

28 May 2019

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**SANDON POINT CONCEPT PLAN MP06-0094 MOD5: RESPONSE TO
SUBMISSIONS FOR ECOLOGY**

Dear Jordan,

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Anglicare commissioned Cumberland Ecology to provide responses to matters involving ecology raised within the agency referrals and public submissions for the Section 75W Modification application to the Sandon Point Concept Plan MP06-0094 (MOD 5) for the proposed Anglicare development at Sturdee Avenue, Bulli.

The agency referrals related to ecology are limited to those received from the NSW Office of Environment and Heritage (OEH) and Wollongong City Council (WCC). A total of six (6) public submissions received raise concerns regarding ecological matters.

Our responses to each of the submissions related to ecology are detailed in **Appendix A** to this letter. In addition to this, some updates have been made to the Biodiversity Development Assessment Report (BDAR) and Vegetation Management Plan (VMP) prepared by Cumberland Ecology for the proposed Modification. These modifications generally provide further clarification on matters raised in the submissions. The updated BDAR and VMP are provided as separate documents to this letter.

If you have any questions, or require any further clarification, please do not hesitate to contact either myself, or Heather Gosper on (02) 9868 1933.

Yours sincerely,



Gitanjali Katrak
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Appendix A

Concept Plan MP06 - 0094 Mod 5 75W
application: Ecology Response to Submissions

Table 1 Concept Plan MP 06-0094: Ecology Response to Submissions for 75W Modification (Mod 5)

Submission	Issue	Cumberland Ecology Response
NSW Office of Environment and Heritage (OEH)		
OEH 1	OEH consider that the SEAR recommending that additional impacts of the proposed modification on biodiversity be considered has been addressed. However, we recommend that the offset scenario derived from on-ground plot data based on current site conditions, rather than the scenario manipulating plot data to exclude a widespread Acacia species, be adopted for future offset requirements.	<p>As noted in the Biodiversity Development Assessment Report (BDAR) prepared by Cumberland Ecology (CE) and provided in Appendix E of the report, OEH have previously confirmed that exclusion of the <i>Acacia longifolia ssp sophorae</i> is 'ecologically sensible' however indicated a reduction to zero credits wouldn't be justifiable on the basis of the potential habitat this species could provide.</p> <p>While Cumberland Ecology accept that complete removal of <i>Acacia longifolia ssp sophorae</i> is not justified as it can provide potential foraging habitat for native species, we do not accept the complete inclusion of the <i>Acacia longifolia ssp sophorae</i> species as per recorded on-ground plot data into the BAM credit calculations as this would result in a perverse outcome that does not take into consideration the community composition of the PCT or species naturally occurring therein.</p> <p><i>Acacia longifolia ssp sophorae</i> is one of several colonising Acacia species that frequently forms a dense shrub layer in historically cleared areas and has even been considered a native 'weed' species when it spreads outside of its natural range (Richardson et al., 2011). In some areas of the Illawarra region, Acacia scrub regrowth frequently occurs in conjunction with heavy infestations of <i>Lantana camara</i>.</p> <p>During surveys undertaken by Cumberland Ecology in 2004 and 2006 for the preparation of a Flora and Fauna Assessment (FFA) for the Anglicare Property and surrounds, this species had not established an abundant population and the Acacia was only occasionally observed within the subject land. Since that time, <i>Acacia longifolia ssp sophorae</i> has colonised and grown into a dense shrub layer that dominates PCT 694: Zone 2. This species, although native to South-East Australia, is not a diagnostic species of PCT 694 and would not be a part of this community were it not for the historical</p>

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Submission	Issue	Cumberland Ecology Response
		<p>clearing of the areas within the subject land and subsequent lack of management since 2006 that has provided the species an opportunity to overrun this area.</p> <p>As stated in Section 4.2.4 of the BDAR, as the concept of non-aligned/planted PCTs and adjustment to determine credit liability is currently still being considered by OEH, potential options for adjustment of values within the BAM calculator are not available. In the absence of adjustment options for 'best-fit' PCTs, the scenario excluding <i>Acacia longifolia ssp sophorae</i> was utilised merely for comparative purposes to determine the extent to which credit liability may be driven by the presence of the colonising species.</p> <p>In Scenario 1, when the species was excluded, the vegetation integrity of Zone 2 calculated by the BAM Credit Calculator is 14. A vegetation integrity score of 14 is considered degraded to the point that offsetting is not required, and no ecosystem credits would be required. In Scenario 2 that includes <i>Acacia longifolia ssp sophorae</i>, the vegetation integrity becomes 32.1, which would require the offsetting of 26 ecosystem credits.</p> <p>The discrepancy between these two scenarios is based on the inclusion of a colonising species that does not form part of the PCT and that has invaded the area due to historical clearing activities and a lack of management over the past decade. Accordingly, we believe some adjustment to on-ground plot data to determine credit liability is warranted.</p> <p>As stated in Section 4.2.4 of the BDAR, further consultation with OEH is required to determine a suitable adjustment which will allow for inclusion of habitat value potential of <i>Acacia longifolia ssp sophorae</i> while considering the deviation of structure and composition from that of the 'best-fit' PCT utilised. The agreed adjustment would be conveyed to the consent authority before it is utilised for any future BDARs at the detailed design/development application stages to determine a final credit liability for the removal of the vegetation.</p> <p>The relevant sections of the BDAR have been updated to further clarify this matter.</p>

