest site is only 20 hectares. No implication as to the significance, or not, of this 20 hectares is offered in the paragraph.	The 360ha quoted is the cell size for the Bogangar – Kings Forest – Forest Hill area (see p29 of Phillips et al 2011). The Kings Forest site itself contains 255 ha of “preferred koala habitat” as defined by the NSW Scientific Committee in their Final Determination for the Tweed Coast Endangered Koala Population. The previous paragraph refers to preferred koala habitat elsewhere on the Tweed Coast. In this context the comparison to the Kings Forest site should be in the same terms – i.e. 255ha of 360ha (71%). If the proponent wishes to make comparisons of the “Primary koala habitat” component of “preferred koala habitat” they should also say how much primary koala habitat is associated with other cells on the Tweed Coast. If this analysis was done they would find that 20 ha of primary koala habitat is very significant especially in the context of its proximity to a greenfield site expected to house approximately 10000 new residents. It is considered that this statement should either be deleted or revised to accurately reflect the context of the site in relation to Tweed Coast more generally.
12	P40, third par – delete – not relevant, koalas are a landscape species and there is a comprehensive management plan (TCCKPoM) involving all stakeholders in place.	DP12: It would seem obvious that a KPoM dealing with a property development in a landscape containing an endangered Koala population would highlight the entities who control/manage	The fact that Council and OEH are major stakeholders in the management of koalas is not disputed, however as emphasised (in some detail) in Chapter 4 of Council’s Tweed Coast Comprehensive Koala Plan of Management 2015, “the responsibilities for the management of koalas and their habitat are widely distributed across the community” and that koala recovery on the Tweed Coast “will require active

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		<p>the most significant Koala habitats containing this endangered population. The entities are NSW government agencies i.e. NSW OEH and Tweed Shire Council.</p>	<p>cooperation of all stakeholders including landholders, property developers, community interests and government agencies.” It is Council’s view that the responsibility for koala management is not just restricted to mainly government landholders. Again if the proponent wishes to address such issues they need to specifically address their own role as a large landholder and property developer seeking to develop land within an area of significant koala activity.</p>
15	<p>P42, section 6.4.1 - delete paras 3, 5 and 6. They don’t add much to the issue of koala activity and the last para (6) regarding the proposed mitigation at Kings Forest is not in the right place and if it was, would need to be balanced against a large body of existing koala mitigation works already carried out elsewhere on the Tweed coast.</p>	<p>DP15: A discussion on Koala Activity Levels and Occupancy Rates on the Tweed Coast must include a discussion on the current (2011 to 2015) data analysis. The dire situation being described for this population is relevant to the significant positive response elicited from Project 28. The planting of over 60000 Koala food trees for the loss of only 1.59 ha of primary habitat and only 6.82 ha of secondary habitat is a disproportional (positive) response to the current poor situation facing the Tweed Coast Koalas.</p>	<p>Dot point 14 which has been agreed and replaces paragraph 3 addresses the koala activity level surveys from 2011, 2015 and 2018. Paragraph 5 which attempts to interpret differences between 2011 and 2015 surveys is confusing and it is not clear which 21 sites it refers to. In any case the point about the precarious nature of the population is acknowledged in the previous paragraphs.</p> <p>As suggested previously this section of the KPoM is concerned with the contemporary status of koalas. At this point there has been no analysis of the impacts of the development and it is therefore not appropriate to consider how impacts of the development should be mitigated. Proposed mitigation measures should be covered under Chapter 10 which is explicitly dedicated to this purpose. While it is not at all disputed that the offsetting program will adequately compensate for losses of koala habitat onsite, insisting on including this sort of information at this point detracts from the objectivity of the KPoM and does not acknowledge the suite of other important measures that is collectively expected to make a significant contribution to koala recovery on the Tweed Coast.</p>

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22	P54 section 8.9 – rename to “Climate Change” and acknowledge that probably the greatest threat to koalas from climate change on the Tweed Coast is sea level induced changes to water tables and salinity intrusion affecting existing koala habitat.	DP22: There is no literature specific to this matter available.	Section 8.9 devotes almost a page to how climate changed induced drought and extreme weather may affect koalas, but fails to consider how even modest projected sea level rise may affect their habitat in the form of swamp sclerophyll coastal vegetation whose distribution is intimately tied to water tables and salinity. A simple internet search will reveal that there is plenty of information on the impacts of rising sea levels on coastal vegetation. For completeness, this issue should be raised. Indeed, it could be hypothesised (within the mitigation chapter) offset plantings on higher ground plantings focussing on forest red gum may be less vulnerable than to sea level.
29	P60, section 9.3.3 – This section should focus on road strike impacts arising from the development. At present there is no mention of traffic generated within the development or on the local road network as a result of the additional population which the development will accommodate. This needs to be acknowledged with references to later sections of the KPoM which describe the measures taken to mitigate these impacts. It is appropriate to mention the existing road kill hotspots but the level of detail is not required –	DP29: The Department of Environment Species Profile and Threats Database (SPRAT Profile) (2014) lists Increased risk of vehicle strike after development as a threat to Koalas. The Kings Forest Koalas are part of the Endangered Tweed Coast Koala population. A discussion of traffic impacts on Koalas in the locality of Kings Forest is pivotal to a proper understanding of impacts which may occur to Kings Forest Koalas. The current Kings Forest sub population cannot be viewed	The need to address road strike in the locality is not disputed. In relation to Clothiers Ck. Road – which is some kilometres from Kings Forest – the 3 rd paragraph adequately describes the issue. The following paragraph (para 4) does not accurately reflect contemporary data or mitigation responses carried out by Council under the Tweed Coast Comprehensive Koala Plan of Management. For example, in addition to fixed signage, Council have installed pavement treatments and regularly uses variable message signage in key locations to lower speeds supported by targeted education campaigns to better inform road users of the risks to koala at this location. Monitoring has also confirmed that the combination of treatments have been effective in reducing vehicle speeds but other options continue to be explored, including speed cameras, fencing and under- or overpasses. In these circumstances the proponent should properly acknowledge what is being done to alleviate the risk to koalas at this location or remain silent on the issue (which is only peripherally related to their development) and delete the

