

Appendix 5 – Flora & Fauna Detail – Mundamia – Twynam

Flora & Fauna and Biodiversity

General Comments

Council's threatened Species office (TSO) has provided the following comments and the Department is requested to request additional information from the applicant to address these matters.

As submitted the Environmental Assessment for *Twynam Mundamia Pty Ltd* George Evans Rd Mundamia, does not meet the DGR's for Flora and Fauna.

Although the development is located in the most disturbed and cleared areas within the site, the extent of impacts on the threatened species known to occur within areas directly impacted would be unknown if the proposal was to proceed without further assessment in accordance with the required assessment process and recommendations below.

The current proposed offset ratio is considered unlikely to meet the "improve or maintain test" (DGR 9.2). Offsets must be re addressed in consideration of the comments below including the likely impacts to hollow dependant threatened fauna, Swamp Sclerophyll Forest on Coastal Floodplains EEC and the Nowra Heath Myrtle within the proposed areas of direct and indirect impacts (including APZ).

The SLR Assessment has not defined the extent of threatened species populations and endangered ecological communities at the site and has not quantified the impacts to these populations that will occur as a result of the development.

The assessment assumes habitat features exist in surrounding areas. Habitats are likely to exist outside the site, however the quality, condition and conservation of these habitats and land tenure is undescribed. The extent and importance of the threatened species habitat impacted by the development and the extent of this habitat within conserved areas has not been quantified. The assessment has not quantified the loss of habitat resources for any of the threatened species likely to be present on the site. The assessment has not taken into consideration the approved recovery plan for large forest owls (DEC 2006).

The SLR assessment claims that the vegetation on the site is unlikely to provide a significant portion of habitat within the home range of the threatened species likely to occur on the site however, no reference is made to the size of each species home range, or what proportions of their home range are used for foraging, roosting etc.

SLR claims that although threatened species have been recorded on site the site is not likely to provide significant or special value for any fauna species. This

statement has not been adequately justified by the survey effort or assessment of impacts.

The assessment does not provide data relevant to the utilisation and value of the hollow-bearing trees to the threatened microbat species on the site meaning the nature of the habitat to be removed is unknown. It is highly likely that there are threatened microbat roosts on the property and there is potential for maternity roosts of some species to occur on the site.

Disturbance of temporary roosts such as bachelor roosts and wintering roosts or disturbance of maternity colonies during spring and summer breeding and raising of young can result in a significant impact on regional populations (DEC 2004).

Recommendations

- 1) Further targeted survey for *P. vernalis* (Spring tiny greenhood) is required to discount its potential to occur within areas of impacts or clarification of survey effort that demonstrates adequate survey of all potential habitats has occurred. (see detailed comments below)
- 2) Amended assessment of impacts to the Swamp Sclerophyll Forest on Coastal Floodplains EEC that occurs within areas mapped by BES 2004 and SLR 2008 as Paperbark Closed Forest and amend mapping to demonstrate the protection of this EEC via adequate buffers
- 3) Further information to justify the conclusion of 'no significant impact' on threatened biota which should include
 - an assessment of the extent and importance of the threatened species habitat to be lost against the specific habitat requirements of each threatened species on the subject site including
 - o The extent of loss of hollow bearing trees utilised for breeding, roosting or denning by hollow dependant threatened fauna known to occur on the site including: the Powerful Owl, Gang-gang Cockatoo, Glossy Black-cockatoo, Yellow-bellied Glider, and microchiropteran bats
 - o the extent of loss of foraging resources and impact this may have on the above species
 - assessment of indirect impacts on the threatened species and EEC's within all areas impacted including
 - o Change in vegetation floristics and structure from edge effects
 - o Altered hydrology regimes including increased run-off, Soil erosion and pollution-potential impacts on EEC
 - o Disturbance to feeding, nesting or breeding of species including the Powerful Owl
 - o Trampling and other impacts due to increased use by humans
 - o Habitat fragmentation and disruption of wildlife movement corridors
 - o altered light and noise regimes
 - o likely contribution of the action proposed to the threatening processes already acting on populations of threatened species or populations in the locality

- an assessment of the distribution and condition of similar habitats in the region and the extent of this habitat within conserved areas outside the subject site
- 4) Further information on the mitigation measures proposed that demonstrates their proven effectiveness and successful implementation elsewhere in mitigating impacts on the threatened species that will be impacted by the proposal
 - 5) In the absence of the above, Offsets must be re addressed in consideration of the comments below including the likely impacts to hollow dependant threatened fauna, Spring tiny greenhood, Swamp Sclerophyll Forest on Coastal Floodplains EEC and the Nowra Heath Myrtle within the proposed areas of direct and indirect impacts (including APZ). Current proposed offsets do not meet improve or maintain

TSO Review against DGR's:

The table identifies the required DGRs and an assessment of adequacy.