Table 1 Concept Plan MP 06-0094: Ecology Response to Submissions for 75W Modification (Mod 5)

Submission	Issue	Cumberland Ecology Response
OEH 2	OEH recommend revisiting the species credit calculations as detailed at Attachment A. Offsets should be provided at an early stage to reduce any further assessment or delays at future development stages.	<p>Attachment A of the OEH submission states '<i>The BDAR also includes a number of species credit species in the assessment and resulting offset obligation. This assumed presence and inclusion in the offset requirements is very conservative in nature, and we suggest this be revisited</i>'</p> <p>As the OEH submission stated that they were available to discuss matters raised in relation to biodiversity, Cumberland Ecology (Senior Project Manager Gitanjali Katrak) contacted Senior Conservation Planning Office, Calvin Houlison, via phone on 17 May 2019 to confirm that the OEH submission indicated that OEH considered that some species credit species assumed to be onsite in the BDAR were unlikely to occur.</p> <p>As outlined in the phone discussion, the timeframe for the submission modification did not allow for targeted surveys of candidate species credit species and a conservative approach was taken for assumed presence. As outlined in Section 4.3.4 of the BDAR, any species credit species that could not justifiably be excluded based on current available data, habitat constraints identified for the species in the Threatened Biodiversity Data Collection, mobility of the species, and habitat assessments conducted in accordance with Step 2 and Step 3 of Section 6.4 of the BAM were assumed to be present.</p> <p>As the current assessment is for a high level concept plan, this species credit species list has been retained for the purposes of the current BDAR as it serves as an indicator of species that may need to be considered for further assessment and targeted survey at future development application stages.</p> <p>It should be noted that Cumberland Ecology also conducted further assessments on the predicted ecosystem credit species. This updated assessment is detailed in Section 4.3.3 of the updated BDAR. Based on the findings of this assessment, we believe that further consultation with OEH is required to determine exclusion of ecosystem credit species from specific vegetation zones in future assessments at the development application stages as the process for exclusion of ecosystem credit species from 'best-fit' PCTs is not clearly outlined within the BAM.</p>

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Submission	Issue	Cumberland Ecology Response
		<p>However, Cumberland Ecology maintain that it is not reasonable to provide offsets up front on the basis of a concept plan that may incur changes between now and the DA stage. The final credit liability for species credit species will therefore be assessed as part of future BDARs for the development assessment stages once detailed design is available and further information on the extent of potential impacts on species credit species is available to better guide targeted survey effort for species credit species.</p>
Wollongong City Council (WCC)		
WCC 1	<p>It's likely there will be direct and indirect impacts to the Turpentine Forest during construction and operation of a future development. It's likely there will be direct and indirect impacts on vegetation in Lot 500 DP 1161858 (Stockland Land) during construction and operation of a future development.</p>	<p>As stated in Section 1.1 and Section 1.3.3 of the BDAR, the SEARs for Flora and Fauna specifically state "Assess any additional biodiversity impacts associated with the proposal, including any additional impacts on adjoining areas".</p> <p>As outlined in Section 1.3.2 of the BDAR, under the approved Concept Plan, development of the Anglicare land largely avoided the E2 zone. However some works in E2 zoned land such as creek crossings over Cooksons Creek and Tramway Creek, creation of a weir within Cooksons Creek and associated pond to the west of the weir for flood management and drainage purposes as well as pathways through the Turpentine Forest were approved.</p> <p>The Turpentine Forest is fully contained within E2 zoned land. It is acknowledged that the approved works in the E2 zoned land may result in some direct impacts upon the Turpentine Forest. However the current modification application does not increase the footprint of these works and therefore has not been addressed in detail in the BDAR as it does not comprise an 'additional impact'. Similarly, as the outermost extent of the development precincts within R2 zoned land remains unchanged from that of the approved Concept plan, potential indirect impacts on the adjacent E2 zone (including E2 zoned land contained within Lot 500 DP 1161858) also remain unchanged from those of the original concept plan and are not addressed in detail in the BDAR as they do not form 'additional' impacts.</p> <p>As stated throughout the BDAR, the assessments comprise a high level or preliminary assessment of</p>

