SEQ Fire and Biodiversity Consortium's

Individual Property Fire Management Planning Kit

Photo: Emergency Services, RFS

Balancing fire safety with conservation of bushland plants and animals

February 2002

GRIFFITH UNIVERSITY

Bushcare
A program of the Natural Heritage Trust

Fire & Biodiversity CONSORTIUM

Natural Heritage Trust
Helping Communities Helping Australia
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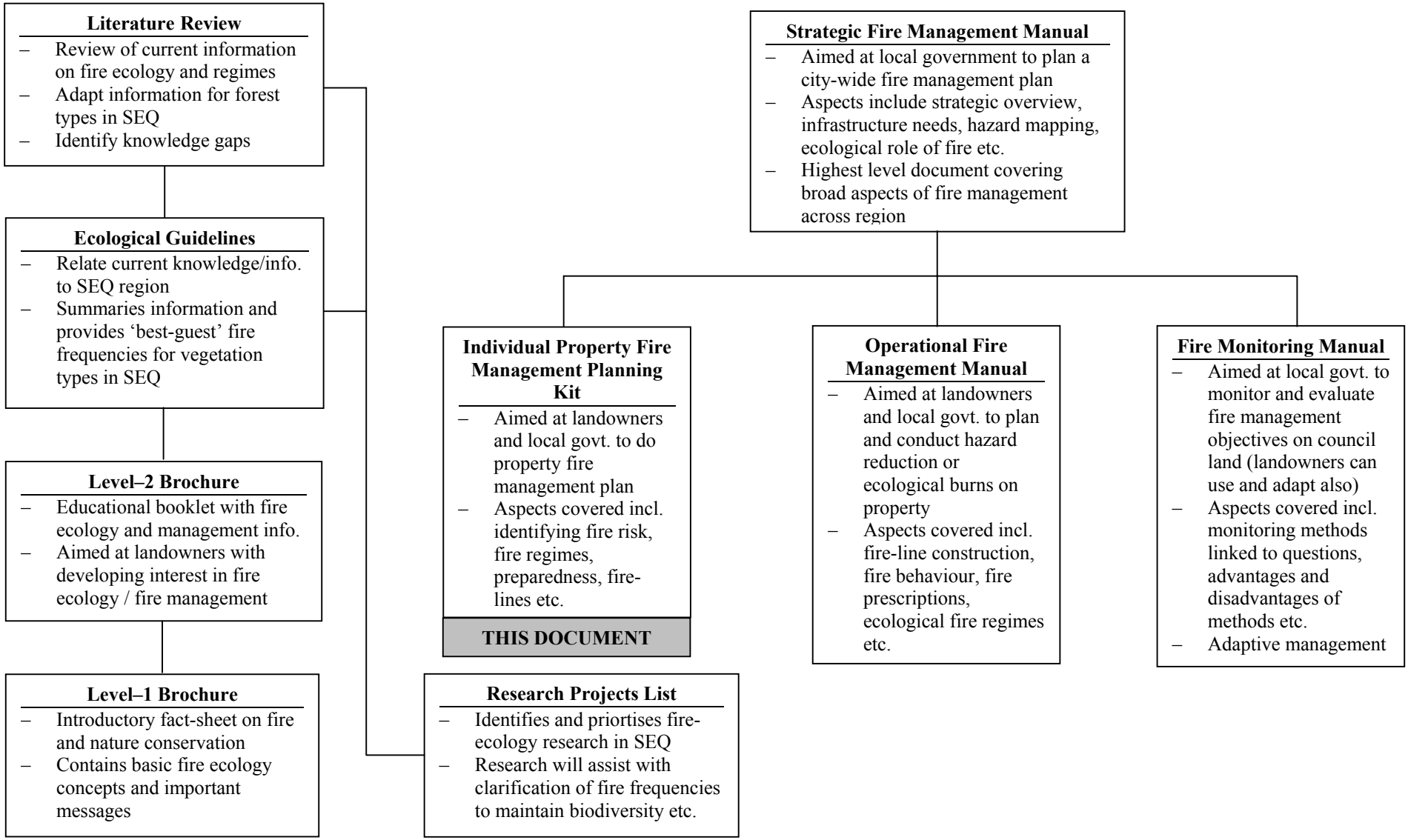
Flowchart of Fire and Biodiversity Consortium Products

…where does this product sit in the big scheme of things?



This Fire Management Planning kit has been prepared for use by landholders and managers in South-east Queensland, by the SEQ Fire and Biodiversity Consortium. The Consortium includes representatives from local authorities throughout SEQ, the Rural Fire Service, Landcare, the Queensland Parks and Wildife Service, the Department of Primary Industries, the Department of Natural Resources, Greening Australia and Universities. The Consortium is funded by the National Heritage Trust through the Bushcare Program.

The initial concept for the kit came from a document developed by the Shire of Yarra Ranges in Victoria, entitled "Fuel Reduction Plan for Private Property" (Hunt and Gooding 1998). This document was first adapted for use in Southeast Queensland by Marc Gardner in June 2000, as part of the Lockyer Catchment Biodiversity Recovery Project. Penny Watson, Project Coordinator [March 2000–Auust 2001] for the SEQ Fire and Biodiversity Consortium, developed the current version. Cuong Tran, Project Coordinator [August 2001–February 2002] for the Fire and Biodiversity Consortium updated and modified the Property Planning Kit to include other Consortium materials and outputs. Input from many Consortium members, and others, is gratefully acknowledged. The Consortium's Fire Management Planning Working Group has been a particularly important source of ideas, comment and encouragement.

This Kit is part of a suite of materials being produced by the Fire and Biodiversity Consortium (refer page 42). These include a document to accompany this Kit that s assists landholders to plan and implement on-going fire management tasks [Operational Fire Management Manual], and fact sheets which provide more detailed information on the role of fire in conserving native plants and animals. If you would like more information, please contact the Southeast Queensland Fire and Biodiversity Coordinator (Cuong Tran) on (07) 3826-5274, e-mail cuongtran@logan.qld.gov.au or the Bushcare Facilitator at QPWS on (07) 3202-0223.

Final Version, 6th February 2002

Disclaimer:

This document has been prepared through consultation with a wide range of stakeholders, including the Rural Fire Service. However it remains merely an aid to planning, and in no way a guarantee of bushfire safety. The aim of fire management planning is to minimise risk, however a degree of risk will always remain when housing and other assets are located in Australia's flammable vegetation. Thus whilst every effort has been pursued to make the information presented here as accurate and factual as possible, those involved in compiling this document take no responsibility for any outcomes, actions or losses resulting from its implementation.

Individual Property Fire Management Planning kit

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Introduction

The aim of this kit is to assist landholders and land managers to reduce the threat to assets from bushfires/wildfires, while at the same time protecting the bush and its inhabitants. Fire is a fact of life in much of the Australian bush, where it plays an important role in renewing plant life through releasing nutrients, encouraging seed germination, and providing ideal conditions for growth. The challenge for those of us who have chosen to make our homes amongst the gum trees is to minimise risk – to life and property, ***and*** to native plants and animals.

