

To Deana Burn, and all others involved in the assessment of SSD-3846-Mod-1: The Sealark Development, at Culburra. Thank you for considering public submissions concerning state significant developments.

The biodiversity development assessment reports (BDAR's) lodged with this proposal are majorly non-compliant with their legislative requirements. There are numerous failures to meet the minimum requirements set out in the *Biodiversity Assessment Method Order 2020* (BAM).

These reports are cited as 'Eco Logical Australia 2025. West Culburra Mixed Use Development SSD Modification 1. Prepared for Sealark' (ELA 2025), and 'Eco Logical Australia 2025. West Culburra Mixed Use Development. Prepared for Sealark,' Referred to as ELA 2025 in text.

Of foundational relevance, is a series of non-compliances within ELA 2025 with subsections 4.3.3(2.(d)), 4.3.3(4.(b)), 4.3.4(1.) of the BAM. These issues relate to minimum surveying requirements.

Of further importance is a failure to input the required survey data into the DEECCW computer program; BAM-C.

The methodology which is legislatively prescribed within the BAM Chapter 4, is of particular influence to the reliability of the rest of the biodiversity assessment. Due to the key point at which the methodology was not followed, the non-compliances profoundly undermine the quality of the information produced throughout ELA 2025. This includes rendering incomplete, information which is necessary to be considered entire; regarding threatened species which potentially occur on-site, and key details involving impact avoidance, mitigation and offsetting.

Due to these non-compliances, and the consequent incompleteness of the biodiversity assessment as a whole, these BDARs are inadequate for the legislative purposes pursuant to the *Biodiversity Conservation Act 2016* s 6.7 & s 6.12.

In other words, the proponent has not supplied the appropriate documentation, (a valid BDAR), which is necessarily required for a lawful evaluation of this proposal's environmental impacts. In consequence, consent must be refused for this application.

I hope the information provided in the following pages will assist your assessment of these matters.

Kind Regards

Samuel Cooper

## The application of BAM chapter 4 (ecological surveying) was majorly non-compliant

In the “BDARs” associated with this proposal, (ELA 2025), a failure to adhere to the BAM commences from not adhering to the requirements of subsection 4.3.3 (2.) Given this, subsection 4.3.3 of the BAM is focused on in the greatest detail in my objection. The first page of this part of the BAM is included below, blue highlighting mine:

### 4.3.3 Assess vegetation integrity (vegetation condition)

In this section, ‘the map’ means the map of vegetation zones on the subject land prepared under Subsection 4.3.1.

1. Vegetation integrity is a metric-based assessment used to measure the condition of native vegetation against a benchmark, based on survey data collected by the assessor.
2. The assessor must survey each vegetation zone identified on the map to obtain a quantitative measure of the **composition, structure and function** attributes listed in Table 2 for PCTs classified as any of the following vegetation formations:
  - a. rainforests
  - b. wet sclerophyll forests
  - c. dry sclerophyll forests
  - d. forested wetlands
  - e. grassy woodlands
  - f. semi-arid woodlands
  - g. heathlands with trees: Wallum Sand Heaths (NSW031), Sydney Coastal Heaths (NSW032), Northern Montane Heaths (NSW033) and Sydney Montane Heaths (NSW034).
3. In addition to the attributes set out in Table 2, the assessor must also assess the presence of hollow bearing trees in each vegetation zone for PCTs classified in formations listed in Subsection 4.3.3(2.) above.
4. For PCTs classified under the following vegetation formations, the assessor must survey each vegetation zone identified on the map to obtain a quantitative measure of the **composition and structure** attributes and the functional attribute, high threat weed cover, listed in Table 2:
  - a. freshwater wetlands
  - b. saline wetlands
  - c. grasslands
  - d. alpine complex
  - e. arid shrublands
  - f. heathlands without trees: Southern Montane Heaths (NSW035), South Coast Heaths (NSW065) and Coastal Headland Heaths (NSW070).
5. The assessor must assess the composition, structure and relevant function attributes listed in Table 2 for each vegetation zone against the benchmark data for the relevant PCT. The assessor must use benchmark data:
  - a. from the BioNet Vegetation Classification, or
  - b. obtained from local reference sites as per Appendix A, or
  - c. from relevant published sources, including the Department’s website, as per Appendix A.

The map of vegetation zones relevant to this section of the BAM, prepared under section 4.3.1 by the assessors, is located in Figure 7. of ELA 2025 (p25, reproduced on the following page.)