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		<p>potential impacts on biodiversity based on high-level concept plans. Further assessments in the form of future BDARs will be prepared at the development stages which will assess any potential direct and indirect impacts on the Turpentine Forest based on detailed designs.</p> <p>Similarly Lot 500 DP 1161858 (Stockland Land) largely lies within E2 zoned land of Tramway Creek, for which creek crossings have been approved under the Concept Plan. While it is acknowledged that the works for these crossings will result in direct and indirect impacts within Lot 500 DP 1161858, these works are not proposed to be modified from that of the approved Concept Plan and therefore have not been addressed in the BDAR as they do not comprise 'additional impacts'. Further assessments on the direct and indirect impacts in the form of a BDAR for works within Lot 500 DP 1161858 will be prepared as required at the development application stages.</p>
WCC 2	<p>It is clear that Anglicare has committed to consultation with interested parties on the future ownership of the Turpentine Forest and riparian corridor. It is unclear if the Natural Resources Access Regulator considers the Anglicare Site: Sturdee Avenue, Bulli Vegetation Management Plan by Cumberland Ecology to be satisfactory and therefore the envisaged outcomes will be realised to the fullest extent possible. Furthermore, it is unclear if the proposed 'defendable space to the Turpentine Forest and riparian areas rather than a specific APZ' remains acceptable to the NSW RFS for the current and proposed modification. The implications for this are that there is uncertainty that:</p>	<p>As the current proposal is a modification to a high level Concept plan approval, the BDAR and VMP are considered to be preliminary assessment documents or 'Masterplan' documents to provide an overarching guiding framework for ecological matters that require assessment at future development application stages.</p> <p>Although the current VMP is a high-level Masterplan documentation, the general ecological requirements for a Vegetation Management Plan as outlined in the Department of Primary Industries – Office of Water's '<i>Guidelines for vegetation management plans on waterfront land</i>' have been addressed. In particular, Table 8.1 of the VMP includes performance criteria which must be followed in order to achieve a complete outcome.</p> <p>While it is acknowledged that some amendments, such as adjustments in the layout of vegetation management zones, may be required once detailed design and layout of approved structures within the E2 zone are available and a Controlled Activity Approval application for works is prepared, it is considered that the overarching framework for rehabilitation of vegetation and riparian corridors within E2 zoned land outlined in the current 'Masterplan' VMP will satisfy the Natural Resources Access</p>

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	<p>The biodiversity impact assessments in the BDAR by CE, which has relied on a recommended '6m defensible zone' for bushfire protection in the Peterson Bushfire report, are complete.</p> <p>The outcomes envisaged in the VMP by CE will be realised to the fullest extent possible.</p>	<p>Regulator (NRAR) requirements. Given the E2 zone, that is encapsulated within the VMP, currently receives no active management and is infested with exotic weeds such that it does not conform to any recognisable native vegetation community, the implementation of the VMP is expected to result in a positive biodiversity outcome for this area.</p> <p>Based on documentation from Peterson Bushfire for the Response to Submissions, it is Cumberland Ecology's understanding that the RFS are satisfied with the 6m defensible zone for bushfire protection and the biodiversity impacts assessed in the BDAR are therefore complete based on the 6m defensible zone. Additionally, the defensible space will continue to be situated in the R2 zone and will avoid thereby avoid the encroachment of the defensible space into the E2 zone, minimising impacts to the Turpentine Forest and riparian areas.</p>
WCC 3	<p>As noted in numerous sections of the CE BDAR, the survey effort is incomplete and 'further assessments will be required at the development application stages when further detailed design is available'. In addition, the BDAR acknowledges that further detailed assessment of direct and indirect impacts according to the Biodiversity Assessment Method 'will be required' in support of future development applications. The preliminary status of the BDAR is reinforced by Council's observations of:</p> <p>The current uncertainties in relation to the adequacy of the proposed 'defensible space' bushfire hazard management. Council will not accept any bushfire restriction over any of its lands.</p>	<p>Cumberland Ecology agrees that the BDAR is preliminary and further assessments and surveys will be required at the development application stages.</p> <p>Regarding Council's observations:</p> <ul style="list-style-type: none"> ➤ As previously stated in our response to WCC Item 2, Peterson Bushfire has in their Response to submissions that the RFS are satisfied with the 6m defensible zone for bushfire protection. It is Cumberland Ecology's understanding that the current Anglicare Property is within land that is not mapped as bushfire prone land by Council. Cumberland Ecology is unable to comment on any future land ownership by Council as this is outside of our area of expertise. ➤ Any future incorporation of a pedestrian footpath will give due consideration to heritage areas and be assessed accordingly. However it should be noted that the approved Concept Plan allowed for pathways through the Turpentine Forest ➤ Cumberland Ecology disagrees with Council's observation that impacts on Lot 500 DP 1161858 have been overlooked. As previously stated in our response to WCC Item 1, the BDAR prepared by Cumberland Ecology focussed on assessing "any additional biodiversity

