

Keeping a Project Journal

Guidelines for planning, monitoring and evaluating a land management project

Project Record

Number of hours	Number of people	Total hours
50	2	100
50	2	100
10	1	10
40	4	160
5	2	10
5	0	20



Hunter-Central Rivers

CMA CATCHMENT MANAGEMENT AUTHORITY

Keeping a Project Journal

Keeping a Project Journal and its companion volume the *Project Journal* are designed for landholders and community groups to record information about land management projects. Both are published by and are available from the Hunter–Central Rivers Catchment Management Authority (CMA). Copies are also available on the CMA's website.



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Part 1 | Overview

Introduction

These guidelines have been produced to help people carrying out work on the land. Whether you are an individual clearing a few hectares of blackberry from a private property or a large group of people planting hundreds of trees in a public space, the principles of planning, monitoring and evaluation are the same.

This book outlines the 'how to' of planning, monitoring and evaluating your work. Its companion volume, the *Project Journal* (see inside front cover), is the place to record the detail of your actions, activities and project's progress.

Why keep a Project Journal?



All projects, regardless of size and scale, benefit from careful record keeping. In his book *Basic Projects in Wildlife Watching* (Stackpole Books 1989), Sam Fadala

points out that: 'We don't always recall fine

details unless we record them. We are in good company when we keep records. Charles Darwin, for example, was a naturalist, not a laboratory researcher. He observed wildlife in its natural setting with meticulous care, and his observations became books.'

A Project Journal is as much a part of your tool kit as a shovel, secateurs or a post-hole digger. By recording and responding to your observations, you will increase the success rate of your current project, and improve the outcomes of future projects. A Project Journal helps you to:

- remember the details of your actions and your observations
- prove what has been achieved
- account for public funds
- boost your own motivation
- keep an eye on your progress and make any needed changes
- learn from your experiences by highlighting why things worked well or what caused problems and how you dealt with them
- make easy any reporting that needs to be done
- make your experience available to others

What should you record in your Project Journal?

You can record as much or as little as you like, as long as you get the basics. However, there are three main stages that you need to focus on:

Stage 1 | Site assessment & planning

Complete a site assessment to work out the issues at your site. Work out your goal, the actions you need to carry out to achieve that goal, and the resources you will need. It's also important at this early stage to plan how you will monitor and record your project's progress.

Start your journal right now. Record all the things that you did to prepare for the project: who you spoke to and the advice you received; the time you actually spent in planning; your actual project plan; any funding submissions. Also include 'baseline' information, such as initial site assessments, species inventories, initial survey results and pre-project photos.

Stage 2 | Recording your progress

Once you get going with your project it is important that you monitor its progress. This is simply a matter of keeping an eye on how things are going, and then recording the details that you may otherwise forget. Your journal might include:

- a record of all the actions carried out during the project
- a description of what you did and how you did it
- observations that you made along the way, especially anything you found to be unusual, unexpected, or not going as planned
- any actions taken to fix problems
- unexpected results (even mistakes, properly recorded, can lead to surprise discoveries)
- a record of dates and hours worked to document your contribution to the project
- results from monitoring, e.g. bird survey, water-quality testing

Stage 3 | Evaluation and reflection

Look back on the project at different stages and think about what succeeded and what could be improved next time. Summarise the project and the hours and materials that went into it, the lessons learnt and any suggestions for the future.

The following section takes you in detail through the three stages of preparing and using a Project Journal.

Stage 1 | Site assessment & planning

STEP 1 'Scope' the project

Discuss your ideas about the project with others who have done something similar, or with your local community support officer. Look over background information such as catchment plans; these are usually available from your Catchment Management Authority (CMA) or local council. Visit the site, seek technical expertise and draw on local knowledge.

You'll have more questions than answers at this stage: What are the issues I want to address? What is it that I want to achieve? How? Who will be involved? Who can help? What resources do I have, and what else is needed?

Use the blank **Project Plan** form in your *Project Journal* to enter your details (pages 9–11 of this publication are an example of how to use the plan).

STEP 3 Objectives, actions and resources

Your objectives are the 'big picture' statements that describe what it is you want to achieve through the project. When writing down your objective, it's often useful to start with 'To', then list a 'doing' word, and end with what it is that will be done. For example, 'To reduce the erosion of the streambank, by replanting native trees and shrubs, and improve bird habitat.'

Your actions are simply the things you will do or produce during your project. In the above example, this might include planting 500 trees, erecting 1000 m of fencing, removing blackberry from a 20 ha remnant, or holding a training day.

Your resources are the materials and support that you need to complete your actions and, therefore, to achieve your objectives. This is also where you cost out your project. Resources might include technical advice, labour, equipment, materials and funds.

For help in developing Step 3, use the **Objectives & Monitoring Toolbox** on page 12.

The first stage of any project is the planning and preparation. By following the four-step guide below, you can create the foundation for a successful project plan.

A blank **Project Plan** can be found in your *Project Journal* and **Site Assessment Forms** are available from the CMA (for both rural/private land assessment and urban/public land assessment).

STEP 2 Project suitability

Consider the suitability of what you plan to do in relation to a broader catchment or property plan. Think about why the project is important to you personally. Also, check up on the latest recommended practices, any risks involved and the types of permits you may need (once again, your CMA will help), and whether or not there are others who could be involved.

Identify any factors you can think of that might impact on the success of your project. Examples include drought, time commitments, funding timeframes, etc. Also, try to come up with ideas about how to minimise the impact of these outside factors on your project.

Use the blank **Project Plan** form in your *Project Journal* to enter your details (pages 9–11 of this publication are an example of how to use the plan).

STEP 4 Monitoring techniques and targets

The final step in Stage 1 is to identify the monitoring techniques and targets for your objectives. Keep track of all actions and resources in your *Project Journal*.

It's important to be realistic and to take into account your abilities, interests and resources. Be aware that measurable achievements of your objective may be difficult in the short term, so choose indicators that will show an immediate response, as well as medium- and long-term ones.

