

final report

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Weeds of the future? Threats to Australia's grazing industries by garden plants

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Abstract

This report identifies 281 introduced garden plants and 800 lower priority species that present a significant risk to Australia's grazing industries should they naturalise. Of the 281 species:

- Nearly all have been recorded overseas as agricultural or environmental weeds (or both);
- More than one tenth (11%) have been recorded as noxious weeds overseas;
- At least one third (33%) are toxic and may harm or even kill livestock;
- Almost all have been commercially available in Australia in the last 20 years;
- Over two thirds (70%) were still available from Australian nurseries in 2004;
- Over two thirds (72%) are not currently recognised as weeds under either State or Commonwealth legislation.

Collectively, these species have the potential to establish as weeds across Australia, affecting all major sectors of the grazing industry. Recommendations recognises that *Meat and Livestock Australia* can play an important role in increasing awareness of weed risks and costs through the education of graziers and the wider public; by lobbying the state/territory and federal governments to tighten legislation relating to the importation, sale and movement of weed species; and in promoting, and appropriately responding to, weed risk assessments of plants already in Australian gardens.

Executive Summary

This report has been produced by the *CRC for Australian Weed Management*. It extends an earlier publication (Grice 2003) which reported on naturalised plant species that present existing and emerging weed threats to Australia's grazing industries. The research is underpinned by the *Western Australian Department of Agriculture and Food's* "Plant Database" (Randall 2006). The database collates information from c. 1.5 million species-related records drawn from over 3000 publications and presently treats approximately 576,000 plant taxa. Used in conjunction with regional climate zones and by extrapolating from overseas weed experiences, the database provides a unique opportunity to identify weeds currently present in Australian gardens that may threaten Australia's agricultural industries or natural environment in the future.

The research focuses on plants that are currently available in Australian nurseries because most of Australia's naturalised flora has been introduced for ornamental purposes (Groves, Boden & Lonsdale 2005: 18, Spencer 2005: 8; Anonymous 2005: 3; Virtue, Bennet & Randall 2004). These plants also present the most immediate threat compared to species outside Australia and being in commercial trade enjoy a level of dispersal well beyond that of natural means.

The report identifies 281 introduced garden plants (Appendix 1) – as well as 800 lesser priority species (Appendix 2) – which present a significant risk to Australia's grazing industries should they escape from Australian gardens and naturalise. The research evaluates these risks as a precursor to formal weed risk assessment. Of the 281 species:

- Nearly all have been recorded overseas as agricultural or environmental weeds (or both);
- More than one tenth (11%) have been recorded as noxious¹ weeds overseas;
- At least one third (33%) are toxic and may harm or even kill livestock;
- Almost all have been commercially available in Australia in the last 20 years;
- Over two thirds (70%) were still available from Australian nurseries in 2004;
- Over two thirds (72%) are not currently recognised as weeds under either State or Commonwealth legislation.

Whilst studies of predicted economic impact have not been conducted, previous research (Centre for International Economics 2001: 24, 26) has predicted that infestations of just two of the 281 species – *Nassella tenuissima* (Trin.) Barkworth and *Onopordum nervosum* Boiss. – could cost Australia up to A\$82m over the next 40-60 years.

¹ This term is usually used for a plant that has been banned by legislation in recognition of the significant threat it presents to a country's economy or environment (Spencer 2005: 12).

Weeds of the future? Threats to Australia's grazing industries by garden plants

Case studies are provided for 11 taxa representing a variety of vegetation types – herbs, trees, shrubs, vines and grasses:

- *Asclepias syriaca* L.
- *Equisetum* L. spp.
- *Festuca gautieri* (Hackel) K. Richter
- *Hieracium* L. spp.
- *Inula helenium* L.
- *Lonicera* L. spp.
- *Miscanthus floridulus* (Labill.) Warb. ex K. Schum. & Lauterb.
- *Nassella tenuissima* (Trin.) Barkworth
- *Onopordum nervosum* Boiss.
- *Ornithogalum nutans* L.
- *Tamarix gallica* L.

Maps of predicted Australia distribution indicate that, collectively, these species have the potential to establish as weeds across Australia, affecting the four major sectors of the grazing industries: beef, dairy, lamb and wool. Infestations of these 11 species alone have the potential to cost the grazing industries of Australia millions of dollars.

Recommendations recognise the role that *Meat and Livestock Australia* can play in increasing awareness of weed risks and costs through the education of graziers and the wider public; by lobbying the state/territory and federal governments to tighten legislation relating to the importation, sale and movement of weed species; and in promoting (and appropriately responding to) weed risk assessments of plants already in Australian gardens.

Foremost amongst the report's recommendations are the formal weed risk assessment of the 1081 listed species and the subsequent withdrawal from sale and prohibition from importation into Australia of high-risk species.

Contents

	Page
1	Background - Section..... 7
1.1	Introduction 7
1.2	Context..... 7
1.2.1	Five major areas of weed impact..... 7
1.2.2	Three major reasons for plant introduction to Australia 8
1.2.3	Three stages of weed development 8
1.2.4	Three weed groups 9
1.2.5	Australia’s grazing industries..... 10
1.2.6	Invasive (Group 1) weeds..... 11
1.2.7	Emerging (Group 2) weeds 13
2	Project Objectives..... 15
3	Methodology - Section 16
3.1	WA Department of Agriculture & Food’s “Plant Database” 16
3.2	Query Check commercial availability 18
3.3	Collect relevant information..... 18
3.4	Remove species less likely to establish in Australia 18
4	Results and Discussion 19
4.1	281 garden plants that threaten grazing industries 19
4.2	Analysis..... 20
4.2.1	Family..... 20
4.2.2	Growth form/longevity 21
4.2.3	Origin..... 21
4.2.4	Weeds of the environment & agriculture 22
4.2.5	Toxicity 23
4.2.6	Weed history 23
4.2.7	Climatic suitability..... 23

4.2.8	Propagule pressure/plant availability from nurseries	23
4.2.9	Existing legislation on 281 species.....	29
4.3	11 case studies.....	34
4.3.1	Selection of the 11 profiled species.....	34
4.3.2	Summaries of the 11 profiled species	35
5	Results and Discussion	39
6	Success in Achieving Objectives.....	40
7	Impact on Meat and Livestock Industry	40
8	Conclusions and Recommendations.....	40
8.1	Educating graziers and the wider public on weed risks	40
8.2	Working with the nursery industry and weeds organisations.	41
8.3	Lobbying the government to tighten legislation	41
8.4	Promoting weed risk assessment processes	42
9	Bibliography	43
10	Appendices.....	46
10.1	281 garden plants that threaten grazing industries	46
10.2	Appendix 2 800 lower priority species	103
10.3	Appendix 3 Case studies.....	108

1 Background - Section

1.1 Introduction

This publication reports the results of a project funded by *Meat and Livestock Australia (MLA)* and conducted by the *Co-operative Research Centre (CRC) for Australian Weed Management*. It is one of a series of recent publications identifying the plants that threaten Australia's agricultural industries and natural ecosystems. These reports have raised awareness of weed issues in Australia and contributed to efforts to tighten and better co-ordinate State & Commonwealth legislation that controls the movement and sale of plants.

To date, most publications have concentrated on the widespread and invasive (Group 1) weeds (e.g. Grice 2003; Csurhes & Edward 1998; Groves, Boden & Lonsdale 2005; *Weeds of National Significance* n.d.) and the emerging and sleeper (Group 2) weeds (e.g. Grice 2003; Csurhes & Edwards 1998; Groves, Boden & Lonsdale 2005; *National Alert List for Environmental Weeds* n.d.). Utilising the *Western Australian Department of Agriculture & Food's* "Plant Database" (Randall 2006), this report identifies garden plants which threaten to become future (Group 3) weeds of Australia's grazing industries and represents a preliminary contribution to formal weed risk assessments for these species.

1.2 Context

1.2.1 Five major areas of weed impact

A weed is essentially an unwanted plant. Our major weeds are naturalised (i.e. reproducing and spreading without human intervention) and growing somewhere they are not wanted. Plants generally establish as weeds in regions where the soils and climate are favourable and their natural predators and diseases are often absent.

Weeds impact five major areas:

- Native environment/ecosystems:
e.g. native grasslands, woodlands etc.;
- Grazing industries:
e.g. sheep, wool, beef, dairy and other meat industries;
- Cropping industries:
e.g. wheat, barley, canola, horticulture, forestry and other plantations;
- Urban areas
e.g. waste places, disturbed land, remnant bushland;
- Aquatic areas
e.g. waterways, ponds.

The economic cost of weeds to Australia's agricultural industries – both in terms of the costs of weed management and yield/income losses – has been estimated at A\$3.4 to A\$4.4 billion annually (Sinden et al. 2003: 39). For example, the projected economic cost to Australia of an infestation of *Nassella tenuissima* (Trin.) Barkworth has been calculated at A\$39 million over the next 60 years (Centre for International Economics 2001: 24) whilst the cost of an infestation of

Onopordum nervosum Boiss. has been estimated at A\$43 million (Centre for International Economics 2001: 26).

Figures on the economic cost of weeds to Australia's natural environment are impossible to predict but nearly A\$20 million was spent on weed management in these areas in 2001-2002 (Sinden *et al.* 2003: 2).

1.2.2 Three major reasons for plant introduction to Australia

Spencer (2005: 8) identified three major means of weed introduction in Australia:

- Agricultural imports:
Agricultural crops, forage pastures, forestry, erosion control;
- Horticultural imports:
For landscaping, ornamental uses, gardens (including Botanic Gardens), aquatic plants for aquariums and garden ponds, horticultural crops (e.g. grapes, vegetables, fruits etc.);
- Accidental imports:
As contaminants in agricultural produce (e.g. wool, grain), ship ballast and soil waste and through the movement of people, animals, machinery and other objects.

The majority of Australia's naturalised flora has been deliberately introduced and largely for ornamental purposes (Groves, Boden & Lonsdale 2005: 18, Spencer 2005: 8; Anonymous 2005: 3; Virtue, Bennet & Randall 2004). For example, recent research (Randall 2006) has revealed that 3222 known weeds were listed as available for sale in the 1998/1999 edition of the Aussie Plant Finder (Hibbert 1998); this represents 40% of all the plant species listed for sale in this edition. Of these 3222 species, 746 have naturalised in Australia.

1.2.3 Three stages of weed development

Groves, Boden & Lonsdale (2005: 12) identified three major stages in the development of a weed (Figure 1):

- 1st stage: Introduction:
Species cultivated and occurring in localised populations;
- 2nd stage: Naturalisation:
Species can reproduce without human intervention/cultivation;
- 3rd stage: Invasion/spread:
Species becomes widespread and/or abundant.

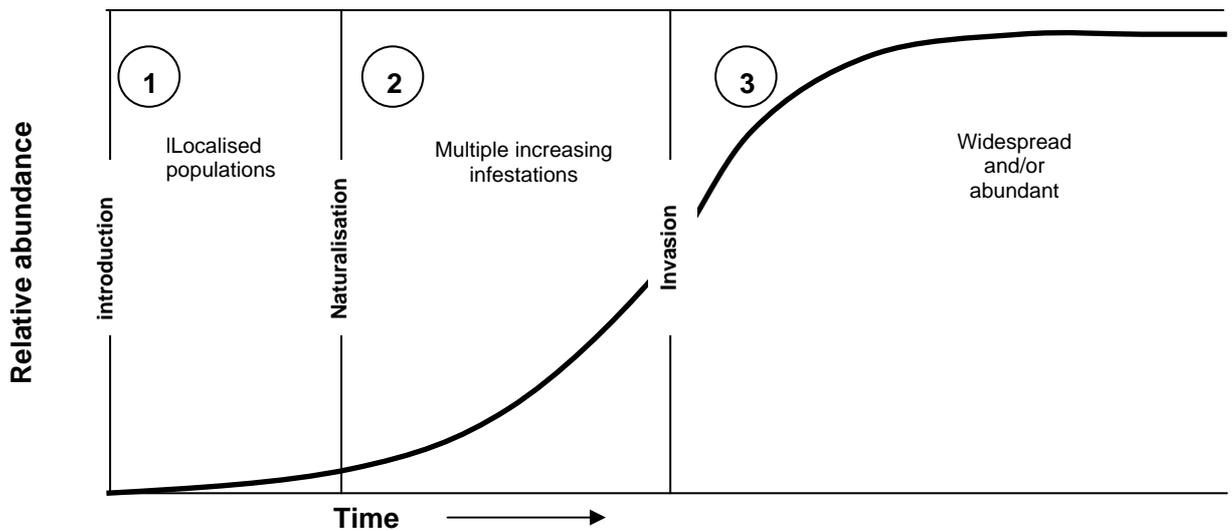


Figure 1. The three stages in weed development; adapted from Hobbs and Humphries (1995).

The time required for a plant to enter the naturalisation or invasion stage is variable and species-dependent with some plants taking decades or even centuries to naturalise (Groves, Boden & Lonsdale 2005: 12). Other species naturalise relatively quickly. Naturalised populations of *Nassella tenuissima* were discovered only eight years after it had been imported to Australia as an ornamental tussock grass. *Bassia scoparia* (L.) A.J.Scott spread rapidly from intentional saline forage plantings in Western Australia and within a couple of years of introduction had colonised thousands of hectares farmlands (Dodd & Randall 2002).

1.2.4 Three weed groups

Introduced plants in Australia can be categorised into three major groups (Figure 2):

- Group 1: widespread & invasive weeds:
Plants naturalised and causing a significant economic, environmental and social costs;
- Group 2: emerging & sleeper weeds:
Plants naturalised and spreading, or likely to spread under the right conditions;
- Group 3: future weeds:
Plants in Australia but not yet reproducing without human intervention.

The group to which an individual species belongs depends on the stage it has reached in its development as a weed.

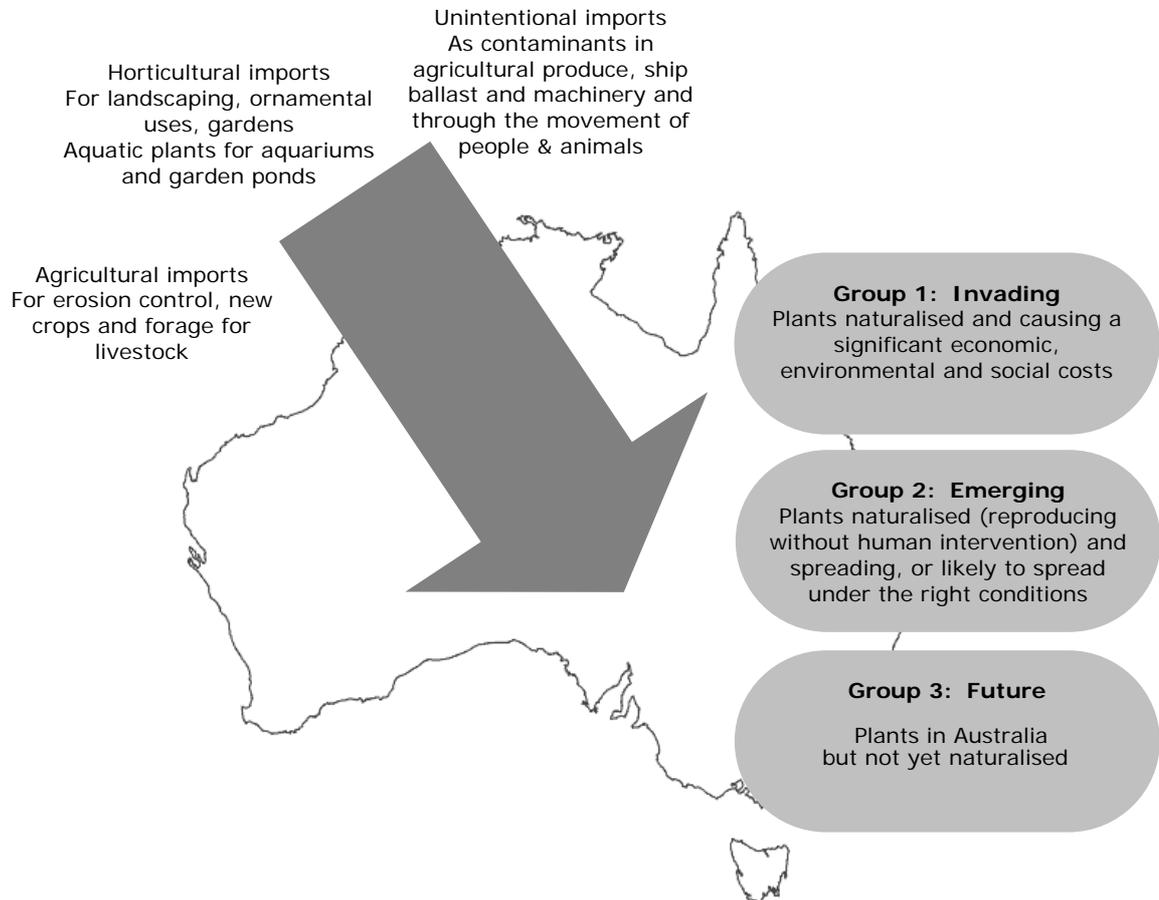


Figure 2. There are three major groups of weeds in Australia at any given time.

1.2.5 Australia's grazing industries

A general overview of the extent of Australia's grazing and pastoral industries is shown in Figure 3. This report has a bearing on the four major grazing industries in Australia: beef, dairy, lamb and wool industries.

The report *Weeds of Significance to the Grazing Industries of Australia* (Grice 2003) identified Group 1 and Group 2 weeds already established in Australia and causing significant concern to this sector of Australia's agricultural industries. The outcomes are briefly discussed here.

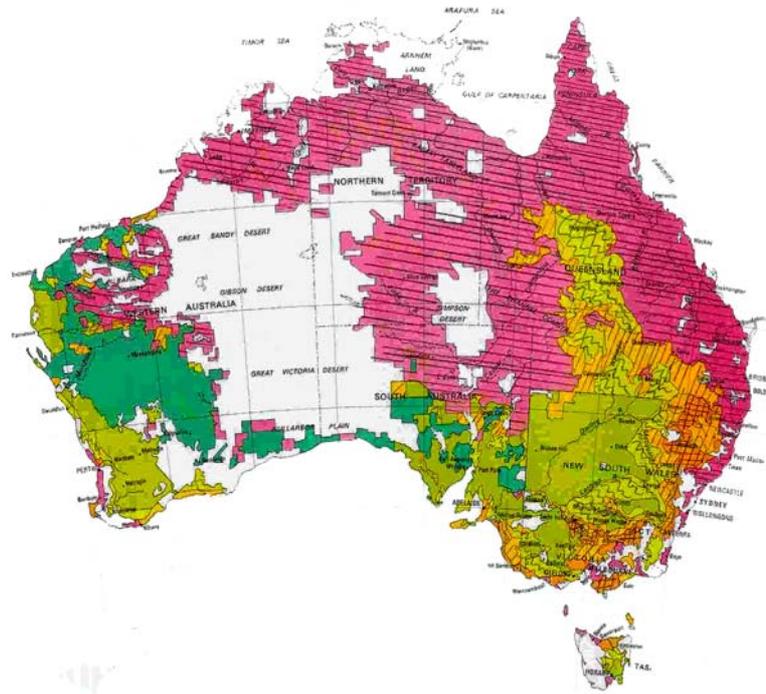


Figure 3. Map showing the geographic extent of Australia's major grazing industries. Pink to orange areas are cattle dominated (dairy and beef industries) whilst dark green to light green areas are sheep dominated (lamb and wool industries). (Modified from an Australian Bureau of Agricultural and Resource Economics (ABARE) map.)

1.2.6 Invasive (Group 1) weeds

According to Grice (2003: 101) 48 invasive plants are presently causing significant economic costs to Australia's grazing industries (Table 1). Twenty-four (50%) species are invasive garden plants (Randall & Kessal 2004) and five of these – *Asphodelus fistulosus* L., *Hypericum perforatum* L., *Bryophyllum delagoense* Eckl. & Zeyh., *Lantana camara* L. and *L. montevidensis* (Spreng.) Briq. – were available from Australian nurseries in 2002 (Hibbert 2002) and 2004 (Hibbert 2004) along with several *Erodium* species. Two additional species – *Cryptostegia grandiflora* R. Br. and *Jatropha gossypifolia* L. – were not listed in 2002 (Hibbert 2002) but were listed amongst the 2004 (Hibbert 2004) Australian nursery stock.

Weeds of the future? Threats to Australia's grazing industries by garden plants

Table 1. Plants identified in Grice (2003) as invasive (Group 1) weeds of significance to the grazing industries of Australia. Species marked with an *asterisk were reported as invasive or potentially invasive garden weeds (Randall & Kessal 2004). **Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G - grass.

Species	Common name	**Vegetation type/ Longevity	Available for sale (Aussie Plant Finder 2002)	Available for sale (Aussie Plant Finder 2004)	Region naturalised (Australia's Virtual Herbarium 2006)
<i>Acacia nilotica</i> (L.) Delile ssp. <i>indica</i> (Benth.) Brenan	Prickly acacia	S/T p			Qld, NT, SA, NSW
* <i>Agrostis capillaris</i> L.	Browntop bent grass	G p			Tas, NSW, SA, Vic, NT
* <i>Arctotheca calendula</i> (L.) Levyns	Cape Weed	H a			SA, Tas, WA, Vic, NSW, Qld, NT
* <i>Asphodelus fistulosus</i> L.	Onion weed	H p	NSW	NSW	SA, Tas, WA, Vic, NSW, Qld, NT
* <i>Bryophyllum delagoense</i> Eckl. & Zeyh. (alternative name <i>Kalanchoe delagoensis</i>)	Mother of Millions	H/S p	NSW (as <i>Kalanchoe delagoensis</i>)	NSW (as <i>Kalanchoe delagoensis</i>)	Qld, NSW, Vic, SA (as <i>B. delagoense</i>)
* <i>Calotropis procera</i> (Aiton) W. T. Aiton	Rubber bush	S/T			WA, NT, Qld, SA
* <i>Cryptostegia grandiflora</i> R. Br.	Rubber Vine	V p		NT	WA, Qld
* <i>Echium plantagineum</i> L.	Paterson's Curse	H a/b			SA, Tas, WA, Vic, NSW, Qld, NT
<i>Elephantopus mollis</i> Kunth	Tobacco weed	H p			Qld
<i>Emex australis</i> Steinh.	Spiny emex	H a			SA, Tas, WA, Vic, NSW, Qld, NT
* <i>Eragrostis curvula</i> (Schrad.) Nees	African Lovegrass	G p			SA, Tas, WA, Vic, NSW, Qld, NT
* <i>Erodium</i> spp. (<i>E. cicutarium</i> (L.) L'Hér.)	Erodium	H a/b	<i>E. chrysanthum</i> (NSW, Vic, Tas); <i>E. manescavii</i> Coss. (NSW); <i>E. pelargoniflorum</i> (NSW); <i>E. reichardii</i> (Murray) DC. (SA, NSW); <i>E. reichardii</i> 'Spanish Eyes' (Vic); <i>E. trifolium</i> (Cav.) Guitt. (Vic)	<i>E. chrysanthum</i> (NSW, Vic); <i>E. corsicum</i> (Vic); <i>E. reichardii</i> (Murray) DC. (SA); <i>E. trifolium</i> (Cav.) Guitt. (Vic); <i>E. x variable</i> 'Bishops Form' (WA)	Many species, all states/territories
<i>Fumaria</i> spp.	Fumatory	H a			Many species, all states/territories
* <i>Heliotropium amplexicaule</i> Vahl	Blue heliotrope	H p			SA, NT, Qld, NSW
<i>Heliotropium europaeum</i> L.	Common heliotrope	H p			SA, WA, Vic, NSW, Qld, NT
<i>Hyparrhenia hirta</i> (L.) Stapf	Coolatai grass	G p			SA, WA, Vic, NSW, Qld, NT
* <i>Hypericum perforatum</i> L.	St Johns wort	H p	Qld, Tas, Vic	Qld, Vic	SA, Tas, WA, Vic, NSW, Qld
<i>Hyptis suaveolens</i> (L.) Poit.	Hyptis	V/H/S p			WA, Qld, NT
<i>Jatropha gossypifolia</i> L.	Bellyache bush	H p		NSW (misspelt as <i>Jatopha gossypifolia</i>)	WA, Qld, NT
* <i>Lantana camara</i> L.	Lantana	V/S p	NT, WA, Vic	NT	SA, Tas, WA, Vic, NSW, Qld
* <i>Lantana montevidensis</i> (Spreng.) Briq.	Creeping Lantana	S p	NSW, NT, Qld, Vic, WA	NSW, NT, Qld, WA	WA, Qld, NSW
* <i>Lycium ferocissimum</i> Miers	African Boxthorn	S p			SA, Tas, WA, Vic, NSW, Qld, NT
* <i>Mimosa pigra</i> L.	Giant Sensitive Plant	S p			NT
* <i>Moraea miniata</i> Andrews (previously <i>Homeria miniata</i>)	Cape Tulip	H p			Vic, SA, WA
* <i>Nassella trichotoma</i> (Nees) Hack. ex Arechav.	Serrated Tussock	G p			NSW, Vic, Tas
* <i>Onopordum acanthium</i> L.	Scotch Thistle	H b			SA, Tas, NSW, Vic
* <i>Parkinsonia aculeata</i> L.	Parkinsonia	S/T p			SA, WA, NSW, Qld, NT
<i>Parthenium hysterophorus</i> L.	Parthenium	H a			NSW, Qld, NT
<i>Pennisetum polystachion</i> (L.) Schult.	Perennial mission grass	G p			NT, Qld
* <i>Phyla canescens</i> (Kunth) Greene	Lippia	H p			NSW, SA, Qld, Vic, Tas
<i>Physalis viscosa</i> L.	Prairie ground cherry	H p			Qld, NSW, Vic, SA
* <i>Prosopis</i> spp.	Mesquites	S/T p			Qld, NSW, SA, NT, Vic, WA
<i>Pteridium aquilinum</i> (L.) Kuhn	Bracken fern	H p (fern)			WA, SA

Weeds of the future? Threats to Australia's grazing industries by garden plants

Species	Common name	**Vegetation type/ Longevity	Available for sale (Aussie Plant Finder 2002)	Available for sale (Aussie Plant Finder 2004)	Region naturalised (Australia's Virtual Herbarium 2006)
* <i>Raphanus raphanistrum</i> L.	Wild radish	H a/b			SA, Tas, WA, Vic, NSW, Qld, NT
* <i>Rubus fruticosus</i> aggr. (species complex)	Blackberry	V/S p			All states/territories except NT
<i>Senecio madagascariensis</i> Poir.	Fire weed	H a/b			Vic, NSW Qld
<i>Senna obtusifolia</i> (L.) H. S. Irwin & Barneby	Sicklepod	H a/p			Qld, NT, WA
<i>Senna occidentalis</i> (L.) Link	Coffee bush	H a/p			SA, WA, NSW, Qld, NT
Several genera (e.g. <i>Carduus</i> , <i>Carthamus</i> , <i>Centaurea</i> , <i>Cirsium</i> , <i>Cynara</i> , <i>Onopordum</i> , <i>Scolymus</i> , <i>Silybum</i>)	Thistles	H a/p/b			Many species, all states/territories
Several genera (e.g. <i>Vulpia</i> spp., <i>Bromus</i> spp., <i>Hordenum</i> spp., <i>Lolium</i> spp.)	Annual grasses	G a			Many species, all states/territories
<i>Sida acutifolia</i> (this is a misspelling for <i>S. acuta</i> Burm. f.)	Sida	H/S p			NT, WA, Qld, NSW
<i>Solanum elaeagnifolium</i> Cav.	Silverleaf nightshade	H p			SA, WA, Vic, NSW, Qld, NT
<i>Sporobolus</i> spp.	Rat's tail grasses	G p			Many species, all states/territories
<i>Themeda quadrivalvis</i> (L.) Kuntze	Grader grass	G a			NT, WA, Qld, NSW
<i>Tribulus terrestris</i> L.	Caltrop	H a			SA, WA, Vic, NSW, Qld, NT
* <i>Ulex europaeus</i> L.	Gorse	S p			WA, SA, Vic, NSW, Tas
<i>Xanthium occidentale</i> L.	Noogoora burr	H a			NT, Qld, SA, NSW
<i>Xanthium orientale</i> L. (sometimes referred to as part of <i>X. strumarium</i> L. species complex)	Bathurst burr	H a			Qld, NSW, SA, Vic

Sources: Grice (2003), Randall & Kessal (2004), Hibbert (2002, 2004), Australia's Virtual Herbarium (2006)

1.2.7 Emerging (Group 2) weeds

Grice (2003: 111) also identified 16 emerging (Group 2) weeds that threaten the grazing industries of Australia (Table 2)². Ten species are considered invasive garden plants (Randall & Kessal 2004) and seven of these – *Agave sisalana* Perrine, *Azadirachta indica* A. Juss., *Diplotaxis tenuifolia* (L.) DC., *Hieracium* spp., *Ornithogalum thyrsoides* Jacq., *Pennisetum setaceum* (Forssk.) Chiov. and *Cascabela thevetia* (Pers.) K. Schum. – were available from Australian nurseries in 2002 (Hibbert 2002) and 2004 (Hibbert 2004). An eighth species – *Centaurea nigra* L. – was available from Australian nurseries in 2002 (Hibbert 2002) but not in 2004 (Hibbert 2004).

² A further eight emerging (Group 2) species were also considered invasive (Group 1) weeds in Grice (2003) – *Elephantopus mollis* Kunth, *Solanum elaeagnifolium* Cav., *Nassella trichotoma* (Nees) Hack. ex Arechav., *Physalis viscosa* L., *Pennisetum polystachion* (L.) Schult., *Bryophyllum delagoensis* Eckl. & Zeyh., *Phyla canescens* (Kunth) Greene and *Moraea miniata* Andrews – and these are dealt with in **Table 1**.

Weeds of the future? Threats to Australia's grazing industries by garden plants

Table 2. 16 plants identified in Grice (2003) as emerging (Group 2) weeds of significance to the grazing industries of Australia. Species marked with an *asterisk were reported as invasive garden weeds (Randall & Kessal 2004). **Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G - grass.

Species	Common name	**Vegetation type/ Longevity	Available for sale (Aussie Plant Finder 2002)	Available for sale (Aussie Plant Finder 2004)	Region naturalised (Australia's Virtual Herbarium 2006)
* <i>Agave sisalana</i> Perrine	Sisal hemp	H/S p	NSW	NSW	Qld
* <i>Azadirachta indica</i> A. Juss.	Neem	T p	NSW, NT, Qld	NSW, NT, Qld	NT
* <i>Cascabela thevetia</i> (L.) Lippold (alternative name <i>Thevetia peruviana</i> (Pers.) K. Schum.)	Yellow Oleander	S/T p	NT	NT, NSW	Qld, NSW
* <i>Celtis sinensis</i> Pers.	Chinese Elm	T p			NSW, Qld, NT
* <i>Centaurea maculosa</i> (alternative name <i>C. stoebe</i>)	Spotted knapweed	H b/p			NSW
<i>Centaurea nigra</i> L.	Black knapweed	H p	Tas, NSW		Tas, SA, Vic
* <i>Cestrum parqui</i> L'Hér.	Green Cestrum	S/T p			NSW
<i>Cuscuta planiflora</i> Ten.	Small-seeded dodder	V/H a/p			SA, WA
* <i>Diplotaxis tenuifolia</i> (L.) DC.	Lincoln Weed	H/S p	NSW, Tas	NSW, Tas, Qld	SA, WA, Qld, NSW, Tas, Vic
<i>Galium tricornutum</i> Dandy	Three-horned bedstraw	H a			SA, NSW, Tas, Vic
<i>Hieracium</i> spp.	Hawkweeds	H p	<i>H. pilosella</i> L., <i>H. aurantiacum</i> L.	<i>H. pilosella</i> Qld, Tas	Tas, Vic, NSW, SA
* <i>Hieracium pilosella</i> L., * <i>H. aurantiacum</i> L.			Qld, Tas		
* <i>Ornithogalum thyrsoides</i> Jacq.	Chincherinchee	H p	Vic, NSW, Tas	NSW, Vic	SA, NSW
<i>Orobanche</i> sp.	Broomrape	H a			SA (<i>O. ramosa</i>)
<i>Paspalum notatum</i> Flügge	Bahia grass	G p			Qld, NSW, WA, Vic
* <i>Pennisetum setaceum</i> (Forssk.) Chiov.	Fountain Grass	G p	Vic	Vic, NSW	NSW, QLD, NT, SA, WA, Vic
<i>Praxelis clematidea</i> R. M. King & H. Rob.	Praxelis	H a			Qld

Sources: Grice (2003), Randall & Kessal (2004), Hibbert (2002, 2004), Australia's Virtual Herbarium (2006)

2 Project Objectives

This report identifies the plant species currently present in Australian gardens which have the potential to become future (Group 3) weeds of Australia's grazing industries. The project was developed in order to meet five objectives:

- To identify the garden plants currently present in Australian gardens but which have not yet naturalised;
- To determine which of these species present a threat to grazing industries;
- To provide case studies of 10 garden species;
- To determine the current availability through the nursery industry of high-risk species;
- To develop recommendations for actions by government agencies, the grazing industries and others to mitigate the risks posed by invasive garden plants.

3 Methodology - Section

The following process was used to establish the foremost potential weed threats to the Australian grazing industries (Figure 4).

3.1 WA Department of Agriculture & Food's "Plant Database"

The *Western Australian Department of Agriculture & Food's* "Plant Database" (Randall 2006) contains weed information drawn from over 3000 publications and covering approximately 576,000 plant taxa. Used in conjunction with climatic modelling and extrapolating from international experience, the database provides a unique and important means by which to predict the plants that might become future weeds in Australia.

The database was initially queried to isolate species satisfying the following three criteria:

- Introduced to Australia;
- Not naturalised or reported as a weed in Australia;
- Record overseas as an environmental and/or agricultural weed.

This resulted in an initial list of approximately 1080 species.

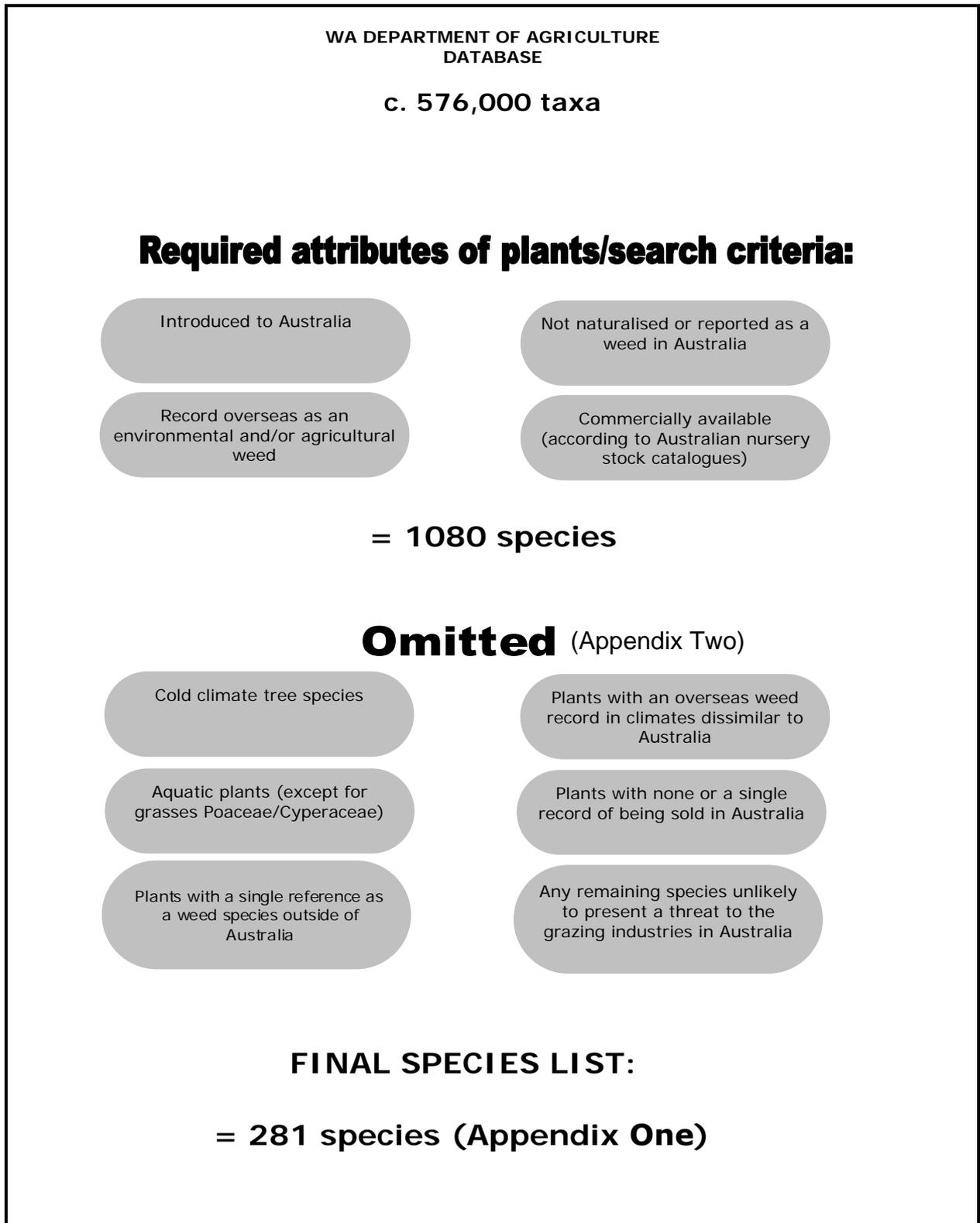


Figure 4. The process used to establish the foremost weed threats to Australia's grazing industries

3.2 Query Check commercial availability

To be included in the report, the plants must also have been commercially available in Australia. Eleven publications relating to Australian nursery stock and Australian seed supplies were consulted. These included *Encyclopaedia Botanica* (Bodkin 1986), *The Australian Plant Finder* (Hutchison 1993), all editions of the *Aussie Plant Finder* (Hibbert 1997, 1998, 1999, 2000, 2002, 2004); *The Seed Search* (Platt 2002), data from *Norfolk Press* (n.d.) and the *Greenlife Database™* (Spencer 1995). Together, these publications provide a discontinuous record of commercial plant availability in Australia from 1950 to 2004 with a particular emphasis on plant availability in the past 20 years.

3.3 Collect relevant information

To assist with prioritising and assessing their potential threat to the grazing industries of Australia, the following information was collected from the *WA Department of Agriculture & Food's* "Plant Database" (Randall 2006) for each species:

- Number of recorded weed references overseas;
- Status as a noxious weed;
- Recorded in mediterranean, tropical or sub-tropical climates (though not necessarily as a weed);
- Geographic origin;
- Geographic location(s) in which the plant is a recorded weed;
- Toxicity;
- Vegetation type (i.e. tree, shrub, herb, vine, grass);
- Longevity (i.e. perennial, annual, biennial).

3.4 Remove species less likely to establish in Australia

To isolate the plant species that present the greatest threat to the Australian grazing industries, the following plant species were removed:

- Cold climate tree species;
- Species recorded as occurring in aquatic environments (except for Poaceae and Cyperaceae grasses);
- Species with a single reference as a weed species outside of Australia³

³ With the exception of 23, 1 weed reference species which were retained because they are all recorded as agricultural weeds; most are from South Africa which has a similar climate to much of southern Australia; and many have been recorded as toxic.

- Species that have been referenced as a weed overseas in climates dissimilar to Australia;
- Species with none or a single record of being sold in Australia;
- Any remaining species unlikely to present a threat to the grazing industries in Australia.

“Plant Database” (Randall 2006) information implies that these 800 species (**Appendix 2**) are unlikely to establish in Australia. However, it is difficult to definitively predict potential weeds and it is possible that amongst these 800 species are future weeds of Australia's grazing industries or natural environment.

4 Results and Discussion

4.1 281 garden plants that threaten grazing industries

281 species that present the greatest potential threat to the grazing industries of Australia were identified: they are well referenced as weed species outside of Australia and they have been freely accessible via the Australian nursery trade and/or through Australian seed suppliers. The species are presented by vegetation type (i.e. trees/shrubs, herbs, vines/climbers, grasses) as well as listed alphabetically by genus in Appendix 1.

4.2 Analysis

Several general observations can be made on the composition of the 281 species:

4.2.1 Family

The 281 species represent a total of 90 families. Approximately half (51%) of these species belong to one of 15 families (Figure 5) – Myrtaceae, Asteraceae, Lamiaceae, Liliaceae, Ranunculaceae, Leguminosae-Papilionaceae, Euphorbiaceae, Caprifoliaceae, Poaceae, Geraniaceae, Scrophulariaceae, Caryophyllaceae, Brassicaceae, Iridaceae, Polygonaceae and Rosaceae – and each of these families is represented by at least 5 species.

