



Our Ref: DOC19/666546
Your Ref: MP 09_0166 MOD 3

Director Regional Assessments
Planning and Assessment, Department of Planning, Industry and Environment
GPO Box 39
Sydney NSW 2001

Attention: Ms Emma Butcher, Planning Officer

Dear Mr Witherdin

Subject: Response to Submissions including an updated BDAR for the Altitude Aspire Residential Subdivision, Terranora (MP09_0166 MOD 3)

Thank you for your email dated 8 May 2019 about the Updated Response to Submissions for the Altitude Aspire Residential Subdivision (MP 09_0166 MOD 3) seeking comments from the Biodiversity and Conservation Division of the NSW Department of Planning, Industry and Environment. I appreciate the opportunity to provide input.

The Biodiversity and Conservation Division (BCD) was formerly part of the Office of Environment and Heritage (OEH), but now forms part of the new Environment, Energy and Science Group in the Department of Planning, Industry and Environment (see <https://www.dpie.nsw.gov.au>).

We have reviewed the revised Biodiversity Development Assessment Report (BDAR) and have identified several issues that are discussed in detail in **Attachment 1** to this letter. Additional information has indicated that there are more than four 'stems' of the threatened flora species *Macadamia tetraphylla* in the impact area. Given the different results from past surveys for *M. tetraphylla* and the possibility that the vegetation community on the eastern boundary may also contain *M. integrifolia/tetraphylla* hybrids, further study should be undertaken to determine the precise number of each *Macadamia* species present in the impact area. Also, the BCD does not support the proposed offset arrangements for *M. tetraphylla* through the translocation plan. Either the loss of these threatened species needs to be avoided or appropriately offset.

The BCD recommends:

1. a further survey be undertaken to determine the precise numbers of each *Macadamia* species to be impacted by the proposal and that voucher specimens be sent to the NSW Herbarium for a DNA analysis to confirm whether they are *M. tetraphylla*, *M. integrifolia* (as a wild population) or a hybrid.

2. Following the results of the above investigation, consideration should be given to how the impacts can be avoided, mitigated and offset.
3. The results of this further survey and the associated assessment should be provided to the BCD for further comment.
4. Any losses of *M. tetraphylla* must be fully offset.
5. If a translocation plan is proposed, in addition to required appropriate offsets, it is recommended that the draft translocation plan:
 - be revised to consider the former OEH's Translocation Operational Policy;
 - include clear responsibilities for monitoring, reporting and protection mechanisms for the translocated material
 - be amended to delete references to sourcing plant material from nearby populations of *M. tetraphylla* as this is not supported by the BCD
 - be referred to the BCD for comment prior to its approval.
6. Any conditions of consent must include a requirement to purchase and retire credits for the following species as calculated by the BAM:
 - Eastern pygmy-possum (*Cercartetus nanus*)
 - Three-toed snake-tooth skink (*Coeranoscincus reticulatus*)
 - Coxen's fig-parrot (*Cyclopsitta diophthalma coxeni*)
 - Pale-headed snake (*Hoplocephalus bitorquatus*)
 - Green-thighed frog (*Litoria brevipalmata*)
 - Rough-shelled bush-nut (*Macadamia tetraphylla*)
 - Slender marsdenia (*Marsdenia longiloba*)
 - Southern pink underwing moth (*Phyllodes imperialis*) (southern subspecies)
 - Common Planigale (*Planigale maculata*).

The BCD can provide further advice on the wording of relevant consent conditions on request.

We also advise that the proponent should consider referring the proposal to the Commonwealth Department of the Environment and Energy (DEE) as a possible controlled action for impacts on *Macadamia tetraphylla* and possibly *M. tetraphylla*/ *M. integrifolia* hybrids once the above additional survey work has been completed and the genetic results have been obtained.

If you have any further questions about this issue, Ms Rachel Lonie, Senior Conservation Planning Officer, Biodiversity and Conservation, can be contacted on 6650 7130 or at rachel.lonie@environment.nsw.gov.au.