How will you monitor?

Monitoring can either be an actual measurement (quantitative) or photopoints and observation (qualitative). Both forms of monitoring are important and useful.

What is your target?

Identifying targets or milestones (such as completion dates) for aspects of your project will help guide your progress and provide points to review its progress. This will also help to highlight early warning signs of any problems and give you a chance to make necessary changes. The 'end-of-project' target is what you are aiming for and is important because it is how you will ultimately judge the success or failure of your project.

For help in developing Step 4, use the **Objectives & Monitoring Toolbox** on page 12.

Stage 2 | Recording your progress

The ideal way to record details about your activities and your progress is in a Project Journal. Your journal should include a copy of your project plan, details of any funding applications, and all your monitoring information.

Try to record everything about your project, from site assessment and planning to all your actions and observations.

Down the track you can look back on your project and remember what you did, where and when it was done, how well it worked and what you noticed and learnt from your experience.

This book's companion volume, *The Project Journal* (see inside front cover for details), contains blank undated **Project Record** entries suitable for any project. See page 17 of this publication for an example Project Record.



Your observations are valuable. Monitoring happens all the time, but is usually done informally and kept in your head rather than being written down. If you record your observations they will never be forgotten.

Hints on journal keeping



Photopoints are an excellent way of recording changes in vegetation. See page 20 for details.

Set aside a time (once a month or a quarter) to observe and record your project's progress. If this is too much, at least record an observation whenever you visit the site.

Make a note of regular occurrences, as well as the interesting and unusual.

Be systematic and organised. If you make a note on a scrap of paper, transfer it to your *Project Journal* as soon as is practical.

Photographs can be an useful part of your monitoring toolbox.

Try to take regular photos and tie them in with your observations.

Hints on journal keeping continued



Which species have thrived? Which have failed? Even mistakes, properly recorded, can lead to surprising discoveries.



Be systematic and organised. If you make a note on a scrap of paper, transfer it to your journal as soon as you can.

Focus your observations

Not sure where to begin? Try focusing on different aspects of your project site. The *Nature Watch Diary* (see References, page 23) suggests the following:

PLANTS

Which species have thrived? Are native species regenerating? Has there been insect infestation or weed invasion? What is the general health of the plants?

ANIMALS

Has there been a rise or decline in the numbers of native animals or pests? Are there any new species moving into the site (especially birds)? Have you noticed any particular behaviour patterns, such as migration, feeding and breeding?

INSECTS

Was there any population explosion or collapse? What were the stages of the lifecycle, behaviour, and impact on environment of the insect species you observed?

INTERCONNECTIONS

Were there any observable linkages or relationships, such as the turning of the seasons or trigger events (wattle blooms, pardalotes starting to call)?

Stage 3 | Evaluation and reflection

What's the difference?

Evaluation and reflection are complementary aspects of a project's assessment. Evaluation is focused on assessing the performance of the project in relation to your original targets. Reflection asks you to think about what you learnt from the project and how things could be improved in the future.

Evaluation

In your project plan you identified targets for your objectives. These are the measures for you to judge your project and its success. Completion dates and maintenance plans were also identified for your actions. Were these met? If not, why not?

Look at your original targets, completion dates and monitoring plans. Complete the blank **Project Evaluation** in your *Project Journal* and add your comments on whether or not your targets were met, and why (see page 18 of this publication for an example Project Evaluation).

The results may show that the project exceeded or fell below your expectations. If the target was not achieved, think about what actions you should take to reach your objective or consider revising your target.

Reflection

This process asks you to examine the suitability of the project, your experience, and any other factors or surprises you encountered. The **Project Reflection** form in your *Project Journal* has been created to provoke thought and discussion (see page 19 of this publication for an example Project Reflection).

Look back once again at your original project plan. The suitability of different aspects of a project can have a major bearing on its final success.

Similarly, there are a number of questions about what you gained from your experience with the project that might change the way you do things in the future.

Finally, think about any factors that were beyond your control. Describe what was done to minimise the impact. There may also be unanticipated outcomes (both positive and negative) that occurred which are important to consider in future project plans.

In hindsight, we've all got 20/20 vision

This final stage of your project is at least as important as the planning, preparation and the doing. It needn't take place at the end of a project either: it's just as useful to evaluate and reflect during your project as it is at the end.

Use the evaluation and reflection techniques described to look back and consider what went well, what you learnt and what could be improved next time. Look at how suitable the project actually was, and look at the project targets to make a judgement about its success. Look back at your Project Plan and refresh your memory about your original objectives. Did your planned monitoring and activities match what you did? If not, why not?

The evaluation and reflection stage of a project shows up just how well you've maintained your *Project Journal*. The more regular and consistent you were during stages one and two, the greater the benefits in stage three.

Some of your information might best be presented in the form of summaries, charts or graphs. A table of the dollars spent or people hours employed will highlight any major differences between your projection and your actual commitment. Graphs of tree survival, growth rates, ground cover, or water quality are also easy ways to present and interpret information.

If you have the opportunity it can be useful to carry out your evaluation as a group or with your local community support officer as a facilitator.

Update your Project Plan

If your evaluation takes place during your project's lifetime, the results should be fed back into the project as soon as possible. New actions may be needed which affect your original plan. You may even begin another Project Plan and include this in your *Project Journal*.

For an end-of-project evaluation it is useful to identify your longer term maintenance plans. Project reflection is very important at this stage. The lessons learnt from the project can be documented in the *Project Journal* and be available for your future reference or for use in any project reporting that is required.

Evaluation is focused on whether your project met your original targets.

Reflection asks you to think about what you learnt from your project and how things could be improved in the future.

Part 2 | Management tools

This section outlines a number of the useful management tools which are part of your *Project Journal*. These will help you during the three stages of the planning and implementation of your project described in Part 1. Some of these have been filled in as examples of how you might use your *Project Journal*. Monitoring Tips on pages 20 and 21 contains hints on how to expand on the information you record.