In Figure 7, 8 vegetation zones from 5 plant community types (PCT’s) are identified as occurring on the subject land, and mapped in the form of 12 discontinuous polygons. The location of surveying plots is also displayed in Figure 7.

Vegetation zone 6 is identified on the map as two discontinuous light blue polygons. This vegetation zone is characterised as PCT 4028, Estaurine Swamp Oak Twig-rush Forest, which is a type of forested wetland. For this zone:

- Contrary to the requirements of subsection 4.3.3(2.(d)), no survey has occurred. As a result, no quantitative measure of the composition, structure and function has been undertaken
- Contrary to the requirements of subsection 4.3.3(3.), it appears that no assessment of hollow-bearing trees has been conducted
- Contrary to the requirements of subsection 4.3.3(5.), no assessment against the benchmark data for measures of composition, structure and function attributes has occurred
- Contrary to the requirements of subsections 4.3.4(1.), the required number of vegetation integrity (VI) survey plots have not been established. Due to no VI plots being established, none of the 31 surveying methodology requirements of subsections 4.3.4(1-20,22-32.) have been complied with.
- Contrary to the requirements of subsection 4.4, no vegetation integrity score has been determined.
- Of further consequence regarding subsection 4.4, the required survey data does not appear to have been input into the BAM-C. Based on the rest of the BDAR, it appears that no information relating the existence of PCT 4028 on the subject land has been processed through the BAM-C in general.

Vegetation zone 8 is identified on the map as a single dark blue polygon. This vegetation zone is characterised as PCT 4091, Grey Mangrove-River Mangrove Forest, which is a type of saline wetland. For this zone:

- Contrary to the requirements of subsection 4.3.3(4.(b)), no survey has occurred. As a result, no quantitative measure of the composition, structure or high threat weed cover has been undertaken
- Contrary to the requirements of subsection 4.3.3(5.), no assessment against the benchmark data for measures of composition or structure has occurred
- Contrary to the requirements of subsections 4.3.4(1.), the required number of vegetation integrity (VI) survey plots have not been established. Due to no VI plots being established, none of the 20 surveying methodology requirements of subsections 4.3.4(1-20.) have been complied with.
- Contrary to the requirements of subsection 4.4, no vegetation integrity score has been determined
- Of further consequence regarding subsection 4.4, the required survey data has not been input into the BAM-C. Based on the rest of the BDAR, it appears that no information relating to the existence of PCT 4091 on the subject land has been processed through the BAM-C in general.

An additional Chapter 4 non-compliance is also indicated. This is non-compliance with a requirement that all discontinuous polygons must contain atleast one VI plot (BAM 4.3.4(6.), (For clarification on this rule, see also: [Biodiversity Assessment Method Operational Manual – Stage 1](#), p20).

Discontinuous polygons which do not have any survey plot are apparent in Figure 7. for zones 6 and 8, as discussed above, but also for two polygons mapped as zone 1 (PCT 3273, South Coast Lowland Shrub-Grass Forest), and one polygon mapped as zone 7 (PCT 4051, South Coast Lowland Red-Gum Swamp Forest).

Given all of the above, a compliant BDAR would need to have established plots within the following 6 polygons (indicated by me using pink arrows) from Figure 7. (ELA 2025 p25), in order to meet the minimum survey requirements.