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	<p>especially in the absence of discussion of the potential impact of the development itself. It is suggested that paragraphs 4, 6 and 7 are deleted.</p>	<p>in isolation. Paragraphs 4, 6 and 7 should remain.</p>	<p>paragraph (para 4). Similarly, paragraph 5 adequately describes the hazards at Tweed Coast Road which has also been recognised as a management priority in the Tweed Coast Comprehensive Koala Plan of Management and works are underway to improve the situation here. Paragraphs 6 and 7 add little to this and the proponent's theories about why there may be a cluster of road strike records for are not relevant to the present KPoM.</p> <p>More importantly, the proponent has not responded to Council's request to address the potential traffic impacts on koalas generated within the development and on the local road network as a result of the additional population which the development will accommodate. This needs to be acknowledged as it forms the basis of mitigation measures proposed later in the document (fencing, underpasses etc.).</p>
37	<p>P69 last sentence of second last para - delete. As noted elsewhere, forest red gum is found extensively on sand substrates on the Tweed Coast and the groundwater modelling does not suggest that forest red gum is an unsuitable species for the site.</p>	<p>DP 37: Forest red gum is found on sand substrates along the NSW coast but not at Kings Forest.</p>	<p>The sentence in question – “Sandy soils generally do not support Forest red gum and groundwater modelling also suggests the area may not be suitable for this species” – is considered to be factually incorrect. Mapping for the Tweed Vegetation Management Plan shows there are more than 50ha of vegetation communities <u>dominated</u> by forest red gum on both alluvial and sand substrates of the Tweed Coast (304 – Coastal Forest Red Gum). Significant examples occur at west Tweed, South Tweed, Chinderah and Pottsville. In relation to the groundwater modelling, Council is not aware of any analysis that links changes in groundwater conditions as a result of the development to the occurrence of specific species or vegetation communities. Rather there is a qualitative presumption (which we agree with; see section 10.12, p85 of the draft revised KPoM of October 2018) that</p>

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			species such a swamp mahogany which is often found in dune swales and directly adjacent to wetlands would do better lower lying areas than more elevated areas where scribbly gum was more common. Similar qualitative observations across the broader Tweed Coast area, also suggest the forest red gum will tolerate drier areas and provide significantly better outcomes for koalas. Indeed, in the proponent's own consultant, Terrestria, agrees with this conclusion (see p 8 of Appendix 1 of the proponent's February 2019 response to the proposed Mod).
38	P72, section 10.5.4 last sentence – delete. The offset ratio expressed via the number of trees is a bit misleading as the offset was calculated on the basis of area of habitat.	DP38: The ratios noted in Section 10.5.4 of the KPoM are a very accurate indicator of the level of tree offset being provided.	Council does not agree with this statement. For the sake of consistency the offset requirement should be framed in terms of area, rather than trees as this was the basis for the offset calculation. The purpose of the KPoM is to support the project approval.
39	P73 – see previous comments on the “Establishment and maintenance periods” and “Environmental management bond”	DP39: Discussed in Section 2.10.2 “8. Contingency and Offset Strategy” of this report above.	The text on p73 regarding compliance around created habitat could be interpreted to mean that the proponent may choose to forfeit the environmental bond (Project Condition 50) rather than continuing to meet the establishment or maintenance requirements thus allowing them to proceed to the next stage of the development. Irrespective of the bond requirements (under Project Condition 50), Concept Plan Condition B7 and A13 both require the proponent to continue to implement all environmental management plans from the commencement of the project. DP&E agree with this view and have proposed Condition 45A(9)(b) to address it. If retained it is likely that the text will conflict with Condition 50 and should therefore be removed.

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41	P75 third sentence – delete – SOS not relevant to this KPoM	DP41: Saving our Species (SOS) is our state-wide (NSW OEH) program that aims to secure threatened plants and animals in the wild in NSW. It is obviously relevant to Koala conservation matters.	Bushfire management actions on the Tweed Coast will be coordinated under the Tweed Coast Comprehensive Plan of Management guided by the Tweed Coast Koala Fire Management Plan potentially with funding under the SOS program. Please revise to reflect this information.
42	P75 forth para, last sentence - Inconsistent. Golf course fencing plan (see fig 40b) prevents koalas from accessing the golf course as originally intended.	DP42: Section 10.9.3 and TABLES 12 and 13 of the KPoM state that wildlife (including Koalas) will be able to access the golf course area in case of wildfire affecting the Environmental protection zones. All gates will be opened and/or fencing panels lifted.	See Council's previous comments in its submission on this issue. Council maintains this is inconsistent with the ecological buffer requirements of the Kings Forest Major Projects SEPP and the Concept Plan which contemplated koalas using the proposed golf course which would act as a buffer. It is recommended that the fauna exclusion fencing should encompass the golf course itself.
46	Fig 28 – location permanent fauna exclusion fencing on the inside of the ecological buffer is not supported (see separate comments above under "Fencing and underpasses" subheading.	DP46: Project Approval MP08_0194 (as modified) shows that the golf course includes the entirety of the 50 metre buffer zone. Although the proposed golf course layout does not occur in the entire 50 buffer zone it is unrealistic for the fencing to follow the exact line of the golf course boundaries. Far better from a management point of view for the fence to be	See Council's previous comments in its submission on this issue. Council maintains this is inconsistent with the ecological buffer requirements of the Kings Forest Major Projects SEPP and the Concept Plan which contemplated koalas using the proposed golf course which would act as a buffer. It is recommended that the fauna exclusion fencing should be constructed between the golf course and the adjacent urban areas.

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		located at the buffer zone/EPZ interface.	
48	P84 - forth para – see comments under “Off-leash dog areas” subheading.	<p>DP48: Condition C2 (3) (f) states “For each stage of development an update to the KPoM shall be provided to the satisfaction of the Secretary..... (3) the update must provide stage specific detail on the following:.....(f) specifications for any offleash dog exercise areas to ensure appropriate separation from Koala habitat;” The condition does not mandate the provision of such detail with the approved KPoM other than for the approved KPoM to state that the offleash area will not be provided in Stage 1 of the development. Obviously, it is likely that the detail will be provided in the updated KPoM for Stage 2 or 3.</p>	<p>It is not considered acceptable to put this issue off to later stages of the development. The KPoM for Stage 1 has never been approved and therefore remains subject to Concept Plan Condition C2(3)(f) which requires details of an appropriate off-leash dog exercise to be provided in the KPoM.</p> <p>More pragmatically, Council’s draft Open Space Strategy recommends negotiation with developers for an off leash area in Kings Forest, to be included as part of casual open space. The draft Guideline for dog areas in public open space recommended the following provision standards for off leash areas requires one off leash area in each precinct with a population of greater than 3000 people. Kings Forest is part of a broader Mid Coast – Casuarina open space precinct and there is currently no off leash area in this broader precinct.</p> <p>Considering the size of the expected population, an off leash area is recommended in accordance with the criteria within the draft guidelines, which states that an off leash is not to be located within an area identified as ‘high risk’ for Tweed Coast koalas or within a Koala Activity Precinct of the Tweed Coast Comprehensive Koala Plan of Management.</p> <p>Given the development will be enclaved it will not be identified as ‘high risk’ for koalas and therefore off leash area is allowable and required. It was recommended that the draft revised KPOM identify the best location for off leash areas.</p>

