

MANAGEMENT PLANNING

4. MODULE TWO: MANAGEMENT PLANNING

PARTICIPANT NOTES

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5. Identifying biodiversity management issues for your property
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8. Costing out your ecological management projects

1. INTRODUCTION

This is Module two in the two module series *Planning for Biodiversity Management*. Prior to doing this module you should have completed Module One and undertaken biodiversity surveys and assessments for your property. You will also have developed your vision for your property's ecological health.

In Module Two you will start to work towards your vision and build on your knowledge of the biodiversity components of your property. You will begin to develop a plan to implement management strategies and monitoring procedures that will retain and/or enhance these biodiversity resources.

LEARNING OUTCOMES

On completion of this workshop you will be able to:

- Set short and long term goals for the management of your property's ecological resources;
- Develop strategies to manage remnant native vegetation, water bodies and other areas on your property in order to maintain and enhance their value as wildlife habitat; and
- Understand the requirements for preparing a property management plan that encourages biodiversity and enhances your property's productive capacity.

2. REVIEWING YOUR ECOLOGICAL RESOURCES AND COMPLETING A SWOTA ANALYSIS

You should recall from Module One, the stool diagram, below, which shows the planning context for your property's ecological management. Your property rests on three "legs": human resources, financial resources and the ecology or the natural resources. All three "legs" need to be in balance. For example, planning decisions about the management of your property's ecology, which you will make today, need to take into consideration the impacts on and resource requirements for your finances and your family. Also the "stool" sits on a platform of external influences such as legislation, planning controls, neighbours values and actions and market forces.

In Module One you developed the *where* part of the planning process - your vision of where you would like your property to be at some time in the near future. Make sure you have a copy of your ecological vision with you. You also conducted ecological stocktakes and assessment of the *now* condition of your property. Make sure you have the map of your property's features which shows the results of your native vegetation, modified areas and water bodies assessments. You may also want to refer to your biodiversity baseline surveys.



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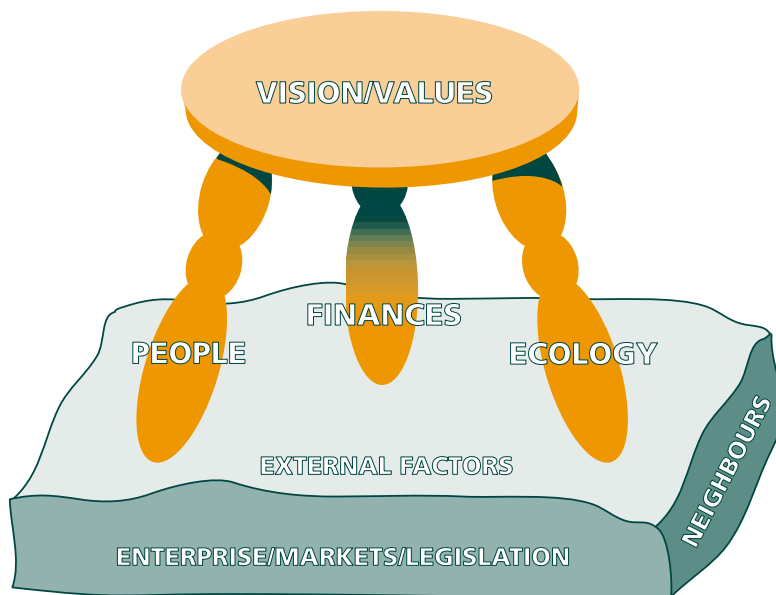


Figure 2.1 The Planning Context

Balancing the property's ecological needs with your enterprise mix as well as your other natural, financial and human resource issues is best achieved by preparing a property management plan.

Contact your local TAFE or NSW Agricultural office for information on your nearest property management planning course.

In this Module we will now consider *how* you will fulfil your vision. You will determine goals

and strategies, enabling you to *do it* and implement the necessary actions. An important

part of the planning process is to regularly check to see how the planned actions are progressing ie *monitor*, as well as to see if any changes are required ie *evaluate* to ensure your vision is achieved.

Central to this process are your values. Your values are simply the things you consider important or the principles you use to guide your decisions.

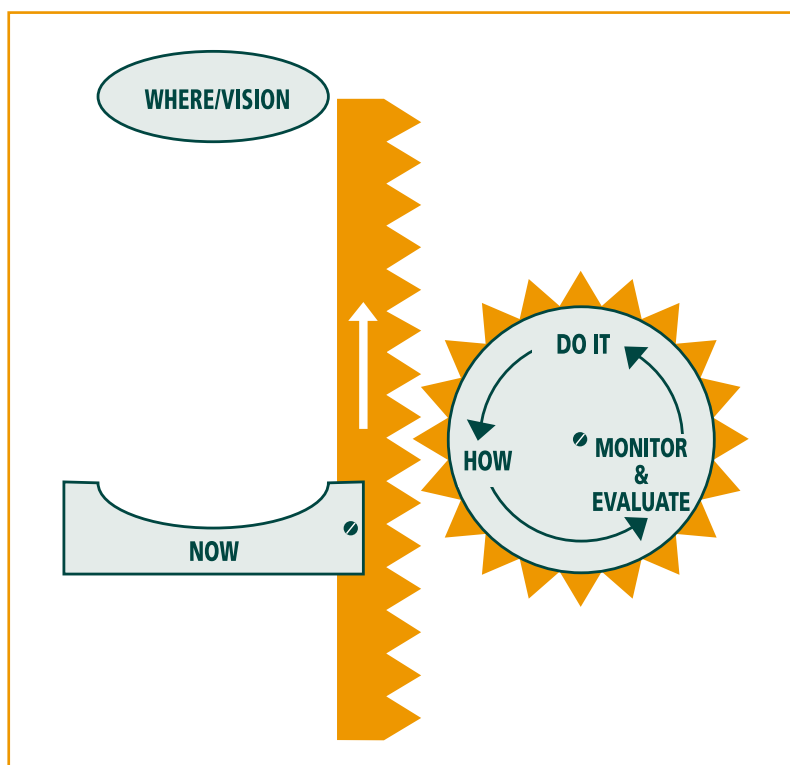


Figure 2.2 The Planning Cycle

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ACTIVITY 2.1 IDENTIFYING YOUR VALUES