Project Plan PAGES 9–11

Used as part of Steps 1 and 2 of Site Assessment & Planning (page 4).

Objectives & Monitoring Toolbox PAGE 12

Used as part of Steps 3 and 4 of Site Assessment & Planning (page 4).

Basic Vegetation Survey PAGE 13

Used as part of Steps 3 and 4 of Site Assessment & Planning (page 4).

Remnant Vegetation Assessment form PAGE 14

Reproduced from the *Hunter Bushland Resource Kit* (details see page 22). This form will be particularly useful if you wish to conserve pockets or corridors of remnant native bushland.

Watercourse Assessment form PAGE 15

This form is of use to those landholders with land next to streams and rivers.

Project Evaluation PAGES 17 & 18

Evaluation can take place at any point in a project's life. Don't wait till the end.

Project Reflection PAGE 19

An important part of any project is reflection on its success and failures.

Monitoring Tips PAGE 20–21

These tips provide information on what to do, what to look out for, and how to identify and record what you see.

Location details

Project title *Remnant Enhancement and Corridor Linkage*

Name of property owner *Alby and Angela Brown*

Project location *45 Rocky Creek Road, Paterson*

Postal address *PO Box 32 Paterson*

Lot DP numbers *Lot 42 DP 14528, 14533*

and/or GPS coordinates: Eastings: *337 500 E* Northings: *6362 000 N*

Project suitability

1 What are the main issues your project will address?

- Native vegetation and biodiversity
- Coastal and estuary health
- Aquatic health
- Soil health
- Salinity
- Other _____

2 Are there any other plans that cover your site?

- Catchment plan
- Rivercare plan
- Property plan
- Coastal and estuary management plan

Name of plan _____

3 Describe the importance of this project to you.

We would like to improve the health of the remnant so that we have more native species of plants and animals on our property.

4 Is there anything that could cause a problem for this project which you have control over (e.g. level of commitment)?

What can you do to prevent such a problem?

We need to be realistic about how much time we can put into the project as we both work full time. We need to ensure that we can find the time to water and weed plantings if necessary.

5 Are there any factors beyond your control which could impact on the project (e.g. weather)? What could you do to minimise this risk?

If it looks like drought again we need to be able to delay planting till a more suitable time.

Checklist

Before you proceed with your project make sure you have:

- consulted with your local Landcare community support officer
- gained technical advice about your project
- asked for information about the latest recommended practices relevant to your project
- discussed your project with other stakeholders and/or your neighbours
- consulted with any local Indigenous groups regarding your project

Objectives			
What do you want your project to achieve in the long term?	How will you monitor?	What is your target?	
<p><i>a. To remove lantana and blackberry from 10 hectares of remnant vegetation</i></p> <p><i>b. Plant 1000 trees and shrubs in corridor between two remnants</i></p> <div style="border: 1px solid gray; border-radius: 50%; padding: 10px; width: fit-content; margin: 10px auto;"> <p>Tip: Aim for no more than three objectives (e.g. to re-establish native vegetation; to improve biodiversity; to reduce erosion).</p> </div>	<p><i>a. Weed mapping photopoints</i></p> <p><i>b. Survival rate photopoints</i></p>	<p><i>a. Reduced weed density</i></p> <p><i>b. 90% survival</i></p>	
Actions			
What will you actually do or produce from this project?	Completion date	What maintenance will you do?	
<p><i>a. Initial knockdown of weeds with brushcutter across 10 hectares</i></p> <p><i>b. Follow up weed control with hand weeding and spray unit</i></p> <p><i>c. Prepare site for planting</i></p> <p><i>d. Plant, guard, mulch and water 1000 trees</i></p> <p><i>e. Maintain (weed and water) and monitor plantings</i></p>	<p><i>a. June 2005</i></p> <p><i>b. Ongoing</i></p> <p><i>c. August 2005</i></p> <p><i>d. September 2005</i></p> <p><i>e. Until June 2007</i></p>	<p><i>a. Inspect and remove any regrowth</i></p> <p><i>b. Remove any regrowth</i></p> <p><i>c. N/A</i></p> <p><i>d. Water if dry and keep weed free for the first year. Keep pests and stock off site.</i></p>	
<p>Remember: Collect baseline information (e.g. photos and site assessment) before you begin any work</p>			

Keep a *Project Journal* to record your progress and details of all actions and resources connected to the project.

Resources

What resources do you need to achieve your outputs and objectives?

Own contribution

Other contribution
(name contributor)

Funding required

1 Materials:

1000 plants @ \$ 1.50 each
1000 guards @ \$ 0.50 each

\$1500
\$500

2 Landholder/volunteer labour:

10 hours site preparation @ \$20 hour
100 hours weed control @ \$20hour
100 hours planting @ \$20 hour
40 hours maintenance & monitoring @ \$ 20 hour

\$200
\$2000
\$2000
\$800

3 Contractor labour:

100 hours @ \$45per hour for lantana removal

\$4500

4 Equipment/other:

Total value of project = *\$ 11,500*

\$ 5000

\$

\$ 6500

5 Technical advice: Who do you need to or have sought advice from?

Name and position:

a. Bob Smith, CSO

Advice given:

a. Species list and lantana removal techniques

Objectives & Monitoring Toolbox

Based on Step 3 of the Site Assessment & Planning stage (page 4), the table below shows a range of typical project objective, actions and resources. It also lists some appropriate monitoring options for each of these objectives. When planning the aspects of your project that you will monitor, consider how much time you can set aside for it, what it will cost, any special skills needed and whether it interests you. Be realistic about what you aim to do, and remember that some projects will be more demanding than others.

When choosing monitoring techniques, make sure you record site details, observations, photos and species inventory before the project begins. This way you have a baseline against which you can compare future monitoring.