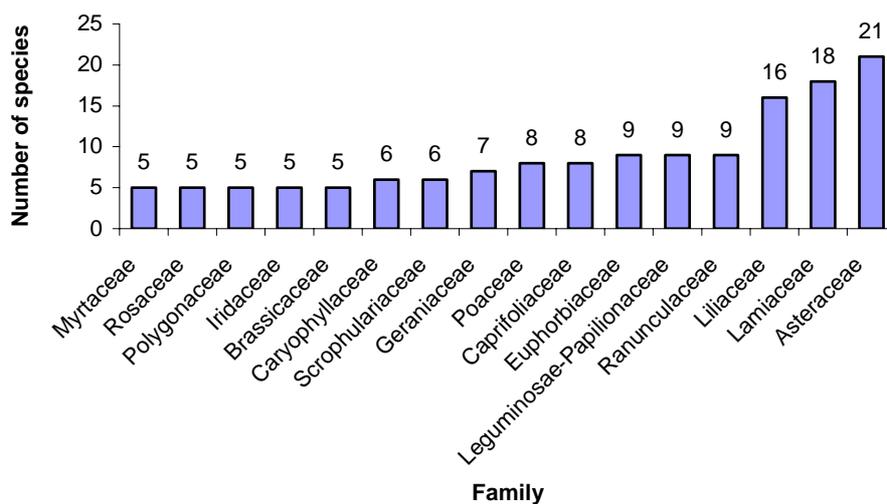


Figure 5. Major represented families.

Asteraceae (21 species), Lamiaceae (18 species) and Liliaceae (16 species) are the largest families represented amongst the 281 species. Many recognised weeds belong to these families. Globally, approximately 15% of the species belonging to Asteraceae; 12% of the species belonging to Lamiaceae; and 11% of Liliaceae species are recorded weeds. In comparison, Australia is over-represented with weed species belonging to these families with almost half (49%) of the introduced Asteraceae species; 44% of Lamiaceae; and a quarter (25%) of Liliaceae recorded as weeds in Australia (Randall 2006).

4.2.2 Growth form/longevity

Herbs (58%) represent the largest group followed by trees/shrubs (34%), vines/climbers (6%) and grasses (2%) (Figure 6). The majority (83%) of the species are perennial.

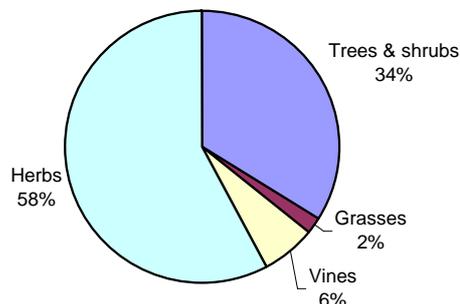


Figure 6. Species by growth form.

4.2.3 Origin

Spencer (2005: 8) stated that the majority of environmental weeds in Australia have come from the Americas (31%) followed by Europe (27%), Africa (26%) and Asia (10%). These figures roughly concur with a breakdown of the continental origins of the 281 species (Figure 7) with Europe (31%) only slightly more represented than the Americas (28%). Species originating from Africa (16%) and Asia (14%) are also well represented.

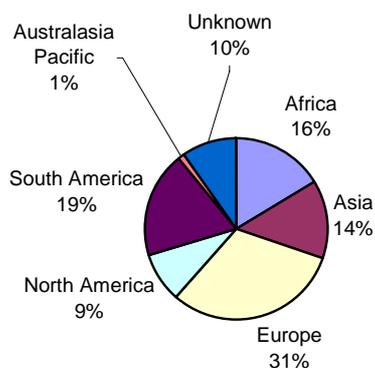


Figure 7. Species by continental origin.

4.2.4 Weeds of the environment & agriculture

Almost two thirds (61%) of the plants have been recorded overseas as agricultural weeds whilst a similar number (58%) are known environmental weeds⁴ (Figure 8). More than one tenth (12%) of the species have been recorded overseas as noxious.

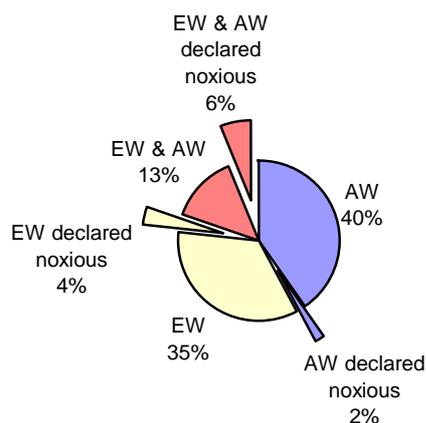


Figure 8. Percentage of species that are environmental, agricultural and noxious weeds. EW – environmental weed, AW – agricultural weed.

⁴ Some plants are recorded as both agricultural and environmental weeds.

4.2.5 Toxicity

One third (33%) of the species have been recorded as toxic. Toxicity manifests itself in several ways. Some grazing weeds can be highly toxic and palatable and can kill or severely poison livestock. Others may be toxic but very unpalatable; their avoidance by livestock leads to desirable pasture species becoming overgrazed and out-competed.

4.2.6 Weed history

Almost two thirds (63%) of the species have been recorded as weeds in more than 6 publications (Figure 9). *Equisetum arvense* L., for example, was referred to as a weed in 65 publications – more than any other species – and belongs to a genus that presents a significant threat to Australia’s grazing industries (see case study in **Appendix 3**).

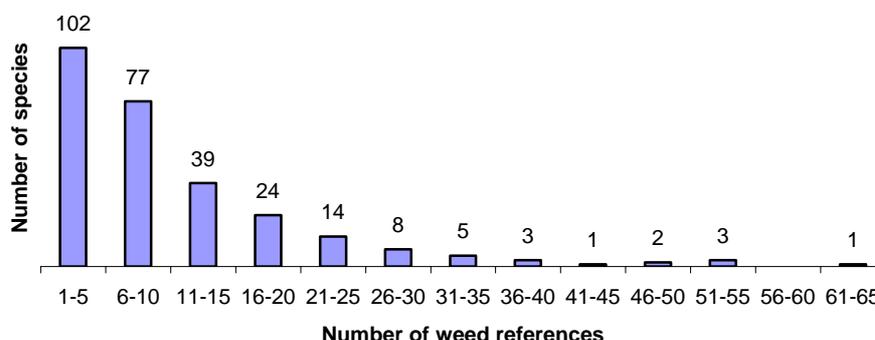


Figure 9. Number of publications that record the species as weeds.

4.2.7 Climatic suitability

Plants will often establish as weeds in places where the climate is similar to that of their native range (Spencer 2005: 8). Indeed, it is proposed that *known* weeds that are not yet naturalised in their adoptive country represent a significant threat if they occur in a climate similar to that of their native range and have already become weedy in other climatically similar regions (Randall & Lloyd 2003: 4). Approximately three quarters (74%) of the listed species have been recorded growing overseas in a Mediterranean environment whilst 59% of the species have been recorded growing in tropical parts of the world⁵ (Figure 10). Based on this information alone, many of these species have some potential to establish in the Mediterranean climate of southern Australian and/or the sub-tropical and tropical environs of northern Australia.

4.2.8 Propagule pressure/plant availability from nurseries

The higher the numbers of reproductive parts (seeds, bulbs, vegetative parts etc) introduced across a range of environments the more likely a species is to establish and naturalise. This is sometimes referred to as “propagule pressure” (e.g. Lockwood, Cassey & Blackburn 2005). It follows then that the more widely available a plant species is in Australian nurseries, the more

⁵ Some plants are recorded growing in both mediterranean and sub-tropical/tropical climatic regions.

propagules are collectively produced by individual plants and the more likely the species is to naturalise. The relationship between “propagule pressure”, the availability of a plant for sale and the likelihood of plant naturalisation is illustrated in Figure 11.

Nearly half (43%) of the plants have been listed in between 7 and 11 nursery stock publications indicating their ready availability from Australian nurseries. Almost all⁶ of the plants have been recorded in Australian nursery stock publications in the last 20 years and over two thirds (69%) of them were available from Australian nurseries in 2004 (Figure 12). A further 18% were last recorded for sale between 1997 and 2002 whilst 13% were last listed in 1986.

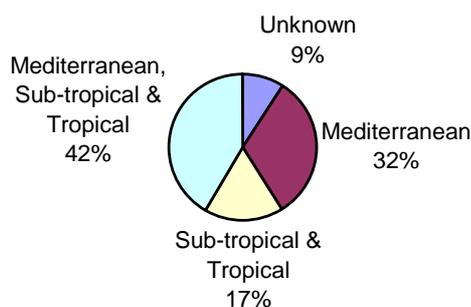


Figure 10. Climatic regions in which the species occur.

⁶ With the exception of *Equisetum ramosissimum* L., *Onopordum nervosum* Boiss. and *Festuca gautieri* (Hackel) K. Richter. Please see p. 26 of this report for further information.

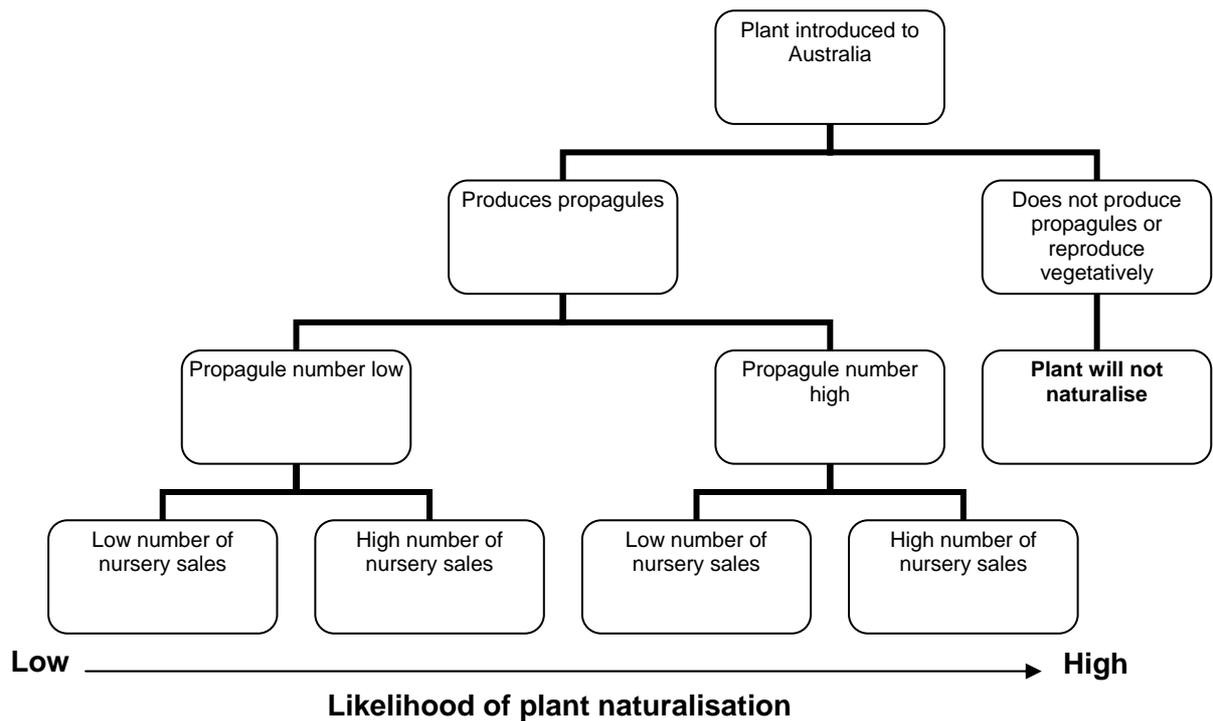


Figure 11. “Propagule pressure”: the relationship between propagule production, plant availability and plant naturalisation.

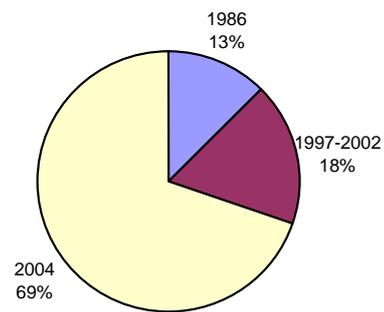


Figure 12. Most recent year in which the species appeared in one of nine consulted Australian nursery stock publications (Bodkin 1986; Hutchison 1993; Hibbert 1997, 1998, 1999, 2000, 2002, 2004; Platt 2002).

Weeds of the future? Threats to Australia's grazing industries by garden plants

Table 3 shows 44 of the most widely available plant species amongst the 281 species. It shows the number of nurseries that have been selling the plants in each state/territory since 1993.

Table 3. Nursery availability by state/territory for 43 of the 281 species examined in this report. The number of nurseries listing the species for sale appears in brackets; the absence of a number next to a state indicates a single nursery.

Species	Australian Plant Finder 1993	Aussie Plant Finder 1997/1998	Aussie Plant Finder 1998/1999	Aussie Plant Finder 1999/2000	Aussie Plant Finder 2000/2001	Aussie Plant Finder 2002	Aussie Plant Finder 2004
<i>Allium sativum</i> L.	NSW, Qld	NSW, Vic	NSW, Vic (3)	NSW (2), Vic (3)	NSW, Vic (2)	NSW	NSW (4)
<i>Allium schoenoprasum</i> L.	NSW (2), Qld (2)	NSW, Tas, Vic (3)	NSW (3), Qld, Tas, Vic (2)	NSW (5), Tas, Vic (2)	NSW (3), Qld, Tas, Vic (2)	Qld, NSW (5), Tas, Vic, Qld	NSW (7), Qld (2), Tas, Vic, ACT
<i>Artemisia dracunculus</i> L.	NSW (2), Qld, Vic	NSW, Tas, Vic (2)	NSW (3), Qld, Tas, Vic	NSW (4), Qld, Tas, Vic (3)	NSW (4), Qld, Tas, Vic (5)	Qld, NSW	NSW (6), Vic (3), Tas, Qld
<i>Asclepias tuberosa</i> L.	NSW	Tas, Vic (3)	SA, Vic (2)	Tas, Vic (2)	NSW, Vic (2)	Qld, Vic, NSW	Tas, Vic, Qld
<i>Bomarea multiflora</i> (L.) Mirb.	NSW, Vic	Vic (2)	Vic (2)	Vic (3)	Vic (2)	Vic (2)	Vic (2)
<i>Buddleja salviifolia</i> (L.) Lam.	NSW (2)	NSW (3), Tas, Vic (3)	NSW (2), SA, Tas, Vic (6)	NSW (3), SA, Tas, Vic (2)	NSW (3), SA, Tas, Vic (4)	SA, NSW (5), Tas, Vic (3)	Vic (3), NSW (3), SA, WA
<i>Campanula rotundifolia</i> L.	NSW, Tas, Vic	Tas (2), Vic (5)	NSW (2), Tas, Vic (8)	NSW (3), Tas, Vic (3), WA	NSW (3), Tas (2), Vic (3)	NSW (3), Tas	NSW (3), Vic (3), Tas (2)
<i>Cardamine pratensis</i> L.	NSW	NSW (2)	NSW (2), Qld, Tas	NSW (3), Qld, Tas, Vic	NSW, Qld, Tas, Vic	Qld (2), Tas, Vic	Qld (2), NSW (2), Vic, Tas
<i>Cerastium tomentosum</i> L.	NSW, Tas, Vic (2)	NSW (7), Tas, Vic (6)	NSW (11), SA, Vic (4), WA (2)	NSW (11), Qld, SA, Vic (7), WA	NSW (7), Vic (8), WA (2)	NSW (5), Vic (7), WA	NSW (4), Vic (5), WA (3), ACT
<i>Cistus salviifolius</i> L.	NSW, Vic	NSW (4), Tas, Vic (3)	NSW (2), Vic (4)	NSW (4), Vic (3), WA	NSW (3), Vic (4), WA	NSW, Vic, WA (2), Tas	Vic (3), NSW (2), WA, Qld
<i>Clethra arborea</i> Aiton	NSW, Tas (2), Vic (2)	Tas (2), Vic (3)	NSW, Tas, Vic (2), WA	NSW, Tas, Vic (3)	NSW, Tas, Vic (6), WA (2)	Vic (6), NSW, WA	Vic (3), WA
<i>Digitalis ferruginea</i> L.	NSW, Vic (2)	Tas, Vic (2)	NSW, SA, Tas, Vic (4)	NSW, Tas, Vic (2)	NSW, Tas (2), Vic	Tas	Tas (3)
<i>Erica cinerea</i> L.	Tas	Tas (2), Vic (3)	NSW, Tas (3), Vic	NSW, Tas	NSW, Tas	NSW	NSW (2)
<i>Euonymus europaeus</i> L.	NSW, Tas, Vic (2)	Tas	Tas, Vic (4)	Tas, Vic (2)	Tas, Vic (3)	Vic (3)	Vic (2), NSW
<i>Euphorbia amygdaloides</i> L.	NSW, Tas (2), Vic (3)	NSW (4), Tas, Vic (8)	NSW (9), Tas (2), Vic (8)	NSW (6), Tas (4), Vic (5)	NSW (6), Tas (6), Vic (4)	NSW (5), Tas (4), Vic (4)	NSW (4), Vic (4), Tas (3)
<i>Filipendula ulmaria</i> (L.) Maxim.	Vic (2)	NSW (3), Vic (4)	NSW (3), Qld, Tas, Vic (6)	NSW (5), Tas (2), Vic (6)	NSW (3), Tas (3), Vic (3)	NSW (4), Vic (2), Qld, Tas (2)	NSW (4), Qld (2), Tas (2), Vic
<i>Galega officinalis</i> L.	NSW	Vic	NSW, Tas, Vic	NSW, Tas, Vic (2)	NSW, Tas, Vic (2)	Qld, NSW (2), Tas, Vic	NSW (2), Tas (2), Vic, Qld
<i>Helenium autumnale</i> L.	Tas, Vic (2)	NSW, Vic (7)	NSW, Vic (4)	NSW, Tas, Vic (4)	NSW (2), Vic (3)	NSW, Tas	NSW (3), Tas (2), Vic
<i>Helichrysum petiolare</i> Hilliard & B.L.Burtt (formerly <i>H. petiolatum</i>)	NSW, Tas, Vic (2)	NSW (4), Tas (3), Vic (2)	NSW (4), SA, Vic (5), WA	NSW (7), SA, Tas, Vic (5), WA	NSW (5), SA, Tas, Vic (5), WA	NSW (6), SA, WA	NSW (8), Vic (2), SA, Qld
<i>Hemerocallis lilioasphodelus</i> L.	NSW, Qld	Tas	NSW, SA, Tas, Vic	NSW (3), SA, Tas	NSW (2), SA, Tas, Vic	NSW (2), SA, Tas	SA, NSW, Tas
<i>Hibiscus syriacus</i> L.	NSW (2), Tas, Vic	NSW (3), Vic (2)	NSW (5), Vic (3)	NSW (4), Vic (3)	NSW (6), Vic (4)	NSW (4), WA (1)	NSW (3), WA (2)
<i>Ilex paraguariensis</i> A. St.-Hil.	Vic	Vic	Qld, Vic	NSW, Qld, Vic	NSW, Qld, Vic	Qld (2), NSW, Vic	Qld (2), NSW
<i>Inula helenium</i> L.	NSW (2)	NSW, Vic	NSW, Qld, Tas, Vic	NSW (2), Tas, Vic	NSW (2), Qld, Tas, Vic	NSW (3), Tas, Vic	NSW (3), Tas, Vic
<i>Jasminum sambac</i> (L.) Aiton	NSW, Qld	NSW (2), Vic	NSW, Qld (4), Vic (3)	NSW (4), Qld, NT, Vic, WA	NSW (2), Qld (2), NT (2), Vic (2), WA	Qld (3), NT (2), WA, NSW	Qld (5), NSW (4), NT
<i>Liriodendron tulipifera</i> L.	NSW, SA (2), Vic(3), Tas	NSW (6), Vic (11), Tas (2)	Widely available	Widely available	Widely available	Widely available plus cultivars in NSW (4), Vic (4), WA	Widely available plus cultivars in NSW (4), Vic (5)

Weeds of the future? Threats to Australia's grazing industries by garden plants

Species	Australian Plant Finder 1993	Aussie Plant Finder 1997/1998	Aussie Plant Finder 1998/1999	Aussie Plant Finder 1999/2000	Aussie Plant Finder 2000/2001	Aussie Plant Finder 2002	Aussie Plant Finder 2004
<i>Lonicera nitida</i> E. H. Wilson	NSW (2), SA, Tas, Vic (2), WA	NSW (6), Vic (10)	NSW (10), Qld, Vic (20), WA	NSW (11), Qld (2), Vic (13), WA (2)	NSW (12), Vic (14), WA (2)	Widely available plus cultivars in NSW (6), Vic (6), Qld	NSW (7), Tas, Vic (5), Qld, WA
<i>Lonicera tatarica</i> L.	NSW	Vic	Vic	NSW (2), Vic	NSW (3), Vic	NSW, Vic	NSW, Vic (2)
<i>Lychnis flos-cuculi</i> L.	NSW, Vic	NSW, Tas (2), Vic	NSW, Tas, Vic (2), WA	NSW (2), Tas, Vic (3), WA	NSW, Tas, Vic	Vic, NSW, Tas	NSW, Tas
<i>Oenothera odorata</i> Jacq.	NSW	Tas, Vic	Tas, Vic	NSW, Tas, Vic	NSW, Tas	NSW, Tas	NSW (2), Tas
<i>Ornithogalum nutans</i> L.	SA, Vic (3)	Vic (8)	NSW, Vic (9)	NSW, Vic (9)	NSW (9), Vic (9)	Vic (6), NSW (2)	NSW, Vic (8)
<i>Pittosporum tobira</i> (Thunb.) W.T. Aiton	Vic (2)	NSW (4), Vic (3), Tas	NSW (2), Qld (2), Vic (4), WA	NSW (2), NT, Qld, Vic (2), WA	NSW, NT, Vic (3), WA	Vic (2), Qld (2), NT, NSW	Vic (3), NSW (2), Qld (2), NT, ACT
<i>Ranunculus asiaticus</i> L.	Vic (6)	Vic	Vic	Vic	Vic (2)	Vic	Vic (3)
<i>Salvia officinalis</i> L.	NSW (2), Qld (2)	NSW (3), Tas, Vic (5)	NSW (3), Qld, Tas, Vic (5)	NSW (4), Qld, SA, Tas, Vic (6)	NSW (4), Qld, SA, Tas (2), Vic (4)	Qld (2), NSW (3), Tas (3), Vic (3), SA	NSW (6), Qld (2), Vic (5), Qld (2), Tas (2), SA, WA
<i>Salvia sclarea</i> L.	NSW, Qld (2)	NSW (2), Vic (8)	NSW (6), Qld, Tas, SA, Vic (9), WA	NSW (4), Qld, SA, Tas, Vic (4), WA	NSW (5), Qld, SA, Tas (3), Vic (10), WA	Vic (4), NSW, Qld, Tas	Vic (4), NSW (5), Qld, SA, Tas, WA
<i>Satureja hortensis</i> L.	NSW (2), Qld (2)	Tas	Tas	NSW, Tas	NSW, Tas	NSW, Tas	NSW, Tas
<i>Scabiosa columbaria</i> L.	NSW (2), Vic (2)	NSW, Vic (5)	NSW (3), Vic (6)	NSW (6), Qld, Vic (7)	NSW (5), Qld, Vic (7), WA	NSW (4), Vic (5), WA, Tas	Vic (3), NSW (2), WA
<i>Stachys officinalis</i> (L.) Trevis.	NSW (2), Qld, Vic (3)	NSW (2), Vic (4)	NSW (3), Qld, Tas, Vic (7)	NSW (3), Qld, Tas (3), Vic (4)	NSW, Qld, Tas (3), Vic (3)	Qld (2), Tas (3), NSW (2), Vic	NSW (2), Tas, Qld, Vic
<i>Symphoricarpos albus</i> (L.) S.F. Blake	Vic	NSW, Vic	NSW, Tas, Vic (4)	NSW (2), Vic (2)	NSW (2), Vic (2)	Vic (3), NSW (2)	NSW (2), Vic, WA
<i>Teucrium chamaedrys</i> L.	NSW, Vic (2)	NSW, Tas, Vic (3)	NSW, Tas, Vic (6)	NSW (2), Qld, Tas, Vic (2)	NSW, Qld, Tas, Vic (3), WA	Qld, NSW, Tas, WA (2)	NSW (3), WA (2), Tas, Qld
<i>Ugni molinae</i> Turcz.	NSW, Vic	NSW, Tas, Vic (4)	NSW, Tas (2), Vic (2)	NSW (2), Tas, Vic (4)	NSW (3), Tas, Vic (6)	NSW (2), Vic (5)	NSW (2), Vic (6), Tas, ACT
<i>Vaccinium corymbosum</i> L.	Vic (2)	NSW	NSW, Vic (3)	NSW, Vic (3)	NSW (2), Qld, Vic (3)	NSW (2), Vic, Qld	NSW (2), Vic (2), Qld (2)
<i>Viola tricolor</i> L.	NSW (2), Qld	NSW (2), Tas, Vic	NSW, Qld, Tas, Vic (2)	NSW (2), Tas, Vic	NSW (2), Tas, Vic	NSW, Qld, Tas, Vic	Vic (2), NSW, Tas, Qld
<i>Vitex agnus-castus</i> L.	NSW, Vic (2)	NSW, Vic (2)	NSW (4), Qld, Vic (3)	NSW (3), Qld, Vic (3)	NSW (4), Qld, Vic (4), WA	NSW (4), Vic (3), Qld (2), WA, Tas	NSW (4), Qld (3), Vic (3), Tas

Sources: Hutchison (1993); Hibbert (1997, 1998, 1999, 2000, 2002, 2004)

Coupled with climatic data this information can help predict the regions in which plants are likely to establish. Indeed, a link between plant naturalisation and nurseries is likely because nurseries will tend to stock plants that are suited to their region. For example, *Ornithogalum nutans* L. has been widely available in Victorian nurseries since 1993 and climatic data indicates that this species is likely to establish in north-western Victoria (Figure 13).

It would be useful to conduct further research to determine which of the 281 species are producing propagules in Australia. This would assist determining which of them are presently capable of spreading.



Figure 13. Projected Australian distribution of *Ornithogalum nutans* L. based on climatic data. This plant has been heavily sold in Victoria since at least 1993 and the map indicates that north-western Victoria has favourable climatic conditions for this species' establishment.

4.2.9 Existing legislation on 281 species

Legislative controls apply to the importation, movement and sale of some plants at the state/territory and federal levels because they are weeds. Only 77 (28%) of the 281 species are recognised by existing state/territory and/or federal laws (Table 4). Where legislation does exist, it is limited and not uniformly applied across all state, territory and federal jurisdictions. The remaining 203 species (72%) are permitted entry into Australia (Australian Quarantine & Inspection Service 2006) and may be sold and moved across state and territory borders without restriction (*Weeds Australia* 2006; *WA Department of Food & Agriculture* 2006a, 2006b).

Weeds of the future? Threats to Australia's grazing industries by garden plants

Table 4. 77 species controlled by state/territory and/or federal legislation. The remaining 203 species (not shown) are all permitted entry into Australia under current federal laws and permitted sale and movement across states and territories without any restrictions.

Species	Legislation applicable (state/territory)	Legislation applicable (federal)*
<i>Aethusa cynapium</i> L.		Unassessed
<i>Ageratina altissima</i> (L.) R. M. King & H. Rob.	Quarantine Weed WA	Unassessed
<i>Aloe aculeata</i> Pole Evans		Unassessed
<i>Aloe castanea</i> Schonl.		Unassessed
<i>Anaphalis margaritacea</i> (L.) Benth. & Hook. f.	Quarantine Weed WA	Permitted
<i>Anthriscus sylvestris</i> (L.) Hoffm.	Quarantine Weed WA	Permitted
<i>Aristolochia littoralis</i> Parodi	<i>Aristolochia</i> species other than native species Qld	Permitted
<i>Arundinaria gigantea</i> (Walter) Muhl.	<i>Arundinaria</i> spp. NSW <i>A. gigantea</i> Quarantine Weed WA	Prohibited
<i>Asclepias syriaca</i> L.	Quarantine Weed WA	Prohibited
<i>Bocconia frutescens</i> L.	Quarantine Weed WA	Unassessed
<i>Broussonetia papyrifera</i> (L.) Vent.	Quarantine Weed WA	Permitted
<i>Bulbine frutescens</i> (L.) Willd.	Quarantine Weed WA	Permitted
<i>Bunium bulbocastanum</i> L.	Quarantine Weed WA	Permitted
<i>Callicarpa americana</i> L.		Unassessed
<i>Cardamine lyrata</i> Bunge	Quarantine Weed WA	Unassessed
<i>Carpobrotus acinaciformis</i> (L.) L. Bolus		Unassessed
<i>Cephalanthus occidentalis</i> L.		Prohibited
<i>Cestrum diurnum</i> L.		Unassessed
<i>Chenopodium capitatum</i> (L.) Asch.	Quarantine Weed WA	Prohibited due to insufficient knowledge of risk status
<i>Commelina tuberosa</i> L.	Quarantine Weed WA	Prohibited due to insufficient knowledge of risk status
<i>Convolvulus althaeoides</i> L.	Quarantine Weed WA	Permitted
<i>Cardia sebestena</i> L.		Prohibited
<i>Cyanella lutea</i> L.f.		Unassessed
<i>Deschampsia flexuosa</i> (L.) Trin.	Quarantine Weed WA	Unassessed
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Quarantine Weed WA	Permitted
<i>Dovyalis hebecarpa</i> (Gardner) Warb.		Unassessed
<i>Eleocharis acicularis</i> (L.) Roem. & Schult.	Quarantine Weed WA	Prohibited due to insufficient knowledge of risk status
<i>Equisetum arvense</i> L.	<i>Equisetum</i> spp. Vic, NSW, Tas, Qld, SA, ACT, WA	Prohibited
<i>Equisetum hyemale</i> L.	<i>Equisetum</i> spp. Vic, NSW, Tas, Qld, SA, ACT, WA	Permitted
<i>Equisetum ramosissimum</i> Desf.	<i>Equisetum</i> spp. Vic, NSW, Tas, Qld, SA, ACT, WA	Prohibited
<i>Euphorbia grandidentata</i> Haw.		Unassessed
<i>Euphorbia lactea</i> Haw.		Unassessed
<i>Euphorbia leucocephala</i> Lotsy		Unassessed
<i>Euphorbia myrsinites</i> L.		Unassessed
<i>Euryops speciosissimus</i> DC.		Unassessed
<i>Euryops tenuissimus</i> (L.) DC.		Unassessed
<i>Festuca gautieri</i> (Hackel) K. Richter	Vic, Tas Quarantine Weed WA	Permitted
<i>Geranium lucidum</i> L.	Quarantine Weed WA	Permitted
<i>Geranium pyrenaicum</i> Burm. f.	Quarantine Weed WA	Permitted
<i>Geranium thunbergii</i> Sieb. & Zucc.	Quarantine Weed WA	Permitted
<i>Gnidia polycephala</i> (C.A.Mey.) Gilg.	Quarantine Weed WA	Permitted
<i>Gypsophila muralis</i> L.	Quarantine Weed WA	Permitted
<i>Hedychium coccineum</i> Buch.-Ham. ex Sm.	Quarantine Weed WA	Permitted
<i>Hedychium flavescens</i> Carey ex Roscoe	Quarantine Weed WA	Permitted
<i>Helenium autumnale</i> L.	<i>Helenium</i> spp. Quarantine Weed WA	Prohibited
<i>Hieracium aurantiacum</i> L.	<i>Hieracium</i> spp. Vic, NSW, Tas Quarantine Weed WA	Prohibited
<i>Hieracium pilosella</i> L.	<i>Hieracium</i> spp. Vic, NSW, Tas Quarantine Weed WA	Prohibited
<i>Ipomoea coccinea</i> L.		Unassessed
<i>Isatis tinctoria</i> L.	Quarantine Weed WA	Permitted
<i>Jasminum humile</i> L.	Quarantine Weed WA	Permitted
<i>Lantana trifolia</i> L.	<i>Lantana</i> spp. Qld, NSW	Prohibited
<i>Mentha arvensis</i> L.	Quarantine Weed WA	Permitted
<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	Quarantine Weed WA	Permitted
<i>Moraea bipartita</i> L. Bolus	<i>Moraea</i> spp. NSW, Tas, Vic	Permitted
<i>Moraea polystachya</i> (Thunb.) Ker Gawl.	<i>Moraea</i> spp. NSW, Tas, Vic	Permitted
<i>Muscari botryoides</i> (L.) Mill.	Quarantine Weed WA	Permitted
<i>Myroxylon balsamum</i> (L.) Harms		Unassessed
<i>Nassella tenuissima</i> (Trin.) Barkworth	NSW, SA, Vic, Quarantine Weed WA	Prohibited
<i>Nigella hispanica</i> L.	Quarantine Weed WA	Permitted
<i>Ocimum gratissimum</i> L.	Quarantine Weed WA	Permitted
<i>Onopordum nervosum</i> Boiss.	<i>Onopordum</i> spp. NSW, Tas <i>O. nervosum</i>	Prohibited

Weeds of the future? Threats to Australia's grazing industries by garden plants

Species	Legislation applicable (state/territory)	Legislation applicable (federal)*
	Quarantine Weed WA	
<i>Oxalis rubra</i> St.-Hil.	<i>Oxalis</i> spp. (except native species) NSW	Prohibited due to insufficient knowledge of risk status
<i>Phyllanthus acidus</i> (L.) Skeels		Prohibited due to insufficient knowledge of risk status
<i>Phyllanthus niruri</i> L.		Prohibited due to insufficient knowledge of risk status
<i>Pinellia pedatisecta</i> Schott	Quarantine Weed WA	Permitted
<i>Ranunculus bulbosus</i> L.		Prohibited due to insufficient knowledge of risk status
<i>Rubus spectabilis</i> Pursh	Quarantine Weed WA	Unassessed
<i>Rumex alpinus</i> L.		Prohibited
<i>Rumex sanguineus</i> L.		Prohibited
<i>Sanchezia speciosa</i> Leonard		Unassessed
<i>Scabiosa columbaria</i> L.	Quarantine Weed WA	Permitted
<i>Scilla natalensis</i> Planch.	Quarantine Weed WA	Permitted
<i>Spondias purpurea</i> L.	Quarantine Weed WA	Permitted
<i>Tamarix gallica</i> L.	Quarantine Weed WA	Unassessed
<i>Tecoma castanifolia</i> (D. Don) Melch.		Unassessed
<i>Terminalia sericea</i> Burch. ex DC.		Unassessed
<i>Viscum album</i> L.		Unassessed

4.2.9.1 State/territory legislation

State/territory legislation was checked against the *Weeds Australia* (2006) website except for Western Australia where legislation was determined using the current permitted and quarantine species list (WA Department of Food & Agriculture 2006a) and the current declared plants list (WA Department of Food & Agriculture 2006b).

State/territory legislation controlling the movement and sale of plants covers only 49 (18%) of the 281 species. Of these 49 species, 42 (15%) are quarantine weeds⁷ under Western Australia's state-wide quarantine system which means they are prohibited from entering the state.

4.2.9.2 Federal legislation

Plants prohibited and permitted under federal legislation were determined using the Australian Quarantine and Inspection Service's (AQIS) Import Conditions Database (ICON) (2006). It should be noted that federal legislation is expected to be tightened over the course of 2006 (R.P. Randall 2006b: *pers. comm.*) which should result in the prohibition from entry into Australia of over 3300 known agricultural and environmental weeds (Spafford Jacob, Randall, Lloyd 2004). However, these changes are unlikely to affect any of the 281 species contained in this report as they are already present in Australia.

Under current federal legislation, 233 (83%) of the 281 species are permitted to enter Australia. Only 21 species (8%) are prohibited from entry into the country: 14 species (5%) are banned because they are weeds and 7 species (3%) are prohibited due to insufficient knowledge of their risk status. The remaining 26 species (9%) are not presently recognised by ICON; under current federal laws, these would not need to undergo a weed risk assessment as they are already present in Australia and most are readily available from Australian nurseries.

⁷ Western Australia also maintains a permitted plant list based on weed risk assessment and some of these species in this report are permitted in this state. These species were retained in the final list as they still pose a potential threat to grazing regions in Australia.

Weeds of the future? Threats to Australia's grazing industries by garden plants

Table 4. 77 species controlled by state/territory and/or federal legislation. The remaining 203 species (not shown) are all permitted entry into Australia under current federal laws and permitted sale and movement across states and territories without any restrictions.

Species	Legislation applicable (state/territory)	Legislation applicable (federal)*
<i>Aethusa cynapium</i> L.		Unassessed
<i>Ageratina allissima</i> (L.) R. M. King & H. Rob.	Quarantine Weed WA	Unassessed
<i>Aloe aculeata</i> Pole Evans		Unassessed
<i>Aloe castanea</i> Schönl.		Unassessed
<i>Anaphalis margaritacea</i> (L.) Benth. & Hook. f.	Quarantine Weed WA	Permitted
<i>Anthriscus sylvestris</i> (L.) Hoffm.	Quarantine Weed WA	Permitted
<i>Aristolochia littoralis</i> Parodi	<i>Aristolochia</i> species other than native species Qld	Permitted
<i>Arundinaria gigantea</i> (Walter) Muhl.	<i>Arundinaria</i> spp. NSW <i>A. gigantea</i> Quarantine Weed WA	Prohibited
<i>Asclepias syriaca</i> L.	Quarantine Weed WA	Prohibited
<i>Bocconia frutescens</i> L.	Quarantine Weed WA	Unassessed
<i>Broussonetia papyrifera</i> (L.) Vent.	Quarantine Weed WA	Permitted
<i>Bulbine frutescens</i> (L.) Willd.	Quarantine Weed WA	Permitted
<i>Bunium bulbocastanum</i> L.	Quarantine Weed WA	Permitted
<i>Callicarpa americana</i> L.		Unassessed
<i>Cardamine lyrata</i> Bunge	Quarantine Weed WA	Unassessed
<i>Carpobrotus acinaciformis</i> (L.) L. Bolus		Unassessed
<i>Cephalanthus occidentalis</i> L.		Prohibited
<i>Cestrum diurnum</i> L.		Unassessed
<i>Chenopodium capitatum</i> (L.) Asch.	Quarantine Weed WA	Prohibited due to insufficient knowledge of risk status
<i>Commelina tuberosa</i> L.	Quarantine Weed WA	Prohibited due to insufficient knowledge of risk status
<i>Convolvulus althaeoides</i> L.	Quarantine Weed WA	Permitted
<i>Cordia sebestena</i> L.		Prohibited
<i>Cyanella lutea</i> L.f.		Unassessed
<i>Deschampsia flexuosa</i> (L.) Trin.	Quarantine Weed WA	Unassessed
<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Quarantine Weed WA	Permitted
<i>Dovyalis hebecarpa</i> (Gardner) Warb.		Unassessed
<i>Eleocharis acicularis</i> (L.) Roem. & Schult.	Quarantine Weed WA	Prohibited due to insufficient knowledge of risk status
<i>Equisetum arvense</i> L.	<i>Equisetum</i> spp. Vic, NSW, Tas, Qld, SA, ACT, WA	Prohibited
<i>Equisetum hyemale</i> L.	<i>Equisetum</i> spp. Vic, NSW, Tas, Qld, SA, ACT, WA	Permitted
<i>Equisetum ramosissimum</i> Desf.	<i>Equisetum</i> spp. Vic, NSW, Tas, Qld, SA, ACT, WA	Prohibited
<i>Euphorbia grandidens</i> Haw.		Unassessed
<i>Euphorbia lactea</i> Haw.		Unassessed
<i>Euphorbia leucocephala</i> Lott.		Unassessed
<i>Euphorbia myrsinites</i> L.		Unassessed
<i>Euryops speciosissimus</i> DC.		Unassessed
<i>Euryops tenuissimus</i> (L.) DC.		Unassessed
<i>Festuca gautieri</i> (Hackel) K. Richter	Vic, Tas Quarantine Weed WA	Permitted
<i>Geranium lucidum</i> L.	Quarantine Weed WA	Permitted
<i>Geranium pyrenaicum</i> Burm. f.	Quarantine Weed WA	Permitted
<i>Geranium thunbergii</i> Sieb. & Zucc.	Quarantine Weed WA	Permitted
<i>Gnidia polycephala</i> (C.A.Mey.) Gilg.	Quarantine Weed WA	Permitted
<i>Gypsophila muralis</i> L.	Quarantine Weed WA	Permitted
<i>Hedychium coccineum</i> Buch.-Ham. ex Sm.	Quarantine Weed WA	Permitted
<i>Hedychium flavescens</i> Carey ex Roscoe	Quarantine Weed WA	Permitted
<i>Helenium autumnale</i> L.	<i>Helenium</i> spp. Quarantine Weed WA	Prohibited
<i>Hieracium aurantiacum</i> L.	<i>Hieracium</i> spp. Vic, NSW, Tas Quarantine Weed WA	Prohibited
<i>Hieracium pilosella</i> L.	<i>Hieracium</i> spp. Vic, NSW, Tas Quarantine Weed WA	Prohibited
<i>Ipomoea coccinea</i> L.		Unassessed
<i>Isatis tinctoria</i> L.	Quarantine Weed WA	Permitted
<i>Jasminum humile</i> L.	Quarantine Weed WA	Permitted
<i>Lantana trifolia</i> L.	<i>Lantana</i> spp. Qld, NSW	Prohibited
<i>Mentha arvensis</i> L.	Quarantine Weed WA	Permitted
<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	Quarantine Weed WA	Permitted
<i>Moraea bipartita</i> L. Bolus	<i>Moraea</i> spp. NSW, Tas, Vic	Permitted
<i>Moraea polystachya</i> (Thunb.) Ker Gawl.	<i>Moraea</i> spp. NSW, Tas, Vic	Permitted
<i>Muscari botryoides</i> (L.) Mill.	Quarantine Weed WA	Permitted
<i>Myroxylon balsamum</i> (L.) Harms		Unassessed
<i>Nassella tenuissima</i> (Trin.) Barkworth	NSW, SA, Vic, Quarantine Weed WA	Prohibited
<i>Nigella hispanica</i> L.	Quarantine Weed WA	Permitted
<i>Ocimum gratissimum</i> L.	Quarantine Weed WA	Permitted

Weeds of the future? Threats to Australia's grazing industries by garden plants

Species	Legislation applicable (state/territory)	Legislation applicable (federal)*
<i>Onopordum nervosum</i> Boiss.	<i>Onopordum</i> spp. NSW, Tas O. nervosum Quarantine Weed WA	Prohibited
<i>Oxalis rubra</i> St.-Hil.	<i>Oxalis</i> spp. (except native species) NSW	Prohibited due to insufficient knowledge of risk status
<i>Phyllanthus acidus</i> (L.) Skeels		Prohibited due to insufficient knowledge of risk status
<i>Phyllanthus niruri</i> L.		Prohibited due to insufficient knowledge of risk status
<i>Pinellia pedatisecta</i> Schott	Quarantine Weed WA	Permitted
<i>Ranunculus bulbosus</i> L.		Prohibited due to insufficient knowledge of risk status
<i>Rubus spectabilis</i> Pursh	Quarantine Weed WA	Unassessed
<i>Rumex alpinus</i> L.		Prohibited
<i>Rumex sanguineus</i> L.		Prohibited
<i>Sanchezia speciosa</i> Leonard		Unassessed
<i>Scabiosa columbaria</i> L.	Quarantine Weed WA	Permitted
<i>Scilla natalensis</i> Planch.	Quarantine Weed WA	Permitted
<i>Spondias purpurea</i> L.	Quarantine Weed WA	Permitted
<i>Tamarix gallica</i> L.	Quarantine Weed WA	Unassessed
<i>Tecoma castanifolia</i> (D. Don) Melch.		Unassessed
<i>Terminalia sericea</i> Burch. ex DC.		Unassessed
<i>Viscum album</i> L.		Unassessed

4.3 11 case studies

The 11 taxa profiled in this report represent a variety of different vegetation types (tree, shrub, herb, grass) that present a potential threat to Australian grazing land across a wide geographic range (Table 5). The case studies are presented in Appendix 3.