Examine the list of values below. Ask yourself these questions: *Is that value important/not important to me? How have I thought about it in the past? Have my values changed over time?*

Step One:

Tick those values that you hold firmly. You may add additional values. Put an asterisk next to the three that you consider have the highest priority.

Step Two:

Think about which of your values can be linked to biodiversity conservation? Do you think your current management decisions reflect your values? Why? Why not?

✓	Value	✓	Value
	Having control over future directions		Managing the property efficiently
	Willing to make changes		Working as part of a team
	Managing debt		Providing for your children
	Gaining new knowledge		Experimenting with new techniques
	Retaining native bushland		Having satisfaction with lifestyle
	Making my own decisions		Being proud of our property
	Having low work stress		Being a leader
	Taking initiative in the local community		Helping others
	Pursuing excellence		Being healthy
	Being active in community groups		Having a healthy property
	Being respected by friends and associates		Having a viable farm
	Enjoying the landscape		Having a profitable business
	Thinking of the property as part of the catchment		Having a close relationship with family and friends
	Being regarded as a good land manager		



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ACTIVITY 2.2 REVIEWING YOUR ECOLOGICAL VISION FOR YOUR PROPERTY

The first part of the planning process is to know where you want to be - your vision. We will now review the ecological vision you wrote for your property in Module One.

Step One:

Create in your mind your ecological vision for your property, complete with all the detail you can manage. Consider the values you have identified and how they are reflected in your vision.

Step Two:

Now, without looking at the vision you wrote in Module One, write your ideas again on Sheet 1.

Step Three:

Compare what you have written today with your previous vision. Edit your original vision document if you think it requires it.

“Consider the values you have identified and how they are reflected in your vision.”

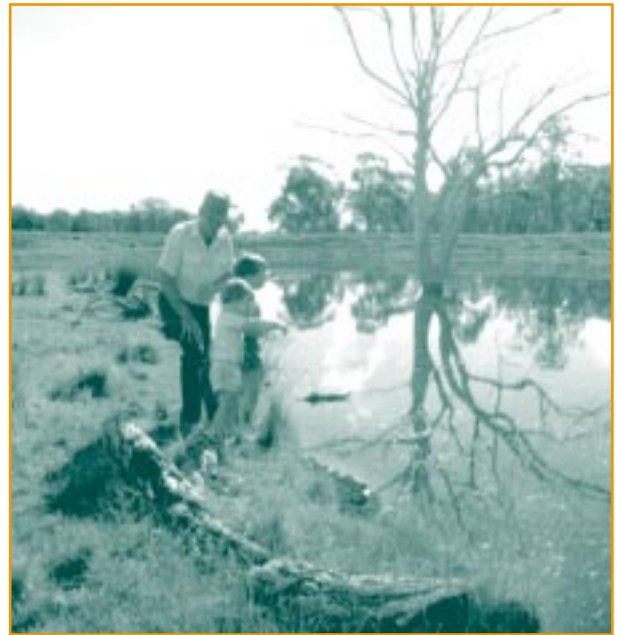


Figure 2.3 Reassess your vision for your property

B.Thompson

ACTIVITY 2.3 REVIEWING YOUR ECOLOGICAL RESOURCES THROUGH A SWOTA ANALYSIS

The next part of the planning process is to assess your current situation. This includes analysing the assessments and surveys you have done of your property's ecological resources.

A useful way to summarise all this information about your property's ecological resources or native biodiversity, and what management actions you need to take, is through a SWOTA analysis.

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A SWOTA analysis includes:

S - Strengths to capitalise on

W- Weaknesses that need attention

O - Opportunities that are available

T - Threats that may have adverse effects

A - Actions that need to be taken

Carrying out an analysis using this framework can often reveal quite simple changes that you can usefully make.

Step One:

First consider your strengths and the strengths of your property. Look at your property map which should be shaded according to the colour coding given in the condition assessment forms. Where are your green areas? Consider the assessments that you completed for your property and your “Yes” responses. Consider your surveys. Where are your biodiversity “hot spots”? Are you conserving any threatened species on your property?

These will be your “strengths”. Your strengths will indicate your management priorities.

Now think about areas that could be improved – your weaknesses. Look at the yellow or red shaded areas. Look at your assessments sheets and take note of where you have written “No”.

These issues will indicate weaknesses or threats to your property’s biodiversity. “Weaknesses” can be linked to “Opportunities”. For example your remnant vegetation may be very scattered and only in small patches. The opportunity will be to link these patches together by restoration and/or revegetation. Your “Opportunities” are also the good chances you can take to enhance your ecological resources.

Think about the obstacles to your just revised vision. What are the things that are currently holding back your achievement of this vision for your property? Look at your site description and assessment sheets for mention of pests and weeds. These and other issues, such as salinity or erosion, present threats to your natural resources. Threats may also be linked to opportunities.