Objectives		How will you monitor?	What is your target?
VEGETATION/BIODIVERSITY	To re-establish native vegetation	<input type="checkbox"/> Survival <input type="checkbox"/> Growth rates	<input type="checkbox"/> 90% survival <input type="checkbox"/> 50 cm per year
	To protect a remnant and encourage natural regeneration	<input type="checkbox"/> Remnant vegetation assessment rating <input type="checkbox"/> Natural regeneration survey <input type="checkbox"/> Mapping vegetation linkages	<input type="checkbox"/> 'Good' health rating <input type="checkbox"/> Regeneration of at least three species <input type="checkbox"/> Linkages created
	To improve biodiversity	<input type="checkbox"/> Plant survey <input type="checkbox"/> Bird survey <input type="checkbox"/> Mammals, frogs, reptiles survey	<input type="checkbox"/> Increased species diversity <input type="checkbox"/> New bird species colonising area <input type="checkbox"/> Increased fauna activity
	To control weeds	<input type="checkbox"/> Weed survey and mapping <input type="checkbox"/> Area controlled	<input type="checkbox"/> Reduced density of weeds <input type="checkbox"/> Weeds under control
SALINITY	To address salinity problems	<input type="checkbox"/> Watertable level (piezometers) <input type="checkbox"/> Presence of salt-tolerant species <input type="checkbox"/> Ground water/surface water salinity	<input type="checkbox"/> Reduced watertable level <input type="checkbox"/> 50% reduction in salt-tolerant species <input type="checkbox"/> Reduction in salinity readings
AQUATIC HEALTH	To stabilise the creek bank and improve riparian health	<input type="checkbox"/> Watercourse assessment rating <input type="checkbox"/> Erosion risk/condition rating <input type="checkbox"/> Waterwatch and bug survey	<input type="checkbox"/> 'Good' assessment rating <input type="checkbox"/> Improved rating <input type="checkbox"/> Improved water quality readings
	To protect a wetland or estuary	<input type="checkbox"/> Waterbird survey <input type="checkbox"/> Waterwatch and bug survey	<input type="checkbox"/> Increased number of species <input type="checkbox"/> Increased water bug diversity
SOILS	To address dune or gully erosion	<input type="checkbox"/> Groundcover transect <input type="checkbox"/> Erosion mapping	<input type="checkbox"/> 100% groundcover <input type="checkbox"/> Stabilisation of area
	To improve soil health	<input type="checkbox"/> Farm sustainability indicators kit <input type="checkbox"/> Production levels	<input type="checkbox"/> Improved organic matter and soil structure <input type="checkbox"/> Crop yields or pasture health
OTHER	To improve grazing management	<input type="checkbox"/> Stock management <input type="checkbox"/> Pasture surveys	<input type="checkbox"/> Implement time control grazing <input type="checkbox"/> Improved pasture composition/health
	To raise community awareness	<input type="checkbox"/> Involvement in project <input type="checkbox"/> Community surveys <input type="checkbox"/> Focus groups and case studies	<input type="checkbox"/> New people getting involved <input type="checkbox"/> Increased understanding of issues <input type="checkbox"/> Example of increased understanding
Actions		What should you record in your <i>Project Journal</i>?	
Erect fencing and gates		<input type="checkbox"/> Identify any problems and solutions e.g. flood issues with fencing, falling limbs on fences <input type="checkbox"/> Length and type of fence constructed	
Plant tubestock or longstems		<input type="checkbox"/> Record site preparation and planting techniques <input type="checkbox"/> Record maintenance carried out e.g. watering, weeding, pest issues <input type="checkbox"/> What species were planted where?	
Install off-stream watering points		<input type="checkbox"/> Completion dates <input type="checkbox"/> Keep a record of any problems and solutions e.g. flood issues, breakdowns, maintenance	
Removal of weeds		<input type="checkbox"/> Record of control techniques <input type="checkbox"/> Area cleared of weeds	
Resources		What should you record in your <i>Project Journal</i>?	
Materials		<input type="checkbox"/> Receipts	
Landholder/volunteer labour		<input type="checkbox"/> Log all hours contributed	
Contractor		<input type="checkbox"/> Receipts, hours required	
Equipment		<input type="checkbox"/> Hire costs, record of equipment used	

Basic Vegetation Survey techniques

Random walk

Most suitable for tree and shrub layer

This method quite simply involves walking in a random manner around your site recording species of interest, their location, as well as collecting unknown species. The method allows you to quickly document a range of species on a small site. Identify as many species as you can in the tree, shrub and ground layer as well as the percentage cover of each layer. Record both native and exotic or weed species.

Step pointing

Most suitable for groundcover

This involves taking 100 steps (or more if necessary) through your site. Walk in either a straight line or zig zag through your site.

As you step through your site record what falls directly under the tip of your boot. Generally, for groundcover you should record: bare ground, grass, litter, dung, and rock. Your final count will then give you a percentage cover for each category across the site.

Measuring survival

- For small plantings simply count all surviving plants
- For large plantings the best way to assess survival is to look at some samples of your planting. This needs to be done in a random fashion.

In three easy steps:

- 1** Measure out a 20 x 20 m square (known as a quadrat), mark the corners with either bright tape or a stake.
- 2** Count the survival of each species within the square.
- 3** Repeat a minimum of three times per hectare (the more you do the more accurate you will be).
- 4** Calculate the average survival rate for each species — by adding your figures together from each quadrat and dividing by the number of quadrats measured.

If your planting is in rows you may prefer to sample randomly selected rows.

DATE:

SITE NAME:

RECORDER:

Random Walk Survey results

Name of dominant species in each plant layer		
TREE LAYER	SHRUB LAYER	GROUND LAYER
<i>Native species</i>		
1.	1.	1.
2.	2.	2.
3.	3.	3.
% cover	% cover	% cover
<i>Exotic/weed species</i>		
1.	1.	1.
2.	2.	2.
3.	3.	3.
% cover	% cover	% cover
What is the average height of each plant layer?		
m	m	m
<i>Vegetation community:</i>		
Is there any evidence of natural regeneration occurring?		
<input type="checkbox"/> Yes <input type="checkbox"/> No		

Step Point Survey results

Categories					
STEPS	BARE	GRASS	LITTER	ROCK	OTHER
0–25 m					
25–50 m					
50–75 m					
75–100 m					
<i>Total</i>	%	%	%	%	%

Remnant Vegetation Assessment form

Refer to the *Hunter Bushland Resource Kit* (details page 23) for a more detailed assessment.

