

## B17. Weed Management

Weeds can displace native plant species, harbour pests and diseases and create fuel loads for fire. Weeds therefore affect the structure and function of land-based and aquatic ecosystems, and impact negatively on fauna and flora.

Most weeds in urban areas are spread as a result of human activity, although a few invade by themselves through the dispersal of seed by the wind. Weeds are introduced commonly through dumping of garden refuse, machinery, clothing, or animal fur and are commonly found along road verges, tracks, paths, drains and firebreaks, or other locations where people frequent such as picnic areas.

Effective weed management involves the implementation of an integrated approach. The interpretation of individual sites, the native plant communities, patterns of disturbance and the distribution of weed species will inform weed management program development.

### Prevention of Weed Establishment

The prevention of new weed establishment is an important part of weed management. Preventing the establishment of new weeds can be addressed by considering workplace hygiene practices such as:

- “Cleaning tools, boots, equipment and machinery between jobs to reduce the spread between sites.
- Check paving materials before bringing on to a site, particularly limestone, for weed seed and only acquire from accredited clean sources. Black Flag (*Ferraria crispa*), Geraldton Carnation Weed (*Euphorbia terracina*) and Pretty Betsy (*Centranthus rubra*) to name a few have been introduced to various bushland sites around Perth in paving materials. Be prepared to spray paths the first wet season after installation.
- Avoid bringing soil or mulch from elsewhere into bushland” (Brown, 2002, p 6).

### Prioritisation of Weed Management

Current and potential weed distribution, ecological impact and level of invasiveness (at a landscape and site scale) are important factors in prioritising weed management.

Weeds may be prioritised according to their level of invasiveness or threat to an area and the extent of their distribution. For example:

- Priority 1 - Major Weeds.
- Priority 2 - Nuisance Weeds.
- Priority 3 - Minor Weeds (Scheltema, 1995).

Additionally, consideration should be given to a number of other factors such as the weed species present within the natural area, the characteristics of individual sites such as soil type, proximity to water courses, quality of native vegetation and presence of sensitive species (ecological ranking).

What may be a nuisance weed in broader regions may be a major weed for a certain locality and vice versa. Weed prioritisation or ranking can change with time and

geographical region. Weeds may become more established or widespread, adapt to different growing conditions or be substantially reduced by effective weed management.

### **Weed Mapping**

It is important for local government land managers to recognise locally significant weed species. The best way to achieve this is to undertake weed mapping of bushland reserves. This will allow for strategic planning and prioritisation of weed management actions. Only high impact weeds need to be mapped. These maps will be useful not only in planning weed management actions but will be vital in monitoring the spread of weeds over time and thus the effectiveness of weed control programs.

A bushland manager needs to set some realistic objectives for the outcomes of their weed management program. For example, to contain weed populations within certain bounded areas, remove all outlier populations, reduce density to a certain cover class, or achieve full eradication. Weed mapping will tell you how successful you are, alert you to when you have reached your objective and therefore, tell you when to stop. Further observations and detailed mapping can also tell you when you need to start again. Map burnt areas (very easy to do with any GPS) and ensure that the date is noted. Please see B7. *Fire Management* (p.30) for information on post fire weed management.

### **State Weed Plan**

The 'Weed Plan for Western Australia', prepared by the State Weed Plan Steering Group (2001) sets out principles and components for the state weed strategy.

Components include:

1. Coordination, integration and public awareness
2. Roles and responsibilities (including Local Government)
3. Priorities and planning
4. Introduction and spread
5. Integrated weed management
6. Policy support and regulation
7. Resources
8. Education, training and research; and
9. Monitoring and evaluation.

Local government roles and responsibilities within the 'Weed Plan' included: provision of information; coordination and support for community groups; and management of weeds within local government management areas.

Priority and planning strategies/activities for local government (Weed Plan) included: priority setting; identification of weeds of local significance; and development of local weed action plans.

Component 4 ('Introduction and spread') strategies/activities for local government include: establishing/maintaining good neighbour policies and coordination of rapid response i.e. early detection of new localised weed populations enabling eradication or containment. Early effort (in the invasion process) can save considerable resources and loss of ability to control the weed in the long-term (State Weed Plan Steering Group, 2001).

A desired outcome of the State Weed Plan included appropriate legal and policy framework to support patch, local, regional and state-wide management of weeds. At a

local government level, mechanisms for legal and policy support include: management plans; policies; local laws relating to 'Pest Plants'; and contractor codes of practice.

Declared Plants - according to the Agriculture Protection Board are listed pursuant to section 35 of the Agriculture and Related Resources Protection Act 1976. Local governments (and other landholders), are obliged to control these plants with regard to the class under which they are declared.

### **Establishment of Weed Management Programs**

A weed management program should ideally incorporate the following principles:

- "Contain the spread of serious weeds and protect intact bushland. Consider the impacts of serious weeds on rare flora and rare plant communities.
- Prevent new weed species establishing.
- Consider restoration of degraded edges. Usually this is of lower priority than protection of good areas. Often though, degraded edges harbour serious weeds, providing a source of propagules that continually disperse into intact areas" (Brown, 2002, p6).

### **Weed Management References**

- The declared plant list can be viewed on the Department of Agriculture and Food WA (DAFWA) website:  
[http://www.agric.wa.gov.au/content/PW/WEED/DECP/DECLAREDPLANTS\\_INDEX.HTM](http://www.agric.wa.gov.au/content/PW/WEED/DECP/DECLAREDPLANTS_INDEX.HTM)
- Department of Agriculture and Food 'Declared Plant (free download) describes methods and the appropriate timing for treatment of declared plant species. Visit: [http://www.agric.wa.gov.au/content/pw/weed/decp/decplants\\_handbook.pdf](http://www.agric.wa.gov.au/content/pw/weed/decp/decplants_handbook.pdf)
- The Weeds Australia website can help with identification of weeds in the region. Visit: <http://www.weeds.org.au/cgi-bin/weedident.cgi?tpl=region.tpl&state=wa&region=swa1>
- The Environmental Weeds Action Network (WA) website: <http://www.environmentalweedsactionnetwork.org.au/> is a handy reference to view and obtain some information on some of the common environmental weeds of WA.
- Brown, K and Brooks, C (2002) Bushland Weeds; a practical guide to their management. This publication is now out of print but is available for download on the Environmental Weeds Action Network website: [http://www.environmentalweedsactionnetwork.org.au/images/pdf/bushlandweeds\\_book.pdf](http://www.environmentalweedsactionnetwork.org.au/images/pdf/bushlandweeds_book.pdf)
- The book, 'Western Weeds' by B.M.J. Hussey, G.J. Keighery, R.D. Cousens, J. Dodd and S.G. Lloyd (2007) is a comprehensive identification guide to weeds in Western Australia. Western Weeds is a book that will help you identify introduced weed species in agricultural and environmental areas throughout the state. It describes about 1050 weeds.

- An online version of Western Weeds is available at the Weeds Society of WA website: [http://members.iinet.net.au/~weeds/western\\_weeds.htm](http://members.iinet.net.au/~weeds/western_weeds.htm)
- The book, 'Southern Weeds and their Control' (2<sup>nd</sup> Edition) by J. Moore and J. Wheeler (2008) (available from the Department of Agriculture WA) is a handy pocket-sized field guide on common weeds in the South-West of WA. The book identifies more than 100 weeds.
- DEC's Florabase will have weed management information for weeds of the Swan Region and Jarrah Forest IBRA (Interim Biogeographic Regionalisation of Australia) regions in the near future.