Table 5. Taxa selected for case studies and their potential Australian distribution. **"No. of Australian nursery stock references" refers to the number of publications (up to 11) in which the species was listed followed by the latest year in which the species was recorded as sold (publication year in brackets). Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G – grass.

Profiled species	Vegetation type/ Longevity	*Availability in Australia	Number of weed references	Potential Australian distribution
<i>Asclepias syriaca</i> L.	H p	2 or 3 (1997/1998) (possibly available as seeds 2002)	33	South-east Qld, north-east and south-west NSW, north-west Victoria, mid north of SA through to the Nullabor Plains, mallee region of south-west WA.
<i>Equisetum</i> spp.	H p	<i>E. arvense</i> L. 5 (2004) <i>E. hyemale</i> L. 5 (2002) <i>E. ramosissimum</i> L. 0	<i>E. arvense</i> L. 65 <i>E. hyemale</i> L. 19 <i>E. ramosissimum</i> L. 23	Widespread, all states/territories (<i>E. arvense</i>) Northern WA, NT and Qld (<i>E. ramosissimum</i>)
<i>Festuca gautieri</i> (Hackel) K. Richter	G p	0	4	Southern Australia; WA, SA, Vic, Tas, NSW
<i>Hieracium</i> spp.	H p	<i>H. aurantiacum</i> L. 7 (2002) <i>H. pilosella</i> L. 6 (2004)	<i>H. aurantiacum</i> L. 47 <i>H. pilosella</i> L. 39	Southern Australia; SA, Vic, Tas, NSW (<i>H. aurantiacum</i>)
<i>Inula helenium</i> L.	H p	9 (2004)	24	South-east Qld, north-west NSW, southern SA, most of Vic, south-west WA
<i>Lonicera</i> spp.	S/V p	<i>L. caprifolium</i> L. 6 (2004) <i>L. etrusca</i> Santi 8 (2002) <i>L. maackii</i> (Rupr.) Maxim. 2 (1997/1998) <i>L. nitida</i> E.H. Wilson 9 (2004) <i>L. sempervirens</i> L. 5 (1997/1998) <i>L. tatarica</i> L. 10 (2004) <i>L. xylosteum</i> L. 5 (2004)	<i>L. caprifolium</i> L. 14 <i>L. etrusca</i> Santi 6 <i>L. maackii</i> (Rupr.) Maxim. 21 <i>L. nitida</i> E.H. Wilson 11 <i>L. sempervirens</i> L. 5 <i>L. tatarica</i> L. 41 <i>L. xylosteum</i> L. 14	Southern Australia; WA, SA, Vic, Tas, NSW (<i>L. tatarica</i>) Southern Australia; WA, SA, Vic, NSW (<i>L. caprifolium</i>)
<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	G p	4 (2004)	14	Northern Australia; WA, NT, Qld extending south to coastal Qld and NSW
<i>Nassella tenuissima</i> (Trin.) Barkworth	G p	2 (1998/1999)	22	Southern Australia; SA, Vic, Southern Qld extending south to coastal NSW Central inland WA across to south-west NT
<i>Onopordum nervosum</i> Boiss.	H b/p	0	7	Southern Australia; WA, SA, Vic, Tas
<i>Ornithogalum nutans</i> L.	H p	6 (2004)	19	Semi-arid regions of southern Australia; WA, SA, Vic, NSW
<i>Tamarix gallica</i> L.	S/T p	3 (2002 – seeds)	21	Southern & arid Australia; WA, SA, Vic, Qld, NSW, NT

4.3.1 Selection of the 11 profiled species

Most of the profiled species were selected because there are records of them as weeds overseas and because they are readily available in Australian nurseries or through Australian seed suppliers.

Several of the profiled species did not strictly qualify for this report. Their inclusion in the report is a concession to the limitations of our search criteria and the "Plant Database" (Randall 2006) and the fact that our species list is not exhaustive.

- Plants that have naturalised in Australia were excluded from our report but naturalised populations of *Onopordum nervosum* Boiss., *Equisetum* spp., *Hieracium* spp. and *Nassella tenuissima* (Trin.) Barkworth have been located. These outbreaks have either

been contained or eradicated and they only confirm the ability of these plants to naturalise in Australia, reinforcing our decision to profile them in this report.

- To determine the availability of the 281 plants in Australia, 11 nursery stock publications were consulted but none of these list *Onopordum nervosum* Boiss., *Equisetum ramosissimum* Desf. or *Festuca gautieri* (Hackel) K. Richter.
 - A well known television program advertised the sale of *Onopordum nervosum* Boiss. in New South Wales and Victoria (Burke's Backyard 2006) whilst a small infestation in New South Wales was the result of an internet mail order purchase (Dellow 2005).
 - *Festuca gautieri* (Hackel) K. Richter has only very recently become available in Australian nurseries (Groves, Boden & Lonsdale 2005: 32).
 - *Equisetum ramosissimum* L. has been retained because it is not presently prohibited by federal legislation from entering Australia and there has been an outbreak in New South Wales. It is also quite possible that this species has been sold in Australian nurseries as various mislabelled *Equisetum* species have been discovered in the past (R.P. Randall 2006b: *pers. comm.*)
- The methodology underpinning our species list also required the plants to be recorded as agricultural and/or environmental weeds overseas (as per the "Plant Database" (Randall 2006)) but *Onopordum nervosum* Boiss. and *Festuca gautieri* (Hackel) K. Richter have not been recorded as either. However, their potential risk to the grazing industries of Australia has been documented elsewhere (Groves, Boden & Lonsdale 2005: 27, 32; Randall 2004).

Finally, in developing the methodology for this report, the presence of state or territory based legislative controls was not a consideration as it was known that the majority of plants that are not naturalised in Australia may be freely imported into the country and moved without restriction across state and territory borders. An exception is the genus *Equisetum*. *Equisetum* is one of the world's worst groups of agricultural weeds (Holm et al. 1977) and it has been included on the *National Alert List for Environmental Weeds* (n.d.). Of the 281 species, it has the tightest controls but blanket restrictions on the genus do not exist at the federal level and no controls are in place in the Northern Territory. These species (or groups of species) are considered to present a particularly serious threat to the grazing industries of Australia (and the Australian environment) and were profiled on this basis and to highlight the gaps in existing legislation.

4.3.2 Summaries of the 11 profiled species

This is an abridged version of the information contained in the case studies (**Appendix 3**). References for this information are given within each case study.

Asclepias syriaca L.

Asclepias syriaca contains chemicals that are poisonous to livestock and there are reports of ingestion and death particularly as a result of overgrazing or drought. The species has caused enormous problems for farmers in western United States where it has proved very difficult to remove, particularly from fertile soil. It absorbs nutrients and water efficiently and may out-compete native plants or desirable grazing species. Fluffy seeds and milky sap may clog machinery. In agricultural crops, it can cause substantial losses in yield and quality.

Weeds of the future? Threats to Australia's grazing industries by garden plants

Asclepias syriaca has been sold from Australian nurseries.

The importation of *Asclepias syriaca* is prohibited by federal legislation but state legislation controlling the movement and sale of this species applies only in Western Australia.

Equisetum L. spp.

Equisetum species are a serious threat to the Australian agricultural and grazing industries. They threaten Australia's wetlands and poorly-drained areas – including farms and pastures - that receive in excess of 500 mm annual rainfall. Due to their extensive underground rhizome system, they have the ability to withstand fire. Rhizome fragments are easily spread by farming equipment and machinery. Chemical substances produced by the plants inhibit the growth of native or desirable grazing species.

Equisetum species are very toxic to livestock - particularly to horses that feed on contaminated hay – and poisoning of sheep and cattle has been reported.

Equisetum species are available from specialist nurseries around Australia.

Blanket prohibitions on all *Equisetum* species are enforced by all Australian states and the Australian Capital Territory. Legislation to this effect is required in the Northern Territory and at the federal level.

Festuca gautieri (Hackel) K. Richter

Festuca gautieri is of low palatability to livestock. Avoidance of this species by livestock will contribute to its spread and reduce pasture holding capacity. *Festuca gautieri* may also compete with native grasses, reducing their biodiversity in natural environments. A fungus occurring in *Festuca* spp. can poison horses and cause abortions in mares.

Festuca gautieri has been sold in Australian nurseries.

Several *Festuca* spp. are prohibited from importation into Australia by federal legislation but this does not include *F. gautieri*. *F. gautieri* is under legislative control in Western Australia, Victoria and Tasmania.

***Hieracium* L. spp.**

Hieracium species aggressively compete with native species and agricultural crops and pastures to form dense monocultures, reducing biodiversity and the forage and cropping value of land. They produce a chemical that hinders the growth of desirable and/or native plants.

Hieracium species mainly threaten tussock grasslands and tablelands in alpine and temperate regions of the eastern states of Australia, particularly where annual rainfall ranges from 500 - 1200 mm. They are likely to threaten native plants that occupy the area between tussock grasses. In Tasmania almost 40 of the native plants that occupy the inter-tussock spaces in areas of tussock grassland are already rare or threatened.

Hieracium species have previously been identified as a potential threat to the grazing industries of Australia.

Hieracium species have been sold from Australian nurseries.

Blanket prohibitions on *Hieracium* species apply in Victoria, New South Wales, Tasmania and Western Australia. Legislation to this effect is required in all other states and territories and at the federal level.

***Inula helenium* L.**

Inula helenium is toxic and avoidance of this species by livestock will contribute to its spread and reduce pasture holding capacity. The likely outcome of significant infestations would be reduced stocking rates.

I. helenium has been widely available from Australian nurseries.

No legislation currently applies to the importation, movement or sale of *I. helenium*.

***Lonicera* L. spp.**

Lonicera L. species are highly invasive plants adaptable to a wide range of habitats - including pastures and areas disturbed by grazing - and tolerant of fire, saline conditions and variable moisture regimes. Whilst the threat to livestock is not certain, the mature fruits of *L. tatarica* L., *L. maackii* (Rupr.) Herder and *L. xylosteum* L. are thought to be toxic. Ingestion of fruits has reportedly poisoned children in Europe.

Adapted to a wide range of habitats, *Lonicera* species produce chemicals that leach into the soil and inhibit the growth of other plants. In North America, the plants have a long photosynthetic period with an extended period of leaf coverage; the shade generated from their leaves inhibits the light available to and growth of native plants. *Lonicera* species also compete for pollinators reducing the seed set of native plants. Migrating birds that feed on the carbohydrate-rich fruits of *Lonicera* species instead of the high-fat native plants do not get the energy they need to make their long flights.

Several *Lonicera* species are prohibited from importation into Australia under federal legislation but not those listed amongst the 281 species. With the exception of Western Australia, no state/territory legislation applies to *Lonicera* species.

Weeds of the future? Threats to Australia's grazing industries by garden plants

Miscanthus floridulus (Labill.) Warb. ex K. Schum. & Lauterb.

Miscanthus floridulus forms dense communities which may impede stock access. Sharp bladed grasses can inflict damage to the mouths of stock leading to ulcers and weight loss.

Miscanthus floridulus has been available from Australian nurseries.

With the exception of Western Australia, there are no legislative controls applicable to *Miscanthus floridulus* at the state/territory or federal level.

Nassella tenuissima (Trin.) Barkworth

Nassella tenuissima is unpalatable to livestock and it aggressively competes with desirable pastoral species. If livestock are forced to feed on *N. tenuissima*, the undigested plant matter will cause serious illness or death. Sharp seeds may also cause injury to stock – including blindness – and devalue wool and pelts.

The highly adaptable nature of *N. tenuissima* has led to projections of a potential distribution of 14 million hectares – much of it grazing land. This is approximately 6 times the potential range of *N. trichotoma* (Nees) Hack. ex Arechav., a species which has cost the New South Wales grazing industry an estimated \$40m in lost production and can reduce the productivity of infected pastures by up to 95%.

It is predicted that *N. tenuissima* may be more invasive than *N. trichotoma* because of its ability to adapt to a wide range of climates. If left to spread, the economic cost to Australia over the next 60 years is estimated to be \$39m annually.

N. tenuissima was discovered in a Victorian nursery in 1998. It had been inadvertently imported and propagated under its old name - *Stipa tenuissima* Trin. It has also been sold as Elegant Spear Grass, a name more usually applied to the Australian native grass *Austrostipa elegantissima* (Labill.) S.W.L. Jacobs & J. Everett. In 2004, only eight years after it had been introduced to Australia, *N. tenuissima* was found naturalised in Tamworth, New South Wales.

Federal legislation prohibits the import of *Nassella tenuissima* but not *Stipa tenuissima*, the name under which *N. tenuissima* gained entry into Australia. Legislation applies to *N. tenuissima* in Victoria, South Australia and Western Australia.

Onopordum nervosum Boiss.

Onopordum L. species compete with desirable pastoral grasses, reducing the grazing capacity of pastoral land. Impenetrable thickets and spines of *Onopordum* species can cause injury to livestock. Their palatability depends on the life stage of the plant but dense spines inhibit grazing and favour their spread.

Onopordum L. infestations in New South Wales have been so damaging to the pastoral industry that farmers have partly subsidised biological control measures for *O. acanthium* L. and *O. illyricum* L.

The projected economic cost to Australia of an outbreak of *Onopordum nervosum* in terms of control measures and productivity loss is estimated to be \$43m.

O. nervosum was available in nurseries in New South Wales and Victoria. A small infestation of *O. nervosum* in New South Wales was the result of an Internet mail-order purchase.

Ornithogalum nutans L.

Ornithogalum L. species can dominate pastures crowding out all other species and lowering stocking rates. They are also toxic (poisonous bulbs) and livestock will not graze them. *Ornithogalum* species can crowd out native plants growing along river banks.

Ornithogalum nutans has been widely available from Australian nurseries.

No legislation currently applies to the importation, movement or sale of *Ornithogalum nutans* L.

Tamarix gallica L.

Tamarix species out-compete native plants for access to water. Long tap roots seeks out ground water and the plants remove enormous amounts of moisture from the soil through evaporation and transpiration. This voracious appetite for water is believed to reduce the water table and modify river morphology, soil chemistry and the composition of native plant communities. Soil salinity levels are raised and the frequency, intensity and effects of fire and flood are increased. Dense stands of *Tamarix* species can block streams causing floods during heavy rain. Whilst the plants provide shelter for wildlife, they offer little nutritional value and probably lessen native animal diversity.

T. gallica L. has been available from Australian nurseries and from seed suppliers.

Federal legislation allows the importation of any *Tamarix* spp. and state legislation applies to *T. gallica* only in Western Australia.

5 Results and Discussion

This report has established the presence in Australia of 281 species with a history as weeds overseas that have the potential to establish in various regions within Australia, threatening the grazing industries.

Further research and climatic modelling are required to predict the potential distribution of the 281 species at the regional level. This would assist in identifying the specific plant threats to each of the grazing industries – beef, dairy, wool and lamb.

The predicted economic cost to Australia of infestations of the 281 species has not been calculated. However, previous research has estimated that infestations of *Nassella tenuissima* (Trin.) Barkworth could cost Australia A\$39m over 60 years (Centre for International Economics 2001: 24) whilst infestations of *Onopordum nervosum* Boiss. may cost A\$43m (Centre for International Economics 2001: 26). If the 281 species are allowed to naturalise and invade Australia, much of the cost would be borne by the grazing industries in terms of lost productivity and the implementation of weed control measures.

The research has highlighted the link between plant naturalisation and commercial availability: the greater the number of individual plant introductions across Australia, the higher the number of propagules/vegetative parts capable of reproduction and the more opportunities for a species to successfully establish. This notion of “propagule pressure” is supported by recent research in New Zealand (Sullivan et al. 2004) as well as in south-eastern Australia (Mulvaney 2001) where a strong correlation was found between the extent to which a species has been planted and the probability that it had naturalised.

This report has revealed that 40% of the nursery stock listed in the 1998/1999 edition of the Aussie Plant Finder (Hibbert 1998) are known weeds (Randall 2006). Furthermore, all of the 281 species examined in this report are known agricultural and/or environmental weeds and 70% of these were available from Australian nurseries in 2004 (Hibbert 2004).

Almost two thirds (72%) of the 281 species are not recognised by either State or Commonwealth legislation. These species are permitted into Australia and may be freely sold and moved across state and territory borders. Under current federal legislation, formal weed risk assessment is not required for these species because they are already available in Australia.

6 Success in Achieving Objectives

The project's objectives were achieved. The *Western Australian Department of Agriculture and Food's* "Plant Database" (Randall 2006) was used to identify the garden plants currently present in Australian gardens but which have not yet naturalised. 281 plant species that are or have been present in Australia, that are a threat to grazing industries but that have not yet naturalised were identified. Their availability through the nursery industry has been determined. Eleven case studies are provided. Recommendations for actions by government agencies, the grazing industries and others in order to mitigate the risks are provided.

7 Impact on Meat and Livestock Industry

As discussed, there are many plant species, cultivated as garden plants, and often commercially available, that present a threat as future weeds of Australian grazing industries. The costs that would be incurred by grazing industries should they naturalise are potentially very great, in line with those incurred by already established weeds (see Discussion above).

8 Conclusions and Recommendations

The threats posed to grazing industries by garden plants that are present in Australia but which have not yet naturalised should be countered by measures involving education, development and implementation of appropriate policies, application of formal weed risk assessment processes, and improvement of capacity for early detection of weeds and appropriate responses. *Meat and Livestock Australia* could usefully contribute to these measures by following the recommendations presented below.

8.1 Educating graziers and the wider public on weed risks

Recommendation 1: Awareness of threats from garden escapees to grazing industries and other sectors, including Australia's natural environment, should be increased. It is especially important that graziers and the broader community of regions that support grazing industries are aware of the threats and both the value and need to respond as early as possible in the invasion process, including in the pre-naturalisation phase. *Meat and Livestock Australia*

should work with state government agencies and bodies such as the *CRC for Australian Weed Management* to increase awareness of these issues.

Recommendation 2: *Meat and Livestock Australia* should help to educate graziers and other land-holders to increase capacity to react appropriately to new infestations of plants that are a threat to grazing industries. Land-holders should know how to react, who to contact (local or state government etc); and what to do (collecting specimens, marking or mapping site etc). The "National Weed Detection Project" (Morton 2005) currently being conducted as a pilot study by the *CRC for Australian Weed Management*, provides a basis for appropriately linking land-holders into programs for early detection of and response to new weed infestations.

Recommendation 3: Especially in regions supporting grazing industries, communities (including individuals, industries and local governments) should be urged to avoid cultivating ornamental species that pose risks to grazing industries. Special attention should be paid to avoiding cultivation of plant species within climatic zones to which they are especially well adapted. The list of 281 garden plants provided in this report identifies species that should be given priority in this regard. *Meat and Livestock Australia* could help educate gardeners about the risks from garden escapes. Mutual co-operation with other industries would be important in this process.

8.2 Working with the nursery industry and weeds organisations

Recommendation 4: Garden plants that have not yet naturalised but which present a high risk to grazing or other industries, or to the natural environment, should be withdrawn from sale. This list of 281 species provided in this report provides a basis for judging these risks and establishing priorities. Particular species could be withdrawn from sale by voluntary agreement. However, to be effective, it would be necessary for any voluntary agreement to address all possible sources of plants. *Meat and Livestock Australia* should work with state government agencies, local government authorities, organisations such as the *CRC for Australian Weed Management*, and representative bodies within the nursery industries to have high risk species withdrawn. As part of this process, there would be great value in identifying and promoting non-weedy alternatives to these high risk species.

Recommendation 5: *Meat and Livestock Australia* should work with Commonwealth and state agencies and the nursery industry to encourage and develop policies that will counter the risks to grazing industries from escaped garden plants. These policies should focus on species that are already available in the country. Areas that need to be addressed include regulating against the cultivation of high risk species and establishing weed risk assessment protocols for threatening plants that are already present in the country.

8.3 Lobbying the government to tighten legislation

Recommendation 6: *Meat and Livestock Australia* should lobby relevant state and territory government agencies to formally assess and ban from sale and movement species listed in this report as high risk species for grazing industries. It is particularly important that high risk species are banned from regional areas that are especially climatically suitable for them.

Recommendation 7: In line with Recommendation 4, *Meat and Livestock Australia* should lobby the relevant Commonwealth agency to ban from importation species listed in this report and subsequently assessed as high risk species for grazing industries.

8.4 Promoting weed risk assessment processes

Recommendation 8: *Meat and Livestock Australia* should encourage the use of formal weed risk assessment processes for plants currently cultivated in gardens and commercially available through the nursery industry but which are not yet naturalised. Currently, formal weed risk assessment is only required for species that are proposed for importation but which are not already in the country. Formal weed risk assessment of plant species already in the country would require the involvement of relevant state agencies.

Recommendation 9: *Meat and Livestock Australia* should encourage the relevant Commonwealth/state authorities to conduct formal weed risk assessment of the 800 species contained in Appendix Two of this report.

9 Bibliography

Anonymous 2005 *Weed proofing Australia: making the new National Weed Strategy Work*. Working Paper September 2005. (WWF Australia, Sydney).

Australia's Virtual Herbarium. (Accessed 2006). Council of Heads of Australian Herbaria. www.chah.gov.au/avh/

Australian Quarantine & Inspection Service. (Accessed 2006.) *Import Conditions Database*. http://www.aqis.gov.au/icon32/asp/ex_alertscontent.asp

Bodkin, F. 1986 *Encyclopaedia Botanica: the essential reference guide to native and exotic plants in Australia*. 1st edition. (Collins/Angus & Robertson, Sydney).

Burke's Backyard website. (Accessed 2006.) http://www.burkesbackyard.com.au/1998/archives/26/in_the_garden/weeds_and_garden_pests/cotton_thistle

Centre for International Economics 2001 The CRC for Weed Management Systems: an impact assessment. *Technical Paper No. 6*. (CRC for Weed Management Systems, Adelaide).

Csurhes, S & Edwards, R 1998 *Potential environmental weeds in Australia: candidate species for preventative control*. (Environment Australia, Canberra).

Dellow, J. 2005 "Scotch, Illyrian and stemless thistles (*Onopordum* spp.)" 2nd edition. *Agfact*. NSW Department of Primary Industries.

Dodd, J. and Randall, R.P. 2002 Eradication of *Kochia* (*Bassia scoparia* (L.) A.J.Scott, Chenopodiaceae) in Western Australia. *Proceedings of the 13th Australian Weeds Conference*, pp. 300-303.

Grice, A 2003 *Weeds of significance to the grazing industries of Australia*. Weeds CRC report for Meat and Livestock Australia. (Meat and Livestock Australia, North Sydney).

Groves, R.H. (Convenor), Hosking, J.R., Batianoff, G.N., Cooke, D.A., Cowie, I.D., Johnson, R.W., Keighery, G.J., Lepschi, B.J., Mitchell, A.A., Moerkerk, M., Randall, R.P., Rozefelds, A.C., Walsh, N.G., Waterhouse, B.M. 2003 *Weed categories for natural and agricultural ecosystem management*. (Bureau of Rural Sciences, Canberra.)

Groves, R.H., Boden, N., Lonsdale, W.M. 2005 *Jumping the garden fence: invasive garden plants in Australia and their environmental and agricultural impacts*. CSIRO Report for WWF Australia. (WWF Australia, Sydney.)

Hibbert, M 1997 *The Aussie Plant Finder*. 1997/1998. (Florilegium, Australia).

Hibbert, M 1998 *The Aussie Plant Finder*. 1998/1999. (Florilegium, Australia).

Hibbert, M 1999 *The Aussie Plant Finder*. 1999/2000. (Florilegium, Australia).

Hibbert, M 2000 *The Aussie Plant Finder*. 2000/2001. (Florilegium, Australia).

Hibbert, M 2002 *The Aussie Plant Finder*. 2002 for 2. (Florilegium, Australia).

Weeds of the future? Threats to Australia's grazing industries by garden plants

Hibbert, M. 2004 *The Aussie Plant Finder*. (Florilegium, Australia).

Hobbs, R. J., Humphries, S. E. 1995 An integrated approach to the ecology and management of plant invasions. *Conservation Biology* 9 (4): 761-770.

Holm, L.G., Plunkett, D.L., Pancho, J.V., Herberger, J.P. 1977. *The World's Worst Weeds – distribution and biology*. (University Press of Hawaii, Hawaii).

Hutchison, F. 1993 *The Australian Plant Finder: 9000 plants and where to find them*. (Simon & Schuster, Australia.)

Lockwood, J.L., Cassey, P., Blackburn, T. 2005 The role of propagule pressure in explaining species invasions. *Trends in Ecology and Evolution* 20 (5): 223-228.

Morton, J. 2005 Establishing a weed detection network. In: *Proceedings of the 8th Queensland Weed Symposium*, Townsville, Qld, pp. 158-163.

Mulvaney, M. 2001 "The effect of introduction pressure on the naturalization of ornamental woody plants in south-eastern Australia." In R. H. Groves, F. D. Panetta, and J. G. Virtue, eds. *Weed Risk Assessment*. (CSIRO, Collingwood, Australia). Pp. 186–193.

National Alert List for Environmental Weeds. (Department of the Environment & Heritage.)
<http://www.deh.gov.au/biodiversity/invasive/weeds/alert-list.html>

Norfolk Press 343 Progress Rd Wacol QLD 4076 (Commercial printers of plant labels for the nursery industry since 1950; unpublished data formerly located at <http://www.norfolkpress.com.au/>)

Platt, K. 2002 *The Seed Search*. 5th edition. (Karen Platt, Sheffield, UK).

Randall, R. & Lloyd 2003 Weed warning from downunder: the weed potential of selected South African plants in cultivation in California. *CalEPPC News* 11(1): 4.

Randall, R. 2002 *A Global Compendium of Weeds*. (R.G. & F.J. Richardson, Melbourne).

Randall, R.P & Kessal, O. 2004 *National list of invasive and potentially invasive garden plants*. (WWF Australia, Sydney).

Randall, R.P. 2004 *Festuca gauteri* Weed Risk Assessment. WA Department of Agriculture and Food. Unpublished report.

Randall, R.P. 2006 Plant Database. Unpublished Data, Western Australian Department of Agriculture and Food.

Randall, R.P. 2006b CRC for Australian Weed Management/Department of Agriculture and Food, Locked Bag 4, Bentley DC WA 6983, Australia

Sinden, J., Jones, R., Hester, S., Odom, D., Kalisch, C., James, R. and Cacho, O. 2003. *The economic impact of weeds in Australia*. CRC for Australian Weed Management, Technical Series #8.

Spafford Jacob, H., Randall, R., Lloyd, S. 2004 *Front door wide open to weeds: an examination of the weed species permitted for import without weed risk assessment*. (WWF Australia, Sydney).

Spencer, R. 2005 *Environmental weeds, agricultural weeds, and garden plants: resource and information pack with emphasis on Victoria*. (Royal Botanic Gardens Board, Melbourne).

Spencer, R. 1995 The horticultural flora of south-eastern Australia and the Greenlife Database™. *ISHS Acta Horticulturae*. 413:121-124.
http://www.actahort.org/books/413/413_18.htm. (Greenlife Database™ is a commercial database comprising 37,000 plants available in Australian nurseries.)

Sullivan, J.J., Williams, P.A., Cameron, E.K. and Timmins, S.M. 2004 People and time explain the distribution of naturalised plants in New Zealand. *Weed Technology* 18: 1330-1333.

Virtue, J.G., Bennett, S.J. and Randall, R.P. 2004 Plant introductions in Australia: How can we resolve "weedy" conflicts of interest? *Proceedings of the 14th Australian Weeds Conference*, Eds B.M. Sindel and S.B. Johnson (Weeds Society of New South Wales).

Weeds Australia. (Accessed 2006.) Noxious weeds list. <http://www.weeds.org.au/noxious.htm>

Weeds of National Significance. (Department of the Environment & Heritage.)
<http://www.deh.gov.au/biodiversity/invasive/weeds/wons.html>

Western Australian Department of Agriculture. (Accessed 2006a) *Permitted & quarantine species list*.

http://www.agric.wa.gov.au/servlet/page?_pageid=449&_dad=portal30&_schema=PORTAL30&p_start_url=/pls/portal30/docs/FOLDER/IKMP/PW/PH/PLANT_INDEX.HTM

Western Australian Department of Agriculture. (Accessed 2006b) *Declared plants list*.
http://www.agric.wa.gov.au/servlet/page?_pageid=449&_dad=portal30&_schema=PORTAL30&p_start_url=/pls/portal30/docs/FOLDER/IKMP/PW/PH/PLANT_INDEX.HTM

10 Appendices

10.1 Appendix 1 281 garden plants that threaten grazing industries

The 281 species have been grouped by vegetation type – that is, trees/shrubs, herbs, vines/climbers, grasses (**Tables 6–9** respectively). Species with overseas records as noxious weeds have been placed at the top of each table. Subsequently, the tables were sorted by the number of overseas weed references followed by the number of nursery stock publications in which the plants were recorded. Sorting the tables in this manner provides an indication of the species that may present the greatest threat to Australia's grazing industries. However, it should be noted that western countries tend to report and publish on weeds more frequently and there may be a bias in weed reference numbers. For the same reason, information on toxicity and whether the plants have been reported as noxious, agricultural or environmental weeds may be understated as it relies on this information being available in the publications that underpin the "Plant Database" (Randall 2006).

Common names have been recorded; however, users of this report are cautioned that regional variation and duplication can occur in the use of common names and the vernacular names listed may not be exhaustive.

Species that are permitted into Western Australia according to the *WA Department of Agriculture & Food's* "Permitted List" were retained in the final list as they may threaten grazing regions in Australia.

Further research and climatic modelling is required to predict the potential Australian distribution of the 281 species at the regional level. This would help identify the specific plant threats to each of the grazing industries – beef, dairy, wool and lamb.

Weeds of the future? Threats to Australia's grazing industries by garden plants

281 species presented by vegetation type

Trees/shrubs

Table 6. List of the 94 tree/shrub species which threaten the grazing industries of Australia with information extracted from the “Plant Database” (Randall 2006). **No. of Australian nursery stock references” refers to the number of publications (up to 11) in which the species was listed followed by the latest year in which the species was recorded as sold (publication year in brackets). **Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G – grass.

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Reference d as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
36	<i>Elaeagnus angustifolia</i> L.	Elaeagnaceae	Europe, Asia	53	9 (2004)	Global, Europe, Hungary, Spain, Andalusia, North America, Global	Tropical/sub-Tropical, Mediterranean	S/T p		Noxious	Agricultural Weed	Environmental Weed	Oleaster, Russian-olive, Trebizond-date
95	<i>Rhodomyrtus tomentosa</i> (Aiton) Hassk. (sometimes spelt <i>R. tomentosus</i>)	Myrtaceae	south-east Asia, China, Indonesia	23	7 (2004)	Global, Asia, south-east Asia, Thailand, Australasia, New Zealand, Pacific, Hawaii, North America, United States, Florida	Tropical/sub-tropical	S/T p		Noxious	Agricultural Weed	Environmental Weed	Ceylon hill cherry
37	<i>Tamarix gallica</i> L.	Tamaricaceae	western & Mediterranean Europe, Asia, Africa	21	3 (2002 seeds)	Europe, United Kingdom, England, Central America, Mexico, Mediterranean Regions, Global	Tropical/sub-Tropical, Mediterranean	S/T p		Noxious		Environmental Weed	French tamarisk, Tamarisk
1	<i>Cestrum diurnum</i> L.	Solanaceae	West Indies	21	1 (1986)	Caribbean, Global, Pacific, Hawaii	Tropical/sub-Tropical, Mediterranean	S p	Toxic	Noxious	Agricultural Weed	Environmental Weed	Day-jessamine
38	<i>Euonymus japonicus</i> Thunb.	Celastraceae	Japan, China, Korea	19	9 (2004)	Europe, United Kingdom, England, Spain, Andalusia, France, Switzerland, Asia, Japan	Tropical/sub-Tropical, Mediterranean	S/T p	Toxic	Noxious		Environmental Weed	Japanese spindletree, spindletree
39	<i>Dichrostachys cinerea</i> (L.) Wight & Arn.	Fabaceae – Mimosaceae	Southern Africa, Africa	19	1 (1986)	Global, South America, Caribbean, Cuba, Pacific	Tropical/sub-Tropical, Mediterranean	S/T p		Noxious	Agricultural Weed	Environmental Weed	Marabou thorn, Acacia St. Dominique, Aroma

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
40	<i>Bocconia frutescens</i> L.	Papaveraceae	West Indies, Central & South America, Caribbean	13	2 (2004)	North America, United States, Africa, Central Africa, Pacific, Hawai'i	Tropical/sub-Tropical, Mediterranean	S/T p		Noxious		Environmental Weed	plume-poppy, tree celandine
2	<i>Viscum album</i> L.	Viscaceae		12	1 (1986)	North America, Global, Australasia, New Zealand, Middle East, Iran	Tropical/sub-Tropical, Mediterranean	S p	Toxic	Noxious	Agricultural Weed		European mistletoe, Mistletoe
3	<i>Cistus ladanifer</i> L.	Cistaceae	south-west, western & Mediterranean Europe, Portugal to France, western North Africa	8	10 (2004)	Mediterranean Regions, Europe, Canary Islands, United Kingdom, Australasia, New Zealand, North America, United States, California	Mediterranean	S p		Noxious		Environmental Weed	Common gum cistus, labdanum, laudanum
41	<i>Senna bicapsularis</i> (L.) Roxb.	Fabaceae – Caesalpinaceae	West Indies, South America	7	3 (2004)	Africa, South Africa, Pacific, Galapagos Islands, Global, Europe, Canary Islands, South America, Chile	Tropical/sub-Tropical, Mediterranean	S/T p		Noxious		Environmental Weed	Rambling cassia, Christmas bush, Monkeybush
42	<i>Cephalanthus occidentalis</i> L.	Rubiaceae	eastern Canada to Cuba	6	5 (2002)	North America, Canada, Caribbean, Puerto Rico, North America, United States, Global, Central America	Tropical/sub-Tropical	S/T p	Toxic	Noxious	Agricultural Weed		Button-willow, Buttonbush, Common buttonbush, Honey-bells
43	<i>Terminalia sericea</i> Burch. ex DC.	Combretaceae	southern & tropical Africa	5	2 (1986)	Africa, South Africa, Global	Tropical/sub-Tropical, Mediterranean	S/T p		Noxious	Agricultural Weed		Clusterleaf
4	<i>Elaeagnus multiflora</i> Thunb.	Elaeagnaceae	China, Korea, Japan	4	4 (2004)	Europe, United Kingdom, Caribbean, Puerto Rico, North America, United States	Tropical, Mediterranean	S p		Noxious		Environmental Weed	Cherry elaeagnus

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
5	<i>Lonicera tatarica</i> L.	Caprifoliaceae	Europe, Asia	41	10 (2004)	Europe, United Kingdom, England, Hungary, Global, North America, Canada	Tropical/sub-Tropical, Mediterranean	S p	Toxic		Agricultural Weed	Environmental Weed	Tartarian honeysuckle, Tatarian honeysuckle
76	<i>Broussonetia papyrifera</i> (L.) Vent.	Fabaceae – Papilionaceae	South East Asia.	34	7 (2004)	Europe, Hungary, France, Global, North America, Mediterranean Regions	Tropical/sub-Tropical, Mediterranean	T p			Agricultural Weed	Environmental Weed	paper-mulberry, tapa-cloth tree
6	<i>Symphoricarpos albus</i> (L.) S.F.Blake	Caprifoliaceae	USA, Canada	26	9 (2004)	Europe, Portugal, Germany, United Kingdom, Hungary, Spain, Andalusia, Ireland	Mediterranean	S p	Toxic		Agricultural Weed	Environmental Weed	Common snowberry, Snowberry, Waxberry
7	<i>Ribes rubrum</i> L.	Grossulariaceae	Europe	21	7 (2004)	Europe, Spain, Andalusia, Ireland, Lithuania, Asia, Japan, North America, Canada	Tropical/sub-Tropical, Mediterranean	S p			Agricultural Weed	Environmental Weed	Redcurrant, Garnetberry, Whitecurrant
8	<i>Lonicera maackii</i> (Rupr.) Maxim.	Caprifoliaceae	Europe, Asia, northern China	21	2 (1997/1998)	Europe, Hungary, Global, North America, Canada, United States	Tropical/sub-Tropical, Mediterranean	S p	Toxic			Environmental Weed	Amur honeysuckle, Bush honeysuckle
44	<i>Pittosporum tobira</i> (Thunb.) W.T.Aiton	Pittosporaceae	Japan, China, Korea	16	11 (2004)	Mediterranean Regions, Asia, Japan, Europe, Italy, Capri, Portugal, France	Tropical/sub-Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	Australian-laurel, Japanese pittosporum, Mock orange
45	<i>Hibiscus syriacus</i> L.	Malvaceae	Old World tropics, possibly eastern Asia	16	11 (2004)	Europe, Hungary, Ukraine, Asia, Japan, Mediterranean Regions, Global	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Rose-of-Sharon, Shrub-althaea
46	<i>Euonymus europaeus</i> L.	Celastraceae	southern Europe, western Asia	15	9 (2004)	Australasia, New Zealand, Europe, United Kingdom, eastern Europe	Mediterranean	S/T p	Toxic			Environmental Weed	European spindle tree, Spindle tree

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
47	<i>Hydrangea macrophylla</i> (Thunb.) Ser.	Hydrangeaceae	Old World, eastern Asia, Japan	15	7 (2004)	Europe, United Kingdom, England, Portugal, Austria, Central America, Mexico	Tropical/sub-Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	French hydrangea
9	<i>Lycium chinense</i> Mill.	Solanaceae	Asia, China, Japan, Korea	15	3 (2004)	Europe, United Kingdom, England, Hungary, Asia, Taiwan, Mediterranean Regions, North America, northeastern Canada/United States	Tropical/sub-Tropical, Mediterranean	S p			Agricultural Weed		Chinese boxthorn, Chinese matrimony-vine, Chinese wolfberry, Wolfberry
10	<i>Lonicera xylosteum</i> L.	Caprifoliaceae	Europe, Asia	14	5 (2004)	Europe, United Kingdom, England, North America, Canada/United States	Mediterranean	S p	Toxic		Agricultural Weed	Environmental Weed	European fly honeysuckle, Fly honeysuckle
48	<i>Citrus sinensis</i> (L.) Osbeck	Rutaceae	China, Vietnam	13	8 (2004)	Pacific, Galapagos Islands, Caribbean, Puerto Rico, Global, Australasia, New Zealand	Tropical/sub-Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	Sweet orange, Blood orange, Navel orange, Valencia orange
49	<i>Citrus aurantiifolia</i> (Christm.) Swingle	Rutaceae	tropical Asia, Indo-Malayan region	13	7 (2004)	Central America, Mexico, Pacific, Galapagos Islands, Caribbean, Global, Caribbean, Puerto Rico	Tropical/sub-Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	Lime, Key lime, Mexican lime, West Indian lime
11	<i>Jasminum humile</i> L.	Oleaceae	China, Bhutan, India, Nepal, Pakistan	12	9 (2004)	Africa, South Africa, Global, Australasia, New Zealand, Europe, United Kingdom	Tropical/sub-Tropical, Mediterranean	S p				Environmental Weed	Italian yellow jasmine

