Landholders' guidelines to property pest management plans

Queensland Government

1. Introduction

A property pest management plan (PPMP) is a tool you can use to identify and manage the issues and risks associated with weeds, pest animals and plague pests on your property.

A PPMP is *not* a regulatory requirement unless you have been issued a pest control notice under the *Land Protection (Pest and Stock Route Management) Act 2002*, when one might be required. However, you are encouraged to prepare one for the reasons stated below.

Benefits

Having a PPMP will help you:

- develop the pest management section of a whole property plan
- meet any pest management statutory obligations. e.g.:
    - the *Land Protection (Pest and Stock Route Management) Act 2002* (Qld) requires landholders to take all reasonable steps to keep land free of Class 1 and Class 2 weeds and pest animals.
    - the *Land Act 1994* (Qld) requires all lessees, licensees and permittees on State land to maintain a duty of care for the land and to control declared pests.
- improve the profitability and sustainability of your enterprise by ensuring you schedule pest management activities and deploy resources at the optimum time
- monitor how well control methods are working
- set and achieve goals using carefully thought-out action plans
- apply for financial assistance and incentives for pest management (e.g. assistance grants from local government or Natural Resource Management (NRM) bodies, loan applications from QRAA (formerly the Queensland Rural Adjustment Authority)
- report progress to funding bodies and local governments.

For information on:

- Class 1 and Class 2 weeds and pest animals, see the Department of Employment, Economic Development and Innovation (DEEDI) website at http://www.dpi.qld.gov.au/4790.htm
- duty of care for land, see the Department of Environment and Natural Resources (DERM) website at http://www.derm.qld.gov.au/land/management/duty_of_care.html
- property planning, see the Property Planning pages at http://www.derm.qld.gov.au/propertyplanning/index.html
- financial assistance and incentives for pest management, see the QRAA website at www.qraa.qld.gov.au and also the DERM website at http://www.derm.qld.gov.au/propertyplanning/assistance.html

Integrating with other plans

As pests don't necessarily stop at property boundaries, any control measures you take will be more effective if they are carried out over a wider area. It is therefore a good idea to develop your PPMP in consultation with your neighbours, nearby landholders and local groups.

You should also ensure your PPMP integrates with:

- any other management plans you have developed for your property, e.g.:
    - resource management plans
    - land and water management plans
    - environmental risk management plans for reef protection
    - property vegetation management plans
    - land management agreements under the Delbessie agreement
    - nature refuge agreements
    - farm management systems
- other relevant catchment, district or regional plans, e.g.:
    - regional or local government area pest management plans
    - regional or subcatchment natural resource management plans
    - industry biosecurity plans
    - industry recommended management practices and codes of practice
    - threatened species or ecosystem recovery plans and conservation plans
    - management plans for local national parks, conservation parks and reserves.

Complying with legislation

Any pest management activities planned must comply with relevant statutory obligations, and the conditions of permits under legislation such as the:

- *Vegetation Management Act 1999* (e.g. permits for clearing native vegetation to control weeds)
- *Agricultural Chemicals Distribution Control Act 1966 (e.g. using pesticides appropriately)*
- *Weapons Act 1990* (e.g. use of firearm on property)
- *Nature Conservation Act 1992* (e.g. protection of dingoes in conservation areas)
- *Nature Conservation (Wildlife Management) Regulation 2006* (e.g. avoiding tampering with native animals' breeding places)

- *Environmental Protection Act 1994* (e.g. the release of contaminants when undertaking pest management actions with special requirements for cane growing and cattle grazing in reef catchments)
- *Aboriginal Cultural Heritage Act 2003* (Qld) & *Torres Strait Cultural Heritage Act 2003* (e.g. protection of culturally sensitive areas)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (e.g. protection of rare and threatened species, refer to step 3 part B)
- *Water Act 2000* (e.g. the impact of management activities in watercourses)
- *Animal Care and Protection Act 2001* (e.g. providing seized pest animals with appropriate food, shelter and water)

2. How to prepare a PPMP

A PPMP includes a *property map* and a written *report.*

The *property map* consists of a base map to which you add information about the property indicating:

- infrastructure
- natural resources (property features)
- anything else relevant to pest management.

In the written *report* you:

- describe the natural and constructed resources on your property, which are relevant to pest management
- identify key issues, risks and priorities
- list the goals you hope to achieve, including your pest management targets
- identify the actions that you plan to undertake to achieve your goals
- describe how you plan to monitor your progress and measure your success.

Steps in the process

There are 6 steps in preparing a PPMP. Please fill out the *property pest management plan* template as you progress through the guide.

