My initial impressions of the NSW BAM and what it's doing for my career and nature positive opportunities.

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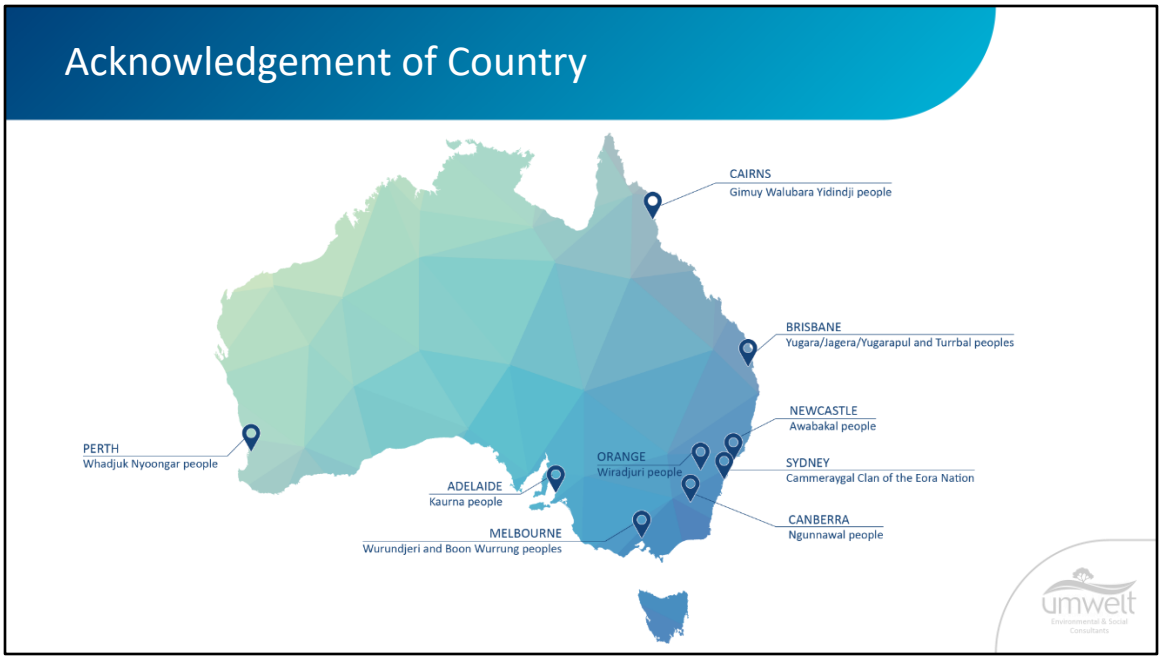


I would like to firstly start by acknowledging the Ngunnawal people as the Traditional Custodians of the land on which we are gathered today. I would like to pay my respects to elders past, present and emerging.

In respect to my presentation topic today, I would like to specifically acknowledge the vital role of the Ngunnawal people, as well as other traditional custodians, in the management and fostering of biodiversity across Australia.