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
12	<i>Elaeagnus pungens</i> Thunb.	Elaeagnaceae	Japan, eastern Asia	12	7 (2004)	Global, Europe, Switzerland, North America, eastern & southern USA, Florida	Tropical/sub-Tropical, Mediterranean	S p				Environmental Weed	Nash
77	<i>Ravenala madagascariensis</i> Sonn.	Musaceae	Madagascar	12	10 (2004)	Africa, Pacific, Hawaii, Caribbean, Puerto Rico, Global	Tropical/sub-Tropical, Mediterranean	T p				Environmental Weed	Traveller's palm, Traveller's tree
13	<i>Lonicera nitida</i> E. H. Wilson	Caprifoliaceae	China	11	9 (2004)	Europe, United Kingdom, England, Austria, Canary Islands, Australasia, New Zealand	Mediterranean	S p				Environmental Weed	Box honeysuckle
14	<i>Erica cinerea</i> L.	Ericaceae	Europe	10	9 (2004)	Australasia, New Zealand, Europe, United Kingdom	Mediterranean	S p				Environmental Weed	Bell-heather, Gray heath
50	<i>Fuchsia boliviana</i> Carrière (alternative name possibly <i>F. corymbiflora</i>)	Onagraceae	South America	10	8 or 9 (2004)	Europe, Canary Islands, Pacific, Hawaii, Australasia, New Zealand	Tropical, Mediterranean	S/T p				Environmental Weed	Bolivian fuchsia
15	<i>Ocimum gratissimum</i> L.	Lamiaceae	Madagascar	10	6 (2004)	Pacific, Hawaii, Marquesas, Vanuatu	Tropical/sub-Tropical	S p			Agricultural Weed	Environmental Weed	Basil
78	<i>Corynocarpus laevigatus</i> J. R. Forst. & G. Forst. (alternative name <i>C. laevigata</i>)	Corynocarpaceae	New Zealand, Vanuatu	10	6 (2004)	North America, Pacific, Hawaii	Tropical	T p	Toxic			Environmental Weed	Karaka nut
51	<i>Spondias purpurea</i> L.	Anacardiaceae	Central & South America	10	5 (2004)	Global, Africa, Nigeria, Pacific, Galapagos Islands, Isla Santa Cruz, Caribbean, Puerto Rico	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Purple mombin, Red mombin, Spanish plum
79	<i>Cecropia peltata</i> L.	Cecropiaceae	Mexico to Venezuela, Caribbean, tropical America	10	5 (2004)	Global, Pacific, South East Asia, North America, United States	Tropical/sub-Tropical	T p			Agricultural Weed	Environmental Weed	pop-a-gun, snakewood, trumpet-tree

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
80	<i>Manilkara zapota</i> (L.) P.Royen	Sapotaceae	central America, Mexico to Nicaragua	10	5 (2004)	Caribbean, North America, United States, Florida, Pacific, Pohnpei	Tropical/sub-Tropical, Mediterranean	T p	Toxic			Environmental Weed	Sapodilla, Beef apple, Chico sapote, Chiku, Naseberry, Nispero
52	<i>Vitex agnus-castus</i> L.	Lamiaceae	southern & Mediterranean Europe	10	11 (2004)	Africa, Central Africa, Global, eastern Europe, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Chasteberry, Chastetree
81	<i>Enterolobium cyclocarpum</i> (Jacq.) Griseb.	Fabaceae – Mimosaceae	continental tropical America	9	5 (2004)	South America, Global, Caribbean, Puerto Rico, South East Asia, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	T p	Toxic			Environmental Weed	Devil's-ear, Earpod tree, Elephant's-ear, Monkeysoap
16	<i>Vaccinium corymbosum</i> L.	Ericaceae	North America, USA, Canada	9	10 (2004)	Europe, United Kingdom, England, Denmark, Australasia, New Zealand	Sub-Tropical, Mediterranean	S p				Environmental Weed	Blueberry, American blueberry, Highbush blueberry
82	<i>Albizia chinensis</i> (Osbeck) Merr.	Fabaceae – Mimosaceae	Pakistan to Indonesia	9	1 (2002 seeds)	Africa, Global, Pacific, Hawaii, South East Asia, North America, United States	Tropical/sub-Tropical	T p				Environmental Weed	Chinese albizia, silktree
17	<i>Teucrium chamaedrys</i> L.	Lamiaceae	Mediterranean	8	9 (2004)	Europe, United Kingdom, England, Denmark, Middle East, Turkey	Mediterranean	S p	Toxic			Agricultural Weed	Wall germander
53	<i>Coccoloba uvifera</i> (L.) L.	Polygonaceae	West Indies, Central & South America	8	8 (2004)	Asia, Japan, Africa, Central Africa, Pacific, Hawaii, North America	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Jamaican kino, Platterleaf, Se-grape

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Reference d as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
54	<i>Phyllanthus acidus</i> (L.) Skeels	Euphorbiaceae	South America, Brazil	8	7 (2004)	Central America, Mexico, Pacific, Galapagos Islands, Hawaii, Caribbean, Puerto Rico	Tropical/sub-Tropical	S/T p				Environmental Weed	Otaheite gooseberry, Chermi, Star gooseberry
55	<i>Daphne laureola</i> L.	Thymelaeaceae		8	7 (2004)	Europe, Denmark, United Kingdom, North America, United States, northwest, Australasia, New Zealand	Mediterranean	S/T p	Toxic			Environmental Weed	Spurge-laurel
83	<i>Pouteria campechiana</i> (Kunth) Baehni	Sapotaceae	Central America, Mexico to Panama, West Indies	8	6 (2004)	Caribbean, Puerto Rico, South East Asia, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	T p				Environmental Weed	Canistel, Egg-fruit tree
18	<i>Rhododendron luteum</i> Sweet	Ericaceae	central & eastern Europe, south-west Asia	7	7 (2002)	Europe, United Kingdom, England, Austria, Middle East, Turkey	Mediterranean	S p			Agricultural Weed		Honeysuckle azalea, Pontic azalea
84	<i>Pimenta dioica</i> (L.) Merr.	Myrtaceae	Central America, Mexico to Nicaragua	7	3 (2004)	Pacific, Hawaii, Caribbean, Puerto Rico	Tropical/sub-Tropical	T p				Environmental Weed	Allspice, Jamaica pepper, Pimento
85	<i>Spondias mombin</i> L.	Anacardiaceae	Central & South America	7	2 (1986)	South America, Pacific, Galapagos Islands, Global, Caribbean, Puerto Rico	Tropical/sub-Tropical, Mediterranean	T p			Agricultural Weed		Yellow mombin, Hog plum, Jamaica plum
86	<i>Liriodendron tulipifera</i> L.	Magnoliaceae	eastern North America	7	11 (2004)	North America, Canada, United States, Global, Australasia, New Zealand	Sub-Tropical, Mediterranean	T p	Toxic		Agricultural Weed		Canary whitewood, Tulip-poplar, Tuliptere, Yellow-poplar
19	<i>Breynia disticha</i> J. R. Forst. & G. Forst.	Capparaceae	Pacific Islands	7	1 (1986)	Pacific, Hawai'i, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	S p			Agricultural Weed	Environmental Weed	foliage-flower, snowbush

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
20	<i>Viburnum plicatum</i> Thunb.	Adoxaceae	China, Japan	6	9 (2004)	Global, Australasia, New Zealand, North America, eastern, United States, Connecticut	Mediterranean	S p				Environmental Weed	Japanese snowball
21	<i>Sanchezia speciosa</i> Leonard	Acanthaceae	northern South America, Peru, Ecuador, Caribbean, Cuba	6	7 (2004)	Pacific, Hawaii, Caribbean, Puerto Rico, South East Asia, North America, United States	Tropical	S p				Environmental Weed	Shrubby whitevein
56	<i>Justicia carnea</i> Lindl.	Acanthaceae	Brazil	6	7 (2004)	Pacific, Galapagos Islands, Australasia, New Zealand, South East Asia, Australasia, New Zealand	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Brazilian-plume, Flamingo-flower, Plumeflower
57	<i>Chrysophyllum oliviforme</i> L.	Sapotaceae	Florida to Hispaniola (Caribbean)	6	6 (2004)	Pacific, Hawaii, South East Asia, North America, United States	Tropical	S/T p				Environmental Weed	Damson-plum, Satinleaf, Wild star-apple
87	<i>Myroxylon balsamum</i> (L.) Harms	Fabaceae – Papilionaceae	Central America, Mexico to Colombia	6	3 (1986)	South America, Global, Caribbean, central Asia, Sri Lanka, Pacific, Pohnpei	Tropical/sub-Tropical	T p				Environmental Weed	Balsam of Tolu
58	<i>Fuchsia paniculata</i> Lindl.	Onagraceae	Mexico to Panama	6	2 (2000/2001)	Pacific, Hawaii, Australasia, New Zealand	Tropical/sub-Tropical	S/T p				Environmental Weed	Shrubby fuchsia
22	<i>Cistus salviifolius</i> L.	Cistaceae	south-west Asia, Mediterranean	6	11 (2004)	Middle East, Turkey, Global, Europe, United Kingdom, Australasia, New Zealand, North America, United States	Mediterranean	S p			Agricultural Weed		Salvia cistus

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
23	<i>Escallonia rubra</i> (Ruiz & Pav.) Pers. (alternative names may be <i>E. rubra</i> var. <i>macrantha</i> or <i>E. macrantha</i> but synonymy is unclear)	Grossulariaceae	Chile	5	8-9 (2004) (1993 reference depends on whether <i>E. rubra</i> var. <i>macrantha</i> / <i>E. macrantha</i> are synonyms for <i>E. rubra</i>)	North America, United States, California, Australasia, New Zealand, North America, United States	Mediterranean	S p				Environmental Weed	Redclaws
88	<i>Tabebuia rosea</i> (Bertol.) DC.	Bignoniaceae	Mexico, Central America, Venezuela to Ecuador	5	8 (2004)	Pacific, Galapagos Islands, Hawaii, South East Asia, Singapore, Caribbean, Puerto Rico	Tropical/sub-Tropical, Mediterranean	T p				Environmental Weed	Pink poui, Rosy trumpet-tree, Roble
59	<i>Clerodendrum speciosissimum</i> Van Geert	Lamiaceae	Java, Indonesia, Marquesas (Pacific)	5	6 (2004)	Caribbean, Puerto Rico, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Javanese glorybower
60	<i>Euphorbia lactea</i> Haw.	Euphorbiaceae	East Indies	5	5 (2004)	Pacific, Galapagos Islands, Hawaii, Caribbean, Puerto Rico, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	Candelabra-cactus, Candelabra-spurge, Dragon-bones, False cactus, Hatrack-cactus, Mottled spurge
61	<i>Cordia sebestena</i> L.	Boraginaceae	Mexico to Venezuela	5	3 (1986)	Caribbean, Puerto Rico, Pacific, Hawaii, North America, United States, Pantropics	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Geigertree, Large-leaf geigertree
24	<i>Ugni molinae</i> Turcz.	Myrtaceae	South America, Bolivia, Chile	5	10 (2004)	Australasia, New Zealand, Europe, United Kingdom, Global	Mediterranean	S p				Environmental Weed	Myrtus berry, Chilean guava, Strawberry myrtle

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
62	<i>Clethra arborea</i> Aiton	Clethraceae	Madiera	5	10 (2004)	Australasia, New Zealand, Global, Europe, Azores, Europe, United Kingdom, Australasia, New Zealand	Mediterranean	S/T p				Environmental Weed	Folhado, Lily-of-the-valley-tree
25	<i>Erica vagans</i> L.	Ericaceae		4	8 (2004)	Europe, United Kingdom, Australasia, New Zealand, North America, United States	Mediterranean	S p				Environmental Weed	Cornish heath
63	<i>Luma apiculata</i> (DC.) Burret	Myrtaceae	Chile, Argentina	4	8 (2004)	Europe, United Kingdom, England, Australasia, New Zealand	Mediterranean	S/T p				Environmental Weed	Chilean myrtle
64	<i>Dovyalis hebecarpa</i> (Gardner) Warb.	Flacourtiaceae	India, Sri Lanka	4	6 (2004)	Pacific, Hawaii, Caribbean, Puerto Rico, North America, United States	Tropical, Mediterranean	S/T p				Environmental Weed	Ceylon-gooseberry, Ketembilla, Kitambilla
65	<i>Tecoma castanifolia</i> (D. Don) Melch.	Bignoniaceae	Ecuador	4	2 (1986)	Pacific, Hawaii, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Chestnutleaf trumpetbush
66	<i>Pimenta racemosa</i> (Mill.) J. W. Moore	Myrtaceae	Caribbean	4	1 (1986)	Africa, Central Africa, Pacific, Hawaii	Tropical	S/T p				Environmental Weed	Bayrum-tree, West Indian bay
67	<i>Buddleja salviifolia</i> (L.) Lam.	Loganiaceae	southern & tropical Africa	3	9 (2004)	Global, Australasia, New Zealand, Africa, South Africa	Tropical/sub-Tropical	S/T p			Agricultural Weed		South African sage bush, Butterfly bush, Mountain sage, Sagewood, Wild sage
68	<i>Ilex paraguariensis</i> A. St.-Hil.	Aquifoliaceae	Brazil to Argentina	3	9 (2004)	Pacific, Hawaii, Pantropics	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Brazilian-tea, mate, Paraguayan-tea, Yerba-mate
89	<i>Virgilia oroboides</i> (P. J. Bergius) T. M. Salter	Fabaceae – Papilionaceae	southern Africa	3	8 (2004)	Africa, South Africa, Australasia, New Zealand	Tropical, Mediterranean	T p			Agricultural Weed		Keurboom

Weeds of the future? Threats to Australia's grazing industries by garden plants

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90	<i>Cunninghamia lanceolata</i> (Lamb.) Hook.	Taxodiaceae	China	3	8 (2004)	Australasia, New Zealand, North America, United States	Tropical, Mediterranean	T p				Environmental Weed	China–fir, Chinese–fir
26	<i>Callicarpa americana</i> L.	Lamiaceae	southern USA, West Indies	3	7 (2004)	North America, United States, Global, Central America, Cuba	Tropical/sub–Tropical	S p	Toxic		Agricultural Weed		American beauty–berry, beauty–berry, French–mulberry
69	<i>Euphorbia leucocephala</i> Lotsoy	Euphorbiaceae	Central America	3	7 (2004)	Pacific, Hawaii, Caribbean, Puerto Rico, North America, United States	Tropical/sub–Tropical	S/T p				Environmental Weed	Pascuita
27	<i>Myrsine africana</i> L.	Myrsinaceae	Southern Africa	3	6 (2004)	Africa, South Africa, Europe, United Kingdom	Tropical/sub–Tropical, Mediterranean	S p	Toxic		Agricultural Weed		Cape Myrtle, African Boxwood
28	<i>Bougainvillea spectabilis</i> Willd.	Nyctaginaceae	Brazil	3	2–4 (2004) ('Elizabeth' B. spectabilis hybrid in 1999/2000 & 2000/2001)	Global, Caribbean, Puerto Rico, Pacific, Galapagos Islands, Isla Santa Cruz	Tropical/sub–Tropical, Mediterranean	S p				Environmental Weed	Bougainvillea
70	<i>Ilex cassine</i> L.	Aquifoliaceae	Tropical Africa	3	2 (1986)	Pacific, Hawaii, Caribbean, Puerto Rico	Tropical/sub–Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	Dahoon, Dahoon holly
91	<i>Halleria lucida</i> L.	Scrophulariaceae	southern, eastern & tropical Africa, Madagascar	2	9 (2004)	Australasia, New Zealand, Africa, South Africa	Tropical/sub–Tropical, Mediterranean	T p			Agricultural Weed		African honeysuckle, Tree fuchsia, Hilarious Lucy, White olive, Wild fuchsia, Christmasberry
71	<i>Heteromeles arbutifolia</i> M. Roem. (alternative names <i>H. salicifolia</i> , <i>Photinia arbutifolia</i>)	Rosaceae	USA, Oregon, California	2	7 (2004)	Pacific, Hawaii	Tropical, Mediterranean	S/T p	Toxic			Environmental Weed	
29	<i>Chamaecytisus prolifer</i> (L. f.) Link (alternative names <i>C. proliferus</i> , <i>C. palmensis</i>)	Fabaceae – Papilionaceae	Canary Islands	2	6 (2004)	Global	Mediterranean	S p				Environmental Weed	Arbusto, Tree lucerne
72	<i>Gnidia polycephala</i> (C.A.Mey.) Gilg.	Thymelaeaceae	southern Africa	2	2 (2002)	Africa, South Africa	Tropical/sub–Tropical	S/T p	Toxic		Agricultural Weed		

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Reference d as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
73	<i>Leucadendron rubrum</i> Burm.f.	Proteaceae	southern Africa	2	2 (2002 seeds)	Africa, South Africa	Mediterranean	S/T p			Agricultural Weed		Spinning top conebush
74	<i>Guaiacum officinale</i> L.	Zygophyllaceae	West Indies, Colombia	2	2 (1986)	Pacific, Hawaii, Global	Tropical/sub-Tropical, Mediterranean	S/T p				Environmental Weed	Guaiacum, Lignum-vitae
30	<i>Medinilla cumingii</i> (also as <i>M. cummingii</i>) Naud.	Melastomataceae		2	1 (2004)	Pacific, Hawaii	Tropical	S p				Environmental Weed	Medinilla
31	<i>Helichrysum argyrophyllum</i> DC.	Asteraceae	southern Africa	1	7 (2004)	Africa, South Africa		S p			Agricultural Weed		Mo's gold, Golden guinea everlasting
32	<i>Barleria obtusa</i> Nees	Acanthaceae	southern Africa	1	6 (2004)	Africa, South Africa		S p			Agricultural Weed		Bush violet
92	<i>Euphorbia grandidens</i> Haw.	Euphorbiaceae	southern Africa	1	3 (2002)	Africa, South Africa	Mediterranean	T p succulent	Toxic		Agricultural Weed		Large-toothed euphorbia, Valley-bush euphorbia
33	<i>Tylecodon paniculatus</i> (L. f.) Toelken	Crassulaceae	southern Africa	1	3 (2000/2001)	Africa, South Africa	Mediterranean	S p succulent	Toxic		Agricultural Weed		Botterboom, Butter tree
75	<i>Grewia occidentalis</i> L.	Tiliaceae	southern Africa to Zimbabwe	1	3 (1999/2000)	Africa, South Africa	Tropical/sub-Tropical, Mediterranean	S/T p			Agricultural Weed		Crossberry
93	<i>Aloe castanea</i> Schonl.	Aloeaceae	southern Africa	1	2 (2000/2001)	Africa, South Africa		T p succulent			Agricultural Weed		Cat's tail aloe,
34	<i>Euryops speciosissimus</i> DC.	Asteraceae	southern Africa	1	2 (1999/2000)	Africa, South Africa		S p			Agricultural Weed		Clanwilliam daisy
94	<i>Euphorbia ingens</i> E. Mey. ex Boiss.	Euphorbiaceae	southern Africa	1	2 (1999/2000)	Africa, South Africa	Tropical/sub-Tropical, Mediterranean	T p succulent	Toxic		Agricultural Weed		Cactus euphorbia, Candleabra-tree, naboom
35	<i>Euryops tenuissimus</i> (L.) DC.	Asteraceae	southern Africa	1	2 (1986)	Africa, South Africa		S p	Toxic		Agricultural Weed		Resin bush

Weeds of the future? Threats to Australia's grazing industries by garden plants

Herbs

Table 7. List of the 162 herb species which threaten the grazing industries of Australia with information extracted from the “Plant Database” (Randall 2006). *”No. of Australian nursery stock references” refers to the number of publications (up to 11) in which the species was listed followed by the latest year in which the species was recorded as sold (publication year in brackets). **Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G - grass.

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
1	<i>Equisetum arvense</i> L.	Equisetaceae	temperate northern hemisphere	65	5 (2004)	Global, North America, Canada, western & northern United States, California, Nebraska, Montana, Oregon, Middle East, Turkey, New Zealand, western & eastern Europe, Spain, Italy, France, Australasia, New Zealand, South America, Brazil, Africa, Ethiopia, Asia, Kashmir, Korea, China, Japan, Bhutan	Tropical/sub-Tropical, Mediterranean	H p	Toxic	Noxious	Agricultural Weed	Environmental Weed	Common horse tail
2	<i>Isatis tinctoria</i> L.	Brassicaceae	Europe, Asia	47	8 (2004)	Europe, United Kingdom, England, Spain, Andalusia, North America, Global, Mediterranean Regions, South America	Sub-Tropical, Mediterranean	H b/p		Noxious	Agricultural Weed	Environmental Weed	Dyer's woad, Woad
3	<i>Hieracium aurantiacum</i> L.	Asteraceae	northern, central and eastern Europe	47	7 (2002)	Asia, Japan, North America, Canada, United States, Global, South America, Chile	Sub-Tropical, Mediterranean	H p		Noxious	Agricultural Weed	Environmental Weed	Orange hawkweed
4	<i>Galega officinalis</i> L.	Fabaceae – Papilionaceae	Europe, Asia, central & southern Russia, Pakistan	39	8 (2004)	Europe, England, France, United Kingdom, North America, Global, South America, Chile	Tropical/sub-Tropical, Mediterranean	H p	Toxic	Noxious	Agricultural Weed	Environmental Weed	Galega, Goat's-rue

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
5	<i>Hieracium pilosella</i> L.	Asteraceae	Europe, Asia	39	6 (2004)	North America, Global, South America, Chile, North America, northeastern Canada/United States	Mediterranean	H p		Noxious	Agricultural Weed	Environmental Weed	Mouse-ear hawkweed
6	<i>Artemisia vulgaris</i> L.	Asteraceae	Europe, Asia	37	8 (2004)	Europe, United Kingdom, England, North America, Canada, Global, Middle East, Turkey	Tropical/sub-Tropical, Mediterranean	H/S p	Toxic	Noxious	Agricultural Weed	Environmental Weed	Mugwort
7	<i>Asclepias syriaca</i> L.	Asclepiadaceae	North America	33	2 or 3 (1997/1998) (2002; possibly available as seeds)	Global, Europe, Czechoslovakia, Hungary, Switzerland, Slovenia, France, Lithuania, Denmark, Austria, Spain, eastern Europe, North America, Canada, United States, Nebraska, Kentucky, Mediterranean regions	Mediterranean	H p	Toxic	Noxious	Agricultural Weed	Environmental Weed	Common milkweed
8	<i>Hedychium flavescens</i> Carey ex Roscoe	Zingiberaceae	Madagascar, India, Himalayas	27	7 (2004)	Global, Africa, South Africa, Australasia, New Zealand, Pacific, Hawaii	Tropical, Mediterranean	H p		Noxious		Environmental Weed	Cream-ginger, Yellow ginger-lily, Yellow ginger
9	<i>Anthriscus sylvestris</i> (L.) Hoffm.	Apiaceae	Europe, Asia	24	6 (2004)	Global, North America, Northeastern Canada/United States, Europe, United Kingdom	Tropical, Mediterranean	H a	Toxic	Noxious	Agricultural Weed	Environmental Weed	Cow parsley, Wild chervil
10	<i>Salvia sclarea</i> L.	Lamiaceae	Europe, Asia	22	10 (2004)	Europe, United Kingdom, England, Hungary, Spain, Andalusia Lithuania, North America	Tropical/sub-Tropical, Mediterranean	H b/p		Noxious	Agricultural Weed	Environmental Weed	Clary sage

Weeds of the future? Threats to Australia's grazing industries by garden plants

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11	<i>Equisetum hyemale</i> L.	Equisetaceae	Europe, Asia, North America	19	5 (2002)	Global, eastern Europe, United Kingdom, Spain, Australasia, New Zealand, Asia, Korea, China, North America, United States, California, Montana, Canada	Sub-Tropical, Mediterranean	H p	Toxic	Noxious	Agricultural Weed	Environmental Weed	Horse tail
12	<i>Ipomoea coccinea</i> L.	Convolvulaceae	United States, North America, Mexico, Arizona	16	1 (2002 seeds)	Asia, Japan, Global, Europe, Lithuania, Austria, North America, United States, South America, Brazil	Tropical/sub-Tropical	H a	Toxic	Noxious	Agricultural Weed	Environmental Weed	Red morning-glory, Scarlet creeper, Star ipomoea
13	<i>Euphorbia myrsinites</i> L.	Euphorbiaceae	southern Europe, Turkey, Iran, Georgia, Armenia, southern Russia	11	8 (2004)	Europe, Hungary, Austria, United Kingdom, North America, northeastern Canada/United States	Mediterranean	H p	Toxic	Noxious		Environmental Weed	Myrtle euphorbia, Myrtle spurge
14	<i>Hedychium coccineum</i> Buch.–Ham. ex Sm.	Zingiberaceae	Asia	9	6 (2004)	Africa, South Africa, Caribbean, South America, Brazil, Global, Central America, Jamaica, Africa, South Africa	Tropical/sub-Tropical, Mediterranean	H p		Noxious		Environmental Weed	Red ginger-lily, Scarlet ginger-lily
15	<i>Physalis angulata</i> L.	Solanaceae	North America, South America	53	2 (2004)	Asia, Taiwan, South Korea, Korea, Africa, Nigeria	Tropical/sub-Tropical, Mediterranean	H a	Toxic		Agricultural Weed	Environmental Weed	Annual ground cherry
16	<i>Artemisia annua</i> L.	Asteraceae	Europe, Asia	34	5 or 6 (2004) (possibly available from Australian seed suppliers 2002)	Europe, United Kingdom, England, Hungary, France, Lithuania, Asia, Japan, Mediterranean Regions	Tropical/sub-Tropical, Mediterranean	H a			Agricultural Weed	Environmental Weed	Annual mugwort, Annual wormwood, Sweet Annie, Sweet wormwood

Weeds of the future? Threats to Australia's grazing industries by garden plants

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17	<i>Rudbeckia laciniata</i> L.	Asteraceae	North America	32	7 (2004)	Europe, United Kingdom, England, Hungary, Slovenia, Mediterranean Regions, Asia, South Korea	Sub-Tropical, Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Cut-leaf coneflower, Tall coneflower
18	<i>Mentha arvensis</i> L.	Lamiaceae	Old World	30	8 (2004)	Asia, Japan Central America, Mexico North America Global Middle East, Turkey Europe, Ukraine Casual A	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed	Environmental Weed	Field mint, Chinese mint, Corn mint, Japanese mint, Menthol mint
19	<i>Antirrhinum majus</i> L.	Scrophulariaceae	southern & Mediterranean Europe	29	5 (2002)	Europe, United Kingdom, England, Hungary, Ireland, Asia, Japan, Central America, Mexico	Tropical/sub-Tropical, Mediterranean	H a/p			Agricultural Weed		Snapdragon
20	<i>Boerhavia diffusa</i> L.	Nyctaginaceae	tropical South America	29	1 (1986)	Asia, Thailand, Japan, Central America, Mexico, Africa, Nigeria	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		red spiderling, spreading hogweed
21	<i>Viola tricolor</i> L.	Violaceae	Europe, Asia	28	9 or 10 (2004) (possibly available from Australian seed suppliers 2002)	Asia, Japan, South America, Chile, North America, Canada/United States, Europe, France	Mediterranean	H a/p	Toxic		Agricultural Weed		European wild pansy, Field pansy, Heart's-ease, Hearts-ease, Johnny-jump-up, Love-in-idleness, Miniature pansy, Pansy, Wild pansy
22	<i>Armoracia rusticana</i> (Lam.) Gaertn., B.Mey. & Scherb.	Brassicaceae	Europe, Asia	27	8 (2004)	Europe, United Kingdom, England, Ireland, Asia, Japan, Mediterranean Regions	Mediterranean	H p	Toxic		Agricultural Weed		Horseradish

Weeds of the future? Threats to Australia's grazing industries by garden plants

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23	<i>Impatiens parviflora</i> DC.	Balsaminaceae	central Asia, Mediterranean	26	2 (1986)	Europe, United Kingdom, England, Hungary, Slovenia, France, Mediterranean Regions	Mediterranean	H a/p				Environmental Weed	Balsam, Small-flower touch-me-not
24	<i>Phyllanthus niruri</i> L.	Euphorbiaceae	West Indies	25	2 (2004)	Asia, Thailand	Tropical/sub-Tropical	H a	Toxic		Agricultural Weed		Lagoon spurge
25	<i>Inula helenium</i> L.	Asteraceae	Europe, Asia	24	9 (2004)	Europe, United Kingdom, England, Ireland, Mediterranean Regions, North America, Canada	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Elecampane, Velvet-dock
26	<i>Aethusa cynapium</i> L.	Apiaceae	western Europe, Asia	24	2 (1986)	Japan, North America, northeastern Canada/United States, Denmark, Italy, France	Mediterranean	H a	Toxic		Agricultural Weed		Fool's parsley
27	<i>Equisetum ramosissimum</i> Desf.	Equisetaceae	Europe, Asia, Africa	23	0	Europe, United Kingdom, Ukraine, Spain, eastern Europe, western Europe, Asia, China, Bhutan, Pakistan, South East Asia, Philippines, Africa, Egypt, South Africa	Tropical/sub-Tropical, Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Branched scouring rush
28	<i>Galium verum</i> L.	Rubiaceae	Europe to Iran	21	8 (2002)	Asia, Japan, Kashmir, North America, northeastern Canada/United States, Europe, United Kingdom	Tropical/sub-Tropical, Mediterranean	H a/p			Agricultural Weed	Environmental Weed	Lady's bedstraw, Yellow bedstraw

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29	<i>Muscari botryoides</i> (L.) Mill.	Liliaceae	Europe, Asia	21	7 (2004)	Europe, United Kingdom, England, Lithuania, Asia, Japan, Kashmir, North America, northeastern Canada/United States	Mediterranean	H p			Agricultural Weed	Environmental Weed	Grape-hyacinth, Italian grape-hyacinth
30	<i>Perilla frutescens</i> (L.) Britton	Lamiaceae	Asia, India, China	21	5 (2004)	Europe, Hungary, Global, Asia, Taiwan, Mediterranean Regions, North America, northeastern Canada/United States, Pacific	Tropical/sub-Tropical, Mediterranean	H a	Toxic		Agricultural Weed	Environmental Weed	Beefsteak-mint, Beefsteakplant, Perilla
31	<i>Artemisia dracunculus</i> L.	Asteraceae	North America, Europe, Asia	20	9 (2004)	Europe, United Kingdom, England, Hungary, Lithuania, Central America, Mexico, North America, northeastern Canada/United States	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		Tarragon, Estragon, French tarragon, Russian tarragon
32	<i>Anaphalis margaritacea</i> (L.) Benth. & Hook. f.	Asteraceae	South America, North America, Europe, Asia	20	8 (2004)	Europe, United Kingdom, England, Hungary, Denmark, Central America, Mexico	Tropical/sub-Tropical	H p			Agricultural Weed		Pearly everlasting
33	<i>Veronica chamaedrys</i> L.	Scrophulariaceae	Temperate Europe, Asia	20	3 (2004)	Asia, Japan, North America, northeastern Canada/United States, Australasia, New Zealand, Europe, United Kingdom	Mediterranean	H p			Agricultural Weed	Environmental Weed	Germander speedwell

Weeds of the future? Threats to Australia's grazing industries by garden plants

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34	<i>Carpobrotus acinaciformis</i> (L.) L. Bolus	Aizoaceae	South Africa	20	1 (1986)	Europe, United Kingdom, England, Spain, Andalusia, France, Mediterranean regions	Tropical, Mediterranean	H p				Environmental Weed	Hottentot fig
35	<i>Ornithogalum nutans</i> L.	Liliaceae	southern & mediterranean Europe, Turkey	19	8 (2004)	Europe, United Kingdom, England, Hungary, Lithuania, Denmark, North America, northeastern Canada/United States	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Nodding star-of-Bethlehem, Star-of-nature
36	<i>Geranium pyrenaicum</i> Burm. f.	Geraniaceae	southern & mediterranean Europe, Asia	19	7 (2004)	Europe, United Kingdom, England, Hungary, Asia, Japan	Mediterranean	H b/p			Agricultural Weed	Environmental Weed	Hedgerow geranium
37	<i>Trigonella foenum-graecum</i> L.	Fabaceae – Papilionaceae	south-west Asia, Mediterranean	19	5 (2004)	Europe, United Kingdom, England, Hungary, Spain, Andalusia, Crete, , Portugal, Asia, Kashmir	Tropical/sub-Tropical, Mediterranean	H a	Toxic		Agricultural Weed		Fenugreek
38	<i>Impatiens balsamina</i> L.	Balsaminaceae	Asia, India	19	2 (1986)	Europe, Hungary, Austria, Central America, Mexico, Pacific, Galapagos Islands, North America, Canada	Tropical/sub-Tropical, Mediterranean	H a			Agricultural Weed		Garden balsam, balsam
39	<i>Adonis aestivalis</i> L.	Ranunculaceae	mediterranean Europe, Asia, Africa	19	1 (1986)	Global, Iran, Turkey, Kashmir, Ukraine	Tropical/sub-Tropical, Mediterranean	H a	Toxic		Agricultural Weed		Summer pheasant's eye
40	<i>Ranunculus bulbosus</i> L.	Ranunculaceae	Europe, Asia, Africa	19	1 (1986)	Asia, Japan, North America, northeastern Canada/United States Australasia, New Zealand	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Bulbous buttercup

Weeds of the future? Threats to Australia's grazing industries by garden plants

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41	<i>Lychnis flos-cuculi</i> L.	Caryophyllaceae	Europe to Russia	18	9 (2004)	Global, North America, northeastern Canada/United States, Australasia, New Zealand, Europe, United Kingdom	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Meadow campion, Ragged-robin
42	<i>Chenopodium capitatum</i> (L.) Asch.	Chenopodiaceae	western Asia	18	6 (2004)	Europe, United Kingdom, England, Hungary, Denmark, Austria, North America, Canada		H a			Agricultural Weed		Indian-ink, Indian-paint, Strawberry blite, Strawberry-spinach, Blite goosefoot, Strawberry-blite
43	<i>Tagetes erecta</i> L.	Asteraceae	Central America, Mexico, Costa Rica	18	2 (2004)	Europe, United Kingdom, England, Hungary, Denmark, Austria, Pacific, Galapagos Islands	Tropical/sub-Tropical, Mediterranean	H a				Environmental Weed	African marigold, Big marigold
44	<i>Helenium autumnale</i> L.	Asteraceae	North America, South America	17	9 (2004)	Europe, United Kingdom, England, Denmark, Austria, Asia, Japan, North America	Sub-Tropical, Mediterranean	H p	Toxic		Agricultural Weed		Sneezeweed
45	<i>Salvia officinalis</i> L.	Lamiaceae	southern Europe, Asia	16	9 (2004)	Europe, Hungary, Denmark, Asia, Japan, Pacific, Galapagos Islands, North America, northeastern Canada/United States	Tropical/sub-Tropical, Mediterranean	H/S p	Toxic			Environmental Weed	Sage
46	<i>Iberis amara</i> L.	Brassicaceae	western & mediterranean Europe	16	6 (2004)	Central America, Mexico, Europe, Lithuania, Denmark, Austria, Ukraine	Sub-Tropical, Mediterranean	H a/b			Agricultural Weed		Bitter cadytuft, Rocket candytuft
47	<i>Rubia tinctorum</i> L.	Rubiaceae	south-east Europe, south-west Asia	16	5 (2004)	Asia, Japan, South America, Chile, Europe, Portugal, Denmark, Austria	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		Dyer's madder, Indian madder, Madder

Weeds of the future? Threats to Australia's grazing industries by garden plants

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48	<i>Cerastium tomentosum</i> L.	Caryophyllaceae	Europe, Italy, Sicily, western Asia	16	10 (2004)	Europe, United Kingdom, England, Hungary, Asia, Japan, North America, Canada, United States	Mediterranean	H p				Environmental Weed	Snow-in-harvest, Snow-in-summer, Snow-on-the-mountain
49	<i>Eryngium foetidum</i> L.	Apiaceae	tropical America	15	5 (2004)	Asia, China, Taiwan, China, Pacific, Hawaii, South America, Brazil	Tropical/sub-Tropical	H a/p			Agricultural Weed	Environmental Weed	False coriander, Shadow-beni, Stinkweed
50	<i>Gypsophila muralis</i> L.	Caryophyllaceae	Europe	15	2 (1986)	Asia, Japan, North America, northeastern Canada/United States, Europe, United Kingdom, eastern Europe	Tropical/sub-Tropical, Mediterranean	H a			Agricultural Weed		Cushion baby's breath, Low baby's breath
51	<i>Verbascum phlomoides</i> L.	Scrophulariaceae	southern Europe, south-west Asia	15	1 (1986)	Europe, United Kingdom, England, Lithuania, Denmark North America, northeastern Canada/United States	Mediterranean	H b/p	Toxic		Agricultural Weed		Mullein, Orange mullein
52	<i>Pseudosasa japonica</i> (Siebold & Zucc. ex Steud.) Makino ex Nakai	Poaceae	Japan, South Korea	14	7 (2004)	Europe, United Kingdom, England, Australasia, New Zealand	Tropical/sub-Tropical, Mediterranean	H p				Environmental Weed	Arrow bamboo
53	<i>Senecio cineraria</i> DC.	Asteraceae	Mediterranean	14	7 (2004)	Europe, United Kingdom, England, Hungary, Spain, Andalusia, Ireland, Mediterranean Regions	Mediterranean	H/S p	Toxic			Environmental Weed	Dusty-miller
54	<i>Eleocharis acicularis</i> (L.) Roem. & Schult.	Cyperaceae		14	5 (2004)	North America, Canada, Asia, Korea, Vietnam, South America, Chile, eastern Europe, North America	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed	Environmental Weed	Needle spikerush

Weeds of the future? Threats to Australia's grazing industries by garden plants

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55	<i>Sedum sarmentosum</i> Bunge	Crassulaceae	eastern Asia	14	2 (1999/2000)	Europe, Hungary, Asia, Japan, Mediterranean Regions, North America, Canada/United States	Mediterranean	H a/p succulent			Agricultural Weed		Star sedum, Stringy stonecrop
56	<i>Hemerocallis lilioasphodelus</i> L.	Liliaceae	Europe, eastern Asia, China	13	9 (2004)	Europe, United Kingdom, England, Denmark, Pacific, Galapagos Islands, North America, northeastern Canada/United States	Tropical, Mediterranean	H p				Environmental Weed	Lemon day-lily, Lemon-lily, Yellow day-lily
57	<i>Ajuga chamaepitys</i> (L.) Schreb.	Lamiaceae	Europe, Africa	13	1 (1986)	United Kingdom, Spain, Czechoslovakia, eastern Europe, western Europe	Mediterranean	H a/p			Agricultural Weed		Yellow bugleweed, Ground pine, Yellow bugle
58	<i>Allium sativum</i> L.	Alliaceae – Liliaceae	western Asia, Mediterranean Europe	12	9 (2004)	United Kingdom, England, Austria, Pacific, Galapagos Islands, North America, northeastern Canada/United States	Tropical/sub-Tropical, Mediterranean	H p	Toxic			Environmental Weed	Garlic
59	<i>Aloe vera</i> (L.) Burm. f.	Aloeaceae	southern Africa	12	9 (2004)	Mediterranean Regions, Pacific, Galapagos Islands, Hawaii, Europe, Portugal, Canary Islands	Tropical/sub-Tropical, Mediterranean	H p succulent	Toxic			Environmental Weed	Aloe vera, Barbados aloe, Medicine plant, True aloe
60	<i>Rumex sanguineus</i> L.	Polygonaceae		12	5 (2004)	Asia, Japan, North America, northeastern Canada/United States, Europe, United Kingdom, South America, Chile	Mediterranean	H p				Environmental Weed	Bloodwort dock, Redvein dock, Wood dock

Weeds of the future? Threats to Australia's grazing industries by garden plants

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61	<i>Bunium bulbocastanum</i> L.	Apiaceae	Europe	12	5 (2004)	Asia, Japan, Europe, Denmark, Austria, United Kingdom, Czechoslovakia	Mediterranean	H/S p			Agricultural Weed		black zira, earthnut, great pignut
62	<i>Verbascum densiflorum</i> Bertol.	Scrophulariaceae	Europe, south-west Asia	12	3 (2000/2001)	Europe, United Kingdom, England, eastern Europe, South America, Chile	Mediterranean	H b			Agricultural Weed		Mullein
63	<i>Herniaria glabra</i> L.	Caryophyllaceae	Europe, Asia, north Africa	12	3 (2000/2001)	Asia, Japan, North America, northeastern Canada/United States, Europe, United Kingdom, Australasia, New Zealand	Mediterranean	H b/p			Agricultural Weed		Herniary breastwort, Rupturewort, Smooth rupturewort
64	<i>Consolida regalis</i> Gray	Ranunculaceae	south-east Europe, south-west Asia	12	2 (2002 seeds)	Middle East, Turkey, North America, northeastern Canada/United States, Europe, Denmark, Ukraine, United Kingdom	Mediterranean	H a	Toxic		Agricultural Weed		Field larkspur, Forking larkspur, Rocket larkspur
65	<i>Filipendula ulmaria</i> (L.) Maxim.	Rosaceae		11	9 or 10 (2004) (possibly available from Australian seed suppliers 2002)	Global, North America, northeastern Canada/United States, Europe, United Kingdom, Australasia, New Zealand	Mediterranean	H p			Agricultural Weed	Environmental Weed	Meadowsweet, Queen-of-the-meadow
66	<i>Scabiosa columbaria</i> L.	Dipsacaceae	southern Africa	11	9 (2004)	Asia, Japan, Middle East, Turkey, United Kingdom, eastern Europe, North America, United States	Mediterranean	H b/p			Agricultural Weed		Pigeon's-scabious, Scabious