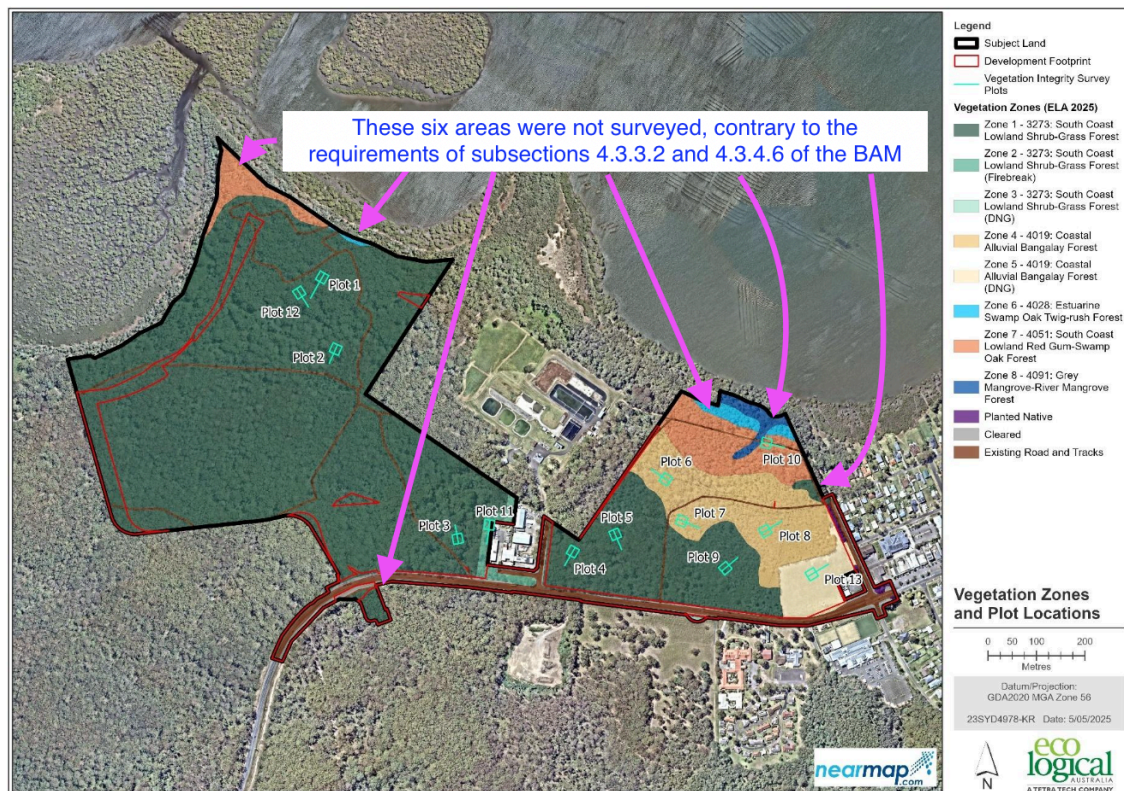


Figure 7: Vegetation Zones and Plots

Six areas not being surveyed, including two PCT's which have not been surveyed in any zone (and consequently not been flagged for the BAM-c calculations), represents major, systemic and repeated non-compliance with the clear requirements of the BAM.

There is no rule within the BAM which would prevent a compliant surveying effort: there is no maximum number of plots or rules which would prevent their establishment in compliant locations. The BAM appears to stress that its rules indicate a *minimum* surveying effort. ELA 2025 has not fulfilled this minimum requirement.

## **Why this matters: Non-compliances with Chapter 4 of the BAM deeply influence the subsequent assessment**

By failing to adequately comply with the requirements of Chapter 4. of the BAM, all subsequent chapters of the BAM are invalidated. This is due to the key nature of chapter 4. as a critical point in the assessment process - the field observations generated by surveying at this stage, create the data on which the rest of the analysis is based.

This is particularly the case because most of the biodiversity assessment (following chapter 4.) is done using a DEECCW online program (the BAM-c). It is a legislative requirement that accredited assessors upload the data generated from their surveys into the BAM-c, and a requirement that the resulting output is used for the remaining assessment.

The BAM-c generates numerous critical outputs. These include calculating the VI scores, identifying threatened species potentially on-site, determining impacts that need to be considered, and calculating offset requirements. Without compliantly generated data going into the BAM-c in line with subsection 4.4, none of the BAM-c outputs can be expected to adequately capture the anticipated impacts of the development.

The volume of errors which predictably result from a non-compliance with Chapter 4 is beyond my capacity to detail as a volunteer. To briefly summarise; due to non-compliances at this key point, all of the information which relied on outputs from the BAM-c is likely to be incomplete. This material forms the vast majority of the detail within a BDAR. The accuracy of these details is important to a decision maker, as they inform an exercise of planning powers.

### An example - threatened species likely to use the subject land

The BAM-c keeps an up to date list of all threatened species and their habitat requirements. Based on the habitat data uploaded by the assessor, the BAM-c indicates which threatened species are likely to occur on a development site.

In ELA 2025, the failure to correctly survey Mangrove Forest or Swamp-Oak Forest, consequently caused a failure to upload data about this habitat into the BAM-c. Amongst the numerous easily anticipated results of this, is that a number of threatened species, likely to occur on the subject land, have not been properly identified.

In the BDAR, 34 ecosystem credit species, and 44 candidate credit species are considered in table 19 (p46-53), and table 20 (p53-61). These lists are an output from the BAM-c, (an output based on the wrongful omission of data from two PCT's.).

To identify species which would have been considered if data from a compliant survey were input into the BAM-c, I ran a hypothetical case through the BAM-c myself. Where available, I used information given in ELA 2025 (such as the area (ha) of the PCT's), I used default community condition benchmarks in place of real VI plot data.



