



Important information is contained in the 'red box' tips throughout this document, please take note of these.

DEPARTMENT OF PLANNING, INDUSTRY & ENVIRONMENT

Release notes: October 2020 Enhancements to the BAM Calculator based on the revised BAM 2020 & endorsement of BOS by the Commonwealth

A description of the changes to the BAM Calculator following publication of the revised BAM on 22 October 2020. Information for Accredited Assessors





Alert: Opening a case

👉 Before opening the BAM-C after the update, please clear your internet browser cache.

Many of the enhancements will not display until the cache has been cleared. Instructions can be found at www.digitaltrends.com/computing/how-to-clear-your-browser-cache/.

If an assessor opens an in-progress case in the BAM-C for the first time after data has been updated, they are likely to receive an alert indicating reference data has been updated.

The information in the message will indicate what data has been updated by the import.

The screenshot shows an alert box with a title 'Alert' and an information icon. The main text reads: 'Reference data updated. Details of the changes to the application listed below (if available). Apart from these please visit Habitat tabs (Step 4 and 5) to see any possible new species additions.' Below this, it says 'Click on [icon] in each section to see the items and fields affected by the change.' The section title is 'PCT'. The main content of the alert is 'Benchmarks updated-Please visit the vegetation tab and recalculate the VI score of the zones impacted by this change.' followed by a list item: '1281- [Stem Size Classes,]'. At the bottom of the alert box is a green 'OK' button.

👉 Take a screenshot of any alert for future reference.

Alerts will not display once the case has been saved.



Inclusion of species listed on EPBC Act

- The Commonwealth has formally endorsed the BOS, assessment bilateral is in place;
- The BAM-C has been updated to allow assessment of EPBC Act only species;
- Species will be progressively added as data is compiled;
- TECs only listed under the EPBC Act are expected to be available in BAM-C later in the year. In the interim, assessors will need to engage with DAWE;
- Recommend early engagement with DAWE for proposals that impact on species only listed under the EPBC Act.

Candidate threatened species (Species credits)								
Species	Habitat constraints	Habitat degraded ⓘ	Geographic limitations	Species is vagrant ⓘ	Confirmed candidate species ⓘ	Sensitivity to gain class	BC Act listing status	EPBC Act listing status.
★ <i>Furina dunmalli</i> Dunmall's Snake	--	<input type="checkbox"/>	--	<input type="checkbox"/>	Yes ▾	High Sensitivity to Potential Gain		Vulnerable



Enhancements: Development Applications

Summary:

- Changes to Offset Trading Tiers;
- Scattered Tree Module – Renamed from Paddock Tree Module;
- Scattered Tree Module – Change to the definition of ‘Scattered Trees’.



Offset Trading Group – adjustment of tiers

BAM 2017.

Table 5: Offset trading group tiers for ecosystem credits

Threat status group	Offset trading group tiers for ecosystem credits
Very high threat status	Tier 1: Name of the critically endangered ecological community
	Tier 2: PCTs in the same vegetation class with a percent cleared value $\geq 90\%$ (being the name of the vegetation class – percent cleared value $\geq 90\%$)
	Tier 3: Name of the endangered ecological community
High threat status	Tier 4: PCTs in the same vegetation class with a percent cleared value $\geq 70\%$ and $< 90\%$ (being the name of the vegetation class – percent cleared value $\geq 70\%$ and $< 90\%$)
	Tier 5: Name of the vulnerable ecological community
Moderate threat status	Tier 6: PCTs in the same vegetation class with a percent cleared value $\geq 50\%$ and $< 70\%$ (being the name of the vegetation class – percent cleared value $\geq 50\%$ and $< 70\%$)
	Tier 7: PCTs in the same vegetation class with a percent cleared value $< 50\%$ (being the name of the vegetation class – percent cleared value $< 50\%$)

TEC offset trading groups removed from tier structure.
Minor updates to the Credit Classes tab.