Step 1—Complete the property details form

You can either fill in the OnePlan *Property details form* online at http://www.derm.qld.gov.au/propertyplanning/pdf/propertydetailsform.pdf and print a copy

or

Fill out section 1 of the *Property Pest Management Plan* template

Step 2—Prepare the property map

Prepare a map to assist in analysing pest-related risks for your property and recording infestations. See the *Guide to Preparing a Property Map* at http://www.derm.qld.gov.au/propertyplanning/pdf/oneplan_guide_property_map.pdf.

Identify the pest problems on your property and prepare pest specific overlays. You can use Biosecurity Queensland's Annual pest distribution survey data and predictive pest maps available on the DEEDI website to assist you with this.

- http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/4790_9824_ENA_HTML.htm
- http://www.dpi.qld.gov.au/cps/rde/dpi/hs.xsl/4790_9827_ENA_HTML.htm

Step 3—Identify and document information on the main pest problems on your property

In Sections 2 & 3 of the *Property Pest Management Plan* template, record details of any current and/or potential weed, pest animal or plague pests affecting your property. This should include any regional, catchment or landscape issues—including those on neighbouring properties—which might be relevant to your property. Mark the location, size and density of any weed outbreaks, and information relevant to the control of pest animals and plague pests, as overlays on your property map.

For weed identification:

- please contact your local government pest management officer or a Biosecurity Queensland officer for advice, and/or
- take a sample of the weed and send it the Queensland Herbarium, using procedures set out in *Collecting and preserving plant specimens, a manual.* Strict hygiene must be observed for collection of weed specimens, as explained in Appendix 1 of the manual.

Be sure to report new weeds to your local government and to Biosecurity Queensland. If the property is within a nature refuge also report the new weed to the relevant DERM officer.

Learn what you can about the biology of current and potential pests on your property so you can plan how to manage the possible causes of the infestation. See the Biosecurity Queensland website at http://www.dpi.qld.gov.au/4790_4823.htm for information on pest species.

a) Estimating weed cover:

Estimating percentage weed cover may assist you in assessing the severity of weed infestations, prioritising your pest control activities and when repeated over time, in assessing the effectiveness of weed control measures. It may also be of use when applying for a permit to clear native vegetation to manage pests or weeds.

To estimate weed cover, at 10 metre intervals (i.e. at 10, 20, 30 and 40 metres) along a survey line, consider an area of 5 metres in radius around you and assess the percent weed cover. Weed cover is determined by estimating the area of the ground covered by the canopy of the weed species, ignoring overlaps and gaps within the individual canopies—see Figure 1 below. Use an average of 4 estimates to get a percentage for the area. Repeat at multiple survey points across the areas affected, and add results to your written plan and map overlays—see Figure 2 to help with placement of sampling points.