Doing this, I identified 11 ecosystem credit species and 13 candidate species credit species which were not listed in tables 19 and 20 of ELA 2025. These are shown in the table below:

Missing Candidate Species Credit Species	Missing Ecosystem Species Credit Species
<a href="#">Calidris alba</a> Sanderling (Breeding)	<a href="#">Calidris alba</a> Sanderling (Foraging)
<a href="#">Calidris canutus</a> Red Knot (Breeding)	<a href="#">Calidris canutus</a> Red Knot (Foraging)
<a href="#">Charadrius mongolus</a> Lesser Sand-plover (Breeding)	<a href="#">Charadrius mongolus</a> Lesser Sand-plover (Foraging)
<a href="#">Esacus magnirostris</a> Beach Stone-curlew (Breeding)	<a href="#">Esacus magnirostris</a> Beach Stone-curlew (Foraging)
<a href="#">Limosa lapponica baueri</a> Bar-tailed Godwit (baueri) (Breeding)	<a href="#">Limosa lapponica baueri</a> Bar-tailed Godwit (baueri) (Foraging)
<a href="#">Limosa limosa</a> Black-tailed Godwit (Breeding)	<a href="#">Limosa limosa</a> Black-tailed Godwit (Foraging)
<a href="#">Numenius madagascariensis</a> Eastern Curlew (Breeding)	<a href="#">Numenius madagascariensis</a> Eastern Curlew (Foraging)
<a href="#">Senecio spathulatus</a> Coast Groundsel	<a href="#">Pseudomys novaehollandiae</a> New Holland Mouse
<a href="#">Sternula albifrons</a> Little Tern (Breeding)	<a href="#">Sternula albifrons</a> Little Tern (Foraging)
<a href="#">Thinornis cucullatus cucullatus</a> Eastern Hooded Dotterel (Breeding)	<a href="#">Thinornis cucullatus cucullatus</a> Eastern Hooded Dotterel (Foraging)
<a href="#">Wilsonia backhousei</a> Narrow-leafed Wilsonia	<a href="#">Xenus cinereus</a> Terek Sandpiper (Foraging)
<a href="#">Wilsonia rotundifolia</a> Round-leafed Wilsonia	
<a href="#">Xenus cinereus</a> Terek Sandpiper (Breeding)	

As would be expected, many threatened species which occur in Mangrove and Swamp-Oak Forests, but not in Bangalay or Lowland Shrub-Grass Forests, have not been identified in the data output by the BAM-c for ELA 2025. Many of the species unique to the excluded PCT's are dual credit species, largely because so many of them rely closely on the excluded habitat for both foraging and breeding.

When comparing the threatened species listed in ELA 2025 tables 19 and 20, with the list which may have been generated based on compliant data, a difference of 32% of the ecosystem credit species, and about 30% of the candidate credit species, is apparent. This is a significant proportion.

A compliant assessment of the impacts to these missing species has not been provided for the decision maker to consider. This is a direct and predictable consequence of the non-compliant surveying choices employed in ELA 2025.

For reasons of expediency, and out of consideration to my my personal time (I am not paid to write this review/objection, nor am I a student), I am unable to detail further the numerous, directly consequential issues which stem from Chapter 4. non-compliances in ELA 2025. I trust that those involved in the decision making process will seek this information from someone suitably qualified (and suitably paid) to critically review the rest of ELA 2025, as part of the assessment process - no doubt such an individual will be able to detail the predictable influence these survey design choices have, including as this relates to detailing other impacts and offsets.

**Where exactly needs to be surveyed to meet the requirements of 4.3.3.2 and 4.3.4.6?**  
**The subject land needs to be surveyed.**

I expect that the assessors would argue that these areas do not need to be surveyed, as these areas are not within a direct development footprint. I would dispute the validity of this argument. The requirements clearly apply to the subject land, rather than a smaller portion of the area, (such as the direct footprint).

This is stated in the first sentence of the requirements for a plot based survey given in section 4.2.1 of the BAM:

#### **4.2.1 Perform a plot-based vegetation survey**

1. Using the information from Section 4.1, **the assessor must perform a plot-based vegetation survey of the subject land** to identify the most likely PCTs on the subject land (Box 1). The survey must be stratified and targeted to assess the expected environmental variation and address any areas with gaps in existing mapping and information.