Credit classes for 850
Like-for-like options

TEC	HBT	Credits	IBRA region
Cumberland Plain Woodland in the Sydney Basin Bioregion This includes PCT's: 849, 850	Yes	10	Cumberland , Burratorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Cumberland Plain Woodland in the Sydney Basin Bioregion This includes PCT's: 849, 850	Yes	14	Cumberland , Burratorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

Credit classes for 850
Like-for-like options

Class	Trading group	HBT	Credits	IBRA region
Coastal Valley Grassy Woodlands This includes PCT's: 116, 618, 760, 761, 762, 830, 834, 838, 849, 850, 1326, 1395, 1603, 1604, 1691	Coastal Valley Grassy Woodlands - $\geq 70\%$ - $< 90\%$ cleared group (including Tier 2 or higher threat status).	Yes	18	Cumberland , Burratorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.
Coastal Valley Grassy Woodlands This includes PCT's: 116, 618, 760, 761, 762, 830, 834, 838, 849, 850, 1326, 1395, 1603, 1604, 1691	Coastal Valley Grassy Woodlands - $\geq 70\%$ - $< 90\%$ cleared group (including Tier 2 or higher threat status).	Yes	24	Cumberland , Burratorang, Pittwater, Sydney Cataract, Wollemi and Yengo. or Any IBRA subregion that is within 100 kilometers of the outer edge of the impacted site.

BAM 2020.

Table 5: Offset trading groups for non-threatened plant community types

Threat status group	Offset trading group tiers for ecosystem credits
Very high threat status	Tier 1: PCTs in the same vegetation class with a percentage cleared value $\geq 90\%$ (being the name of the vegetation class – percentage cleared value $\geq 90\%$)
High threat status	Tier 2: PCTs in the same veg cleared value $\geq 70\%$ and $< 90\%$ vegetation class – percentage $< 90\%$)
Moderate threat status	Tier 3: PCTs in the same veg percentage cleared value $\geq 50\%$ name of the vegetation class $\geq 50\%$ and $< 70\%$)
Low threat status	Tier 4: PCTs in the same veg percentage cleared value $< 50\%$ vegetation class – percentage cleared value $< 50\%$)

Table 4: Offset trading groups for threatened ecological communities

Threat status	Offset trading group name for ecosystem credits
Critically endangered ecological community	Name of the critically endangered ecological community
Endangered ecological community	Name of the endangered ecological community
Vulnerable ecological community	Name of the vulnerable ecological community



Scattered Tree Assessments

B.1 Scattered trees

Scattered trees are defined as species listed in the tree growth form group that:

- have a percent foliage cover that is less than 25% of the benchmark for tree cover for the most likely plant community type and are on category 2-regulated land and surrounded by category 1-exempt land on the Native Vegetation Regulatory Map under the LLS Act, or
- have a DBH of greater than or equal to 5 cm and are located more than 50 m away from any living tree that is greater than or equal to 5 cm DBH, and the land between the scattered trees is comprised of vegetation that are all ground cover species on the widely cultivated native species list, or exotic species or human-made surfaces or bare ground, or
- are three or fewer trees that have a DBH of greater than or equal to 5 cm and are within a distance of 50 m of each other, that in turn, are greater than 50 m away from the nearest living tree that is greater than or equal to 5 cm DBH, and the land between the scattered trees is comprised of vegetation that are all ground cover species on the widely cultivated native species list, or exotic species or human-made surfaces or bare ground.

The definition has been updated:

- Trees with a DBH ≥ 5 cm must be assessed;
- All native vegetation including ground cover, around/between the trees, must be on the widely cultivated native species list;
- Ground cover may also be 100% exotic, human-made or bare ground;

Assessments that don't meet these rules must use another BAM module.

849-Cumberland shale plains woodland

#	PCT code	Species	Large tree threshold size	DBHOB category*	Contains hollows*	No. of trees*	Negligible biodiversity value	Class	Assessment required	Delete
1	849	Eucalyptus tereticornis	50	< 20cm	<input type="checkbox"/>	5	Yes	1	No	
2	849	Eucalyptus tereticornis	50	< 20cm	<input checked="" type="checkbox"/>	7	No	2	Visual assessment for hollows, presence of important habitat features and habitat suitability for threatened species	

Trees <20 cm DBH that contain hollows are now classified as Class 2 trees and require assessment.