The kit is primarily designed to assist landowners whose property includes native vegetation. We hope it will help you plan fire management on your property, whether it is big or small, and whether you use your land for production purposes or whether you don't. It may also assist public land managers with responsibility for bushland parks and reserves.

The kit will take you through a step-by-step process to help you decide what measures are appropriate for your property. It is based on the concept that the best way to balance safety and conservation concerns is to manage different areas, or *zones*, on your property in different ways with respect to fire.

These are the steps in the kit:

1. **What have you got?** This is basically a mapping exercise, which includes identification of the different habitat types in the bushland on your property.
2. **Assess fire risks.** Fire risk varies with slope, aspect, and type of vegetation.
3. **Minimise risk to your assets.** This step helps you determine where and how to create a low fuel zone around your house and other assets.
4. **Determine how to best manage fire in production areas.** For example, where you carry out grazing, cropping, or timber production.
5. **Determine how best to manage fire in bushland conservation areas.** Helps you determine suitable fire regimes for your bushland.
6. **Identify fire-lines.** These are strategically-placed low fuel areas which provide access for fire fighting and/or planned burns.
7. **Be prepared for wildfire.** Bushfires can and do happen in SEQ, and it's important to be prepared.
8. **Summarise and prioritise tasks.** In this step, you list and prioritise your fire management tasks.
9. **Monitor and review your plan.** It's a good idea to review your plan periodically, making changes where appropriate.

The Operational Fire Management Manual provides some very useful guidelines on identifying fire-lines, how you can measure fire behaviour, and how to prepare and conduct fuel reduction or ecological burns on your property.

When you have worked through the kit, you will have developed **a Fire Management Plan** (**FMP**) which consists of a **map**, and up to six other sheets:

FMP Sheet 1	**Your fire management aims and broad strategies -** a statement of your goals for different parts of your property, and how you plan to tackle them, in general terms.
FMP Sheet 2	**Overall task list** - a prioritised list of fire management tasks
FMP Sheet 3	**Jobs for the next 12 months** - a list of the tasks you wish to undertake over the next year.
FMP Sheet 4	**If there's a bushfire** - a sheet which will provide you with easily-accessible information for you in the event of a wildfire.
FMP Sheet 5	**Information for firefighters** - a sheet which documents information to assist firefighters defending your property in the event of a wildfire.
FMP Sheet 6	**Record of fires** - a list of fires which occur on your property.

The yellow section of this kit contains proformas of these sheets. You may wish to copy these pages and work on the copies, leaving the yellow pages in the kit as masters which can be copied again when you update and revise your plan.

Examples of FMP Sheets 1–3 completed for a hypothetical property are provided at the back of the kit – these are the blue pages.

It is strongly recommended that you talk with the following people about your plan, seeking their input where appropriate:

- your local fire warden and Rural Fire Brigade;
- your local bushcare officer, catchment centre, or Land for Wildlife extension officer (if your property is registered with Land for Wildlife);
- your local council's environment or planning branch (there may be a fire management strategy for your area, Voluntary Conservation Agreement [VCA] for your land or other local requirements you should know about);
- your neighbours. Neighbours may include public bodies such as Forestry, your local council, or the Queensland Parks and Wildlife Service. These agencies may have fire management plans for their land, and may be very happy to work cooperatively with you.

You may like to give a copy of your completed plan to some of these people. The Rural Fire Service in particular is keen to hear from landholders who have completed fire management plans – FMP Sheet 5 can be lodged with the RFS office for your district, along with a copy of your map. The back page of this kit has space for local fire and bushland management contacts.

What will you need?

To use this kit, you will need a map of your property. You may already have a property plan that includes a map. If you do not currently have a map of your land, the Rural Fire Service or your local council may be able to assist. Topographic maps and aerial photos can be purchased from the Department of Natural Resources, although the scale of these products means they will be of limited use for small properties. You can contact DNR on (07) 3892-3216.

For detailed mapping, the Orienteering Association of Queensland may be able to assist, in return for a fee and/or property access. Inquiries should be directed to Mapping Officer Rob Simson on 3345-4527.

You will need some paper for your map – A3 size is suggested. You will also need a good set of coloured pencils, and plastic or tracing paper overlays. If you use plastic overlays, then you'll need a set of pens which can be used on write on plastic.

You can use the yellow pages of this kit to develop your plan. Alternatively, you may wish to photocopy these pages and work on the copies, leaving the yellow sheets as master copies which can be used when you revise your plan.

You will need to allow yourself time to complete the various steps. You will probably want to walk around your property as you think about how you can best manage fire. As your plan will affect everyone who lives on your land, consider including the whole family in the planning process.

Step 1 | *What have you got?*

Before you can choose the best way to manage your property for fire, you need a clear picture of your assets – both built and natural. The map you develop in this step will form part of your final plan, and will also provide valuable information for firefighters. You will need coloured pencils to work through this section of the kit. Your starting point will be the existing map(s) of your property. Note compass points and scale.

(a) **Mark your property boundaries clearly** (in black). Try to keep your map and associated assets etc. within scale and proportion.

(b) **Map: roads** (solid red line)
tracks (broken red line)
rivers and creeks (dark blue)
fences (pink line with crosses for gates)
your house and outbuildings (pink, with clear labels)
overhead power lines (purple line with crosses),
gas pipelines (broken purple line)
dams (light blue, label with a D)
swimming pool (light blue – label SP)
water tanks (blue squares – label them with a T)
bores (blue triangles – label them with a B)
pumps (purple stars, label them with a P)
irrigation lines (broken blue line)
meter box (purple diamond, label it MB)
special hazards – explosives, flammable chemical stores, old dip sites etc. (black crosses, with labels)

(c) **Map lawns, paved areas, vegetable gardens, tennis courts and other relatively "bare" areas** (outline boundaries in brown, shade light brown, and label).

"Bare" areas located near your house and other built assets can help protect from bushfire

(d) **Map the areas you use for growing crops, plantation timber and areas used for grazing** (outline boundaries in orange – you'll shade and label them in Step 4).

(e) **Identify and map your bushland conservation areas.** For fire management purposes, these are areas where the primary management objective is conservation of native plants and animals. First, outline bushland patches on your property in green.

<u>Different</u> vegetation types are adapted to <u>different</u> fire regimes

(f) What habitat types do you have on your property?

Next, identify the habitat types within these bushland areas, and mark your map accordingly. You may have one, or several, different habitat types.

☐ **Rainforest/scrub**
Thick canopy with a number of different tree species, most of which are not "gum trees". Contains vines and/or ferns. (Shade dark green)

☐ **Creekside vegetation**
This is the bush that grows along creeks, rivers and major drainage lines. It is often quite lush in comparison with surrounding areas. (Shade blue–green)

☐ **Wet eucalypt forest**
Tall straight gum trees form most of the canopy. Understorey often contains rainforest species. (Dark green stripes)

☐ **Dry eucalypt forest/woodland with a grassy understorey**
Most trees are gum trees. Understorey is mostly grasses.
(Shade brown–green)

☐ **Dry eucalypt forest/woodland with a shrubby understorey**
Most trees are gum trees. Understorey contains many flowering shrubs. (Brown–green stripes)

☐ **Heath**
Mostly shrubs, up to a few metres tall. Lots of flowers in late winter and spring. Tallest plants more likely to be Banksias than Eucalypts.
(Shade light green)

☐ **Melaleuca wetlands**
Often found in swampy areas. Most trees are paperbarks.
(Light green stripes)

If you would like help in sorting out the different vegetation types on your property, your local bushcare officer, council environment section, or catchment centre may be able to assist.