Yours sincerely

 3 September 2019

DIMITRI YOUNG
Senior Team Leader Planning, North East Branch
Biodiversity and Conservation

Attachment 1: Detailed Biodiversity and Conservation Comments - Updated Response to Submissions Altitude Aspire Residential Subdivision (MP 09_0166 MOD 3)

The NSW Department of Planning, Industry and Environment's Biodiversity and Conservation Division (BCD) has reviewed the following documents:

- Cover letter dated 24th July 2019 Ref: AM/N09031/Lw2 (JWA Pty Ltd)
- Amended Biodiversity Development Assessment Report (BDAR) Lot 325 DP 1238182 and Part Lot 1 DP 175234 Altitude Aspire, Terranora July 2019 (JWA Pty Ltd)
- Revised *Macadamia tetraphylla* Translocation Plan (MTTP) Altitude Aspire Terranora, NSW July 2019 (JWA Pty Ltd).

Our detailed comments on this proposal are provided below.

1. Vegetation Communities

1.1 Vegetation Community 1

The development involves clearing of vegetation mapped as Vegetation Community 1, occurring both along the eastern boundary and in the north west corner of the development footprint as described in the BDAR (Figure 1). Both areas are described as being a row of predominantly Camphor laurel trees.

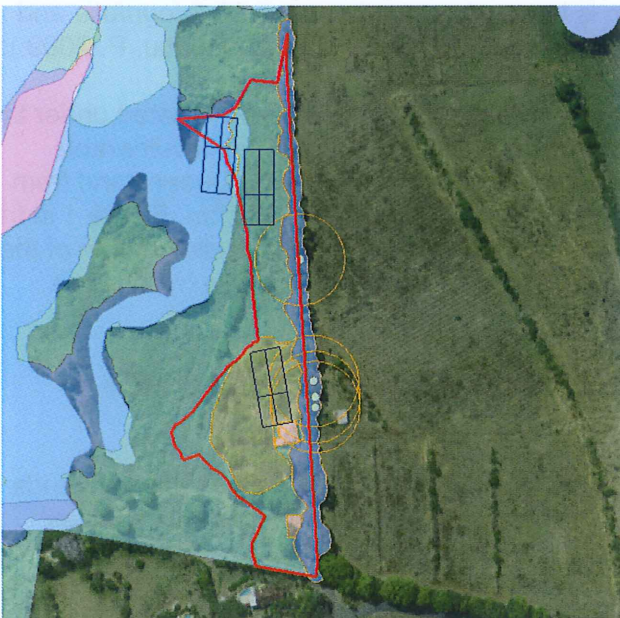


Figure 1. BDAR development footprint

Vegetation Community 1 is identified as a very highly degraded/modified form of PCT 1302 White Booyong – Fig subtropical rainforest of the NSW North Coast Bioregion. This is recognised as the Lowland Rainforest in the NSW North Coast and Sydney Basin Bioregions endangered ecological community.

One survey plot was undertaken for this community in accordance with the Biodiversity Assessment Method (BAM) and a vegetation integrity score of 13.8 was calculated. Under the BAM Paragraph 3.1.1.3 a score of less than 15 results in native vegetation not being required to be considered beyond Section 5.4 and an assessment of threatened species habitat according to Section 6.2 and Paragraph 6.2.1.4 not being required.

1.2 Vegetation Community 5

Vegetation Community 5 is described as Substantially cleared land / pasture with scattered exotic regrowth. We note the revised BDAR now includes vegetation surveys for Vegetation Community 5a

and 5b. Vegetation integrity scores of 0.5 and 1 respectively have been calculated. Therefore, under the BAM an assessment of these areas is not required beyond Section 5.4.

Despite addressing this issue that we had raised, the assessor has again incorrectly asserted that a survey was not actually required for this area under the BAM.

