An Evaluation Framework for the ACC's Natural Diversity Program: Phase 1

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Explanation of Phases

The development of the Monitoring and Evaluation Framework proceeds through a number of phases from developing draft procedures, database design, testing with feedback from end-users and the final product. Each of these phases is required in the final application framework. Acknowledging this the reporting will continue as a series of phases (Table 1) which will be synthesised in the final report.

Table 1. Reporting phases and their timelines.

Milestones	Completion Date	Phase
Final M&E procedure/framework completed	31-Mar-09	1
M&E database system requirements, specification and data storage determined	27-May-09	2
Report on application	30-June-09	3

This report, the Phase 1 report, constitutes the M&E procedure.

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Introduction

Monitoring and Evaluation (M&E) is now considered a key component of project development and reporting. In general terms monitoring refers to outputs such as kilometres of fencing, dollars spent on on-ground work while evaluation refers to outcomes: what has resulted from the money expended. Evaluation is essentially about collecting information on the impacts of our activities and in doing this it allows us to start making judgements about how effective an intervention is in terms of specific criteria and values. This is why evaluation is seen as a key part of project development: it makes us clearly think through the issues of issue, implementation, outcomes and how to measure success.

This has recently been highlighted by the *The Auditor-General Performance Audit of the Regional Delivery Model for NHT and NAP* funding over 2007-2008 which concluded that there

was no effective outcomes reporting; we are very good at reporting where we have spent money but less good at identifying how effective has been our intervention.

The Avon Catchment Council (ACC) has tasked the Baselining Project with the development of an evaluation framework across their natural diversity projects. This document describes the salient project development details and gives the evaluation framework.

Project Scope

The evaluation framework described here is nested within the larger M&E framework being developed by the ACC for all projects being delivered for the ACC. To limit overlap we have defined the scale of this evaluation framework as the on-ground site level ie the scale at which actions are being done by delivery organisations (DO's) within the ACC's Natural Diversity Program. Here we are only interested in objectives that have a conservation outcome, thus agroforestry and saltland pastures are not included in this framework.

Stem *et al.* (2005) reviewed the M&E literature and defined four broad purposes for M&E: basic research; accounting and certification; status assessment; and effectiveness measurement. For the ACC projects we are focusing on effectiveness measurement ie developing a framework to test that on-ground actions have achieved predefined outcomes.

We define actions as those activities which have both a defined objective and an activity that aims to achieve this objective. Thus activities such as fencing, controlling weeds and competitive herbivores etc are actions that can have their effectiveness measured but activities such as monitoring changes in rare flora populations <u>without</u> an on-ground action are excluded. Similarly, planning is not considered an evaluation action.

General Principles

There are some general principles that we developed to identify actions and outcomes:

(i)   Underlying effectiveness measurement is an understanding of what the action is intended to deliver (ie the outcome).

(ii)   The outcome needs to be measurable.

(iii)   If we have a measurable outcome this implies that we have a measure of current status which we are trying to improve.

(iv)   The outcome needs to be time bound and that some outcomes will only be achieved decades after the action has occurred, thus, for some actions, we may also need to evaluate a mid-term objective which may or-may-not be the same as the final objective.

(v)   The link between outcomes and actions is predicated on a number of assumptions.

This is the thinking that we used to develop our framework.

Framework

The core of this is the definition of present status, of a biodiversity asset, objectives of any intervention and assumptions for the actions that each DO performs and to nest these in a quantifiable evaluation process. To do this we developed a series of standardised questions that leads the user through the process.

These questions are:

1. What does success look like in the long term eg 20 years? (ie what is the long term objective)

2. What action/s will achieve this success/objective?

3. What assumptions are you making about this action for that objective?

4. What is the present status of the asset?

5. What does success look like in the short term eg 3-5yr? (ie what is the short term objective)

6. What is the measure of success in the patch in the long term (quantitative)?

7. What is the measure of success in the patch in the short term (quantitative)?

Identifying Objectives, Actions and Assumptions

In November 2008 a seminar and workshop was held in Northam. Invitees were from the ACC and Delivery Organisations in contract with the ACC. The intent was to start a conversation about an M&E framework and to start to develop a list of actions, outcomes and assumptions from the DO.

This was followed up by email correspondence with the attendees to the seminar and workshop to further explore their actions, assumptions and outcomes.

Objectives

One of the key parts of evaluation is to have a clearly defined objective ie what does success look like. From DO feedback we have defined 12 different objectives; these can be categorised into three general themes (Table 2). These themes can be readily identified as those relating to flora (these relate to specific species of rare flora), fauna (rare fauna) and vegetation (including managing and creating corridors and patches of bush). Appendix 3 shows the list of possible actions for each long term objective.