(g) Identify and map important habitat features.

This might include old trees with hollows, logs and rocks used by animals for shelter, or the location of rare or threatened species. Mark with pink circles, and label.

(h) Identify and map anything else you want to protect from fire –

for example places of historic significance. More pink circles and labels.

(i) Identify, map and label nearby bushland and assets on neighbouring properties.

Use colours and symbols as above.

Step 2	*Assess fire risks*

The slope, aspect, type of vegetation and the way vegetation is managed within and outside your property influence the extent of risk from fire. This step will give you important background information.

(a) What fire risk is associated with the various vegetation types on your property?

Some vegetation types are more flammable than others, or are associated with more intense fire. A rough rating of common vegetation types, from 1 for those that pose the least risk to 5 for those that pose the most risk, is given below. Tick the vegetation types on your property.

- ☐ **5 – Wet eucalypt forest**
- ☐ **4 – Dry eucalypt forest/woodland with a shrubby understorey**
- ☐ **4 – Dry eucalypt forest/woodland with a grassy understorey**
- ☐ **4 – Heath**
- ☐ **3 – Melaleuca wetlands**
- ☐ **2-3 – Grassy pasture (heavily-grazed pasture constitutes a lesser risk than lightly grazed pasture)**
- ☐ **2 – Scrubs**
- ☐ **1 – Rainforest**

(b) What fire risk is associated with the slopes on your property?

Fire travels much faster uphill than downhill, so risk is greater on steep, upper and middle slopes and on ridges, than on gentle and lower slopes. Again, the relative risk can be represented in a five-point scale. Tick the slope categories on your property.

- ☐ **5 – slopes of over 30°, gorges, very steep mountains, ridge tops**
- ☐ **4 – slopes of 20-30°, steep hills, upper slopes**
- ☐ **3 – slopes of 10-20°, rolling hills, mid slopes**
- ☐ **2 – slopes of 3-10°, undulating country, lower slopes**
- ☐ **1 – 0-3° - flat plains, valley floor**

On your map, mark the direction of the main slopes with dark brown arrows.

(c) What fire risk is associated with the aspects on your property?

The way in which slopes face – their aspect – also affects fire risk. Vegetation on north- and west-facing slopes tends to be drier than that on south- and east-facing slopes, and is therefore more prone to burning at high intensity. In southeast Queensland, the worst bushfires tend to occur when the wind is blowing from the north-west or south-west (although local winds, eg "gully winds", may not stick to this rule – check with your local fire warden or rural fire brigade). Again, the relative risk can be represented in a five-point scale. Tick the aspect categories on your property.

- ☐ **5 – north to north-west**
- ☐ **4 – north-west to west**
- ☐ **3 – west to south-west to south**
- ☐ **3 – north to north-east to east**
- ☐ **2 – east to south-east to south**

(d) Considering risk relative to assets

It is possible to identify areas of high, medium and low fire hazard on your property, by mapping the various risk factors outlined above, and summing the ratings for each area. You may choose to do this, using plastic overlays (or GIS), if you are deciding where to locate a new building. However for the purposes of this plan, the main point is to consider fire hazard in relation to your current assets, and those of your neighbours.

List the fire hazard ratings for the vegetation type, slope and aspect around your house and other assets:

Rating for:	Your house	Asset 2	Asset 3
Vegetation type			
Slope			
Aspect			

These ratings provide an indication of the degree of protection you will need to provide for your assets, and of where protection measures will be most important.

Are assets on neighbouring properties likely to be affected by areas of high fire hazard on your property? Consider vegetation type, slope and aspect.

_____

_____

_____

_____

The way land is used and managed on one property often affects neighbouring properties. For this reason, it may be a good idea to develop your fire management plan in conjunction with neighbours.

(e) Assessing current fuel levels

This point differs from those above in that fuel levels change over time, where vegetation type, slope and aspect are unlikely to change. However it is important to be aware of the hazard posed by current fuel loads on your property, particularly those in bushland areas. Fire burns "fine fuels", ie grass, bark, leaves and twigs less than the width of a pencil. Fuel levels build up gradually after a fire. Grass fuel builds up relatively fast, where shrubs may not present a hazard until several years after the previous burn. While dead, dry plant material (including grass) is more flammable than green, living material, in extreme conditions even green grass will burn.
Is there much fuel available on your property to support a fire? When was the last fire? Where are the high fuel areas?
The Operational Fire Management Manual has some simple methods for measuring fuel (see Section 'How Do I Measure Fuels').

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Step 3 *Minimise risk to your assets*

While you may not be able to change the way that the land next door is managed, you can manage *your* property by planning for fire protection. Steps 3 to 6 involve adding to your map and working on other elements of your fire management plan.

> ***The most basic way to minimise bushfire risk is to think carefully about how you design your house and other assets, and where you place them. Ridge top sites and steep slopes, particularly west-facing slopes, are best avoided. The best designs are simple ones which minimise corners where burning embers could get trapped. Spaces under the house and eaves where embers may get in, should be bricked up or screened.***
>
> ***Contact your local Rural Brigade for detailed information on house design and location.***
>
> ***Detailed information on this topic is available from the Rural Fire Service.***

Plan and map a property protection zone around your house and outbuildings

(a) On your map, draw in property protection zone boundaries.

The width of this zone will depend on the vegetation type, the slope and the aspect, as identified in step 2d. Use a dotted black line. The Operational Fire Management Manual (Figure 1) shows the general rule-of-thumb with zoning boundaries.

Rememeber:

- The greater the risk associated with the vegetation type or types near your assets, the wider the zone should be. See step 2a.
- The zone should be wider on the downhill side.
- The steeper the slope, the further the zone should extend, particularly on the downhill side. See step 2b.
- Make the zone widest on the sides of your house from which bushfires are likely to approach. See step 2c.
- As a guide, aim for at least 15m as a minimum width. Remember all vegetation, except perhaps rainforest, is fire prone, even where slopes are low and aspect favourable.

(b) Within this zone, graduate fuel loads

Place a cross where you need to take action.

☐ Make sure trees do not hang over your house, and are not located where they could fall on it.

Keep the area immediately adjoining the house free of fine fuels

- ☐ remove bushes against house walls;
- ☐ keep lawns short and green;
- ☐ rake up leaves and twigs.

This is a good place for paved areas, gravel driveways, car parking areas, a swimming pool.