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	<p>A pedestrian path is likely to be proposed in the 'Turpentine Forest' in future development applications and will be subject to heritage considerations (Anglicare should retain ownership and management of this land. Council will not accept ownership).</p> <p>Infrastructure to support the development is proposed on Lot 500 DP 1161858 involving the direct impact of clearing of vegetation, and associated indirect impacts, and these have been overlooked by CE.</p>	<p>impacts associated with the proposal, including any additional impacts on adjoining areas" as required by the SEARs. Therefore all items previously approved as part of the Concept Plan that are not proposed to be modified have not been included in the BDAR as they do not comprise 'additional impacts'. It is acknowledged that the infrastructure on Lot 500 DP 1161858 will support the Anglicare development. However these works have already been approved as part of the Concept plan and are not proposed to be modified from that of the approved Concept Plan. Therefore have not been addressed in the BDAR as they do not comprise 'additional impacts'. The BDAR, however has been amended to include an acknowledgement of the supporting infrastructure and its current approval under the Concept Plan.</p>
WCC 4	<p>It should be noted that Council's position is that PCT Coastal Freshwater Lagoons of the Sydney Basin Bioregion and South East Coast Corner Bioregion (PCT781) corresponding to the Biodiversity Conservation Act 2019 (BC Act) threatened ecological community (TEC) Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions is present on the subject site and adjoining areas. The presence of this PCT/TEC generally corresponds to mapping in the Illawarra Plant Community Type Vegetation Map, 2016. VIS_ID 4678 by OEH (2016). The BC act TEC present in Cookson's Creek and</p>	<p>Cumberland Ecology disagrees with Council's position that PCT 781 - Coastal Freshwater Lagoons of the Sydney Basin Bioregion and South East Coast Corner Bioregion (which conforms to the BC Act listing of the Threatened Ecological Community (TEC) Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions) is currently present on the subject land.</p> <p>While it is acknowledged that Illawarra Plant Community Type Vegetation Map, 2016. VIS_ID 4678 by OEH (2016) shows the area associated with the 1st order Cookson's Creek towards the east, and the southern eastern corner of the Anglicare Property as "Floodplain Wetland", this mapping is broad scale and has been refined by CE through multiple site-specific surveys that have specifically focussed on the extent and form of the vegetation within the Anglicare Property.</p> <p>As stated in Section 4.2.2 of the BDAR, review of documentation indicated that surveys by Cumberland Ecology between 2006 and 2012 confirmed the existence of the three vegetation communities (including Floodplain wetland), as per the 2002 Illawarra mapping, on the Anglicare</p>

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	<p>Tramway Creek on the subject site forms a part of a larger area of this vegetation extending east into adjoining Lot 500 DP 1161858 and is also present in the remainder of Tramway Creek on the southern wetland mapping. Council's position on the presence of BC Act TEC present in Cookson's Creek and Tramway Creek is supported by the CE reports which:</p> <p>State the areas within the Anglicare Property mapped as Coastal Wetland occur within the E2 zone.</p> <p>State the coastal wetlands 'will be managed and enhanced under a VMP'.</p> <p>Provide a commitment to 'active management under a VMP and will serve as a buffer between the development and wetlands'.</p> <p>The mapping in Figure 3.1 of the VMP which highlights Zone 3: Freshwater Wetlands</p>	<p>property but found the extent within the site differed from that of the broad scale Illawarra mapping. The areas of Floodplain Wetland are limited to the riparian areas along Cooksons Creek and are contained completely within the E2 zones.</p> <p>While it is acknowledged that Floodplain Wetland communities, albeit highly disturbed, occurred along Cooksons Creek and the Anglicare property, the surveys conducted by Cumberland Ecology in 2018 determined that lack of management had resulted in significant levels of degradation and weed infestations within the wetland areas compared to findings of previous surveys.</p> <p>The only native species recorded in the wetland areas of the Anglicare property comprised scattered occurrences of <i>Typha orientalis</i>. While this species is listed as a diagnostic species in the Final Determination of the Freshwater Wetlands EEC, it is also a widespread ubiquitous species that can grow in heavily disturbed areas, including irrigation channels and drains and is considered to be a weed requiring control when growth interferes with flows of natural watercourses (Botanic Gardens Trust, 2019; DPI, 2019). Furthermore, as seen in Photograph 4.8 of the BDAR, the wetland areas of Cooksons Creek are so heavily infested by <i>Ageratina adenophora</i> (Crofton Weed) that the wetland vegetation, in its current form, cannot be considered to conform to a native vegetation unit. Therefore, due to the highly degraded condition of the wetland vegetation, the vegetation in the wetland area has been mapped as Exotic Vegetation.</p> <p>However, given the historic occurrence of Floodplain Wetland on the site, it is recognised that Cooksons Creek has the potential to be rehabilitated such that it could function as Freshwater Wetlands based on landform and hydrology. The mapping of Zone 3 – Freshwater Wetlands in Figure 3.1 of the VMP, therefore, shows the extent of areas that can be rehabilitated to Freshwater wetlands, not the current extent of any native wetland community.</p> <p>Regarding Council's determination that the CE reports support the notion of Freshwater Wetlands</p>