This assessment form can be used for remnant bushland, scattered trees in paddocks and for grasslands. If you are assessing scattered trees and grasslands then leave out the the questions marked # for scattered trees in paddocks and * for grasslands.

Remnant type: Forest or woodland Native grassland Scattered trees

Vegetation community (e.g. red gum woodland) _____

ASSESSMENT QUESTIONS

Remnant characteristics

Response

Remnant is greater than 5 ha in size	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Remnant area is at least half as wide as it is long	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Remnant area is fenced to control stock access	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Remnant resilience

*Good general plant health (dieback or insect attack less than 30%)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
*#Good variety of native understorey plants (shrubs and grasses)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
*A range of different aged plants present with indications of continuing regeneration (saplings of trees and shrubs present)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
A higher proportion of native plants than weeds (for grasslands or scattered trees native plants might include native grasses, native daisies and lilies, orchids etc)	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Habitat potential

*Fallen timber and rocks on the ground	<input type="checkbox"/> YES	<input type="checkbox"/> NO
*Fissures in ironbarks and hollows or holes in other trees	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Most of the remnant has good ground cover or leaf litter (not a lot of exposed or eroded land)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
For grasslands: the remnant has no bare ground	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Distance to similar vegetation or scattered trees less than 100 m	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Disturbance/management impacts

Fires occur in the remnants at intervals greater than five years	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Neither the remnant nor the adjacent land is affected by salinity	<input type="checkbox"/> YES	<input type="checkbox"/> NO
The remnant is grazed infrequently (less than twice a year)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
The remnant is free from pesticide/herbicide spray drift	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Native animals are more abundant than feral animals (foxes, rabbits, cats etc.) in the remnant	<input type="checkbox"/> YES	<input type="checkbox"/> NO
For grasslands and scattered trees: the observation/sighting of feral animals is infrequent	<input type="checkbox"/> YES	<input type="checkbox"/> NO
*Not applicable to grassland remnants # Not applicable to scattered tree remnants	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Total number of 'yes' answers =

ASSESSMENT RESULTS

Bushland	Grassland	Scattered trees	Health rating	Level of management required
10+	8+	9+	Good health	Maintain and monitor
7-9	4-7	5-8	Fair health	May need to encourage natural regeneration through minimisation of disturbance/management impacts
0-6	0-3	0-4	Poor health	May need to significantly reduce disturbance/management impacts, monitor and replant if necessary

Reproduced from the *Hunter Bushland Resource Kit* (see Resources on page 22)

Watercourse Assessment form

ASSESSMENT QUESTIONS

Vegetation	Response	
Significant proportion of continuous mature native trees along both banks	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Ground cover mainly native plants	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Native tree regeneration occurring	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Blackberry/exotic shrubs/weeds mainly absent from banks	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Willows/exotic trees absent	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Native water plants present	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Native vegetation strip 20–30 m wide along each bank	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Bank stability		
Stock tracks absent from bank	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Banks stable under flood conditions	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Erosion absent	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Watercourse flow		
River channel not widening over time	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Major sand/silt deposits absent	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Major instream blockages absent	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Deep pools and riffles present	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Floodplain		
No river outflanking/floodplain stripping	<input type="checkbox"/> YES	<input type="checkbox"/> NO
No cultivation immediately adjacent to watercourse	<input type="checkbox"/> YES	<input type="checkbox"/> NO
No cultivation on adjacent steep hills	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Management		
Banks fenced out from livestock	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Algal blooms absent (all year)	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Wildlife		
Aquatic insects present under many small to medium rocks	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Variety of native birds present	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Native fish present	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Frogs, platypus or water rat present	<input type="checkbox"/> YES	<input type="checkbox"/> NO

Total number of 'yes' answers = _____

ASSESSMENT RESULTS

	Health rating	Level of management required
9+	Good health	Maintain and monitor
5–8	Fair health	Advised to implement a rehabilitation program
0–4	Poor health	Need urgently to implement a rehabilitation program

Save the Bush Toolkit (see References on page 23)

Project Record

Try to record everything you do, but keep it brief. Most importantly, record the number of hours you contribute and observations you make about your project.

Date	Weather (since last entry)	Rainfall (since last entry)	What did you do?	What did you observe? Did any problems occur?	Number of hours	Number of people	Total hours
23/5/04– 29/5/04	Dry, cool	—	Worked with contractor to remove lantana and blackberry from 5 ha of remnant	Contractors provided us with on the job advice, their experience helped a lot.	50	2	100
8/6/04– 14/6/04	Showers	20 mm	Worked with contractor to remove lantana and blackberry from 5 ha of remnant	Noticed a lot of small birds nests as we removed the weeds. Slow going due to thickness of weeds	50	2	100
15/7/04– 18/7/04	Cold, rainy	40 mm	Prepared site for planting (slashing and ripping), set up photopoints	No problems	10	1	10
16/9/04– 30/9/04	Warm, some rainy days	15 mm	Planted, mulched, guarded and watered 1000 plants	A bit slow to begin with because it's the first time we ever planted trees. Haves a problem so put netting up around fence as well.	40	4	160
20/10/04	Dry, warm	0 mm	Watered plantings due to dry month, monitored growth	Some losses due to frosts	5	2	10
30/11/04	Some rain, warm	15 mm	Follow-up weed control in remnant	Some regrowth but keeping on top of it, natural regeneration of native plants evident	10	2	20
16/12/04	Dry, hot	0 mm	Watered plantings again due to little rain, some weed control as well	Most plants going well, except those lost to frost	5	2	10
OUTPUTS Cleared environmental weeds from 10 ha remnant Planted 1000 trees and shrubs				TOTAL HOURS	410		

