

Assembling the Living in the Lockyer Property Management Planning Kit

- Photocopy this page and the next page and use the photocopies as a checklist.

For each kit you will need:

- Text originals (contained in this file).
- 1 x 2-ring A4 folder with a clear plastic cover-page sleeve on the front cover.
- 1 x pack 5 tab A4 coloured manilla dividers (Marbig ref no. 37100).
- 5 x A4 size sheet protectors.
- 1 x clear plastic OHP transparency sheet

Assembly instructions:

Assembly in order from the front to the back of the folder:

- Photocopy the kit cover page, which is the first original in this assembly pack, and insert it into the clear plastic cover-page sleeve on the front cover of the folder.
- Photocopy Introduction section originals (single-sided originals to double-sided copies, note that blank pages have already been inserted where appropriate into all of the originals in this assembly pack to facilitate direct double-sided copying). The introduction originals start with the kit title page, which is identical to the kit cover page.
- Hole-punch the Introduction section copy and insert into folder.
- Insert first coloured A4 tab card into folder.
- Photocopy Module 1 originals (single-sided originals to double-sided copies).
- Hole-punch the Module 1 copy and insert into folder.
- Insert second coloured A4 tab card into folder.

(continued over page)

Assembling the Kit (continued)

- Photocopy Module 2 originals (single-sided originals to double-sided copies).
- Hole-punch the Module 2 copy and insert into folder.
- Photocopy Technical Note 2.1 originals (single-sided originals to double-sided copies).
- Staple Technical Note 2.1 copy in top left-hand corner, place in A4 sheet protector and insert A4 sheet protector into folder.
- Insert third coloured A4 tab card into folder.
- Photocopy Module 3 originals (single-sided originals to double-sided copies).
- Hole-punch the Module 3 copy and insert into folder.
- Photocopy Resource 3.1 original onto clear plastic OHP transparency sheet.
- Place Resource 3.1 copy (clear plastic OHP transparency) in A4 sheet protector and insert A4 sheet protector into folder.
- Insert fourth coloured A4 tab card into folder.
- Photocopy Module 4 originals (single-sided originals to double-sided copies).
- Hole-punch the Module 4 copy and insert into folder.
- Obtain current 'Land for Wildlife' and 'Nature Refuges' brochures and information and place in A4 sheet protector and insert A4 sheet protector into folder. (If originals cannot be obtained then photocopy the originals in this assembly pack).
- Download the *Individual Property Fire Management Planning Kit* from <http://www.griffith.edu.au/environment-planning/southeast-queensland-fire-biodiversity-consortium> and print double-sided. Staple in top left hand corner, place in A4 sheet protector and insert A4 sheet protector into folder.
- Insert fifth coloured A4 tab card into folder.
- Obtain additional information, handouts etc. of use or interest to particular landholder (some potentially useful material can be found at the end of this assembly pack). Place in A4 sheet protector and insert A4 sheet protector into folder.



Welcome to the:

Living in the Lockyer

Property Management Planning Kit

*A Property Management Planning kit for use
with the “Living in the Lockyer” guidebook*



Welcome to the:

*Living in
the Lockyer*

*Property Management
Planning Kit*

*A Property Management Planning kit for use
with the “Living in the Lockyer” guidebook*

Published by the Lockyer Catchment Centre,
PO Box 61, Forest Hill, Q, 4342.



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Publication data

Boyes, B. (2001). *Living in the Lockyer Property Management Planning Kit*. Lockyer Catchment Centre, Forest Hill.

Acknowledgements

The production of this kit has been supported by the Natural Heritage Trust, the Lockyer Catchment Centre, the Helidon Hills Landcare Group and the Lockyer Watershed Management Association (LWMA) Inc. - Lockyer Landcare Group.

The kit has been developed from resource material used in the Queensland Government Futureprofit property management planning program.

Special thanks to landholders Graeme & Heidi Burkett and Don Walker & Helen Smythe who generously gave up their time to trial early drafts of the kit and provide feedback.

Disclaimer

The Lockyer Catchment Centre, the Helidon Hills Landcare Group, the Lockyer Watershed Management Association (LWMA) Inc. - Lockyer Landcare Group and Bruce Boyes disclaim all liability for any error, loss or consequence which may arise from the use of this kit. Statements made in this kit do not necessarily reflect the policies of the Lockyer Catchment Centre or any other organisation, group, association, government agency, or individual.

Who should use this kit?

Are you:

- A primary producer? (e.g. a vegetable grower, grazier or fruit grower?)

or are you:

- Not a primary producer? (e.g. are you a hobby farmer, a landholder who lives in a rural-residential area, a landholder that lives on a bush block, or a landholder who plans to establish a nature-based tourism enterprise?)

If you are a primary producer, then we recommend that you use the 'Futureprofit' property management planning program instead of this kit. The Futureprofit program will help you to plan the primary production aspects of your property, whereas this kit won't. For information on the Futureprofit program contact the Lockyer Catchment Centre on 5465 4400.

If you are not a primary producer, then this kit is for you!

How do I use this kit?

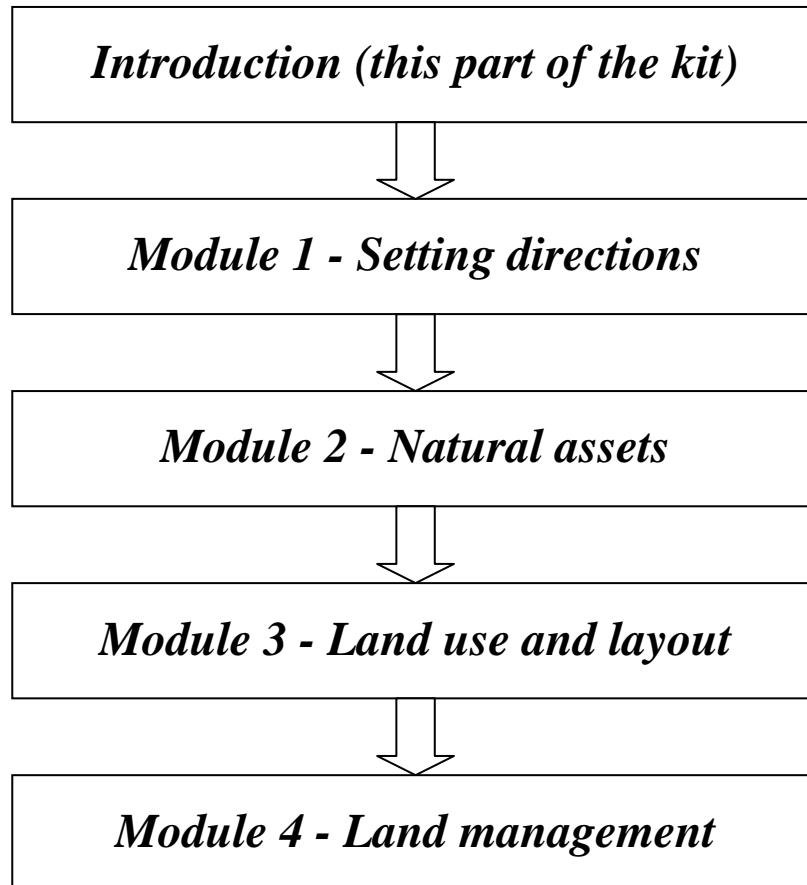
This kit is a self-help resource that allows you to develop a simple but comprehensive management plan for your property. The kit is made up of linked modules that you can work through at home in your own time and at a pace that suits you. Alternatively, you could join with some of your neighbours or the members of your local Landcare or environment group and work through the kit together. In this way your plan can benefit from the knowledge and experiences of others. Working through the kit is a great adventure, opening up many new possibilities, opportunities and options you will want to investigate and evaluate. To get the best out of the kit allow yourself several months for the journey through the modules.

The key reference resource for the kit is the extremely informative guidebook *Living in the Lockyer - A Landholders Guide to Land, Water, Wildlife and Vegetation Management in the Lockyer Catchment and Surrounds*. Copies of can be purchased from the Lockyer Catchment Centre, phone 5465 4400.

The modules

The kit is made up of an introduction (which you are reading now) and four modules that you will progress through at your own pace. It is important that you go through the whole kit - if you skip over bits you are likely to miss important information or decision-making steps. You don't need to go through a whole module in the one session. Each module is made up of several sections so you can easily stop and re-start whenever you need to. Just mark the place where you stopped so you can easily find it again.

The kit is designed as a self-help resource, but if you need advice or assistance at any point don't hesitate to contact the Lockyer Catchment Centre on 5465 4400. The Lockyer Catchment Centre can also link you up with a network of other landholders who have used the kit and who are happy to provide support and assistance to landholders like yourself.



Worksheets and support resources

At the end of each module are a series of worksheets, and at the end of some modules there are also support resources such as technical notes. The modules tell you when to use the worksheets and support resources.

Before getting started

Before getting started, there are a few things that you need:

- A copy of *Living in the Lockyer - A Landholders Guide to Land, Water, Wildlife and Vegetation Management in the Lockyer Catchment and Surrounds*. This guidebook can be purchased from the Lockyer Catchment Centre, phone 5465 4400.
- Pens, pencils, and a notebook.

- An aerial photograph or photographs of your property. These can be purchased through Department of Natural Resources (DNR) offices. In the past, most aerial photographs were in black and white. New photographs are in colour, which can make details easier to distinguish. Standard photographs are taken looking straight down from a camera underneath an aircraft while the aircraft flies along straight and level “flight lines”. The flight lines are parallel and are usually between 1 and 3 kilometres apart.
- A small property may be covered by one photograph, while a large property may require two or more photographs to cover the appropriate area. Most aerial photographs have a scale of approximately 1 to 25,000 but the Department of Natural Resources (DNR) staff can enlarge them by up to 400%. Popular scales for property management planning range from 1 to 5,000 for large properties up to 1 to 1,000 for small properties.
- Aerial photographs need to be laminated and not left in the sun or in moist places. Do not pierce the laminate with pins as this allows moisture to penetrate.
- Visit the Lockyer Catchment Centre to obtain the following information for your property: (a) a vegetation map copy, (b) species and ecosystem information, and (c) Lockyer land systems information. It is important to first make an appointment for your visit by contacting 5465 4400 at least a week in advance.
- Clear plastic sheets. These will be used to create property plan overlays on your aerial photographs. The best plastic sheets are the A4-sized sheets used to make overhead projector (OHP) transparencies. You will need enough sheets to make at least 5 overlays covering your whole property.
- Felt-tipped marker pens for writing on the overlays. Fine tips are best. A range of different coloured markers is handy (e.g. green for vegetation, red for roads). You might like to have one non-permanent pen for rough work and the rest permanent.
- An electronic calculator.

The first steps...

Before starting on Module 1:

- Read the Introduction and Steps 1 and 2 of *Living in the Lockyer* (you will find these sections on pages 1 to 14).
- Work through the “Introduction to planning” in the following pages.

Happy planning!