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		<p>within the Anglicare Property, we have provided clarification on each point below.</p> <p><i>“State the areas within the Anglicare Property mapped as Coastal Wetland occur within the E2 zone”</i></p> <ul style="list-style-type: none"> ➤ This reference to Coastal Wetlands in Section 1.6.2 iii a) of the BDAR is in relation to the State Environmental Planning Policy (Coastal Wetlands) 2016 (SEPP – Coastal Management) mapping of Coastal Wetlands and does not in any way refer to the presence of native wetlands, PCT 781 or the associated TEC within the Anglicare Property. The mention of this SEPP – Coastal Management “Coastal Wetlands” in the BDAR is followed by the statement that “areas mapped as Coastal Wetlands <u>under the Coastal Management SEPP</u> will be protected and enhanced thus improving ecological integrity above existing conditions”. It should be noted that SEPP – Coastal Management mapping of wetlands also comprises broad-scale mapping based on presence of waterbodies and landform and does not distinguish between native wetlands and degraded wetlands dominated by exotic vegetation. <p><i>“State the coastal wetlands ‘will be managed and enhanced under a VMP”.</i></p> <ul style="list-style-type: none"> ➤ As above, the concept of Coastal Wetlands is based on the SEPP – Coastal Management mapping, not that the vegetation community of this area conforms to any native vegetation community or TEC. As stated in the BDAR, the E2 zoned land does not form part of the development and is not addressed in detail in the BDAR. Furthermore, as per the SEARs, all vegetation within the E2 zoned land is to be managed under a VMP. As areas mapped as ‘Coastal Wetland’ under the SEPP – Coastal Management occur within the E2 zone, they will be managed and enhanced under the VMP. <p><i>Provide a commitment to ‘active management under a VMP and will serve as a buffer between the development and wetlands’.</i></p>

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Submission	Issue	Cumberland Ecology Response
		<p>➤ As stated in Section 1.6.2 iii a) of the BDAR, the areas mapped as 'Proximity to Coastal Wetland' under the SEPP – Coastal Management occur within both the R2 and E2 zoned land. The areas mapped as 'Proximity to Coastal Wetland' under the SEPP – Coastal Management that occur within the E2 zone are to be rehabilitated and managed under the VMP, as per the requirements of the SEARs. These "Proximity to Coastal Wetland' areas will serve as a buffer between the development and the 'Coastal Wetland' areas as mapped by the SEPP – Coastal Management.</p> <p><i>"The mapping in Figure 3.1 of the VMP which highlights Zone 3: Freshwater Wetlands"</i></p> <p>➤ This mapping shows the proposed management zones and future site vegetation function after the VMP has been implemented. As stated in Section 3.1.3 of the CE VMP, along Cookson's Creek there is a "bio-retention basin that will be rehabilitated into Freshwater Wetland" thus indicating this project will have a positive environmental outcome due to the establishment of a freshwater wetlands from an area that is presently highly infested with exotic weeds and that does not provide wetlands habitat in its current state. Cookson's Creek, unlike Tramway Creek, is not considered to presently perform a significant wildlife habitat function (CE BDAR – Section 1.3.4). However through the rehabilitation proposed as part of the development it has the potential to perform a significant wildlife habitat function in the future.</p> <p>In conclusion, Cumberland Ecology is of the opinion:</p> <p>The OEH mapping indicated by Council is considered to be broad scale. It has been refined by Cumberland Ecology through multiple, up-to-date site surveys and subsequent detailed vegetation mapping. The comprehensive site-specific surveys revealed the Anglicare Property does not contain</p>