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67	<i>Consolida orientalis</i> (J. Gay) Schrodinger	Ranunculaceae	Mediterranean Europe, Asia, Africa	11	1 (1986)	Europe, Lithuania, Denmark, Ukraine, Czechoslovakia, Middle East, Turkey	Tropical/sub-Tropical, Mediterranean	H a			Agricultural Weed		Oriental larkspur
68	<i>Satureja hortensis</i> L.	Lamiaceae	Mediterranean Europe, Asia	10	9 (2004)	Europe, Hungary, Spain, Andalusia, Denmark, Austria, North America, northeastern Canada/United States	Tropical/sub-Tropical, Mediterranean	H a/b			Agricultural Weed		Summer savory
69	<i>Cardamine pratensis</i> L.	Brassicaceae	Europe	10	9 (2004)	Asia, Japan, Global, Australasia, New Zealand, eastern Europe, North America, United States	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Cuckoo flower
70	<i>Allium sphaerocephalon</i> L.	Alliaceae – Liliaceae	Europe	10	8 (2004)	Denmark, United Kingdom, eastern Europe, western Europe, Africa, Egypt, Global	Mediterranean	H p			Agricultural Weed		Round-headed garlic, Round-headed leek
71	<i>Thymus pulegioides</i> L.	Lamiaceae	Mediterranean	10	4 (2004)	North America, northeastern Canada/United States, Europe, United Kingdom, eastern Europe, Australasia, New Zealand	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Large thyme, Lemon thyme, Wild thyme
72	<i>Deschampsia flexuosa</i> (L.) Trin.	Poaceae		10	3 (2002)	Global, Europe, United Kingdom, eastern Europe, Australasia, New Zealand, Africa, South Africa	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed	Environmental Weed	Crinkled hair grass, Wavy hair grass
73	<i>Trimezia martinicensis</i> (Jacq.) Herb. ex Baker	Iridaceae		10	1 (2004)	Pacific, Hawaii, Caribbean, Puerto Rico, Global, Central America	Tropical/sub-Tropical	H p			Agricultural Weed	Environmental Weed	Martinique trimezia

Weeds of the future? Threats to Australia's grazing industries by garden plants

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74	<i>Rumex alpinus</i> L.	Polygonaceae	Middle East, Europe, south-west Asia	10	1 (1986)	Europe, Czechoslovakia, eastern Europe, Global, North America, United States	Mediterranean	H p			Agricultural Weed		Alpine dock, Butter dock, Monk's-rhubarb, Mountain-rhubarb
75	<i>Campanula rotundifolia</i> L.	Campanulaceae	Northern temperate	9	9 or 10 (2004) (possibly available from Australian seed suppliers 2002)	North America, Canada, Australasia, New Zealand, Europe, United Kingdom	Sub-Tropical, Mediterranean	H p			Agricultural Weed		bluebell, bluebell-of-Scotland, harebell, meadowbell
76	<i>Althaea officinalis</i> L.	Malvaceae	Europe, Asia	9	8 or 9 (2004) (possibly available from Australian seed suppliers 2002)	Europe, Ireland, Switzerland, United Kingdom, eastern Europe, North America, northeastern Canada/United States	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		marshmallow, white-mallow
77	<i>Campanula glomerata</i> L.	Campanulaceae		9	8 (2004)	Asia, Japan, Middle East, Turkey, North America, northeastern Canada/United States, Europe, United Kingdom	Mediterranean	H p			Agricultural Weed		clustered bellflower, Dane's blood
78	<i>Adiantum raddianum</i> C.Presl	Pteridaceae	tropical America & Africa	9	8 (2004)	Europe, Canary Islands, Hawaii, Australasia, New Zealand	Tropical/sub-Tropical, Mediterranean	H/Fern p			Agricultural Weed	Environmental Weed	Delta maidenhair fern
79	<i>Stellaria holostea</i> L.	Caryophyllaceae		9	7 (2004)	Asia, Japan, Middle East, Turkey, Europe, United Kingdom, eastern Europe, Australasia, New Zealand	Mediterranean	H p			Agricultural Weed		Easter-bell, Greater stichwort

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80	<i>Osmunda regalis</i> L.	Osmundaceae	Temperate worldwide	9	7 (2004)	Australasia, New Zealand, Europe, United Kingdom, Austria, eastern Europe, Australasia, New Zealand	Tropical, Mediterranean	H/Fern p				Environmental Weed	Royal fern
81	<i>Polygonum bistorta</i> L. (alternative names <i>Bistorta officinalis</i> , <i>Persicaria bistorta</i>)	Polygonaceae		9	6 (2004)	Global, Australasia, New Zealand, Asia, China, eastern Europe, North America, United States	Tropical/sub-Tropical, Mediterranean	H p	Toxic		Agricultural Weed		see <i>Bistorta officinalis</i> Bistort, Easter-LEDGES, European <i>bistorta</i> , Snakeweed
82	<i>Achillea nobilis</i> L.	Asteraceae	southern Europe, France, Russia, Asia	9	4 (2002)	Lithuania, Denmark, United Kingdom, Australasia, New Zealand, eastern Europe, North America, United States	Mediterranean	H p				Environmental Weed	Noble yarrow
83	<i>Veratrum album</i> L.	Liliaceae		9	2 (1998/1999)	Global, North America, Canada, Australasia, New Zealand, eastern Europe, Global	Mediterranean	H p	Toxic		Agricultural Weed		European white-hellebore, White-hellebore
84	<i>Asclepias tuberosa</i> L.	Asclepiadaceae		8	9 or 10 (2004) (possibly available from Australian seed suppliers 2002)	North America, Canada, Australasia, New Zealand, North America, Canada, United States	Mediterranean	H p	Toxic		Agricultural Weed		butterfly milkweed, butterfly-weed, chiegeflower, pleurisy-root
85	<i>Euphorbia pulcherrima</i> Willd. ex Klotzsch	Euphorbiaceae	Central America, Mexico	8	9 (2004)	Pacific, Galapagos Islands, Isla Santa Cruz, Global, Europe, Canary Islands, Caribbean, Puerto Rico	Tropical/sub-Tropical, Mediterranean	H p	Toxic			Environmental Weed	Christmas-flower, Christmas-star, Lobsterplant, Mexican flameleaf, Paintedleaf, Poinsettia

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86	<i>Helleborus orientalis</i> Lam.	Ranunculaceae	Turkey, Iran, Georgia, Armenia, southern Russia	8	8 (2004)	Europe, Austria, Switzerland, United Kingdom, England, Middle East, Turkey	Mediterranean	H p	Toxic		Agricultural Weed		Lenten-rose
87	<i>Aconitum napellus</i> L.	Ranunculaceae	Europe	8	8 (2004)	North America, northeastern Canada/United States, Australasia, New Zealand, eastern Europe, North America, United States, Global	Mediterranean	H p	Toxic			Environmental Weed	Monkshood
88	<i>Mentha requienii</i> Benth.	Lamiaceae	Mediterranean	8	8 (2004)	Europe, United Kingdom, England, Ireland, Portugal	Mediterranean	H p				Environmental Weed	Corsican mint
89	<i>Cerinth major</i> L.	Boraginaceae	Mediterranean	8	7 (2004)	Europe, Switzerland, United Kingdom, eastern Europe, Australasia, New Zealand, Global	Mediterranean	H a			Agricultural Weed		Great honeywort, honeywort
90	<i>Dryopteris filix-mas</i> (L.) Schott	Dryopteridaceae	Europe, Asia, North America	8	7 (2004)	North America, Canada, Global, Australasia, New Zealand, South America, Chile, Europe, eastern	Mediterranean	H p	Toxic			Environmental Weed	Male fern
91	<i>Alpinia purpurata</i> (Vieill.) K.Schum.	Zingiberaceae	Pacific Islands	8	6 (2004)	Pacific, Galapagos Islands, Hawai'i, Caribbean, Puerto Rico	Tropical/sub-Tropical	H p				Environmental Weed	red-ginger
92	<i>Chenopodium quinoa</i> Willd.	Chenopodiaceae	South & North America	8	4 (2000/2001)	Pacific, Galapagos Islands, Europe, Denmark, Austria, Czechoslovakia, United Kingdom	Tropical	H a			Agricultural Weed		Quinoa
93	<i>Trifolium purpureum</i> Loisel.	Fabaceae – Papilionaceae	Mediterranean	8	1 (2000/2001)	Global, Europe, United Kingdom, eastern & western Europe, Global, Middle East, Syria	Mediterranean	H a			Agricultural Weed		Purple clover

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
94	<i>Geranium nepalense</i> Sweet	Geraniaceae	Afghanistan, western China, Bhutan, India, Myanmar, Nepal, Pakistan, Sri Lanka	8	1 (1999/2000)	Asia, Kashmir, Central Asia, Bhutan, China, North America, United States, New England	Tropical/sub-Tropical, Mediterranean	H a/b/p			Agricultural Weed	Environmental Weed	Nepalese crane's-bill
95	<i>Allium schoenoprasum</i> L.	Alliaceae – Liliaceae	Northern Hemisphere, Europe, Asia	7	9 (2004)	Pacific, Galapagos Islands, Middle East, Turkey, North America, northeastern Canada/United States, Queen Charlotte Islands	Tropical/sub-Tropical, Mediterranean	H p	Toxic		Agricultural Weed		Chives, Giant garlic, Onion chives, Rush leek
96	<i>Sisyrinchium californicum</i> (Ker-Gawl.) Dryand.	Iridaceae	western North America	7	8 (2004)	Europe, United Kingdom, England, Ireland, United Kingdom		H p				Environmental Weed	Golden blue-eyed grass
97	<i>Allium carinatum</i> L.	Alliaceae – Liliaceae	Europe, Turkey	7	7 (2004)	United Kingdom, England, Ireland	Mediterranean	H p				Environmental Weed	keeled garlic
98	<i>Libertia formosa</i> Graham	Iridaceae	Chile	7	7 (2004)	Europe, United Kingdom, England, Ireland	Mediterranean	H p				Environmental Weed	Snowy mermaid
99	<i>Alocasia macrorrhizos</i> (L.) G.Don (formerly <i>A. macrorrhiza</i>)	Araceae	tropical Asia	7	6 (2004)	Pacific, Galapagos Islands, Marquesas, Australasia, New Zealand, South East Asia, Singapore, North America, United States	Tropical/sub-Tropical	H p	Toxic		Agricultural Weed	Environmental Weed	Giant taro, Cunjevoi
100	<i>Geranium thunbergii</i> Sieb. & Zucc.	Geraniaceae	Japan to Taiwan	7	4 (2002)	Asia, Korea, Japan, North America, United States		H p			Agricultural Weed	Environmental Weed	Thunberg's geranium
101	<i>Ageratina altissima</i> (L.) R. M. King & H. Rob.	Asteraceae	North America	7	1 (2002)	Denmark, Austria, North America, Canada, Australasia, New Zealand		H p	Toxic		Agricultural Weed		Richweed, Snakeroot, White snakeroot
102	<i>Lantana trifolia</i> L.	Verbenaceae	South America	7	1 (1986)	South America, Brazil, Cuba, Central America, Africa, South Africa, Global	Tropical/sub-Tropical	H/S p			Agricultural Weed		Sweet-sage

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
103	<i>Onopordum nervosum</i> Boiss.	Asteraceae	south-west Europe	7	0	Europe, United Kingdom	Mediterranean	H b/p					Cotton thistle
104	<i>Eccremocarpus scaber</i> Ruiz & Pav.	Bignoniaceae	South America	6	9 (2004)	Australasia, New Zealand, Europe, United Kingdom, Australasia, New Zealand	Mediterranean	H a/p				Environmental Weed	Chilean glory flower, Glory vine, Glory flower
105	<i>Sagina subulata</i> (Sw.) C. Presl	Caryophyllaceae	eastern North America	6	8 (2004)	Australasia, New Zealand, Europe, United Kingdom, eastern Europe, North America, United States	Mediterranean	H p			Agricultural Weed		Corsican pearlwort, Heath pearlwort, Irish-moss, Pearlwort, Scottish-moss
106	<i>Tolmiea menziesii</i> Torr. & Gray	Saxifragaceae	western North America, Alaska to California	6	7 (2002)	Europe, United Kingdom, England, Ireland	Mediterranean	H p	Toxic			Environmental Weed	Youth on age
107	<i>Geranium lucidum</i> L.	Geraniaceae		6	6 (2004)	Europe, Spain, North America, United States, Oregon	Mediterranean	H a/b			Agricultural Weed	Environmental Weed	Shining geranium
108	<i>Nigella hispanica</i> L.	Ranunculaceae	south-west Europe, north-west Africa, Spain, France	6	1 (1986)	Europe, Spain, United Kingdom, western Europe, Global	Mediterranean	H a			Agricultural Weed		Fennel-flower, Spanish-fennel
109	<i>Stachys officinalis</i> (L.) Trevis.	Lamiaceae	Europe, Asia	5	9 (2004)	Middle East, Turkey, Europe, United Kingdom	Mediterranean	H p			Agricultural Weed		Bishop's-wort, Purple betony, Wood betony
110	<i>Zephyranthes citrina</i> Baker	Liliaceae		5	8 (2004)	Pacific, Hawaii, Caribbean, Puerto Rico, North America, United States, Florida	Tropical/sub-Tropical	H p				Environmental Weed	Citron zephyrily
111	<i>Cardamine lyrata</i> Bunge	Brassicaceae	Siberia, China, Japan, Korea	5	5 (2004)	Asia, Korea, China, Japan, Global	Mediterranean	H p			Agricultural Weed		Japanese cress
112	<i>Nephrolepis falcata</i> (Cav.) C.Ch.	Nephrolepidaceae		5	5 (2004)	Pacific, Hawaii, South East Asia, New Guinea, North America, United States	Tropical	H/Fern p			Agricultural Weed	Environmental Weed	Fishtail swordfern, Fishtail fern
113	<i>Atropa belladonna</i> L.	Solanaceae	southern Europe, Asia	5	4 (2004)	Global, Europe, Lithuania, Portugal, United Kingdom	Mediterranean	H p	Toxic		Agricultural Weed	Environmental Weed	Deadly nightshade, Belladonna

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
114	<i>Pilea nummulariifolia</i> (Sw.) Wedd.	Urticaceae	West Indies, Panama, South America	5	3 (2004)	Africa, Central Africa, South America, Brazil, Global, Central America, Guadeloupe, North America, United States, Florida	Tropical/sub-Tropical	H p			Agricultural Weed		Creeping-Charlie
115	<i>Pinellia pedatisecta</i> Schott	Araceae	China	5	3 (2004)	Asia, China, North America, United States, Connecticut		H p			Agricultural Weed		Green dragon
116	<i>Oxalis rubra</i> St.-Hil.	Oxalidaceae	South America	5	3 (2002)	Central America, Mexico, North America, United States, Global	sub-Tropical	H p				Environmental Weed	Windowbox wood sorrel, Rosy oxalis
117	<i>Euphorbia amygdaloides</i> L.	Euphorbiaceae		4	9 (2004)	Europe, United Kingdom, eastern Europe, Australasia, New Zealand, Global	Mediterranean	H p	Toxic		Agricultural Weed		Wood spurge
118	<i>Commelina tuberosa</i> L.	Commelinaceae	eastern Asia	4	7 (2004)	Europe, Austria, Global, Central America, Mexico	Sub-Tropical	H p	Toxic		Agricultural Weed		Commelina
119	<i>Adiantum tenerum</i> Sw.	Pteridaceae		4	7 (2004)	Pacific, Galapagos Islands, Hawai'i, Global	Tropical/sub-Tropical, Mediterranean	H/Fern p				Environmental Weed	Brittle maidenhair
120	<i>Heliconia latispatha</i> Benth.	Heliconiaceae		4	6 (2004)	Africa, Central Africa, Pacific, Hawaii, North America, United States	Tropical/sub-Tropical, Mediterranean	H p				Environmental Weed	Expanded lobsterclaw
121	<i>Anagallis monelli</i> L. (formerly <i>A. linifolia</i>)	Primulaceae	western Mediterranean Europe	4	6 (2002 seeds)	Europe, Spain, Czechoslovakia, United Kingdom, North America, United States	Mediterranean	H a			Agricultural Weed		Flaxleaf pimpernel
122	<i>Incarvillea sinensis</i> Lam.	Bignoniaceae	China	4	4 (2002)	Asia, China, South America, Colombia	Tropical	H a			Agricultural Weed		
123	<i>Salvia tiliifolia</i> Vahl	Lamiaceae	Texas to South America	4	2 (2004)	Central America, Mexico, Africa, South Africa, North America, United States	Tropical/sub-Tropical	H a/p			Agricultural Weed		Lindlenleaf sage

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
124	<i>Dianella ensifolia</i> (L.) DC.	Liliaceae	Bangladesh, Bhutan, Cambodia, China, India, Japan, Laos, Myanmar, Nepal, Philippines, Sri Lanka, Thailand, Vietnam	4	2 (1986)	North America, United States, Florida, Global, Asia, Thailand	Tropical/sub-Tropical	H p			Agricultural Weed		Umbrella-dracaena
125	<i>Digitalis ferruginea</i> L.	Scrophulariaceae	southern Europe	3	9 (2004)	Middle East, Turkey, Europe, Austria, United Kingdom	Mediterranean	H p/b			Agricultural Weed		Rusty foxglove
126	<i>Potentilla rupestris</i> L.	Rosaceae		3	8 (2004)	Middle East, Turkey, Europe, United Kingdom, Finland	Mediterranean	H p			Agricultural Weed		Sie sheng wei ling cai [Chinese]
127	<i>Tulipa clusiana</i> DC.	Liliaceae		3	8 (2004)	Europe, Portugal, Global	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		Lady tulip
128	<i>Elettaria cardamomum</i> (L.) Maton	Zingiberaceae	India	3	8 (2004)	South East Asia, Global, Pacific	Tropical, Mediterranean	H p				Environmental Weed	Cardamom
129	<i>Tillandsia aëranthos</i> (Loisel.) L.B.Sm.	Bromeliaceae	Brazil to Argentina	3	5 (2004)	South America, Argentina	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		
130	<i>Polygonatum verticillatum</i> (L.) All.	Convallariaceae		3	4 (2004)	Asia, Kashmir, Europe, United Kingdom, eastern Europe	Tropical, Mediterranean	H p			Agricultural Weed		Whorled Solomon's-seal
131	<i>Glycyrrhiza uralensis</i> Fisch. ex DC.	Fabaceae – Papilionaceae		3	3 (2004)	Asia, China	Tropical/sub-Tropical	H p	Toxic		Agricultural Weed		Chinese licorice
132	<i>Bidens ferulifolia</i> (Jacq.) DC.	Asteraceae	Arizona, Mexico	3	3 (2004)	Central America, Mexico, Europe, United Kingdom		H p			Agricultural Weed		Apache beggarsticks
133	<i>Alcea pallida</i> (Waldst. & Kit. ex Willd.) Waldst. & Kit.	Malvaceae	eastern Europe, Turkey	3	1 (2004)	North America, northeastern Canada/United States, eastern Europe	Mediterranean	H p			Agricultural Weed		Hollyhock
134	<i>Syngonium angustatum</i> Schott	Araceae		3	1 (1986)	Pacific, North America, United States, Florida	Tropical/sub-Tropical	H p				Environmental Weed	Fivefingers

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
135	<i>Oenothera odorata</i> Jacq.	Onagraceae	South America	2	9 (2004)	Asia, Korea, Global		H p			Agricultural Weed		Fragrant evening primrose
136	<i>Ranunculus asiaticus</i> L.	Ranunculaceae	eastern Mediterranean	2	9 (2004)	Global, Africa, Egypt	Mediterranean	H a/p	Toxic		Agricultural Weed		Asian buttercup, Persian buttercup, Persian crowfoot
137	<i>Arum dioscoridis</i> Sibth. & Sm.	Araceae		2	7 (2002)	Global, Middle East, Syria	Mediterranean	H p	Toxic		Agricultural Weed		
138	<i>Verbena venosa</i> Gillies & Hook.	Verbenaceae	South America, Argentina	2	6 (2004)	Africa, South Africa		H p	Toxic		Agricultural Weed		see <i>V. rigida</i> Veined verbena, Blueweed, Veined vervain, Vervain, Wild verbena
139	<i>Calathea picturata</i> (Linden) K. Koch & Linden	Marantaceae		2	6 (2004)	Pacific, Galapagos Islands, Hawaii		H p				Environmental Weed	Zebra plant, Calathea
140	<i>Artemisia afra</i> Jacq. ex Willd.	Asteraceae	southern & tropical Africa	2	6 (2004)	Europe, United Kingdom, Africa, South Africa	Tropical/sub-Tropical	H/S p			Agricultural Weed		African wormwood
141	<i>Moraea polystachya</i> (Thunb.) Ker Gawl.	Iridaceae	southern Africa	2	5 (2004)	Africa, South Africa	Tropical/sub-Tropical, Mediterranean	H p	Toxic		Agricultural Weed		Blue tulip
142	<i>Scilla natalensis</i> Planch.	Liliaceae	southern Africa	2	4 (2004)	Africa, South Africa	Mediterranean	H p	Toxic		Agricultural Weed		Blue-hyacinth, Blue-squill
143	<i>Cyanella lutea</i> L.f.	Liliaceae	southern Africa	2	3 (2004)	Africa, South Africa	Tropical/sub-Tropical, Mediterranean	H p			Agricultural Weed		Lady's hand
144	<i>Sedum telephium</i> L. (alternative and current name <i>Hylotelephium telephium</i>)	Crassulaceae	Caucasus Europe (Turkey, Iran, Georgia, Armenia, southern Russia)	2	3 (2004)	Europe, United Kingdom, Global		H p				Environmental Weed	Orpine, Live-forever
145	<i>Bulbine frutescens</i> (L.) Willd.	Liliaceae	southern Africa	2	3 (2002)	Africa, South Africa		H p			Agricultural Weed		Stalked bulbine, Orange African bulbine, Cat's tail, Rankkopieva
146	<i>Echeveria gibbiflora</i> DC.	Crassulaceae	Mexico	2	2 (1986)	Global, Central America, Mexico	Sub-Tropical, Mediterranean	H succulent p			Agricultural Weed		Oreja de burro [Spanish]
147	<i>Salvia stenophylla</i> Burch. ex Benth.	Lamiaceae	southern Africa	2	1 (2004)	Africa, South Africa	Tropical/sub-Tropical	H/S p, sometimes a or b			Agricultural Weed		African tea-tree

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
148	<i>Lathyrus rotundifolius</i> Willd.	Fabaceae – Papilionaceae	Russia, south-west Asia	2	1 (1986)	Middle East, Turkey, Europe, United Kingdom	Mediterranean	H p			Agricultural Weed		
149	<i>Ornithogalum saundersiae</i> Baker	Liliaceae	Africa	1	8 (2004)	Africa, South Africa		H p	Toxic		Agricultural Weed		Giant chinchinchee
150	<i>Ledebouria cooperi</i> (Hook.f.) Jessop	Liliaceae	southern Africa	1	7 (2004)	Africa, South Africa	Tropical/sub-Tropical	H p	Toxic		Agricultural Weed		Cooper's squill, Wild squill
151	<i>Ornithogalum conicum</i> Jacq.	Liliaceae	southern Africa	1	6 (2004)	Africa, South Africa		H p	Toxic		Agricultural Weed		Chinkerinchee
152	<i>Geranium asphodeloides</i> BURM.f.	Geraniaceae		1	6 (2004)	Middle East, Turkey	Mediterranean	H p			Agricultural Weed		Cranesbill
153	<i>Bowiea volubilis</i> Harv. ex Hook. f.	Liliaceae	southern Africa	1	5 (2004)	Africa, South Africa	Mediterranean	H p	Toxic		Agricultural Weed		Climbing-onion, climbing-potato, zulu-potato
154	<i>Geranium cafrum</i> Eckl. & Zeyh.	Geraniaceae	southern Africa	1	4 (2004)	Africa, South Africa		H a/p			Agricultural Weed		Kafir cranesbill
155	<i>Salvia runcinata</i> L.	Lamiaceae	southern Africa	1	4 (2004)	Africa, South Africa	Tropical/sub-Tropical	H/S p			Agricultural Weed		
156	<i>Geranium polyanthes</i> Edgew. & Hook. f.	Geraniaceae		1	4 (2002)	Asia, Kashmir		H a/p			Agricultural Weed		Cranesbill, Garden geranium
157	<i>Boophane disticha</i> (L.f.) Herb. (this genus is sometimes misspelt <i>Boophone</i>)	Liliaceae	southern Africa	1	3 (2004)	Africa, South Africa	Tropical/sub-Tropical	H p	Toxic		Agricultural Weed		Fan-leaved boophone, Poison bulb, Sore-eye flower, Tumblehead
158	<i>Gynura procumbens</i> (Lour.) Merr.	Asteraceae		1	3 (1986)	South East Asia, Java	Tropical, Mediterranean	H p			Agricultural Weed		Purple velvet plant, Purple passion vine
159	<i>Moraea bipartita</i> L. Bolus	Iridaceae	southern Africa	1	2 (2004)	Africa, South Africa		H p	Toxic		Agricultural Weed		Blue tulip
160	<i>Sarcostemma viminalis</i> (L.) R. Br.	Asclepiadaceae	southern Africa	1	2 (2004)	Africa, South Africa	Tropical/sub-Tropical	H p	Toxic		Agricultural Weed		Caustic vine, Caustic creeper, Caustic bush, Pencil caustic
161	<i>Aloe aculeata</i> Pole Evans	Aloeaceae	southern Africa	1	2 (2000/2001)	Africa, South Africa	Tropical/sub-Tropical	H p succulent			Agricultural Weed		Red hot poker aloe, Ngopanie, Sekope
162	<i>Scutellaria prostrata</i> Jacquem. ex Benth.	Lamiaceae		1	2 (1999/2000)	Asia, Kashmir		H p			Agricultural Weed		

Weeds of the future? Threats to Australia's grazing industries by garden plants

Vines/Climbers

Table 8. List of the 18 vine/climber species which threaten the grazing industries of Australia with information extracted from the “Plant Database” (Randall 2006). **No. of Australian nursery stock references” refers to the number of publications (up to 11) in which the species was listed followed by the latest year in which the species was recorded as sold (publication year in brackets). **Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G – grass.

Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
1 <i>Rosa multiflora</i> Thunb.	Rosaceae	Old World, eastern Asia, Japan, Korea	52	8 (2004)	Global, Europe, United Kingdom, England, Hungary, Central America, Mexico, North America	Tropical/sub-Tropical, Mediterranean	V/S p		Noxious	Agricultural Weed	Environmental Weed	Baby rose, Japanese rose, Multiflora rose, Seven-sisters rose
2 <i>Convolvulus althaeoides</i> L.	Convolvulaceae	Mediterranean, North Africa	15	4 (2004)	Asia, Japan, Europe, Spain, United Kingdom, Canary Islands, Global, North America	Mediterranean	V/H p		Noxious	Agricultural Weed		Mallow bindweed
3 <i>Helichrysum petiolare</i> Hilliard & B.L.Burt (formerly <i>H. petiolatum</i>)	Asteraceae	southern Africa	12	9 (2004)	Mediterranean Regions, Europe, Portugal, United Kingdom, Australasia, New Zealand	Mediterranean	V/S p		Noxious		Environmental Weed	Licorice-plant
4 <i>Celastrus orbiculatus</i> Thunb.	Celastraceae	temperate & eastern Asia	32	2 (2000/2001)	Global, Europe, United Kingdom, England, North America, northeastern Canada/United States, Australasia, New Zealand	Tropical/sub-Tropical, Mediterranean	V p	Toxic			Environmental Weed	Japanese bittersweet, oriental bittersweet

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
5	<i>Lonicera caprifolium</i> L.	Caprifoliaceae	south-east & Mediterranean Europe, south-west Asia, Caucasus Europe (Turkey, Iran, Georgia, Armenia, southern Russia)	14	6 (2004)	Europe, United Kingdom, England, Lithuania, Ukraine, North America, northeastern Canada/United States	Mediterranean	V p				Environmental Weed	Italian woodbine
6	<i>Rubus spectabilis</i> Pursh	Rosaceae	western North America	14	5 (2004)	Europe, United Kingdom, England, Ireland, Denmark, North America, United States		V/S p			Agricultural Weed	Environmental Weed	Salmonberry
7	<i>Passiflora ligularis</i> Juss.	Passifloraceae	Central & South America	11	7 (2004)	Pacific, Galapagos Islands Pacific Pacific, Hawaii Pacific, Hawaii Pacific, Galapagos Islands, Isla San	Tropical/sub-Tropical, Mediterranean	V p				Environmental Weed	Granada-china, Sweet granadilla
8	<i>Passiflora mixta</i> L. f.	Passifloraceae	Central & South America	10	1 (1986)	Australasia, New Zealand, Global	Tropical	V p				Environmental Weed	Banana passionfruit, Passionflower, Northern banana passionfruit
9	<i>Aristolochia littoralis</i> Parodi	Aristolochiaceae	South America, Brazil	9	4 (2002)	Central America, Mexico, Pacific, Hawai'i, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	V p				Environmental Weed	Calico-flower
10	<i>Jasminum sambac</i> (L.) Aiton	Oleaceae	tropical Asia, India	9	10 (2004)	Africa, Central Africa, Caribbean, Puerto Rico, Pacific, North America, United States, Florida	Tropical/sub-Tropical, Mediterranean	V/S p	Toxic			Environmental Weed	Arabian jasmine

Weeds of the future? Threats to Australia's grazing industries by garden plants

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	**Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
11	<i>Lonicera etrusca</i> Santi	Caprifoliaceae	southern & Mediterranean Europe	6	8 (2002)	Europe, Canary Islands, United Kingdom, Australasia, New Zealand, North America, United States	Mediterranean	V p				Environmental Weed	Etruscan honeysuckle, Honeysuckle, Zapletina
12	<i>Lonicera sempervirens</i> L.	Caprifoliaceae	eastern & southern USA	5	5 (1997/1998)	Africa, Central Africa, Global, North America, United States	Tropical/sub-Tropical, Mediterranean	V p				Environmental Weed	Trumpet honeysuckle
13	<i>Passiflora rubra</i> L.	Passifloraceae	Tropical America	5	2 (2002 seeds)	Pacific, South East Asia, Global, Pacific	Tropical/sub-Tropical	V/H p	Toxic			Environmental Weed	Dutchman's laudaman
14	<i>Bomarea multiflora</i> (L.) Mirb.	Liliaceae		4	10 (2004)	Australasia, New Zealand	Mediterranean	V p				Environmental Weed	Bomarea
15	<i>Passiflora alata</i> Curtis	Passifloraceae	Brazil	3	8 (2004)	South America, Brazil, Pacific, Global	Tropical/sub-Tropical, Mediterranean	V p				Environmental Weed	Wingstem passionflower
16	<i>Cissus sicyoides</i> L. (alternate and current name <i>Cissus verticillata</i> ssp. <i>verticillata</i>)	Vitaceae	tropical America, Florida	3	1 (1986)	Central America, Costa Rica, Global, Central America, Cuba	Tropical	V/S p			Agricultural Weed		C. verticillata Princessvine
17	<i>Clematis tibetana</i> Kuntze.	Ranunculaceae	Nepal, Tibet	2	3 (2004)	Australasia, New Zealand		V p				Environmental Weed	Chinese clematis
18	<i>Muehlenbeckia australis</i> (Forst) Meissn.	Polygonaceae		2	2 (1986)	Australasia, New Zealand		V p				Environmental Weed	Shrubby creeper, Pohuehue, Wire plant

Weeds of the future? Threats to Australia's grazing industries by garden plants

Grasses

Table 9. List of the 6 grass species which threaten the grazing industries of Australia with information extracted from the “Plant Database” (Randall 2006). *”No. of Australian nursery stock references” refers to the number of publications (up to 11) in which the species was listed followed by the latest year in which the species was recorded as sold (publication year in brackets). **Vegetation type/Longevity key: p – perennial, a – annual, b – biennial, T – tree, S – shrub, V – vine, G - grass.

	Species	Family	Origin	No. of weed refs	*No. of Australian nursery stock references	Location of weed references	Referenced growing climates	*Vegetation type/ Longevity	Referenced as toxic?	Referenced as noxious?	Referenced as an agricultural weed?	Referenced as an environmental weed?	Common names
1	<i>Nassella tenuissima</i> (Trin.) Barkworth	Poaceae	south, central and North America	22	2 (1998/1999)	Global, Africa, South Africa, Australasia, New Zealand	Mediterranean	G p		Noxious	Agricultural Weed	Environmental Weed	White tussock
2	<i>Miscanthus floridulus</i> (Labill.) Warb. ex K. Schum. & Lauterb.	Poaceae		14	4 (2004)	North America, Asia, China, Japan, Thailand, North America, United States	Tropical/sub-Tropical	G p		Noxious	Agricultural Weed		Giant Chinese silver grass, Japanese silver grass, Miscanthus
3	<i>Briza media</i> L.	Poaceae		13	3 (2002)	Asia, Japan, Europe, United Kingdom, Spain, eastern Europe, Australasia, New Zealand	Tropical/sub-Tropical, Mediterranean	G p			Agricultural Weed		perennial quaking grass, quaking grass, totter grass
4	<i>Pennisetum orientale</i> Rich.	Poaceae	North Africa, Middle East, India	4	4 (2004)	Asia, Kashmir, Central Asia, Bhutan, Australasia, New Zealand, Africa, Egypt	Tropical/sub-Tropical, Mediterranean	G p			Agricultural Weed		Oriental pennisetum, White fountain grass
5	<i>Festuca gautieri</i> (Hackel) K. Richter	Poaceae	Spain, Portugal, France	4	0	Europe, United Kingdom	Mediterranean	G p					Bear-skin fescue
6	<i>Arundinaria gigantea</i> (Walter) Muhl.	Poaceae	south-eastern North America	2	4 (2002)	North America, United States		G/S p	Toxic			Environmental Weed	giant cane, switch cane

Weeds of the future? Threats to Australia's grazing industries by garden plants

119	<i>Adiantum tenerum</i> Sw.	65	<i>Filipendula ulmaria</i> (L.) Maxim.
39	<i>Adonis aestivalis</i> L.	4	<i>Galega officinalis</i> L.
26	<i>Aethusa cynapium</i> L.	28	<i>Galium verum</i> L.
101	<i>Ageratina altissima</i> (L.) R. M. King & H. Rob.	152	<i>Geranium asphodeloides</i> BURM.f.
57	<i>Ajuga chamaepitys</i> (L.) Schreb.	154	<i>Geranium cafferum</i> Eckl. & Zeyh.
133	<i>Alcea pallida</i> (Waldst. & Kit. ex Willd.) Waldst. & Kit.	107	<i>Geranium lucidum</i> L.
97	<i>Allium carinatum</i> L.	94	<i>Geranium nepalense</i> Sweet
58	<i>Allium sativum</i> L.	156	<i>Geranium polyanthes</i> Edgew. & Hook. f.
95	<i>Allium schoenoprasum</i> L.	36	<i>Geranium pyrenaicum</i> Burm. f.
70	<i>Allium sphaerocephalon</i> L.	100	<i>Geranium thunbergii</i> Sieb. & Zucc.
99	<i>Alocasia macrorrhizos</i> (L.) G. Don (formerly <i>A. macrorrhiza</i>)	131	<i>Glycyrrhiza uralensis</i> Fisch. ex DC.
161	<i>Aloe aculeata</i> Pole Evans	158	<i>Gynura procumbens</i> (Lour.) Merr.
59	<i>Aloe vera</i> (L.) Burm. f.	50	<i>Gypsophila muralis</i> L.
91	<i>Alpinia purpurata</i> (Vieill.) K. Schum.	14	<i>Hedychium coccineum</i> Buch.-Ham. ex Sm.
76	<i>Althaea officinalis</i> L.	8	<i>Hedychium flavescens</i> Carey ex Roscoe
121	<i>Anagallis monelli</i> L. (formerly <i>A. linifolia</i>)	44	<i>Helenium autumnale</i> L.
32	<i>Anaphalis margaritacea</i> (L.) Benth. & Hook. f.	120	<i>Heliconia latispatha</i> Benth.
9	<i>Anthriscus sylvestris</i> (L.) Hoffm.	86	<i>Helleborus orientalis</i> Lam.
19	<i>Antirrhinum majus</i> L.	56	<i>Hemerocallis lilioasphodelus</i> L.
22	<i>Armoracia rusticana</i> (Lam.) Gaertn., B. Mey. & Scherb.	63	<i>Herniaria glabra</i> L.
140	<i>Artemisia afra</i> Jacq. ex Willd.	3	<i>Hieracium aurantiacum</i> L.
16	<i>Artemisia annua</i> L.	5	<i>Hieracium pilosella</i> L.
31	<i>Artemisia dracunculus</i> L.	46	<i>Iberis amara</i> L.
6	<i>Artemisia vulgaris</i> L.	38	<i>Impatiens balsamina</i> L.
137	<i>Arum dioscoridis</i> Sibth. & Sm.	23	<i>Impatiens parviflora</i> DC.
7	<i>Asclepias syriaca</i> L.	122	<i>Incarvillea sinensis</i> Lam.
84	<i>Asclepias tuberosa</i> L.	25	<i>Inula helenium</i> L.
113	<i>Atropa belladonna</i> L.	12	<i>Ipomoea coccinea</i> L.
132	<i>Bidens ferulifolia</i> (Jacq.) DC.	2	<i>Isatis tinctoria</i> L.
20	<i>Boerhavia diffusa</i> L.	102	<i>Lantana trifolia</i> L.
157	<i>Boophane disticha</i> (L.f.) Herb. (this genus is sometimes misspelt <i>Boophone</i>)	148	<i>Lathyrus rotundifolius</i> Willd.
153	<i>Bowiea volubilis</i> Harv. ex Hook. f.	150	<i>Ledebouria cooperi</i> (Hook.f.) Jessop
145	<i>Bulbine frutescens</i> (L.) Willd.	98	<i>Libertia formosa</i> Graham
61	<i>Bunium bulbocastanum</i> L.	41	<i>Lychnis flos-cuculi</i> L.
139	<i>Calathea picturata</i> (Linden) K. Koch & Linden	18	<i>Mentha arvensis</i> L.
77	<i>Campanula glomerata</i> L.	88	<i>Mentha requienii</i> Benth.
75	<i>Campanula rotundifolia</i> L.	159	<i>Moraea bipartita</i> L. Bolus
111	<i>Cardamine lyrata</i> Bunge	141	<i>Moraea polystachya</i> (Thunb.) Ker Gawl.
69	<i>Cardamine pratensis</i> L.	29	<i>Muscari botryoides</i> (L.) Mill.
34	<i>Carpobrotus acinaciformis</i> (L.) L. Bolus	112	<i>Nephrolepis falcata</i> (Cav.) C. Ch.
48	<i>Cerastium tomentosum</i> L.	108	<i>Nigella hispanica</i> L.
89	<i>Cerinthe major</i> L.	135	<i>Oenothera odorata</i> Jacq.
42	<i>Chenopodium capitatum</i> (L.) Asch.	103	<i>Onopordum nervosum</i> Boiss.
92	<i>Chenopodium quinoa</i> Willd.	151	<i>Ornithogalum conicum</i> Jacq.
118	<i>Commelina tuberosa</i> L.	35	<i>Ornithogalum nutans</i> L.
67	<i>Consolida orientalis</i> (J. Gay) Schrodinger	149	<i>Ornithogalum saundersiae</i> Baker
64	<i>Consolida regalis</i> Gray	80	<i>Osmunda regalis</i> L.
143	<i>Cyanella lutea</i> L.f.	116	<i>Oxalis rubra</i> St.-Hil.
72	<i>Deschampsia flexuosa</i> (L.) Trin.	30	<i>Perilla frutescens</i> (L.) Britton
124	<i>Dianella ensifolia</i> (L.) DC.	24	<i>Phyllanthus niruri</i> L.
125	<i>Digitalis ferruginea</i> L.	15	<i>Physalis angulata</i> L.
90	<i>Dryopteris filix-mas</i> (L.) Schott	114	<i>Pilea nummulariifolia</i> (Sw.) Wedd.
104	<i>Eccremocarpus scaber</i> Ruiz & Pav.	115	<i>Pinellia pedatisecta</i> Schott
146	<i>Echeveria gibbiflora</i> DC.	130	<i>Polygonatum verticillatum</i> (L.) All.
54	<i>Eleocharis acicularis</i> (L.) Roem. & Schult.	81	<i>Polygonum bistorta</i> L. (alternative names <i>Bistorta officinalis</i> , <i>Persicaria bistorta</i>)
128	<i>Eleitaria cardamomum</i> (L.) Maton	126	<i>Potentilla rupestris</i> L.
1	<i>Equisetum arvense</i> L.	52	<i>Pseudosasa japonica</i> (Siebold & Zucc. ex Steud.) Makino ex Nakai
11	<i>Equisetum hyemale</i> L.	136	<i>Ranunculus asiaticus</i> L.
27	<i>Equisetum ramosissimum</i> Desf.	40	<i>Ranunculus bulbosus</i> L.
49	<i>Eryngium foetidum</i> L.	47	<i>Rubia tinctorum</i> L.
117	<i>Euphorbia amygdaloides</i> L.	17	<i>Rudbeckia laciniata</i> L.
13	<i>Euphorbia myrsinites</i> L.	74	<i>Rumex alpinus</i> L.
85	<i>Euphorbia pulcherrima</i> Willd. ex Klotzsch	60	<i>Rumex sanguineus</i> L.