Further out from the house, some trees and shrubs are okay, but:

- ☐ Plant trees with smooth bark, and keep lower branches trimmed;
- ☐ Space shrubs and garden beds to avoid large concentrations of fuel;
- ☐ Slash or mow between trees and shrubs;
- ☐ Remove dead branches;
- ☐ Water gardens and lawns well.

> ***Low and no fuel areas will include the roads, creeks and dams you identified in step 1b, and the "bare areas" identified in step 1c. It will also include areas you are already managing as fire breaks, eg through slashing.***
>
> ***Additional information about protective measures can be obtained from the Rural Fire Service. Local fire wardens can generally advise on appropriate measures for your situation, as can Rural Fire Service district staff.***

(c) List tasks that you will need to do to create the property protection zone around your house and other assets.

As these tasks will form part of your Fire Management Plan, list them in the second column on FMP Sheet 2 – Overall Task List (p23) – under the heading "Property protection zone".

You may have identified some actions in point (b) above. Other actions may be identified through reading Rural Fire Service literature, and through careful consideration and discussion of your specific situation. The Operational Manual provides some useful tips and methods for preparing and maintaining fire-lines, and plans for conducting and implementing fuel reduction / ecological burning. Input from experts (Rural Fire Service etc.) will be required if you are planning a burn.

(d) What tasks do you need to undertake with your neighbours to ensure appropriate protection for each of you?

Add these tasks to the overall task list.

It is, of course, best if buildings are located where necessary fire protection zones can be encompassed within the owner's own property. However this will not always be the case, as much building around south-east Queensland has taken place without awareness of fire hazards.

(e) Record the aim and overall strategy you plan to adopt with respect to managing your property protection zone(s).

Write this in the appropriate space on FMP Sheet 1 – Your fire management aims and broad strategies.

Step 4	*Determine how best to manage fire in production areas*

You only need to do this step if you use your property for production purposes.

If you do use your property for production purposes, you have probably already considered the fire regimes you wish to use in production areas.

You will probably want to burn areas which you are managing for grazing somewhat more frequently than areas whose primary purpose is conservation.

Sugar cane fields may still need burning at some stage.

On the other hand, you may wish to exclude fire from other production areas, such as cereal crops and pine plantations.

Appropriate fire regimes for native timber production areas will depend on the age of the trees, and whether you are aiming to maintain biodiversity of non-timber species.

(a) On FMP Sheet 1, write in the aim and overall strategy you plan to adopt with respect to managing each of your production areas

(b) On your map, mark production areas from which you want to exclude fire (orange stripes), **and areas where you envisage there will be some burning** (shade in orange). Label each production area, eg "grazing", "plantation timber" etc. We have some guidelines for you to follow if you are planning a burn (hazard reduction/ecological) on your property.

(c) List tasks associated with managing your production zones with respect to fire on the Overall Task List (FMP Sheet 2)

Step 5	***Determine how best to manage fire in bushland conservation areas***

Fire in bushland can be planned or unplanned. Consider both types of fire when thinking about the fire regimes in your bushland. In some places, unplanned fire will fulfil ecological imperatives. In other areas, some planned fire may be needed.

If you decide that some planned burning may be desirable in bushland conservation areas for ecological reasons, consider conducting initial burns near assets, where they may also help meet property protection goals. The Operational Fire Management Manual offers some excellent advice and guidelines for preparing your property for burning. We recommend you obtain and use this document.

If your property adjoins a State Forest, a National Park, or a Council reserve, you may be able to work with the staff who look after these areas to plan and conduct a burn.

Fire in bushland conservation areas – points to keep in mind

- *Different* vegetation types need *different* fire frequencies – see table on next page.
- In fire-adapted vegetation communities, both too frequent and too infrequent burning will cause species to be lost.
- Even within one habitat type, different species have somewhat different needs in relation to fire. Vary fire frequency over time and space to allow for the full range of species.
- Get to know the different types of bushland on your property and note changes that occur. Fire adapted communities look different at different times after a fire. Each stage provides different habitat; each has value.
- Don't burn the whole place at one time. Patchiness in burning provides refuges for animals, and a seed source for plants to recolonise burnt areas.
- Coordinate with neighbours to maintain a mosaic of vegetation in different stages of post-fire development, as different birds and animals prefer different stages.
- Ask your local bushcare contact whether anything is known about the fire requirements of rare or threatened species on your land. Try to balance fire management for these species with the needs of the community as a whole.
- If you have the resources, you may wish to protect particular habitat features, such as trees with hollows, by clearing fuel away from them prior to burning.

Further information on fire ecology and its implications for bushland management is available from the Fire and Biodiversity Consortium. Contact details are shown on the last page.

Researchers are still working to find out what frequency limits apply to southeast Queensland's various habitats. However we know enough to make some educated guesses, which are set out in the table below. These guidelines will no doubt be refined as we learn more about our regional ecosystems and the plants and animals within them.

HABITAT TYPE	SUGGESTED FIRE FREQUENCY
Creekside vegetation	In general, don't burn. These strips provide a buffer against erosion. Will often naturally exclude fire, but may burn in a wildfire.
Rainforest and scrubs	Not fire adapted, and should not be burnt. Will generally naturally exclude fire. May burn in extreme conditions, especially if flammable weeds have invaded.
Wet eucalypt forest	Needs a hot fire to burn out rainforest understorey, if this veg type is to survive. Intervals between hot fires should probably exceed 20 years, where possible. Hot fires, however, are dangerous, so these regimes may not be possible except in large wilderness areas.
Dry eucalypt forest/woodland with a shrubby understorey	Fire adapted, vary intervals between 7 and 25 years.
Dry eucalypt forest/woodland with a grassy understorey	Fire adapted, vary intervals between 3 and 6 years.
Heath	Fire adapted. Coastal and sub-coastal heath: vary intervals between 7 and 20 years. Heaths of rocky areas: depends on relationship to surrounding vegetation; intervals generally between 15 and 50 years.
Melaleuca wetlands	Fire adapted, vary intervals between 15 and 30 years.

(a) Make a note of the fire regimes recommended for the vegetation types on your property. Use the first two columns of the table below.

HABITAT TYPE	RECOMMENDED REGIME (INCLUDES BOTH PLANNED AND UNPLANNED FIRE)	PAST FIRE REGIME	CONSISTENT?

(b) When/how often have these vegetation types burned in the past?

Use the third column in the table on the previous page. You may wish to record the years when fires occurred, or just make some general observations about past fire frequency. If you are relatively new to the neighbourhood, people who have lived in your community for some time may be able to tell you about past fires.

(c) Are past fire regimes consistent with recommended regimes?

Use the final column in the table on the previous page.

(d) Adjusting fire frequency

Sometimes it is difficult to control fire frequency – particularly if you live in an area where arson plays a role. In other areas, fire may have been excluded from a fire-adapted vegetation type for many years, perhaps because of safety concerns – which may be quite realistic. You may or may not have scope to adjust fire frequency in your bushland, either by reducing the frequency of ignitions, if burning is too frequent, or by conducting a planned burn, if fire has been excluded for an excessively long time.

Make a note of the habitat types that don't meet the recommended regimes. In the Overall Task List, under the heading "Bushland conservation zones", write down actions you think could help to bring fire frequency into line with the recommendations.