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		<p>the PCT Coastal Freshwater Lagoons of the Sydney Basin Bioregion and South East Coast Corner Bioregion (PCT 781) corresponding to the TEC Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions.</p> <p>The term “Coastal Wetlands” as used in the BDAR (Section 1.6.2 iii) is a reference to the SEPP – Coastal Management mapping unit which is broad-scale and does not describe any particular vegetation communities within the ‘Coastal Wetland’ mapping. Areas mapped by SEPP – Coastal Management within the Anglicare Property are not considered to be representative of PCT 781 or any TEC vegetation community occurring. Although “Freshwater Wetlands” is identified in Zone 3 of the VMP, this relates to the future function of the area after rehabilitation as directed by the VMP has occurred. Thus, Cookson’s Creek will be rehabilitated such that it will have the potential to function as a wetland once the proposed development works have been completed. This action would represent a positive biodiversity outcome for this heavily weed infested and degraded area that is currently not subject to any active management and is not recognised as providing a significant wildlife habitat function.</p> <p>Therefore, we reject Council’s opinion that PCT 781 or the associated Threatened Ecological Community (TEC), Freshwater Wetlands on Coastal Floodplains of the NSW North Coast, Sydney Basin and South East Corner Bioregions, occurs within the Anglicare Property and we do not believe the Cumberland Ecology reports support this notion.</p>
WCC 5	<p>The correspondence between CE and OEH on the matter of MU 56a Acacia Scrub is noted including the observation by OEH that:</p> <p>Any attempt to adjust local benchmark values to support ‘reduction to zero credits’ is not justifiable.</p>	<p>Cumberland Ecology recognises that Council has noted the correspondence between Cumberland Ecology and OEH regarding the Acacia Scrub. As detailed in our response to the OEH submission (1): While Cumberland Ecology accept that complete removal of <i>Acacia longifolia ssp sophorae</i> is not justified as it can provide potential foraging habitat for native species, we do not accept the complete inclusion of the <i>Acacia longifolia ssp sophorae</i> species as per recorded on-ground plot data into the</p>

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Submission	Issue	Cumberland Ecology Response
	Consistent with the BC Act, 'ultimately the consent authority is the one who has to make that decision'.	<p>BAM credit calculations as this would result in a perverse outcome that does not take into consideration the community composition of the PCT or species naturally occurring therein.</p> <p>Given that the difference between the two scenarios provided in the BDAR strongly indicate that the credit liability for the clearing of the PCT appears to largely be driven by the presence and density of <i>Acacia longifolia ssp sophorae</i>, a species which is not diagnostic of the PCT and that has invaded the area due to historical clearing activities and a lack of management over the past decade, we believe some adjustment to on-ground plot data to determine credit liability is warranted.</p> <p>As stated in Section 4.2.4 of the BDAR, further consultation with OEH is required to determine a suitable adjustment which will allow for inclusion of habitat value potential of <i>Acacia longifolia ssp sophorae</i> while considering the deviation of structure and composition from that of the 'best-fit' PCT utilised. The agreed adjustment would be conveyed to the consent authority before it is utilised for any future BDARs at the detailed design/development application stages to determine a final credit liability for the removal of the vegetation.</p>
WCC 6	<p>Consistent with the CE BDAR, the VMP by CE is considered to be preliminary and only indicative in view of the following:</p> <p>It has been prepared on the basis of proposed 'concept' development as opposed to detailed proposed development which would be articulated in future development applications.</p> <p>There are uncertainties in relation to the adequacy of the proposed 'defendable space' bushfire hazard management.</p> <p>The Natural Resources Access Regulators are yet</p>	<p>Cumberland Ecology agrees that the VMP is preliminary and will require further revisions when submitted in support of future DAs.</p> <p>In response to Council's points we provide the following:</p> <p>Cumberland Ecology agrees that the VMP has been prepared on the basis of a proposed Concept Plan rather than a detailed DA and will be revised and submitted for approval based on future DAs.</p> <p>The RFS has determined that the defendable space is adequate for bushfire hazard management and recommends that the current bush fire requirements remain unchanged.</p> <p>The Natural Resources Access Regulators (NRAR) have responded to the modification of the Concept Plan and have not raised any issues with the VMP. We note that NRAR have stated that the revised Statement of commitments should include a commitment to form a remediation plan for Tramway Creek, Slackys Creek and Woodfords Creek. It should be noted that Tramway Creek, Slackys Creek</p>