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			<p>Such an area should be located well away from any koala habitat and not in any ecological buffer.</p> <p>Under Concept Plan condition C2(3)(f) the issue will need to be reconsidered at each future stage and Council will provide further input at this stage.</p>
52	P86 section 10.14, second sentence – delete.	DP52: The Tweed Coast Koala Habitat Study (Phillips 2011) was funded by Tweed Shire Council in order to provide a solid data driven background for the Tweed Coast Comprehensive Koala Plan of Management. This sentence should remain.	<p>According to its title, this section should focus on what the <u>proponent</u> is doing to engage with the community. The section needs to be rewritten to provide this focus.</p> <p>The background science (Phillips 2011) used to inform the Tweed Coast Comprehensive Plan of Management is not relevant here. Similarly the makeup of the Tweed Coast Koala Advisory Group that was formed only to assist the preparation of Tweed Coast Comprehensive Plan of Management which was adopted in 2015 is not relevant. Further “Koala Connections” was a project not a “group”.</p>
53	P86 section 10.14, second para – move to Section 10.11	DP53: The statement on Friends of the Koala belongs in both sections i.e. 10.11 and 10.14. The sentence should remain where it is currently located.	Again, this section should focus on what the <u>proponent</u> is doing to mitigate impacts via engagement with the community. It is not sufficient to simply name some community groups without going on to say <u>how</u> the <u>proponent</u> will support the important work they do.
55	P86 last para – delete. Not necessary.	DP55: The last paragraph on page 86 states “The provisions contained in the TCCKPoM are: (i) Council shall establish a KMC to advise and assist Council with implementation and review of the Plan, including	The level of detail here distracts from the point of this section. All that is needed to establish ongoing liaison with Tweed Shire Council is to state that: (1) there is a thing called the Tweed Coast Comprehensive Plan of Management and (2) that Council encourages property developers to liaise on issues of mutual concern regarding the management and recovery of koalas. Whether this involves the Koala Management Committee will depend on the issue.

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		any contiguous IKPoM's." It should be recognised that the Kings Forest KPoM will be a "contiguous IKPoM." It is appropriate to leave this paragraph in the KPoM.	
57	P90 Section 10.16.3 - See comments above under "See comments above under "Timing and sequencing of koala habitat offsets" subheading.	DP57: It appears that there has been a mistake in the allocation of comments between DP57 and DP58. We have assumed that the comment under DP58 should be under DP57. There is no objection if the request is to note FOK being the group to provide services relating to injured Koalas.	Mistake noted – this was meant to relate to the "Protocols for injured koalas" subheading. This section needs to involve Friends of the Koala (FOK) who are the only licenced care group in the region. Injured koalas should be immediately reported to FOK (via their 24hr hotline 0266221233) and their advice followed regarding treatment options. FOK should also be notified of any dead koalas, with a post mortem examination to be undertaken by an appropriately qualified person at the expense of the proponent.
58	P91 section 11.2 - See comments above under "See comments above under "Protocols for injured koalas" subheading.	DP58: We have assumed that the comment under this dot point is actually the comment under DP57. If this is the case, then Project 28 are clear in their preference for the inclusion of the EPBC Act definition of "commencement".	Council maintains that on ground works should not commence until all relevant environmental management plans have been revised and updated in accordance with the conditions of consent. (Note, no objection is raised to investigatory and monitoring works under Project Condition A18.) The draft revised KPoM (October 2018) proposes using the following definition of 'commencement' which is derived from the EPBC approval and reproduced in the draft revised KPoM (see p65) as: <i>Commencement of construction means any preparatory works, excluding preliminary works, required to be undertaken including clearing vegetation, the erection of any</i>

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			<p><i>onsite temporary structures and the use of heavy duty equipment for the purpose of breaking the ground for bulk earthworks, buildings or infrastructure for the proposed action. Preliminary Works include:</i></p> <ul style="list-style-type: none"> <i>a) Minor physical disturbance necessary to undertake pre-clearance surveys, to establish monitoring programs, for geotechnical investigations or associated with mobilisation of plant, equipment, materials, machinery or personnel;</i> <i>b) Surveying or the construction of boreholes;</i> <i>c) Works associated with maintenance of the subject site including chopper rolling and weed management;</i> <i>d) Works necessary for rehabilitation including construction of frog ponds, installation of monitoring devices and necessary access tracks; and</i> <i>e) Other activities that are necessary for commencement that are associated with mobilisation of plant and equipment materials machinery and personnel prior to start of development only if such activities will have no adverse impact on Matters of National Environmental Significance only if the proponent has notified the Department in writing before an activity is undertaken.</i> <p>However, State Concept Plan Condition B7 and Project Condition A13 define “commencement” as:</p> <p>A13. The proponent is responsible for the management of all Potential Council Land and Future OEH Land for conservation purposes and the implementation of all establishment period and maintenance period works specified in all Environmental Management Plans from the date of the commencement of the project, or at another time directed by</p>

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			<p>the Secretary, until such time that an agreement is reached with OEH and /or Tweed Shire Council regarding the dedication of that land.</p> <p>Note: For the purpose of this condition, commencement is taken to mean any physical works including clearing vegetation, the use of heavy duty equipment for the purpose of breaking ground for bulk earthworks, or infrastructure for the proposed project.</p> <p>The concern here is that if the EPBC definition of “commencement” prevails this may allow rehabilitation works without triggering the revision, approval, issue of a construction certificate and implementation of the relevant environmental management plans as required by CP Conditions B7 Project Approval Conditions A13, 39-48.</p> <p>On the other hand, the following statement on p67 of the draft revised KPoM (October 2018) suggests that the proponent is expecting to complete the related management plans prior to commencing on ground works:</p> <p><i>All management plans relevant to the creation of the compensatory habitat will need to be amended and approved prior to any “preliminary” management actions occurring on the site i.e. habitat creation, offset areas, monitoring programs, surveys, etc.</i></p> <p>To avoid potential conflict with the conditions of approval it is recommended that references to “commencement” derived</p>