This delineation of the area to be surveyed is reiterated at the start of subsection 4.3 of the BAM (4.3.1.1. (a) ), from p13 of the BAM:

### **4.3 Map vegetation zones and assess vegetation integrity (vegetation condition)**

#### **4.3.1 Map vegetation zones**

1. The assessor must:
  - a. use the PCT map from Section 4.2 to identify and map the area of each PCT into a vegetation zone **on the subject land**
  - b. delineate areas of each PCT that are in different broad condition states into separate vegetation zones. Disturbance to growth form groups for tree, shrub and ground cover or extent of exotics (or combinations of these) can be used to identify areas of similar condition.
2. A vegetation zone may have discontinuous (fragmented) patches of vegetation (Subsection 4.3.2(1.)), provided the vegetation within the discontinuous areas are the same PCT and in a similar condition state.

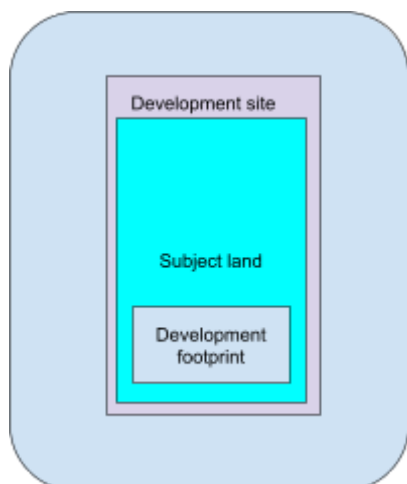
In Appendix K of the *Biodiversity Assessment Method Order 2020*, minimum requirements for a legally compliant BDAR are indicated in Table 24. This echoes the above statements that the surveying requirements apply to the subject land, and places this amongst the requirements for VI plots (subsection 4.3.4). Below is an excerpt of this table, from p118:



Report section	BAM ref.	Information	Maps & tables (in document)	Data (to be supplied)
Native vegetation	Chapter 4, Appendix A and Appendix H	<p><b>INFORMATION</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Identify native vegetation extent within the subject land, including cleared areas and evidence to support differences between mapped vegetation extent and aerial imagery (as described in BAM Section 4.1(1–3.) and Subsection 4.1.1)</li> <li><input type="checkbox"/> Provide justification for all parts of the subject land that do not contain native vegetation (as described in BAM Subsection 4.1.2)</li> <li><input type="checkbox"/> Review of existing information on native vegetation including references to previous vegetation maps of the subject land and assessment area (described in BAM Section 4.1(3.) and Subsection 4.1.1)</li> <li><input type="checkbox"/> Describe the systematic field-based floristic vegetation survey undertaken in accordance with BAM Section 4.2</li> <li><input type="checkbox"/> Where relevant, describe the use of more appropriate local data, provide reasons that support the use of more appropriate local data and include the written confirmation from the decision-maker that they support the use of more appropriate local data (as described in BAM Subsection 1.4.2 and Appendix A)</li> </ul> <p>For each PCT within the subject land, describe:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> vegetation class</li> <li><input type="checkbox"/> extent (ha) within subject land</li> <li><input type="checkbox"/> evidence used to identify a PCT including any analyses undertaken, references/sources, existing vegetation maps (BAM Section 4.2(1–3.))</li> <li><input type="checkbox"/> plant species relied upon for identification of the PCT and relative abundance of each species</li> <li><input type="checkbox"/> if relevant, TEC status including evidence used to determine vegetation is the TEC (BAM Subsection 4.2.2(1–2.))</li> <li><input type="checkbox"/> estimate of percent cleared value of PCT (BAM Subsection 4.2.1(5.))</li> </ul> <p>Describe the vegetation integrity assessment of the subject land, including:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> identification and mapping of vegetation zones (as described in BAM Subsection 4.3.1)</li> <li><input type="checkbox"/> assessment of patch size (as described in BAM Subsection 4.3.2)</li> <li><input type="checkbox"/> survey effort (i.e. number of vegetation integrity survey plots) as described in BAM Subsection 4.3.4(1–2.)</li> <li><input type="checkbox"/> use of relevant benchmark data from BioNet Vegetation Classification (as described in BAM Subsection 4.3.3(5.))</li> </ul> <p>Where use of more appropriate local benchmark data is proposed (as described in BAM Subsection 1.4.2, BAM Subsection 4.3.3(5.) and BAM Appendix A):</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> identify the PCT or vegetation class for which local benchmark data will be applied</li> <li><input type="checkbox"/> identify published sources of local benchmark data (if benchmarks obtained from published sources)</li> <li><input type="checkbox"/> describe methods of local benchmark data collection (if reference plots used to determine local benchmark data)</li> <li><input type="checkbox"/> provide justification for use of local data rather than BioNet Vegetation Classification benchmark values</li> <li><input type="checkbox"/> provide written confirmation from the decision-maker that they support the use of local benchmark data</li> </ul>		

### A clarification of the mapping concepts

The manner in which mapping concepts within the BAM relate to one another is slightly complicated, a detailed clarification may be beneficial. To assist an understanding, I have created a simple diagram:



In line with the definitions, the development footprint is included within the subject land, and both of these are within the development site. These relationships are nested and exclusive; the development footprint cannot be outside the subject land, which cannot be outside the development site.