(e) Developing and maintaining a mosaic of stages of post-fire development

Do you have the scope to maintain vegetation in different stages of post-fire development on your property? Could you work with neighbours on this? If you live in an area where a fire-adapted system is burnt either very frequently, or very infrequently, could your management counterbalance the prevailing trend? List actions in the Overall Task List.

(f) On FMP Sheet 1, write in the aim and overall strategy you plan to adopt with respect to managing each habitat type within your bushland conservation zone(s).

See example on p35.

> *Planning for bushland fire management needs to be flexible. Weather conditions will often dictate whether you can conduct a burn. Bushland fire management, like all land management, is partly a matter of noting and responding to the needs of the land.*

Step 6 | *Identify fire-lines*

A fire-line[1] is a strategically placed low-fuel area.

A fire-line will not necessarily STOP fire however it can SLOW and REDUCE the intensity of the fire front and provide access for fire fighting.

Fire lines also provide access and boundaries for planned burns.

[1]–We have used the words "fire-lines" rather than "fire breaks" to emphasise that tracks and other low fuel areas should not be relied upon to stop a fire. A "fire break" is a fire-line where all above ground vegetation has been removed down to the mineral earth layer (ie bare ground).

We have produced a manual that assists landholders and local government with the on-ground operational aspects of fire management planning. The Operational Fire Management Manual has aspects such as measuring fuel and fuel loads, identifying and preparing fire-lines, fire-behaviour, and weather prescriptions to conduct burning. Use the Operational Manual with local experts to conduct and plan any future burns.

Points to consider when deciding where to locate fire lines

- Keep fire lines to a minimum, as every track increases bushland fragmentation and access for feral plants and animals.
- Consider the fire risk factors identified in Step 2.
- As property boundaries often do not reflect landscape features, it's often a good idea to coordinate with neighbouring landholders when determining where to locate fire lines.
- Wherever possible, use pre-existing roads, tracks, driveways etc. The old track in to the back paddock may be just the shot. Tracks which are used for purposes other than fire management are less likely to get overgrown. Identifying these types of fire-lines is advantageous as other agencies/neighbours will be familiar with roads etc.
- Wherever possible, avoid step gradients, as these are prone to erosion. Where gradients are unavoidable, manage drainage to avoid erosion. The Operational Manual has some useful fire-line construction parameters to use as a guide.
- Creeks, dams, rainforest patches and gullies will also slow fires, and may provide boundaries for planned burns.
- Where grazing areas adjoin bushland, a slashed break may be a good option.

You may want to use plastic overlay sheets and erasable pens to work though this step, as they will allow you to try out options.

(a) What roads, tracks, driveways, dams, creeks and other low fuel areas that could act as fire lines do you already have?

You have already done some work on this question in steps 1b, 1c and 3.

Mark any additional features on your map, using the appropriate colours.

(b) Are there tracks or other low fuel areas on adjoining land which could act as fire lines?

Map any tracks and low fuel areas which have not yet been mapped.

(c) Does the existing fire-line network adequately provide for:

It is recommended that you discuss this question with your local rural fire brigade and/or warden.

☐ – access for fire fighting in the event of a bushfire?

☐ – igniting and stopping planned burns?

☐ – discourage fires moving from bushland to production areas and vice versa?

If not, mark on your map locations for additional or relocated fire lines to meet these three objectives.

(d) What work will be required to fire lines on your or your neighbour's property?

For example, do existing tracks need upgrading or maintenance? Is there a need to put in any new fire lines? Should any existing tracks be closed?

List actions on in the Overall Task List under the heading "fire lines"

Step 7	*Be prepared for wildfire*

As we saw in 1982, 1994 and again in 2000, bushfires can and do happen in SEQ. It is essential to be prepared for bushfires at all times, but particularly from September to December, which is recognised as southeast Queensland's 'Fire Season'.

Preparation and assiduous property maintenance are vital elements in minimising risk to your house and other assets.

(a) Pre fire-season safety check

These points should be checked at least once a year, well before the start of the fire season. Place a cross where you need to take action.

- ☐ Fit fly-wire screens to windows and doors.
- ☐ Box in open eaves or cover with fine wire mesh. This will minimise the chance of embers starting a fire in the area between your ceiling and roof
- ☐ Repair loose tiles and roofing sheets.
- ☐ To minimise the chance of embers starting a fire in the area under your house, box in or cover openings with fine wire mesh.
- ☐ Remove wood and other flammable material from under the house.
- ☐ Locate woodheaps, woodchips, etc safely away from the house.
- ☐ Make sure external house timbers have a sound coat of paint.
- ☐ Point LPG safety valves away from the house.
- ☐ Store flammable liquids in proper containers in safe, sensible places.
- ☐ Ensure tank fittings can couple with Fire Service equipment.

Check equipment you may need in the event of a fire is in working order and easily available:

- ☐ water pumps
- ☐ knapsack spray
- ☐ drums, metal buckets and other water containers
- ☐ hoses – with enough length to reach around the house
- ☐ hose fittings which enable hoses to be joined
- ☐ rake
- ☐ clean hessian bags and/or woollen blankets for wetting
- ☐ fire extinguisher
- ☐ first aid kit
- ☐ battery radio
- ☐ torch
- ☐ ladder
- ☐ protective clothing (wool, cotton) – consider gloves and face protection (wet cotton towel or face towel will also do)
- ☐ plugs for downpipes (These can be purchased at hardware stores. Alternatively, try a supermarket bag filled with sand or soil.)

List any tasks you've identified under "Wildfire preparedness" in the Overall Task List.

(b) Regular maintenance

Check these points regularly throughout the fire season.

- Clear leaves from gutters, roof and roof gullies.
- Clear leaf litter from around the house.
- Check trees, shrubs and lawns around buildings are maintained to minimise fine fuel load (see Step 3)
- Where there is no town water supply, keep tanks full.
- Keep gardens and lawns well-watered, if possible.
- Keep hoses in the shade.
- Watch and listen for bushfire danger in your area (TV, radio).

(c) If there's a bushfire

FMP Sheet 4 is designed to assist you in the event of a bushfire.

Work with other family members to fill in the blanks in this sheet, and to make sure everyone knows what to do in the event of a bushfire.

The decision to **stay** or **leave** is a personal decision which will be influenced by your degree of comfort in staying and your confidence in your preparations. You may wish to discuss this question with the Rural Fire Service.

If you decide to go, make sure you leave well in advance of the fire, to ensure you can get out safely. Make the house as fire resistant as possible, given the time constraints, eg: windows shut, wet towels against doors etc.

(d) Information for fire-fighters

There are some pieces of information which will greatly assist fire-fighters in defending your property.

FMP Sheet 5 is designed to record this information. Now is the time to fill it out.

You are strongly encouraged to lodge a copy of this part of your plan with the Rural Fire Service.

They will also need a copy of your map (you will be adding to this copy as you complete the questions in Sheet 5). You could provide them with a paper copy, if you have easy access to a colour photocopier. Alternatively, the Ipswich office of the RFS can scan colour documents up to A3 size directly into their computer.