Table 2. Long-term objectives for delivery organisations in the ANRMR.

Theme	Long-term Objective
Managing DRF	Improve health of DRF plants and promote recruitment of plants
Managing DRF	Reduce the risk of DRF extinction by establishing and managing a viable self sustaining population in natural habitat.
Managing Fauna	Maintain or increase fauna population
Managing Vegetation	Ameliorate waterlogging and/or salinisation
Managing Vegetation	Improve condition of vegetation by improving health and recruitment of existing native plants.
Managing Vegetation	Increase native plant recruitment
Managing Vegetation	Increase riparian vegetation
Managing Vegetation	Increase size of defined vegetation community
Managing Vegetation	Reduce surface water runoff to stabilise soils prone to surface water runoff & soil erosion
Managing Vegetation	Slow the decline in condition of remnant vegetation
Managing Vegetation	The target species uses the corridor.
Managing Vegetation	To revegetate or manage an area with the intent of replicating the Benchmark for this community.

Actions and Assumptions

From the information given to us by the DOs there are 20 different actions each with their own assumption (see Appendix 1). Identification of these assumptions is critical in understanding the relationship between actions and objectives.

In collating the actions the following, needs to be recognised:

- Rabbit control includes fencing, gassing and baiting for rabbits.

- There are two different types of revegetation: (i) Biodiverse revegetation refers to revegetation or supplementary plantings that do not have the specific intent of achieving benchmark status for a specified vegetation community but are done for biodiversity conservation outcomes (in contrast agroforestry is not part of our evaluation framework as

it is not considered a natural diversity activity). This could be for a buffer or corridor. This could be the planting of a single species. (ii)Benchmarking revegetation is revegetation with the intent of replicating the Benchmark for this community ie numerous species planted that represents each strata.

Measuring

Some objectives, such as decreasing fox numbers, are not readily measurable, in these instances, were possible, we have used a surrogate such as increase of target species.

References

Stem, C., Margoluis, R., Salafsky, N. and Brown, M. (2005). "Monitoring and Evaluation in Conservation: a Review of Trends and Approaches." Conservation Biology **19**(2): 295-309.

Appendix 1: The Actions and Assumptions of the evaluation framework.

Action	Assumptions
Bait for foxes	Removing feral predators will result in an increase or maintenance of present population size of target species.
Control pest species of parrots	Hollows are the limiting factor in maintaining or increasing a threatened fauna population.
DRF Translocation	Translocation of DRF to a secure site will benefit the long-term survival of the species by increasing plant numbers and populations, and providing a site which has reduced threat.
Fence	Removal of grazing pressure and/or public disturbance will improve, retain or slow decline of the health of the population or remnant.
Poison feral honeybees	Hollows are the limiting factor in maintaining or increasing a threatened fauna population.
Provide nest boxes	Hollows are the limiting factor in maintaining or increasing a threatened fauna population.
Rabbit Control	Removal of grazing pressure will lead to an improvement of the health and recruitment of native plants
Recruitment burn of dead DRF plants and surrounds	Fire promotes germination of seedlings. Recruitment of seedlings improves the long-term survival of the population.
Revegetation (Benchmark revegetation)	Benchmark revegetation will result in benchmark status being achieved
Revegetation (Benchmark revegetation)	Corridors are beneficial for fauna movement and maintaining and improving biodiversity in linked patches. Well planned and sufficiently wide corridors will be self sustaining, especially if they are ecologically matched to landscape.
Revegetation (Biodiverse revegetation)	Corridors are beneficial for fauna movement and maintaining and improving biodiversity in linked patches. Well planned and sufficiently wide corridors will be self sustaining, especially if they are ecologically matched to landscape.

Action	Assumptions
Revegetation (Benchmark revegetation or Biodiverse revegetation)	Increasing the size of remnants increases the viability of the patch and of the wider ecosystem.
Revegetation (Biodiverse revegetation)	Plantings will reduce surface erosion.
Revegetation (Biodiverse revegetation)	Riparian vegetation will help reduce the impact of water erosion & sedimentation into tributary or waterbody
Revegetation (Biodiverse revegetation)	Supplementary planting/direct seeding increases native plant recruitment
Revegetation (Biodiverse revegetation)	Planting trees will reduce watertable
Revegetation (Biodiverse revegetation)	Buffer plantings will reduce wind-borne weed seeds entering remnant, high wind effects and chemical drift.
Roo Control	Removal of grazing pressure will lead to an improvement of the health and recruitment of native plants
Spraying for insect pests	Removal of grazing pressure will lead to an improvement of the health and recruitment of native plants
Weed control	Weed competition decreases recruitment and health of existing native plants

Appendix 2: The measures for the actions undertaken in this framework.

