

Managing parkinsonia



Section 2

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Michele Deveze and Nathan March

Evolution of management strategies

By 1906 parkinsonia was already considered a weed in parts of Queensland, especially along the Fitzroy River. By 1972 it had taken a firm hold in the Darwin area and in the Victoria River and Gulf districts.

Although parkinsonia is already widespread in Australia, invasion is still mostly in the early stage of thicket formation. Consequently, the total loss of pastoral production and environmental values due to parkinsonia infestation is still small. Most of the direct costs associated with parkinsonia are related to control work, and expenditures of up to \$5000 per annum on individual properties are beginning to occur, with 46 per cent of all landholders in the major areas of infestation spending money on parkinsonia control (Vitelli 1995).

The first formal recommendation for parkinsonia's control came in the 1950s: basal bark spraying using 2,4,5-T in diesel (ARMCANZ & ANZECCFM 2001). This became the standard method of control in infested areas on properties and government reserves until the herbicide's demise in the early 1990s. In addition to this, some landholders utilised fire and mechanical control.

As the problem became more serious, a combined research effort began in the early 1980s, with three state or territory government departments—the Department of Natural Resources, Mines and Energy,

Queensland; the Department of Agriculture, Western Australia; and the Northern Territory's Department of Primary Industries and Fisheries—looking into herbicide and biological control methods. This resulted in the release of three biological control agents and the registration of further herbicides for parkinsonia control.

In 1999 parkinsonia was recognised as one of Australia's 20 worst weeds, and a portion of significant National Heritage Trust (NHT), funding for the years 2001–03 has supported the development of a highly successful and collaborative research effort between state and territory departments, CSIRO and the Cooperative Research Centre for Australian Weed Management.

A major focus of the research is to predict the likely impact of parkinsonia in different regions and habitats throughout Australia if no control work is undertaken, and to develop integrated management methods (including the use of biological control, fire, machinery, herbicides and improved on-farm management) to minimise its spread and impact. It is expected that management strategies will need to be tailored for different landscapes around Australia. Research findings will be presented in future parkinsonia management publications.



Developing a weed control plan

Developing an overall plan for weed management on your property can save you time and money as well as helping you achieve other desired outcomes.

A realistic view of the impact of parkinsonia on overall property management is a necessary first step if planning is to be effective. Developing and implementing an achievable plan will reduce the impact of parkinsonia on a property's primary resources.

Although the control of parkinsonia is the primary focus of this manual, the same management principles can be applied to other weeds on a property. Ideally, all weed management should be included in the same plan, and a weed management plan should be integrated into the overall property management plan. It is recommended that a weed control plan has at least a 5–10 year time frame and is reviewed annually.

A range of planning processes is available for this purpose. The following is a suggested control and eradication management plan involving six steps. More detailed information about individual treatment methods is presented in Section 3.



Nathan March

▲ Peter Klem, Winton Shire Council, reviews a parkinsonia management plan





Suggested planning steps

Step 1: Define and prioritise the problem areas

The easiest way to identify problem areas is by using a map of the property.

- On the map, outline all natural features, improvements and property boundaries; then indicate areas of parkinsonia and other weeds, noting the size and density of each infestation.
 - Prioritise the areas for control at both the property level and a paddock-by-paddock level—keeping in mind features outside your property such as seed sources, seed dispersal routes or vulnerable areas.
 - Consider what legal or ethical responsibilities you may have (e.g. the threat of parkinsonia to neighbouring properties).
 - Consider relevant local government, catchment or regional priorities and plans.
- The property map can be an aerial map, a satellite image or a hand-drawn map. Remember that the more accurate and current the map, the more precise the estimates and calculation of the control costs will be, and the easier it will be to track the long-term effectiveness of control programs.
 - Separate transparent overlays are useful when developing the plan. Use one overlay to map property improvements, one for vegetation types and natural features, and one for weed infestations. The use of different overlays can make each section of the map easier to interpret and will also help determine management options, such as the placement of fences or fire containment lines.

Step 2: Determine the control options

- Identify the resources that are already available or affordable, such as spray equipment, machinery and labour.
- Determine the control methods required to address all phases of the control program—initial, follow-up and ongoing monitoring.
- Identify the most appropriate management strategies to control the parkinsonia infestation in each situation. Figure 3 (in Section 3) is a guide to the cost-efficiency of different techniques in relation to the infestation size. Table 3 provides an indication of the suitability of treatment method in relation to infestation density. Usually, a combination of methods is necessary to complete the job effectively. Refer to sections 3 and 7 of this manual.
- To help prevent infestations from spreading, control efforts should initially focus on isolated and strategic outbreaks of parkinsonia. Start with the easiest section to control and then gradually work towards the thicker patches.





Step 3: Develop a financial plan

- Estimate costs of the management strategies and control options for each priority.
- Compare the costs of control against other property management priorities to make sure that the chosen control methods are viable options.
- Integrate control costs into short-term and long-term property budgets.
- Check to see if there are any financial incentives available to assist with control programs.
- All costs should be considered when developing a financial plan, including the hourly running costs of machinery and labour. If necessary, seek advice from local government or departmental weeds officers before committing a large amount of funds.
- Ensure that future costs are adequately considered. A common pitfall is to underestimate the amount of ongoing control required.

Step 4: Schedule activities for weed control

Parkinsonia control needs to be a regular part of property management.

- When developing a plan, take into consideration that after initial treatment, monitoring and follow-up control will also be necessary. Ensure that any treated areas are followed up within a year.
- Consider the effectiveness of control methods at different times throughout the year and balance this with the time available for weed control.
- Try to integrate weed control with other property management activities. For example, it may be suitable to combine a routine burn with the control of parkinsonia.
- Schedule all weed control activities for the year.

Step 5: Monitor progress

As an integral part of any control program, monitoring will show what has happened after treatment; it will identify areas of regrowth and indicate where follow-up is required.

- Use the map of the property as a baseline record of the problem before any control work has commenced.
- On the map, show previously treated areas and any new ones.
- Take several photographs at the same point over time, to show the changes resulting from the control effort.
- Document control costs and resource requirements.
- Incorporate monitoring activities into the yearly timetable.

Step 6: Follow up what was started

Follow-up control is crucial. No one control method for parkinsonia gives 100 per cent kill rate and some level of regrowth is almost guaranteed.

- Identify areas from the monitoring sites where follow-up is needed as a result of regrowth or seed germination.





Helpful tips

There is no 'quick fix' solution to parkinsonia management, so the development of a parkinsonia management plan and a commitment to that plan is essential for the long-term effectiveness of your efforts.

Any control plan is useless without implementation. If, because of the size of the problem or lack of experience, it is difficult to start the planning process, it is advisable to gain professional advice and/or start on a smaller scale.

While the plan must be structured, it should be flexible enough to allow for changes brought about by uncontrollable external influences such as drought or fluctuating commodity prices.

It is critical to review the plan annually to assess the effectiveness and efficiency of the control options and strategies implemented.