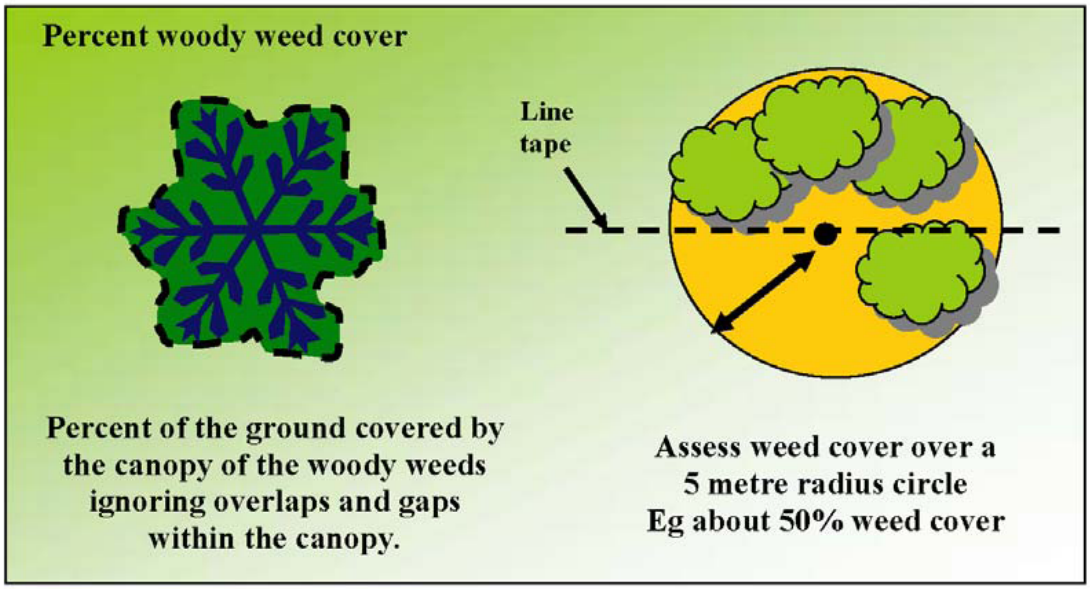

Figure 1 – Weed cover percent

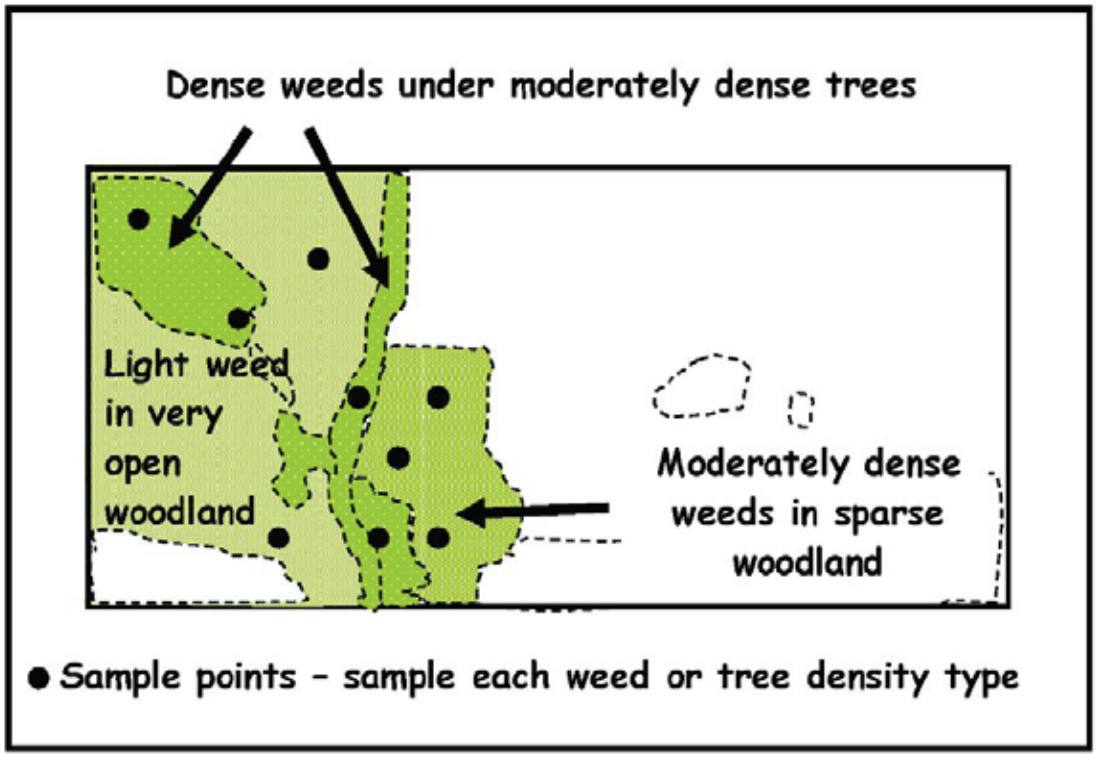

Figure 2 – Sampling point placement

b) Mitigation of impact of weed control measures on native animals and plants

Consider how you will reduce the adverse impact of pest or weed control measures on protected plants and animals. Invasive species have a major impact on Queensland's environment, threatening our unique biodiversity and reducing overall species abundance and diversity.

If you have a listed threatened species or an endangered ecological community on your property where weed control measures are required contact:

* Smart Service Queensland at http://www.qld.gov.au/contact/ or 131304 to report a sighting of a listed threatened native animal, plant or community or for advice about its management.

* DERM, contact details at http://www.derm.qld.gov.au/contactus/businesscentres.htm or the Queensland Parks and Wildlife Service (office locations listed at http://www.derm.qld.gov.au/contactus/regionalqpws.html) for advice on required permits, control measures or dealing with native animal breeding places.