You may also like to lodge a copy of these documents with neighbours, including those responsible for managing public land, including your local council.

Step 8	*Summarise and prioritise tasks*

This step involves reviewing your task list, and deciding when you want to do the various tasks you have identified.

(a) Read through the actions you have written in the 2nd column of FMP Sheet 2. Are there other actions you would like to add? Any changes?

(b) Next, estimate how much time and/or money it will cost to carry out each task. Put your estimates in columns 3 and 4.

(c) Decide priorities.

In the light of the estimates in columns 3 and 4, and the importance of each task (eg is it a vital safety matter), decide what priorites you want to allocate to the tasks you have listed. Consider each task individually: is it a high priority (H), a low priority (L), or somewhere in between (M)? Put your rating in column 1.

(d) Consider when you would like to tackle each task.

List the year in the final column.

(e) Finally, list the tasks which you've decided to undertake in the next 12 months on FMP sheet 3, allocating a more specific time frame to each one.

Some tasks will need to be done regularly. The SEQ Fire and Biodiversity Consortium is planning to produce a companion document to this kit, to assist landholders to implement the ongoing maintenance associated with fire management.

Always ensure expert input when planning and implementing a burn. If you wish to conduct a planned burn, a written permit from a Fire Warden is essential. Your local rural fire brigade may be able to assist, in return for a donation.

Step 9	*Monitor and review your plan*

It's a good idea to keep a record of when fires occur, and what area they cover.

FMP Sheet 6 provides a simple way to record fires as they occur over the years. Fire area is best recorded through map overlay sheets. Each sheet can be used for several fires, if you use different colours and shading.

You may also wish to monitor what happens to plant and/or animal species in the years after a fire – particularly if you have any rare or threatened species. Some plant species resprout after a fire. Others die off and rely on seedlings to regenerate.

We strongly suggest that you review your fire management plan every year. Although many things will stay the same, others may change. For example,

- Are land uses still the same?
- Do you have additional assets to protect?
- Has experience suggested that fire lines and protection zones need adjustment?
- Have you learned more about the fire regimes which are appropriate to your bushland?
- Has the time since the last fire in your bushland now reached the point where you would not be concerned on ecological grounds if it were to burn, or is it even reaching the point where you might need to consider a planned burn for ecological reasons?

A yearly review gives you an opportunity to make a new task list for the next 12 months.

It will also keep you and your family aware of what to do in the event of a bushfire.

And it will provide an opportunity for you to update the information about your property held by the Fire Brigade.

REMEMBER TO REPORT ALL WILDFIRES!
DIAL 000

The Queensland Fire Service's Act states:
Where a fire is burning on any land and the lighting of the fire is not authorised by or under this or any other Act, the occupier of the land, immediately upon becoming aware of the fire (regardless of who lit it)— must
(a) take all reasonable steps to extinguish or control the fire; and
(b) must, as soon as is practicable, ***report the existence and location of the fire*** to a fire officer, an officer of a rural fire brigade, a chief fire warden or fire warden, a forest officer (within the meaning of the *Forestry Act 1959*), a conservation officer within the meaning of the *Nature Conservation Act 1992* or a police officer.

Fire Management Plan sheet 1:
Your fire management aims and broad strategies

This sheet lists the aims for each fire management zone you have identified, along with the overall strategy you want to adopt for that area. Of course, there will be a range of constraints and considerations involved in implementing these strategies over time. Adaptability and flexibility are essential in fire management. However it is a good idea to have a broad picture of what you would like to achieve, and how you might achieve it.

Property Protection Zone

Aim: *To minimise risk from wildfire to* _____

Fire management strategy: _____

_____

_____

Production Zone 1

Production activity: _____

Aim: _____

Fire management strategy: _____

_____

_____

Production Zone 2

Production activity _____

Aim: _____

Fire management strategy: _____

_____

_____

Bushland Zone 1

Habitat type: _____

Aim: _____

Fire management strategy: _____

_____

_____

Bushland Zone 2

Habitat type: _____

Aim: _____

Fire management strategy: _____

_____

Bushland Zone 3

Habitat type: _____

Aim: _____

Fire management strategy: _____

_____

_____

Add additional sheets if necessary

Fire Management Plan sheet 2: Overall task list

Priority	Tasks	Time	Money	Year
	Property protection zone			
	Production zones			
	Bushland conservation zones			

Priority	Tasks	Time	Money	Year
	Fire lines			
	Wildfire preparedness			
	Other			

Fire Management Plan sheet 3:
Jobs for the next 12 months

Today's date: _____

Task	Completion date

Fire Management Plan sheet 4:
If there's a bushfire

If you hear that a bushfire is approaching, will you stay in the house or leave it? Will some family members stay and others go?

_____
_____
_____
_____

Where should those who are to leave go <u>TO</u>? This should be a safe, fire-free area. How should they get there?

_____
_____
_____
_____

As a fire approaches, there are a number of things you can do to prepare. Become familiar with the list below, which can be used as a checklist in the event of a fire.

☐ Store all verandah furniture, bedding and blinds inside the house. Where will you put them? (Make sure not to block exits.) _____
_____

☐ Close all windows, doors, screens and shutters.
☐ Block gaps between doors and floor eg with wet towels or wet hessian bags.
☐ Turn off main electricity supply (does everyone know where it is and how to do this?)
☐ Turn gas off at cylinder
☐ Set up a ladder to the man-hole in the ceiling, with buckets of water ready at the top.
☐ Fill other water containers and place them around the house.
☐ Soak blankets and bags so they can be used as fire beaters.
☐ Block downpipes and fill gutters with water.
☐ Wet down eaves, walls and sills on the side of the house facing the fire.
☐ Park your car in a completely clear open space such as a green lawn. Where will you park it? _____
_____
_____

☐ As the fire front approaches, put on woollen or cotton clothes. Avoid synthetics.
☐ Bring hoses, with all fittings, indoors (so they don't melt). Have them ready to attach to taps once the fire front is past.
☐ Prepare smoke masks from wet handkerchiefs or cloths.
☐ Before the fire front reaches your house embers and debris may be thrown ahead. Be alert for spot fires particularly in the roof spaces.

The fire front will take 5 to 10 minutes to pass your property. This stage will be very hot and noisy, and visibility will be low due to smoke.

- Stay calm
- Shelter inside your house near a solid external door on the opposite side from the approaching flames.
- Keep all windows and doors **CLOSED**.

If your house does ignite and you cannot extinguish the fire:

- Crawl low under the smoke
- Leave the house as soon as possible after the main fire front has passed.
- Keep to areas which are clear of flammable material, eg paved areas, ground where the vegetation has already been burnt.

Identify at least two ways that your family can leave the house, and a cleared area to which everyone should move. This is also important in the event of a house fire.

_____
_____
_____
_____

Once the fire front has passed, you need to be alert for spot fires for several hours afterwards. In particular, you should inspect inside the ceiling every 10 minutes for 2 hours after the fire has passed. The area under your house should also be checked carefully.
Research has shown most houses/property burn down NOT directly from the fire, but after the fire passes where ember/sparks are allowed to smoulder and ignite…so this is a crucial time to be alert and extinguish any smoulders/embers etc.