Now note down some of the key actions you will need to take to address the issues you have identified.

Step Two:

Use Sheet 8. Complete your SWOTA analysis, keeping in mind your vision for your property

“Your strengths will indicate your management priorities.”



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3. MANAGEMENT PRACTICES FOR CONSERVING BIODIVERSITY ON YOUR PROPERTY

There are many management practices that will enhance your property's ecological health and biodiversity while making the farm more robust against impacts such as climatic variation and insect attack. These measures in turn contribute to the reduction of production costs and improve your property's agricultural viability.



Figure 3.1 Native grasslands are important for biodiversity

L.Brodie/NPWS

DISCUSSION QUESTION 3.1

Brainstorm the management strategies you think will assist in building on your property's strengths and opportunities and overcoming your own property's threats and weaknesses, remembering discussions in the Module One workshop.

RETAIN

A key element of biodiversity conservation is retaining remnant native vegetation. The highest priority for biodiversity management in rural environments is to identify, protect and manage the existing remnants of natural

vegetation, wetlands and representative samples of all native biodiversity.

RESTORE AND PROTECT

Although the remnants may have experienced varying degrees of disturbance, protection and restoration of remnant vegetation is far more cost effective and offers greater potential for biodiversity conservation than attempting to develop new habitats by revegetation.

Often simply fencing off remnants, dams, creeks and wetlands will be a significant step towards increasing the biodiversity component of your property, allowing for natural regeneration. Larger patches are also more valuable for habitat and easier to manage than small patches, and isolated patches less valuable than linked ones.

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REVEGETATE AND REHABILITATE

However in many situations the protection and restoration of remnant native vegetation will not be enough to substantially enhance your property's biodiversity. Where existing

species and have biodiversity value and need to be managed. Buildings can host swallows, bats and many other creatures; farm gardens are often biodiversity havens and cultivation paddocks can also be suitable habitat for grassland species which have adapted to the modified conditions, such as Stubble Quail in wheat paddocks or Bush Stone Curlews in rice



Figure 3.2 Fence off revegetation areas

N.Layne/CVA

remnant vegetation is limited and/or degraded and isolated the re-establishment of native vegetation or revegetation is also necessary.

There may also be many other parts of your property, which no matter how modified or artificial, are still important habitat for certain

fields. It is important to be aware of the importance of managing these parts of your property as well as the native vegetation areas.



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Rehabilitation may also be required to manage key threatening processes across your property as a whole. These threats may involve weeds and animal pest problems, (both introduced or native) and issues of pollution, land contamination and salinity.

This section will discuss many generic ecological planning and management practices that will enhance your property's biodiversity and environmental health.

For specific information and advice on local and regional management practices, appropriate species and biodiversity issues you should contact your local NSW National Parks and Wildlife Service officers, Dept. Land and Water Conservation, Greening Australia staff, Landcare, or local Field Naturalist Club representatives. Refer to Sheet 12.

“Retaining vegetation should remain your highest priority in planning for biodiversity.”

(I) NATIVE VEGETATION PLANNING AND MANAGEMENT

Retaining vegetation should remain your highest priority in planning for biodiversity. There are a range of management issues to consider when planning to protect and improve your remnant patches so that they provide improved habitat for plants, birds and animals.

What shape is best for remaining native vegetation?



These areas have less perimeter ✓



Than these ✗

Figure 3.3 Remnant shapes. Minimise the perimeter of remaining vegetation to reduce “edge effects” or disturbances

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TABLE 3.1 NATIVE VEGETATION PLANNING AND MANAGEMENT

Planning considerations	Management considerations
<ul style="list-style-type: none"> • Retain existing clumps of remnant vegetation, paddock trees and native pastures. • Retain, where possible, fallen and standing dead trees, fallen timber, rocks, logs and stumps as native wildlife habitat. • Minimise the perimeter of remnants to reduce “edge effects” or disturbances, such as changes in levels of weeds, predators, noise, humidity, sunlight, wind, temperature and nutrients. (See Figure 3.3). 	<ul style="list-style-type: none"> • Fence off potential habitat areas, ie your remnant vegetation areas including grasslands, farm dams, creeks and wetlands, to control stock access and to allow natural regeneration. • Fence off areas next to and downwind of mature trees (equivalent to twice the diameter of the tree’s crown) to allow for natural regeneration and increase the size and value of these areas for shelter and habitat. • Exclude stock from these areas during flowering and seeding periods to allow natural regeneration. Exclude stock from wetlands during wet periods and bird breeding seasons. • Plant missing understorey shrubs and grasses, using local indigenous species. • Control weeds prior to native species seed fall and maintain good native ground cover with minimal disturbance. • Control pests like rabbits, foxes, feral cats. • Stabilise any areas of soil erosion.
<ul style="list-style-type: none"> • Alter paddock sizes to reduce paddock grazing times and pressures on a particular area, allowing paddock trees to regenerate naturally. 	<ul style="list-style-type: none"> • If grazing native grasslands, graze intermittently in short spells of high grazing pressure. Contact NPWS for information on ideal timing of grazing to reduce impacts.

