



Using innovative methods to assess development impacts and biodiversity offset requirements in NSW

2018 AUSTRALASIAN NETWORK FOR ECOLOGY AND TRANSPORTATION
CONFERENCE

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The journey so far – NSW context

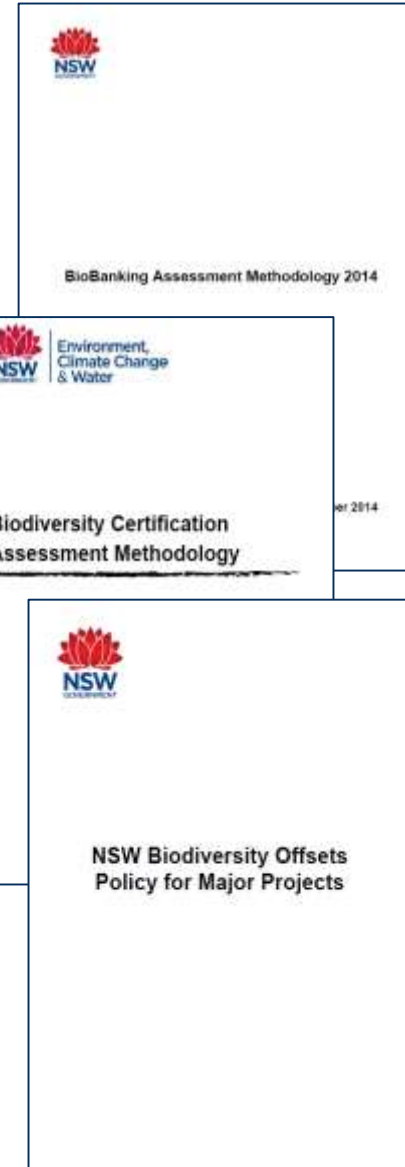
OEH has been involved in negotiating offsets since 1995

Shift to method based approach -

- EOAM (2007)
- Biobanking assessment methodology (2008)
- Biodiversity certification assessment method (2012)
- Framework for Biodiversity Assessment (2014)

Land management and biodiversity conservation reforms (2014-2017)

- Biodiversity Conservation Act (2017)
- Biodiversity Assessment Method (2017)