Who I Am

Alexandra Cottle
Ecologist - Umwelt

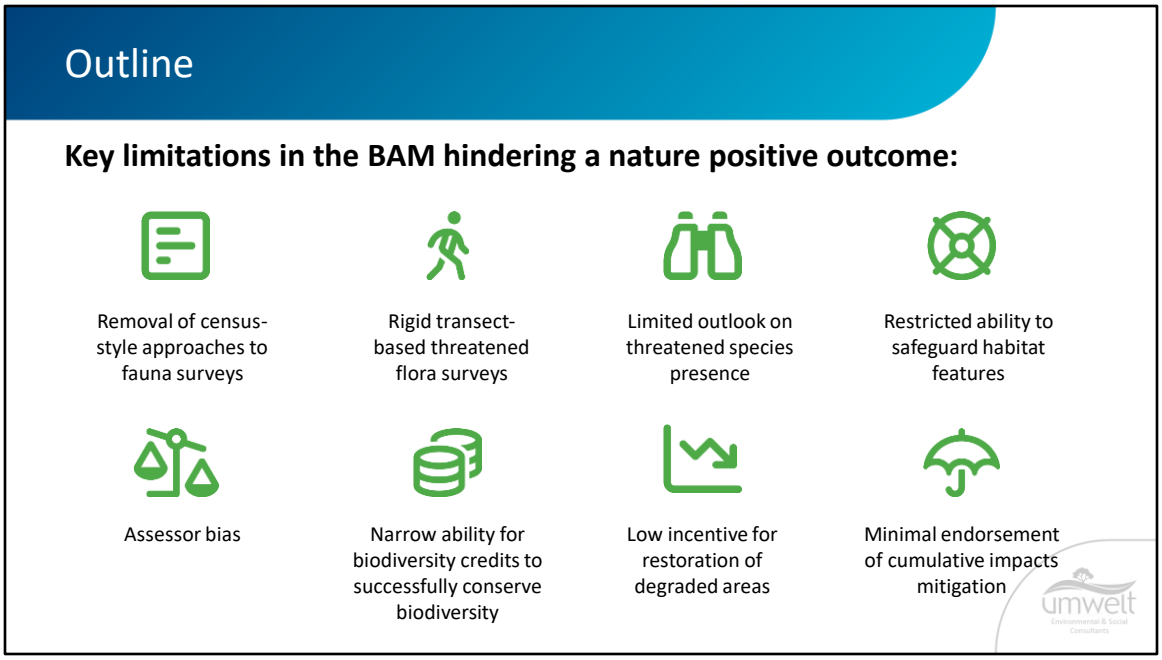
In this presentation, I will be discussing the ways in which the NSW Biodiversity Assessment Method, which I will now refer to as the BAM, is hindering a nature-positive future in NSW biodiversity legislation and policies.

The contents of this presentation are based upon my experience working with the BAM thus far as a young and green Ecologist and the points made are of my own personal opinion.

I have been an Ecologist in Newcastle, NSW, for three years and in that time, I have been heavily involved in numerous projects requiring assessment under the current BAM. These include several Biodiversity Development Assessments and Biodiversity Stewardship Site Assessments.

Within my short career experience, I have undertaken many BAM field assessments as well as aided in the BAM Calculator assessments and delivery of the associated reports.

Even with my limited career experience, it is apparent that various aspects of the BAM system must evolve to ensure nature-positive outcomes.



In this presentation, I will discuss my personal experience with the BAM through various case studies, illustrating several key faults in the current BAM system's capability of achieving a nature-positive outcome.

I will explore the causes of these faults, including:

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- Removal of census-style approaches to fauna surveys
- Rigid transect-based threatened flora surveys
- Limited outlook on threatened species presence
- Restricted ability to safeguard habitat features
- Assessor bias
- Narrow ability for biodiversity credits to successfully conserve biodiversity
- Low incentive for restoration of degraded areas
- Minimal endorsement of cumulative impacts mitigation

Overall, I will identify how these consequences are hindering the achievement of a nature-positive outcome in NSW biodiversity legislation and policies.

Brief overview of the Biodiversity Assessment Method (BAM)

- Originally established as the Biodiversity Assessment Method 2017
- Now updated and modified to be the:

  Biodiversity Assessment Method 2020 (the current BAM)

  - Intended to create a consistent method to assess biodiversity
  - Created to achieve a 'no net loss' of biodiversity outcome

The Biodiversity Assessment Method 2020, which I will hereby refer to as the BAM, came into force on the 22nd October 2020. That was roughly a year before I started my career as a consulting Ecologist.

Before this, the BAM was originally implemented in 2017, although this is not the version of the BAM I will be speaking about today.

The BAM aims to provide a consistent method to assess biodiversity values at impact sites as well as stewardship sites.