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	<p>to provide feedback on the adequacy of the VMP.</p> <p>A pedestrian path proposed in the 'Turpentine Forest' in future development applications</p> <p>Infrastructure to support the development is proposed on Lot 500 DP 1161858 and this will involve the direct impact of clearing vegetation, and associated indirect impacts, and these have been overlooked by CE.</p> <p>The current indicative VMP will require further revisions when submitted in support of future development applications.</p>	<p>and Woodfords Creek do not occur on Anglicare land although Cooksons Creek does connect with Tramway Creek. As identified in Section 1.2 of the VMP, management of these connected waterways by relevant landowners will need to be carried out concurrent with the management of the Anglicare lands in order for actions such as weed control to succeed.</p> <p>It should be noted that the approved Concept Plan allowed for pathways through the Turpentine Forest. Due consideration to heritage areas and biodiversity values will be given during the design phase and further assessments will be conducted as required once detailed designs and layouts are available.</p> <p>As previously stated in our response to WCC Item 3, Cumberland Ecology disagrees with Council's observation that impacts on Lot 500 DP 1161858 have been overlooked. As previously detailed, the infrastructure on Lot 500 DP 1161858 has already been approved as part of the Concept plan and were not addressed in the BDAR as they do not form 'additional' impacts.</p> <p>It is agreed that the current VMP will require further revisions/updates for future development applications.</p>
Department of Planning and Environment (DPE)		
DPE 1	The species credit calculations should be revised as recommended by OEH	An updated assessment of both species credit species and ecosystem credit species was conducted. Further details are provided in Cumberland Ecologys response to OEH Item 2
DPE 2	The proposal should demonstrate how future construction impacts on the Turpentine forest and Aboriginal archaeological site can be appropriately managed or avoided	As stated in the BDAR and in prior responses, the current assesments are preliminary assessments for a high level Concept Plan. Further detailed design is required to accurately assess future construction impacts which will be conducted at the development application stages. All feasible avoidance measures will be considered during detailed design and Construction Environment Management Plan (CEMP) will be prepared to manage all residual impacts. As a minimum, the CEMP will include measures such as appropriate delineation of clearing limits/'No go' zones, sediment fencing, ecological

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Submission	Issue	Cumberland Ecology Response
		<p>certification of protection measures and ecological supervision of clearing. Further measures to protect the Turpentine forest are outlined in Chapter 4 of the VMP.</p> <p>Cumberland Ecology is unable to comment on avoidance or management measures in relation to the Aboriginal archaeological site as this is outside our area of expertise</p>
Public Submissions		
PS 1	Anglicare has not demonstrated that the revised development will not encroach on the Turpentine Forest.	<p>The Turpentine Forest, which is listed as an Item of Natural Heritage Significance in the Wollongong Local Environmental Plan 1990, is fully contained within E2 zoned land. As outlined within the BDAR, the proposed development will be fully contained within R2 zoned land and will not encroach on the Turpentine Forest</p> <p>The original approved Concept Plan allowed for a 10m APZ within the outer perimeter of the Turpentine Forest, whereas the proposed revised layout situates the reduced 6m defendable zone entirely within the R2 zone. Consequently, the revised development significantly reduces the encroachment into the Turpentine Forest compared to that of the approved Concept Plan.</p> <p>Furthermore, the 'footprint' of minor development such as pathways and creek crossings within the E2 zoned land will be reduced compared to that allowed under the approved Concept Plan thus further reducing the level of approved encroachment into the Turpentine Forest.</p>
PS 2	Anglicare has not provided appropriate buffer areas to riparian corridors.	<p>Cookson's Creek comprises a 1st order stream as per the Strahler system and therefore is classified as a Category 1 stream under the BAM. In accordance with Appendix 3 of the BAM and the Guidelines for Riparian corridors on waterfront land, a minimum buffer or Vegetated Riparian Zone (VRZ) of 10m on either side applies to the creek. As proposed in the VMP prepared in accordance with the SEARs, Management Zone 3 – Freshwater Wetlands and Management Zone 4 – Swamp Oak will be managed as the riparian corridor associated with Cookson's Creek within Anglicare lands. Management Zone 3 extends 10m either side of Cookson's Creek, while Management Zone 4 extends a further 10m either side of the waterway from the outer boundary of Management Zone 3. Therefore, a total riparian buffer</p>