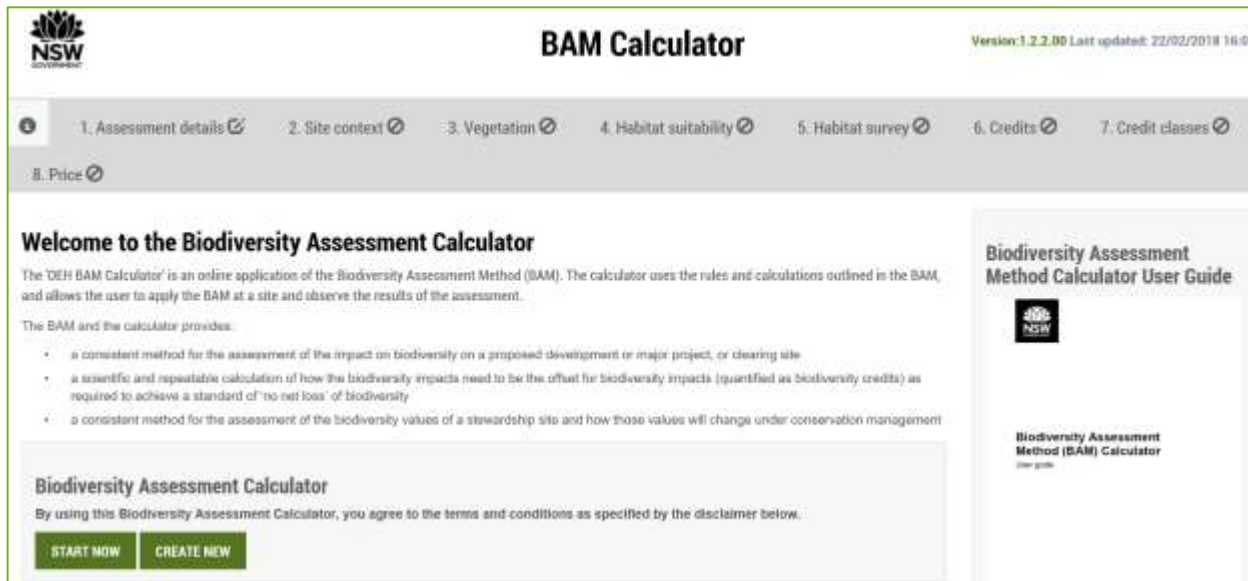


Expanded biodiversity offsets scheme

Single assessment method - Biodiversity
Assessment Method

Mandatory use of the BAM above set threshold

Opportunity for review



The screenshot shows the 'BAM Calculator' web application. At the top left is the NSW Government logo. The title 'BAM Calculator' is centered, with the version '1.2.2.00' and last update '22/02/2018 16:00' on the right. A progress bar below the title shows seven steps: 1. Assessment details, 2. Site context, 3. Vegetation, 4. Habitat suitability, 5. Habitat survey, 6. Credits, and 7. Credit classes. The current step is 'B. Price'. The main content area has a heading 'Welcome to the Biodiversity Assessment Calculator' followed by a paragraph explaining the calculator's purpose. Below this is a list of three bullet points describing the calculator's functions. On the right side, there is a link to the 'Biodiversity Assessment Method Calculator User Guide' with a small NSW logo icon. At the bottom left, there are two buttons: 'START NOW' and 'CREATE NEW'.



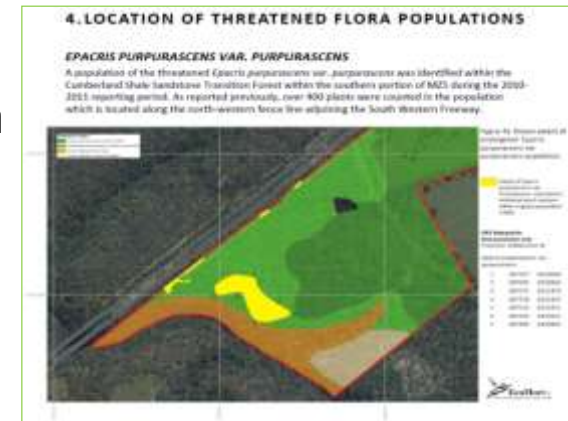
Biodiversity Assessment
Method

Overview of NSW Biodiversity Offset scheme

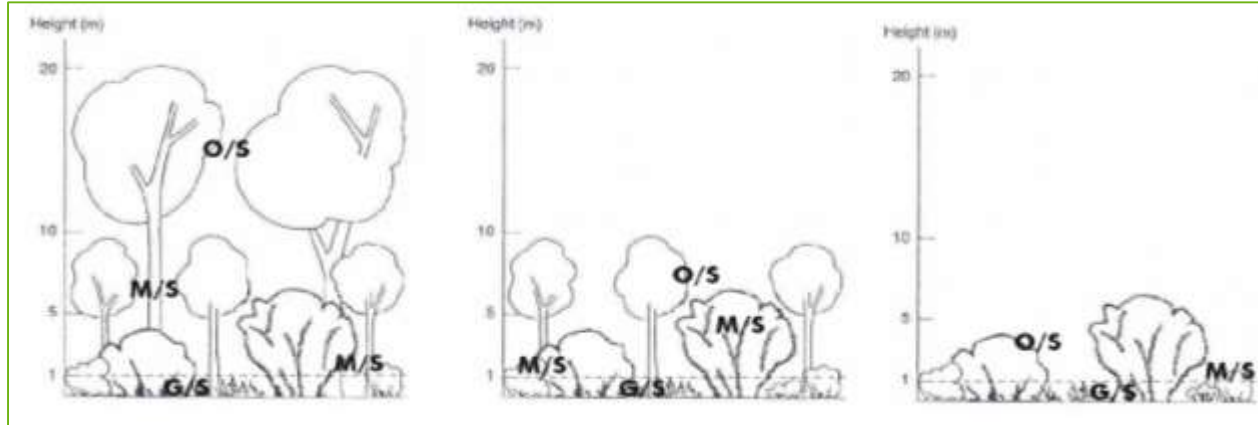
Credit system and application of BAM provides common measure of impact/gain