Weeds of the future? Threats to Australia's grazing industries by garden plants

References underpinning 281 species

Table 10 lists the 343 references that underpin the 281 species contained in this report. Reference numbers connect back to the "Plant Database" (Randall 2006) and some can be found in *The Global Compendium of Weeds* (Randall 2002). Please note that time constraints have not allowed the revisitation of URL addresses and these may have been revised or removed since they were first recorded in the "Plant Database" (Randall 2006).

Table 10. The information obtained for the 281 species was extracted from 343 references underpinning the "Plant Database" (Randall 2006).

Ref Number	Source	URL
1	Class C Weeds Whitman County Washington State.	www.wa.gov/agr/weedborad/weed_list/weed_listhome.html
3	Actual and Prospective Weeds. Pacific Islands Ecosystems at Risk Project; http://www.hear.org/pier/	www.hear.org/pier/
4	INVASIVE PLANTS OF CANADA, Melinda Thompson Canadian Botanical Conservation Network, August 1997	www.rbg.ca/cbcn/en/invasives/i_list.html
5	Agence Méditerranéenne de l'Environnement, Conservatoire Botanique National Méditerranéen de Porquerolles (2003). Plantes envahissantes de la région méditerranéenne. Agence Méditerranéenne de l'Environnement. Agence Régionale Pour l'Environnement Provence-Alpes-Côte d'Azur. 48 p.	http://www.ame-lr.org/publications/espaces/plantesenvahissantes/pdf/plantesenvahissantes.pdf
6	Waterhouse, D.F. (1997). The Major Invertebrate Pests and Weeds of Agriculture and Plantation Forestry in the Southern and Western Pacific ACIAR Canberra	
8	Foster, S. and Duke, J.A. (1990). A Field Guide to Medicinal Plants, Eastern and Central North America. Houghton Mifflin Co., New York	
10	Vermeulen, J.B., Dreyer, M., Grobler, H. and Van Zyl, K. (1996) A Guide to the Use of Herbicides. National Dept. of Agric. Republic of South Africa.	
12	WEEDS IN RUBBER PLANTATIONS (2002) Thailand Department of Agriculture.	www.doa.go.th/botany/rubber.html
13	Backer, C.A. (1973) Atlas of 220 Weeds of sugarcane fields in Java. A reprint of an original publication from the early 1930's.	
14	Acuna, G.J. (1974). Plantas Indeseables en Los Cultivos Cubanos. Academia de Ciencias, Insitituto de Investigaciones de Cuba, Havana.	
15	Colin C. Ogle (last revision May 2003). Adventive plants collected in the Wanganui Conservancy of the New Zealand Department of Conservation, 1988-present. (Unpublished working list). Author's address: 22 Forres St, Wanganui, New Zealand. Email: robcol.ogle@xtra.co.nz	
17	Virginia Native Plant Society (1998) Alien Invasive plants in Virginia. Virginia Native Plant Society (PO Box 844, Annandale, VA 22003) Division of Natural Heritage.	www.state.va.us/~vaher.html
21	Chris, R. and McLendon, T. (1998) An Assessment of Exotic Plant Species of Rocky Mountain National Park Rutledge. Department of Rangeland Ecosystem Science, Colorado State University. 97pp. Northern Prairie Wildlife Research Center Home Page. (Version 15DEC98).	www.npwrc.usgs.gov/resource/othrdata/explant/explant.htm
22	AN OVERVIEW OF INVASIVE WOODY PLANTS IN THE TROPICS. PIERRE BINGGELI, John B. Hall and John R. Healey p.binggeli@ulst.ac.uk	members.tripod.co.uk/WoodyPlantEcology/invasive/index.html
23	Andersen, R.N. (1968). Germination and Establishment of Weeds for Experimental Purposes. Weed Science Society of America Handbook. WSSA, Illinois.	
26	Arizona State Designated Exotic Plant Species.	http://ag.arizona.edu/OALS/agnic/weeds/home.html
28	Banana Weeds Report to Hortguard, Randall (1999).	
30	Behrendt, S. and Hanf, M. (1979) Grass Weeds In World Agriculture. BASF Aktiengesellschaft. Ludwigshafen am Rhein, Germany.	
32	Biological Diversity of the Guianas (BDG) Guyana; Surinam; French Guiana. The Checklist of the Plants of the Guianas; 2nd Edition (edited by J. Boggan; V. Funk; C. Kelloff; M. Hoff; G. Cremers; & C. Feuillet; 1997) was produced as a cooperative project between the Biological Diversity of the Guianas Program (Smithsonian Institution; Washington; DC USA) and the ORSTOM Herbarium (Cayenne; French Guiana); under the auspices of the Centre for the Study of Biological Diversity (University of Guyana; Georgetown; Guyana). http://www.nmnh.si.edu/biodiversity/checklst.htm	
34	CALFLORA DATABASE Summaries of geographic distribution, habitat, and lifeform data for the approximately 8400 vascular plant taxa known to be native or naturalized	http://elib.cs.berkeley.edu/calflora/download.html

Weeds of the future? Threats to Australia's grazing industries by garden plants

- in California, based on published literature as well as specific documented observations.
- 35 California Noxious Weed Control Projects Inventory (CNWCPI) <http://endeavor.des.ucdavis.edu/weeds/>
- 37 Pierre Binggeli (1999) Case Histories of Highly Invasive Woody Species in the Tropics. members.tripod.co.uk/WoodyPlantEcology/invasive/index.html
- 38 Brako L. and Zarucchi J. L. (1993) Catalogue of the Flowering Plants and Gymnosperms of Peru. Vol. 45. Monographs in Systematic Botany from the Missouri Botanical Garden. W3TROPICOS – Peru Checklist.. (2001–) Search facilities provided on the Missouri Botanical Garden's Peru Checklist. <http://mobot.mobot.org/W3T/Search/peru.html>
- 40 Check-list of the Flowering Plants and Ferns of Cornwall and the Isles of Scilly – 1994 C.N. French and R.J. Murphy. University of Exeter www.ex.ac.uk/~cnfrench/lcs/cbru/checklist/a1menu.htm
- 42 CHECKLIST OF THE VASCULAR PLANTS OF FINLAND, based on Kurto, A. & Lahti, T. 1987: Suomen putkilokasvien luettelo (Checklist of the vascular plants of Finland). – Pamphl. Bot. Mus. Univ. Helsinki 11: I.–VI + 1–163. The list includes all the vascular plants found in Finland up to 1987, excluding those only in cultivation (i.e. taxa found during the past few years – mainly casual plants or plants escaping from cultivation are missing, and erroneous records of the 1987 list have not been corrected)
- 44 Ernst Hafliger, (Basle), and Josef Brun–Hool, (Lucerne) (1968–) CIBA–GEIGY WEED TABLES A synoptic presentation of the flora accompanying agricultural crops. www.planning.ci.portland.or.us/lib_plantlist.html
- 45 City of Portland, Oregon: Nuisance Plant List: Dominating Plants (weed).
- 49 Thornton, B.J. and Durrell, L.W. (1933) Colorado Weeds. Bulletin 403, Colorado Agricultural College, Colorado Experimental Station, Fort Collins.
- 50 Wild, H. (1955) Common Rhodesian Weeds. Government Printer, Salisbury, Rhodesia.
- 51 Henderson, M., and Anderson, J.G. (1966). Common Weeds of South Africa. Memoirs of the Botanical Surveys of South Africa N° 37, Department of Agriculture, Technical Services, Republic of South Africa.
- 52 Mulligan, G.A (1987) Common Weeds of Canada. McClelland and Stewart, the Department of Agriculture and the Publishing Centre, Supply and Services Canada.
- 54 Groves, R.H. & Hosking, J.R. (1997) Recent Incursions of Weeds to Australia. Technical Series N° 3. CRC for Weed Management Systems, Australia.
- 62 Declared (Noxious) Plants Listing For Western Australia. Agriculture and Related Resources Protection Act 1976 (ARRPA) (for Dec 2004). www.agric.wa.gov.au
- 63 Declared Weeds and Invader plants of South Africa (2000) www.nda.agric.za/docs/Act43/Act43.html
- 66 Diwakar, P.G. and Ansari, A.A. (1995). Weed Flora of Buldhana District of Maharashtra. J. Econ. Tax. Bot. Vol. 19 No.3
- 67 Dr. David Patterson Weed Specialist North Carolina Department of Agriculture and Consumer Services Plant Protection Section email: David_Patterson@mail.agr.state.nc.us
- 70 Williams, G.H. (1982). Elsevier's Dictionary of Weeds of Western Europe. Elsevier Scientific Publishing Company Amsterdam, Holland.
- 74 Kate Blood, NRE Vic, pers. comm. Coordinator, Enviroweeds Manager Cooperative Research Centre for Weed Management Systems (Weeds CRC)
- 77 James H. Miller (1999) EXOTIC INVASIVE PLANTS IN SOUTHEASTERN FORESTS, Southern Research Station USDA Forest Service Auburn University, AL www.srs.fs.fed.us/pubs/rpc/1999-03/rpc_99mar_27.htm
- 78 Exotic Pest Plants of Ecological Concern in California: CALEPPC web site www.caleppc.org/info/plantlist.html
- 79 Exotic Plant Records in the Northwest United States 1950–1996: an Ecological Assessment; Toney, C.J., Rice, P.M, & Forcella, F. 1998 weed
- 80 Faith T. Campbell: American Landss Alliance: draft lists of exotic plant species invasive in continental United States mentioned as invasive by someone but lacking sufficient source to include on main list; most but not all exotic in origin: weed
- 84 'Florida Weeds', Florida Agricultural Retrieval Information System, FAIRS. University of Florida http://outreach.missouri.edu/ne-imaster/demonet/hammock_ifas_ufl_edu.html
- 85 G.R.I.N. TAXON Database <http://www.ars-grin.gov/npgs/tax/index.html> GRIN
- 86 Kern County Introduced (naturalised) Species – not all introduced species represented yet. Nature Alley • P.O. Box 153 • Weldon, CA 93283 • (760) 378–2029 • Copyright 1998–2005 by Nature Ali <http://www.ars-grin.gov/npgs/tax/index.html>
<http://natureali.org/kis.htm>
- 87 Holm, L. G., Pancho, J. V., Herberger, J. P. and Plucknett, D. L. (1979). A Geographical Atlas of World Weeds. John Wiley and Sons NewYork, USA
- 90 Häfliger, E. and Scholz, H. (1980) Grassweeds 1. Ciba–Geigy Ltd., Basel, Switzerland.
- 91 Häfliger, E. and Scholz, H. (1981). Grassweeds 2. Ciba–Geigy Ltd., Basel, Switzerland.
- 94 Hanf, M. (1983). The Arable Weeds of Europe, with their seedlings and seeds. BASF Aktiengesellschaft, D–6700 Ludwigshafen. Germany
- 95 Henderson, L. (1995). Plant Invaders of Southern Africa. Plant Protection Research Institute Handbook N°5. Agriculture Research Council.
- 100 Kathleen Nelson (nursery owner), 55 Mud Pond Road, Gaylordsville, CT 06755

Weeds of the future? Threats to Australia's grazing industries by garden plants

- 101 Introduced (Naturalised) Species to the United States [USDA, NRCS 1999. The PLANTS database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.] <http://plants.usda.gov/plants>
- 102 Invasive exotic pest plants in Tennessee. Southeast Exotic Pest Plant Council. (October 19, 1999). Research Committee of the Tennessee Exotic Pest Plant Council. <http://webriver.com/tn-eppc/exlist.htm>
- 103 Invasive Exotic Plants of Canada. An Initiative of Parks Canada, Canadian Heritage CWS, BCO, EMAN, Environment Canada, GeoAccess Division and Natural Resources Canada. <http://infoweb.magi.com/~ehaber/ipcan.html>
- 104 Invasive Plants of Natural Habitats in Canada. An Integrated Review of Wetland and Upland Species and Legislation, Government and their control. Environment Canada and the Canadian Wildlife Service. www.cws-scf.ec.gc.ca/habitat/inv/index_e.html
- 107 Space, J. (2002-) Invasive species present on Pohnpei, Federated States of Micronesia. A product of the Pacific Island Ecosystems at Risk project (PIER) www.hear.org/pier/pohnpei.htm
- 108 Fern, K. (1992-97). Plants for a Future. A resource centre for edible and other useful plants. The Field, Penpol, Lostwithiel, Cornwall, PL22 0NG, England. URL: <http://www.comp.leeds.ac.uk/pfaf/index.html>
- 111 Soufi, Z. (1988). Les principales mauvaises herbes des vergers dans la region maritime de Syrie. Weed Research, Vol 2.
- 112 List of Florida's Most Invasive Species – Florida Exotic Pest Plant Council. www.fleppc.org/99list.htm
- 115 Robson, T.O., Americanos, P.J. and Abu-Urmaileh, B.E. (1991). Major weeds of the Near East. Paper 104. FAO Plant Production and Protection, Rome.
- 116 Santa Catalina Island Conservancy (1997) Management Plan for the Control and Eradication of Wildland Weeds Ecological Restoration Department [August 1997]. www.catalinaconservancy.org
- 118 Anon (1989) Manuale per il Riconoscimento delle Principali erbe Infestanti. Societa Italiana per lo Studio della Lotta alle Malerbe S.I.L.M Italy. <http://users.unimi.it/weed/sez01/libri/libri.html>
- 121 Wells, M.J., Balsinhas, V.M., Joffe, H., Engelbrecht, V.M., Harding, G. and Stirton, C.H. (1986) A Catalogue of Problem Plants in Southern Africa, incorporating The National Weed List of South Africa. Memoirs of the Botanical Survey of South Africa No. 53. Botanical Research Institute, Pretoria, South Africa.
- 122 Prohibited Plant Species of Miami-Dade County www.co.miami-dade.fl.us/derm/environment/land/badplants/scientific.htm
- 126 Häfliger, E., Kuhn, U., Hämet-Ahti, L., Cook, C.D.K. Faden, R. and Speta, F. (1982) Monocot Weeds 3. Ciba Geigy Ltd., Basel, Switzerland.
- 129 Native Plant Conservation Initiative, Alien Plant Working Group. www.nps.gov/plants/alien/fact/eufo1.htm
- 131 Harris, G. (1998) Invasive New Zealand Weeds. CalEPPC Newsletters, Fall 1998 (newsletter is incorrectly dated Winter 1998) Volume 6 Number 4 (539 kb) www.caleppc.org/publications/newsletters/vol6no4.pdf
- 132 Nominated dominant weed species, Aliens List
- 133 Leslie J. Mehrhoff (1999) Non-native Invasive Plant Species Occurring in Connecticut. Revised Edition. George Safford Torrey Herbarium. Connecticut Invasive Plant Working Group. PLUS The Non-Native Invasive & Potentially Invasive Vascular Plants in Connecticut. CT Geological and Natural History Survey www.eeb.uconn.edu/research/invasives/ind_spec.html
- 135 Mitchell, A.A. and Waterhouse, B.M. (1998) Northern Australian Quarantine Service, Weeds Target List. 2nd Ed. Misc. Pub. No. 6/98. AQIS Canberra. NAQS.
- 136 Taylor, R.J. (1990) Northwest Weeds-The Ugly and Beautiful Villians of Fields, Gardens and Roadsides. Mountain Press Publishing Company, Missoula, Montana.
- 137 Noxious Invasive Vegetation of the Willamette Valley: Native Plant Society of Oregon. <http://csf.colorado.edu/northwest/nwnatives/dec97/msg00594.html>
- 138 Noxious Weeds and Non-Native Plants (Colorado Weed Management Association 1999) www.cwma.org
- 139 Noxious Weeds in Washington State www.wa.gov/agr/weedboard/weed_list/overview.html
- 140 Federal Noxious Weed List of the United States. USDA, NRCS 1999. The PLANTS database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA. <http://plants.usda.gov/plants>
- 142 Randall, J.M. and Marinelli, J. eds (1996) Invasive plants: Weeds of the global garden. Brooklyn Botanical Garden Publications, Brooklyn, New York. [Ornamentals Invading Natural Areas in the Continental United States.]
- 147 Parsons, W.T. and Cuthbertson, E.G. (1992). Noxious Weeds of Australia. Inkata Press, Melbourne & Sydney.
- 151 This list of invasive plants affecting natural areas in the U.S. (including Hawaii) has been compiled from a wide variety of publications, reports, surveys, and occasional personal observations. Sources of plant lists include the National Park Service and other federal agencies, state and local natural resource and related departments, Exotic Pest Plant Councils and related organizations, The Nature Conservancy, and universities. Sources for each plant listed are provided on the table (a legend for the source code is provided from the REFERENCE(S) header). The current list includes over 1000 plants and is updated as needed. Please contact Jill Swearingen (jil_swearingen@nps.gov) regarding any errors, omissions or potential additions to the

Weeds of the future? Threats to Australia's grazing industries by garden plants

- list.
- 152 Cronk, Q.C.B and Fuller, J.L. (1995). Plant Invaders, The threat to natural ecosystems. Chapman and Hall United Kingdom
- 153 PLANTAS INVASORAS MAS FRECUENTES EN PLANTAS INVASORAS MAS FRECUENTES EN LAS PASTURAS DE LA ZONA DE PUCALLPA: Frequently Invasive Plants of Pastures in the Pucallpa Region of Peru: [LAS PASTURAS DE LA ZONA DE PUCALLPA = Frequently Invasive Plants of Pastures in the Pucallpa Region of Peru:] www.idrc.ca/library/document/099396/index_s.html
- 156 Rice, P.M., Toney, C. and Sacco, B. (1997). Potential Exotic Plant Species Invading the Blackfoot Drainage, Montana. (Peter M. Rice, Chris Toney and Bob Sacco) <http://invader.dbs.umt.edu/blackfoot/>
- 157 Garcia, J.G., MacBryde, B., Molina, A.R. and Herrera-MacBryde, O. (1975) Prevalent Weeds of Central America. International Plant Protection Centre, El Salvador.
- 158 Bromilow, C. (1995) Problem Plants of South Africa. Briza Publications, Arcadia, South Africa.
- 159 Project to identify the riparian and aquatic weeds of Montana – vascular plants only. The Montana State University Herbarium. <http://gemini.oscs.montana.edu/~mlavin/herb/ripweed.htm>
- 161 RAPID. Common Weeds and Poisonous Plants of North America: University of Idaho, College of Agriculture – [RAPID = Random Access Plant Identification] <http://sdg.ag.uidaho.edu/rapid/>
- 165 Roy, B., Popay, I., Champion, P., James, T., and Rahman, A. (1998). An illustrated guide to the common weeds of New Zealand. New Zealand Plant Protection Society, R.G. & F.J. Richardson.
- 169 Snowy River Shire Council, Noxious Weeds (New South Wales) www.snowyriver.nsw.gov.au/s9s_weed.htm
- 170 Soerjani, M., Kostermans, A.J.G.H. and Tjitrosoepomo, G. (Eds) (1987). Weeds of Rice in Indonesia. Balai Pustaka, Jakarta.
- 171 Proclaimed Plants in South Australia, February 2002. Copyright © PRIMARY INDUSTRIES AND RESOURCES SA 1999. http://www.pir.sa.gov.au/pages/sus_res/animal_plant/proclaimed_plants_list.htm:sectID=633&tempID=68
- 172 SOUTH CONE PLANT PROTECTION COMMITTEE (COSAVE) Quarantine plants <http://www.cosave.org.py/>
- 174 Stubbendieck, J., G.Y. Friisoe, & M.R. Bolick. 1994. Weeds of Nebraska and the Great Plains. Nebraska Department of Agriculture, Bureau of Plant Industry. Lincoln, Nebraska. 589 pp. see USDA Plants Database for Listing of species. <http://plants.usda.gov/plants/>
- 175 Suzuki, K., Hirose, K., Kawase, K. and Okitsu, B. (1988) Studies on weed control in a citrus orchard. III. Control of broad leaf perennial weeds. Fruit Tree Res. Sta., Shizuoka, Japan Bulletin of the Fruit Tree Research Station, Japan. No. 15, 21–34; 7 ref.
- 176 Introduced (Naturalised) species of Tasmania (1999) Data Supplied by Resource Management and Conservation Department of Primary Industry, Water & Environment. Hobart
- 179 The Exotic Plants of Southern Florida. Exotic Specifics. The Institute for Regional Conservation George D. Gann and Keith A. Bradley www.regionalconservation.org/sfe3/sfehome.html irc@regionalconservation.org 22601 S.W. 152 Ave. Miami, Florida 33170.
- 180 Anon (1992). The Grower's Weed Identification Handbook by Family and by Alphabetical Listing. Publication 4030. – Division of Agriculture and Natural Resources, University of California.
- 181 Reid, V.A. (1998). The Impact of Weeds on Threatened Plants. DOC, Science & Research Internal Report N° 164.
- 182 The Nature Conservancy Weed Alert! Wildland Invasive Species Program. Invasives on the web protecting the native biodiversity of our wild lands from harmful invaders. <http://tncweeds.ucdavis.edu/alert/archive.html>
- 185 Boulos, L., and Nabil el-Hadidi, M (1994). The Weed Flora of Egypt. The American University in Cairo press, Cairo, Egypt.
- 186 Holm, L.G., Plucknett, D.L., Pancho, J.V. and Herberger, J.P. (1977). The World's Worst Weeds. Distribution and Biology. University Press of Hawaii Honolulu, Hawaii.
- 188 Mangoensoekardjo, S. and Pancho, J.V. (1975). Rerumpitan Di Kebun Karet, Kelapa, Sawit, Coklat, The Dan Padi Serta cara Pemberantasannya. [Current Status of weed problems in plantation crops]. Bulletin B.P.P.M. Vol.6 No 1 Maret.
- 191 Randall, R.P., Mitchell, A.A. & Waterhouse, B.M. (1999) Tropical Weeds Report. Internal Report to Manager of Plant Industry Protection, Dept of Agriculture, Western Australia.
- 192 Missouri Botanical Garden – w3 – Specimen Data Base – 26 Jan 2004 http://mobot.mobot.org/cgi-bin/search_vast
- 195 USDA Forest Service Eastern Region, Section 3B. Eastern Region invasive plants, ranked by degree of invasiveness as based on information from States. <http://www.fs.fed.us/r9/wildlife/range/weed/?open=Sec3B.htm>
- 196 National Parks Board, Singapore. Species Lists. www.nparks.gov.sg/nparks_cms/cms/cmsmgr/data/6/PlantChkList.xls
- 199 Villaseñor Ríos, J.L. and Espinosa García, F.J. (1998). Catálogo De Malezas De México. Ediciones Científicas Universitarias, Mexico.
- 204 Tetango, M.H. (1981) Weeds and Weed Control in Asia. FFTC Book Series N° 20. Taiwan

Weeds of the future? Threats to Australia's grazing industries by garden plants

- 206 Fournet, J. (1993) Phytoecological Characteristics of Weed Populations in Sugar Cane and Banana Plantations in Basse Terre (Guadeloupe). *Weed Research Oxford*. 33: 5, 383-395
- 207 Haragan, P.D. (1991). *Weeds of Kentucky and Adjacent States – A Field Guide*. The University Press of Kentucky. [Patricia Dalton Haragan].
- 209 Matchacheep, S. (1995) *Weeds of Thailand*, Thai Publication. [Author Ass. Prof. Dr. Surachai Matchacheep of the Ratchamongkul Technology Institute, Thailand. List supplied by Ricky Ward, Enviroweeds]
- 210 Weeds of the North Central States: North Central Regional Research Publication N° 50. Cooperative Extension Service. Agricultural Experiment Station. University of Illinois. www.ag.uiuc.edu/~vista/abstracts/aWEEDS.html
- 211 Uva, R.H., Neal, J.C. and DiTomaso, J.M. (1997) *Weeds of the Northeast*. Cornell University Press, USA.
- 212 Whitson, T.D. (ed.), Burrill, L.C., Dewey, S.A., Cudney, D.W., Nelson, B.E., Richard, D.L. and Parker, R.P. (1996) *Weeds of the West*. The Western Society of Weed Science, Newark.
- 214 Weir, J.R. (1927). The problem of *Dichrostachys nutans*, a weed tree, in Cuba with remarks on its pathology. *Phytopathology* 17, 137-146, plates 6-8.
- 216 Hossain, M.K. & Pasha, M.K. (2001). Alien exotics in Bangladesh which have a detrimental impact on the Ecosystem. *ALIENS* No.13, pp. 12-13. ISSG, New Zealand.
- 217 Holm, L. G., Doll, J., Holm, E., Pancho, J. V., and Herberger, J. P. (1997). *World Weeds. Natural Histories and Distribution*. John Wiley and Sons New York, USA.
- 218 Darrow, R.A. Erickson, L.C. Holstrum, J.T.Jnr., Miller, J.F., Scudder, W.F. and Williams, J.L. Jnr. (1966) Report of the Terminology Committee, Standardized Names of Weeds. *WSSA* (14), 346-386. *Weed Science Society of America*.
- 219 Anon (19xx) *Weed Handbook Series 1-55*. Wyoming Weed and Pest Council, Douglas Wyoming.
- 221 Arasi Lawrence Company TM. *Weeds of Egypt*. <http://arasi.freeServers.com/>
- 222 Hoffman, R. & Kearns, K. (Eds). (1997). *Wisconsin manual of control recommendations for ecologically invasive plants*. Wisconsin Dept. Natural Resources. Madison, Wisconsin. 102 pp. See species List on the USDA Plants Database. weed
- 224 Non-Native Invasive & Potentially Invasive Vascular Plants in Connecticut. The CT Geological and Natural History Survey. List and criteria developed by the George Safford Torrey Herbarium at the University of Connecticut in conjunction with the State Geological and Natural History Survey of Connecticut and the Connecticut Invasive Plant Working Group. www.eeb.uconn.edu/research/invasives/ind_spec.html
- 225 Owen, S.J. (1996). *Weeds of concern on conservation lands in New Zealand. Ecological weeds on conservation land in New Zealand: A database*. 118p. Department of Conservation, Wellington.
- 226 ALIEN INVASIVE PLANT SPECIES OF JAMAICA. www.jamaicachm.org.jm/aliens_i_pl.htm
- 229 State Noxious Weeds of the USA. USDA, NRCS 1999. The PLANTS database. National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- 230 Flora List for Pohnpei from Christopher Dahl (File creation date 15 Nov 1997) College of Micronesia-FSM Botany 250 www.geocities.com/TheTropics/Cabana/4705/Botany.html
- 231 Brossard, C.C., Randall, J.M. and Hoshovsky, M.C (2000) *Invasive Plants of California's Wildlands*. University of California Press, USA
- 232 AUSTRALIAN CAPITAL TERRITORY LAND (PLANNING AND ENVIRONMENT) ACT 1991 DECLARATION OF PEST PLANTS DECLARATION NO. 1 OF 1999 Under Subsection 254 (1) of the Land (Planning and Environment) Act 1991, I declare that the following plants to be 'pest plants' in the ACT www.publishing.act.gov.au/legsales/inst/inst99
- 233 Hawaii's Most Invasive Horticultural Plants. This is a list of the worst invasive horticultural plants in Hawaii as put forth by the Hawaii State Alien Species Coordinator (Department of Land & Natural Resources [DLNR], Division of Forestry & Wildlife [DOFAW]). It is urged that species on this list not be grown anywhere in the state of Hawaii. Questions regarding this list should be directed to the State Alien Species Coordinator, DLNR/DOFAW, 1151 Punchbowl St., Rm. 325, Honolulu, HI 96813; ph. 808-587-0164. www.state.hi.us/dlnr/dofaw/hortweeds/
- 235 Source Formosan Weed Seed Morphology Edited from Miyake and Kore (1937-1938) Investigation on the Seed Morphology of Taiwan Weed Species. *Formosa Agricultural Review* (372): 831-842; (374): 50-74; (375): 153-163; (376): 227-251; (377): 62-67. <http://seed.agron.ntu.edu.tw/ENG/tech/Eweed.htm>
- 236 Weeds of Cultivation in Argentina. *Malezas en Cultivos de Argentina Agro Mercado – via Rural – Arventis* (2001) Web Site. www.viarural.com.ar/viarural.com.ar/agricultura/malezas-nombrelatino.htm
- 237 Argentina AGRO Management Malezas Incluidas. Argentinian Software Development Company. www.agromanagement.com/malezas_incluidas.htm
- 238 Harada, J., Paisooksantivartana, Y. and Zungsontiporn, S. (1987). *Weeds in the Highlands of Northern Thailand*. Project Manual No. 3. National Weed Science www.disc.doa.go.th/botany/dicot1.html

Weeds of the future? Threats to Australia's grazing industries by garden plants

- Research Institute Project. (also available as a web site Weeds in the Highlands of Northern Thailand. Botany and Weed Science Division of the Thai Department of Agriculture.)
- 239 Major Weeds of Thailand. Botany and Weed Science Division of the Thai Department of Agriculture. www.disc.doa.go.th/botany/dicot1.html
- 240 Tamado, T. and Milberg, P. (2000). Weed flora in arable fields of eastern Ethiopia with emphasis on the occurrence of *Pathenium hysterophorus*. *Weed Research* 40, 507–521.
- 241 Marticorena, C. & Quezada, A. (1985). Catálogo de la flora vascular de Chile. GAYANA, BOTANICA Vol 42 N° 1–2 Universidad de Concepcion–Chile.
- 242 Braun, M., Burgstaller, H., Hamdoun, A.M., and Walter, H. (1991) Common Weeds of Central Sudan. Verlag Josef Margraf, Scientific Books, Germany.
- 243 HortGuard and GrainGuard Initial Threat List Compilations
- 245 AgroInformacoes Plantas Daninhas – Brasil (Problematic Plants of Agriculture in Brazil). www.agronet.eng.br/informa/planta_daninha.html
- 246 Chris Buddenhagen and Melanie Newfield (pers comm. 2001) A list of potential and actual environmental weeds for New Zealand. Department of Conservation.
- 248 Marwat, Q. & Hussain, F. (1988). Ecological Assessment of Apple and Apricot Weeds in Hanna – Urak Valley Quetta. *Pakistan J. Agric. Res.* Vol. 9, N°: 2.
- 249 Murphy T.R. and Johnson B.J. (2001) Weeds of Southern Turfgrasses. College of Agricultural and Environmental Sciences – Griffin, Georgia. <http://www.griffin.peachnet.edu/cssci/TURF/turf.htm>
- 253 Unité de Malherbiologie & Agronomie Weed Science & Agronomy INRA–Dijon This encyclopedic database on plant protection catalogues the main weeds (580) of western Europe, describes the species at two stages: mature plants and seedlings, and provides information on their taxonomy, their distribution and their ecology. Copyright (c) 2000 INRA, all rights reserved ; J.–P. Lonchamp, Nov. 2000 www.dijon.inra.fr/malherbo/hyppa/hyppa-a/hyppa_a.htm
- 254 Ferns and Man in New Guinea by Jom Croft from a paper presented to Papua New Guinea Botany Society, 1982 [Ferns and their Allies used by or Affecting Man in Papuasia] URL: <http://www.anbg.gov.au/projects/fern/ferns-man-ng.html>
- 255 Lorenzi, H. (2000). Plantas daninhas do Brasil. Terrestres, Aquaticas, Parasitas e Toxicas. 3rd Edition. Instituto Plantarum De Estudos Da Flora Ltda
- 256 Qiang, S., Cao X. (2000) Survey and analysis of exotic weeds in China. *Journal of Plant Resources* 9(4): 34–64
- 257 Tye, A. (2001) Invasive Plant Problems and Requirements for Weed Risk Assessment in the Galapagos Islands. Proceedings of the Weed Risk Assessment Workshop. CSIRO Publishing.
- 258 Puerto Rico: Summary Of Plant Protection Regulations Updated September, 1999 Puerto Rico Department of Agriculture Plant Quarantine Services, Noxious Weeds. www.aphis.usda.gov/npb/F&SOS/prsq.html
- 261 Liogier, H.A. (2000). Flora of Puerto Rico and Adjacent Islands. A Systematic Synopsis. (2nd Edition). Universidad de Puerto Rico
- 262 Koo, S.K., Chin, Y.W., Kwon, Y.W., Cung, H.A. (2000) Common Weeds in Vietnam. Agriculture Publishing House, Vietnam.
- 263 Morita, H. (1997). Handbook of Arable Weeds in Japan. Kumiai Chemical Company.
- 264 Heil, K.D. (2000) Four Corners Invasive and Poisonous Plant Field Guide. San Juan College, Bureau of Land Management
- 265 Oleskevich, C., Shamoun, S.F. & Punja, Z.K. (1996) The biology of Canadian weeds. 105. *Rubus strigosus* Michx., *Rubus parviflorus* Nutt., and *Rubus spectabilis* Pursh. *Can. J. Pl. Sci.* 76, 187–201.
- 266 Anderson, W.P. (1999). Perennial Weeds. Iowa State University Press Iowa, USA
- 267 Sheley, R.L. and Petroff, J.K. (Eds) (1999). Biology and Management of Noxious Rangeland Weeds. Oregon State University Press Oregon
- 268 Bambaradeniya, C. (2000) List of Alien Invasive Plant Species from Sri Lanka: email to Aliens: [Channa Bambaradeniya – channab@slt.net.lk]
- 270 Molina, A.R. (1998) Malezas presentes en cultivos de verano. Vol 1. [Verano means 'summer' or 'dry season', so the title is basically, Summer weeds of cultivation] www.molinaanibal.com.ar/molinaanibal/manuales.htm
- 272 Williams, G. and Hunyadi, K. (1987). Dictionary of Weeds of Eastern Europe: Their common names and importance in Latin, Albanian, Bulgarian, Czech, German, English, Greek, Hungarian, Polish, Romanian, Russian, Serbo–Croat and Slovak. Elsevier. Amsterdam.
- 273 Chiang, M.Y. and Shi, L.M. (2000). Lawn Weeds in Taiwan. Council of Agriculture, Executive Yuan, Taiwan.
- 274 Horng, H.C. & Leu, L.S. (1980). Weeds of Cultivated Land in Taiwan. Weed Science Society of the Republic of China.
- 275 Wang, Z., Xin M., Ma D., Song, S., Wang, X., Yan, C., Zhang, D., Feng, W., Ma, E. and Chen, J. (1990). Farmland Weeds in China. A collection of coloured illustrative plates. Agricultural Publishing House. China.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- 276 Henty, E.E. and Pritchard, G.S. (1973) Weeds of New Guinea and their control. Botany Bulletin N°7. Department of Forests. Div. of Botany. Lae, P.N.G. (All plants illustrated, kept in Agency library)
- 281 Landcare Research New Zealand (2001) Plant Names Database. <http://nzflora.landcare.cri.nz/plannames>
- 281 PRINCIPALES MALEZAS DE CENTRO AMERICA Y EL CARIBE CONTROLADAS CON ROUNDUP MAX. Per Label Registration in Peru and Ecuador. (from Chris Buddenhagen, Galapagos Islands)
- 283 Henderson, L. (2001) Alien Weeds and Invasive Plants. Plant Protection Research Institute & Agricultural Research Council, South Africa.
- 286 The Research Institute for Bioresources. Okayama University. Laboratory of Wild Plant Science. Weeds of Japan. www.rib.okayama-u.ac.jp/wild/zassou/z_table.htm
- 287 The Research Institute for Bioresources. Okayama University. Laboratory of Wild Plant Science. Naturalized plants from foreign country into Japan. www.rib.okayama-u.ac.jp/wild/kika/kika_table.htm
- 289 Blood, K. (2001) Environmental weeds: A field guide for SE Australia. C.H. Jerram & Associates.
- 290 Blood, K. (2001) NOT USED IN HER BOOK
- 293 Mulligan, G.A. (Ed.) (1984). The Biology of Canadian Weeds II. Contributions 33–61. Agriculture Canada.
- 294 Mulligan, G.A. (Ed.) (1979). The Biology of Canadian Weeds I. Contributions 1–32. Agriculture Canada.
- 295 Marzocca, A. (1994). Guia Descriptiva De Malezas Del Cono Sur. Instituto Nacional De Tecnologia Agropecuaria.
- 296 Muyt, A. (2001). Bush Invaders of South–East Australia. R.G. and F.J. Richardson, Victoria
- 297 Zhang, Z.P. & Hirota, S. (Eds) (2000). Chinese Colored Weed Illustrated Book. Institute for the Control of Agrochemicals, Ministry of Agriculture, P.R.China, and the Japan Association For Advancement of Phyto–Regulators.
- 298 Espie, P.R. (2001). Hieracium in New Zealand: ecology and management. AgResearch Ltd. Mosgiel, New Zealand.
- 299 Royer, F. and Dickinson, R. (1999). Weeds of Canada and the Northern United States. The University of Alberta Press.
- 300 Marticorena, C. (2000?) Naturalised Plants of Chile. University of Santiago Herbarium. Chile, supplied via Landcare New Zealand. [Clodomiro Marticorena]
- 301 Plants Naturalised in Hawai'i. Bishop Museum, Oahu. DISCLAIMER: Be it known to all who use this web resource, that this is NOT intended to represent a complete, definitive, or authoritative checklist of the flora and fauna of the Hawaiian Islands. This is a Beta–Test site that makes available online a copy of the taxonomic database currently used by the Bishop Museum Botany collection for its collections databases. Some groups in this list have been thoroughly scrutinized and do, in fact, represent an essentially complete checklist for the Hawaiian Islands. Other groups, however, are NOT complete, and only represent an unverified listing of what happens to be in the Bishop Museum specimen collection database. <http://www2.bishopmuseum.org/PBS/taxontree.asp>
- 303 A Provisional List Of Non–Native Invasive And Potentially Invasive Plants In New England. Leslie J. Mehrhoff. DRAFT Please Note: This list has no legal status 1 JAN 2000 <http://darwin.eeb.uconn.edu/ccb/publications/publication-3.html>
- 305 Alien plants of Fuerteventura, Canary Islands. Plantas extranjeras de Fuerteventura, Islas Canarias – korrigierte Fassung vom 23.01.2002 – Prof. Dr. Dietmar Brandes, Dipl.–Biol. Katrin Fritzsche. Arbeitsgruppe für Vegetationsökologie und experimentelle Pflanzensoziologie Botanisches Institut und Botanischer Garten der TU Braunschweig D–38023 Braunschweig. Abstract: The nowadays flora of Fuerteventura contains some 780 species. At least 119 species are aliens, some 150 further species of mediterranean and/or North African origin are probably introduced too. The estimated percentage of aliens therefore reaches 35 %.
- 306 Aliens Listserv, weed
- 310 Randall, R.P. & Kessal, O. (2004) Revised Garden Thugs database. WWF Australia.
- 313 Christian Goninon, Christian.Goninon@dpiwe.tas.gov.au
- 314 Clement, E.J. and Foster, M.C. (1994) Alien plants of the British Isles. Botanical Society of the British Isles, London.
- 315 Common Weeds of Vanuatu (with comments on its impacts and control) <http://www.fao.org/ag/AGP/AGPC/doc/Publicat/FAOBUL2/B201.htm>
- 317 Ryves, T.B., Clement, E.J. and Foster, M.C. (1996) Alien Grasses of the British Isles. Botanical Society of the British Isles, London.
- 324 Vascular Plants Of Susúa Forest: Puerto Rico. Gary J. Breckon and Ricardo G. García; Revised 29 June; 2001 Preliminary listing based on Table 3 of García's 1991 thesis; Little and Wadsworth (1962); Little; Woodbury and Wadsworth (1972); Susúa collections at MAPR; and selected materials at NY; UPR and US. [Herbarium

