TOPIC 2: PERFORMANCE MEASURES

What are meaningful measures that can be used for different situations?

These notes are a summary of the brainstorm and discussions at the July 09 Industry Forum.
The views and opinions expressed do not reflect the views of the RBIA Inc

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Site issues: Varied responses to regeneration, even at various locations within a site. There needs to be baseline measures first

What are we measuring? "Potential of recovery" (healthy/not healthy)
Also, presence of native species and types
Soil profiles, soil disturbance

The group started to discuss the different measures and when they can work well. This table is a guide, but the information in incomplete.

Suitable measurements for REGENERATION SITES *"where there is something to work with"*	**Description** **p** = Suitable for measuring progress of the site **cp** = Suitable for measuring performance of the contract or contractor work	**Strengths**	**Weaknesses**
Percentage weed cover / native cover	**p, cp** Example: Ku-ring-gai Council weed density mapping	Good methods for achieving vegetation mapping	
Random transects	100 metre transects. Random, 15 degrees zig zag, meander, distance. At every 1 metre point put a knot, get 100 points. Measure what is at that knot (eg a weed or groundcover) **p, cp**	Gives a % measurement Can be a good method for achieving vegetation mapping	Hard to do on very steep slopes Requires a lot of resources
Specht (vegetation mapping)	Percentage cover (area) or vegetation layer	Good for contracts to do targeted weed removal (eg blackberry, pampas grass, bitou)	
Quadrats	This is more of a survey tool, using GPS Depends on the size of the site, location of	Works for all strategies – regeneration, revegetation etc	Time consuming, labour intensive

	site, length of contract. These will determine how many quadrats, size of quadrats etc **p, cp**		
Biometric measures/ benchmarks	Tool developed by DECC. Does canopy, mid-storey and groundcover Refer DECC website for Native Veg Act clearance. Determined via quadrats and random transects.	Works for all strategies – regeneration, revegetation etc Good for benchmarks and data on communities	Not quick. Intensive. Long term measurement. Need to have a species list first.
Plant mortality	Forms part of quadrats system. Percentage mortality.		
Photo points		Works for all strategies – regeneration, revegetation etc	
Tree girth/ tree height			
Weed resistance/ Weed seed succession			
Species lists			
Flora and Fauna indicator species	Indicator species vary according to the vegetation community		Long term monitoring
Presence of certain groundcover species	Indicator species vary according to the vegetation community (eg *microlaena, eunidia, plactanthus*)		
Amount of weed removed	Can measure m^2 or weight		
Weeds to natives ratio	% weeds on site, AND diversity of native species		
Landform transects	Eg species erosion		
Fauna and flora macroinvertebrate test/bird surveys			

Suitable measurements for REVEGETATION SITES *"where there is nothing to work with"*	**Description** **p** = Suitable for measuring progress of the site **cp** = Suitable for measuring performance of the contract or contractor work	**Strengths**	**Weaknesses**
Random transects	100 metre transects. Random, 15 degrees zig zag, meander, distance. At every 1 metre point put a knot, get 100 points. Measure what is at that knot (eg a weed or groundcover) **p, cp**	Gives a % measurement Can be a good method for achieving vegetation mapping	Hard to do on very steep slopes Requires a lot of resources
Quadrats	This is more of a survey tool, using GPS Depends on the size of the site, location of site, length of contract. These will determine how many quadrats, size of quadrats etc **p, cp**	Works for all strategies – regeneration, revegetation etc	Time consuming, labour intensive

Specht (vegetation mapping)	Percentage cover (area) or vegetation layer	Good for contracts to do targeted weed removal eg blackberry, pampas grass, bitou)	
Tree girth/ tree height			
Plant mortality	Forms part of quadrats system. Percentage mortality.		
Weed seed succession			

The variables!
Drought/Floods, Vandalism, 40 degree heat, Diseases, Bugs, Plant stock …

Note:
- Vegetation mapping can be expensive, depends on the scale and level of detail required.
- Detail can make it expensive. Small areas cost less money, but to see a change in the site may require mapping on a fairly fine scale.

Resources:
- DECC website pages for Endangered species lists
- 2004 DECC survey guidelines, devised for threatened species but good guidelines for general surveys
- Wildlife Atlas (does not cover all vegetation communities)
- R.L Specht, 1981, gives a standard for % cover (check the resource is it in someone else's report…)
- Copper, 1995, Random Meander Method, CSIRO publishing
- DECC Bitou Bush monitoring – three levels of monitoring from basic to intense

What is needed next/ agreed actions:
- Baseline monitoring/intermediate
- Case studies – effectiveness of different methods, standardized survey methodology
- Minimal requirements for monitoring
- Baseline measurement of resilience of a site – TAFE
- All discussion group members to provide comments on notes via email
- Set up sub-committee to evaluate methods