Comprehensive framework for offset land that includes:

- Accredited assessments
- Ongoing management of land for conservation
- Funding for implementation
- Monitoring, reporting, auditing
- Secured on title

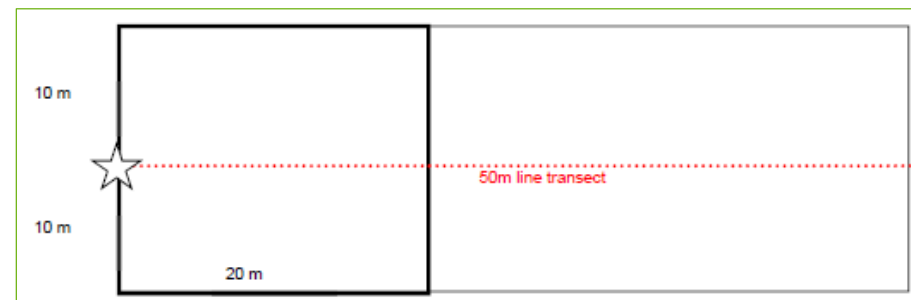
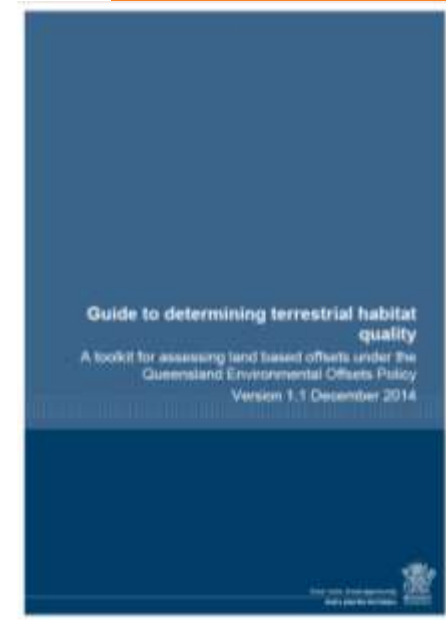


From vegetation strata to growth form



Benefits:

- *Consistent field allocation with look-up table means greater assessor repeatability*
- *Growth form richness can be benchmarked*
- *Aligns with other jurisdictions*



Key changes in the BAM

Vegetation Integrity (condition)

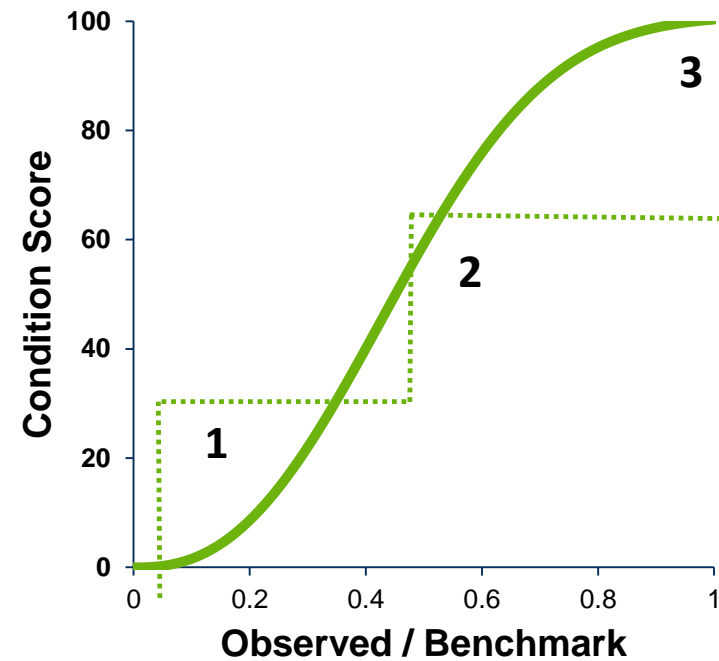
Data-driven benchmarks (replaces expert derived)

Continuous non-linear scoring (replaces ordinal 0-3 approach)

Dynamic weighting (replaces static)