We advise that, although Section 5.1.1.5 of the BAM states that areas that are not native vegetation (i.e. land not included in native vegetation extent) do not require further assessment, the earlier steps in the BAM must be followed to determine that areas are not native vegetation. Accordingly, an assessor must follow the steps in Stage 1 Biodiversity Assessment of the BAM before they can determine that no further assessment is required.

2. *Macadamia tetraphylla*

2.1 Impacts on *Macadamia tetraphylla*

The site was inspected by a BCD officer on 13 August 2019 and more than four (4) *Macadamia tetraphylla* were observed ranging in size in Vegetation Community 1 on the eastern boundary of the site as identified in the revised BDAR. *Macadamia integrifolia* plants were also observed, but this site inspection was brief, and it was not possible to undertake an adequate survey in the time available.

A subsequent site inspection undertaken by a Tweed Shire Council environment officer on 27 August 2019 found five (5) *Macadamia tetraphylla* plants in this area (pers. com. M Hopkins, Tweed Shire Council). These may also be hybrids as hybridization is known to occur between *M. integrifolia* and *M. tetraphylla* in areas where their ranges overlap (Costello, G., Gregory, M. and Donatiu, P. 2009.).

Although not listed as a threatened plant in NSW, *M. integrifolia* growing in the wild is listed under the *Commonwealth Environmental Protection and Biodiversity Act 1999* (EPBC Act) as a vulnerable species and is known to occur along the foothills and coastal ranges of southeast Queensland from the NSW border to Mt Bauple near Maryborough, a distance of approximately 300 km. Figure 1 in the Southern Macadamia Species Recovery Plan (the Recovery Plan) titled 'Indicative distribution of the four southern species of macadamia in Australia' indicates *M. integrifolia/tetraphylla* hybrids are known from northern NSW.

The Recovery Plan states that habitat critical to the survival of southern macadamia species includes:

- All areas currently occupied by each species
- All areas currently occupied by *M. integrifolia/ternifolia* and *M. integrifolia/tetraphylla* hybrids
- Areas of native vegetation which provide linkages between southern macadamia species' populations.

In NSW, *M. tetraphylla* occurs in several Endangered Ecological Communities, including lowland rainforest in the NSW North Coast and Sydney Basin Bioregions, littoral rainforest in the NSW North Coast, Sydney Basin and South East Corner Bioregions, and lowland rainforest on floodplain in the NSW North Coast Bioregion.

Given the different results from past surveys for *M. tetraphylla* and the possibility that the vegetation community on the eastern boundary may also contain *M. integrifolia/tetraphylla* hybrids a further study should be undertaken to determine the precise numbers of each Macadamia species to be impacted by the proposal and that voucher specimens be sent to the NSW Herbarium for a DNA analysis to confirm whether they are *M. tetraphylla*, *M. integrifolia* (as a wild population) or a hybrid. The results of this further survey should be provided to the BCD for further comment.

2.2 Offsetting the loss of *Macadamia tetraphylla* and the *M. tetraphylla* Translocation Plan (MTTP)

JWA Pty Ltd have included the following comment in their cover letter under TSC Issue/Comment 4:

"Translocation of the affected individual Macadamia tetraphylla may still be an appropriate approach to minimise impact on the threatened species, and provide a better biodiversity outcome, while also potentially meeting requirements to avoid and/or minimise impact."

In response to these comments, the consultants state Newland Developers no longer propose to satisfy the *Macadamia tetraphylla* offset credit obligations through payment to the Biodiversity Conservation Trust and have reverted to the original proposal to implement a translocation plan.

The advice quoted above was provided by the Tweed Shire Council and not the former OEH (noting the previous responses on this matter dated 30/04/2018, 24/08/2018 and 31/05/2019). The BCD does not consider translocation to be an appropriate approach to avoiding, minimising or offsetting the impacts on this threatened species. Translocated individuals are to be treated as a loss and offsets provided.