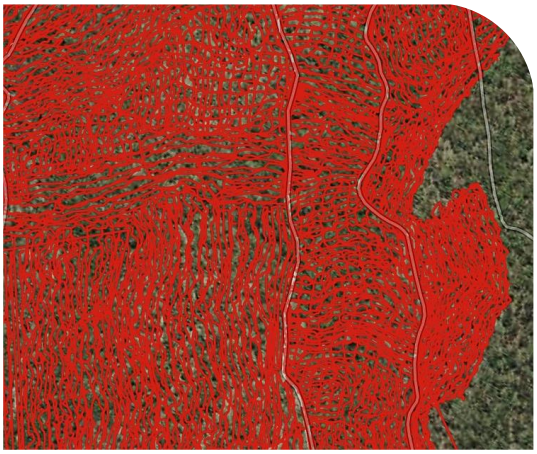
The BAM was established to:

1. Give guidance on how to avoid and minimise potential biodiversity impacts;
2. Provide a consistent method for assessing biodiversity values and impacts;
3. Provide a consistent method for assessing improvements in biodiversity values from management actions;
4. Determine the number and class of biodiversity credits required to achieve a standard of 'no net loss' of biodiversity.

-Note the 'no net loss' objective rather than the Commonwealth's current objective of 'nature positive' –this in itself indicates that the BAM has not yet been modified to be in line with the latest aims of the Commonwealth

Some Positive Elements of the BAM

Multiple targeted threatened flora surveys create a very thorough comprehension of an impact area



Now before I go into the shortcomings of the BAM, I would firstly like to point out that in my opinion, the BAM does currently hold some positive elements in assessing our biodiversity.

While there are multiple aspects of the BAM that have positive features, for the purposes of this presentation, I will highlight just a few that are relevant to field ecology. These include:

The BAM:

1. Forces survey coverage of the entirety of sites via the threatened flora survey methodology which includes parallel traverses or the two-phase grid method for larger project areas;
2. The BAM calculator creates a standardized list of threatened species to consider based on threatened species associations to particular plant community types.

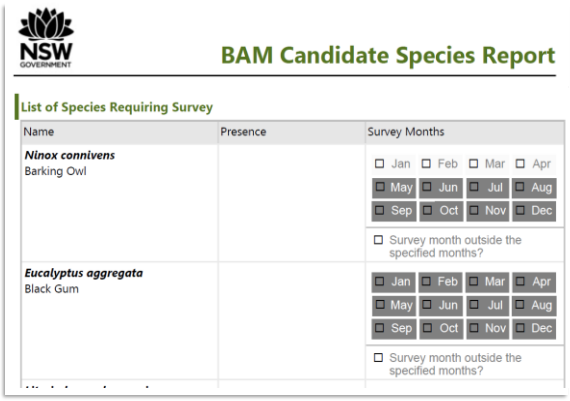
-This ensures that no matter who the assessor is, the same species for each Plant community type will be assessed. This means that no key threatened species will be missed or disregarded without good reason. Noting, of course, any additional TS that are found via database searches or previous survey data will be added into the assessment.

1. The BAM also ensures the optimum survey period for the threatened species is utilised

-This means that all assessors must conduct surveys at a time in which the species is most likely to be observed, and if this cannot be achieved, reasoning must be provided.

Although these successful elements exist, there are many shortcomings (some of which are directly related to the points I have just made) which limit the ability for the BAM to create a holistic ecosystem understanding, thus, hindering the ability to achieve a nature positive outcome.

Removal of Census-style Approaches of Fauna Surveys



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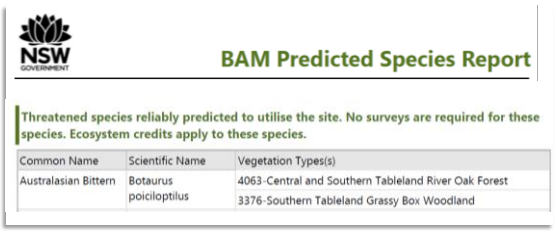
BAM Candidate Species Report

List of Species Requiring Survey

Name	Presence	Survey Months
Ninox connivens Barking Owl		☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?
Eucalyptus aggregata Black Gum		☐ Jan ☐ Feb ☐ Mar ☐ Apr ☐ May ☐ Jun ☐ Jul ☐ Aug ☐ Sep ☐ Oct ☐ Nov ☐ Dec ☐ Survey month outside the specified months?