New composition (C), structure (S), function (F) attributes

C-S-F sub-index aggregation via geometric mean



Habitat suitability for threatened species

Much of the TS assessment processes have been retained

Focus on improving rigour of data and management needs

Improved habitat condition assessment

as the V.I. score  so does no. species & individuals



Impact assessment

- Greater emphasis on the mitigation hierarchy
- Biodiversity risk weighting based on threat status & response to gain
- Serious and irreversible impact category
- Less ‘substitution’ of biodiversity values within credit units
- Prescribed biodiversity impacts

Table 18: Application of the biodiversity risk weighting – ecosystem credits

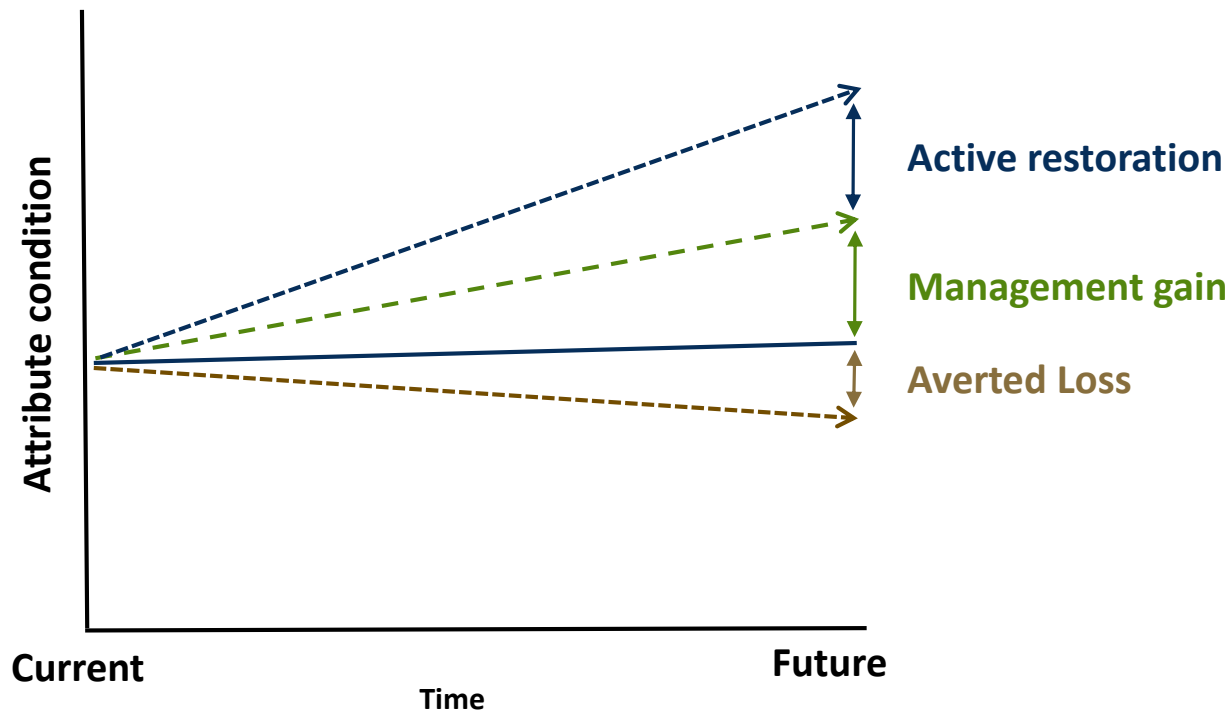
Sensitivity to loss – ecological communities and PCTs	Sensitivity to gain – ecosystem credit species (based on the species with the highest sensitivity impacted by the development, or biodiversity certification)			
	Very high sensitivity (x's 3)	High sensitivity (x's 2)	Medium sensitivity (x's 1.5)	Low sensitivity (x's 1)
CEEC or a PCT ≥90% cleared Very high sensitivity (3)	3	2.5	2.25	2.0
EEC or a PCT ≥70% – <90% cleared High sensitivity (2)	2.5	2.0	1.75	1.5
VEC or a PCT ≥50% – <70% cleared Moderate sensitivity (1.5)	2.25	1.75	1.5	1.25
PCT <50% cleared Low sensitivity (x'1)	2.0	1.5	1.25	1