Introduction to planning

Planning for the future

Why this is a good idea

Planning is one of the most frequently carried out activities in our society. It is an integral part of development and progress for most organisations and people who want to be successful. Planning is just as relevant to you and your property as it is to any organisation, government or business.

The benefits of preparing a “Living in the Lockyer” property management plan include:

- Recognition and utilisation of your expertise and knowledge.
- Strengthened family bonds through the involvement of the whole family in the planning process.
- A better understanding of your property and your local area.
- Identification of land use and land management options that will improve the long-term sustainability and value of your property.
- Enhanced planning skills that can be used over and over again in all areas of your life.
- A plan that can be used for both day-to-day management and the achievement of long-term goals.

What is the process?

Property management planning involves much more than just deciding where to put that dam or how to manage that patch of weeds. Before getting into the “nuts and bolts” of land use and land management it is very important to establish a “vision and goals” for both yourself and your family. You will establish a vision and goals in Module 1, then work on the “nuts and bolts” in Modules 2, 3 and 4.

Who should be involved?

The success of property management planning hinges on the amount of communication and the level of trust within the family or property management team. The property management plan needs to reflect the ideas of all the family or team. Be sure to include spouses, off-property family members, employees and property enterprise partners wherever possible. Even young children can be included in the discussions.

Will I need to change anything?

Why this is a good idea

Successful plans need to be flexible. Very few things in our world and in ourselves are constant. Change is continuous. Human nature, however, is always drawn to what is comfortable and requires less effort. We are secure in what is known.

The one thing change does bring is the unknown. It disturbs our comfort which causes most of us to resist it.

Flexible plans are produced by people who know they will face unexpected pressures and events through time. They accommodate change by having a “planning” frame of mind rather than operating by a “plan” which is fixed and secure but is not progressive.

A key aspect in the successful planning of your property is your attitude to change.

Step 1

Write down as many answers as you can to the following questions:

Why do people plan?

Why will a property management plan help me?

Step 2

Recall the changes that you’ve had to face in relation to your property or life over the last few years. Record below the feelings and reactions you had when those changes became apparent:

Did you resist the changes, or did you work through them, or did you take advantage of them?

Why?

We can easily resist change and revert to the old way of doing things, rather than taking advantage of change and moving forward. When planning your property, make sure you are committed not to boomerang to the old way of doing things.

*Watch out for big problems...
they often disguise big opportunities!*

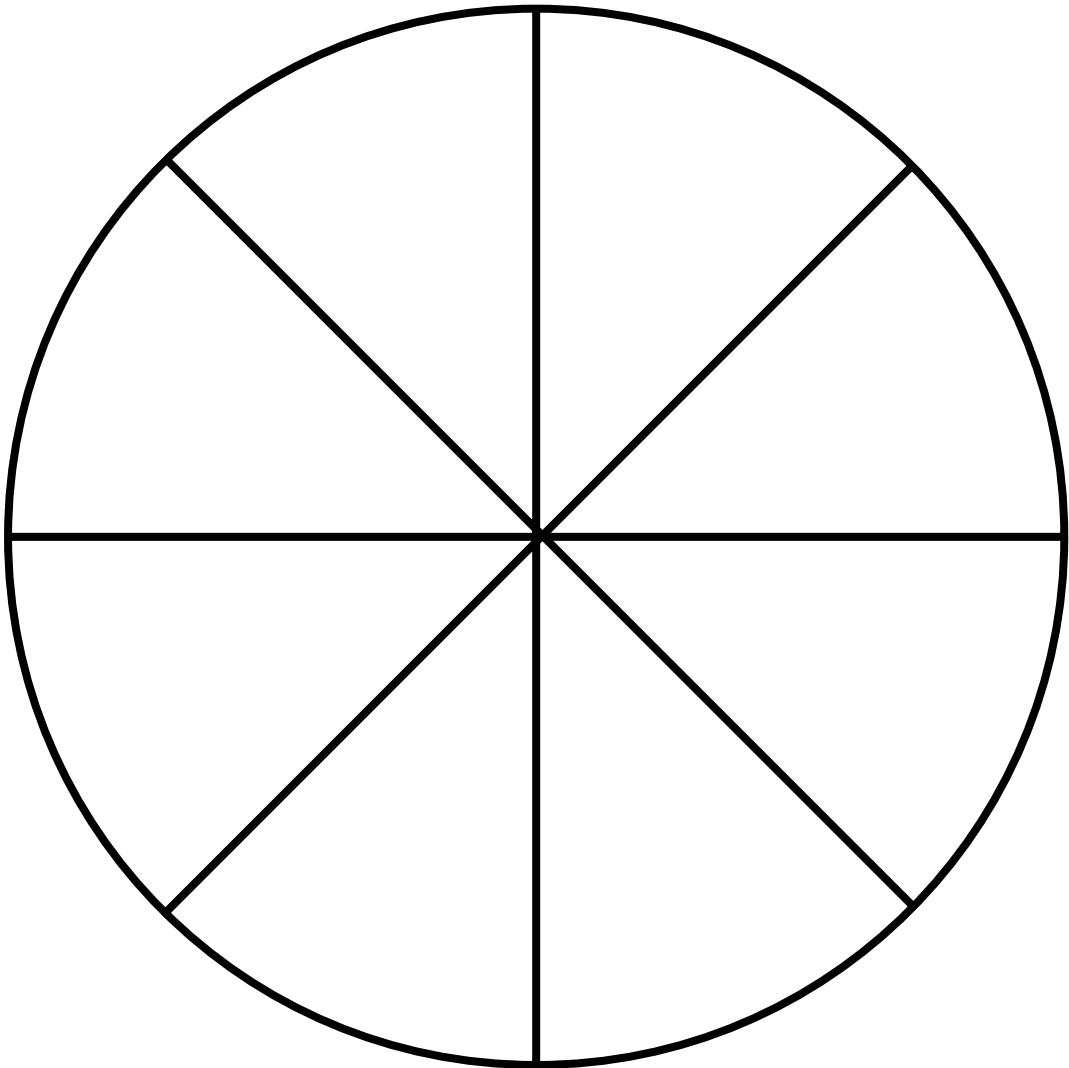
Achieving balance

Why this is a good idea

Our lives are complex and we are faced with the constant challenge of juggling everything - the property, family, recreation, health, personal development etc. Every now and then it is important to take stock of ourselves and consider whether we are living how we really want to.

In the exercise on the next page, you will use a “Life balance wheel” to show your level of satisfaction with the major areas of your life.

Do the exercise in pencil, so that it can be re-done anytime you feel that you need to take stock of your situation. Other family members or members of your property management team might like to complete their own “Life balance wheel”. Use it as a tool to share your feelings and ideas with them, and to find out how they are feeling about things.



Step 1

- On the life balance wheel above, label each spoke with a major area of life. Ideas for the spoke labels include:

Home	Personal time	Health
Recognition	Exercise	Personal growth
Family	Financial security	Work
Faith	Friends	

Step 2

- Each of the spokes represents a satisfaction continuum. On each of the spokes, put a mark to indicate how you feel at the moment about each area of your life. The centre of the wheel is LOW level satisfaction and the rim of the wheel is

HIGH level satisfaction. Remember this is a measure of how happy you are with each area, not how important the area is.

Step 3

- Now join up the marks you have made on each spoke. What sort of shape is your wheel in? Does it have some low and high points? Are you equally (un)happy with all areas? Jot down any ideas you have for changes that you think need to be made:

The paradigm shift

Why this is a good idea

One reason we may be unwilling to change is because our mindset convinces us of preconceived outcomes. These mindsets are called *paradigms*. Paradigms need to be overcome before we can clearly see the opportunities and avoid the difficulties that come our way.

Paradigm is not a commonly used word these days. The list of words below help to give 'paradigm' a clearer meaning. These words are not equivalent but they are similar in meaning.

Theory	Routines	Superstitions
Model	Conventional wisdom	Rituals
Belief system	Common sense	Doctrine
Protocols	Habit	Prejudice
Conventions	Etiquette	Compulsions
Patterns	Tradition	Addictions
Methodologies	Customs	Orthodoxy
Values	Inhibitions	Dogma

Paradigms shift over time. Consider some old and new paradigms:

Old Paradigms

- Divine right of kings.
- The earth is flat.
- Women have no right to vote.
- Humans can't fly.

New Paradigms

- The entry of capitalism into communist countries.
- The global economy.
- The greenhouse effect.

Step 1

What are some other paradigms that our society lives within at the moment?

Step 2

Can you identify any paradigms that you and your family live within?

Step 3

Think about the following suggestions for dealing with change:

- Make sure you have a clear understanding of your own paradigms.
- Whenever change is suggested, work through both the negative and the positive aspects of the change.
- Actively seek your own paradigm shifts by getting outside your field regularly.
- If you are having difficulty overcoming a paradigm, ask yourself, “Who would be interested in helping me?” and then go and talk to them.
- As you work through this kit, keep in mind your paradigms and think about how you can overcome them.

What is impossible to do right now, but, if you could do it, would fundamentally change your life?

Where to from here?

The work that you have just done on planning, change and paradigms forms a valuable foundation for the rest of the kit.

It is now time to start working through Modules 1 to 4. As you work through, remember that this kit is here to help you do YOUR property management plan for YOUR property. There are no exams and no right and wrong answers - it's entirely YOUR plan.

Module 1 - Setting directions

Purpose of this module

This module lays the groundwork for the rest of the kit. The main aim of this module is to introduce you to concepts and tools which can be used to develop a vision and goals for your property.

What will be achieved?

By the end of this module you will:

- Have a clearer vision for yourself, your family and your property.
- Appreciate the difference between visions, goals, and actions.
- Have developed goals for the vital aspects of property management planning i.e. for yourself, your family, and your property.
- Have begun a process in which actions will be developed in subsequent modules.

Contents of this module

- Developing a vision and goals.
- Your vision.
- Your goals.
- Property Strengths, Weaknesses, Opportunities and Threats (SWOT).
- Where to from here?

Developing a vision and goals

Why this is a good idea

Planning for your future and that of your property is an ongoing process. Most likely you already have many plans that you intend to implement over the next few years. In your mind's eye you would have a vision of your future.

The future arrives an hour at a time

In this module we will look at a way of documenting your ideas so that you can keep track of your progress. The direction that you set for your family and your property will be constantly changing so your vision and goals will need to be evaluated and modified on a regular basis.

Having a vision and goals for both yourself and your family will connect the planning of your property to the planning of your own life and future. This is very, very important.

Sadly, there are numerous examples throughout the Lockyer Catchment where landholders have expended vast amounts of time, effort and money on property activities, only to realise later that these activities weren't what they wanted to be doing with their lives. In some cases, landholders have spent tens of thousands of dollars doing things that they later realised did not fit into their life plan.

Thinking about your life plan can be very thought provoking and challenging. As you work through this module, you might feel overwhelmed and start to think about giving up or skipping ahead to Modules 2, 3 and 4. This is perfectly understandable. The best thing to do if this happens is to stop and take some "time out". Give your mind some time to work through the issues, and then when things become clearer return to the kit.