Weeds of the future? Threats to Australia's grazing industries by garden plants

- abbreviations follow Index Herbariorum.]
 ENVIRONMENTAL WEEDS OF WAITAKERE www.waitakere.govt.nz/CnlSer/pw/plantweed/pdf/enviroweed.pdf
- 331 Rose, A.B., Basher, L.R., Wiser, S.K., Platt, K.H. and Lynn, I.H. (1998) Factors predisposing short-tussock grasslands to Hieracium invasion in Marlborough, New Zealand, *New Zealand Journal of Ecology*, 22(2):121-140.
- 334 Garden Thugs proposed to be withdrawn from nurseries in Western Australia. List compiled by Sandy Lloyd in consultation with EWAN, CALM and other staff of Dept. Georgia Lawn Weed Control Fact Sheet. Jake Price of the Camden County Extension Service in association with Jeff Michel, Glynn County Extension, and Bob Boland Brantley County Extension www.griffin.peachnet.edu/cssci/TURF/niruri.htm
- 335 International Legume Database & Information Service (Report generated by LegumeWeb from the ILDIS World Database of Legumes. version 6.05, 9 July 2002) www.ildis.org/LegumeWeb/6.00/uses/u10.shtml
- 346 Invasive Plant Species in Delaware. William A. McAvoy (Botanist) Delaware Natural Heritage Program June 2001. This list contains 64 species and varieties of alien vascular plants considered to be invasive in the state of Delaware. These species are or have extreme potential to be detrimental to natural systems; i.e. displace native vegetation and disrupt ecological processes. www.dnrec.state.de.us/fw/invasive.htm
- 354 John Hosking, NSW Department of Agriculture, Weed Database 30 April 2003
- 360 Kissman, K.G. (1991). *Plantas Infestantes e Nocivas*. Vol 1 – 2nd Ed. BASF. <http://www.plantasdaninhas.com.br/>
- 361 Kissman, K.G. & Groth, D. (1993). *Plantas Infestantes e Nocivas*. Vol 2 – 2nd Ed. BASF.
- 362 Kissman, K.G. & Groth, D. (1995). *Plantas Infestantes e Nocivas*. Vol 3 – 2nd Ed. BASF.
- 367 LIST OF ALIEN SPECIES. A pdf downloaded from Japanese language web site. Manuela Nunes, Island Officer, Sociedade Portuguesa para o Estudo das Aves (message to Aliens) www.river.or.jp/kawa/mi0205/p028.pdf
- 372
- 380 Mulvaney, M.J. (1991). *Far from the Garden Path: An Identikit Picture of Woody Ornamental Plants Invading South-Eastern Australian Bushland*. PhD Thesis. Dept. Biogeography and Geomorphology, Research School of Pacific Studies. Australian National University
- 382 National Department of Agriculture, South Africa. List of plants and their control. Contains all names appearing on all labels (most of the labels are crop related and most of the weeds are not legislated). <http://www.nda.agric.za/docs/weeds/NUOKREN.html>
- 392 Pacific Northwest Exotic Pest Plant Council (Weed)
- 400 Pysek, P., Sadlo, J. and Mandak (2002) *Catalogue of Alien Plants of the Czech Republic*. Preslia, Praha. 74:97-186.
- 401 Randall, R.P. (2001). Garden thugs, a national list of invasive and potentially invasive garden plants. *Plant Protection Quarterly* 16 (4), 138-171.
- 405 PLANT INVADERS IN SPAIN [CHECK-LIST] 'The Unwanted Citizens' Dana, E.D., Sanz-Elorza, M. & Sobrino, E. (1) Sanz-Elorza, M., Dana, E.D. & Sobrino, E. 2001. Aproximación al listado de plantas alóctonas invasoras reales y potenciales en España. *Lazaroa* 22: 121-131. [English abstract] (2) Dana, E.D. Cerrillo, M.I., Sanz-Elorza, M., Sobrino, E. & Mota, J.F. 2001. Contribución al conocimiento de las xenofitas en España: catálogo provisional de la flora alóctona de Almería. *Acta Botanica Malacitana* 26 264-276. [English abstract] We have included also some unpublished recent data within this list. The species have been arranged first by their invasive character (from higher to lower). Within the most aggressive, species have been presented by their morphology (herbaceous, woody, and so on). Within species are alphabetically listed. Consideration of 'Invasiveness' follows the recent proposal by Richardson, D., Pysek, P., Rejmánek, M., Barbour, M.G., Panetta, F.D. & West, C.J. 2000. Naturalization and invasion of alien plants: concepts and definitions. *Diversity and Distributions* 6: 93-107.
- 407 Seja Bem Vindo ao Site Plantas Daninhas Aqui você encontrará diversas informações, que estão sendo constantemente atualizadas. (March 2002) <http://www.plantasdaninhas.com.br/>
- 411 Subject: Regional Invasive Exotic Plant Species List To: Forest Supervisors [Regional Forester's List and Ranking Structure Invasive Exotic Plant Species of Management Concern USDA Forest Service, Southern Region] Date: May 18, 2001 (Tables 16 & 17 (Weeds) from the Importation of Fresh Bananas from the Philippines Technical Information Paper May 2002. BIOSECURITY AUSTRALIA <http://www.se-eppc.org/fslist.cfm>
- 412
- 416 The Crum Woods in Peril Toward Reversing the Decline of an Irreplaceable Resource for Learning, Research, Recreation and Reflection. Roger Latham '83 http://www.swarthmore.edu/NatSci/Biology/bio_professor/latham/crumwoods.html
- 417 The invading weeds of the culture of the maize and their control. Jose Luis Villarias Moradillo. Engineer Dr agronomist. Titular Professor of University. Director of the Institute of Investigation of Natural Resources of the University of Leon. <http://www.eumedia.es/articulos/vr/Cereales/15marmaz.htm>
- 419 Hillary Cherry, Center for Aquatic and Invasive Plants University of Florida, Gainesville.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- hcherry@ozemail.com.au, Request for info on Aliens 3 Mar 2003
- 422 List of Invasive species of Pakistan. Education for Environment and Biodiversity of Pakistan – <http://edu.iucnp.org/> www.edu.sdnpk.org/alist.htm
- 423 Parker, C. (1991) A first DRAFT manual of Bhutan Weeds, Department of Agriculture, Research and Extension Division, Royal Government of Bhutan [This taxon not included in the final copy publication]
- 424 EXOTIC WEEDS AND ALIENS. An html page found on the UNDP sponsored Sustainable Development Networking Programme Website – India now being maintained by the ENVIS Secretariat, Ministry of Environment and Forests, Government of India, New Delhi. <http://sdnp.delhi.nic.in/nbsap/themes/terrestrial/weeds%26endemism.html>
- 425 A list of weed species from various New Zealand references to weeds compiled by P.A. Williams, Landcare Research, New Zealand.
- 428 WEED CONTROL FOR PEANUT (ARACHIS HYPOGAEA) Cooperating agency for this topic: Assessment Institute of Agricultural Technology (AIAT), Ungaran, Indonesia 2001–03–01 www.agnet.org/library/article/pt2001006.html
- 431 Li Yanghan (1998). Weeds of China. Beijing: Agriculture Press. 1617 pages + 8 plates. This book describes 106 families, 591 genera, 1380 species, 11 subspecies, 60 varied species. In Chinese with Latin name, English name and Chinese name index.
- 433 Annual/Biennial Seed Germination Database (weed) <http://www.anet.com/~manytimes/index.htm>
- 461 Brundu, G., Brock, J., Camarda, L., Child, L. and Wade, M. (2001) Plant Invasions: Species Ecology and Ecosystem Management. Backhuys Publishers, Leiden, Netherlands.
- 470 INVASIVE SPECIES IN URBAN AND SUBURBAN COENOSIS IN CENTRAL ITALY. Cagiotti M.R., Ranfa A., Marinangeli F., Maovaz M. Department of Plant Biology, Environment section. Borgo XX giugno, 74 – 06100 Perugia Italy cagdipvg@unipg.it 5th International Conference Ecology of Invasive Alien Plants, 13–16 October 1999 La Maddalena, Sardinia – ITALY http://www.lboro.ac.uk/research/cens/invasives/5iceap_abstracts_c.htm
- 472 Ian Popay, Scientist Northern Regional Office, Department of Conservation, Hamilton New Zealand (pers comm.)
- 473 Alien Invasive Plants of Jamaica. IABIN Invasive Species Information Network – Jamaica (I3N – JA) I3N – JA is coordinated by the Jamaica Clearing–House Mechanism. http://www.jamaicachm.org.jm/inv_I3N_JA.htm
- 476 Tan, H.T.W., Choong, M.F., Chua, K.S., Loo, A.H.B., Haji Samsuri Bin Haji Ahmad, Saeh, E.E.L., Turner, I.M. and Yong, J.W.H. (1997). A Botanical Survey of Sungei Buloh Nature Park, Singapore. Gardens' Bulletin Singapore. 49. 15–35.
- 482 Inger Wallentinus (19??). Introduced Marine Algae and Vascular Plants in European Aquatic Environments. Department of Marine Botany, Göteborg University, Göteborg, Sweden. Appendix 1. Introduced vascular plants in aquatic environments in the different European areas, including also occasional species. www.ku.it/nemo/aqua_app_wallentinus.pdf
- 483 MAF BIOSECURITY AUTHORITY STANDARD. 155.02.05. Importation of Seed for Sowing. 1.5.1 QUARANTINE IMPURITIES. No seed lot will be released for sowing in New Zealand if it contains: unidentified seed regulated pests in excess of 0.1% by weight of soil particles seed of any of the quarantine weed species listed in the schedule below. 1.5.2 SCHEDULE OF REGULATED (QUARANTINE) WEED SEEDS www.maf.govt.nz/biosecurity/imports/plants/standards/155-02-05.pdf
- 486 Parker, C. (1992) Weeds of Bhutan. National Plant Protection Centre, Simtokha, Royal Government of Bhutan.
- 494 Weeds in New Zealand, You are entitled to kill them! Compiled by Norbert Haley. Index of Weeds. <http://www.envbop.govt.nz/green/weed111.htm>
- 495 National Surveillance Pest Plants. Wellington Regional Council. These are plants which, while not being an immediate problem to the Wellington Region, have been identified as representing an actual and potential problem elsewhere and over time may become a problem here. The Council will provide advice and education about these plants. The sale, distribution and propagation of these plants is prohibited. The following plants are National Surveillance Plant Pests. <http://www.wrc.govt.nz/lm/national.htm>
- 498 W.R.Sykes (2002) New Zealand Botanical Soc. Vol. 70. (Record from Peter Williams Landcare Research NZ.)
- 502 BlackList, Grey List and Watch List established by the working group E. Weber et al. 22.02.2002 In 2001, a working group CPS/SKEW was initiated (directed by Dr. E. Weber, ETHZ), which has established lists of invasive neophytes for Switzerland. http://www.cps-skew.ch/english/black_list.htm
- 507 Checklist of wild flowering plants and ferns in Iceland. Flora of Iceland <http://www.floraislands.is/plantlist.htm>
- 514 New Zealand Plants – Fern Table. Ferns native to New Zealand. University of Auckland – New Zealand. (List of Naturalised taxa at the end of the Genus table). http://homepages.ihug.co.nz/~jmc/plants/fern_table.htm
- 516 100 Most Dangerous Invaders. Threatening Oregon in 2002. Oregon Department of Agriculture. http://www.oda.state.or.us/plant/inv_spp/100_Worst_Inv_2002.html
- 518 Flora of the Marquesas islands. Botany Department of Systematic Biology. <http://rathbun.si.edu/botany/pacificislandbiodiversity/mar>

Weeds of the future? Threats to Australia's grazing industries by garden plants

- Smithsonian Institute.
- 519 Preston, C.D., Pearman, D.A. and Dines, T.D. (2002) New Atlas of the British & Irish Flora. An Atlas of the Vascular Plants of Britain, Ireland, the Isle of Man and the Channel Islands. Oxford University Press. quesasflora/index.htm
- 534 Pat Enwright (2003) Adventive species of the Wellington Conservancy ecological district. Project initiated by John Sawyer of D.O.C and further refined and updated by Colin Ogle of Wanganui before Ewen Cameron and Mei Nee Lee of the Auckland Museum herbarium very kindly provided lists of adventive species by ecological district for the Wellington Conservancy from the AK database. I must also thank Ewen Cameron and Rhys Gardner for identification of a number of specimens included in this list, Phillipa Crisp from W.R.C. also supplied information on species recorded by or on behalf of W.R.C and not already included in the database. Pat Enwright pers. comm. [Pat.Enright@nz.towerlimited.com]
- 535 Christophe LAVERGNE (Dr) Invasive Species Project Leader INVABIO National Programme Conservatoire Botanique National de Mascarin 2 rue du Père Georges – Domaine des Colimaçons F-97436 Saint-Leu – Ile de La Reunion (FRANCE) [email to Aliens] <http://www.efloras.org/index.aspx>
- 543 Bernard H. Zandstra (2003). Weed Control Guide for Vegetable Crops. MSU Extension Bulletin E-433 (Revised November 2002). Department of Horticulture, Michigan State University <http://www.msue.msu.edu/vegetable/Resources/weeds2003/E433.htm>
- 544 CBD Thematic Report on Alien Species – Estonia (English version) by Liina Eek, Senior officer. Ministry of the Environment. Toompuiestee 24, Tallinn, 15172 Estonia. (email: leek@ut.ee) Weed comments according to Toomas Kukk (Institute of Zoology and Botany). www.biodiv.org/doc/world/ee/ee-nr-ais-en.doc
- 546 Databases. List of Weed Species with links to more data. FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 552 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information gathered from FAO Plant Protection Project and a mission report of R. Labrada) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 571 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information kindly provided by Prof. Li Yan Hang) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 575 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information gathered from various FAO reports) Information kindly provided by Mrs Sermisri Kongsangdao Botany & Weed Science Division DOA Thailand. FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 579 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information provided by R. Labrada) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 581 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information mainly gathered at the regional FAO workshop held in Managua May 1987 Information kindly provided by Dr Israel Garita) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 591 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information gathered in the FAO IPM workshop held in Kathmandou in April 1998) Information kindly provided by Ms D. Jagat Ranjit. FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 594 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information kindly provided by Mr Mohammad Ali Baghestani Meybody) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 600 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information kindly provided by Mr Ahmet Uludag) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 606 Important Weed Species in Crops and Countries. Data stored from 59 developing countries and regularly updated. (Information gathered from FAO project on Plant Protection) (Information gathered from FAO workshops on weed management and *Rottboellia cochinchinensis* (Lour.) Clayton control both held in Managua 1987 and 1992 respectively) (Information given by Dr R. Malik) FAO Weed Management, Ricardo Labrada. <http://www.fao.org/WAICENT/FAOINFO/AGRICULT/AGP/AGPP/IPM/Weeds/DB.htm>
- 617 George, W. Staples, Derral, Herbst & Clyde, T. Imada (2000). Survey of Invasive or Potentially Invasive Cultivated Plants in Hawai'i. A Special Publication of the Records of the Hawai'i Biological Survey for 1999. Honolulu, Hawai'i. <http://hbs.bishopmuseum.org/pdf/op65.pdf>
- 619 Alien species recorded in Poland. Alien Species Polich Database.Wojciech Solarz, Institute of Nature Conservation, Polish Academy of Sciences, Kraków Poland. <http://www.iop.krakow.pl/ias/list.asp>

Weeds of the future? Threats to Australia's grazing industries by garden plants

- (Database was prepared for the Polish Ministry of Environment)
- 621 Plant Threats to Pacific Ecosystems. A product of the Pacific Island Ecosystems at Risk project (PIER). This table lists all species that are profiled on PIER. It includes those of environmental concern (including those that are probably of threat only to islands with high elevations) as well as agricultural and ruderal weeds. Jim Space, PEIR Co-ordinator. <http://www.hear.org/pier/biglist.htm>
- 622 Botha, C. (2001). Common Weeds of Crops and Gardens in Southern Africa. ARC – Grain Crops Institute, South Africa.
- 626 University of Connecticut, Ecology & Evolutionary Biology Conservatory, Greenhouse Report Generated: November 21, 2003 – 15:29:13 Current general collection holdings: http://floraweb.eeb.uconn.edu/gen_coll_plants.html
- 627 Pushpakumara, D.K.N.G. and Hitinayake, H.M.G.S.B. (2001). Invasive Tree Species in Udawattekele Forest Reserve. Sri Lankan Biodiversity Review, Volume 1: 53–63.
- 628 Bargeron, C.T., D.J. Moorhead, G.K. Douce, R.C. Reardon & A.E. Miller (Tech. Coordinators). 2003. Invasive Plants of the Eastern U.S.: Identification and Control. USDA Forest Service – Forest Health Technology Enterprise Team. Morgantown, WV USA. FHTET–2003–08 (CD version: Nov 2003) www.invasive.org
- 629 Parker, C. (2003). CREATION OF A PRIORITIZATION MODEL TO IDENTIFY WEEDS OF GLOBAL SIGNIFICANCE – PHASE II FINAL REPORT, NOVEMBER, 2002 [The following lists indicate (Table 1) the 15 species (not in cultivation in USA) selected under Phase I and (Table 2) the further 25 highest-ranking species selected under Phase II. Full fact sheets of the new 25 species are appended (Appendix 1). Appendix 2 includes the further 126 species not in cultivation which have been fully scored. Corresponding lists of species already in cultivation in USA appear as Tables 3 and 4. The latter table includes all those species, in cultivation, which have been at least partially scored (though this process is far from complete)]
- 630 Tricks & Tips, Gardening for Bees and other Insects. Peter Edwards 11 June 2003. The list below gives a selection of the more important garden plants, shrubs and trees for bees and other insects, but for further reading the following books are particularly good: 'Plants and Beekeeping' by FN Howes (Faber & Faber) – the definitive guide to the major and minor sources of forage for honeybees. 'The Beekeeper's Garden' by Ted Hooper & Mike Taylor (Alphabooks) – gives information on siting hives in the garden as well as a useful list of plants – very readable. 'Garden Plants valuable to Bees' by Ted Hooper (IBRA) 'Bees of the World' by Christopher O'Toole & Anthony Raw (Blandford) – a fascinating guide to the various species of bees – solitary and social, found all around the world. Excellent diagrams showing nesting habits. <http://www.stratford-upon-avon.freeserve.co.uk/PENotes/BeePlants.htm>
- 631 Decision Support Tool for Addressing Invasive Species in Garry Oak and Associated Ecosystems. Top 10 Invasive Plant Species Currently Threatening GOEs in BC Experts were asked to rank a list of candidate species according to 3 separate criteria: 1. Significance of impact, 2. Difficulty of control or management, and 3. Urgency of control or management. <http://www.essa.com/projects/descriptions/garryoak/top10.htm>
- 632 NEOFLORA: The 30 most important invasive kinds (plants) in Germany. For comprehensive background information consider the book. Biological invasions: Neophyten and Neozoen in Central Europe by Ingo Kowarik. <http://www.floraweb.de/neoflora/forum.html>
- 637 List of Pteridophytes and Spermatophytes for the Canary Islands (Lista de Pterido y Spermatoe Indice) Presence or Absence is denoted on an island by island basis and introduced (naturalised) taxa are also denoted. © 2002. Viceconsejería de Medio Ambiente. Gobierno de Canarias. www.gobcan.es/medioambiente/biodiversidad/ceplam/bancodatos/biota/ListadePteridoySpermatoeIndice.pdf
- 638 Forman, Jennifer (2003). The introduction of American plant species into Europe: issues and Consequences. pp. 17–39 in Plant Invasions: Ecological Threats and Management Solutions. Edited by L.E. Child, J.H. Brock, G. Brundu, K. Prach, P. Pysek, P.M. Wade, and M. Williamson. Backhuys Publishers, Leiden, The Netherlands. [This is a draft list – please request a reprint from jennforman@knottybits.com to see the full article] www.knottybits.com/FormanInvadeEuropeDraftSpplList.doc
- 641 Turk. M.A and Tawaha, A.M. (2003). Weed control in cereals in Jordan. Crop Protection 22 pp. 239–246
- 642 Darbyshire, S.J. (2003). Inventory of Canadian Agricultural Weeds. Agriculture and Agri–Food Canada. Ottawa, Ontario. http://res2.agr.gc.ca/ecorc/weeds_herbes/titre_e.htm
- 643 Sergei L. Mosyakin and Oksana G. Yavorska (2002) The Nonnative Flora of the Kiev (Kyiv) Urban Area, Ukraine: A Checklist and Brief Analysis URBAN HABITATS, VOLUME 1, NUMBER 1 • ISSN 1541–7115 Sergei L. Mosyakin and Oksana G. Yavorska M.G. Kholodny Institute of Botany, National Academy of Sciences of Ukraine, 2 Tereshchenkivska Street, Kyiv (Kiev), 01601 Ukraine; flora@ln.ua <http://www.urbanhabitats.org>
- 644 Fremstad, E. & Elven, R. (1997). Alien plants in Norway: a review. Norsk geografisk tidsskrift Vol. 51. pp. 199–218. http://www.environment.no/templates/PageWithRightListimg_____2246.aspx
- 647 Nicolas Mihanovic, mihanovic@fibertel.com.ar – Farmer from Buenos Aires, Argentina peters.com.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- 648 Korean Society of Plant Protection. (1972). A List of Plant Diseases, Insect Pests and Weeds in Korea. The Korean Society of Plant Protection.
- 649 Weber, E. (2003). Invasive Plant Species of the World. A Reference Guide to Environmental Weeds. CABI Publishing, UK. [dist data refers to regions where plant is an environmental weed]
- 652 Calder, J. A. & Taylor, L. R. (1968). Flora of the Queen Charlotte Islands. Part 1. Systematics of the vascular plants. Canada Department of Agriculture, Research Branch, Monograph No. 4, Part 1, 659 pp.
- 653 These taxa were indicated as neophytes to the Swiss Flora. (Red list of the endangered fern and flowering plants of Switzerland 2002.) www.cjb.unige.ch/rsf/deu/download/f_lr2002_plantes.pdf
- 654 Motooka, P., Castro, I., Nelson, D., Nagai, G. and Ching, L. (2003) Weeds of Hawaii's Pastures and Natural Areas. An Identification and Management Guide. College of Tropical Agriculture and Human Resources, University of Hawai'i at Manoa.
- 655 Home and garden online Magazine: September: Week 39 Pest Plants SEVERAL years ago I asked readers of the Los Angeles Times to send me the names of garden plants that grew out of control. The subject came up because several things I had planted were suddenly trying to take over the place. We're not talking about weeds here, but things planted on purpose that soon begin behaving like weeds—invasively spreading underground or everywhere sprouting from seeds. Here, then, is a list of menace plants suggested by The Times readers. Each was mentioned in at least several letters, so it is not just one person's condemnation. Though I would be suspect of any plant in this list, it is important to realize that not all people feel the same about these plants. http://www.latimes.com/extras/homeandgarden/garden_wk39.html
- 658 MAF. New Zealand Unwanted Organisms List. <http://www.maf.govt.nz/biosecurity/pests-diseases/registers-lists/unwanted-organisms/>
- 661 DiTomaso, J.M. and Healy, E.A. (2003). Aquatic and Riparian Weeds of the West. University of California, Agriculture and Natural Resources, Publication 3421.
- 662 Anon, (----). Species introduced in Continental Portugal [Espécies introduzidas em Portugal Continental]. ICN – Instituto da Conservacao da Natureza. www.icn.pt/documentos/download/proj_conser/flora_lista.htm
- 663 Weeds and weed management in onion. Details from single countries. Denmark (by Bo Melander) <http://www.agr.unipg.it/ewrsveg/oniondetails.htm>
- 665 Weeds and weed management in onion. Details from single countries. France (by Jean Pierre Caussanel) <http://www.agr.unipg.it/ewrsveg/oniondetails.htm>
- 667 Weeds and weed management in onion. Details from single countries. Italy (by Francesco Tei) <http://www.agr.unipg.it/ewrsveg/oniondetails.htm>
- 676 Weeds and weed management in onion. Details from single countries. United Kingdom (by Robert J Froud-Williams) <http://www.agr.unipg.it/ewrsveg/oniondetails.htm>
- 687 Main weeds in carrots in relation to the country – Italy http://www.agr.unipg.it/ewrsveg/weeds_in_carrots.htm
- 692 Main weeds in carrots in relation to the country – Denmark http://www.agr.unipg.it/ewrsveg/weeds_in_carrots.htm
- 704 Instituto Hórus Invasives List Dated April 2004. http://www.institutohorus.org.br/trabalhosa_basedados_eng.htm <http://tncweeds.ucdavis.edu/global/brasil/horuslist.html>
- 707 A Draft list of Species Reported Alien to the Caribbean. This table presents provisional information on the distribution of species reported alien in the Caribbean. The list is drawn from a work in progress database that aims to collate more detailed information on the occurrence and impact of all species known to occur as aliens in the region. The species listed are those reported to be established in the wild in marine; freshwater or terrestrial habitats. Some of the species on the list are regarded as invasive (spreading) in at least one Caribbean territory. As a working document; it is anticipated that this list will contain some omissions and errors. In particular; it is expected that the distributions of many species will be incomplete. The intention therefore is to provide a list for discussion; aiding workshop participants to contribute to and; where necessary; correct information on the occurrence and impact of alien species in the region. www.cabi-bioscience.org/Html/Table1.pdf
- 708 Essl, F. & Rabitsch, W. (eds.) (2002). Neobiota in Österreich. Umweltbundesamt GmbH, Wien.
- 711 Introduced Species in the Nordic Countries (Denmark) under Nordic Council of Ministers (NMR), subgroup Natur-og Friluftslivgruppen – Aulikki Alanen, Finnish Environment Institute, Eythór Einarsson, Icelandic Institute of Natural History, Linda Hedlund, Swedish Environment Protection Agency, Heidi Hansen, Directorate for Nature Management, Kristina Jansson, Swedish Environment Protection Agency, Marianne Philipp, Botanical Institute, University of Copenhagen, Hans Erik Svarit, The National Forest and Nature Agency, Inger Weidema, Botanical Institute, University of Copenhagen
- 712 Kaul, M.K. (1986). Weed Flora of Kashmir Valley. Journal of Economic and Taxonomic Botany, Additional Series I. Scientific Publishers, Jodhpur, India.
- 714 Haysom, K.A. and Murphy, S.T. (2003). The status of invasiveness of forest tree www.fao.org/forestry/site/biotech/en

Weeds of the future? Threats to Australia's grazing industries by garden plants

- species outside their natural habitat: a global review and discussion paper. Forest Health and Biosecurity Working Paper FBS/3E. Forestry Department. FAO, Rome (unpublished). (c) FAO [Forest genetic resources / Biosecurity]
- 718 ANEXO 1 – Espécies introduzidas em Portugal continental – (I) Invasoras. Legislação Nacional Decreto–Lei n.º 565/99 de 21–12–1999 (Versão 1 Originária) Decreto–Lei 565/9921–12–1999 Ministério do Ambiente Regula a introdução na natureza de espécies não indígenas da flora e fauna. Espécies não indígenas da flora e da fauna 21–12–1999295 fauna, flora, animais domésticos, espécies de fauna ameaçadas, protecção dos animais, vegetação Direito do Ambiente 1999–12–21 S
- 719 Komolafe, D.A. (1976). Weed Problems in Tree Crops in Nigeria. PANS 22(2): 250–276
- 720 Muller, S. (2002) Les invasions biologiques causées par les plantes exotiques sur le territoire français métropolitain – Etat des connaissances et propositions d'actions. Synthesis, Ministère de l'Aménagement du Territoire et de l'Environnement, Direction de la Nature et des Paysages, Paris, 187 p.
- 725 SMURPHBOT: A DATABASE OF FLORA OF NORTHEASTERN CANADA/U.S. Last Updated: January 14, 2004 Stephen D. Murphy, B.Sc. (Hons.), Ph.D. Associate Professor Dept. of Environment and Resource Studies, University of Waterloo, Waterloo, ON, N2L 3G1 Canada. Voice: 519–885–1211 ext. 5616 Fax: 519–746–0292 E–mail: sd2murph@fes.uwaterloo.ca
- 727 Mennan.ve ark (1999). Weed species in Hazelnut orchards in Blacksea region of Turkey. Karadeniz Bölgesi f?nd?k bahçelerinde görülen yabancı ot türleri.
- 728 Hüsrev Mennan and Dogan Isik (2003). Invasive Weed Species In Onion Production Systems During The Last 25 Years In Amasya, Turkey. Pak. J. Bot., 35(2): pp: 155–160. [Ondokuzmay?s University, Faculty of Agriculture, Department of Plant Protection 55139 Samsun, Turkey]
- 732 Weeds of Wheat in Iran
- 733 Massimo Ricciardi (2004) A SYNTHETIC OUTLINE OF THE FLORA OF CAPRI AND PATTERNS OF ITS CHANGES IN THE XX CENTURY. A Concerted Action funded by the 5th Framework Programme of the European Commission «Energy, Environment and Sustainable Development» ; Life time 2001 – 2004 Effects of Land Abandonment and Global Change on Plant and Animal Communities 11 – 13 October 2004, Villa Orlandi, Capri (AVEC) Integrated Assessment of Vulnerable Ecosystems under Global Change.
- 734 Effigy Mounds National Monument (December 1994) Pipestone National Monument (July 1992) Scotts Bluff National Monument. Species Abstracts of Highly Disruptive Exotic Plants. Northern Prairie Wildlife Research Center.
- 735 Weeds of Mexico. Heike Vibrans & Francisco Perdomo Colegio de Postgraduados, Montecillo, Mexico
- 736 Exotic Plant Species List Scientific and Common Names of known Exotic Plant Species in the Redwood National and State Parks. This list of exotic species was compiled from the park's plant species lists and herbarium specimens. The inventory of species and associated threat assessment are essential parts of the parks' Exotic Plant Management Plan. California State Parks, US National Park Service. Last Update: June 13, 2001
- 737 Lithuanian Invasive Species Database. The Database is aimed: to provide a qualified reference online system on invasive species in Lithuania; to serve a virtual forum on environmental and administrative issues related to biological invasions in Lithuania; to encourage the exchange of data among different geographical regions and serve a node in the global information network on invasive species Project is initiated by the National Advisory Council on Invasive Species established by the Ministry of Environment of Lithuania (ME, Order No. 352, July 1, 2002).
- 738 Dana, E.D., Sobrino, E. & Sanz–Elorza, M. (2003) Plantas invasoras en España: un nuevo problema en las estrategias de conservación. (in Bañares, A., Blanca, G., Güemes, J., Moreno, J.C. & Ortiz, S (eds.) Atlas y Libro Rojo de la Flora Vasculare Amenazada de España. Taxones Prioritarios. [Atlas and Red Book of Vascular threatened Flora in Spain]) Dirección General de Conservación de la Naturaleza (Ministerio de Medio Ambiente), Madrid.
- 741 YOSHIOKA, Toshiya (2005) Preliminary Weed Risk Assessment of Landscaping plants. Landscape Research Japan 68(4), 296–300.
- 742 Introduced plants in Galapagos. Introduced Species Registered in the Charles Darwin Research Station Herbarium as present in Galapagos (616 species, not including questionably native species), November 2004.
- 743 Anon. (1972). Weed Manual. 8th Ed. [2nd revised and extended Edition] Schering AG, Berlin.
- 755 FRUIT TREES AND PLANTS (Bungang Tanaman) (Researched by Armando Regala
- http://www.diramb.gov.pt/data/basedoc/TXT_LN_21196_1_0001.htm
- www.ornithomedia.com/pratique/conseils/conseil_art25_5.htm
- www.fes.uwaterloo.ca/ers/faculty/smurphy.html
- <http://www.findikci.net/hazelnutweeds.htm>
- <http://www.pjbot.org/pjbot/samplecopy/mennan&isik/mennan&isik.htm>
- <http://www.iranwheat.ir/introduction/weeds/weed/alaf.asp>
- www.pik-potsdam.de/avec/capri/flora_capri.pdf
- <http://www.npwr.usgs.gov/resource/plants/exoticab/exotcab.htm>
- http://pick1.pick.uga.edu/cgi-bin/20q?act=x_checklist&guide=Weeds
- <http://www.nps.gov/redw/epsplist.htm>
- <http://www.ku.lt/lisd/species.html>
- <http://www.m-fuukei.jp/invasive/jlist.php>
- <http://www.hear.org/galapagos/invasives/topics/management/plants/projects/species.htm>
- <http://www.geocities.com/Athens/Academy/4059/fruitdes>

Weeds of the future? Threats to Australia's grazing industries by garden plants

- from Julia Morton's book *Fruits from Warm Climates*) Dalayap (Mexican lime) Scientific name: *Citrus aurantifolia* Swingle
- 756 Tyler W. Smith (2003) Checklist of the spontaneous flora of Royal Botanical Gardens' nature sanctuaries. Royal Botanical Gardens, Contribution No. 113, Ontario Canada. ISBN 0-9691759-3-0 www.rbg.ca/pdf/RBGChecklist03.pdf
- 757 Vibrans, H. (1999). Epianthropochory in Mexican Weed Communities. *American Journal of Botany* 86(4): pp.476-481. <http://www.amjbot.org/cgi/content/full/86/4/479>
- 758 Spraying Schedule- Herbicides. Pesticides Manufacturers & Formulators Association of India. http://www.pmfai.org/spraying_schedule.htm & Crop: Soyabean - Herbicide: Anilophos - Dose of a.i./Ha: 1.25 to 1.50 kg & Crop: Cotton - Herbicide: Trifluralin - Dose of a.i./Ha: 0.96 to 1.2 kg & Crop: Soybean - Herbicide: Trifluralin - Dose of a.i./Ha: 0.96 to 1.2 kg
- 759 An analysis of 233 species of important and potentially important invasive plants in South Africa (i.e. the reason for importation). The species were extracted from the book Henderson, L. 2001. Alien weeds and invasive plants. Plant Protection Research Institute Handbook No. 12. (L. Henderson pers. comm.)
- 760 Cultivated and/or Exotic Plants in Central Africa (R.D.Congo - Rwanda - Burundi). (list provisional)13-03-2005 This list gives an extremely incomplete image of the horticulture in central Africa (R.D. Congo, Rwanda, Burundi). users.chello.be/cr28796/CultAfrC.htm
- 761 Alien Plants in Korea. National Institute of Environmental Research. NIER : nier.go.kr Director. Deok-Gil Rhee. July 2004. <http://alienplant.nier.go.kr/eng/html/search01.html>
- 764 Muller, S. (coord.) (2004). *Plantes invasives en France*. Muséum national d'histoire naturelle, Paris. 108 p.
- 765 Castro, S.A. et al. (2005) Minimum residence time, biogeographical origin, and life cycle as determinants of the geographical extent of naturalized plants in continental Chile. *Diversity and Distributions* 11: 183-191.. Appendix S1 Checklist of 428 naturalized plants in continental Chile, their first record date (FRD), life cycle (LC), biogeographic origin (BO), and number of administrative regions occupied (ARO). Am: America; Eu: Europe; As: Asia; Af: Africa; Au: Australia; N.Z.: New Zealand; Pan: Pantropical; Cosmo: Cosmopolitan; Tro: Tropical.
- 767 Fletcher, R. and Stace, C.A., 2000, A new section and species of *Festuca* (Poaceae) naturalised in England. *Watsonia* 23(1): 173-177.
- 771 Turland, N.J., Chilton, L. and Press, J.R. (1993). *Flora of the Cretan Area*. Annotated Checklist & Atlas. The Natural History Museum, London.
- 772 List of Slovenian plant IAS (submediterranean In red): Plant Invaders in sub-mediterranean part of Slovenia. Nejc Jogan, Dept of biology BF, University of Ljubljana, Slovenia. Poster presented at the First International Workshop on Mediterranean Weeds at Méze, France, 25-27 May 2005. (Nejc.jogan@bf.uni-lj.si)
- 773 J.H.Kil, K.C.Shim, S.H.Park, K.S.Koh, M.H.Suh, Y.B.Ku, S.U.Suh, H.K.Oh, and H.Y.Kong (2004). Distributions of Naturalized Alien Plants in South Korea. *Weed Technology*. Vol 18. pp:1493-1495. [An Illustrated Internet Guide to Alien Plants in Korea (<http://alienplant.nier.go.kr>)]
- 775 List of Mediterranean Weeds compiled by Sarah Brunel as part of the Medit Weeds Workshop June 2005. Chargée de mission Plantes envahissantes Conservatoire Botanique National Méditerranéen de Porquerolles 34 090 MONTPELLIER FRANCE
- 777 Wu, S.H., Hsieh, C.F. and Rejmanek, M. (2004). Catalogue of the Naturalized Flora of Taiwan. *Taiwania*, 49 (1) pp:16-31.
- 780 China Species Information Service. Invasive Aliens Species in China. <http://www.chinabiodiversity.com/search/aspecies/english/ealist.shtm>
- 784 Randall, J.M., & Rice, B.A. (2003). 1998-1999 Survey of Invasive Species on Lands Managed by The Nature Conservancy © The Nature Conservancy, 1999. <http://tncweeds.ucdavis.edu/survey.html>
- 787 Haysom, K.A. and Murphy, S.T.(2003). The status of invasiveness of forest tree species outside their natural habitat: a global review and discussion paper. Forest Health and Biosecurity Working Paper FBS/3E. Forestry Department. FAO, Rome. http://www.fao.org/documents/show_cdr.asp?url_file=/D/OCREP/006/J1583E/J1583E00.HTM
- 788 Invasive and Exotic Weeds. Invasive List: The Source for Information and Images of Invasive & Exotic Species. A joint project of The University of Georgia's Bugwood Network, USDA Forest Service and USDA APHIS PPO. www.invasive.org/weeds.cfm
- 790 Noxious weeds in the US and Canada. This web site provides a searchable database of the noxious weed lists for all U.S. states and six southern provinces of Canada. The database can be searched by plant name, state name, or by clicking on a map. This portion of the INVADERS web site is supported by the USDA Agricultural Research Service. Principal investigators: Dr. Kerri Skinner, University of Nebraska - Kearny, NE Dr. Lincoln Smith, USDA-ARS Western Region Research Center, Albany, CA Peter Rice, University of Montana - Missoula, MT http://invader.dbs.umt.edu/Noxious_Weeds/
- 791 Villaseñor, Jose L. & and J. Espinosa-García, F. (2004) The alien flowering plants of Mexico. *Diversity and Distributions*, 10, pp:113-123.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- 793 Stokes, K., O'Neill, K. & McDonald, R.A. (2004) Invasive species in Ireland. Unpublished report to Environment & Heritage Service and National Parks & Wildlife Service. Quercus, Queens University Belfast, Belfast. http://www.wew.nu/exoten/doc/invasive_species_in_ireland.pdf
- 794 Alien Species. On March 10, the Japanese Cabinet submitted the bill dealing with invasive alien species to the Diet. The Diet passed the bill without amendments and the Invasive Alien Species Act was promulgated as of June 2, 2004. List of alien species recognized to be established in Japan or found in the Japanese wild (as of October 27, 2004) [PDF] <http://www.env.go.jp/en/topic/as.html>
- 802 Sanz Elorza, M., Dana Sánchez, E.D., & Sobrino Vesperinas, E., (eds.) (2004). Atlas de las Plantas Alóctonas Invasoras en España. Dirección General para la Biodiversidad. Madrid.
- 807 Dana, E.D., Sanz, M., Vivas, S. and Sobrino, E. (2005). Especies Vegetales Invasoras en Andalucía. Junta de Andalucía.
- 809 Botond, M. & Zoltán, B.D.(eds.) (2004) Biological Invasions in Hungary. Invasive Plants. Természeti BUVÁR Alapítvány Kiado.
- 810 anon. (2002). The Common Weeds of Central Thailand. Weed Science Society of Thailand.
- 811 Matachacheep, S. (1995) Weeds of Thailand. Ratchamongkol Tech. Ins. Thailand. (Dr. Surachai Matachacheep).
- 812 Mark Hill, Richard Baker, Gavin Broad, Peter J. Chandler, Gordon H. Copp, Jim Ellis, David Jones, Cassie Hoyland, Ian Laing, Matt Longshaw, Niall Moore, David Parrott, David Pearman, Chris Preston, Richard M. Smith, Ruth Waters (2005). Audit of non-native species in England. English Nature Research Reports N° 662, English Nature.
- 815 Global Invasive Species Database was developed by the IUCN/SSC Invasive Species Specialist Group (ISSG) as part of the global initiative on invasive species led by the Global Invasive Species Programme (GISP). Results of a search for all Plantae Kingdom. <http://www.issg.org/database/welcome/default.asp>
- 817 Plants of Belarus. Herbarium of CBG NASB MSKH. Supported by the Ministry of Natural Resources and Environmental Protection of the Republic of Belarus. <http://hbc.bas-net.by/plantae/eng/>
- 818 Wittenberg R (ed.) (2005) An inventory of alien species and their threat to biodiversity and economy in Switzerland. CABI Bioscience Switzerland Centre report to the Swiss Agency for Environment, Forests and Landscape. [Table 10.6: Alien species in Switzerland.] www.umwelt-schweiz.ch/buwal/eng/fachgebiete/fg_biotechnologie/news/2005-09-26-00893/index.html
- 819 Wittenberg R (ed.) (2005) An inventory of alien species and their threat to biodiversity and economy in Switzerland. CABI Bioscience Switzerland Centre report to the Swiss Agency for Environment, Forests and Landscape. [Table 10.8: Invasive plant species in Europe.] www.umwelt-schweiz.ch/buwal/eng/fachgebiete/fg_biotechnologie/news/2005-09-26-00893/index.html
- 820 Weber E, Gut D (2005) A survey of weeds that are increasingly spreading in Europe. *Agronomy for Sustainable Development* 25, 109–121. A Europe-wide survey was conducted by sending questionnaires to weed scientists in order to evaluate currently troublesome weeds and those which may cause problems in the future. Recipients were asked to list species that are spreading and cause problems in agroecosystems and to rate these according to three scores (degree of weediness, degree of spread potential and degree of control success), with three levels for each score (low, medium and high). In all, 281 species were reported from 26 European countries (Albania, Austria, Bulgaria, Croatia, Czech Republic, Cyprus, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Turkey, United Kingdom and Ukraine). Most of them were annuals (48%), followed by perennials (34%) and biennials (14%). Among these 281 weed species, the 15 most troublesome (either indigenous or alien to Europe) have been listed for each crop system defined in this survey. In the table below, the EPP0 Secretariat has extracted only weed species which were considered as alien.
- 821 Noda, K., Teerawatsakul, M., Prakongvongs, C. and Chaiwiratnukul, L. (1994). Major Weeds in Thailand. National Weed Science Research Institute Project, Revised Third Edition. Thailand.
- 822 Harada, J., Shibayama, H. and Morita, H. (1996). Weeds in the Tropics. Association for International Cooperation of Agriculture and Forestry, Japan.
- 823 References: This Excel database comprises all species listed in five New Zealand Journal of Botany (NZJBot) supplements to the adventive plants listed in Flora of NZ Vol. 4 (Webb et al. 1988), namely Heenan et al. (1998, 1999, 2002, 2004) and Webb et al. (1995). In the following database, Webb et al. (1988) is cited as FNZ4 followed by a page number. To reduce space, the four NZJBot papers are identified simply by the volume number, followed by the page number in which the reference occurs. – Heenan, P.B.; Breitweiser, I.; Glenn, D.S.; de Lange, P.J.; Brownsey, P.J. 1998: Checklist of dicotyledons, and pteridophytes naturalised or casual in New Zealand:

Weeds of the future? Threats to Australia's grazing industries by garden plants

- additional records 1994–1996. NZJBot.36: 155–162.; Heenan, P.B.; de Lange, P.J.; Cameron, E.K.; Champion, P.D. 2002: Checklist of dicotyledons, gymnosperms, and pteridophytes naturalised or casual in New Zealand: additional records 1999–2000. NZJBot.40: 155–174.; Heenan, P.B.; de Lange, P.J.; Cameron, E.K.; Ogle, C.C.; Champion, P.D. 2004: Checklist of dicotyledons, gymnosperms, and pteridophytes naturalised or casual in New Zealand: additional records 2001–2003. NZJBot.42: 797–814.; Heenan, P.B.; de Lange, P.J.; Glenny, D.S.; Breitweiser, I.; Brownsey, P.J.; Ogle, C.C. 1999: Checklist of dicotyledons and pteridophytes naturalised or casual in New Zealand: additional records 1997–1998. NZJBot.37: 629–642.; Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J.; 1988: Flora of New Zealand Volume IV – Naturalised Pteridophytes, Gymnosperms, Dicotyledons. Botany Division, D.S.I.R., Christchurch, New Zealand. 1365p.; Webb, C.J.; Sykes, W.R.; Garnock-Jones, P.J.; Brownsey, P.J. 1995: Checklist of dicotyledons, gymnosperms, and pteridophytes naturalised or casual in New Zealand: additional records 1988–1993. NZJBot.33: 151–182.
- 824 de Lange, P.J. ., de Lange, T.J.P. & de Lange, F.J.T. (2005) New exotic plant records, and range extensions for naturalised plants, in the northern North Island, New Zealand. Auckland Botanical Society Journal. Dec, 2005.
- 825 Swaziland's Alien Plants Database <http://www.kbraunweb.com/alienplants/specieslist.asp>
- 826 Pysek, P., Sádlo, J. and Mandák, B. (2003). Alien flora of the Czech Republic, its composition, structure and history. Plant Invasions: Ecological Threats and Management Solutions, Edited by L.E. Child, J.H. Brock, G. Brundu, K. Prach, P. Pyšek, P.M. Wade and M. Williamson pp. 113–130. www.ibot.cas.cz/personal/pysek/pdf/5.pdf
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10.2 Appendix 2 800 lower priority species

These 800 species are recorded environmental and/or agricultural weeds overseas. These species were not considered amongst the foremost potential threats to Australia's grazing industries because they met one or several of the criteria used to refine the original species list:

- Northern hemisphere trees;
- Aquatic plants (except for grasses Poaceae/Cyperaceae);
- Plants with an overseas weed record in climates dissimilar to Australia;
- Plants with none or a single record of being sold in Australia;
- Plants with a single reference as a weed species outside of Australia;
- Any remaining species unlikely to present a threat to the pastoral industry in Australia.