Mitigation methods will differ depending on the listed threatened species and communities, the types of ecosystems on your property, tree densities, weed type/densities, control/management methods, and other factors. The following mitigation methods are examples only:

- *Not removing mature trees so that habitat is retained.*
- *Pulling/pushing of individual lantana bushes so that native trees and shrubs that are clearly visible in the lantana remain in place.*
- *Avoiding basal bark spraying of mature or immature native trees and shrubs unless the proximity to the target weed makes this unavoidable.*
- *Spraying dense lantana under the rainforest canopy with all over spray of Round Up. While this may kill some non-target native understorey, it will not remove any of the rainforest canopy.*
- *Avoiding the removal of canopy vegetation by curving your access tracks through patches of native vegetation.*

c) Mitigation of impact of weed control measures on watercourses, wetlands and Great Barrier Reef (if your property is within a reef catchment)

You should consider mitigation methods to reduce the adverse impact of weed and pest management activities on watercourses, wetlands and the Great Barrier Reef if your property is within a reef catchment. Invasive species have a major impact on Queensland's wetlands and watercourses, threatening terrestrial and aquatic biodiversity and reducing overall species abundance and diversity.

There are a number of requirements you must address if you are managing weeds and pest animals along a watercourse, in a wetland area or if your property is within a reef catchment. Contact your local DERM officer for further advice prior to beginning the work, for contact details see http://www.derm.qld.gov.au/contactus/index.html

Mitigation methods will differ depending on the types of wetlands and watercourses on your property, ecosystems on your property, tree densities, weed type/densities, control/management methods, and many other factors. The following mitigation methods are examples:

- *Complying with specified conditions when using certain agricultural chemicals (herbicides) in the Wet Tropics, Burdekin Dry Tropics or Mackay-Whitsunday catchments (http://www.reefwisefarming.qld.gov.au/pdf/guide-gbrpl.pdf).*
- *Not slashing within 20m of wetlands and watercourses.*
- *When slashing weed patches around a wetland, avoiding significant soil disturbance.*

- *Confining slashing to weed patches. In this way, trees and larger shrubs will remain in the area and the native ground covers will return.*
- *Pulling individual very large lantana bushes to confine soil disturbance to the root zone of each bush, avoiding removal of larger native trees, and protecting bank stability and any other values.*
- *Not allowing the tractor to enter the active zone of the watercourse.*

d) Weed hygiene practices

To limit the spread of weeds and avoid new weed infestations consider:

- improving stock movement practices and holding practices
- cleaning down vehicles before they leave the property and when they arrive from other areas
- checking the weed free status of purchased seed, fodder, soil, gravel, sand and garden products by asking for a Weed Hygiene Declaration
- ensuring that weed hygiene is included in this plan

e) Pest animals/plague pests

When managing pest animal and plague pest problems, remember:

- control programs are more effective, can reduce the likelihood of reinfestation, and be more cost effective if you coordinate them with your neighbours, local landholders and property groups
- identifying and monitoring damage can help you prioritise potential action plans and determine the level of control needed.

Step 4—Assessing risk and assigning priorities

Assessing risk and assigning priorities may enable you to better allocate your resources to control weeds and pests.

Consider the following factors when assessing risk of pest species:

- local government pest priorities
- regional pest priorities
- priority species and locations
- the likely threat/impact of priority species
- invasiveness of particular species
- species spread in distance and time
- high priority areas for protection (e.g. high productivity areas such as cultivation, improved pasture grasses; environmentally significant areas such as riparian areas, creeks or frontage country)
- available resources
- ways of minimising environmental damage, preventing off-target effects and making an area more resilient to pests
- potential use as part of a management program (e.g. for grazing, timber)

- potential to coordinate programs with neighbouring landholders.

Insert pest species for your property into the matrix in section 4.1 of the *Property Pest Management Plan* template. Use risk assessment findings to fill out section 4.2 of the template.

Step 5—Goals, targets and actions

a) Setting overall goals

Setting overall goals for managing your property can give your business direction and help you work out what you need to do to achieve these goals. They can include personal, family, financial and production goals.

It's a good idea to do this before setting broad pest management goals, so you can align the two. In many cases, meeting your pest management targets will help you achieve your overall natural resource management goals. Ensure that the goals you set are realistic, and that all relevant people agree to them.

Entries in section 5.1 of the *Property pest management plan* template could include the following:

- prevent new pests from establishing
- eradicate pests
- contain pests to core areas
- manage the impacts of pests.

b) Targets and actions

Use the information you have documented on your base map and worksheets to decide how to manage the pest problems on your property. Your targets and activities will depend on factors such as the type of pest, the extent and density of the infestation, the land type and your farming enterprise.

Record this information in Section 5.2 of the *Property pest management plan* template.

Pest management targets

Make your targets species–based. In some cases you may need to vary them from paddock to paddock because of the size of the infestation, the land type and its accessibility, etc. It is also a good idea to set achievable targets for the short, medium and long term, so that you can measure your progress.