Action	Qualitative Measure
Bait for foxes	An increase or maintenance of present population size of target species. That is, a surrogate species for fox management such as Black-flanked rock-wallabies.
Control pest species of parrots	Counts of hollows being occupied by pest species in a remnant (exact and/or extrapolated)
DRF Translocation	DRF pop estimate and subsequent generation recruitment.
Fence	Measured by (i) an increase in desirable biodiversity variable(s) that are subdued by grazing and/or public disturbance and (ii) presence of faeces and other disturbance (public) on transect.
Poison feral honeybees	Counts of hollows being occupied by pest species in a remnant (exact and/or extrapolated).
Provide nest boxes	Target species population estimate.
Rabbit Control	Measured by (i) an increase in desirable biodiversity variable(s) that are subdued by rabbit grazing and/or rabbit disturbance and (ii) presence of faeces and other disturbance (burrows) on transect (decrease).
Recruitment burn of dead DRF plants and surrounds	DRF population (increase).
Revegetation (Benchmark revegetation)	The vegetation community's variables against the Benchmark for that community's variables eg Canopy Cover
Revegetation (Benchmark revegetation) for corridors.	Target species population estimate and the defined vegetation community's variables measured against the Benchmark for that community's variables eg Canopy Cover, in the corridor.
Revegetation (Biodiverse revegetation) for corridors.	Target species population (increase) and the number/proportion of plants on transect surviving.

Revegetation (Benchmark revegetation or Biodiverse revegetation) to increase size of defined vegetation community	Area increase of defined vegetation community. For benchmarking, area of defined vegetation community's variables measured against the Benchmark for that community's variables eg Canopy Cover. For biodiverse plantings the area of surviving plants that have increased the size of remnant.
Revegetation (Biodiverse revegetation) to Reduce surface water runoff and stabilise soils.	Surface water runoff measure (?) Number/proportion of plants on transect, surviving.
Revegetation (Biodiverse revegetation) to increase riparian vegetation.	Area increase of riparian vegetation. Number/proportion of plants on transect, surviving.
Revegetation (Biodiverse revegetation) to improve native plant recruitment.	Proportion of recruitment on transect, and number/proportion of plants on transect surviving.
Revegetation (Biodiverse revegetation) to ameliorate waterlogging/salinisation.	Proportion of recruitment on transect and waterlogging and salinisation measures (?) number/proportion of plants on transect surviving.
Roo Control	Measured by (i) an increase in desirable biodiversity variable(s) that are subdued by roo grazing and (ii) presence of faeces on transect.
Spraying for insect pests	Measured by (i) an increase in desirable biodiversity variable(s) that are subdued by insect grazing and (ii) presence of evidence of insect grazing on transect.
Weed control	Weed population estimates on transect (quadrat? Presence absence?)

Appendix 3: The long term objectives and their associated actions, identified in this framework.

Theme	Long-term Objective	Action(s)
Managing DRF	Improve health of DRF plants and promote recruitment of plants	Fencing, weed control, rabbit and kangaroo control and recruitment burn of dead DRF plants and surrounds.
Managing DRF	Reduce the risk of DRF extinction by establishing and managing a viable self sustaining population in natural habitat.	DRF Translocations and the on-going management actions listed above.
Managing Fauna	Maintain or increase fauna population	Baiting for foxes, fencing, controlling feral honey bees and pest parrots and providing nest boxes.
Managing Vegetation	Ameliorate water-logging and/or salinisation	Biodiverse revegetation, rabbit, weed, and kangaroo control and fencing.
Managing Vegetation	Improve condition of vegetation by improving health and recruitment of existing native plants.	Biodiverse revegetation, rabbit, weed, insect pest and kangaroo control and fencing.
Managing Vegetation	Increase native plant recruitment	Biodiverse revegetation, rabbit, weed, insect pest and kangaroo control and fencing.
Managing Vegetation	Increase riparian vegetation	Biodiverse revegetation, rabbit, weed, insect pest and kangaroo control and fencing.
Managing Vegetation	Increase size of defined vegetation community	Benchmark or Biodiverse revegetation, rabbit, weed, insect pest and kangaroo control and fencing.
Managing Vegetation	Reduce surface water runoff to stabilise soils prone to surface water runoff & soil erosion	Biodiverse revegetation, rabbit, weed and kangaroo control and fencing.
Managing Vegetation	Slow the decline in condition of remnant vegetation	Fencing and rabbit, kangaroo and weed control.
Managing Vegetation	The target species uses the corridor.	Benchmark or Biodiverse revegetation, rabbit, weed and kangaroo control and fencing.
Managing Vegetation	To revegetate or manage an area with the intent of replicating the Benchmark for this community.	Benchmark revegetation, fencing, rabbit, kangaroo and weed control.