Vegetation zones are delineated based on the on-ground condition of a plant-community within a development site. BAM surveying requirements are specified for vegetation zones within the subject land.

Relevant definitions for these mapping concepts, directly from the BAM glossary, are reproduced below:

**Development footprint:** the area of land that is directly impacted by a proposed development, including access roads and areas used to store construction materials. The term *development footprint* is also taken to include clearing footprint, except where the reference is to a small area development or a major project development.

**Development site:** an area of land that is subject to a proposed development under the EP&A Act. The term *development site* is also taken to include clearing site, except where the reference is to a small area development or a major project development.

**Subject land:** is land subject to a development, activity, clearing, biodiversity certification or a biodiversity stewardship proposal. It excludes the assessment area which surrounds the subject land (i.e. the area of land in the 1500 m buffer zone around the subject land or 500 m buffer zone for linear proposals). In the case of a biodiversity certification proposal, subject land includes the biodiversity certification assessment area.

**Vegetation zone:** a relatively homogeneous area of native vegetation on a development site, clearing site, land to be biodiversity certified or biodiversity stewardship site that is the same PCT and has the same broad condition state.

Of note: The relationships above are defined clearly, but distances between these areas can vary, and be effectively non-existent. These situations are common for very small or very large developments. For example, a knock-down-rebuild housing development typically clears all vegetation in the property boundary; in that case the footprint; subject land; and development site are effectively synonymous. For the proposals assessed in ELA 2025, the subject land and development site are effectively synonymous, but the development footprint is a distinct and smaller area within the subject land.

The non-compliances on which I base my main objection relate to particular survey requirements not being met for the *subject land* broadly. It appears that these requirements have instead been met only for the development footprint portion of the subject land.

As an aside; the assessors may hold an opinion regarding the informative value gained by surveying areas which are not within the direct footprint; “why tell the planning assessor measurements of bushland that isn’t being bulldozed?”. I hold a differing view: There are sound ecological reasons why the relevant impacts to biodiversity value are not constrained to the area being bulldozed - animals, floral genetic diversity, and some ktp’s, all move dynamically over a spatial area which is necessarily larger than the area of direct disturbance. I am convinced that this requirement of the BAM is metrologically correct.

Regardless, a scientifically contrarian opinion does not justify disregarding the legislative requirements of the BAM. If the assessors believe the surveying requirements are unjustified, the correct avenue to have that debate would be as part of the regular and on-going 5-yearly review process for the BAM. If a belief that only the subject land needs to be surveyed is held by the assessors, then it is inappropriate to alter the methodology based on this private opinion.

## ELA 2025 presents false and misleading definitions regarding the mapping concepts discussed above

ELA 2025 states, in Appendix A on p157, that their terminology is in accordance with the BAM. It is of serious importance that this be true - To make a correct assessment, a decision maker needs to trust that when an assessor uses a term in a BDAR, that term has the same meaning as it does in the BAM. In contrast to this expectation, definitions relevant to the surveying non-compliances discussed above appear to have been selectively tampered with.

ELA 2025 Appendix A definitions are almost all verbatim copies of the BAM glossary, however, this is not the case for terms required for correctly interpreting the surveying methodology. Excerpts demonstrating this, from pp158-160, are below, with red-underlining and annotations from me identifying the alterations. For additional ease of comparison, the original BAM glossary definitions of these terms are reproduced with fidelity earlier in this submission.

<b>Development footprint</b>	The area of land that is directly impacted on by a proposed development, including access roads, and areas used to store construction materials.
<b>Development footprint</b>	An area of land that is subject to a proposed development that is under the EP&A Act.  A clarifying detail relevant to major projects has been deleted from both of these definitions. The second definition, is the definition “development site” in the BAM, the word “site” has been deleted and replaced with the word “footprint”
<b>Subject land</b>	Is land to which the BAM is applied in Stage 1 to assess the biodiversity values of the land. It includes land that may be a development <u>footprint</u> , clearing site, proposed for biodiversity certification or land that is proposed for a biodiversity stewardship agreement. This meaning has been narrowed, and the word “footprint” has been inserted.
<b>Vegetation zone</b>	A relatively homogenous area of native vegetation on a development <u>footprint</u> , land to be biodiversity certified or a biodiversity stewardship site that is the same PCT and broad condition state. The word “site” has been deleted and replaced with the word “footprint”

Definitions directly related to the earlier discussed methodological non-compliances appear to have been selectively edited, by substituting the word “site” with the word “footprint”. This may prevent clear differentiation between a development footprint and a development site, with consequent obscuration of how the surveying methodology should be correctly applied.