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BAM Predicted Species Report

Threatened species reliably predicted to utilise the site. No surveys are required for these species. Ecosystem credits apply to these species.

Common Name	Scientific Name	Vegetation Types(s)
Australasian Bittern	Botaurus poiciloptilus	4063-Central and Southern Tableland River Oak Forest
		3376-Southern Tableland Grassy Box Woodland

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Through the implementation of targeted threatened species surveys, the BAM has removed the previous census-style approaches.

Before the BAM, a census-style survey was conducted to identify and record all species observed and heard at the time of survey.

-This created a holistic understanding of the entire fauna species composition and offered an insight into the fauna habitat value of the area.

In comparison, as you'll see in this slide, the BAM calculator generates a 'candidate species list' which is a list of threatened species generated in the calculator according to the

1. plant community types in the project area,
2. habitat requirements potentially present, and
3. geographic distributions of those species.

An assessor must then conduct habitat suitability assessments for each of these species, and if suitable habitat is deemed to potentially occur in the project area, targeted surveys in accordance with the BAM are required.

In addition to that, the BAM calculator also develops a 'predicted species report' which lists threatened species that have been generated by the plant community types present within the project area and can be reliably predicted and do not require targeted surveys.

This greatly limits our ability to gain a holistic ecosystem understanding as we have a very narrow and restricted view of what fauna habitat and species are present.

It causes a reduction in the overall understanding of genus structure as well as species richness within the assessed ecosystem.

Non-threatened and near-threatened species also need to be considered in field surveys and impact assessments.

This is critical as such species may be on the brink of needing further protection, or the proposed works may have a significant impact on a non-threatened species which puts it on a negative trajectory of becoming threatened in the future.

Overall, these implications lead to a negligence in understanding and conserving areas of high biodiversity value.

Therefore, by only considering already listed threatened species, a nature-positive outcome for the total biodiversity value of an impact area is not possible, as a loss of generally high-value habitat is not required to be conserved.

Rigid Transect-Based Threatened Flora Surveys

Genoplesium insigne (Variable Midge Orchid)

The BAM dictates targeted threatened flora searches must be undertaken via parallel traverses or the two-phase grid method for larger project areas.

These methods typically results in surveyors subconsciously spending too much time reviewing a GPS screen for locational accuracy rather than concentrating on finding a target species.

It also means that focus on microhabitats of the targeted species is generally limited as the parallel traverses may not directly intersect with a favoured micro-habitat, and while the widths of these traverses are intended to be able to view threatened species in between the traverses, some cryptic and inconspicuous species may be highly unlikely to be viewed in this way.

An example of this is from my own personal experience in my very first week of fieldwork in my career.

I was conducting targeted searches for the threatened Variable midge Orchid; *Genoplesium insigne* which is a very inconspicuous orchid which favours disturbed microhabitats.

As such, I deviated from my parallel traverse to focus on a disturbed bike track, and that's when I observed it!

That observation was highly significant as fewer than 20 individual plants of this species have ever been identified!

This example proves that experience isn't the determining factor when conducting threatened species searches –rather, it's emphasis on the microhabitat it is likely to occur in, although this often goes

against the rigid traverse BAM survey requirements!

Limited Outlook On Threatened Species Presence

Caladenia tessellata (Thick-lipped Spider-orchid)

The BAM currently limits the potential for a nature positive outcome for possibly unidentified, non-targeted, threatened flora.

A great example of this occurred in my 2nd week of fieldwork in my career.

During targeted flora searches for *Pterostylis vernalis*, I identified *Caladenia tessellata*.

This species was not considered to be likely to occur and was not included in the BAM calculator candidate species list for the project.

The species had not been recorded in that particular area before, with the only record in its locality was recorded back in 1998, 23 years prior to my record!!

This just highlights the importance of needing to conduct census-based surveys and not be limited by the knowledge available from the BioNet Atlas and BAM calculator candidate species list!

Restricted Ability To Safeguard Habitat Features

The BAM currently has a restricted ability to safeguard habitat features, particularly for fauna species.