Different PCT groups can be created for trees <20 cm without hollows and <20 cm with hollows.



Amendments to the stewardship module

Summary:

- Amendments to values for annual rate of decline;
- Changes to the categorisation of 'High risk land';
- Inclusion of intrinsic rate of gain to 'Other GFG', large trees and stem size class attributes;
- Option to reduce high threat weed cover, where the weeds are deemed 'manageable' with active restoration management actions.



Intrinsic rate of increase & annual rate of decline

Changes to Increase and Decline.

Type	Field	Attribute	BAM 2017	BAM 2020
Rate of gain – with Management	Composition	Other	0	0.03
	Structure	Other	0	0.06
	Function	No. large trees	0	0.02
Stem size classes		0	0.06	
Rate of decline – without management (Low Risk Land)	Composition	All attributes	0 – 0.05	0.15
	Structure	All attributes except tree cover	0.05	0.15
		Tree cover	0.25	0.25
	Function	Litter cover, tree regen, stem size classes	0	0.15
		No. large trees	0.5	0.5
Length of fallen logs	0.25	0.25		
Rate of decline – without management (High Risk Land)	Composition	All attributes	0 – 0.1	0.3
	Structure	All attributes except tree cover	0.1	0.3
		Tree cover	0.5	0.5
	Function	Litter cover, tree regen, stem size classes	0	0.3
		No. large trees	1	1
Length of fallen logs	0.5	0.5		



Changes to the categorisation of 'High Risk' Land

Three new categories of land considered to be at high risk of decline.

New proposals in BAM-C:

- BAM-C will automatically tick the High Risk land box for proposals within NSW (Mitchell) Landscape that is $\geq 30\%$ cleared, or vegetation that is an endangered or critically endangered TEC.

Existing proposals in BAM-C:

- Assessors will need to manually assess vegetation zones against the new criteria;
- Check (and tick if appropriate) zones.

IMPORT SITE							
Vegetation zones [Current vegetation integrity (VI) score]							
#	Import	PCT code	Condition class *	Vegetation zone name	Patch Size*	Area (ha) *	High risk lands
1		849	TEC1	849_TEC1	101	1	<input checked="" type="checkbox"/>
2		849	NonTEC	849_NonTEC1	101	1	<input type="checkbox"/>

BAM 2017.

Native vegetation that has a high risk of decline in vegetation integrity score is on:

- land identified as Category 1-exempt land on the native vegetation regulatory map published under Part 5A of the *Local Land Services Act 2013*, or
- lands that were or are zoned for residential (including rural residential), business or industrial uses in a local environmental plan (LEP) prior to the development of a Standard Instrument LEP (in accordance with the Standard Instrument (LEP) Order 2006), or
- land that is zoned RU1 (Primary production).

BAM 2020.

Native vegetation that has a high risk of decline in vegetation integrity is on land that, at the time the application for a biodiversity stewardship agreement is made:

- is identified as category 1-exempt land on the native vegetation regulatory map published under Part 5A of the LLS Act (in the absence of the Native Vegetation Regulatory Maps the assessor will be required to identify lands as category 1-exempt land or category 2-regulated land by applying the definitions in the LLS Act, with support from Local Land Services), or
- is zoned for residential (including rural residential), business or industrial uses in a local environmental plan, or
- is zoned RU1 (primary production) or RU2 (rural landscape) or RU4 (primary production small lots), or
- is located in a NSW (Mitchell) landscape that is $\geq 30\%$ cleared, or
- the proposed biodiversity stewardship site adjoins urban or industrial development (or future urban development) if the proposed biodiversity stewardship agreement is part of the biodiversity certification proposal, or
- the native vegetation is listed as an endangered or critically endangered community.