Throughout a bushfire, it's important to think clearly about the situation as it arises and act accordingly.

Fire Management Plan sheet 5:
Information for firefighters

Property details	
Name:	
Address of property:	**Mailing address:**
Home phone:	**Business phone:**
Mobile:	**E-mail:**

Today's date: _____

How many people live on your property (including you)? _____

How much water (in litres) is usually held on the property?

Dams: _____
Bores: _____
Tanks: _____
Swimming pool: _____
Other: _____
(Please ensure all these features are clearly marked on your map – see Step 1b for codes.)

Please tick if the Rural Fire Service has been out and confirmed that they can couple their equipment up to your tank water supply. ☐

What fire protection equipment do you keep on your property?

☐ water pumps
☐ knapsack spray
☐ drums, metal buckets and other water containers
☐ hoses
☐ fire extinguisher
☐ first aid kit
☐ heavy machinery eg tractors, dozers

Where is your meter box located?

_____
_____

What special risks might firefighters encounter on your property?

(This list includes assets which firefighters will try to protect.)

☐ explosives
☐ flammable chemical stores
☐ old dip sites
☐ gas pipelines
☐ overhead power lines
☐ irrigation lines
☐ pumps (located at dams and creeks)
☐ plantations and crops

(Make sure all these special risks are indicated on your map.)

What stock do you keep on your property and where are they located?

_____
_____
_____

Your house

What is your house made of? eg bricks, timber _____
Is it ☐ low-set? ☐ high-set? ☐ stumped?
What direction does it face? _____
Is it located ☐ on a ridge top?
☐ on a steep slope?
☐ on a gentle slope?
☐ on flat ground/in a valley?

What would you like to happen to your production and bushland conservation areas in the event of a fire?

You may be happy to let some or all of these areas burn if a bushfire happened to come through. Think about the fire frequency that is appropriate for your bushland, and the time since the last fire. Letting a bushfire burn may save you from having to organise a planned burn. On the other hand, you may want fire excluded from some areas if that can be achieved. (It is helpful to fire fighters to know this information, as this assists them to direct their efforts where they are most needed. Obviously, however, it is not always possible in an emergency situation to exclude fire at will.)

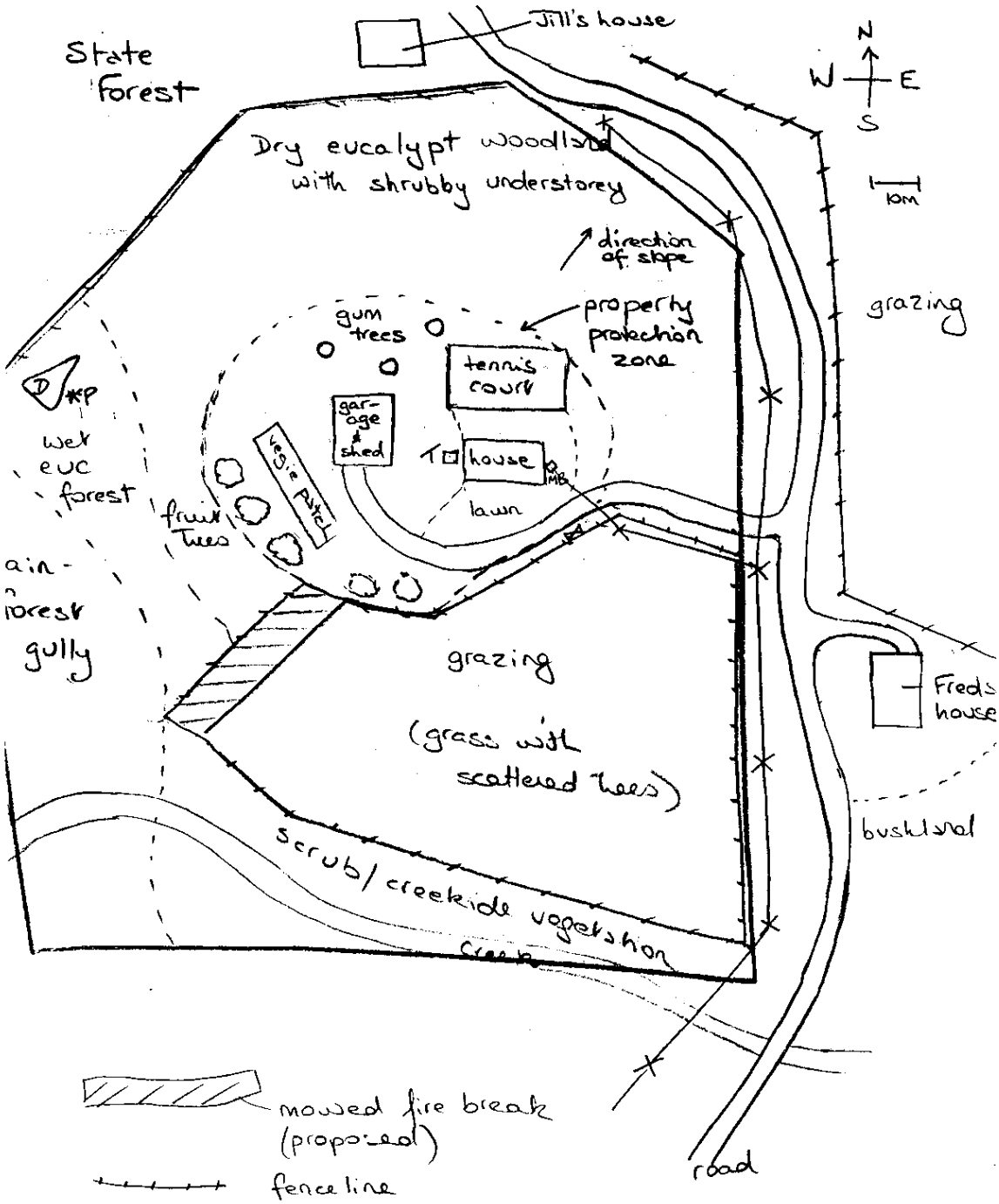
On your photocopied map, mark areas which you would prefer did not burn at this time with orange stripes (you may have already marked some areas in this way in step 4). Mark areas which you would be happy to see burn with lead pencil stripes.

A copy of this section of your plan, together with your map, can be lodged with the Rural Fire Service, where it will be retained on file for use in the event of a wildfire. Contact your local RFS District Office – see back page for contact details.

You are strongly encouraged to update this information every year, and to inform the RFS of any changes.

Fire Management Plan sheet 6:
Record of fires

Date of Fire	Map Legend	Wildfire or planned burn?	Comments eg re fire intensity



SAMPLE MAP.

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Example

Fire Management Plan sheet 1:
Your fire management aims and broad strategies

This sheet lists the aims for each fire management zone you have identified, along with the overall strategy you want to adopt for that area. Of course, there will be a range of constraints and considerations involved in implementing these strategies over time. Adaptability and flexibility are essential in fire management. However it is a good idea to have a broad picture of what you would like to achieve, and how you might achieve it.