If you get really stuck, you might like to talk things over with your family, friends or other landholders. The Lockyer Catchment Centre (phone 5465 4400) can link you up with a network of landholders who have used the kit and who are happy to provide support and assistance to other landholders like yourself.

The success of planning hinges on the amount of communication and the level of trust within the family or property management team. The vision and goal setting exercises need to reflect the ideas of all the family or team. Be sure to include spouses, off-property family members, employees and property enterprise partners wherever possible. Even young children can be included in the discussions.

Without a vision, we can easily become directionless, dissatisfied and discouraged

Your vision

Some people are natural visionaries. They can clearly see their future life in their mind's eye, and can actually describe the picture to others. However, most of us will need to develop our vision.

The exercise below will help you to develop your vision. The exercise does this by first getting you to think about the things that make up a vision. From these, you will then develop the vision itself.

The exercise uses some of the Module 1 worksheets, which can be found at the end of the module. When filling in the worksheets, it is best to remove them from the folder. This saves having to flip backwards and forwards between the steps below and the worksheets.

Don't forget to involve all members of your family or property management team in the exercise. When the exercise talks about "you" or "your", it means the family or team.

Step 1

- First, think about your core beliefs and values. What is important to you, and what do you truly believe in:
 - For the world.
 - At work or in business.
 - In relationships.
 - For yourself.
 - On your property.
- Write your core beliefs and values on *Worksheet 1.1*. The prompts on the worksheet will give you some ideas for what to write.

Step 2

- With your core beliefs and values in mind, consider the purpose of your property. On *Worksheet 1.2* answer the following questions:
 - What is the fundamental reason for owning our property?
 - What would the world lose if our property ceased to exist?
 - Why don't we sell up and move on?
 - What makes us unique?

Step 3

- Using what you have written on *Worksheet 1.1* and *Worksheet 1.2*, write statements of your “core values and beliefs” and “property purpose” under these headings on *Worksheet 1.3* (but don’t write anything under the “vivid description of the future” heading yet - this happens in the next step).

Step 4

- With your core beliefs and values and property purpose in mind, think about a vivid description of the future. What is the best possible future you can envisage for yourself, your family and your property? (If you can't dream of a better future you can't have a better future.) The vivid description of the future should:
 - Provoke emotion and generate excitement.
 - Bring the future to life in the minds of all the team members.
 - Consider the natural resources, family and personal, and any business and financial aspects of your property.
- π Write your “vivid description of the future” under that heading on *Worksheet 1.3*.

Step 5

- Using what you have written on *Worksheet 1.3*, you can now write your “vision for the future”. On *Worksheet 1.4* write a description of your future that encapsulates your core beliefs and values, property purpose and vivid description of the future.

Your goals

Why this is a good idea

Having a vision alone will not help you to work towards future achievements. Once you have developed your vision it is essential that you consider how you will go about achieving it.

At this stage we will clarify our terms:

- *Vision* refers to the “big picture”, the ultimate end result.
- A *goal* is a small section of the vision which is clarified and looked at in detail. It identifies *what* needs to be achieved as well as *when* these things should be achieved.
- *Actions* describe *how* a goal is going to be achieved i.e. the method that will be used, the means to the end.

Beware of confusing goals and actions. Often people put so much time and effort into actions that they lose sight of the end goal.

Your vision contains many specific goals which you will aim towards in the years ahead. These need to be identified and refined so that actions can then be developed. You will identify your goals in the exercise below, first individually, and then as a team.

In order to be meaningful, your goals should be SMART:

Specific

Measurable

Agreed

Realistic

Time constrained

Step 1

- Each members of your family or property management team is to take a copy of *Worksheet 1.6* and fill it in individually. *Worksheet 1.5* provides some ideas for goals. Keep your vision (*Worksheet 1.4*) in front of you to make sure that your goals are part of your vision.

Step 2

Very few property management goals can be realised without cooperation and assistance from other people. By pulling together as a team, goals can be completed faster and often more successfully and cheaper. A side benefit is the greater sense of unity and bonding that results in a team when a job is well done.

Conversely, where property management results from several 'one man bands', jobs are more likely to be incomplete due to disagreement, lack of coordination, or frustration over resources and assistance. It is essential that all family members and partners involved in the property be given the opportunity to contribute their ideas.

- On *Worksheet 1.7*, record the goals that you would like to achieve as a team. While some goals may be directly relevant to only one member, the goal can be recorded so other members can provide support and encouragement.

Step 3

In a similar manner, actions can be developed for each goal. This will be done in Module 4, after you have considered your natural assets (Module 2), land use and layout options (Module 3) and land management options (Module 4).

Where to from here?

This module has provided the groundwork for the rest of the kit. In Module 2 you will investigate your natural assets.

As you work through Modules 2, 3 and 4 keep in mind your vision and goals. To help with this, you might like to display your vision and goals in a prominent place.

Before starting on Modules 2 it's a good idea to do a quick "SWOT" analysis of your property. This will start you thinking about the issues that you will be further investigating in Modules 2, 3 and 4. Every property has its own Strengths, Weaknesses, Opportunities and Threats, or "SWOT". For the purposes of this exercise, we will use the following definitions for SWOT:

- **Strengths** are the positive aspects of your property - the things that could help you to achieve your goals.
- **Weaknesses** are the negative aspects of your property - the things that could hinder you in achieving your goals.
- **Opportunities** are the goal achievement possibilities presented by the strengths of your property.
- **Threats** are things that come from outside your life or property that could hinder you in achieving your goals.

On *Worksheet 1.8*, quickly note down the Strengths, Weaknesses, Opportunities and Threats of your property as you see them.

Do you think any of the threats and weaknesses that you have identified could be turned into strengths, and perhaps ultimately become opportunities?

What are the chances of the threats you have identified coming to pass?

If you like, you can add to or amend your SWOT analysis as you work through Modules 2, 3 and 4.

Review and resolutions

What were the highlights or most important things to come out of this module?

Why were these important or interesting to you?

What have you learnt from this module? Are there any rules of thumb that you can apply to other situations?

How can you apply these ideas or principles in the future?

Worksheet 1.1 - Core beliefs and values

What is important:

<p><i>For the world</i></p>	<p>Ideas</p> <ul style="list-style-type: none">pollution freepeaceno child abuseeveryone with food and waterfree political systems
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<p><i>At work or in business</i></p>	<p>Ideas</p> <ul style="list-style-type: none">moneychallenge and interestachievementintegrityvalue for money
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Worksheet 1.1 (continued)

What is important:

<p><i>In your relationships</i></p>	<p>Ideas</p> <ul style="list-style-type: none">honestysomeone specialchildrenshared valuessense of humoursecurityto be valued as me
--	--

<p><i>For yourself</i></p>	<p>Ideas</p> <ul style="list-style-type: none">sense of humourpeace of mindfollowing a spiritual pathtime to dig the gardengood healtha nice carhouse decorated to my tastehaving self-respecttime to read a book
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Worksheet 1.1 (continued)

What is important:

On your property

Ideas

outdoors environment

good place for kids to grow up

peace and quiet

protecting natural resources

innovation

Worksheet 1.2 - The purpose of our property

What is the fundamental reason for owning our property?

What would the world lose if our property ceased to exist?

Why don't we sell up and move on?

What makes us unique?

Keep asking yourself “Why” questions. Keep in mind that your purpose may never be fully achieved.

Worksheet 1.3 - Developing our vision

Core beliefs and values (from Worksheet 1.1)

Property purpose (from Worksheet 1.2)

Vivid description of the future

Worksheet 1.4 - Vision of the future

Date _____

VISION of the FUTURE

Worksheet 1.5 - Ideas for goals (not exhaustive)

The following checklist of ideas may prove useful if you are having difficulty thinking of goals for *Worksheet 1.6* and *Worksheet 1.7*, or suspect there may be goals you've overlooked.

Personal Goals

- Holidays or travel.
- Recreation.
- Entertainment.
- Improved standard of living.
- Having children.
- Increased family time e.g. time for children and spouse.
- Improved family relationships.
- Gaining greater knowledge in particular areas.
- Development of a new skill or skills.
- Education or courses.
- Formal accreditation.
- Transferring skills to others.
- When do you want to retire? What will you do in retirement? Where will you live?

Family Goals

- Education requirements of children.
- Handing on the property to children.
- Preparation or updating of wills.
- Family meetings.
- Health.
- Informal time together.
- Holidays or travel.
- Understanding of the future in the local area by all family members.

Financial goals

- Desirable income level.
- Free of debt by when?
- Investment.
- Superannuation or retirement funds.
- Children's education expenses.
- Funds or income for retirement.
- Other dependents or potential dependents e.g. aged parents.
- Funding for new projects e.g. buildings, land, enterprises.
- Lifestyle wants and requirements e.g. recreation, holidays etc.

Work or business goals

- Get a promotion.
- Work for a different employer.
- Change career.
- Diversification of enterprises or establish new enterprises.
- Seek advice or employ professional consultants.
- Employ more workers.

Natural assets goals

- Land type potential.
- Address land degradation problems, e.g. erosion, salinity, weeds, feral animals, etc.
- Water supply adequacy and siting.
- Address flooding or waterlogging problems.
- Property layout, e.g. fencing, roads, firelines, etc.
- Timber requirements for building, e.g. housing, sheds, etc.
- Conserve native vegetation and wildlife habitat.
- Stream, river or gully bank management.

Worksheet 1.6 - Goals for myself

Goals for the next ____ years for _____ (name)

Date _____

I would like to achieve the following goals:

Category	Goals
PERSONAL (e.g. retirement, learning)	
FAMILY (e.g. holidays)	
FINANCIAL (e.g. greater income)	
WORK OR BUSINESS (e.g. promotion, starting new enterprise)	
NATURAL ASSETS (e.g. land, water, nature conservation)	

Worksheet 1.6 - Goals for myself

Goals for the next ____ years for _____ (name)

Date _____

I would like to achieve the following goals:

Category	Goals
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FAMILY (e.g. holidays)	
FINANCIAL (e.g. greater income)	
WORK OR BUSINESS (e.g. promotion, starting new enterprise)	
NATURAL ASSETS (e.g. land, water, nature conservation)	

Worksheet 1.6 - Goals for myself

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Worksheet 1.6 - Goals for myself

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Date _____

I would like to achieve the following goals:

Category	Goals
PERSONAL (e.g. retirement, learning)	
FAMILY (e.g. holidays)	
FINANCIAL (e.g. greater income)	
WORK OR BUSINESS (e.g. promotion, starting new enterprise)	
NATURAL ASSETS (e.g. land, water, nature conservation)	

Worksheet 1.6 - Goals for myself

Goals for the next ____ years for _____ (name)

Date _____

I would like to achieve the following goals:

Category	Goals
PERSONAL (e.g. retirement, learning)	
FAMILY (e.g. holidays)	
FINANCIAL (e.g. greater income)	
WORK OR BUSINESS (e.g. promotion, starting new enterprise)	
NATURAL ASSETS (e.g. land, water, nature conservation)	

Worksheet 1.6 - Goals for myself

Goals for the next ____ years for _____ (name)

Date _____

I would like to achieve the following goals:

Category	Goals
PERSONAL (e.g. retirement, learning)	
FAMILY (e.g. holidays)	
FINANCIAL (e.g. greater income)	
WORK OR BUSINESS (e.g. promotion, starting new enterprise)	
NATURAL ASSETS (e.g. land, water, nature conservation)	

Worksheet 1.7 - Goals for our team

Goals for the next ____ years.