Components of gain

Averted loss: attribute *annual average* rate of decline in condition

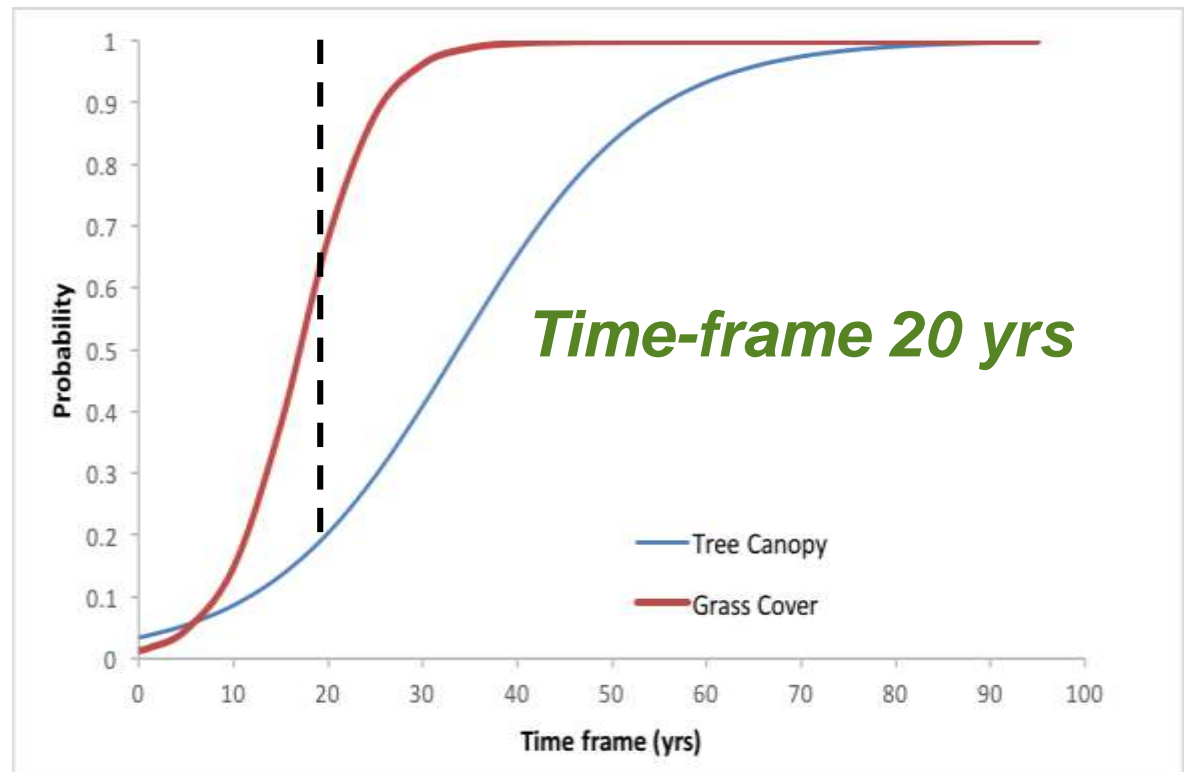
Management gain: probability of reaching benchmark over a given timeframe (from mandatory management actions for threats and pressures)

Restoration gain: additional credit from active restoration
(e.g. sowing/planting of species representative of the PCT, replacement of logs, stags, nest boxes, constructed hollows)