The former OEH *Translocation Operational Policy* (<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/translocation-operational-policy-190162.pdf>) contains the following advice:

"Consent authorities are strongly advised that translocation is generally not an appropriate measure to mitigate the impacts of a development and may do more harm than good where impacts to the recipient site(s)/ecosystem(s) are not appropriately assessed and addressed."

The MTTP proposes moving four (4) 'stems' of *M. tetraphylla* to a nearby receiving area. The MTTP does not identify the sizes of the *M. tetraphylla* trees /saplings/ or seedlings. It states in the event that translocation of one or more of the *M. tetraphylla* is deemed to have a low chance of success (i.e. <50%) by either the horticulturalist or the arborist the plants will not be translocated, and additional contingency measures will be completed instead.

The contingency measures involve producing an additional 20-24 plants from cuttings and/or seed taken from the plants to be translocated (if available) or a population near the subject site. If suitable material cannot be sourced from the plants to be translocated, or from nearby populations, plants may be sourced from nurseries that can prove local provenance. Upon completion of the translocation project, a total of at least twelve (12) individuals will be established in the translocation area. The revised BDAR does not provide any details for the long-term security of this receiving area but it is understood it is intended to be dedicated to the council. It is not specified who will commission the monitoring report and who will be responsible for its implementation.

As the MTTP confirms, little research has been completed on the breeding system or population biology of *M. tetraphylla* with the exception of Pisanu (2001). A carefully designed translocation plan may be considered where it is integrated with other conservation actions as an additional measure to assist in minimising biodiversity losses. Such a plan could assist in providing more information about the species and its conservation. However, this would not be acceptable as an offset.

If the removal of the plants cannot be avoided, then this loss must be offset. For this reason, we previously recommended either an assessment be done using the Framework for Biodiversity Assessment or the Biodiversity Assessment Method that could calculate required offsets. The consultant has used the BAM and calculated that the loss of 4 'stems' of *Macadamia tetraphylla* from the impact site would generate an offset obligation of eight (8) species credits in accordance with the Biodiversity Offset Scheme (BOS).

As the assessor's response states, under the BOS proponents have two primary ways that they can satisfy an offset obligation:

1. identify and purchase the required 'like for like' credits in the market and then retire those credits; or
2. use the Offsets Payment Calculator to determine the cost of the credit obligation and transfer this amount to the Biodiversity Conservation Fund. The Biodiversity Conservation Trust is then responsible for identifying and securing the credit obligation.

These remain the only acceptable strategies to offset the loss of the threatened *Macadamia* plants. If a translocation plan is included in a condition of consent, in addition to required appropriate offsets, then that the draft translocation plan should:

- be revised to consider the former OEH's Translocation Operational Policy
- include clear responsibilities for monitoring, reporting and management and includes protection and adaptive management mechanisms for the translocated material
- be amended to delete references to sourcing plant material from nearby populations of *M. tetraphylla* as this is not be supported by the BCD
- be referred to the BCD for comment prior to its approval.

2.3 Referral to the Department of the Environment and Energy

In response to the recommendation regarding referral to the Commonwealth Department of the Environment and Energy (DEE) as a possible controlled action for impacts on *Macadamia tetraphylla*, the consultant concluded that *"There are no additional impacts on this species as a result of the small area of additional vegetation clearing and therefore it is not considered necessary to refer the proposed action to the Commonwealth for assessment under the EPBC Act."*

As the DEE website states:

"Under the EPBC Act any action which could have a significant impact on a matter of National Environmental Significance, including the listed threatened macadamia species, must be referred to the Minister for the Environment, Heritage and the Arts, for a decision as to whether referral and assessment is required. This is separate from any other development approval process requirements."