Date _____

All family members and partners involved in our property would like to achieve the following goals:

Category	Goals
PERSONAL (e.g. retirement, learning)	
FAMILY (e.g. holidays)	
FINANCIAL (e.g. greater income)	
WORK OR BUSINESS (e.g. promotion, starting new enterprise)	
NATURAL ASSETS (e.g. land, water, nature conservation)	

Worksheet 1.8 - Property SWOT

Strengths	Weaknesses
Opportunities	Threats

Module 2 - Natural assets

Purpose of this module

The aim of this module is to begin the planning process for your property by describing and documenting its natural assets.

The natural assets of your property determine what land uses and activities will be possible. If you are to prepare a good property management plan, you must first develop a clear understanding of the constraints and capabilities of the land, water, wildlife and vegetation of which you are custodian.

What will be achieved

By the end of this module you can expect to have:

- An appreciation of the value of the natural assets on your property.
- A clear view of the effect the natural features of your property have on determining the land uses and land management practices that are suitable for your land.
- An understanding of some techniques which can be used to protect and manage your natural assets.

Contents of this module

- Describing your property.
- The Lockyer land systems.

Describing your property

Why this is a good idea

Surroundings become very familiar during the day-to-day use and management of a property, meaning that the value of natural assets can be easily overlooked. It is important to stop and take stock of your natural and physical resources and appreciate their value to your future.

- As you work through the checklist below, make notes in your notebook of anything that is relevant to your property. These notes will become an essential reference as you work through the rest of the kit.

You will find most of the information you need in *Living in the Lockyer*. However, you may need or like to do some further research. The following services and references may be useful:

- The Lockyer Catchment Centre and Toowoomba & Region Environment Council (TREC) centre reference libraries have a wealth of information on identifying and assessing all of your natural assets. Library books cannot be borrowed, but you are very welcome to read them in the centres. Most of the 'further resources' listed on pages 111 to 113 of *Living in the Lockyer* can be viewed at the Lockyer Catchment Centre. For opening hours, contact the Lockyer Catchment Centre on 5465 4400 or the Toowoomba & Region Environment Council centre on 4632 1505.
- The easy-to-use *Urban Bushland Assessment and Monitoring Kit for South-East Queensland* can assist you to assess the condition of any bushland areas on your property. To find out how to obtain a copy of the kit, contact the Lockyer Catchment Centre or your local Landcare Group.
- The Queensland Parks and Wildlife Service has produced a computer CD-ROM titled *Balancing Production with Nature*. The CD-ROM includes information on native wildlife and land management. Telephone 1800 603 604 (free call) to find out how to purchase a copy of the CD-ROM. If you don't have access to a computer with a CD-ROM drive, then the Lockyer Catchment Centre or your local Landcare Group may be able to arrange for you to view the CD-ROM.
- Landcare, environment and community groups throughout the area have regular workshops, field trips, guest speakers and other activities that can provide very useful natural asset and land management information. Group newsletters and activity fliers can be viewed at the Lockyer Catchment Centre (5465 4400) and Toowoomba & Region Environment Council centre (4632 1505).

Step 1 - Topography, soils and climate

- Read Step 4 of *Living in the Lockyer* (pages 19 to 26).
- Think about the issues raised in Step 4 of *Living in the Lockyer* in relation to your property. Read through Step 4 of *Living in the Lockyer* again if you need to.
- What is the topography of your property, e.g. slope, aspect? What distinguishing topographic features does your property have, e.g. mountains, cliffs, gorges?

- What advantages and disadvantages do the slope, aspect and features of your property offer, e.g. makes the property frost free or frost prone, makes the property sheltered from westerly winds or exposed to westerly winds?
- What types of soils do you have? What is the structure and profile of these soils? What are the advantages and disadvantages of your soils, e.g. soils are prone to or free from erosion or hard setting, soils are suitable or unsuitable for growing vegetables or fruit trees? Are the soils in good condition?
- What are the climatic conditions of your property, e.g. annual rainfall, temperature range, seasonal changes, cycles and variability, possibility of droughts or floods? What are the advantages and disadvantages of your climate, e.g. makes the property prone to frequent floods or frequent droughts, makes the property frost prone or frost free?

Step 2 - Water

- Read Step 8 of *Living in the Lockyer* (pages 47 to 60). Think about the issues raised in relation to your property.
- What are the water assets of your property, e.g. rivers, creeks and waterways, natural wetlands, groundwater?
- What quantity is available? Is it reliable? How much water could be taken from the system before there might be negative impacts, e.g. impacts on native flora and fauna that needs water for survival?
- What are the potential uses of the water, e.g. for cattle, horses, irrigation? Do you know if the water quality is suitable for these uses, e.g. salinity, turbidity, pH?
- Are there potential dam sites?
- What is the condition of the local environment, e.g. creek bank vegetation, wetland vegetation?

Step 3 - Flora, fauna and native vegetation

- Read Step 10 of *Living in the Lockyer* (pages 67 to 92).
- Look at the vegetation map copy and the species and ecosystem information that you obtained from the Lockyer Catchment Centre (the Lockyer land system information that you also obtained from the Centre will be used later in this module).
- Think about the vegetation map copy, the species and ecosystem information and the issues raised in Step 10 of *Living in the Lockyer* in relation to your property.
- What 'Regional Ecosystems' (REs) are present on your property? Are any of these REs 'Endangered' or 'Of-concern'? What threatened species might be present on your property? Have you seen any of them? Have you seen any of the things they might need, e.g. nesting hollows? What are the fire requirements of your REs?

- Is the native vegetation on your property one continuous area, or is it split up into isolated remnants? What effect could this have on plant and animal species? Does the native vegetation on your property link to native vegetation on adjacent properties?
- Is your native vegetation in good condition or poor condition? If it is in poor condition, what are the causes or possible causes, e.g. weed invasion, feral animals, poor land management practices? Are there areas that could be rehabilitated or replanted? Are there areas that are re-growing naturally?
- Does your native vegetation have any additional values, e.g. scenic amenity, windbreaks, potential timber source for fences or building?

Step 4 - Natural assets inventory

- When you have finished working through the checklist you can use the information you have written in your notebook to fill in the natural assets inventory (*Worksheet 2.1*). This inventory will help you to describe your property to others as well as remind you of the unique qualities of your property.

The Lockyer land systems

Why this is a good idea

Within the Lockyer Catchment there are six distinct areas of land. These are called the ‘Lockyer land systems’. Each Lockyer land system has a characteristic pattern of landform, soils and vegetation, making each more suitable for some land uses and land management activities than others. Your property may be located entirely on one land system, or may include parts of several land systems.

From extensive research and community consultation, the Lockyer Catchment Coordinating Committee (LCCC) has developed recommended land uses and land management practices for each of the six land systems. These have been reproduced in *Technical Note 2.1* at the end of this module. It is important to understand the difference between ‘land uses’ and ‘land management practices’. ‘Land uses’ are *what* you do on your property, whereas ‘land management practices’ are *how* you do it.

The steps below will help you begin the process of assessing the suitability of your property for different land uses and land management practices.

Step 1

- Which Lockyer land system or systems is your property located on? (You received this information when you visited the Lockyer Catchment Centre).

Step 2

- Read *Technical Note 2.1*. This is titled *What should I do with my property?* and can be found at end of this module. When you reach the 'Actions' section, go to your land system or systems and tick the land use actions and land management actions you think are relevant to you and your property.

Note - *Technical Note 2.1* is an aid for broad-scale planning across the Lockyer Catchment, and for this reason only dominant land uses are mentioned. Don't be concerned if you don't see all of your specific land uses at this stage - these will be included when you fully examine 'land use' in Module 3).

Step 3

- Using the information in *Technical Note 2.1*, complete a separate copy of *Worksheet 2.2* for each of the Lockyer land systems your property is located on.

Where to from here?

The subject material that has been overviewed in this module is extensive. Take some time to reflect on your property and appreciate its natural assets.

You may wish to take this opportunity to dig a number of soil cores over your property to determine how deep the soil is, any changes in colour, maybe have a nutrient analysis done. You could also start a collection of the grasses, trees and bushes on your property. The Lockyer Catchment Centre can help with identification and advice on the best ways to collect, press and store specimens.

In the next module we will be looking at appropriate land use and property layout. If there are new land uses in which you are interested, start to write notes about the requirements of those land uses, e.g. climate, soil, water, aspect etc. For any new land use you will need to do a considerable amount of research just to determine whether you have the necessary natural assets to make it feasible.

Review and Resolutions

What were the highlights or most important things to come out of this module?

Why were these important or interesting to you?

What have you learnt from this module? Are there any rules of thumb that you can apply to other situations?

How can you apply these ideas or principles in the future?

Worksheet 2.1 - Natural assets inventory

Asset	Identify and describe resource	Advantages	Disadvantages	Land use and management options
TOPOGRAPHY				
SOILS				
CLIMATE				

Continued over page...

Natural assets inventory (continued)

Asset	Identify and describe resource	Advantages	Disadvantages	Land use and management options
WATER				
FLORA, FAUNA AND NATIVE VEGETATION				

Worksheet 2.2 - Land systems

Complete a separate copy of this worksheet for each the Lockyer land systems on your property.

Sheet number _____ **Lockyer land system** _____

***What are the landscape characteristics of this land system?
(landform, soils, vegetation, water etc.)***

***What are the major limitations or disadvantages of this land system?
(e.g. prone to erosion, has limited water availability etc.)***

***What are its main advantages of this land system?
(e.g. highly fertile soils, good timber, threatened species habitat etc.)***

Which of your current and proposed land uses are encouraged on this land system?

Are any of your land uses discouraged on this land system?

Are there any alternative land uses that you could consider?

Which of your current and proposed land management practices are encouraged on this land system?

Are any of your land management practices discouraged on this land system?

Are there any new or different land management practices that you could consider?

Worksheet 2.2 - Land systems

Complete a separate copy of this worksheet for each the Lockyer land systems on your property.

Sheet number _____ **Lockyer land system** _____

***What are the landscape characteristics of this land system?
(landform, soils, vegetation, water etc.)***

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Which of your current and proposed land uses are encouraged on this land system?

Are any of your land uses discouraged on this land system?

Are there any alternative land uses that you could consider?

Which of your current and proposed land management practices are encouraged on this land system?

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Which of your current and proposed land management practices are encouraged on this land system?

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Are any of your land uses discouraged on this land system?

Are there any alternative land uses that you could consider?

Which of your current and proposed land management practices are encouraged on this land system?

Are any of your land management practices discouraged on this land system?