Estimating the rate of gain

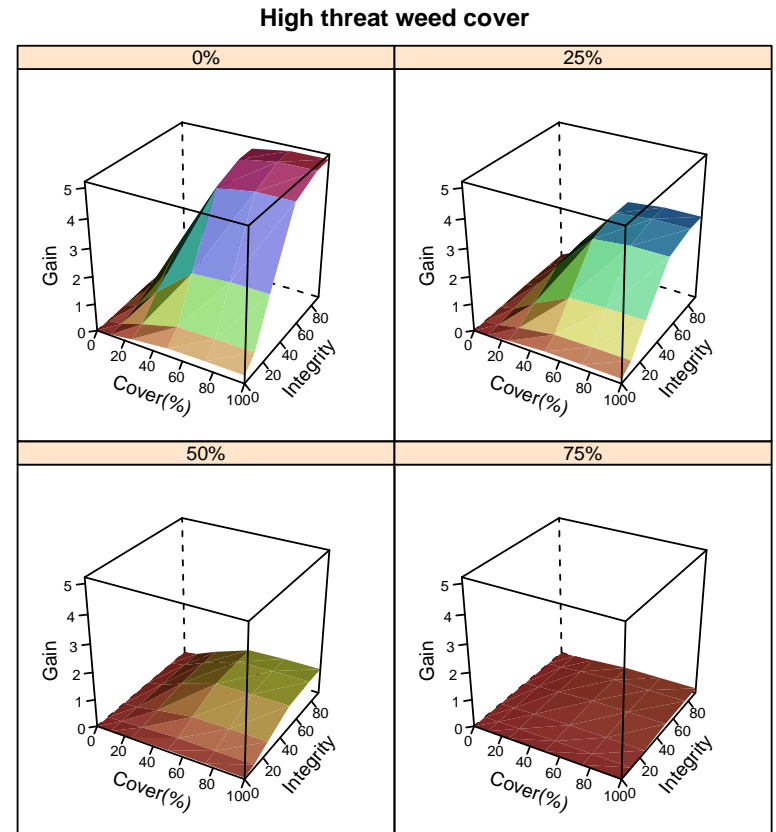
- BAM adopts a probabilistic approach: What is the probability of reaching benchmark over a 20-year timeframe?
- Rate of gain differs among attributes
- Explicit timeframe of 20 years



Modifiers to rate of gain

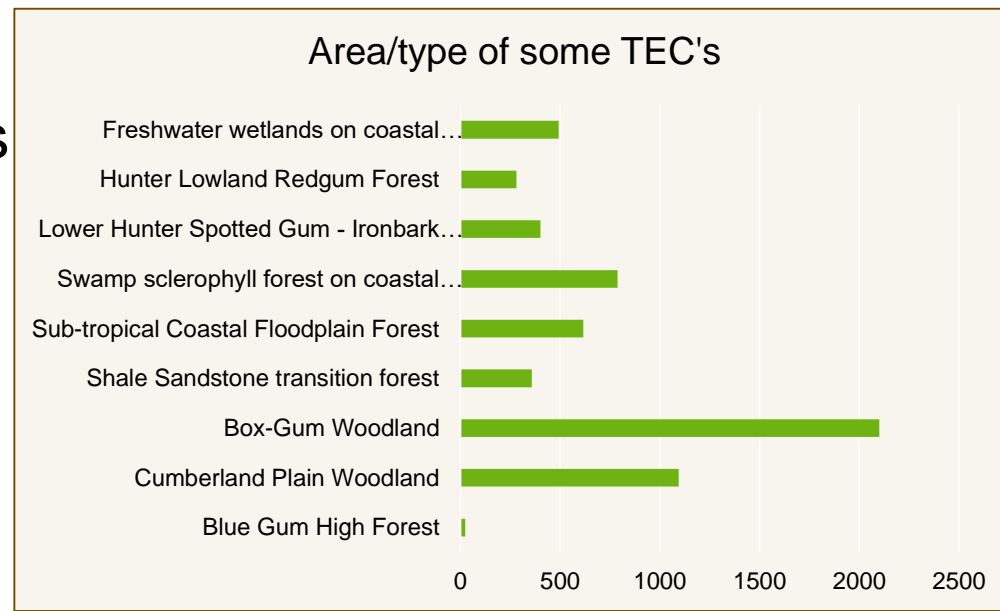
The rate of gain at each site is modified based on:

- Connectedness of the site (surrounding vegetation cover)
- Site resilience (a low vegetation integrity score)
- Extent of high threat weed cover (key threat)