Dot point	Disputed Council Comment of November 2018	Proponent response of February 2019	Further Council comments March 2019
			from the EPBC approval are removed from the draft revised KPoM.
61	P110 Section 12.6 dot point 2 – what is the “benchmark” – 50% occupancy? Please clarify.	DP61 – “Benchmark” means the estimate of habitat occupancy rate established by baseline monitoring.	Noted – please ignore
62	P124, third last dot point – replace with the following: <i>Whether or not the observed decline is due to development impacts or part of a more general trend affecting the Tweed Coast koala population as described by Phillips et al. (2011) and the NSW Scientific Committee (2016). It is considered that if the proponent remains compliant with the conditions of approval and approved management strategies relevant to koalas (i.e. this KPoM and related environmental management plans) they should not be held responsible for any local declines in the koala population.</i>	DP62 – No objection.	As noted in our comments on the proposed Mod 4, Council is not convinced that proposed Conditions 45A(8)(a) iii to v are workable due to the fact that it will not be possible to attribute a decline in koala numbers to the development. If the proposed conditions 45A(8)(a) iii to v are to be retained, the third last dot point on page 124 of the draft revised KPoM (or Council’s suggested rewording) should be removed to avoid conflicts with these conditions of approval.

4 Revised Recommended Condition 45A(4)(a)ii – highlighted in yellow

1. 45A(4) Vegetation Management

- a) update Appendix 6 of the Koala Plan of Management dated 4 October 2018, to specify:
 - i. the performance indicators, performance criteria and corrective actions only apply to the compensatory koala habitat (i.e. the koala offset plantings)
 - ii. ~~the establishment and maintenance period performance criteria for the following indicators: seedling survival, native canopy cover, weed presence shrub and ground cover recruitment, and infrastructure (e.g. associated fencing and signage); the following Biodiversity Assessment Method (BAM) vegetation integrity scores for each vegetation zone must be achieved for the relevant plant community types: composition 100, structure 50, and function 25; the following Biodiversity Assessment Method (BAM) vegetation integrity scores for each vegetation zone must be achieved for the relevant plant community types: composition 100, structure 50, and function 25;~~
 - iii. where natural regeneration of native shrub and groundcover species has not occurred within the first ~~7-3~~ years of management, planting of suitable native shrub and groundcovers will be undertaken to achieve compliance with ~~the shrub and ground cover performance criteria required under sub-clause 45A(4)(a)ii~~ 45A(4) ii above ~~vegetation integrity scores for each plant community type (PCT);~~
 - iv. the management measures required to ensure the removal of slash pine will not result in the clearing of retained koala habitat;
 - v. the tree species selection and planting densities for all planting proposed within the off-site offset area; and
 - vi. ~~the details of any on-going monitoring and management measures, and the standards for achievement for all off-site koala food tree planting.~~

Author
 The proposed condition is not workable this is because: 1) the plantings are primarily for koalas and are not designed to replicate a particular Plant Community Type (PCT); 2) under the approval all performance criteria need to be framed in terms of the in terms of the "establishment period" and "maintenance period"; 3) the proposed performance criteria do not address the critical early phases (establishment period) of the plantings; and 4) PCTs for the far north coast are not finalized. What is needed here are measurable indicators that define progress on establishing the plantings.

Author
 This is not considered workable 1) the plantings are primarily for koalas not designed to replicate a particular PCT; 2) the critical trigger is meeting the establishment period criteria which may not contain all species for a particular not a theoretical endpoint which is not time bound; 3) PCTs for the far north coast are not finalized; and; 4) under the approval all performance criteria need to be framed in terms of the Establishment and Maintenance periods.

Author
 This is not considered workable 1) the plantings are primarily for koalas not designed to replicate a particular PCT; 2) the critical trigger is meeting the establishment period criteria which may not contain all species for a particular not a theoretical endpoint which is not time bound; 3) PCTs for the far north coast are not finalized; and; 4) under the approval all performance criteria need to be framed in terms of the Establishment and Maintenance periods.

Author
 Suggest 3 years is plenty of time to decide if enhancement planting is required. Based on past natural regeneration on the site it is considered more likely that in some cases natural regeneration may need to be temporarily suppressed to ensure that offset plantings survive

Author
 Replace performance criteria linked to PCTs with those previously defined for the shrub and ground cover components of the vegetation