Are there any new or different land management practices that you could consider?

Module 3 - Land use & layout

Purpose of this module

Due to insufficient or incorrect information, some land managers have made some poor decisions which have led to land degradation. While there are still many unknowns, we are in a better position these days to make well informed and wise decisions both for the present use and management of our land and for its future sustainability.

Making a transition to sustainability is essential. For some properties this may mean major changes in land use and land management practices. On some properties very few, if any, changes may be required. This module will assist you to objectively determine your current land use situation and future options.

What will be achieved?

By the end of this module you will have considered:

- The strengths and weaknesses of your current and proposed land uses and property layout.
- How well your current and proposed land uses and property layout relate to the natural assets of your land.
- Land use and layout options that could improve the sustainability of your property and help achieve your current and future goals.

Contents

- Why mapping?
- Working with aerial photographs.
- Determining land suitability.
- Map “best practice” property design.
- Map existing property design.
- Where to from here?

Why mapping?

Why this is a good idea

An aerial photograph with map overlays is a valuable tool for planning and for the day to day management of your property. It can save you time, labour, and money and is useful for recording many types of historical information. Many people find it easier to absorb information presented in a visual format than as plain text.

Below are some suggestions of information that you could consider recording on your map overlays. Highlight the points on the list that might be relevant to your situation and add any other ideas of your own.

- Locations of natural assets.
- Current and planned changes in property layout and land use.
- Distances, e.g. length/width of fences, pipes, dams, tracks etc.
- Area sizes, e.g. size of paddocks, forested areas etc.
- Weed management areas, fire management areas etc.
- Historical information about property development.
- _____
- _____
- _____

Using this sort of information you can identify and prioritise possible improvements and confirm the future direction for your property. This mapping process is an effective tool that leads to a well thought out property design. This often results in improved efficiency, reduced maintenance requirements, labour savings and optimal, sustainable land use.

Working with aerial photographs

Why this is a good idea

Aerial photographs have been repeatedly taken of many districts over the years. Old photographs are available at any time and can be valuable in tracing the history of many aspects of your property. For example, changes in tree cover, erosion and salinity show up very clearly.

The “Before getting started” section of this kit provided information on how to obtain an aerial photograph or photographs of your property. You will be using your photograph or photographs from now on.

How do I calculate and use scales for my aerial photograph?

Step 1

There may be a scale indicated on your photo, but this must be checked for accuracy. The scale varies from the centre of the photograph to the outside. This variation may sometimes be increased by the tilting of the aircraft. For accuracy, scales should be made by taking measurements at three or more locations.

Procedure for calculating scales

- Select three distances that are clearly visible on your photograph. One in the centre and two on the edges of the photo. If you have points that can be seen easily and are also on other scaled maps such as cadastral maps it is easiest if you use those.
- Measure the three distances on the photograph using a millimetre ruler.
- Now record the actual distance on the ground. This can be done from existing accurately scaled maps or from actually measuring the distance on the ground using a tape measure, or known length of cord, wire or chain (pacing the distance is not a good idea as it is not very accurate).
- In the first table below, write the 'on photo' and 'on ground' measurements for the three distances. Then perform 'calculation 1' for each of the three distances.
- In the second table, perform 'calculation 2' using (X), (Y) and (Z) from the first table.

Distance	On photo	On ground	Calculation 1
Distance A	mm	mm	$\frac{\text{On ground distance}}{\text{On photo distance}} = \text{(X)}$
Distance B	mm	mm	$\frac{\text{On ground distance}}{\text{On photo distance}} = \text{(Y)}$
Distance C	mm	mm	$\frac{\text{On ground distance}}{\text{On photo distance}} = \text{(Z)}$

(Note: 1cm = 10 mm and 1 metre = 1000 mm)

Calculation 2	
$[(\text{X}) + (\text{Y}) + (\text{Z})]$ divided by 3	= average scale for photo
$\frac{(\text{X}) + (\text{Y}) + (\text{Z})}{3}$	= 1:

Step 2

You can use your scale to transfer distances from map overlays to the ground and vice-versa.

For example:

- If you measure 2.5 cm on a map overlay and your photo scale is 1:5,500, then the distance on the ground will be $2.5 \text{ cm} \times 5,500 = 13,750 \text{ cm} = 137.5 \text{ m}$.
- If you measure 97 m on the ground and your photo scale is 1:5,500, then the map overlay distance will be $(97 \text{ m} \text{ divided by } 5,500) = 0.0176 \text{ m} = 1.76 \text{ cm}$.

How do I use my scale to calculate areas?

Towards the end of this module you will find a clear plastic overlay with a grid of lines and dots on it. You can use this “dot grid” and your scale to calculate approximate areas on your map overlays.

Step 1

First, work out the area on the ground that equals an area of 1 cm x 1 cm on your photo.

For example:

If your scale is 1:10,400 then 1 cm on your photo = $1 \text{ cm} \times 10,400 = 10,400 \text{ cm} = 104 \text{ m}$ on the ground, and since 1 cm by 1 cm gives 1 square cm:

One square cm on the photo = $104 \text{ m} \times 104 \text{ m}$ on the ground
= 10,816 square metres

Therefore 1 cm dot grid scale = 1.08 hectares

(Note: 1 hectare = 10000 square metres)

Following the example, calculate your own dot grid scale:

My scale is 1:_____, so 1 cm on my photo = $1 \text{ cm} \times \underline{\hspace{2cm}}$ = _____ cm = _____ m on the ground, and since 1 cm by 1 cm gives 1 square cm:

One square cm on the photo = _____ m x _____ m on the ground
= _____ square metres

Therefore 1 cm dot grid scale = _____ hectares

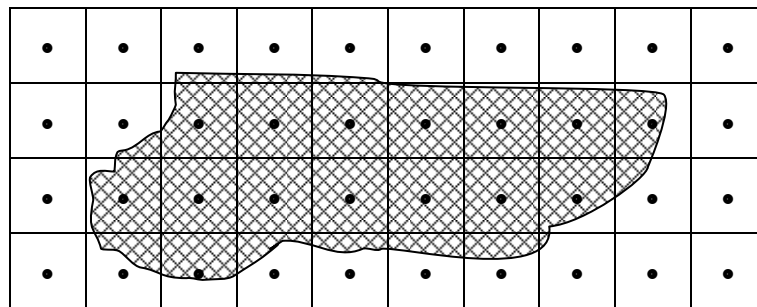
Write this dot grid scale on your dot grid for future reference.

Step 2

Place the dot grid over the area to be measured. Count the number of dots that fall within that area. Multiply the total number of dots by the dot grid scale calculated above to give you the approximate area in hectares.

For example:

15 dots fall within the shaded area below. Using the dot grid scale from the example above (1 cm dot grid scale = 1.08 hectares), the shaded area has an approximate area of $15 \times 1.08 \text{ ha} = 16.2 \text{ ha}$.



Describing property units

Why this is a good idea

In Module 2 you identified the natural assets on your property and started to develop an understanding of how these natural assets determine the land uses and land management practices that are suitable for your land. The steps below will help you to use the information from Module 2 to begin the process of assessing areas of your property for their suitability for different purposes.

When carrying out this exercise please remember this is your property plan: a personal, family or property management team document for use on your property. There are no exams and no right and wrong answers - it's entirely your plan.

Step 1

- Read back over your responses on *Worksheet 2.1* and *Worksheet(s) 2.2*.

At a property level it is best to map 'property units' using a landscape approach. This approach subdivides land according to observable patterns in the landscape. From your responses on *Worksheet 2.1* and *Worksheet(s) 2.2*, you will recognise areas on your property which are distinctive and can be mapped as distinct 'property units'. Often a property unit is recognised because it is dominated by one or two main features such as the same soil type, topography or vegetation (remember that your property vegetation map and species and ecosystem information can help you to identify areas with the same vegetation).

Note that while your 'property units' will relate to the 'Lockyer land systems', they are not the same thing. The 'Lockyer land systems' are an aid for broad-scale planning across the Lockyer catchment, whereas your 'property units' are an aid for detailed planning on just your property. For example, all of your property may be on the 'Steep sandstones' land system, but the property will consist of several distinct 'property units' such as a 'flat plateau top property unit', a 'cliff lines and steep slopes property unit', and a 'creek flats property unit'.

Your 'property units' are something that you yourself decide - you decide how many property units you will have and where on your property they will be.

- Attach a clear plastic overlay to your aerial photograph and mark in the corners of the photograph so that if the overlay moves it can be repositioned. On the overlay, mark in areas that are obviously different due to changes in soil type, vegetation or landform. These areas are distinct 'property units' and will be assessed separately, as they are likely to be suitable for different land uses or may require different management approaches.
- Number or name each property unit for later reference.
- Also show features such as drainage lines, ridges, rock outcrops, site boundaries, access tracks, buildings, dams etc.

Step 2

Once your property units have been identified their main characteristics should be described. Each property unit can be considered as a separate ecological unit capable of different land uses. A property unit with a low capability or suitability for one use (e.g. cattle grazing) may have a high capability for another use (e.g. forestry).

- From your responses in *Worksheet 2.1* and *Worksheet(s) 2.2*, describe the landscape features of each mapped property unit. These attributes will give you the information you need to assess each property unit according to its suitability for different uses. Record this information in Part A of copies of *Worksheet 3.1* (don't fill in Part B yet - this happens later in the Module).

Step 3

- Time for some exercise! Take your aerial photo and property unit overlay and go for a walk (or if your property is large, a drive) over your property. 'Ground truth' your map overlay and property unit descriptions by checking that the overlay and descriptions match what is on the ground. Make any adjustments that are necessary.

As you travel over your property, start to think about how your current and proposed land uses and land management practices relate to the characteristics of each of your property units.

Determining land suitability

Why this is a good idea

Land can be put to use in a huge variety of ways. Responsible landholders aim to use their land appropriately. This includes making wise land use and land management decisions. For instance, an intensive cropping operation is not well suited to an area with a very steep slope due to the severe erosion risk.

To determine the land use and layout options suited to your particular property you need:

- A detailed description of the natural assets of your property.
- To understand how your current and proposed land uses and land management practices relate to your natural assets.

Step 1

Read the following sections of *Living in the Lockyer*:

- Step 3 (pages 15 to 17).
- Step 6 (pages 31 to 39).
- Step 11 (pages 93 to 100).
- Step 12 (pages 101 to 106).
- Step 13 (pages 107 to 109).

Step 2

Have any land use or land management strategies been prepared for your area or district? These will contain valuable information that will assist you to develop and implement sustainable land uses and land management practices on your property.

- Contact the Lockyer Catchment Centre to find out if any land use or land management strategies have been prepared for your area or district. Read these strategies and make notes about any recommendations or actions relating to land use and land management practices that could be relevant to your property.

Step 3

You can now assess land use suitability using:

- Your property units map overlay (which shows your natural assets).
- Your property unit descriptions (Part A on your copies of *Worksheet 3.1*).
- The information you have read in *Living in the Lockyer*

- The information you have read in any land use or land management strategies that have been prepared for your area or district.