In other words, meaningful distinction between the concepts “subject land,” “development footprint” and “development site” appears to have been deliberately removed, and this would serve to obscure those non-compliances.

This is not an issue of semantics contained merely within the glossaries, in other locations in the BDAR, instructions in the BAM which apply to subject land, have been selectively edited to narrow the meaning down to the development footprint. Of relevance to an example given earlier, this is the case for the application of BAM Chapter 5. a red-underline excerpt from ELA 2025 (p45) is immediately below:

## 5. Threatened species

### 5.1. Ecosystem credit species

Ecosystem credit species predicted to occur within the development footprint are generated by the BAMC following the input of VI data and the PCTs identified within Chapter 3. Ecosystem credit species predicted to occur at the development footprint, their associated habitat constraints, geographic limitations and sensitivity to gain class is included in Table 19. Table 19 also outlines the justification for inclusion or exclusion for each species.

### 5.2. Species credit species

#### 5.2.1. Identification of species credit species

Species credit species that require further assessment on the development footprint (i.e. candidate species), their associated habitat constraints, geographic limitations and sensitivity to gain class is included in Table 20.

Please consider in contrast the following related excerpts of the BAM:

## 5.1 Ecosystem credit species, species credit species and dual credit species

### 5.1.1 Species that can be predicted by habitat surrogates (ecosystem credit species)

1. Ecosystem credit species are threatened species whose occurrence can generally be predicted by vegetation surrogates and/or landscape features, or that have a low probability of detection using targeted surveys. The TBDC identifies the threatened species assessed for ecosystem credits. A targeted survey is not required to identify or confirm the presence of ecosystem credit species.
2. The assessor must identify the species assessed for ecosystem credits in conjunction with:
  - a. information about the site context of the subject land (Section 1)
  - b. information about PCTs and vegetation integrity attributes (Chapter 4)
  - c. data from the TBDC.
3. Based on this information, the threatened species that can be predicted by habitat surrogates and assessed as part of the ecosystem credits for a proposal are automatically populated in the BAM-C.
4. The condition of the threatened species' habitat assessed for ecosystem credits is measured using the vegetation integrity score for each vegetation zone (Appendix H).
5. Species that require ecosystem credits are assessed according to Section 5.2, Step 1 and Step 2 (Subsections 5.2.1 and 5.2.2).

### 5.1.2 Species that cannot be predicted by habitat surrogates (species credit species)

1. Species credit species are threatened species for which vegetation surrogates and/or landscape features cannot reliably predict the likelihood of their occurrence or components of their habitat. These species are identified in the TBDC. A targeted survey or an expert report is required to confirm the presence of these species on the subject land. Alternatively, for a development, activity, clearing or biodiversity certification proposal only, the proponent may elect to assume the species is present. (This option must not be applied to proposed biodiversity stewardship sites).

## 5.2 Assess habitat suitability for threatened species (ecosystem credit species and species credit species)

1. The assessor must use Subsections 5.2.1–5.2.6 to identify the habitat suitability for threatened species on the subject land.

### 5.2.1 Step 1: Identify threatened species for assessment

1. Step 1 identifies the threatened species that are likely to occur on or use the subject land and thereby predicts the species that require assessment. This step uses information from the TBDC (which is automatically populated in the BAM-C) and information collected from assessing the subject land in Chapters 3 and 4. The assessor can manually apply any relevant geographic limitations, which are based on information from the BioNet Atlas, and accessed through the Department's Threatened biodiversity profile search webpage (see Subsection 5.2.1(2.b.) below).
2. The assessor must use the following criteria to identify those threatened species that have or may have, suitable habitat on the subject land:
  - a. the distribution of the species includes the IBRA subregion within which the subject land is mostly located
  - b. the subject land is within any geographic limitations of the species distribution within the IBRA subregion. If no geographic limitations are listed for the species, then this step is not applicable
  - c. the species is associated with any of the PCTs occurring within the subject land
  - d. the native vegetation cover within the assessment area (Section 3.2) is equal to, or greater than, the minimum class needed for the species (unless the proposal is, or is part of, a linear-shaped development proposal)

As previously discussed, this wrongful interpretation of the BAM necessarily results in an incomplete assessment of the biodiversity on-site (in this case, the threatened species considered in part 5, being reduced by approximately 30%.) There are numerous additional flow-on effects, including those relating to avoidance, mitigation and offset measures recommended in ELA 2025.