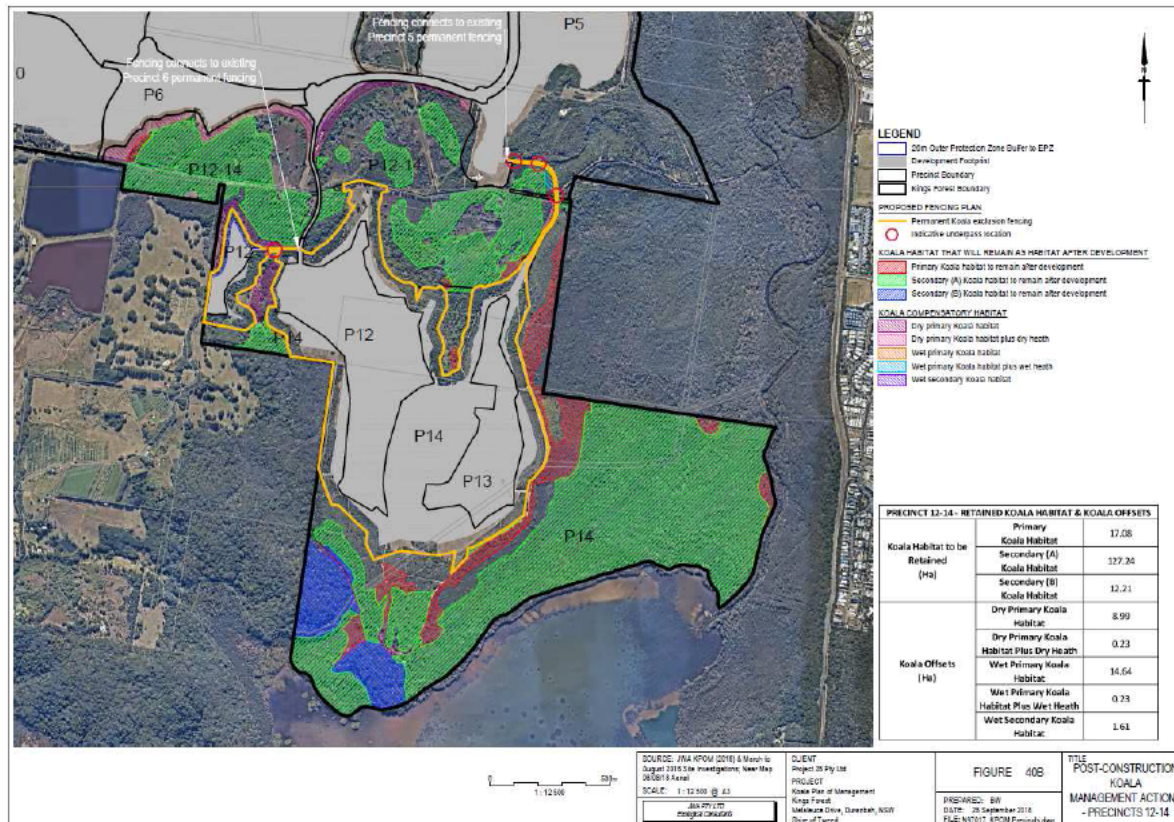


Figure 40B of the draft revised KPOM of October 2018 showing fauna exclusion fencing between the golf course and the adjacent environmental area. Council maintains that if the golf course is to function as an ecological buffer (consistent with the Kings Forest Major projects SEPP) the fencing should separate the golf course (Precinct 14) from the adjacent urban areas (Precincts 12 and 13).

Figure 28 of the draft revised KPoM of October 2018 showing fauna exclusion fencing between the golf course and the adjacent environmental area. Council maintains that if the golf course is to function as an ecological buffer (consistent with the Kings Forest Major projects SEPP) the fencing should separate the golf course (Precinct 14) from the adjacent urban areas (Precincts 12 and 13).

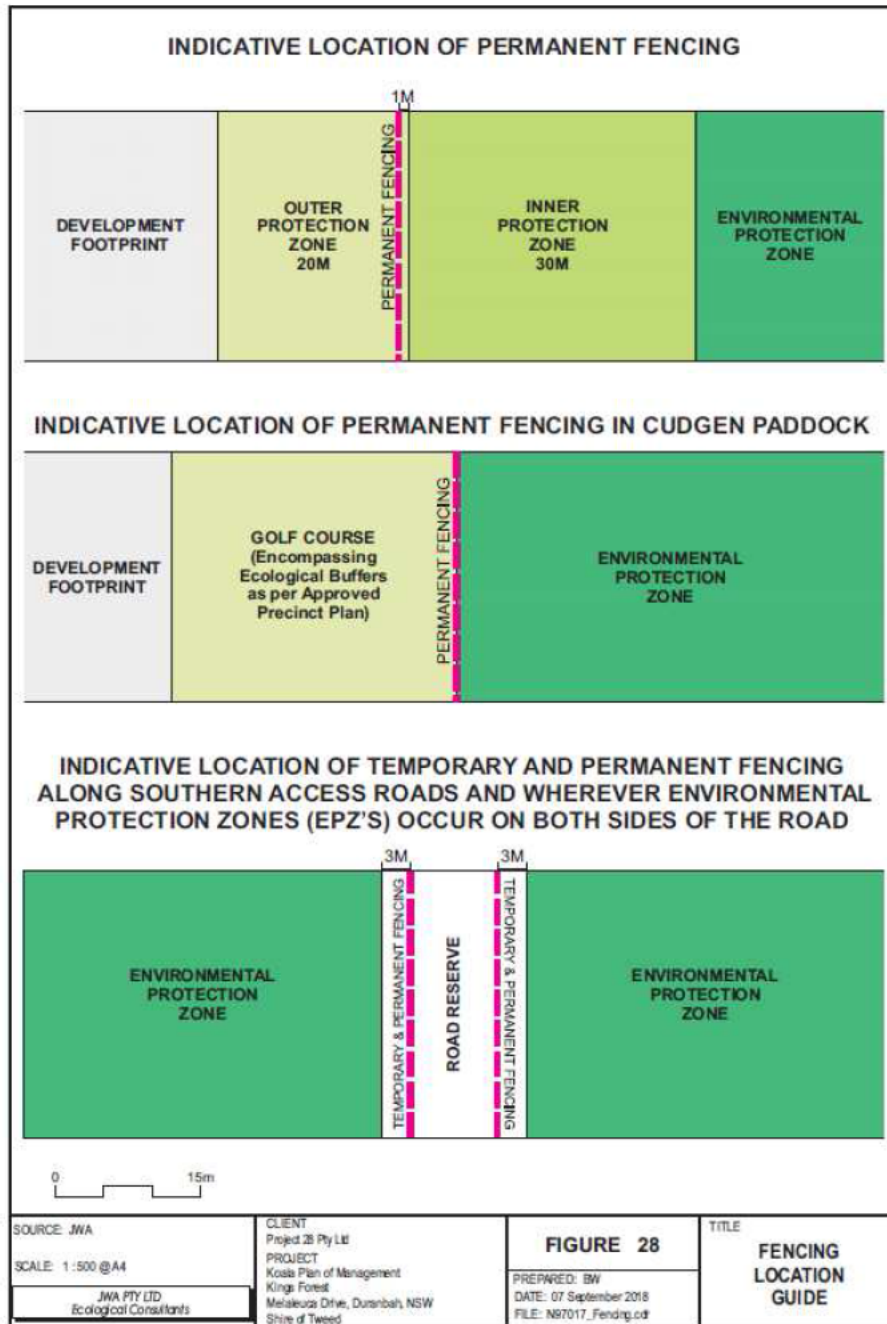
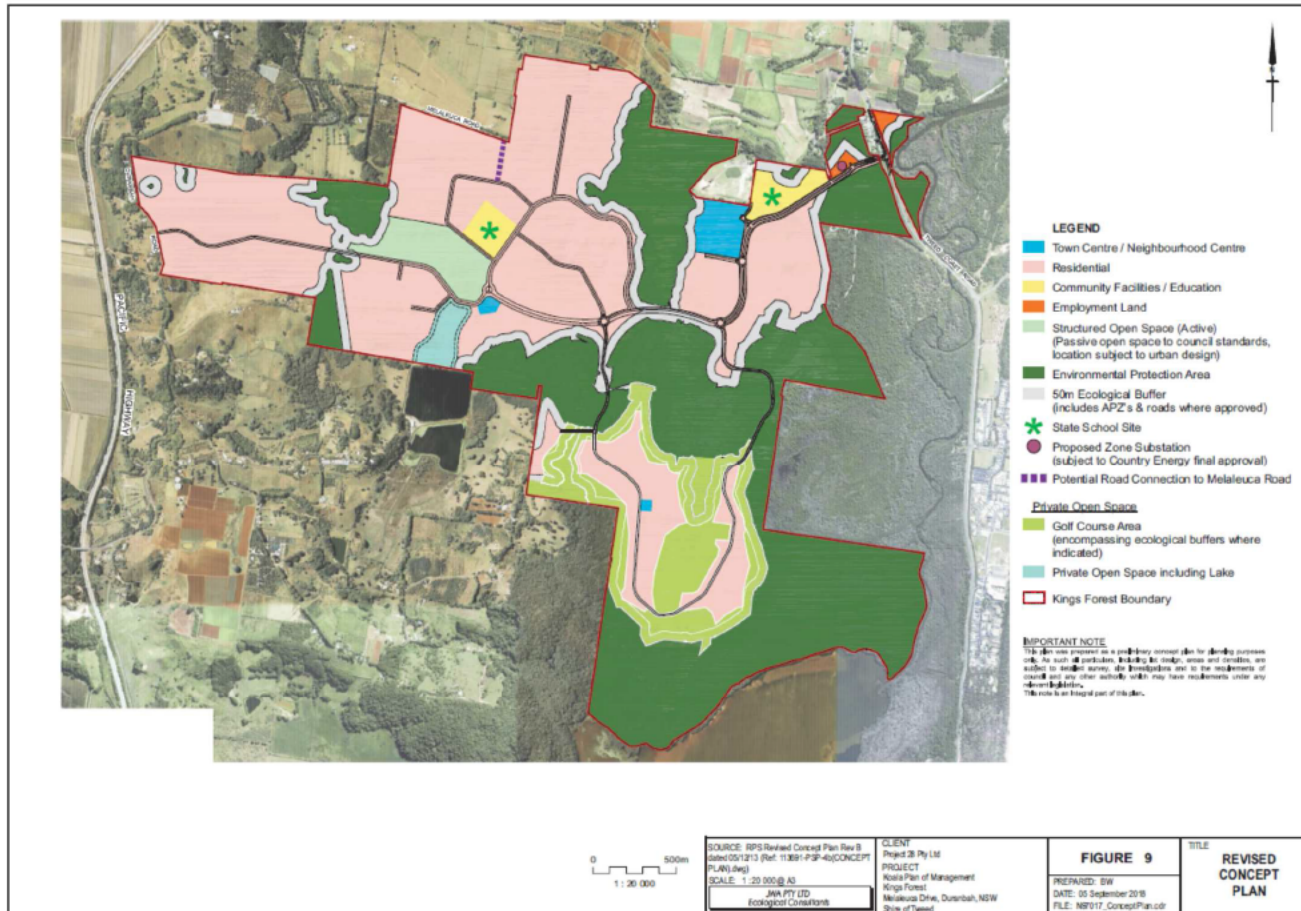