Project Evaluation

NAME: <i>Alby & Angela Brown</i> PROJECT: <i>Remnant Enhancement & Corridor Linkage</i>				
Objectives				
Project objectives <ul style="list-style-type: none"> • <i>To remove lantana and blackberry from 10 ha of remnant vegetation</i> • <i>Plant 1000 trees and shrubs in corridor between two remnants</i> 	<table border="1"> <tr> <td> How did you monitor? <ul style="list-style-type: none"> • <i>Weed mapping</i> • <i>Photopoints</i> • <i>Survival rate</i> • <i>Photopoints</i> </td> <td> What was your target? <p><i>Reduced weed density</i></p> <hr/> <p><i>90% survival</i></p> </td> <td> Has target been reached? <i>.if not, why? If it has been exceeded, why?</i> <p><i>Weeds have been controlled with monthly follow-up</i></p> <hr/> <p><i>After six months there is a 75% survival rate — one species was vulnerable to frost and they all died</i></p> </td> </tr> </table>	How did you monitor? <ul style="list-style-type: none"> • <i>Weed mapping</i> • <i>Photopoints</i> • <i>Survival rate</i> • <i>Photopoints</i> 	What was your target? <p><i>Reduced weed density</i></p> <hr/> <p><i>90% survival</i></p>	Has target been reached? <i>.if not, why? If it has been exceeded, why?</i> <p><i>Weeds have been controlled with monthly follow-up</i></p> <hr/> <p><i>After six months there is a 75% survival rate — one species was vulnerable to frost and they all died</i></p>
How did you monitor? <ul style="list-style-type: none"> • <i>Weed mapping</i> • <i>Photopoints</i> • <i>Survival rate</i> • <i>Photopoints</i> 	What was your target? <p><i>Reduced weed density</i></p> <hr/> <p><i>90% survival</i></p>	Has target been reached? <i>.if not, why? If it has been exceeded, why?</i> <p><i>Weeds have been controlled with monthly follow-up</i></p> <hr/> <p><i>After six months there is a 75% survival rate — one species was vulnerable to frost and they all died</i></p>		
Results				
Project results <ul style="list-style-type: none"> • <i>Initial knockdown of weeds with brushcutter across 10 ha</i> • <i>Follow-up weed control with hand weeding and spray across 10 hectares</i> • <i>Prepare site for planting</i> • <i>Plant 1000 trees</i> 	<table border="1"> <tr> <td> Were there any delays or problems? <i>if so, what solutions did you come up with?</i> <p><i>No</i></p> <hr/> <p><i>This job was more time consuming than originally planned</i></p> <hr/> <p><i>No</i></p> <hr/> <p><i>We planted 100 trees of a species that was not recommended and they were prone to frost so did not survive — next time we will only plant recommended species</i></p> </td> <td> Has your maintenance been successful? <p><i>Yes</i></p> <hr/> <p><i>Yes</i></p> <hr/> <p><i>n/a</i></p> <hr/> <p><i>Watering and weeding has generally been required and has successful</i></p> </td> <td> Project expenditure <p>Predicted expenditure <i>\$11,500</i></p> <p>Actual expenditure <i>\$13,000</i></p> <p>Difference <i>\$1,500</i></p> <p>Why was there a difference? <i>The difference was because we had to spend a lot of extra hours watering the plants</i></p> </td> </tr> </table>	Were there any delays or problems? <i>if so, what solutions did you come up with?</i> <p><i>No</i></p> <hr/> <p><i>This job was more time consuming than originally planned</i></p> <hr/> <p><i>No</i></p> <hr/> <p><i>We planted 100 trees of a species that was not recommended and they were prone to frost so did not survive — next time we will only plant recommended species</i></p>	Has your maintenance been successful? <p><i>Yes</i></p> <hr/> <p><i>Yes</i></p> <hr/> <p><i>n/a</i></p> <hr/> <p><i>Watering and weeding has generally been required and has successful</i></p>	Project expenditure <p>Predicted expenditure <i>\$11,500</i></p> <p>Actual expenditure <i>\$13,000</i></p> <p>Difference <i>\$1,500</i></p> <p>Why was there a difference? <i>The difference was because we had to spend a lot of extra hours watering the plants</i></p>
Were there any delays or problems? <i>if so, what solutions did you come up with?</i> <p><i>No</i></p> <hr/> <p><i>This job was more time consuming than originally planned</i></p> <hr/> <p><i>No</i></p> <hr/> <p><i>We planted 100 trees of a species that was not recommended and they were prone to frost so did not survive — next time we will only plant recommended species</i></p>	Has your maintenance been successful? <p><i>Yes</i></p> <hr/> <p><i>Yes</i></p> <hr/> <p><i>n/a</i></p> <hr/> <p><i>Watering and weeding has generally been required and has successful</i></p>	Project expenditure <p>Predicted expenditure <i>\$11,500</i></p> <p>Actual expenditure <i>\$13,000</i></p> <p>Difference <i>\$1,500</i></p> <p>Why was there a difference? <i>The difference was because we had to spend a lot of extra hours watering the plants</i></p>		

Provide details of number of plants, metres of fencing, hectares of weed control, etc.

Project Reflection

- 1** What went well with the project? What were the things that helped it succeed? Were there any unexpected results that were positive?

The assistance from the contractor made the weed removal much more manageable and the natural regeneration that occurred was a great result.

- 2** Were there any problems? If so, how did you deal with them?

The main problem was that we planted a certain species that was not frost tolerant and they all died. We couldn't do much about this. We also had a problem with rabbits and roos grazing the seedlings, we added netting to the fence which helped.

- 3** What have you learnt from this project (e.g. which species were the best)? What would you do differently if you had to repeat the project?

Spotted gums and flooded gums grew the best and frost-tolerant species (especially lilly pillies) are not suitable for planting on a site like ours. In future we would stick with the recommended species list.

- 4** Have there been any comments, questions or involvement from other landholders or community members regarding your project?