Threatened forest owls were all dual credit species – meaning they were considered both ecosystem-credit, and species-credit species.

On the 18th March 2024, it was announced that the threatened forest owls changed from being a dual credit species to just a species-credit species.

This meant that these species now needed to be surveyed to identify their presence within an impact area.

I believe there are still downfalls to this latest update as current surveys may find numerous suitable hollows within the proposed impact area, but only record one owl which creates a species polygon that covers only a small proportion of the hollows present within the area.

This means that the vast majority of hollows to be impacted have not been considered and their conservation goes amiss.

Likewise, according to the interpretation of the new survey guidance, the presence of an owl, but no hollow within 800m requires no offset obligations. This interpretation is currently seeking clarification via the BOS help desk, thus it is currently only a personal interpretation.

If correct, however, this interpretation displays a major downfall in the new way of surveying forest

owl species and their habitats.

Therefore, I believe the BAM needs to evolve to develop assessments of finite or difficult-to-replace habitat features in order to allow for a nature-positive outcome.

Assessor Bias

What would you asses the leaf litter coverage percentage in this photo?

Assessor bias is another current downfall of the BAM system.

Whilst the BAM accreditation system does try to address this, there is no way to standardize this in practice.

The BAM currently requires the collection of variables that are not suitable for credit calculation.

An example of this is leaf litter cover.

This is collected through estimates which are difficult to consistently replicate between surveyors and it is also a temporary and changing variable.

While there are explanations in the BAM manual on how to best calculate leaf litter cover, it is still ultimately affected by assessor bias.

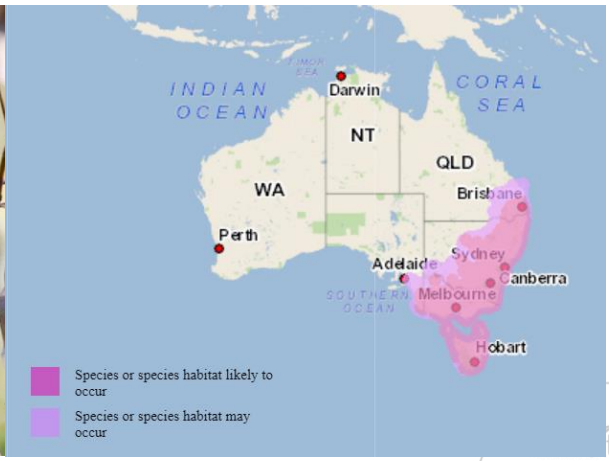
To prove this, see the photograph here – with the knowledge of assessing leaf litter cover as to be vegetation that is both detached and dead, what do you assess the % leaf litter cover to be?

Now, let's check what the person next to us …. Are the % covers different?

You may be wondering why this really matters - well the importance of calculating % leaf litter cover becomes extremely important when assessing derived native grasslands threatened ecological communities as it can heavily influence offsetting outcomes.

Therefore, assessments of leaf litter cover must be accurate to allow for a true understanding of the implications of the proposed works, which can then enable successful nature-positive actions to be created.

Narrow Ability for Biodiversity Credits to Successfully Conserve Threatened Species



Now I will move on to discuss some of the downfalls of the BAM in relation to its offsetting ambitions.

A major limitation of the BAM which is becoming increasingly obvious is the BAM's limited future opportunity for the NSW Biodiversity Conservation Trust.

The trust is intended to allow proponents to provide funds to satisfy their credit liability.

These funds are intended to be used to acquire land to assist in offsetting the impacts of the project.

We are coming to a time where we are now running out of some offset trading group ecosystems which inevitably means that a new method to conserve biodiversity is required.

Often, there is plenty of habitat available for the threatened species and instead, the main threat is the low population numbers.

An example of this is the EPBC Critically Endangered Swift Parrot, which as of the most recent population estimate in 2010, the population of Swift Parrot is likely to now be considerably less than 2,000 individuals.

Yet, the non-breeding habitat of this species spans across most of the east coast of mainland Australia.

In addition to this, the full extent of occurrence for this species was estimated at 57,000 km2 in the Action Plan for Australian Birds in 2010, which is <u>not</u> considered limited.