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		<p>of at least 20m either side of Cookson's Creek has been allowed for under the proposed development, which is twice the buffer distance required for a Category 1 stream.</p> <p>Hence, it is considered the substantial riparian buffers are more than adequate given they are double the required buffer distance for Cookson's Creek.</p>
PS 3	The boardwalk across Cookson's Creek will create and adversely impact further on flora, fauna and biodiversity.	<p>The original Concept Plan approved a crossing across Cooksons Creek as a weir with an associated pond. The current proposed design has modified this to be a boardwalk and bio-retention basin. This change represents a reduction in the impact area of this feature from the original approved Concept Plan, reducing the impact footprint within the E2 zone from 1800m² to 1600m². The removal of the weir also reduces the extent of 'hardstand' areas and allows for a greater level of revegetation of wetland vegetation within Cooksons Creek.</p> <p>Boardwalks allow for access to wetland areas with minimal disturbance to the wetland habitat, thus enabling recreational activities such as birdwatching and viewing points for public education purposes. This represents a significant improvement in conditions for biodiversity compared to construction of a weir.</p> <p>It should also be noted that Cooksons Creek is currently heavily infested with Crofton weed and currently has very limited habitat value for native flora and fauna. The proposed modification also includes a commitment to rehabilitate and revegetate the E2 zoned land, including Cooksons Creek, thus improving conditions for native flora and fauna in the long term.</p>
PS 4	The townhouse development diminishes the important habitat for many Australian birds that use the bushes and shrubs at the proposed townhouse site as habitat. This will reduce the scenic and recreational value of one of the most beautiful regions in Wollongong, and damage the tourist	<p>The site is currently not managed and the majority of the vegetation on the site is degraded through the spread of exotic weeds, including significant environmental weeds such as Lantana and Crofton Weed. These degraded areas, where parts of the townhouse development are located, provide very limited, marginal habitat for native birds. Parts of the townhouse development will also be sited in previously developed areas which are currently dilapidated and vandalised and therefore have limited to no scenic, recreational or biodiversity value.</p>

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	value of Sandon Point and Bulli Point.	<p>The best quality habitat for native birds within the site, namely the Turpentine Forest will be retained and actively managed to enhance its habitat value for native species. Furthermore, the degraded areas of Cooksons Creek will also be rehabilitated and revegetated to improve habitat values for native species.</p> <p>The managed areas of the Turpentine Forest and Cooksons Creek will contain designated access paths and boardwalks for the public. These pathways and boardwalks will enable recreational activities such as birdwatching and viewing points for public education purposes in areas where currently no legal access exists thus improving the scenic and recreational value of the area. Therefore the proposed development is not considered to damage the tourist value of Sandon Point and Bulli Point.</p>
PS 5	I object to the proposed housing blocks of A,B,C,D,E,F and G as they are situated far too close to sensitive areas, such as the Heritage listed Turpentine remnant forest and the wetland area.	<p>The Turpentine Forest and wetland area, the wetland area in particular, show signs of degradation such as significant weed infestation/invasion from historic and current land uses and lack of management.</p> <p>Although the proposed development will result in construction of houses in the vicinity of the Turpentine Forest and Wetland, appropriate buffers will be maintained.</p> <p>Furthermore, the active management of the Turpentine Forest and wetland as part of the proposed development will significantly improve the conditions of the forest and wetland via weed management and revegetation thus improving biodiversity values in the long-term.</p>
PS 6	By clearing shrubby understorey to eliminate bush fire risk, Anglicare will pose a direct threat to the heritage listed Turpentine Forest.	<p>The defensible space for bushfire control is located within the R2 zoned development area.</p> <p>The majority of the shrubby understorey within the site comprises a mix of exotic species, including significant noxious weeds such as Lantana, and colonising Acacia species.</p> <p>Although Acacias are native, they are not a species characteristic of the Turpentine Forest vegetation community. The species is a heavy invader following clearing, and the dense growth of the Acacia may in fact be preventing the natural regeneration of the Turpentine Forest community. Thus, clearing of the</p>

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		<p>shrubby understorey does not pose a threat a direct threat to the Turpentine Forest as this shrubby understorey is not a naturally occurring species within the Turpentine Forest vegetation community.</p> <p>Furthermore, although some of the more degraded areas of regrowth Turpentine Forest will be removed under the proposed development, the good quality areas of the Turpentine forest, which is listed as Item of Natural Heritage Significance in the Wollongong Local Environmental Plan 1990, will be retained in perpetuity and the biodiversity value of it will be greatly enhanced by the active management of the invasive weeds that are presently degrading the site.</p>

A.1 References

Botanic Gardens Trust (2019). "PlantNET - Typha orientalis." Retrieved 2013, from <http://plantnet.rbgsyd.nsw.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=sp&name=Typha~orientalis>.

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