Our neighbours have noticed what we are doing and are now also interested in getting involved.

- 5** Did you receive adequate assistance from the CMA? Are there any improvements you would like to suggest?

The financial assistance and technical advice was all adequate. We will definitely apply for further assistance in the future. More assistance with monitoring would be helpful.

Monitoring Tips

Photopoints

It's important that you are consistent in your photo taking. The best way to achieve this is to pick something and use it as a feature of your photo. You could choose a fencepost, a building or clear a landmark. If choosing a fencepost, be sure to choose one that will be visible well into the future, and mark it clearly.

Use the plastic sleeves in your *Project Journal* for recording photopoints. As you take photos place them alongside their matching photos so you can instantly compare the progress of your project. Alternatively, you may be using digital photos or prefer to scan your photos into your computer. Build a virtual album on your computer to store your photos where they can be easily compared with each other.

Photographs show large and obvious changes in vegetation, especially the tree and shrub layer. Close-ups can be used to give an idea of changes in ground cover. Photopoints are useful for recording the spread or decline of environmental weeds as well as the natural regeneration of vegetation.

Record relevant details for each photo including time, date and location.



Consistency is important. Pick out an object or create something that will be a clear landmark in your photo records.



Photos provide a dramatic illustration of a project's success or failure, as with these before-and-after photos of bushland rehabilitation.



Waterwatch and bug survey



Monitoring water quality and the health of water bug communities can provide you with a good indicator of the health of your streams. Although there are many factors affecting water quality, changes that you make in managing your waterways could result in obvious improvements in habitat which can be assessed through water bug surveys.

The national Waterwatch program provides a comprehensive water-quality monitoring system that is simple to use. There is also the opportunity to be part of a national network of community water-quality monitoring groups and to contribute to the on-line water quality database. Training is available and, once undertaken, you will be able to carry out tests whenever you like. To arrange a training session contact one of your local coordinators, or check out www.waterwatch.nsw.gov.au or www.bugsurvey.nsw.gov.au.

Contact the CMA for your local Waterwatch coordinator.

Fauna survey

Note that the methods described below are based on bird surveys. However, the principles apply to most types of fauna.

1 Two-hectare search

- This is the preferred Birds Australia method.
- Search a two-hectare area for 20 minutes.
- We encourage you to survey your selected area once each season for at least one year.

2 Area search

- The area search is more flexible than the two-hectare search; you can search any area, listing the birds seen around a central point.
- You may do a small area search, within 500 m, or a large area search, extending beyond 500 m but within 5 km of a central point.
- The search area can be any shape.
- Search for at least 20 minutes.

3 Incidental search

- Records of rare, uncommon or unusual species seen as once-off sightings.
- Surveys of a specific group of birds, such as wetland birds, waders, or waterfowl.

Contact the CMA to find out about your local birdwatching groups.



Weed Mapping

If you want to undertake weed mapping, a useful publication is 'Guidelines for Weed Mapping in the Hawkesbury-Nepean' which is on the *Aspects of Catchment Health* CD-ROM (published by DLWC 2000 and available from the CMA).

Part 3 | Resources

The following list of resources is far from extensive, but will help you carry out the identification of flora, birds and other fauna. Books which are likely to remain in print for some time have been selected; these should be readily available through your bookshop or the Internet. Contact details have been provided for any books that are not easily available through normal retail outlets.

Books and CDs

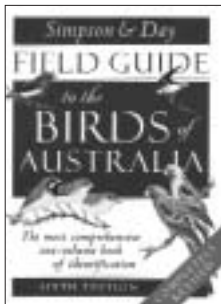
Bird identification guides



The Field Guide to the Birds of Australia
Graham Pizzey & Frank Knight

A comprehensive and stunningly illustrated handbook. The guide features information on 778 species of birds. It has 250 full-

colour plates, specially painted for the book, with more than 2500 individual portraits. Field marks are highlighted in the text with illustrations to help birdwatchers distinguish between similar species. Full details of the breeding and nesting habits, voice characteristics, habitats and range of each species, and more than 700 distribution maps, are also included.



Field Guide to the Birds of Australia
Ken Simpson & Nicolas Day

This sixth edition is completely revised. The field guide section gives key points of identification using

the latest classification system; 132 superb full-colour plates show 760 Australian birds, including 18 revised plates; distribution maps with subspecies shown; over 1000 black and white line illustrations (many new or redrawn), extended vagrant bird bulletin with 42 species; core library included for beginner birdwatchers. Suitable for beginners through to experienced birdwatchers.

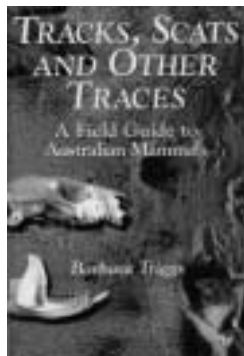
Other fauna guides



A Field Guide to the Mammals of Australia
Peter Menkhorst & Frank Knight

What distinguishes the eastern grey from the western grey kangaroo? This is an outstanding field guide to the identification of all 379 of

Australia's diverse mammal fauna, including concise identification keys, distribution maps, details of dimensions, habitat and behavioural characteristics and hundreds of full-colour illustrations. The durable flexi-cover makes it ideal for the glove box.



Tracks, Scats and Other Traces: A Field Guide to Australian Mammals
Barbara Triggs

Use footprints in the mud, scats on a rocky ledge or bones scattered on a forest floor to identify the

presence of Australia's mammals without ever seeing them. A must for bushwalkers, naturalists, students and enthusiasts.



Frogs and Reptiles of the Sydney Region
Ken Griffiths

A comprehensive field guide to the frogs, snakes, lizards and tortoises of the Sydney region. Contains spectacular colour photographs along with detailed descriptions to allow for ready identification of all species.