From my green perspective, to potentially achieve a nature-positive outcome, an alternative method could be via funding the establishment and maintenance of breeding and reintroduction programs*, similar to that of the NSW Save Our Species initiative.*

Low Incentive for Restoration of Degraded Areas

As the Commonwealth is striving for a 'net gain' in biodiversity, restoration and rehabilitation are now becoming increasingly critical.

The BAM seeks to use active restoration management actions (in addition to the standard or required management) to aid in the restoration of highly degraded native vegetation and species-credit species habitat.

Active restoration is critical in the endeavor to improve both the extent and condition of native vegetation.

To date, there has been low uptake of these actions, often due to the cost of implementing these actions, outweighing the high credit-yielding benefits.

Thus, to increase the use of active restoration management actions, there needs to be a further increase in the number of credits gained from these actions.

Furthermore, as noted in the BAM Stage 2 manual – Section 5.2 - rehabilitation of very degraded threatened ecological communities and threatened species habitats is not encouraged, nor is it currently accounted for in the BAM ecosystem credit obligations.

This is due to no ecosystem credits being required to be generated for vegetation zones with the following vegetation integrity scores:

- <15 where the plant community type is representative of an endangered ecological community

or critically endangered ecological community;

- <17 where the PCT is associated with threatened species habitat (as represented by ecosystem credits) or represents a vulnerable ecological community; and
- <20 where the PCT does not represent a TEC and is not associated with threatened species habitat (as represented by ecosystem credits)

Thus, the BAM currently holds no incentive to offset the impacts of degraded native vegetation zones, nor improve upon the health of these vegetation zones, to support the Commonwealth goal of a nature-positive outcome.

Minimal Endorsement of Mitigating Cumulative Impacts

Box 7. Example – compensatory measures for impacts to habitat connectivity

Where a residual prescribed impact cannot be avoided or minimised completely, the proponent and assessor may consider options to compensate for this loss of connectivity in the form of additional biodiversity credits or other conservation actions that will directly benefit the species in the wild. These measures must be documented in the BAR.

NSW Department of Planning and Environment (April 2023). *Biodiversity Assessment Method 2020 Operational Manual – Stage 2.* Parramatta.

In impact assessments, we consider connectivity and surrounding habitats, but there is no requirement to maintain or re-establish connectivity once a project has impacted such a matter.

For example, if the prescribed impact 'habitat connectivity' is at a 'small scale', the impact is in turn considered to be negligible, requiring no further action.

If many 'small scale' impacts are dismissed in this way, they will sum to be a considerably large loss of biodiversity, particularly at an urban development scale.

As such, dismissing the loss of habitat connectivity which appear to be at a small scale on a project-by-project basis, is resulting in habitat corridors quickly diminishing.

Further to this, Box 7 in the BAM Stage 2 manual (which is presented on the screen) notes proponents and assessors "may consider options to compensate for this loss of connectivity *in the form of additional biodiversity credits or other conservation actions that will directly benefit the species in the wild"*

-it does not say that a nature-positive outcome regarding habitat connectivity 'must' be achieved!

This is due to the current BAM objective being to deliver a 'no net loss' outcome rather than a nature-positive outcome!

Hope is not lost….

Even with limited career experience, it is apparent to me that various aspects of the BAM system must evolve to ensure nature positive outcomes.

Throughout this presentation, I have tried to suggest some ways in which we can make improvements, and although these are very novice and I certainly don't have all the answers, it indicates that solutions can be achieved if they're given the adequate time and attention required.

In my opinion, such clear, easily identifiable limitations and ability to pose suggestive solutions, advocates there is no reason why NSW cannot follow suit of the Commonwealth in striving to deliver nature-positive outcomes for our nation.

In summary, the 3 main takeaways from this presentation are:

1. The BAM does hold numerous positive elements in delivering biodiversity impact assessments, however,
2. the BAM currently contains many limitations in its ability to achieve a nature positive outcome, and
3. There is no reason why NSW cannot strive to deliver nature-positive outcomes for our nation.

Thank you.