Technical Note 2.1 can also assist you with this exercise. Try to look at your land objectively and resist the temptation to be too generous when you are assessing areas of land. If you have difficulty in assessing particular attributes it is best to make whatever notes you can and contact the Lockyer Catchment Centre for advice. Assessing land attributes is not always simple, so it is important that you are patient and thorough. Extra care at this stage will help avoid expensive mistakes.

- Read *Resource 3.2*, which you will find towards the end of this module.
- Go to *Worksheet 3.2* and tick the land uses that you would like to assess for suitability on your property.
- Using the information in *Resource 3.2* and your responses on *Worksheet 3.2*, fill in Part B of each of your copies of *Worksheet 3.1*.

Step 4

The following suffixes, or some similar system, can be used on your map overlay to show the limiting features of each property unit. These are only examples - use any others that you find appropriate. If you have room on the edge of the overlay you can note down your suffixes to create a key for your map.

Suggested suffixes are:

ss	Steep slope
su	Unstable slope
wi	Wind erosion potential
wa	Water erosion potential
gu	Gully or tunnel erosion
fl	Often floods
fr	Often frosts
rc	Rocky
rg	Rough
sd	Poor soil depth
sf	Poor soil fertility
sc	Poor soil condition
sw	Soil waterlogging (sw1 occasional, sw2 often)
sa	Salinity present (sa1 minor, sa2 moderate, sa3 severe)
wa	Poor water availability
wi	Poor water infiltration
ts	Threatened species populations and/or habitat
te	Threatened ecosystems
bp	Bushfire prone
ch	Cultural heritage values

Best practice property design

Why this is a good idea

The natural resources and characteristics of your property dictate its ultimate potential and limitations. That is, they ultimately determine how well different land uses will perform on your property, irrespective of how good your management is. By considering only the natural features in preparing this overlay, you will be able to determine a “best practice” design for your property.

Step 1

- To move forward with the planning of your property it is helpful to go backwards first! Try to imagine your property without any improvements on it - no fences, no house or sheds, no cattle or horses, no dams and so on. The property is now ready for you to design its layout and land use without the hindrance of existing infrastructure. You can design the property to your specifications and take into account the changes in land characteristics and the areas of particular sensitivity or potential.

Step 2

- Attach your property units map overlay to your aerial photograph. Then place a new overlay on the top. Draw around the corners of the new overlay so it can be repositioned at a later date.

Step 3

Keeping in mind your vision and goals and the natural assets of your property, start thinking about the areas and infrastructure that you require for the preferred land uses you identified in Table 2 of each of your copies of *Worksheet 3.1*.

Refer back to your copies of *Worksheet 3.1* as you carry out the exercise. *Technical Note 3.1* provides some guidance with respect to placement of access tracks, watering points and fences. Use *Worksheet 3.3* as a guide or prompt for what to show on the overlay, and as a key for the symbols that you use on the overlay.

- Look back at the vision and goals that you developed in Module 1.
- Keeping in mind your vision and goals and the natural assets of your property, draw on the areas and infrastructure that you require for the preferred land uses you identified in Table 2 of each of your copies of *Worksheet 3.1*. Map what you consider to be the best possible land use layout. Don't forget that you are considering only your natural assets (i.e. imagine your property without any improvements on it - no fences, no house or sheds, no cattle or horses, no dams etc).
- Use *Worksheet 3.3* as a guide or prompt for what to show on the overlay, and as a key for the symbols that you use on the overlay.

- If you are using a permanent marker you can make alterations to your map by using methylated spirits applied with a tissue, cloth or cotton bud.

Step 4

- When you have completed your overlay, fill in the “Best Practice” Property Design Summary Table (*Worksheet 3.4*).

Mapping your existing property design

Why this is a good idea

This exercise is designed for you to produce an overview of your existing land uses and layout, providing you with a “scale model” of your property as it is at the present time. This can then be compared with your “best practice” property design overlay.

Step 1

- Remove your “best practice” property design and the property units overlays from your aerial photograph. Attach a fresh piece of overlay and mark in the corners of the photograph so that if the overlay moves it can be repositioned.

Step 2

- Using *Worksheet 3.3* as a guide, map out your existing property design.

Step 3

- When you have completed your overlay, fill in the Existing Property Design Summary Table (*Worksheet 3.5*).

Step 4

- Now you can compare your existing and “best practice” property designs. This will help you to establish priorities for your workplans, which you will prepare in Module 4. Write your notes on *Worksheet 3.6*.

Where to from here?

The next module will cover the topic of land management. Suitable land uses are one key to sustainability - appropriate land management practices are the other. Appropriate land management differs between districts, climatic zones, land uses and even individual landholders. While there may not be hard and fast rules that are appropriate under every situation there are well established, good land management principles that you can implement.

Review and resolutions

What were the highlights or most important things to come out of this module?

Why were these important or interesting to you?

What have you learnt from this module? Are there any rules of thumb that you can apply to other situations?

How can you apply these ideas or principles in the future?

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT															
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT															
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Worksheet 3.1 - Property unit summary

Property unit number _____ Map symbol _____

Property unit name _____

Area (hectares) _____ Percentage of property _____

Part A - Landscape characteristics

TOPOGRAPHY
SOILS
CLIMATE
WATER
FLORA, FAUNA AND NATIVE VEGETATION
MAIN LIMITATIONS/DISADVANTAGES (e.g. prone to erosion, has limited water availability etc.)
MAIN ADVANTAGES (e.g. highly fertile soils, good timber, threatened species habitat etc.)

Continued over page (Part B)...

Part B - Land suitability assessment

Note - This part (Part B) is not completed at the same time as Part A. Wait until the Module tells you before completing Part B. Read *Resource 3.2* to find out how to fill in the tables below.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

Resource 3.2 - Land use suitability

How to fill in the tables in Part B of Worksheet 3.1.

The land use suitability recording tables in Part B of *Worksheet 3.1* can be used to assess the property unit for its suitability for a number of land uses.

Step 1

In the left hand column of TABLE 1, insert your current and proposed land uses for this particular property unit. For example, house area, orchard, nature conservation, forestry, grazing.

Step 2

In TABLE 1 rate the extent to which each of the land characteristics of this property unit limit each of the land uses. The degree of limitation is rated on a scale of 1 to 4:

- Class 1 **Negligible limitation** - The land characteristic limits the land use to a negligible degree, with only basic management practices required to maintain sustainability.
- Class 2 **Minor limitation** - The land characteristic limits the land use to some degree, with complex management practices required to maintain sustainability.
- Class 3 **Major limitation** - The land characteristic limits the land use to a substantial degree, with very complex management practices required to maintain sustainability.
- Class 4 **Very major limitation** - The land characteristic limits the land use to an extreme degree, with even the most complex management practices unable or unlikely to maintain sustainability.

Step 3

From your ratings in TABLE 1, write the suitable land uses in TABLE 2. Ideally, your suitable land uses will be any land uses where all characteristics have been rated either Class 1 or Class 2. You can also include land uses where characteristics have been rated Class 3, but you will need to be prepared to intensively manage the land so as to avoid land degradation.

Eliminate any land use where there are Class 4 ratings. Do this even if there is only one Class 4 rating for the land use and the rest of the ratings are Class 1 or Class 2 - if you want to sustainably manage your land then its a case of 'one Class 4 strike and it's out!'

Example land suitability assessment

See the back of this sheet for an example land suitability assessment.

Example land suitability assessment

Property unit - Bluegum flats. An alluvial flat alongside a creek has fertile soil and is covered in large bluegum trees. Wet spots remain after heavy rain and every few years the area has a major flood. These creek flats usually get 5 to 10 frosts each winter. The blue gum vegetation community is an ‘endangered’ ecosystem and provides habitat for koalas.

TABLE 1																	
CURRENT AND PROPOSED LAND USES	LAND CHARACTERISTICS AND SUITABILITY ASSESSMENT																
	Slope	Erosion	Flooding	Frost	Rockiness	Roughness	Soil depth	Soil fertility	Soil condition	Soil wetness	Salinity	Water availability	Water infiltration	Threatened species	Threatened ecosystems	Bushfires	Cultural heritage
Grazing	1	1	2	2	1	1	1	1	1	1	1	1	2	2	2	1	1
Nature conservation	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
Large orchard	1	1	3	3	1	1	1	1	1	3	1	1	2	4	4	2	1
House area	1	1	4	2	1	1	2	1	1	3	1	1	2	3	3	2	1

TABLE 2 - SUITABLE LAND USES FOR THIS PROPERTY UNIT

The ‘bluegum flats’ property unit is best suited to nature conservation and/or grazing. Putting in a large orchard would require the clearance of a threatened ecosystem that provides koala habitat, which gives a Class 4 rating and eliminates this land use. House construction could be very carefully managed so there is minimal clearing, but the regular flooding gives a Class 4 rating and eliminates this land use.

Worksheet 3.2 - Land use prompt sheet

There are a multitude of land use possibilities you could consider for your property. The following list is provided as a prompt that will help you document and analyse the land uses that interest you. Tick those land uses that you would like to assess for suitability on your property.

Make sure that you research all of your proposed land uses thoroughly. The Lockyer Catchment Centre can help with contacts and advice and access to an extensive reference library.

- | | |
|--|--|
| <input type="checkbox"/> House or houses | <input type="checkbox"/> Fruit orchards |
| <input type="checkbox"/> Sheds | <input type="checkbox"/> Herbs |
| <input type="checkbox"/> Gardens | <input type="checkbox"/> Flowers |
| <input type="checkbox"/> Cattle | <input type="checkbox"/> Bush tucker |
| <input type="checkbox"/> Horses | <input type="checkbox"/> Plants for oil distillation |
| <input type="checkbox"/> Donkeys | <input type="checkbox"/> Farm forestry |
| <input type="checkbox"/> Pigs | <input type="checkbox"/> Agroforestry |
| <input type="checkbox"/> Poultry | <input type="checkbox"/> Native forest selective logging |
| <input type="checkbox"/> Deer | <input type="checkbox"/> Native vegetation conservation |
| <input type="checkbox"/> Goats | <input type="checkbox"/> Threatened species and ecosystem conservation |
| <input type="checkbox"/> Emus and/or ostriches | <input type="checkbox"/> Native vegetation regrowth (trees, shrubs or grasses) |
| <input type="checkbox"/> Alternative animals, e.g. alpacas | <input type="checkbox"/> Native vegetation replanting (trees, shrubs or grasses) |
| <input type="checkbox"/> Aquaculture - fish species, red claw, prawns, etc | <input type="checkbox"/> Natural features for scenic amenity |
| <input type="checkbox"/> Bee keeping and honey production | <input type="checkbox"/> Riparian vegetation conservation |
| <input type="checkbox"/> Native grazing pasture | <input type="checkbox"/> Wetland conservation |
| <input type="checkbox"/> Improved grazing pasture | <input type="checkbox"/> Ecotourism |
| <input type="checkbox"/> Pasture seed production | <input type="checkbox"/> Rural tourism |
| <input type="checkbox"/> Fodder trees or shrubs | <input type="checkbox"/> Walking tracks |
| <input type="checkbox"/> Shade and shelter belts for grazing animals | <input type="checkbox"/> Horse trails |
| <input type="checkbox"/> Hay production | <input type="checkbox"/> |
| <input type="checkbox"/> Vegetables | <input type="checkbox"/> |

Technical Note 3.1 - Locating property improvements

The siting of tracks, watering points, fences and other improvements without considering the natural assets of a property often leads to soil erosion, waterlogging or land degradation problems.