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TABLE 3.2 NATIVE VEGETATION MANAGEMENT GUIDELINES

Condition	Fencing	Revegetation/dead timber/habitat	Weeds	Pest animals	Fire	Erosion
Healthy (Green)	<ul style="list-style-type: none"> • Fence off to control stocking rates and inappropriate use, and encourage natural regeneration (permanent fencing preferred) 	<ul style="list-style-type: none"> • Allow natural regeneration of all locally native species including shrubs and grasses • Link remnants using shelterbelts or woodlots • Retain standing dead timber, rocks, logs and stumps as habitat • Identify the plant species 	<ul style="list-style-type: none"> • Identify and control weeds • Use ecologically sensitive control methods 	<ul style="list-style-type: none"> • Remove all non-native animals (rabbits and foxes can be controlled using 1080 poison - minimises harm to most native animals) 	<ul style="list-style-type: none"> • Use fire for ecological purposes only (seek advice) 	<ul style="list-style-type: none"> • Stabilise erosion without using earth works • Maintain good native ground cover
Good (Blue)	<ul style="list-style-type: none"> • Fence off to control stocking rates and inappropriate use, and encourage natural regeneration (temporary fencing may be an option) 	<ul style="list-style-type: none"> • Allow natural regeneration of all locally native species including shrubs and grasses • Where necessary, establish native trees, shrubs and grasses to supplement natural regeneration • Link remnants using shelterbelts or woodlots • Retain standing dead timber, rocks, logs and stumps as habitat • Identify the plant species 	<ul style="list-style-type: none"> • Identify and control weeds • Use ecologically sensitive control methods 	<ul style="list-style-type: none"> • Exclude rabbits; remove foxes, cats and goats (rabbits and foxes can be controlled using 1080 poison) 	<ul style="list-style-type: none"> • Use fire to reduce fuel loads and to trigger regeneration 	<ul style="list-style-type: none"> • Stabilise erosion but minimise earth works • Maintain good native ground cover
Fair (Yellow)	<ul style="list-style-type: none"> • Fence off to control stocking rates and encourage natural regeneration (temporary fencing may be an option) 	<ul style="list-style-type: none"> • Allow natural regeneration of all locally native species including shrubs and grasses. • Establish trees to supplement aging trees; establish missing shrubs; use tree guards • Link remnants using shelterbelts • Retain standing dead timber, rocks, logs and stumps as habitat 	<ul style="list-style-type: none"> • Control noxious and invasive weeds 	<ul style="list-style-type: none"> • Exclude rabbits; manage others 	<ul style="list-style-type: none"> • Use fire if needed to reduce fire hazard 	<ul style="list-style-type: none"> • Stabilise erosion using earthworks and/or native grasses
Poor (Red)	<ul style="list-style-type: none"> • Desirable to control stocking rate • Off-set fencing of aging groups of paddock trees encourages regeneration 	<ul style="list-style-type: none"> • Establish trees and shrubs; use tree guards • Retain standing dead timber, rocks, logs and stumps as habitat • Identify the plant species 	<ul style="list-style-type: none"> • Control noxious and invasive weeds 	<ul style="list-style-type: none"> • Exclude rabbits; manage others 	<ul style="list-style-type: none"> • Use fire if needed to reduce fire hazard 	<ul style="list-style-type: none"> • Stabilise erosion using earthworks and/or native grasses

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Fire as a management tool

Fire is an important ecological management tool. It can be used to advantage in maintaining remnants or can be a destructive force if poorly managed.

Develop a fire management plan for protecting your built assets and your natural resources. This plan should integrate with your overall property fire management plan. Contact NPWS for information on fire ecology for particular habitats.

How much remnant vegetation is required?

Research has shown that 5-10 per cent vegetation cover in flat country provides economic and environmental benefits to your property. Consider this as a minimum amount for your best country and 50-100 per cent cover in your least productive areas. Birds Australia

have stated that local native vegetation should cover at least 30% of the total farm area to ensure sustainability and maintain native bird populations. (Barrett, 2000).

(II) REVEGETATION: WHAT, WHY, WHERE?

Revegetation means planting trees, shrubs, sedges and rushes for creeks, dams and wetlands or native pasture grasses to rehabilitate areas and increase habitat. In all cases, by selecting plants which are native to your local area you will be improving the biodiversity of your property and also ensuring a higher success rate of establishment, as plants will be adapted for the local soil type, topography and climatic conditions.

Why revegetate?

Apart from the many benefits to the productive capacity of your farm, as discussed in Module One, revegetation strategies are often required to improve the biodiversity of your property.

TABLE 3.3 MINIMUM RECOMMENDED VEGETATION COVER

Suggested targets for minimum long-term tree/natural vegetation cover		
(This table has been produced for the Northern Tablelands of NSW)		
Landuse	Land capability classes	Tree cover
cropping enterprises	I	5 %
cropping & livestock	I, II, III	10 %
livestock enterprises	IV, V	15 %
light grazing, semi-"improved"	VI	50 %
light grazing, "unimproved"	VII	100 %

Source: C. Nodolny/UNE



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1. Existing remnants may be too small to maintain wildlife populations of sufficient size to be self-sustaining in the long term. Revegetation, with plants native to your local area, can be used to enlarge individual remnants and increase the total amount of habitat in the landscape.
2. Not all types of vegetation (eg understorey plants) are adequately represented in the system of the remaining vegetation present. Revegetation offers the potential to replace these missing elements. This will improve the structure of the remaining vegetation to provide better wildlife habitat opportunities.
3. Revegetation for biodiversity value can also be combined with productive outcomes. For example firewood woodlots of suitable

trees, such as wattles and casuarinas, will copice when cut and produce multiple trunks while at the same time they provide wildlife habitat.

Where to revegetate?