Manageable high threat weeds (HTW)

BAM 2020 allows for an assessor to remove or reduce the effect of the HTW modifier, but:

- Limited to suite of HTW that can managed;
- Management plan must set out appropriate techniques and effort;
- Some HTW will not be on the manageable weed list, as they are deemed unmanageable under normal weed control measures. The HTW cover should not be reduced for these species.

The screenshot displays the Biodiversity Assessment Calculator interface with the following sections:

- 6. Habitat survey**, **7. Credits**, **8. Credit classes**, **9. Price**
- Rates of increase/rates of decline**: A table with columns for various metrics and a **DOWNLOAD** button.
- Native species by growth form list**: A table listing species and their growth forms, with a **DOWNLOAD** button.
- High threat weeds list**: A table listing high threat weeds, with a **DOWNLOAD** button highlighted by a red box and a callout.

The screenshot shows the homepage of the Biodiversity Assessment Calculator with the following elements:

- Navigation tabs: **1. Assessment details**, **2. Site context**, **3. Vegetation**, **4. Habitat suitability**, **5. Habitat survey**
- Welcome to the Biodiversity Assessment Calculator**
- Text: "The 'BAM Calculator' is an online application of the Biodiversity Assessment Method (BAM). The calculator uses the rules and calculations outlined in the BAM to assess the impact of a proposed development or major project, or clearing site, on biodiversity at a site and observe the results of the assessment." and "and the calculator provides:"
- Text: "A consistent method for the assessment of the impact on biodiversity on a proposed development or major project, or clearing site" and "A scientific and repeatable calculation of how the biodiversity impacts need to be the offset for biodiversity impacts (quantified as biodiversity credits) as re"

Access the list of high threat weeds, including those classed as manageable, from the homepage of the BAM-C.

Download the spreadsheet.



Modifying an assessment for manageable HTW

Zone function data RECALCULATE OK

Function condition score: 73.4

Plots Calculation results

Current level of HTW cover.

Item	Tree regeneration <5cm D*	5-9	10-19	20-29	30-49	50-79	Number of large trees* (>50cm DBHOB)	Hollow bearing trees*	Litter cover*	fallen log	High Threat Weed Cover*
Plot 1	Absen	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	2	2	45	80	50

849 TEC_C 849_TEC_Good 101 1.8 90.2 47.3 73.4

A new field will populate the level of HTW cover for each zone. This allows an assessor to unlock the field and edit the percent of HTW cover.

When applied, the future VI score is calculated based on the revised HTW figure.

With no active management

Vegetation zone name	Patch Size	Management zone	Area (ha)	High Threat Weed Cover <input type="checkbox"/>	Composition condition score	Structure condition score	Function condition score	VI score	CL or conservation obligation	Security Benefit Score	Change in VI score	Total Change in VI score
849_TEC_Good	101		1.8	50	90.3	65.4	85.8	79.7	<input type="checkbox"/>	0	17	17

With active management

Vegetation zone name	Patch Size	Management zone	Area (ha)	High Threat Weed Cover <input checked="" type="checkbox"/>	Composition condition score	Structure condition score	Function condition score	VI score	CL or conservation obligation	Security Benefit Score	Change in VI score	Total Change in VI score
849_TEC_Good	101		1.8	5	96.3	93.1	90.9	93.4	<input type="checkbox"/>	0	30.7	30.7



Resources and Support

If you have any questions, feedback or issues as a result of the release of BAM 2020 or the update to the BAM-C, please contact us at bam.support@environment.nsw.gov.au.

Assessor resources and contacts for support include:

- DPIE webpages:
 - Revised Biodiversity Assessment Method;
 - Accredited assessors website:
 - Assessor resources (links to legislation, databases, manuals and guidelines, assessor correspondence);
 - Assessor frequently asked questions;
 - BAM support webinars;
 - Serious and Irreversible Impacts (SAII) guidance and list of entities at risk;
 - Threatened species profile search;
 - Saving our Species (SoS) program;
 - NSW Scientific Committee Determinations;
- EPBC profile database (species and ecological communities);
- PlantNet (NSW flora online);
- NSW government SEED database (publicly available environmental data);
- BAM Support Mailbox.