Property Protection Zone

Aim: *To minimise risk from wildfire to house, garage and shed*
Fire management strategy: *Keep fuel loads low through manual and/or mechanical removal.*

Production Zone 1

Production activity: *Grazing cattle*
Aim: *Maintain grass cover, allow some tree regeneration*
Fire management strategy: *Burn top of paddock every 2-4 years to encourage fresh grass; only allow every second or third fire to burn to bottom fence, to encourage young trees to grow.*

Production Zone 2

Production activity: *Orchard*
Aim: *Allow trees to grow unimpeded, enhance fire safety for shed and house*
Fire management strategy: *Exclude fire. Slash between trees every three months.*

Bushland Zone 1

Habitat type: *Dry eucalypt woodland with shrubby understorey*
Aim: *Maintain diversity of native plants and animals*
Fire management strategy: *Vary intervals between fires from 7 to 25 years. Let wildfires burn in this area when interval since last fire not too short. Work with Forestry staff if control burn becomes necessary.*

Bushland Zone 2

Habitat type: *Scrub/creekside vegetation*
Aim: *Maintain diversity of native plants and animals, protect water quality*
Fire management strategy: *Exclude fire if possible.*

Add additional sheets if necessary

Example

Fire Management Plan sheet 2: Overall task list

Priority	Tasks	Time	Money	Year
	Property protection zone			
H	Remove garden beds close to house	2 days	nil	1
M	Pave area between house and garage (develop as an entertainment area)	nil	$1,200	3
H	Trim lower limbs from gum trees behind garage	2 hours	nil	1
H	Keep lawn well-mowed throughout property protection zone	1.5hr/2wks	$20/mth	on-going
H	Talk with Jill about safety of her house in relation to my bushland	2 hours	nil	1
	Production zones			
H	Slash grass in orchard every three months	1 hour	$5	on-going
	Bushland conservation zones			
H	Confirm habitat identification with John from Field Naturalists group	2 hours	nil	1
M	Talk with State Forestry people and the Rural Fire Brigade about feasibility of burning the eucalypt woodland next year, as it is 25 years since it last burnt	2 hours	nil	1
M	Conduct burn when soil moisture levels will ensure scrub doesn't get burnt. Will need to allocate time for mop up.	3 half days	$100 donation	1 to 3
H	Aim for next interfire interval in the euc woodland to be somewhere between 7 and 12 years, since last interval was so long	nil	nil	on-going

Priority	Tasks	Time	Money	Year
	Fire lines			
M	Slash break where orchard adjoins flammable bushland	1 hour	$20	2
	Wildfire preparedness			
H	Brick up area under house	nil	$1000	1
L	Repaint deck	4 days	$200	3
H	Purchase fire extinguisher	3 hours	?	1
	Other			
H	Contact Jim re getting input/feedback to this plan from Fire Mountain Rural Fire Brigade. Can they assist with planned burns?	4 hours	nil	1
L	After planned burn in woodland, check burnt area for shrub regeneration every three months for 18 months	2 days	nil	2 to 4

Example

Fire Management Plan sheet 3: Jobs for the next 12 months

Today's date: 3 March 2001

Task	Completion date
Remove garden beds close to house	August 2001
Trim lower limbs from gum trees behind garage	July 2001
Keep lawn well-moved throughout property protection zone	on-going
Talk with Jill about safety of her house in relation to my bushland	31 March 2001
Slash grass in orchard every three months	April, July, October, January
Confirm habitat identification with John from Field Nats	December 2001
Talk with State Forestry and RFS about feasibility of burning euc woodland sometime next year	December 2001
Brick up area under house	July 2001
Purchase fire extinguisher	April 2001
Contact Jim from RFB re getting his input/feedback to plan. Can they assist with planned burns?	31 March 2001

Congratulations!

You have made a large step towards managing fire on your property in a manner which considers both safety, and conservation.

We strongly recommend that you contact your local Rural Fire Service to find out more about the safety aspects of fire management, and to let them know about you plans. Contact details for SEQ are:

Ipswich District Office
Phone: 3202-1444
Fax: 3202-1449
E-mail: rfsipsch@emergency.qld.gov.au

Caboolture District Office
Phone: 5499-1002
Fax: 5499-1016
E-mail: sjones@emergency.qld.gov.au

Your local fire warden is:

Your local Rural Fire Brigade contact is:

Your local vegetation management contacts include:

Consortium publications

The SEQ Fire and Biodiversity Consortium has produced a suite of materials to support land managers and those who work with them. Materials completed, or nearing completion as of February 2002 include:

A comprehensive literature review

Tran, C. and C. Wild. 2000. *A Review of Current Knowledge and Literature to Assist in Determining Ecologically Sustainable Fire Regimes for the Southeast Queensland Region.* 106pp.

A database of fire ecology literature

Tran, C. 2000. *CD-Rom of Fire Regime Literature.*

A database of SEQ fire research and monitoring projects

Tran, C. and P. Maidens. 2000. *Southeast Queensland Fire and Biodiversity Research Studies Database.*

Ecological guidelines, for professionals who want a moderately in-depth summary of the management implications of the fire ecology literature

Watson, P. 2001. *The Role and Use of Fire for Biodiversity Conservation in South-east Queensland: Fire Management Guidelines Derived from Ecological Research.* 49pp.

A list of potential research projects

List of potential fire ecology research projects and contacts. 16pp.

An introductory fact sheet for private landholders and the general public

Watson, P. 2001. *Fire and Nature Conservation in Southeast Queensland: an Introduction.* 4pp.

A more comprehensive fact sheet for landholders and community group members

Watson, P. and Tran, C. 2001. *Fire in Bushland Conservation.* 20 pp.

A fact sheet for Land for Wildlife landholders, produced in conjunction with Land for Wildlife

Moran, C. and Watson, P. 2000. *Fire as a Wildlife Habitat Management Tool.* Land for Wildlife Note No. 14. Land for Wildlife Program Southeast Queensland. 8pp.

A kit to assist landholders develop a fire management plan for their property

Individual Property Fire Management Planning Kit: Balancing Fire Safety with Conservation of Bushland Plants and Animals. 41pp.

Recommended Operational Manual

A manual to assist local government and landowners plan and conduct hazard reduction/ecological burning for their property

Tran, C. 2002. *Best Practice Fire Management Manual – Operational Level: Guidelines and Procedures. 100 pp.*

A manual to assist local government plan and develop a fire management strategy for council-administered land

Tran, C. 2002. *Best Practice Fire Management Manual –Strategic Level: Guidelines and Procedures. 35 pp.*

A manual to assist local government officers with various methodologies that can be used to monitor and evaluate fire management of council-owned land.

Fire Monitoring Manual: Methods and Decision Matrices. 2002.

Copies of these materials can be obtained from the Southeast Queensland Regional Bushcare Facilitator, Queensland Parks and Wildlife Service, phone (07) 3202-0223.