Some of the general principles are outlined below but each property will be different and it is important to take some time to study your physical property plan and plan carefully. Simply planting along existing fencelines, which may change or not reflect topography or other landscape features, may not be suitable. You need to plan revegetation where it is most suited in the long term. Some guidelines include:

1. Link patches of remaining vegetation, dams and wetlands using shelterbelts or woodlots.

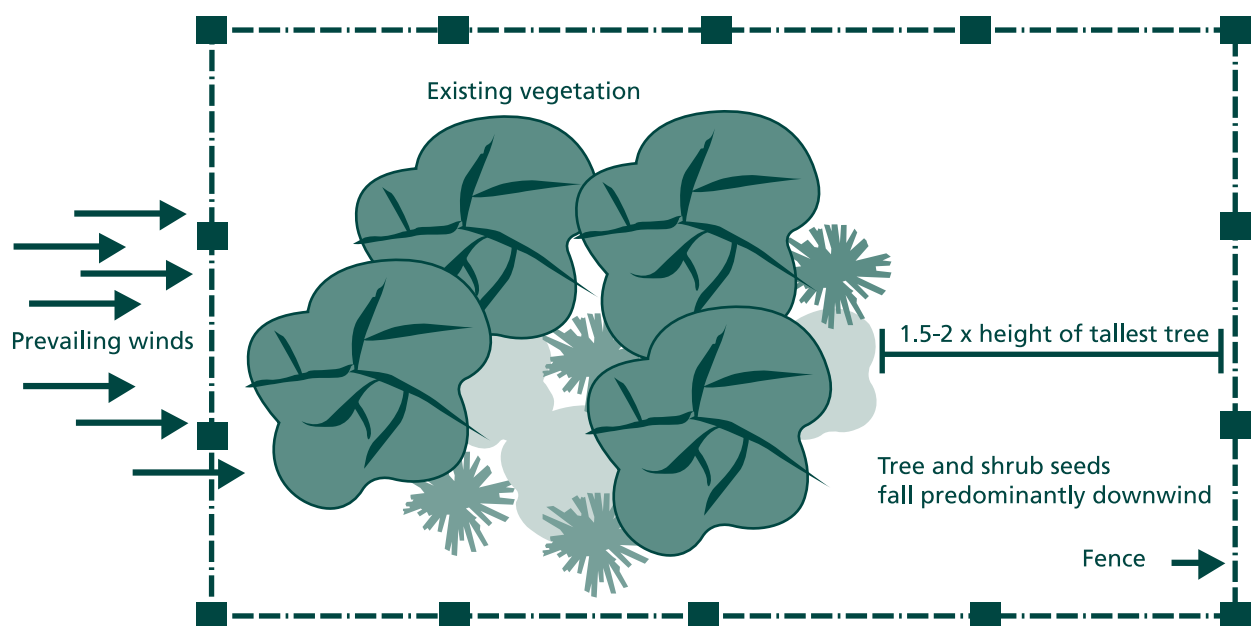


Figure 3.4 Plan view of a patch of remnant trees with offset fencing downwind to maximise regeneration potential

NPWS

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2. Revegetate along creeks and gullies or as shelterbelts across damaging hot and cold winds and along contours.
3. Establish native shrubs, trees and grasses upslope of dams and wetlands to act as a sediment and nutrient buffer, as well as a wildlife area.
4. Consider planting on upper slopes and ridgelines to:
 - gain maximum wind protection,
 - minimise the risk of exposed stock camps.
5. Consider planting on lower slopes to:
 - provide shelter to crops and pastures
 - provide diverse fodder and movement corridors for native wildlife.

Be aware revegetation areas and wetlands often harbour pests like foxes, which will prey on native wildlife. Seek advice about effective fox control methods from NPWS and see the Red Fox Threat Abatement Plan on the NPWS web site www.nationalparks.nsw.gov.au.

GUIDELINES FOR DESIGN OF SHELTERBELTS.

Design shelterbelts so that they:

- are approximately 20 times the height of the trees in the belt from the next shelterbelt;
- are wider than the height of trees in the belt;
- are longer than 20 times the height of trees in the belt;
- consist of at least three rows of trees/shrubs;
- consist of native trees and shrubs;
- are not directly up and down hills to prevent erosion from channelled water;
- take particular account of porosity which is a key factor in shelter effectiveness, eg have a porosity of approximately 50 % from the ground to the top of the canopy, so that you can see patches of light through the foliage.

Consider enlarging a three row shelterbelt to a ten row woodlot, increasing the shade, shelter and timber resource with very little extra fencing needed.



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(III) PLANNING AND MANAGEMENT FOR CREEKS, RIVERS, DAMS AND WETLANDS

The water bodies on your property - your rivers, creeks, wetlands and dams are valuable for wildlife habitat and offer wonderful opportunities for increasing your property's ecological health in a relatively short period of time. Revegetation in these areas will not only increase the biodiversity component of your property but also help in other ways, such as improving water quality by filtering sediments and runoff from other areas, stabilising creek banks and improving fish habitat. These areas are also important aesthetically and can influence property values.