Figure 9 of the draft revised KPoM of October 2018 showing Concept Plan incorporating the ecological buffers within the proposed golf course. This arrangement was approved on the basis that the design golf course met the ecological buffers requirements if the Kings Forest Major Projects SEPP.



Excerpt the draft KPoM (of June 2011) that accompanied Concept Plan Mod 2 discussing the need for future fauna exclusion fencing between the golf course (Precinct 14) and the adjacent urban areas Precincts 12 and 13 (p24 – see yellow highlight).



Kings Forest (Stage 1) - Koala Plan of Management

burns as well as any wildfires in these areas, and vegetation adjacent to these roads should be managed with this in mind.

Also within Kings Forest the bushfire risk to vegetation within the golf course area will be substantially addressed by the proposed distributor road through these precincts, but otherwise vegetation should be managed and other measures taken, where appropriate, to meet this risk in relation to Koala habitat values.

Adjacent to Kings Forest the particular area of concern in terms of bushfire threat is the Cudgen Nature Reserve, including the lands currently forming a part of Kings Forest to be added to it. The Cudgen Nature Reserve Fire Management Plan should be amended to include these additional areas. Furthermore, Koalas and Koala habitat should be particularly considered in a review of the Fire Management Plan in light of information provided by Phillips (2011) regarding fire and Koalas within the Tweed Coast strip.

9.6 Fencing

Koalas will be excluded from the development areas in Precincts 1 and 5 (the subject of the present Project Application) by appropriate fencing in conjunction with the required road underpasses/bridging and grids, in accordance with the findings of Biolink Ecological Consultants in its report on the Skyline Road Upgrade for Lismore City Council (Hopkins & Phillips 2009). Fencing to the northern boundary of Precinct 2 shall also be provided. Such fencing must be completed prior to the occupation of any buildings constructed within these precincts.

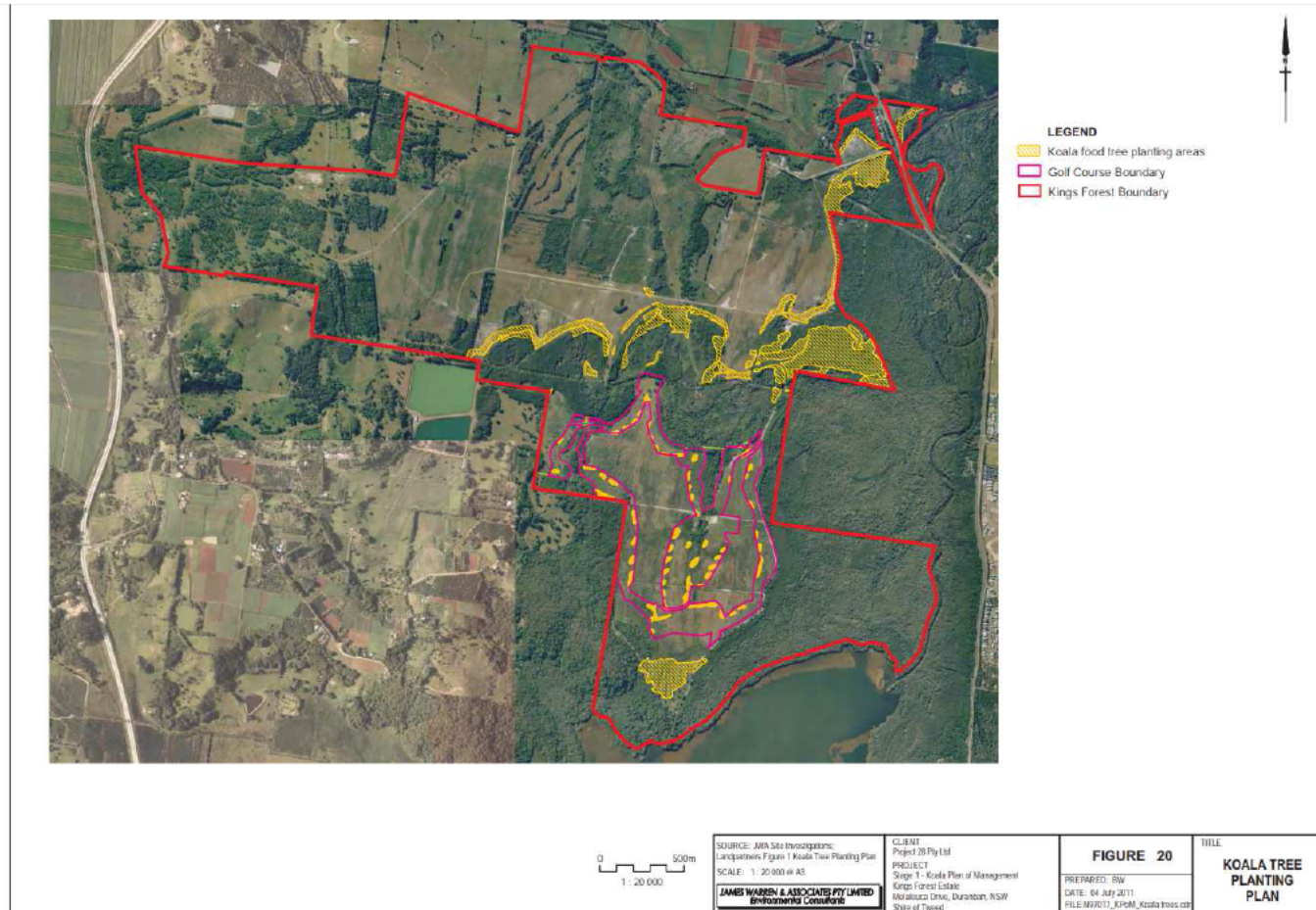
The specification of such fencing and its extent relevant to Precincts 1, 2 and 5 shall be in accordance with FIGURES 17 & 18.