Roads and tracks

- Locate roads and tracks on ridgelines or along the contour to minimise the build-up of runoff water along them.
- Where tracks run up and down the slope, construct low earth mounds across them to divert runoff water and minimise erosion (these mounds are called 'whoa-boys'). Position whoa-boys every 50 m along tracks on steep slopes, with up to 100 m spacing on low slopes. Ensure that the outlet of each whoa-boy is free of stumps or rocks to ensure that the flow of runoff water is not restricted.
- Where tracks must run diagonally across the slope, zigzag them to avoid long straight runs where runoff water will accumulate. Where tracks need to cross a relatively flat area, keep them as close to the contour as possible to prevent runoff water flowing along them.
- Where tracks cross streams or gullies, position whoa-boys at the top of banks to minimise erosion to the entry and exit points of the crossings.
- On contoured land, site tracks just below the contours to minimise the amount of runoff water collecting on and damaging them.
- Avoid positioning tracks in or close to watercourses, waterways, fencelines or stock pads, as runoff water concentrates in these areas.
- When constructing tracks, minimise soil and vegetation disturbance. A light blading to remove obstacles is all that is required. If windrows are pushed, run them up and down the slope to minimise diversion of runoff water. Occasionally slash to maintain the track.
- Change the location of wheel tracks regularly to prevent ruts developing.

Fences and gates

- If you have grazing animals (cattle, horses etc.) fence similar land and pasture types into the same paddock to even out grazing pressure. Site gates on high stable areas 100 m to 200 m from paddock corners to minimise stock-pad erosion and reduce the risk of stock jamming into corners. A short dummy fence may be required to direct stock through the gate.
- Fence adjacent and parallel to watercourses and gullies to minimise the number of times that the fence crosses these areas.
- On contoured land, site fences 2 or 3 m below banks to allow for bank maintenance.

Firelines

- Wherever possible, use existing features for firelines instead of constructing dedicated firelines, e.g. combine firelines with tracks, roads etc. and/or use natural features such as seepage areas, creeks, cliffs etc.
- You will further examine the issue of fire lines in Module 4.

Walking tracks, horse trails etc.

- In general, follow the guidelines for roads and tracks. The Queensland Parks and Wildlife Service (QPWS) can provide specialist advice in regard to the siting and construction of bushwalking tracks and related infrastructure such as boardwalks. Contact the Lockyer Catchment Centre (5465 4400) for further information.

Watering points

If you have grazing animals (cattle, horses etc.):

- Provide more than one watering point per paddock and locate them in stable areas. This will even out grazing pressure and reduce the risk of erosion. Where dams must be built on fragile soils, fence them to keep stock out and pipe the water to a more stable area. Locating such dams as high as possible in the paddock will allow for a gravity reticulation systems to be used.
- Provide watering points one to two kilometres apart on steep hilly land, and three to four kilometres away from paddock corners to minimise stock pads along fence lines and to allow stock access from several different directions.
- Locate troughs away from gullies and watercourses.
- To reduce pollution and siltation of dams, place them above shade areas or stock camps.

Laneways, stockyards, shade clumps and shade lines

If you have grazing animals (cattle, horses etc.):

- Site stockyards in a central position to provide access to as many paddocks as possible. Where this cannot be done, a laneway system will simplify stock handling. Build laneways 20 m to 50 m wide to assist with stock movement. If possible, locate stockyards on ridges to avoid drainage problems.
- Shade lines may help with stock handling as cattle tend to follow shade. Therefore, shade lines should lead to yards, laneways and watering points. Where practical, leave shade lines at least 100 m wide. Where shade clumps are preferred, leave clumps 2 to 5 hectares in size. Leave wide shade lines alongside permanent streams.

Worksheet 3.3 - Things to show on map overlays

Scan this list and tick any that you feel are appropriate for your situation. Add any additional items in the spaces provided below.

ITEM	MAP SYMBOL
<input type="checkbox"/> An appropriate title for each overlay	
<input type="checkbox"/> The property boundary	
<input type="checkbox"/> North arrow	
<input type="checkbox"/> Areas for your current and proposed land uses (see your responses on <i>Worksheet 3.1</i>).	
<input type="checkbox"/> Internal fencing	
<input type="checkbox"/> Access roads, tracks, gateways, grids etc.	
<input type="checkbox"/> Water supply infrastructure - dams, tanks, bores, pipes, pumps, windmills etc.	
<input type="checkbox"/> Waste water and effluent infrastructure - disposal pipes, trenches, areas etc.	
<input type="checkbox"/> Native vegetation areas	
<input type="checkbox"/> Soil conservation works - contour banks, gully restoration works etc.	
<input type="checkbox"/> Fire management areas and firelines	
<input type="checkbox"/> Weed management areas - areas being managed, areas eradicated, areas yet to be managed.	
<input type="checkbox"/> Feral animal management areas	
<input type="checkbox"/> Flood management infrastructure - levee banks etc.	
<input type="checkbox"/> Surface and sub-surface drainage works	
<input type="checkbox"/> Salinity control or management areas	
<input type="checkbox"/> Buildings - houses, sheds etc.	
<input type="checkbox"/>	
<input type="checkbox"/>	

Worksheet 3.4 - "Best practice" property design summary

PROPERTY UNIT	AREA (ha)	DESCRIPTION	LAND USES

Continued over page...

Worksheet 3.4 (continued)

PROPERTY UNIT	AREA (ha)	DESCRIPTION	LAND USES

Worksheet 3.5 - Existing property design summary

PROPERTY UNIT	AREA (ha)	DESCRIPTION	LAND USES

Continued over page...

Worksheet 3.5 (continued)

PROPERTY UNIT	AREA (ha)	DESCRIPTION	LAND USES

Worksheet 3.6 - Comparison of existing and “best practice” property layouts

What are the main differences between your existing and “best practice” layouts?

How will the “best practice” layout help you and your family achieve your property vision and goals?

Are your existing land uses compatible with the land characteristics of your property?

If not, what land use changes or improvements could be made?

What land management practices could be changed or improved?

Module 4 - Land management

Purpose of this module

As mentioned at the end of the last module, suitable land uses are one key to sustainability and appropriate land management practices are the other. In this module you will examine any land degradation on your property, assess your current and proposed land management practices, and then develop sustainable land management programs. For some properties this may mean major changes, while on other properties very few, if any, changes may be required.

The sustainable land management programs are the last planning component of your property management plan. At the end of this module you will develop actions to turn your property management plan into reality.

What will be achieved?

By the end of this module you will have:

- Assessed the level of land degradation on your property.
- Developed management actions to address degradation.
- Developed workplans for implementing your property management plan.

Program

- Land management.
- Planning to manage.
- Workplans.
- Congratulations!

Land management

Why this is a good idea

The responsibility of appropriate land management lies almost entirely with the individual landholder. For good land management landholders must be aware of the causes of land degradation, the symptoms or signs to look for and the possible solutions. Of course, prevention is better than any cure.

Keep in mind the fact that land degradation:

- Is likely to decrease the value of your property.
- Is more expensive to fix as time goes on.
- Could have wider repercussions if activities on your land have off-site effects.

Step 1

Read the following sections of *Living in the Lockyer*, which feature important land management information:

- Step 5 (pages 27 to 29).
- Step 7 (pages 41 to 46).
- Step 9 (pages 61 to 66).

You might also like to look back over the following sections of *Living in the Lockyer* (these are sections that you have already read) which also feature important land management information:

- Step 4 (Soil erosion and management pages 24 to 25, Creek management pages 25 to 26).
- Step 8 (all of Step 8, pages 47 to 60).
- Step 10 (all of Step 10, pages 67 to 92).
- Step 11 (all of Step 11, pages 93 to 100).
- Step 12 (all of Step 12, pages 101 to 106).

Step 2

- Attach your property units map overlay to your aerial photograph. Then place a new overlay on the top. Draw around the corners of the new overlay so it can be repositioned at a later date.

Step 3

Start thinking about any areas of land degradation on your property and the land management practices you could use to overcome this degradation and improve the sustainability of your land uses.

When carrying out this exercise, refer back to *Technical Note 2.1*, *Worksheet(s) 2.2*, *Worksheet(s) 3.1*, and *Worksheet 3.6*. Use the categories on *Worksheet 4.1* as a guide or prompt for the issues to consider. Think about the land degradation and management issues you saw on the walk/drive at the end of Module 2. Remember that this is your property management plan for your property - try to be as objective as possible when assessing land degradation.

- Read back over the 'Actions' section of *Technical Note 2.1*, your responses in the bottom box of *Worksheet(s) 2.2*, your responses on *Worksheet(s) 3.1*, and your responses on *Worksheet 3.6*.
- Mark on the new map overlay any areas of land degradation on your property. Also mark in areas that concern you because of their potential to degrade due to land use or land management practices.
- Use the categories on *Worksheet 4.1* as a guide or prompt for the issues to consider. When you have completed your overlay, fill in the corresponding details on *Worksheet 4.1* and rate the level of degradation using the categories given on the worksheet.
- Think about your management options and if possible discuss them with some other people (e.g. family, friends, neighbours, Lockyer Catchment Centre staff etc). What changes could you make to immediately overcome the problem? If not what is a suitable longer-term plan?

Planning to manage

Why this is a good idea

Before you carry out any management actions 'on the ground' it is best to have a long-term plan for what you are going to do. While there are some degradation issues that can be solved readily and easily, many will require work over several years or more.

Without adequate planning your time, money and effort could easily be wasted. For example, if you are going to remove a patch of lantana this year, make sure you plan to go back next year and the year after to control any regrowth. If you don't go back, there is every chance that the lantana will grow again and you will be right back where you started with your efforts wasted.

As well as up-front planning, it is also a good idea to monitor and review your management activities. This involves objectively checking your progress on a regular basis using simple techniques. If your monitoring shows that your management actions aren't working then you will need to look at what changes or improvements could be made.

Three good ideas for monitoring are:

- *Map overlay monitoring.* Use map overlays to record changes in degradation and the effects of your management programs. For example, if you are going to carry out a weed control program show on a map overlay your current area of weed infestation, and then map it again in a years time to see how much has been effectively controlled.
- *Photographic monitoring.* When it comes to assessing the impacts of management actions, a picture can truly tell a thousand words. For photo monitoring to work, you need to establish fixed sites and mark these with numbered pegs in the ground and corresponding symbols on a map overlay. Take a picture from each peg at regular intervals (say every year) making sure each picture is taken in exactly the same direction. Then compare the pictures.
- *Aerial photographic monitoring.* Aerial photography for the Lockyer Catchment is updated every few years. Obtaining updated aerial photography when it is published and comparing it with the aerial photography you are using now can be useful for monitoring things like reductions in the area infested with weeds. Obtaining both historic and updated aerial photography can also provide you with a pictorial history of your property development.