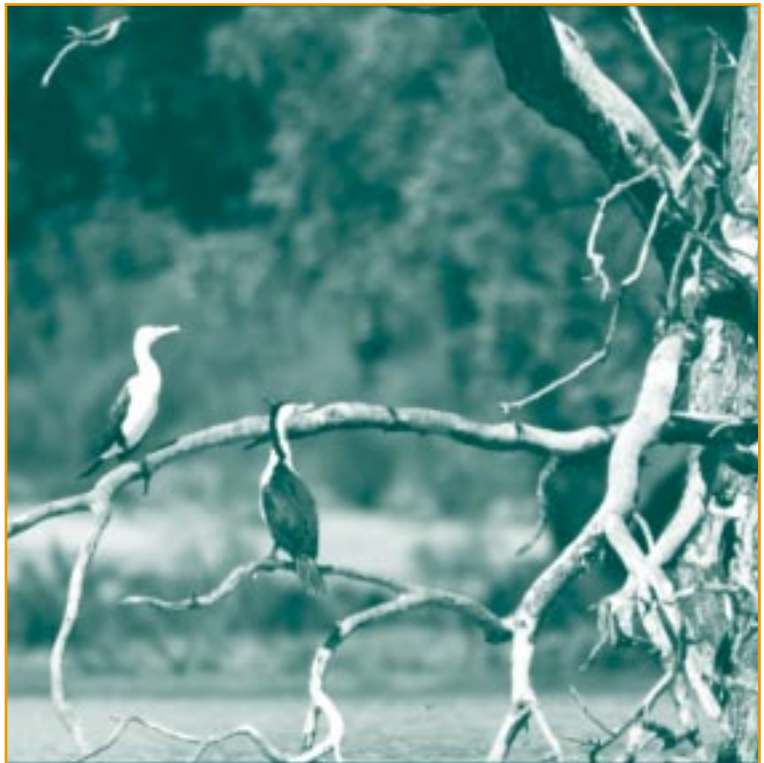


Figure 3.5 Standing dead trees provide valuable habitat

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Figure 3.6 Provide a gravelled stock ramp into fenced off dams

L.Brodie/NPWS

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TABLE 3.4 WATER BODIES PLANNING AND MANAGEMENT

Planning considerations	Management considerations
<ul style="list-style-type: none"> Retain native vegetation areas near water bodies, such as creeks, dams and wetlands, to greatly enhance the area's habitat value. 	<ul style="list-style-type: none"> Standing dead trees near or within dams provide safe water bird roosts. Logs, rocks and litter within and around the dam provide shelter for fish and frogs.
Creeks <ul style="list-style-type: none"> Fence rivers, and creeks for possible buffer zones, wildlife corridors and erosion control areas and increase the areas of vegetation. Have a range of microhabitats in farm streams, eg. deep pools, rocky riffles, submerged logs and snags. Prevent chemicals, fertilisers and irrigation tailwater running off into streams or wetlands. 	<ul style="list-style-type: none"> Incorporate wider patches of vegetation in the streamside corridor eg. at bends in the creek. Retain logs and rocks for shelter for frogs. Ensure foliage from trees and shrubs overhang creek water, providing shade for fish and turtle habitat.
Dams <ul style="list-style-type: none"> When constructing dams be aware of the ways in which you can make your dam more wildlife-friendly. 	<ul style="list-style-type: none"> Increase slightly the height of the dam overflow which might flood shallow areas, increasing the wildlife value of the dam. Provide an earthen or floating island within farm dams as safe waterbird habitat. Provide a gravelled stock ramp into the deep section of a fenced off farm dam, or pipe water to stock troughs located outside the fenced off dam area. Walking/compressing clean straw into the edge of a new dam will supply aquatic organisms with a source of food and kick start the new food web, while reducing erosion. Natural fluctuations in dam water levels are desirable for wildlife, but should be taken into account when considering the amount of shallow water available in summer and to ensure the dam doesn't dry out.
Wetlands <ul style="list-style-type: none"> Consider fencing the wetland's catchment to manage separately to reduce input of sediment, nutrients and pollutants. Create a buffer zone of vegetation around the wetland to help absorb the impacts of on-farm activities. Consider diverting irrigation tailwater (which may contain pesticides) to holding dams - not wetlands. 	<ul style="list-style-type: none"> Retain dead trees for waterbird roosts. Use fire carefully. Do not burn during wildlife breeding seasons. Retain areas of lignum as nesting habitat.



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(IV) RISK MANAGEMENT PLANNING FOR BIODIVERSITY LOSS

Risk assessment within any farm business includes the physical production risk of biodiversity loss and its associated ecosystem services, as discussed in Module One. By reviewing the ecosystem services that biodiversity affords your property you can identify the risks of losing these services and develop management strategies to offset these risks.



Figure 3.7 Feral cats or other pest animals may be a problem in your area. S.McMahon/NPWS

DISCUSSION QUESTION 3.2

What are the risks for your property associated with the loss of biodiversity and associated ecosystem services?

What management strategies can offset these risks?

How do these strategies compare with those already discussed in this section?

4. SETTING YOUR ECOLOGICAL GOALS

Your ecological goals will break down your vision for your property into manageable detail, helping you to set a well marked path to go about implementing your ideas. Once goals have been set, then strategies can be put in place to achieve these goals. In order to be meaningful, your goals need to be SMART.

S - Specific

M - Measurable

A - Agreed / Achievable

R - Realistic

T - Time constrained

Here are some examples of ecological goals. Can you identify the SMART elements of these goals?

"We will establish a 30 metre wide native shelterbelt corridor along the western boundary of our two bottom paddocks by June 2005."

"We will fence off and revegetate the house dam, using native trees and shrubs, by October 2005."

"We will link the red box and stringybark vegetation patches with a 20 metre wide native shelterbelt by October 2006."

ACTIVITY 4.1 WRITING YOUR KEY ECOLOGICAL GOALS

Look at your updated vision and your SWOTA analysis. Consider the key goals required in order to achieve this vision. What are the goals or milestones that must be achieved in terms of conserving your property's ecological resources? Will these goals help to build on your property's strengths and overcome its weaknesses thus allowing you to achieve your vision?