The Recovery Plan states that actions which could have a significant impact on the southern macadamia species include those which could result in any of the following within habitat critical to survival of the species include removal or destruction of *Macadamia integrifolia*, *M. janseni*, *M. ternifolia* or *M. tetraphylla* plants, or of viable plant material (fruits, seeds, cuttings, seedlings). Hardner et al. (2009) conclude that small populations in degraded habitats that are at risk of being overlooked should not be ignored but should be a focus for restoration efforts as they are a valuable asset for the conservation of *M. tetraphylla*

It is the proponent's responsibility to consider whether the works or activity could be a controlled action under the EPBC Act. However, given the number of *M. tetraphylla* recorded (and the additional observed one) and the presence of *M. integrifolia* that could be a wild population or hybrids this stand of vegetation, the proponent should consider referring the development matter to the Commonwealth Department of Environment and Energy for impacts on *Macadamia tetraphylla* as a possible controlled action.

3. Threatened Species Offsets

Our previous advice stated that certain species should be retained as candidate species credit species and that the assessor should assume presence, or undertake fauna and flora surveys at the appropriate time, or provide an expert report, unless further justification is provided under Step 3 of the BAM.

We accept the assessor's advice that the habitat in the impact area for Southern Myotis (*Myotis macropus*), Mitchell's rainforest snail (*Thersites mitchellae*) and Scented acronychia (*Acronychia littoralis*) is highly unsuitable for these candidate species. Also, the BAM calculation has resulted in

Hairy jointgrass (*Arthraxon hispidus*) being removed as a candidate species. However, further justification was not provided by the assessor for removing the other candidate species, therefore impacts on the following threatened species will still require offsets:

- Eastern pygmy-possum (*Cercartetus nanus*)
- Three-toed snake-tooth skink (*Coeranoscincus reticulatus*)
- Coxen's fig-parrot (*Cyclopsitta diophthalma coxeni*)
- Pale-headed snake (*Hoplocephalus bitorquatus*)
- Green-thighed frog (*Litoria brevipalmata*)
- Rough-shelled bush-nut (*Macadamia tetraphylla*)
- Slender marsdenia (*Marsdenia longiloba*)
- Southern pink underwing moth (*Phyllodes imperialis*) (southern subspecies)
- Common Planigale (*Planigale maculata*).

A requirement to purchase and retire these credits must be included in any conditions of consent. The BCD can provide further advice on the wording of relevant consent conditions on request.

BCD Recommendations

The BCD recommends that:

1. a further survey be undertaken to determine the precise numbers of each *Macadamia* species to be impacted by the proposal and that voucher specimens be sent to the NSW Herbarium for a DNA analysis to confirm whether they are *M. tetraphylla*, *M. integrifolia* (as a wild population) or a hybrid.
2. Following the results of the above investigation, consideration should be given to how the impacts can be avoided, mitigated and offset.
3. The results of this further survey and the associated assessment should be provided to the BCD for further comment.
4. Any losses of *M. tetraphylla* must be fully offset.
5. If a translocation plan is proposed, in addition to required appropriate offsets, it is recommended that the draft translocation plan:
 - be revised to consider the former OEH Translocation Operational Policy
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 - be amended to delete references to sourcing plant material from nearby populations of *M. tetraphylla* as this is not supported by the BCD
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 - Common Planigale (*Planigale maculata*).

References

Costello, G., Gregory, M. and Donatiu, P. (2009) Southern Macadamia Species Recovery Plan. Report to Department of the Environment, Water, Heritage and the Arts, Canberra by Horticulture Australia Limited, Sydney)

Pisanu (2001) Reproduction in Wild Populations of the Threatened Tree *Macadamia tetraphylla*: Interpopulation Pollen Enriches Fecundity in a Declining Species.

Hardner C.M, Peace C, Lowe A.J, Neal J and Pisanu P. (2009) Genetic Resources and Domestication of Macadamia in Biotropica Horticultural Reviews 41(3):391 - 398 · May 2009 Volume 35 Edited by Jules Janick Copyright & 2009 John Wiley & Sons, Inc.