Plant identification & vegetation management



Hunter Bushland Resource Kit
Hunter Catchment Management Trust & Travis Peake

This book has been developed with Hunter landholders for Hunter landholders. It provides practical

advice on managing, protecting and conserving the Hunter's unique native vegetation. Special features of the kit include:

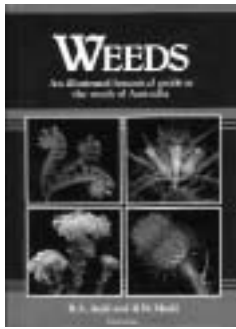
- comprehensive details of Hunter vegetation types
- extensive native and weed species lists for each local government area of the Hunter catchment
- simple, easy-to-follow checklists for assessing remnant vegetation
- practical information on protecting and expanding remnants
- techniques for integrating remnant vegetation with productive farming



Field Guide to the Native Plants of Sydney
Les Robinson

This guide to over 1370 species of Sydney's (and also many of the Hunter's) plants has information on history, ecology, Aboriginal and

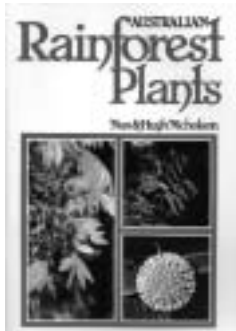
European plant uses and references to the literature of explorers. Illustrated with line drawings for easy identification, it is perfect for plant lovers, students, scientists, bushwalkers and environmentalists. Please note the version now on sale is the revised 3rd edition which has a different cover to the one pictured.



Weeds: An illustrated botanical guide to the weeds of Australia
BA Auld & RW Medd

This book includes all the important species which occur in NSW. The authors have used a

minimum of technical terms and included many photographs, line drawings and simple descriptions.



Australian Rainforest Plants
Nan & Hugh Nicholson

This series includes six easy-to-follow guides which describe over 500 rainforest plants. Written in an informative manner that doesn't

frighten beginners but can hold the interest of experts, it provides a unique identification guide for people with little formal botanical knowledge.



Aquatic and Wetland Plants
Nick Romanowski

This field guide for non-tropical Australia describes in plain English more than 340 plants using colour photographs and drawings. In this easy-to-use guide all field characteristics of

plants can be easily recognised.

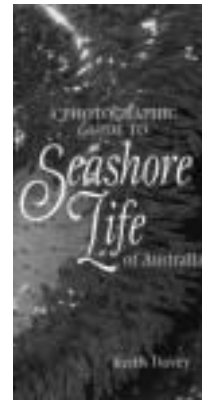
Coastal management



Seashores: A Beachcomber's Guide
AJ Underwood & MG Chapman

An invaluable guide for anyone who enjoys exploring the seashores of the Sydney region. Learning about coastal plants and animals in their habitats is easy and fun with this

delightful book. Includes many illustrations for easy identification.



A Photographic Guide to Seashore Life of Australia
Keith Davey

This compact, easy-to-use, pocket-sized guide is an ideal travelling companion. Authoritative text describes key identification features of 232 species or groups. In addition a full-colour photograph illustrates each species.

Thumbnail outlines of each major group enables quick identification.

Other



Farm Sustainability Indicators Kit
Karuah-Great Lakes Landcare

This kit provides a useful guide to assessing the soil and pasture condition on your property and giving you an indicator of the ecological condition of your grazing enterprise. Contact the CMA for a copy.

On-line resources & Internet links

Bureau of Meteorology

All the information you'll need about the weather:

www.bom.gov.au

Flora Online

The National Herbarium of New South Wales has produced *Flora Online*, an electronic version of the *Flora of New South Wales*. This useful resource can be used for identification and to learn about endemic and naturalised plant species:

www.plantnet.rbgsyd.nsw.gov.au/floraonline.htm

Hunter-Central Rivers Catchment Management Authority

Copies of these guidelines and the *Project Journal* are available online:

www.hcr.cma.nsw.gov.au

Natural resources

The *New South Wales Natural Resources Atlas* is a website designed for locating, viewing and querying natural resources data within New South Wales. Use this tool to explore topics such as wildlife, vegetation, geology, land, water, pollution and more:

www.nratlas.nsw.gov.au

Waterwatch

Information about monitoring your stream or river, as well as contacts and training sessions:

www.waterwatch.nsw.gov.au or
www.bugsurvey.nsw.gov.au

Weeds of the Hunter & Central Coast: Identification CD by Ken Bunn

This catalogue of noxious and environmental weeds of the Hunter and Central Coast is available from local government council offices. There are three main categories of weeds: aquatic weeds, weeds of the riparian (streambank) zone, and weeds of roadsides and grazing lands. It features descriptions of 69 types of weeds and habitat and control methods, and contains over 140 photographs. A preview of the CD can be seen at the following Internet address:

www.lhccrems.nsw.gov.au/weeds_cd

References and further reading

Charles Sturt University 1997, *Save the Bush Tookit*, Bathurst, NSW.

Hunter Catchment Management Trust 2003, *Hunter Bushland Resource Kit*, HCMT, Tocal, NSW.

Hunter-Central Rivers Catchment Management Authority 2005, *Hunter Riparian Resource Kit*, forthcoming, HCRCMA, Tocal, NSW.

Karuah-Great Lakes Landcare Management Committee 2004, *Farm Sustainability Indicators Kit*, Nabic, NSW.

Newcastle City Council 2004, *Nature Watch Diary*, NCC, Newcastle, NSW.

Rixon, Sharon 2003, *A Monitoring, Evaluation and Reporting Framework for Community*

Managed Natural Resource Management Projects: A facilitation tool for community capacity-building in the Hunter Catchment, Hunter Region Landcare Network, Shortland, NSW.

NSW Agriculture 2004, *Vegetation Survey and Assessment*, NSW Agriculture, Tocal.



Keeping a Project Journal

Keeping a Project Journal and its companion volume the *Project Journal* are designed for landholders and community groups to record information about land management projects they are undertaking. A *Project Journal* is as much a part of your tool kit as a shovel, secateurs or a post-hole digger. By recording and responding to your observations you will increase the success rate of your current project, and improve the outcomes of future projects.



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