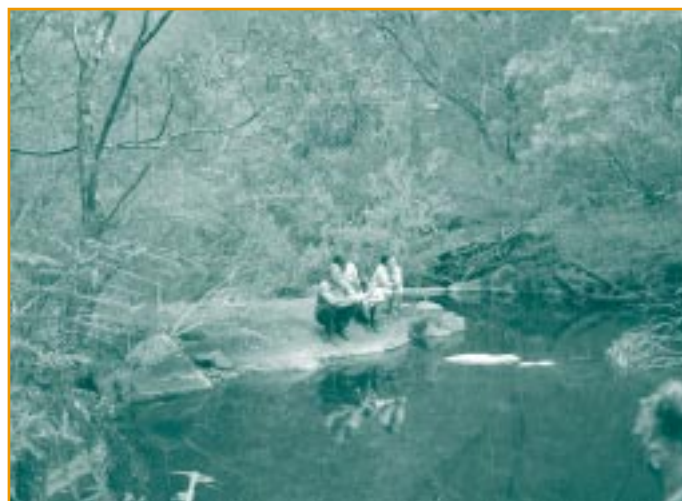
Use Sheet 9. Write your short and long term goals.

Record as much detail as you can about what you want to achieve, ensuring that your goals are SMART. You will have a chance to refine these goals later today.

**“In order to be meaningful,
your goals need to be
SMART.”**

5. IDENTIFYING THE BIODIVERSITY MANAGEMENT ISSUES FOR YOUR PROPERTY

You have now reached a point in the planning process where you have determined where you would like to be, with regard to your property's ecological condition, at some time in the near future. Your family's vision has provided a focus of what you would like your property to look like in the future.



S. Ash/NPWS

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TABLE 3.5: THE PLANNING STEPS

Where	Set your vision What do you want the wildlife and natural vegetation on your property to be like?	Module 1/ 3 Module 2/2	Sheet 1
Now	Map your property's features	Module 1/4	Aerial photo and map
	i. Assess the current condition of your natural resources How good is your bushland? Is your dam good wildlife habitat? What native species do you have? ii. Map the results on your map	Module 1/ 5, 6 & 7	Sheets 2, 3 4, 5, 6, 7
	SWOTA review Identify strengths, weaknesses, opportunities, threats (constraints) and management actions.	Module 2/ 2	Sheet 8
How	Set your goals	Module 2/ 4	Sheet 9
	Summarise key issues What are the essential things that you need to do, and that are in your capacity to do, to achieve your vision?	Module 2/5	Sheet 8
	Develop management strategies and actions What do you need to do to achieve your goals	Module 2/6	Sheets 10 & 11
Do it	Implement actions Start to carry out tasks to achieve your plan		
Monitor & evaluate	Review/check performance indicators Review your actions, are they going according to plan? Adjust/adopt your plan if necessary	Module 1/7 Module 2/ 7	

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You and your family have also undertaken surveying and assessing of your property's biodiversity and current ecological condition. You have considered your property's ecological strengths and weaknesses and made a start in developing your key ecological goals.

It is now time to begin to develop management strategies to retain and enhance your property's ecological condition and biodiversity values. The steps in planning process are shown in Table 3.5

ACTIVITY 5.1 IDENTIFYING SIGNIFICANT MANAGEMENT ISSUES

The planning steps you have so far taken will all help you to identify your most significant management issues. We will now look at ways to summarise the issues you have identified and then to link them to management strategies and actions.

Look at the map of your property's physical features and your SWOTA analysis on your ecological resources. Consider your strengths - your stand out healthy areas. Can the biodiversity in these areas be enhanced through management practices? Consider the areas on your property that stand out as degraded or ecologically unhealthy. Where should you concentrate your management efforts?

Step One:

Keeping all your previous planning steps in mind, review each of your property's strengths, weaknesses, opportunities and threats. Which are the most significant of each of these issues?

Consider:

- Which strength or opportunity will more likely, with enhancement, help you achieve your vision?
- Which weaknesses or threats will most hinder you in achieving your vision?

Use the SWOTA Sheet 8. Use the Summary sheet to record the most significant positive and negative issues.

Record at least two key strengths /opportunities and two weaknesses/threats.



Figure 5.2 Putting together a management strategy will help you achieve your vision for your property

D.Brouwer



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Step Two:

To help you prioritise these issues, look at each significant issue and consider the following questions. Place a tick alongside the issue in the relevant column under the heading **Concern, Influence** or **Control**.

*Is this issue totally within your power to change?
Can you **control** its effects on your situation?*

*Is this issue in your power to do something about,
to **influence** its effects on your situation?*

*Is this issue outside your power to do anything
about? Can it only **concern** you?*

Step Three:

Having ordered these issues into your realms of control, influence and concern, we will now consider key goals and management strategies for those significant issues you can **control** and **influence**. This will ensure that your limited management resources are being most effectively utilised.

Use the Management Planning Sheet 10. Rewrite each significant issue that you can “control” or “influence” onto a separate copy of this sheet.

“Look at each significant issue.”

ACTIVITY 5.2 REVIEWING AND DEVELOPING YOUR KEY GOALS

The goals you developed previously now need to be linked with the issues you have identified on the Management Planning Sheets.

Step One:

Look at the key ecological goals you have already written. With both your property vision and your summary of key issues (Sheets 1 & 8) review each of your goals, ensuring they are still appropriate and targeted to your key issues.