DGR Flora and Fauna	Summary of the Environmental Assessment's performance against the DGR
9.Prepare a Flora and Fauna Assessment Report in accordance with the <i>Draft Guidelines for Threatened Species Assessment (DEC, DPI 2005), Threatened Biodiversity Survey and Assessment Guidelines Working Draft(DEC 2004) and the Threatened Species Assessment Guidelines; the Assessment of Significance (DECC 2007).</i> Address potential impacts of the development on the flora and fauna of the site and setting in the landscape, particularly impacts on any threatened	Some inadequacies are apparent in consideration of the DECC guidelines: <u>Survey for Spring tiny Greenhood (<i>S.vernalis</i>) critically endangered</u> SLR claim surveys for <i>S.vernalis</i> were undertaken by SCC and SLR in 2010 and 2011. SCC advise that SCC survey of the site was not adequate to discount the potential for the species to occur within areas of suitable habitat (areas mapped as kunzea shrubland). Confirmation of areas surveyed including mapped transects by SLR is required. <u>Assessment of Swamp Sclerophyll Forest on Coastal Floodplains EEC</u> Insufficient assessment of this vegetation community by SLR. This community occurs along the creek /drainage line (mapped by BES 2004, Appendix B, Figure 4 and SLR 2008, Figure 7 as paperbark closed forest) and is within areas directly impacted by the proposed development. An assessment of significance is required for this EEC to demonstrate compliance with this DGR. Ideally this community should be retained within a riparian zoned and appropriately buffered from the development. The assessment must comply with the Threatened Species Assessment Guidelines; the Assessment of Significance (DECC 2005) Insufficient information has been provided to evaluate the

species, population or endangered ecological communities (EEC's) and/or critical habitat, and any relevant recovery plan, with particular regard for relevant EEC's or threatened species, where known (bearing in mind DECC's letter dated 30 September 2008, attached particularly its comments in relation to Attachment A and the proposed development envelope) Surveys should target the <i>Triplarina nowraensis</i> species and the assessment should demonstrate that the proposal will have minimal impact on the species. Provide measures for the conservation of flora and fauna, habitats and communities where relevant, including the provision of adequate vegetated buffers, particularly on the eastern side, bordering the Flat Rock Creek Gully.	full extent of impacts on the threatened species known to occur at the site Section 8.3 p89 (Impact analysis) demonstrates an Inadequate assessment of impacts with the following statements; • The development will involve the loss of 30-40 hollow bearing trees of various sizes, 'most' of the HBT's are of moderate size at best and there are 'very few' large tree hollows which will require removal • a 'Small proportion' of the Nowra Heath-Myrtle population and • a 'number ' of Glossy Black-cockatoo feed trees This provides a lack of quantitative information to enable an informed evaluation of impacts. SLR do not provide an assessment of impacts in accordance with the specified guidelines for Threatened Species Assessment. A revised assessment of impacts is required which must include a 7 part test on the threatened species /EEC likely to be present within areas impacted by the proposal. <u>Impacts to threatened Hollow dependant fauna</u> 165 hollows were recorded on the site within 60 hollow bearing trees. This indicates there are trees with multiple hollows. The Assessment states that 39 hollow bearing trees will be removed. Given the hollow dependant threatened fauna that have been recorded on the site and the time lapsed (5 years) since targeted survey of hollows, further clarification on the actual number of hollows to be removed and their relevance to the threatened hollow dependant fauna that have been recorded on the site is required to evaluate the assessment of impacts. Further information on the proposed mitigation measures for hollow dependant fauna is required that demonstrates their proven effectiveness and successful implementation elsewhere in mitigating impacts on the threatened species that will be impacted by the proposal. Recovery plans for threatened species have not addressed Step 5 of the <i>Part 3A Threatened Species Assessment Guidelines</i> (2005) • <i>whether or not the proposal, including actions to avoid or mitigate impacts or compensate to prevent</i>
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	<i>unavoidable impacts will maintain or improve biodiversity values.</i> <i>whether or not the proposal is likely to reduce the long-term viability of a local population of the species, population or ecological community.</i> <i>whether or not the proposal is likely to accelerate the extinction of the species, population or ecological community or place it at risk of extinction.</i> Insufficient information has been submitted to determine the above. <u>Bushfire protection (APZs)</u> APZ's in the proposed conservation area pose a significant conflict to conservation of TS habitats. The concept of enhancing Nowra Heath Myrtle habitat in an APZ is not considered to be achievable or appropriate as management of the APZ will require removal of understorey vegetation
9.2 Offsets: Any native vegetation proposed to be removed within the areas identified by DECC's submission dated 30 September 2008 needs to be offset in accordance with the principles maintain or improve environmental outcomes in DECC 2005 draft guidelines	The SLR Assessment does address the maintain or improve biodiversity principle for threatened species however does not sufficiently demonstrate there would be no net impact on threatened species or native vegetation due to an insufficient assessment of impacts (DGR 9.1 not adequately addressed) The SLR Assessment does not demonstrate that the 'Conserve biological diversity and promote ecologically sustainable development' outcome has been adequately addressed. This will hinge on an amended Assessment of Significance that provides further quantitative information on the significance of the loss of hollow bearing tree habitat resources, the impact to Swamp Sclerophyll Forest EEC and measures to ensure protection of Nowra Heath Myrtle and threatened species habitats in the proposed conservation zones (i.e- not clearing for APZ)
9.4 Outline measures for the conservation of existing wildlife corridor values and /or connective importance of any vegetation on the subject land	Not adequately addressed by assessment of impacts
9.5 Address impacts on migratory species listed under	Not adequately addressed by survey or assessment of impacts

Section 20 and 20A and species listed under Section 18 and 18A of the EPBC Act	
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References:

Churchill, S 2008, Australian Bats, Jacana Books, Crows Nest, NSW.

DEC 2004 Natural Resource Management Advisory Series Note 7, Bat roosts.

DEC, DPI 2005 Draft Guidelines for Threatened Species Assessment.

Law, B and Anderson, J 2000, "roost preferences and foraging ranges of the eastern forest bat Vespadelus pumilus under two disturbance histories in northern New South Wales, Australia", Austral Ecology, vol. 25, pp. 352-367.