Pest management actions

As the most appropriate management actions will vary from pest to pest and possibly from one location to another:

- base actions on established knowledge of the biology of the specific pest, and known measures for controlling it
- specify what is going to be done, where, when, and by whom
- decide whether your target is to prevent, eradicate, control, contain or monitor infestations
- document your desired results in advance, so you can decide on economic and practical ways to treat and monitor pest infestations

- make sure that your plans complement any local government or regional plans for similar issues
- find out about any available financial assistance and incentive programs to help with your pest management activities.

Types of actions you could consider:

- Attend training/information sessions to find out about current and emerging pests in the area.
- Attend training/information sessions to learn more about the way weeds and pest animals spread.
- Carry out control and follow-up programs, using a combination of chemical, manual and mechanical methods, for example:
    - herbicides (misting or aerial spraying)
    - cultivation
    - planting of competitive species
    - fire
    - biocontrol
    - grazing management
    - trapping or shooting
    - fencing
    - baiting
    - removal of habitat or refuges.
- Monitor for the emergence of priority species, so they can be controlled before they reproduce.
- Concentrate on eradicating or controlling small, outlying populations and individual species, leaving a dense main infestation to be controlled later.
- Limit entry and further expansion of pest species by:
    - controlling the movement of vehicles, grazing animals and humans (to prevent spread of weed material and seeds etc.)
    - reducing access by other seed spreaders (e.g. pest animals)
    - establishing barriers (e.g. fences or hedges) to prevent pests or seeds from spreading
    - reducing reproductive capacity (e.g. slashing or burning before seed maturation; implementing pest control measures before the breeding season)
    - checking that seed and fodder are free of weeds
    - checking that tools, equipment, machinery, vehicles (especially tyres), pets, clothing and boots are free of soil that can carry weed seeds
    - keeping livestock in a holding paddock when they arrive on the property, or before moving them into a new paddock
    - ensuring that visiting vehicles are clean before entering the property
    - where possible, using an on-farm vehicle, instead of a visiting one

- providing a designated wash-down or cleaning area for vehicles and equipment
- working from top to bottom of hills, catchments, creeks, etc.
- temporarily or permanently fencing out environmentally sensitive or highly productive areas.

Collate your management actions on the Yearly activity calendar in section 7 of the *Property pest management plan* template

Step 6—Monitor and Review

a) Monitor

Once you've implemented any pest management actions, monitor the results so that you can:

- measure how effective they have been
- determine when is the best time to carry them out
- assess what effects pests have had on your property, and estimate population increases and decreases.

To do this you:

- specify which weeds, pest animals, and/or plague pests you are going to monitor
- describe the area, density, and priority of the infestation before beginning control activities
- check the damage caused by plague pests by walking through crops or refuge areas regularly and documenting the effects you observe
- record any change in pest populations, ground cover, or pasture health over time (e.g. by taking a series of photographs).

Enter monitoring records into section 6 of the *Property pest management plan* template.

For further information on monitoring, see the *Land managers' monitoring guide* on the DERM website at http://www.derm.qld.gov.au/monitoring_guide/index.html

b) Review

The information you have collected from monitoring will enable you to evaluate how successful you have been in meeting your pest management targets. You can then review your plan and incorporate any necessary changes.

Record comments in section 8 of the *Property pest management plan* template.

Other questions to consider during the evaluation and review process could include:

- Was the plan implemented?
- If not, why not (e.g. lack of time, money, resources, weather patterns)?
- Did the planned activities achieve the pest management targets?
- If not, why not (e.g. drought, failed chemical application due to poor application, timing)?
- What were the actual costs?

- Were these under or over budget?
- Were there any positive or negative changes in the condition of the property as a result of the management tasks (e.g. increased pasture on scalded areas where parthenium weed was thick)?

There will be times when not all targets are achieved. This review process provides you with an opportunity to assess why, and use the information gained to develop new pest management activities.

3. Contacts and references

- For further information please contact your nearest local government pest officer or Biosecurity Queensland service centres see contact details at http://www.dpi.qld.gov.au/4790_9295.htm
- Biosecurity Queensland officers see contact information at http://www.dpi.qld.gov.au/4790_8582.htm
- DEEDI weeds, pest animals and ants web pages at http://www.dpi.qld.gov.au/4790_4823.htm
- Biosecurity Queensland Pest Facts see A-Z listing of pest animals http://www.dpi.qld.gov.au/4790_8259.htm and A-Z listing of weeds at http://www.dpi.qld.gov.au/4790_6998.htm
- Weeds Australia at http://www.weeds.org.au