A form of fencing that, whilst discouraging koalas from traversing it, enables them to do so in order to escape from bushfire, as suggested by Carrick (2009), is not considered to offer that advantage in reality. Koalas do not typically react to bushfire by attempting to flee, but tend to seek refuge from bushfires high in the canopy. However, the location and design of Koala fencing combined with the use of grids and traffic calming devices through the central Environmental Protection Zones (i.e. SEPP 14 wetlands), rather than constructing fences on both sides of the roadways, will allow for unimpeded Koala movements into other Environmental Protection zones, the golf course area and adjacent vegetated properties.

Fencing to exclude Koalas from the residential areas of Precincts 12 and 13 (that is, containing the golf course area, being Precinct 14), and additional required underpasses and/or grids, shall be the subject of a future Project Application or Development Application.

Residents should be made aware of the purpose of the exclusion fencing and grids, by (as a minimum) the fixing of relevant signage to such fencing at intervals of no more than 100m.

Excerpts from the draft KPoM (of June 2011) that accompanied Concept Plan Mod 2 showing koala tree planting in the proposed golf course (Fig 20).



For further information regarding this matter please contact either:

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Yours faithfully

Vince Connell
DIRECTOR PLANNING AND REGULATION

under the provisions of the *Native Vegetation Conservation Act 1997* as continued in force by that clause, or

- (c) trees or other vegetation within a State forest, or land reserved from sale as a timber or forest reserve under the *Forestry Act 1916*, or
- (d) action required or authorised to be done by or under the *Electricity Supply Act 1995*, the *Roads Act 1993* or the *Surveying Act 2002*, or
- (e) plants declared to be noxious weeds under the *Noxious Weeds Act 1993*.

29 Community use of educational establishments

- (1) The objective of this clause is to allow the use of educational establishments, including their site and facilities, for other community purposes.
- (2) An educational establishment (including the site and facilities) may, with consent, be used for any other community purpose, whether or not any such use is a commercial use of the land.
- (3) Nothing in this clause requires consent to carry out development on any land if that development could, but for this clause, be carried out on that land without consent.

30 Temporary use of land

The consent authority may grant consent to the carrying out, on land within the Redfern–Waterloo Authority Sites, of development (other than designated development) for any purpose for a maximum period of 28 days, whether consecutive or non-consecutive, in any one year.

Part 6 Kings Forest site

1 Definitions

In this Part:

agricultural buffer means an area within the Kings Forest site indicated by distinctive marking as “Agricultural Buffer—150m” on the Land Zoning Map.

ecological buffer means an area within the Kings Forest site indicated by distinctive marking as “Ecological Buffer—50m” on the Land Zoning Map.

Kings Forest site means the land identified on the Land Application Map.

Land Application Map means the *State Environmental Planning Policy (Major Development) 2005 Kings Forest Land Application Map*.

Land Zoning Map means the *State Environmental Planning Policy (Major Development) 2005 Kings Forest Land Zoning Map*.

native vegetation has the same meaning as in the *Native Vegetation Act 2003*.

2 (Repealed)

3 Application of Part

- (1) Subject to subclauses (2) and (3), this Part applies with respect to development within the Kings Forest site and so applies whether or not the development is a transitional Part 3A project.
- (2) This Part does not apply to the land comprising Lot 19, DP 112061 unless and until that land has been vacant for one continuous period of 12 months, being a period that commences on or after

the commencement of this Part.

- (3) Nothing in this Part applies to or with respect to development for the purposes of a public utility undertaking.

4 Land use zones and objectives

- (1) For the purposes of this Policy, land within the Kings Forest site is in a zone specified below if the land is shown on the Land Zoning Map as being within that zone:
 - (a) Zone 2 (c) Urban Expansion,
 - (b) (Repealed)
 - (c) Zone 7 (a) Environmental Protection (Wetlands and Littoral Rainforests),
 - (d) Zone 7 (l) Environmental Protection (Habitat).
- (2) Subject to the other provisions of this Part, the provisions of *Tweed Local Environmental Plan 2000*, as in force at the commencement of this clause, apply to land within a zone in the same way as they apply to land within a zone of the same name under that Plan and so apply as if those provisions were provisions of this Policy.
- (3) The consent authority must have regard to the objectives for development in a zone within the Kings Forest site when determining a development application in respect of land within that zone.

5 Zone 2 (c)

(1) **Subdivision**

Subdivision of land within Zone 2 (c) is permitted with consent regardless of the size of each allotment to be created by the subdivision.

(2) **Dwelling houses**

Development for the purposes of a dwelling house is permitted with consent on land within Zone 2 (c) regardless of the size of the allotment on which the house is to be located.