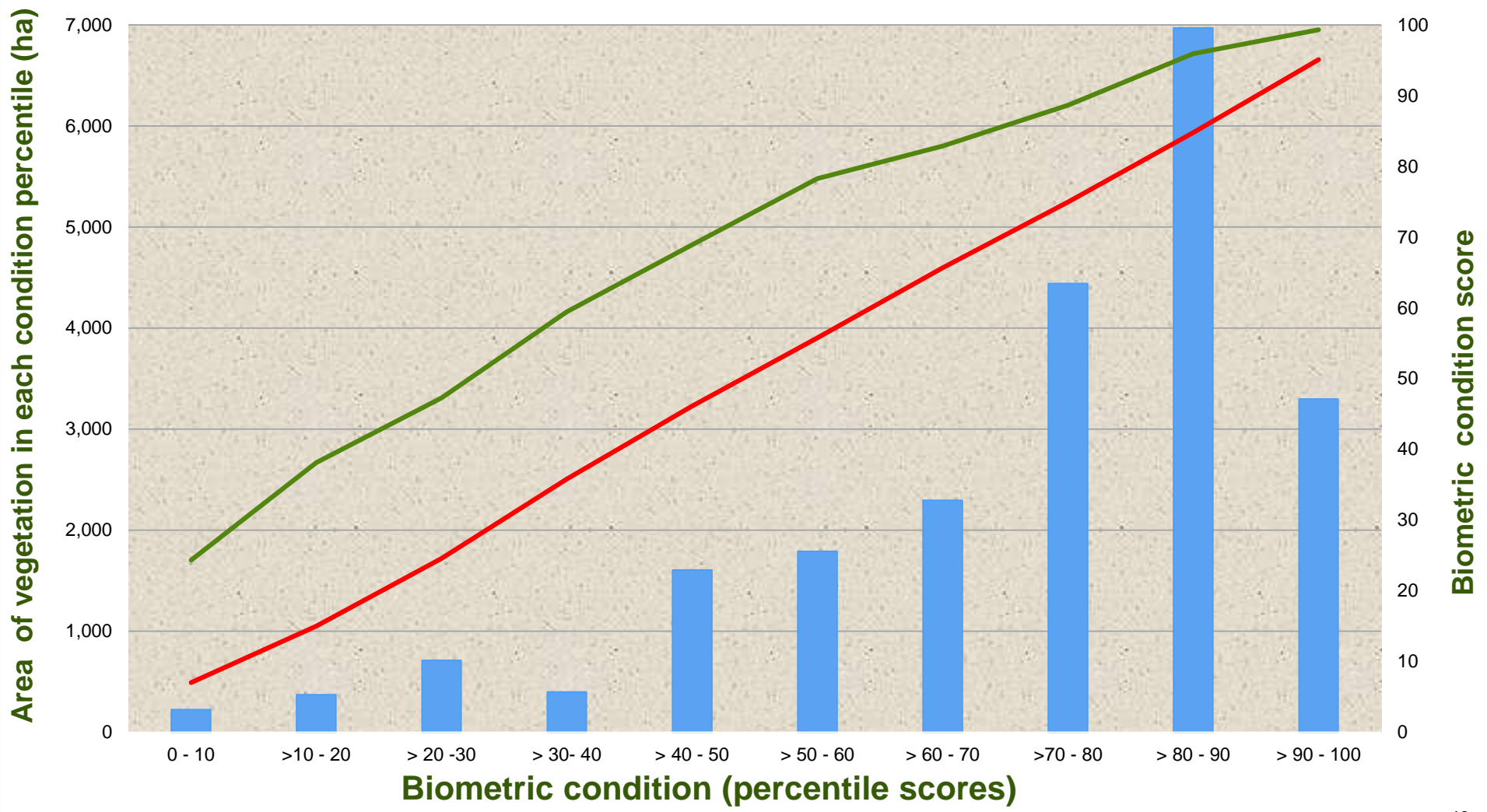
Ecological outcomes from Biobanking (2010 – 2018)

- 87 approved agreements covering over 10,200 hectares
- Applications for a further 116 agreements (est. 12,000 ha)
- Over 8,000 hectares are TEC representing 39 different ecological communities
- 234 different Plant Community Types (or about 16% of PCT's listed in the NSW classification)
- Credits created for 91 different threatened species



Area and vegetation condition

Area & condition of vegetation - approved and submitted biobank sites



Questions

For more information on the NSW Biodiversity Offset Scheme

<http://www.environment.nsw.gov.au/biodiversity/offsetscheme.htm>