(p14 redacted for public view)

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**Thankyou for considering my objection**

To restate the most immediately salient point: to be considered a BDAR under the BOS, that BDAR must be prepared in accordance with the Biodiversity Assessment Method (BC Act s 6.12, 6.17). The "BDAR"(s) attached to this development (Eco Logical 2025) have not been prepared in this manner, being majorly non-compliant with the BAM. As such, these documents are inappropriate for a decision maker to rely upon when assessing the environmental impacts of this proposal.

Because the decision maker is unable to assess the environmental impacts as per the legislative requirements, this application must be determined by way of refusal.

I also ask the decision authority to have the "BDAR" further reviewed or investigated, as appropriate, if my concerns regarding professional conduct are shared by the decision authority.

Thankyou for considering my objection

Kind Regards  
Samuel Cooper

## Appendix - BAM requirements mandated by legislation

The Biodiversity Assessment Method is publicly published in [legislative form](#), and as a practical pdf on the [Departments website](#), where there is also an [operational guidance manual for applying the BAM](#). These documents provide a clear indication of the legislative requirements for a compliant Biodiversity Assessment, including the ecological surveying procedures which are required.

The Biodiversity assessment method (BAM) is created by Ministerial Order established under the *Biodiversity Conservation Act 2016* (BC Act). BC Act s 6.7 (reproduced below)

### 6.7 Minister may establish biodiversity assessment method

- (1) The Minister is to establish a biodiversity assessment method in connection with the biodiversity offsets scheme.
- (2) The biodiversity assessment method is also established for the purpose of assessing the impact of actions on threatened species and threatened ecological communities, and their habitats, and the impact on biodiversity values of other actions prescribed by the regulations (whether or not the biodiversity offsets scheme applies to the impact of those actions on biodiversity values).

**Note.**

See Part 7 of this Act and Division 6 of Part 5A of the *Local Land Services Act 2013*.

- (3) When establishing, amending or replacing the biodiversity assessment method, the Minister must—
  - (a) have regard to the purpose of this Act, and
  - (b) having regard to the targets and time frames set out in the strategy for the transitioning of the biodiversity offsets scheme to deliver net positive biodiversity outcomes under section 6.2A(2)—
    - (i) during the transition of the scheme—adopt a standard that, in the opinion of the Minister, will result in no net loss of biodiversity in New South Wales, and
    - (ii) as soon as practicable after the strategy is made—adopt a standard that, in the opinion of the Minister, will result in net positive biodiversity outcomes in New South Wales.
- (4) The biodiversity assessment method is to be established by order of the Minister published on the NSW legislation website.
- (5) The biodiversity assessment method may be amended or replaced by further order of the Minister published on the NSW legislation website.
- (6) The Environment Agency Head is to make the biodiversity assessment method available on a government website maintained by the Agency Head.

**Note.**

See Part 9 and section 6.9 (Review of biodiversity assessment method) for public consultation requirements in relation to the biodiversity assessment method.



## A BDAR must assess vegetation clearing impacts “in accordance with the BAM” (s 6.12)

### 6.12 Biodiversity development assessment report

For the purposes of the biodiversity offsets scheme, a *biodiversity development assessment report* is a report prepared by an accredited person in relation to proposed development or activity that would be authorised by a planning approval, or proposed clearing that would be authorised by a vegetation clearing approval, that—

- (a) [assesses in accordance with the biodiversity assessment method the biodiversity values of the land subject to the proposed development](#), activity or clearing, and
- (b) assesses in accordance with that method the impact of proposed development, activity or clearing on the biodiversity values of that land, and
- (c) sets out the measures that the proponent of the proposed development, activity or clearing proposes to take to avoid or minimise the impact of the proposed development, activity or clearing, and
- (d) specifies in accordance with that method the number and class of biodiversity credits that are required to be retired to offset the residual impacts on biodiversity values of the actions to which the biodiversity offsets scheme applies.

**Note.**

A biodiversity development assessment report is also used for the assessment of impacts on threatened species and threatened ecological communities, and their habitats, and other impacts under Part 7 (Biodiversity assessment and approvals under Planning Act) even though the impacts may not relate to actions to which the biodiversity offsets scheme applies.