6 Zones 7 (a) and 7 (l)

(1) **Subdivision that is permitted**

Subdivision of land within Zone 7 (a) or 7 (l) is permitted with consent if the subdivision is for one or more of the following purposes:

- (a) making an adjustment to a boundary between lots, being an adjustment that does not involve the creation of a greater number of lots,
- (b) a minor realignment of boundaries to reflect the zone boundaries, being a realignment that does not involve the creation of a greater number of lots.

(2) **Other subdivision**

Subdivision of land within Zone 7 (a) or 7 (l) for any other purpose is prohibited.

(3) **Temporary development**

The consent authority must not consent to development on land within Zone 7 (a) or 7 (l) for which consent may be granted under *Tweed Local Environmental Plan 2000* only because the development is carried out for not more than 14 days, whether consecutive or not, in any one year.

(4) **Dwelling houses**

Development for the purposes of a dwelling house is prohibited on land within Zone 7 (1).

(5) **Earthworks**

Development for the purposes of earthworks is permitted with consent on land within Zone 7 (1), but only if the applicant for consent has demonstrated to the consent authority's satisfaction that:

- (a) the development is necessary for any one of the following reasons:
 - (i) it needs to be in the locality in which it is proposed to be carried out due to the nature, function or service catchment of the development,
 - (ii) it meets an identified urgent community need,
 - (iii) it comprises a major employment generator, and
- (b) there is no other appropriate site on which the development is permitted with consent (other than as advertised development) in reasonable proximity, and
- (c) the development is generally consistent with the scale and character of existing and future lawful development in the immediate area, and
- (d) the development is consistent with the aims of *Tweed Local Environmental Plan 2000* (to the extent that those aims are consistent with this Policy) and at least one of the objectives of Zone 7 (1).

7 Ecological buffers

- (1) Consent must not be granted to development on land within an ecological buffer unless the consent authority is satisfied, after considering a detailed environmental assessment, that:
 - (a) the development complies with the objectives for ecological buffers and other provisions of this clause, and
 - (b) there is no practicable alternative to siting the development within the buffer.
- (2) The objectives for ecological buffers are:
 - (a) to protect wetlands or areas of particular habitat significance, and
 - (b) to restrict development so that, as far as practicable, it does not occur within ecological buffers, and
 - (c) to help ensure that development is designed, sited and managed so as to minimise its impact on the ecological and hydrological functions of ecological buffers, and
 - (d) to encourage the restoration and maintenance of native vegetation and the ecological processes of land within and adjacent to wetlands or areas of particular habitat significance.
- (3) Development on land within an ecological buffer is to:
 - (a) incorporate effective measures to manage wetlands or areas of particular habitat significance, and
 - (b) be designed and sited to maintain connectivity of vegetation and minimise vegetation clearing, soil disturbance and alterations to the rate, volume or quality of surface and ground-water flows, and

- (c) retain and maintain all existing native vegetation outside the area immediately required for the development, and
 - (d) incorporate measures to regenerate native vegetation for all disturbed areas within the buffer, and
 - (e) incorporate appropriate stormwater and erosion control measures to protect the buffer from surface water run-off or other disturbance.
- (4) When considering whether or not there is a practicable alternative to siting development inside an ecological buffer, the consent authority must consider:
- (a) the design, type and site cover of the proposed development, and
 - (b) the physical characteristics of the land on which the development is proposed to be carried out, and
 - (c) the suitability of the land for the proposed development.
- (5) Before deciding whether or not to grant consent to development on land within an ecological buffer, the consent authority must consult the Department.

8 Agricultural buffers

Consent must not be granted to development on land within an agricultural buffer unless the consent authority:

- (a) has considered the potential impact of the proposed development on agricultural activities on land adjoining the buffer and of those agricultural activities on future occupiers of land within the buffer, and
- (b) has consulted the Department of Primary Industries.

9 Complying development

For the purposes of determining whether development within the Kings Forest site is complying development, the provisions in *Tweed Development Control Plan No 40* (as adopted by Tweed Shire Council on 6 October 2004) relating to single dwelling houses, or to development ancillary to single dwelling houses, are taken not to apply to the Kings Forest site.

10 Relationship with other environmental planning instruments

The only environmental planning instruments that apply, according to their terms, to or in respect of development within the Kings Forest site are as follows:

- (a) in the case of development that is a transitional Part 3A project—this Policy and all other State environmental planning policies otherwise applicable to the land, except *State Environmental Planning Policy No 1—Development Standards*,
- (b) in the case of all other development—all environmental planning instruments otherwise applicable to the land, except *State Environmental Planning Policy No 1—Development Standards*, but only to the extent that those instruments are not inconsistent with this Policy.

11 Infrastructure development and the use of existing buildings of the Crown

- (1) This Part does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development that is permitted to be carried out with or without consent or that is exempt development under *State Environmental Planning Policy (Infrastructure) 2007*.

- (2) This Part does not restrict or prohibit, or enable the restriction or prohibition of, the use of existing buildings of the Crown by the Crown.

Part 7

(Repealed)

Part 8 North Head Federal Police Training site

Division 1 Preliminary

1 Land to which Part applies

This Part applies to the land shown edged heavy black on Map 6 to this Schedule referred to in this Schedule as the *North Head Federal Police Training site*.

2 Interpretation

A word or expression used in this Part has the same meaning as it has in the standard instrument prescribed by the *Standard Instrument (Local Environmental Plans) Order 2006* (as in force immediately before the commencement of the *Standard Instrument (Local Environmental Plans) Amendment Order 2011*) unless it is otherwise defined in this Part.

3 Relationship with other environmental planning instruments

- (1) Except as provided by this Policy, all other environmental planning instruments apply, according to their terms, to the North Head Federal Police Training site.
- (2) Division 3 applies to the North Head Federal Police Training site despite any provision of *Manly Local Environmental Plan 1988* or any other local environmental plan applying to that site.

Division 2

4 (Repealed)

Division 3 Provisions applying to development within North Head Federal Police Training site

5 Application of Division

This Division applies with respect to any development within the North Head Federal Police Training site and so applies whether or not the development is a transitional Part 3A project.

6 Development controls in relation to North Head Federal Police Training site

- (1) Development for the purpose of a police training facility and any ancillary development may be carried out with consent on land within the North Head Federal Police Training site.
- (2) Development for the purpose of a public utility undertaking may be carried out without consent on land within the North Head Federal Police Training site.

7 (Repealed)

8 Infrastructure development and the use of existing buildings of the Crown

- (1) This Part does not restrict or prohibit, or enable the restriction or prohibition of, the carrying out of any development that is permitted to be carried out with or without consent or that is exempt development under *State Environmental Planning Policy (Infrastructure) 2007*.