Step 1

- Think about what you have read in *Living in the Lockyer*, your responses on *Worksheet 4.1*, and any relevant actions in any land use or land management strategies that have been prepared for your area or district (you researched and took notes about these in Module 3).
- Work through the following steps, completing a copy of *Worksheet 4.2* for each land management issue you wish to address. If a particular land management issue is not relevant to you, skip to the next step.
- For further information on managing each issue, refer to *Living in the Lockyer*. Additional references are given for some of the issues. If you need more information, see the services and references listed on page 2 of Module 2. If you get stuck, don't hesitate to contact the Lockyer Catchment Centre for advice or assistance.

Step 2 - Landslips

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused your landslips, e.g. the over-clearing of steep slopes?
- Do you think the landslip problem is stable or getting worse? What remedial actions could you undertake, e.g. revegetation with deep-rooted native vegetation?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- How will you monitor the success of your management actions?

Step 3 - Erosion

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the erosion, e.g. exposure to winds, the clearing of slopes that are too steep, water flowing incorrectly over the land etc?
- Do you think the erosion problem is stable or getting worse? What remedial actions could you undertake, e.g. earth works, tree planting etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- How will you monitor the success of your management actions?

Step 4 - Streambank erosion, slumping or collapse

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the erosion, slumping or collapse, e.g. the clearing of riparian vegetation, water flowing incorrectly over the land etc?
- Do you think the situation is stable or getting worse? What remedial actions could you undertake, e.g. tree planting etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- How will you monitor the success of your management actions?

Step 5 - Poor soil condition

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the poor soil condition, e.g. over-cultivation, overgrazing etc?
- Do you think the soil condition problem is stable or getting worse? What remedial actions could you undertake, e.g. mulching etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- How will you monitor the success of your management actions?

Step 6 - Salinity

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the salinity, e.g. over-clearing, poor irrigation practices etc?

- Do you think the salinity problem is stable or getting worse? What remedial actions can you undertake, e.g. tree planting etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- How will you monitor the success of your management actions?

Step 7 - Poor water quality

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the poor water quality, e.g. pollution from inappropriate wastewater disposal, runoff from upstream properties etc?
- Do you think the water quality problem is stable or getting worse? What remedial actions could you undertake, e.g. improving wastewater disposal etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- If the poor water quality is the result of pollution from another property, how will you address this?
- How will you monitor the success of your management actions?

Step 8 - Herbicide or pesticide residues

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the herbicide or pesticide residues, e.g. poor application practices, overspray from adjacent properties etc?
- Do you think the herbicide/pesticide residue problem is stable or getting worse? What remedial actions could you undertake, e.g. improving application practices etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- If the herbicide or pesticide residues are the result of overspray from an adjacent property, how will you address this?
- How will you monitor the success of your management actions?

Step 9 - Overgrazing

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the overgrazing, e.g. too many animals in the paddock, poor stock rotation, poor placement of paddock fences, poor placement of watering points etc?

- Do you think the overgrazing problem is stable or getting worse? What remedial actions could you undertake, e.g. reducing stock numbers etc?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- How will you monitor the success of your management actions?

Step 10 - Decline of native vegetation

- If you don't have this land management issue on your property, skip to the next step.
- Have you assessed the health and quality of your bushland? This is recommended, as it will help you to develop and improve your management practices. The easy-to-use *Urban Bushland Assessment and Monitoring Kit for South-East Queensland* can assist you to assess and monitor your bushland. To find out how to obtain a copy of the kit, contact the Lockyer Catchment Centre or your local Landcare Group.
- Have you reviewed the threatened species and ecosystem management information you obtained from the Lockyer Catchment Centre? Do you need further assistance with identifying and managing your threatened species and ecosystems?
- What do you think has caused the decline of your native vegetation, e.g. over-clearing, inappropriate fire regimes, inappropriate grazing practices, inappropriate timber harvesting practices etc?
- Do you think the situation is stable or getting worse? What remedial actions could you undertake?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- Have you considered entering into a Nature Refuge Agreement or registering your property as Land for Wildlife? You will find information on Nature Refuge Agreements and Land for Wildlife at the end of this module.
- If your areas of vegetation are part of a larger area of vegetation that spans several properties, how will you work with your neighbours to coordinate management actions?
- How will you monitor the success of your management actions?

Step 11 - Inappropriate fire regimes

- If you don't have this land management issue on your property, skip to the next step.
- Have you prepared a fire management plan for your property? This is recommended, as it will assist you to protect your family and home from wildfire as well as helping you to protect your native vegetation. The easy-to-use *Individual Property Fire Management Planning Kit* is a step-by-step aid to developing your own fire management plan. You will find a copy of the kit at the back of this module.

- Fire management is often best achieved through a coordinated approach across several properties, particularly if you have areas of vegetation that are part of a larger area of vegetation spanning several properties. Is this approach best for your property? How will you work with your neighbours to achieve coordinated fire management actions?
- How will you monitor the success of your management actions?

Step 12 - Weed invasion.

- If you don't have this land management issue on your property, skip to the next step.
- What do you think has caused the weed invasion? Which weed species are present?
- Do you think the situation is stable or getting worse? What remedial actions could you undertake?
- How much will it cost? When can you afford this expenditure? Is funding assistance available?
- If your weed invasion part of a larger invasion that spans several properties, how will you work with your neighbours to coordinate management actions?
- Are any of your garden plants identified as potential environmental weeds (see pages 64 to 65 of *Living in the Lockyer*)? How will you ensure that these plants do not spread?
- How will you monitor the success of your management actions?

Step 13 - Other management issues

- Do you have other management issues? What are they and how will you address them?

Workplans

Why this is a good idea

You have almost completed your 'Living in the Lockyer' property management plan. So far, you have prepared the following key components of the plan:

- Property units map overlay and descriptions.
- “Best practice” property design overlay and summary.
- Existing property design overlay and summary.
- Land degradation overlay and summary.

The final key component is a very important one. This is your 'property workplan'. This workplan sets out what you will do on your property in the short-term (1 year), medium term (5 years) and long term (20 years).

Step 1

Read back over and carefully reflect on:

- Your property vision and goals (the worksheets at the end of Module 1).
- Your map overlays and *Worksheet(s) 3.1, Worksheet 3.4, Worksheet 3.5, Worksheet 3.6, Worksheet 4.1* and *Worksheet(s) 4.2*.

Step 2

From the material you have read, think about:

- The land use actions you want to carry out over the next year, the next five years and the next twenty years. Include actions to establish any new land uses (you identified these on *Worksheet(s) 3.1* and *Worksheet 3.4*) and actions to change or improve existing land uses (you identified these on *Worksheet 3.5* and *Worksheet 3.6*).
- The land management actions you want to carry out over the next year, the next five years and the next twenty years. Include all of the issues and actions that you have identified in *Worksheet 4.1* and *Worksheet(s) 4.2*.

Step 3

- Fill in *Worksheet 4.3* (workplan for the next year), *Worksheet 4.4* (workplan for the next five years) and *Worksheet 4.5* (workplan for the next twenty years).
- Carefully double-check to make sure you have included all of the land use and land management issues and actions from *Worksheet(s) 3.1, Worksheet 3.4, Worksheet 3.5, Worksheet 3.6, Worksheet 4.1* and *Worksheet(s) 4.2*.

- ❑ Make sure that the final action on *Worksheet 4.3* (the workplan for the next year) is an ‘annual review’ where you will review your progress, prepare the workplan for the following year, and make any necessary adjustments to your five-year and twenty-year work plans.

Congratulations!

Congratulations on completing your “Living in the Lockyer” Property Management Plan, and thank-you for making a very positive contribution to the future well-being of the Lockyer Catchment. We wish you the very best for your future “Living in the Lockyer”.

Review and resolutions

What were the highlights or most important things to come out of this module?

Why were these important or interesting to you?

What have you learnt from this module? Are there any rules of thumb that you can apply to other situations?

How can you apply these ideas or principles in the future?

Worksheet 4.1 - Land degradation assessment

Tick any land degradation issues that are relevant to your property and write in the details (which will correspond to your map overlay). Rate the level of degradation as high, medium or low.

DEGRADATION ISSUE	MAP SYMBOL	DETAILS	RATING
<input type="checkbox"/> Land slips.			
<input type="checkbox"/> Gully erosion.			
<input type="checkbox"/> Tunnel erosion.			
<input type="checkbox"/> Streambank erosion, slumping or collapse.			
<input type="checkbox"/> Poor soil condition.			
<input type="checkbox"/> Salinity present.			
<input type="checkbox"/> Poor water quality.			

Continued over page...

Worksheet 4.1 (continued)

DEGRADATION ISSUE	MAP SYMBOL	DETAILS	RATING
<input type="checkbox"/> Herbicide or pesticide residues.			
<input type="checkbox"/> Overgrazing.			
<input type="checkbox"/> Threatened species populations or habitat declining.			
<input type="checkbox"/> Threatened ecosystems declining.			
<input type="checkbox"/> Fire regimes damaging or modifying native vegetation.			
<input type="checkbox"/> Weed invasion.			
<input type="checkbox"/> Cultural heritage values damaged.			
<input type="checkbox"/>			
<input type="checkbox"/>			

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:	DATE PREPARED: ___ / ___ / ___	
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:	DATE PREPARED: ___ / ___ / ___	
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:	DATE PREPARED: ___ / ___ / ___	
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:	DATE PREPARED: ___ / ___ / ___	
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:	DATE PREPARED: ___ / ___ / ___	
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.2 - Land management plan

Complete a separate copy of this worksheet for each land management issue you wish to address.

MANAGEMENT ISSUE:		DATE PREPARED: ___ / ___ / ___
This plan starts on ___ / ___ / ___ and finishes on ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.2 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.3 - Workplan for the next year

DATE PREPARED: ___ / ___ / ___	PLAN DURATION: 12 months.	
THIS WORKPLAN STARTS ON ___ / ___ / ___ AND FINISHES ON ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.3 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.4 - Workplan for the next five years

DATE PREPARED: ___ / ___ / ___	PLAN DURATION: 5 years.	
THIS WORKPLAN STARTS ON ___ / ___ / ___ AND FINISHES ON ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.4 (continued)

ACTION	TARGET DATE	COMPLETED

Worksheet 4.5 - Workplan for the next 20 years

DATE PREPARED: ___ / ___ / ___	PLAN DURATION: 20 years.	
THIS WORKPLAN STARTS ON ___ / ___ / ___ AND FINISHES ON ___ / ___ / ___		
ACTION	TARGET DATE	COMPLETED

Continued over page...

Worksheet 4.5 (continued)

ACTION	TARGET DATE	COMPLETED