Write each of your key goals onto your Management Planning Sheets next to the issue that is relevant to that goal.

Step Two:

Do you have some significant issues without associated goals developed?

Look at each significant issue recorded on your Management Planning Sheets. Write some SMART goals to address each issue (you may have more than one goal per issue) onto the relevant Management Planning Sheet.

You have now completed the first important steps in the planning process. Keeping in mind the management strategies discussed earlier, you will now develop strategies and actions relevant to the needs of your own property.

6. DEVELOPING MANAGEMENT STRATEGIES AND ACTIONS

Having identified your significant issues and having clearly defined your key goals, you will now be able to choose the best strategies and associated actions to help you towards achieving your property's ecological vision.

What is a strategy?

Strategies are projects or programs. They describe a broad direction that must be followed for a key goal to become a reality.

What is an action?

Actions are specific tasks or steps that must be undertaken for a strategy to be implemented.

ACTIVITY 6.1 IDENTIFYING STRATEGIES TO HELP CONSERVE BIODIVERSITY ON YOUR PROPERTY

Step One:

Look at the assessments and surveys you did in Module One. Look at the explanations which correspond to your “No” answers. In point form, turn these explanations into strategies or management activities.

Step Two:

Look at Table 3.2 Which management strategies correspond to particular patches of bushland on your property? Are there some strategies in this table that you hadn't noted down before?

Look at the general or water body assessments you did in Module One. Again your “No” responses will indicate areas for your management attention. Highlight these and note down quickly some management strategies for the other non-remnant vegetation habitat areas of your property which will help in improving their ecological condition.

ACTIVITY 6.2 COMPLETING MANAGEMENT PLANNING SHEETS FOR YOUR KEY ISSUES

Step One:

Look at the model management planning sheet (Table 3.6) which has been completed for a significant issue, in this case an identified “weakness”. It outlines an example of a significant issue and its associated goal, strategies and actions.

Step Two:

Using your significant issues and key goals as a guide and referring to your notes from Activity 2.3 and Activity 6.1, write your management strategies and associated actions onto your Management Planning Sheets.

Try to think past the obvious. Get your ideas down first, you can judge them later. A lot of good ideas are lost by being judged prematurely.

Step Three:

Complete Sheet 11 - the Management Planning Summary Sheet to help you prioritise your actions.



4. MODULE TWO: MANAGEMENT PLANNING

TABLE 3.6 MODEL MANAGEMENT PLANNING SHEET

An example of significant issue (“weakness”) and its related goal, strategies and actions.

Key issue	Key goal	
Highly exposed bottom paddocks	We will establish a 30 metre wide native shelterbelt corridor along the western boundary of our two bottom paddocks by October 2003	
Strategies		
A Research most appropriate native vegetation establishment technique and species for site		
B Develop timetable for shelterbelt establishment and weed management		
C Protect shelterbelt area from stock pressure		
D Establish shelterbelt		
Action plan		
Action	Completion Date	Person responsible
A 1 Speak to local Greening Australia rep	March 2002	Sarah
A 2 Look in local library for relevant books	February 2002	Sarah
B 1 Speak to local Greening Australia rep	March 2002	Sarah
B 2 Write shelterbelt establishment timetable	March 2002	Sarah
C1 Select site for shelterbelt	January 2002	Harry and Sarah
C 2 Measure site lengths and area on aerial photo	February 2002	Harry
C 3 Purchase fencing materials and build fence	May 2002	Harry
D 1 Strip spray shelterbelt lines	Sept 2002	Harry
D 2 Respray shelterbelt lines	April/May 2003	Harry
D 3 Final spray of shelterbelt lines	Sept 2003	Harry
D 4 Treat area for red legged earth mite	Sept 2003	Harry
D 5 Direct seed tree and shrub species	Sept 2003	Harry and Sarah
D 6 Check for weeds, shielded herbicide spray, check for earth mite and grasshoppers	Dec 2003	Harry

7. MONITORING YOUR PROPERTY'S ECOLOGICAL MANAGEMENT

An important part of planning and implementing your property ecological management practices is to regularly check to see how the planned actions are progressing (ie. *monitor*). Are they actually improving the health of the areas in question?

Once you have monitored these practices you can see if any changes to the strategies and actions are required (ie. *evaluate*) to ensure your vision is achieved.

Annual monitoring should be conducted in late winter through to late spring. At this time the biological systems are operating at their optimal level. Conduct your annual monitoring at the same time of each year.

Try to do your monitoring at the same time of the day, preferably early in the morning when the greatest number of species can be found.



Figure 7.1 Monitoring tree growth

L.Brodie/NPWS

Review the monitoring methods outlined in Module One (Section7) and choose your preferred **Performance indicators**.

“Try to do your monitoring at the same time of the day.”

4. MODULE TWO: MANAGEMENT PLANNING

8. COSTING OUT YOUR ECOLOGICAL MANAGEMENT PROJECTS

You should check your plans to make sure the proposed changes are within your financial capacity to implement.

For example:

- A partial budget
 - which assesses the impact of a change involving some form of capital investment.
- A cashflow development budget
 - which assesses the cashflow and finance implications of a plan over a long period of time.



Good management involves planning

E.Brown/Hornsby Council

There are a number of different budgeting techniques you could use to test your plans.

- A cashflow budget
 - which assesses the cashflow and finance implications of a plan over a short period – usually a year.

Consult with your accountant or financial adviser to discuss the financial implications of your proposed management plans.

“There are a number of different budgeting techniques you could use to test your plans.”