These species are probably present in Australia and the "Plant Database" indicates that they have not naturalised. However, time restrictions did not allow for cross-checking against nursery stock publications and current herbarium censuses of naturalised flora.

Due to the difficulty of definitively predicting the weedy potential of plants, any of these plants may become issues for Australia's grazing industries in the future.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- Abelmoschus esculentus* (L.) Moench
Abies pinsapo Boiss.
Acacia tenuifolia (L.) Willd.
Acer campestre L.
Acer circinatum Pursh
Acer ginnala Maxim.
Acer rubrum L.
Acer saccharinum L.
Acer saccharum Marshall
Achillea santolina L.
Achyranthes bidentata Miq.
Achyranthes japonica (Miq.) Nakai
Acinos arvensis (Lam.) Dandy
Acorus americanus (Raf.) Raf.
Acorus calamus L.
Actinidia arguta (Siebold & Zucc.) Planch. ex Miq.
Adenophora potaninii Korsh.
Aeschynomene sensitiva Sw.
Aesculus glabra Willd.
Agastache foeniculum (Pursh) Kuntze
Agastache rugosa (Fisch. & C. A. Mey.) Kuntze
Agropyron cristatum (L.) Gaertn.
Agrostis canina L.
Agrostis castellana Boiss. & Reut.
Ajuga genevensis L.
Albizia harveyi E. Fourn.
Albizia julibrissin Durazz.
Alchemilla vulgaris L.
Alisma gramineum K.C. Gmel.
Allium canadense L.
Allium cernuum Roth
Allium giganteum Regel
Allium nigrum L.
Alnus incana (L.) Moench
Alnus incana ssp. rugosa (L.) Moench
Alnus incana ssp. tenuifolia (L.) Moench
Alnus viridis (Chaix) DC.
Alnus viridis ssp. crispa (Chaix) DC.
Alnus viridis ssp. viridis (Chaix) DC.
Aloe lutescens Groenewald
Aloe mutans Reynolds
Aloe wickensii Pole–Evans
Alopecurus arundinacea Poir.
Alopecurus arundinaceus Poir.
Aloysia citriodora Palau
Alpinia mutica Roxb.
Alternanthera brasiliana (L.) Kuntze
Amorpha fruticosa L.
Ampelopsis brevipedunculata (Maxim.) Trautv.
Amsinckia menziesii var. *intermedia* (Lehm.) Nelson & J.F. Macbr. (Fischer & C.A.Mey.) Ganders
Anagallis foemina Mill.
Androsace lactiflora Pall.
Androsace rotundifolia Hardw.
Androsace septentrionalis L.
Andryala integrifolia L.
Aneilema beniniense (P.Beauv.) Kunth
Anemone hupehensis Lemoine
Anemopsis californica (Nutt.) Hook. & Arn.
Angelica atropurpurea L.
Angelica sylvestris L.
Annona cherimola Mill.
Annona muricata L.
Anredera baselloides (Kunth) Baill.
Antennaria plantaginifolia (L.) Richardson
Anthriscus cerefolium (L.) Hoffm.
Apocynum cannabinum L.
Aquilegia canadensis L.
Aralia elata (Miq.) Seem.
Aralia spinosa L.
Araucaria columnaris (G. Forst.) Hook.
Arbutus menziesii Pursh
Arctium tomentosum Mill.
Areca triandra Roxb. ex Buch.–Ham.
Arenga pinnata (Wurmb) Merr.
Argemone polyanthemus (Fedde) G. B. Ownbey
Argentina anserina (L.) Rydb.
Arisaema flavum (Forsk.) Schott
Aristea africana (L.) Hoffmanns.
Aristolochia longa L.
Aronia melanocarpa (Michx.) Elliott
Aronia x prunifolia (Marshall) Rehder
Artabotrys hexapetalus (L. f.) Bhandari
Artemisia apiacea Hance
Artemisia argyi H.Lév & Vanihot
Artemisia californica Less.
Artemisia cana Pursh
Artemisia capillaris Thunb.
Artemisia frigida Willd.
Artemisia stelleriana Besser.
Arundina graminifolia (D.Don) Hochr.
Asarum canadense L.
Asclepias fascicularis Dcne.
Asclepias incarnata L.
Asperula orientalis Boiss. & Hohen.
Asphodelus aestivus Brot.
Aster x salignus Willd.
Astragalus cicer L.
Astragalus complanatus R. Br. ex Bunge
Atylosia scarabaeoides (L.) Benth.
Bacopa egensis (Poepp.) Pennell
Baldellia ranunculoidea (L.) Parl.
Balsamita major Desf.
Bambusa guadua Bonpl.
Barbarea vulgaris R. Br.
Barleria eranthemoides R.Br.
Barleria repens Nees
Begonia cucullata Willd.
Begonia foliosa Kunth
Begonia hirtella Link
Begonia vitifolia Schott
Bellis annua L.
Betula lenta L.
Betula papyrifera Marshall
Betula populifolia Marshall
Biophytum sensitivum DC.
Boehmeria macrophylla D. Don, nom. illeg.
Boehmeria nipoonivea Koidz.
Borreria latifolia (Aubl.) Schum.
Bothriochloa ischaemum (L.) Keng
Bouteloua gracilis (Kunth) Lag. ex Griffiths, nom. illeg.
Brachypodium phoenicoides (L.) Roem. & Schult.
Brachypodium sylvaticum (Huds.) P. Beauv.
Brexia madagascariensis Thouars ex Ker Gawl.
Bromus briziformis Fisch. & C. A. Mey.
Bromus carinatus Hook. & Arn.
Bromus erectus Huds.
Buddleja alternifolia Maxim.
Burkea africana Hook.
Butomus umbellatus L.
Calandrinia umbellata (Ruiz & Pav.) DC.
Calla palustris L.
Callicarpa dichotoma (Lour.) K.Koch
Calocedrus decurrens (Torr.) Florin
Calophyllum antillanum Britton
Calopogonium caeruleum (Benth.) Sauvages
Caltha palustris L.
Calystegia hederacea Wall.
Calystegia pulchra Brummitt & Heywood
Campanula patula L.
Campanula rapunculoides L.
Capparis micrantha A.Rich.
Caragana arborescens Lam.
Carissa bispinosa (L.) Desf. ex Brenan
Carmona retusa (Vahl) Masam.
Carum carvi L.
Carya glabra (Mill.) Sweet
Caryota urens L.
Catalpa ovata G. Don
Catalpa speciosa (Warder ex Barney) Warder ex Engelm.
Caulophyllum thalictroides (L.) Michx.
Cedrus deodara (Roxb. ex D.Don) G.Don
Centaurea biebersteinii auct.
Centaurea dealbata Willd.
Centaurea macrocephala Muss. Puschk. ex Willd.
Centaurea rhenana Boreau
Cerastium biebersteinii DC.
Cerastium grandiflorum Waldst. & Kit.
Ceratopteris pteridoides (Hook.) Hieron.
Cercis canadensis L.
Chaenomeles japonica (Thunb.) Lindl. ex Spach
Chaerophyllum bulbosum L.
Chamaebatia foliolosa Benth.
Chamaecyparis pisifera (Siebold & Zucc.) Endl.
Chamaedorea cataractarum Mart.
Chamaedorea seifrizii Burret
Chelidonium majus L.
Chenopodium berlandieri Moq.
Chenopodium botrys L.
Chiliodactylon diffusum (G.Forst.) Kuntze
Chrysanthemum x superbum Bergmans ex J. W. Ingram
Chrysobalanus icaco L.
Cinchona pubescens Vahl
Cinnamomum burmannii (Nees & T. Nees) Blume
Cinnamomum verum J. Presl
Cissus quadrangularis L.
Cistus incanus auct.
Citharexylum caudatum L.
Cladanthus arabicus (L.) Cass.
Claytonia sibirica L.
Clematis apiifolia DC.
Clematis brachiata Thunb.
Clematis ligusticifolia Nutt.
Clematis orientalis L.
Clematis terniflora DC.
Clematis virginiana L.
Clematopsis scabiosifolia (DC.) Hutch.
Clerodendrum aculeatum (L.) Schldt.
Clerodendrum buchananii (Roxb.) Walp.
Clerodendrum colebrookianum Walp.
Clerodendrum japonicum (Thunb.) Sweet
Clerodendrum serratum (L.) Moon
Clusia rosea Jacq.
Cnidium monnieri (L.) Cusson
Colchicum luteum Baker
Colutea arborescens L.
Commelina erecta L.
Comptonia peregrina (L.) J. M. Coult.
Conostegia xalapensis (Bonpl.) D.Don.
Convallaria majalis L.
Cordia alliodora (Ruiz & Pav.) Oken
Coreopsis tinctoria Nutt.
Coreopsis verticillata L.
Cornus alba L.
Cornus amomum Mill.
Cornus canadensis L.
Cornus drummondii C. A. Mey.
Cornus florida L.
Cornus mas L.
Cornus racemosa Lam.
Cornus sanguinea L.
Cornus sericea L.
Cornus sericea ssp. sericea L.
Corydalis aurea Willd.
Corydalis edulis Maxim.
Corydalis pallida (Thunb.) Pers.
Corydalis sempervirens (L.) Pers.
Corydalis solida (L.) Clairv.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- Corylus americana* Marshall
Corylus avellana L.
Corylus cornuta Marshall
Costus pulverulentus C. Presl; 1827
Costus speciosus (J. König) Sm.
Cotoneaster bullatus Bois
Cotoneaster integrifolius (Roxb.) Klotz
Cotoneaster lucidus Schltld.
Cotoneaster multiflora Bunge
Cotoneaster tenuipes Rehder & E. H. Wilson
Cotoneaster tomentosus Lindl., nom. illeg.
Crotalaria pumila Ortega
Croton bonplandianus Baill.
Cryptocoryne beckettii Thwaites ex Trimen
Cryptotaenia canadensis (L.) DC.
Cucumis ficifolius A. Rich.
Cucurbita foetidissima Kunth
Cuphea viscosissima Jacq.
Cuscuta pentagona var. *pentagona* Engelm.
Cyamopsis senegalensis Guill. & Perr.
Cyclosorus aridus (Don) Ching
Cynodon plectostachyus (K. Schum.) Pilg.
Cynoglossum officinale L.
Danthonia spicata (L.) P. Beauv. ex Roem. & Schult.
Daphne mezereum L.
Daphne pontica L.
Dasypyrum villosum (L.) P. Candargy
Delosperma herbeum (N.E.Br.) N.E.Br.
Delphinium bicolor Nutt.
Delphinium menziesii DC.
Delphinium staphisagria L.
Dendrocalamus giganteus Munro
Deparia petersenii (Kunze) M. Kato
Desmodium adscendens (Sw.) DC.
Desmodium barbatum (L.) Benth.
Desmodium nicaraguense Oerst.
Desmodium sandwicense E. Mey.
Dianthus chinensis L.
Dicentra canadensis (Goldie) Walp.
Dicentra cucullaria (L.) Bernh.
Dicentra formosa (Haw.) Walp.
Dichanthium saccharoides (Swartz) Roberty
Dicoma zeyherii Sond.
Dieffenbachia seguine (Jacq.) Schott
Digitalis lanata Ehrh.
Dillenia suffruticosa (Griff. ex Hook. f. & Thomson) Martelli
Dioscorea japonica Thunb.
Dioscorea oppositifolia L.
Diospyros dichrophylla (Gand.) De Winter
Diospyros simii (Kuntze) De Winter
Diospyros virginiana L.
Dipsacus laciniatus L.
Dirca palustris L.
Distichlis spicata (L.) Greene
Dolichos formosus Hochst. ex A. Rich.
Dorstenia contrajerva L.
Dypsis lutescens (H. Wendl.) Beentje & J. Dransf.
Echinodorus berteroi (Spreng.) Fassett
Echinodorus bolivianus (Rusby) Holm-Niels.
Echinodorus latifolius (Seub.) Rataj
Echinodorus osiris Rataj
Echinodorus uruguayensis Arechav.
Echinops gmelinii Turcz.
Ehretia rigida Druce
Eichhornia azurea (Sw.) Kunth
Eichhornia paniculata (Spreng.) Solms
Elaeagnus commutata Bernh. ex Rydb.
Elaeagnus umbellata Thunb.
Elephantorrhiza elephantina (Burch.) Skeels
Elytrigia ciliata (Thunb.) Hyl.
Elymus dahuricus Turcz. ex Griseb.
Elytrigia intermedia (Host) Nevski
Elytrigia pontica (Podp.) Holub
Enterolobium contortisiliquum (Vell.) Morong
Epilobium palustre L.
Epilobium pedunculare Cunn.
Epipactis helleborine (L.) Crantz
Epipremnum pinnatum (L.) Engl.
Equisetum fluviatile L.
Equisetum sylvaticum L.
Equisetum telmateia Ehrh.
Eragrostis lehmanniana Nees
Erica ciliaris L.
Erica terminalis Salisb.
Erica tetralix L.
Erinus alpinus L.
Eriogonum fasciculatum Benth.
Eriosema psoraleoides (Lam.) G. Don
Erodium laciniatum (Cav.) Willd.
Eryngium billardieri Laroche.
Erysimum capitatum (Douglas ex Hook.) Greene
Erysimum hieracifolium L.
Escobaria vivipara (Nutt.) F. Buxb.
Euchiton japonicus (Thunb.) A. Anderb.
Euonymus alatus (Thunb.) Siebold
Euonymus fortunei (Turcz.) Hand.-Mazz.
Euphorbia epithymoides L.
Euphorbia ledienii A. Berger
Euphorbia mauritanica L.
Euphrasia rostkoviana Hayne
Euryops empetrifolius DC.
Euryops multifidus (Thunb.) DC.
Eustachys paspaloides (Vahl) Lanza & Mattei
Euterpe oleracea Mart.
Evolvulus sericeus Sw.
Exochorda racemosa (Lindl.) Rehder
Fagus orientalis Lipsky
Fagus sylvatica L.
Falcataria moluccana (Miq.) Barneby & J. W. Grimes
Felicia filifolia (Vent.) Burt Davy
Festuca brevipila R. Tracey
Festuca heterophylla Lam.
Festuca tenuifolia Sibth.
Ficus sur Forssk.
Fimbristylis globulosa (Retz.) Kunth
Firmiana simplex (L.) W. Wight
Flemingia strobilifera (L.) W. T. Aiton
Fragaria chiloensis (L.) Mill.
Fragaria virginiana Mill.
Fragaria x ananassa Duch. (pro sp.)
Frangula alnus Mill.
Fraxinus americana L.
Fraxinus chinensis Roxb.
Fraxinus uhdei (Wenz.) Lingelsh.
Fritillaria imperialis L.
Galactia striata (Jacq.) Urb.
Galanthus nivalis L.
Galium tinctorium (L.) Scop.
Gaultheria shallon Pursh
Gaura mollis James
Geranium columbinum L.
Geranium phaeum L.
Geranium parviflorum L.
Geranium richardsonii FISCH. & TRAUTV.
Geranium viscosissimum Fisch. & C. A. Mey.
Geranium wilfordii Maxim.
Geum rivale L.
Gilia capitata Sims
Ginkgo biloba L.
Gladiolus italicus Mill.
Gladiolus scullyi Bak.
Grewia bicolor Juss.
Grewia flavescens Juss.
Grindelia squarrosa (Pursh) Dunal
Guazuma ulmifolia Lam.
Harrisia eriophora (Pfeiff.) Britton
Hebe x franciscana (Eastw.) Souster
Heimia myrtifolia hort. ex Cham. & Schltld.
Helenium bigelovii A. Gray
Helianthus maximiliani Schrad.
Heliconia bihai (L.) L.
Heliconia metallica Planch. & Linden ex Hook.
Heliconia psittacorum L.f.
Hemigraphis repanda (L.) Hallier f.
Heteranthera reniformis Ruiz & Pav.
Heterocentron subtripplinervium (Link & Otto) A. Braun & C. D. Bouche
Hibiscus moscheutos L.
Hibiscus surattensis L.
Hieracium caespitosum Dumort.
Hierochloa odorata (L.) P. Beauv.
Hippophae rhamnoides L.
Hohenbergia penduliflora (A. Rich) Mez.
Humulus japonicus Siebold & Zucc.
Hunnemannia fumarifolia Sweet
Hydrangea paniculata Siebold
Hydrocharis morsus-ranae L.
Hygrophila polysperma (Roxb.) T. Anderson
Hypericum hircinum L.
Hypericum punctatum Lam.
Hypericum revolutum Vahl
Hypoxis obtusa Burch. ex Edwards
Hyssopus officinalis L.
Iberis pinnata L.
Iberis semperflorens L.
Ilex crenata Thunb.
Ilex vomitoria Sol. ex Aiton
Impatiens capensis Meerb.
Impatiens glandulifera Royle
Indigofera schimperii Jaub. & Spach
Iris ensata Thunb.
Iris missouriensis Nutt.
Iris sisyriochium L.
Iris versicolor L.
Iseilema laxum Hack.
Ixophorus unisetus (J. Presl) Schltld.
Jasminum fluminense Vell.
Jasminum multipartitum Hochst.
Juglans ailantifolia Carriere
Juglans neotropica Diels
Juniperus ashei Buchholz
Juniperus bermudiana L.
Juniperus deppeana Steud.
Juniperus horizontalis Moench
Juniperus occidentalis Hook.
Kaempferia pulchra Ridl.
Kalanchoe lanceolata (Forssk.) Pers.
Kalanchoe rotundifolia (Haw.) Haw.
Kalimeris yomena Kitam.
Kalmia angustifolia L.
Kalmia polifolia Wengen.
Kerria japonica (L.) DC.
Knautia arvensis (L.) Coult.
Kopsia fruticosa (Ker Gawl.) A. DC.
Kummerowia stipulacea (Maxim.) Makino
Kyllinga squamulata Thonn. ex Vahl
Lagopsis supina (Steph.) Ik.-Gal. ex Knorr.
Lallemantia iberica (M. Bieb.) Fisch. & C. A. Mey.
Lallemantia royleana (Benth.) Benth.
Lamium album L.
Lamium maculatum L.
Lappula squarrosa (Retz.) Dumort.
Larix decidua Mill.
Larrea tridentata (Sesse & Moc. ex DC.) Coville
Lasia spinosa (L.) Thwaites
Lathyrus annuus L.
Lathyrus cicera L.
Lathyrus clymenum L.
Lathyrus hirsutus L.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- Lathyrus laxiflorus* (Desf.) Kuntze
Lathyrus pratensis L.
Legousia speculum-veneris (L.) Chaix
Leonurus japonicus Houtt.
Lepidium ruderalis L.
Leptochloa mucronata auct.
Leptospermum ericoides A. Rich.
Lespedeza bicolor Turcz.
Lespedeza cuneata (Dum. Cours.) G. Don
Leucanthemum x superbum (J.W. Ingram) Berg. ex Kent.
Leucas lavandulaefolia J.E. Sm.
Liatris punctata Hook.
Licuala grandis (hort. ex W. Bull) H. Wendl.
Ligustrum amurense Carriere
Ligustrum indicum (Lour.) Merr.
Ligustrum japonicum Thunb.
Ligustrum obtusifolium Siebold & Zucc.
Ligustrum quihoui Carriere
Limnophila heterophylla Benth.
Limonium sinense (Girard) Kuntze
Linaria dalmatica ssp. *dalmatica* (L.) Mill.
Linaria purpurea (L.) Mill.
Linaria repens (L.) Mill.
Linaria supina (L.) Chaz.
Liriope spicata (Thunb.) Lour.
Lithocarpus densiflorus (Hook. & Arn.) Rehder
Livistona chinensis (Jacq.) R. Br. ex Mart.
Lobelia inflata L.
Lobelia siphilitica L.
Lolium arundinaceum (Schreb.) Darbysh.
Lolium perenne ssp. *perenne* L.
Lonchocarpus capassa Rolfe
Lonicera morrowii A. Gray
Lonicera standishii Jacques
Lonicera x bella Zabel
Ludwigia repens J.R.Forst.
Lunaria rediviva L.
Lupinus argenteus Pursh
Luzula luzuloides (Lam.) Dandy & Wilmott
Lycopus europaeus L.
Lysichiton americanus Hulten & H. St. John
Lysimachia ciliata L.
Lysimachia clethroides Duby
Lysimachia punctata L.
Lysimachia terrestris (L.) Britton et al.
Lythrum anceps (Kohne) Makino
Lythrum virgatum L.
Macleaya cordata (Willd.) R. Br.
Magnolia tripetala (L.) L.
Mahonia bealei (Fortune) Carriere
Mahonia repens (Lindl.) G. Don
Malus baccata (L.) Borkh.
Malus floribunda Siebold ex Van Houtte
Malus prunifolia (Willd.) Borkh.
Malva alcea L.
Malvaviscus penduliflorus DC.
Mammillaria vivipara (Nutt.) Haw.
Matteuccia struthiopteris (L.) Tod.
Maytenus senegalensis (Lam.) Exell.
Medicago rigidula (L.) All.
Medinilla magnifica Lindl.
Medinilla venosa Blume
Melastoma candidum D. Don
Melica nutans L.
Melicococcus bijugatus Jacq.
Melilotus altissimus Thuill.
Melilotus sulcatus Desf.
Menispermum canadense L.
Mentha gracilis Sole
Mentha x gracilis Sole (pro sp.)
Mentha x villosa Huds.
Mentzelia laevicaulis (Douglas ex Hook.) Torr. & A. Gray
Mentzelia nuda (Pursh) Torr. & A. Gray
Menyanthes trifoliata L.
Metaplexis japonica (Thunb.) Makino
Metasequoia glyptostroboides Hu & W. C. Cheng
Microsorium scolopendrium (Burm.f.) Copel.
Mimosa diplotricha C. Wright
Mimulus lewisii Pursh
Mimulus x robertsii Silverside
Mirabilis hirsuta (Pursh) MacMillan
Mirabilis nyctaginea (Michx.) MacMill.
Miscanthus nepalensis (Trin.) Hack.
Miscanthus purpurascens Andersson
Miscanthus sacchariflorus (Maxim.) Benth.
Momordica foetida Schumacher.
Morella faya (Aiton) Wilbur
Morus rubra L.
Mussaenda frondosa L.
Myoporum serratum R. Br.
Myosotis micrantha Pall. ex Lehm.
Myrica gale L.
Myriophyllum verticillatum L.
Myrrhis odorata (L.) Scop.
Nigella sativa L.
Nuphar lutea (L.) Sm.
Nymphaea nouchali auct. nonn.
Nymphaea tetragona Georgi
Nymphaea x daubenyana W. T. Baxter ex Daubeny
Nymphoides aquatica (J. F. Gmel.) Kuntze
Nymphoides peltata (S. G. Gmel.) Kuntze
Nyssa sylvatica Marshall
Ochna thomasi Engl. & Gilg
Oeceoclades maculata (Lindl.) Lindl.
Oenanthe aquatica (L.) Poir.
Oenothera pallida Lindl.
Oenothera perennis L.
Oenothera pumila L.
Oldenlandia affinis (Roem. & Schult.) DC.
Onoclea sensibilis L.
Ononis reclinata L.
Oplopanax horridus (Sm.) Miq.
Opuntia cochenillifera (L.) Mill.
Opuntia spinulifera Salm-Dyck
Origanum syriacum L.
Ornithogalum narbonne L.
Oryzopsis coarulescens (Desf.) Hack.
Oxydendrum arboreum (L.) DC.
Oxytropis splendens Douglas ex Hook.
Pachysandra terminalis Siebold & Zucc.
Pangium edule Reinw.
Panicum obtusum Kunth
Papaver pavoninum Fisch. & C. A. Mey.
Pappea capensis Eckl. & Zeyh.
Pascopyrum smithii (Rydb.) A. Love
Paspalum conspersum Schrad. ex Schult.
Paspalum maritimum Trin.
Passiflora biflora Lam.
Passiflora incarnata L.
Passiflora tripartita var. *mollissima* (Juss.) Poir.
Passiflora x violacea Vell.
Pavetta indica L.
Pavonia spinifex (L.) Cav.
Pennisetum ciliare var. *ciliare* (L.) Link
Pennisetum flaccidum Griseb.
Penstemon digitalis Nutt. ex Sims
Pereskia grandifolia Haw.
Persicaria bistorta (L.) Samp.
Petasites hybridus (L.) P. Gaertn. et al.
Petiveria alliacea L.
Peucedanum ostruthium (L.) W. D. J. Koch
Phellodendron amurense Rupr.
Phellodendron japonicum Maxim.
Photinia davidiana (Decne.) Cardot
Phyla scaberrima (Juss. ex Pers.) Moldenke
Phyllostachys bissetii McClure
Phymatosorus scolopendria (Burm. f.) Pic. Serm.
Physocarpus opulifolius (L.) Maxim.
Picea glauca (Moench) Voss
Picea sitchensis (Bong.) Carriere
Pilosella officinarum F. W. Schultz & Sch. Bip.
Pimpinella saxifraga L.
Pinus banksiana Lamb.
Pinus coulteri D. Don
Pinus jeffreyi Balf.
Pinus rigida Mill.
Pinus roxburghii Sarg.
Pinus strobus L.
Pinus virginiana Mill.
Pinus wallichiana A.B. Jacks.
Piper methysticum G. Forst.
Pittosporum pentandrum (Blanco) Merr.
Pittosporum viridiflorum Sims
Plantago afra L.
Plantago camtschatica Cham.
Plectranthus barbatus Andrews
Pluchea camphorata (L.) DC.
Plumbago scandens L.
Poa cita Edgar
Podophyllum peltatum L.
Polygonum amphibium L.
Polygonum amplexicaule D. Don
Polygonum aubertii L. Henry
Polygonum equisetiforme Sm.
Polygonum hydropiper L.
Polygonum orientale L.
Polystichum munitum (Kaulf.) C. Presl
Populus balsamifera L.
Populus balsamifera ssp. *balsamifera* L.
Populus balsamifera ssp. *trichocarpa* L.
Populus deltoides W. Bartram ex Marshall
Populus grandidentata Michx.
Populus tremuloides Michx.
Populus trichocarpa Torr. & A. Gray
Potentilla argentea L.
Potentilla erecta (L.) Raeusch.
Potentilla gracilis Douglas ex Hook.
Potentilla intermedia L.
Potentilla nepalensis Hook.
Prunella vulgaris ssp. *vulgaris* L.
Prunus campanulata Maxim.
Prunus fruticosa Pall.
Prunus glandulosa (Hook.) Torr. & A. Gray, nom. illeg.
Prunus pensylvanica L. f.
Prunus tomentosa Thunb.
Prunus virginiana L.
Pseudogaltonia clavata (Mast.) E. Phillips
Pterocarpus rotundifolius ssp. *rotundifolius* (Sond.) Druce
Pueraria montana var. *lobata* (Lour.) Merr.
Pulsatilla patens ssp. *multifida* (L.) Mill.
Pyrus calleryana Decne.
Pyrus melanocarpa (Michx.) Willd.
Quercus acutissima Carruth.
Quercus alba L.
Quercus falcata Michx.
Quercus gambelii Nutt.
Quercus macrocarpa Michx.
Quercus petraea (Matt.) Liebl.
Quercus rubra L.
Quercus stellata Wangenh.
Quercus velutina Lam.
Quercus virginiana Mill.
Ranunculus abortivus L.
Ranunculus aquatilis L.
Ranunculus lingua L.
Rhamnus cathartica L.
Rhamnus davurica Pall.
Rhododendron canadense (L.) Torr.

Weeds of the future? Threats to Australia's grazing industries by garden plants

- Rhododendron macrophyllum* D. Don ex G. Don
Rhodotypos scandens (Thunb.) Makino
Rhoicissus tomentosa (Lam.) Wild & R. B. Drumm.
Rhus copallina L.
Rhus hirta (L.) Sudw.
Rhus lancea L. f.
Rhus leptodictya Diels
Rhus lucida L.
Rhus trilobata Nutt. ex Torr. & A. Gray
Ribes americanum Mill.
Ribes aureum Pursh
Ribes aureum var. *villosum* Pursh
Ribes cynosbati L.
Ribes glandulosum Grauer
Ribes nigrum L.
Ribes triste Pall.
Robinia hispida L.
Rosa arkansana Porter
Rosa palustris Marshall
Rosa rugosa Thunb.
Rosa spinosissima L., nom. ambig.
Rosa woodsii Lindl.
Rosa x damascena Mill.
Rubia cordifolia L.
Rubus allegheniensis Porter
Rubus bogotensis Kunth
Rubus idaeus ssp. *strigosus* L.
Rudbeckia hirta L.
Ruellia brevifolia (Pohl) C.Ezcurra
Ruellia devosiana hort. Makoy ex E. Murr.
Rumex patientia L.
Sabal mauritiformis (H. Karst.) Griseb. & H. Wendl.
Saccharum ravennae (L.) L.
Sagittaria natans (L.) Buchenau
Sagittaria rigida Pursh
Sagittaria subulata (L.) Buchenau
Salix humilis Marshall
Salix lasiolepis Benth.
Salix pentandra L.
Salvia forskahlei L.
Salvia mellifera Greene
Salvia moorcroftiana Benth.
Salvia nemorosa L.
Salvia pratensis L.
Salvia sylvestris L.
Salvia verticillata L.
Salvia virgata Jacq.
Salvinia auriculata Aubl.
Sambucus ebulus L.
Sambucus racemosa L.
Sanguisorba officinalis L.
Sansevieria hyacinthoides (L.) Druce
Sanvitalia procumbens Lam.
Saponaria ocyroides L.
Sarracenia purpurea L.
Sasa palmata (hort. ex Burb.) E. G. Camus
Sassafras albidum (Nutt.) Nees
Saururus cernuus L.
Saxifraga tridactylites L.
Saxifraga x urbium D.A.Webb.
Schinus polygamus (Cav.) Cabrera
Schizostachyum glaucifolium (Rupr.) Munro
Scilla nervosa (Burch.) Jessop
Scilla scilloides (Lindl.) Druce
Scilla siberica Haw.
Sedum aizoon L.
Sedum dasyphyllum L.
Sedum lineare Thunb.
Sedum ochroleucum Chaix
Sedum stoloniferum Gmel.
Serissa japonica (Thunb.) Thunb.
Setaria megaphylla (Steud.) T. Durand & Schinz
Sida fallax Walp.
Silene colorata Poir.
Silene cretica L.
Silene fuscata Link ex Brot.
Silene latifolia ssp. *alba* Poir.
Silphium perfoliatum L.
Smilax excelsa L.
Smyrnium olusatrum L.
Solanum jamaicense Mill.
Solanum ptychanthum Dunal
Solanum wrightii Benth.
Solidago gigantea Aiton
Sorbaria sorbifolia (L.) A. Braun
Spartina pectinata Bosc. ex Link
Sphaeralcea coccinea (Nutt.) Rydb.
Spiraea alba Du Roi
Spiraea alba var. *latifolia* Du Roi
Spiraea japonica L. f.
Spiraea thunbergii Siebold ex Blume
Spiraea tomentosa L.
Spiraea x arguta Zabel
Spiraea x vanhouttei (Briot) Zabel
Spirostachys africana Sond.
Sporobolus cryptandrus (Torr.) A. Gray
Sporobolus ioclados (Trin.) Nees
Streptosolen jamesonii (Benth.) Miers
Strychnos madagascariensis Poir.
Swietenia macrophylla King
Swietenia mahagoni (L.) Jacq.
Symphotrichum lateriflorum (L.) A. & D. Löve
Symphytum asperum Lepech.
Symphytum tuberosum L.
Symplocarpus foetidus (L.) Salisb. ex W.P.C.Barton
Syringa villosa Vahl
Tabebuia heterophylla (DC.) Britton
Tabebuia lepidophylla A.Rich.
Tabebuia lepidota (Kunth) Britton
Tacca chantrieri Andre
Talinum fruticosum (L.) Juss.
Tamarix africana Poir.
Tamarix chinensis Lour.
Tamarix parviflora DC.
Taraxacum mongolicum Hand-Mazz.
Taxus baccata L.
Taxus brevifolia Nutt.
Taxus canadensis Marshall
Taxus cuspidata Siebold & Zucc.
Tectaria incisa Cav.
Tellima grandiflora (Pursh) Douglas ex Lindl.
Terminalia myriocarpa Van Heurck & Mull. Arg.
Tetrastigma voinierianum (Baltet) Pierre ex Gagnep.
Thalia geniculata L.
Thapsia garganica L.
Thelypteris dentata (Forssk.) E.St John
Thermopsis rhombifolia (Pursh) Richardson
Thuja occidentalis L.
Thymus pannonicus auct.
Thymus praecox ssp. *arcticus* Opiz
Thymus serpyllum L.
Tithonia tagetiflora Desf.
Tournefortia argentea L. f.
Toxicodendron diversilobum (Torr. & A. Gray) Greene
Toxicodendron vernix (L.) Kuntze
Tradescantia x andersoniana W.Ludwig & Rohweder nom inval.
Tragopogon pratensis L.
Trema micrantha (L.) Blume
Trifolium aureum Pollich
Trifolium burchellianum Ser.
Trifolium clusii Godr. & Gren.
Trifolium nigrescens Viv.
Trifolium tumens Steven ex M. Bieb.
Trigonella caerulea (L.) Ser.
Trigonella corniculata (L.) L.
Trimezia steyermarkii R.Foster
Tulipa lanata Regel
Tulipa lehmanniana Merckl. ex Bunge
Tulipa stellata Hook.
Tulipa sylvestris L.
Tussilago farfara L.
Tylecodon wallichii (Harv.) Toelken
Typha angustifolia L.
Typha laxmannii Lepech.
Typha minima Funck
Typhonium trilobatum (L.) Schott
Ulmus americana L.
Ulmus davidiana Planch.
Ulmus glabra Huds.
Ulmus pumila L.
Umbellularia californica (Hook. & Arn.) Nutt.
Urera caracasana (Jacq.) Griseb.
Urginea altissima (L. f.) Baker
Urochloa brachyura (Hack.) Stapf
Ursinia nana DC.
Utricularia inflata Walter
Utricularia macrorhiza Le Conte
Vaccinium myrtilloides Michx.
Valeriana officinalis L.
Veratrum viride Aiton
Verbascum nigrum L.
Verbena hastata L.
Verbena x hybrida hort. ex Groenl. & Rumpfer
Vernonia gigantea (Walter) Trel. ex Branner & Coville
Veronica beccabunga L.
Veronica filiformis Sm.
Veronica gentianoides Vahl
Veronica longifolia L.
Veronica peduncularis Bieb.
Verschaffeltia splendida H. Wendl. ex Lem.
Vetiveria zizanioides (L.) Nash
Viburnum carlesii Hemsl.
Viburnum dilatatum Thunb.
Viburnum lantana L.
Viburnum opulus L.
Viburnum opulus var. *americanum* L.
Viburnum sieboldii Miq.
Vicia articulata Hornem.
Vicia ervilia (L.) Willd.
Vicia narbonensis L.
Viola chaerophylloides (Regel) W. Becker
Viola japonica Langsd.
Viola kitaibeliana Roem. & Schult.
Viola mandshurica W. Becker
Viola yedoensis Mak.
Vitex negundo L.
Vitis labrusca L.
Vitis riparia Michx.
Vitis vulpina L.
Wisteria floribunda (Willd.) DC.
Wisteria frutescens (L.) Poir.
Xanthium strumarium var. *canadense* L.
Zanthoxylum americanum Mill.
Zigadenus elegans Pursh
Zizania aquatica L.
Zoysia japonica Steud.

10.3 Appendix 3 Case studies

Asclepias syriaca

Common milkweed

ASCLEPIADACEAE

Plant description

Asclepias syriaca, is one of approximately 120 species of *Asclepias* milkweeds most of which are native to North America (1). There are no species native to Australia. *A. syriaca* is common across much of its native range, particularly eastern United States (2). It also hybridises with *A. speciosa* (3).

A. syriaca is an erect, perennial herb 1-2 metres high. **Leaves** are simple, opposite and egg-shaped to oblong with a short stalk; successive pairs are arranged at right angles to each other. They have a green, smooth upper surface and a light green undersurface covered in fine white hairs. **Stems** are hairy, straight and rarely branched. **Flowers** are pink, mauve or purple to white and sweetly perfumed. They occur in spherical clusters at the ends of branches. Clusters are pendulous on a long stalk and contain 20-130 flowers. **Fruits** are oval-shaped pods, furrowed along their length and covered with fine white hairs. A single pod contains numerous thick, brown, flat **seeds**, each with a long, silky tuft of hair. The plant has a deep taproot with a creeping **rhizome**. Broken stems, leaves and roots bleed large amounts of milky sap. (1, 3, 4, 5)

Flowering Summer (mature plants only)

Fruiting Autumn

Seeding Autumn; remain viable up to 7 years (6)

Germination 12 months

Habitat

Asclepias syriaca is commonly found in orchards, roadsides, waste places, pastures, thickets, open woods, railroads, dry fields and along the banks of lakes, ponds and watercourses (8, 10, 11). It prefers an annual rainfall of 400-1200 mm and grows in a range of soil types, as long as they are well-drained and loamy with full or partial sun (11). It will not tolerate extended periods of drought or excessive moisture (6, 11).

How the plant spreads

A single *A. syriaca* plant produces 4-6 pods each with 150-450 seeds which are wind and water dispersed (6, 11). The plant also multiplies vegetatively with roots emerging from the soil to create new plants in spring (6).

International weed status

A. syriaca has naturalised in central and southern Europe where it was once cultivated (5). It is a noxious weed in parts of Canada where it has spread into agricultural crops and grazing land (11). Since the mid-19th century it has proved difficult to eradicate from US farms owing to its deep, creeping rootstock (1). In the state of Iowa, for example, it is a common weed of row crops and grazing land (12).

COMMON MILKWEED
Asclepias syriaca L.
MILKWEED FAMILY



Asclepias syriaca

From National Geographics "Book of Wildflowers"
Courtesy of University of Wisconsin - Stevens Point

Uses

Asclepias syriaca is a popular garden ornamental, often marketed for its attractiveness to the Monarch or Wanderer butterfly, itself an introduced species to Australia. Monarchs lay their eggs on *Asclepias* species and the plants provide the caterpillars, which feed on the plants, with an important chemical defence against birds (1, 3).

A. syriaca features in numerous medicinal and folk remedies, particularly for the treatment of respiratory illnesses and skin disorders (3, 13). Young shoots can be boiled (to remove harmful toxins) and eaten whilst fibres from the stems have been used to make cords and ropes (3). The silky tufts of seeds were used by American settlers to stuff pillows and mattresses (14).

Management

The large taproot of *Asclepias syriaca* makes **mechanical** removal difficult and mature plants tend to readily resprout. Removal of the tops of the plants by **cutting** or **mowing** simply promotes rhizome growth (6, 11). **Tillage** can produce larger infestations as plants regenerate from root fragments (11) but it can be effective if it is conducted every few weeks in the warmer months when the soil is dry and before the seeds are released (9). **Herbicides** can provide an effective control (6).

Asclepias spp. in Australian gardens

The following *Asclepias* species are present in Australian gardens:

A. curassavica, *A. incarnata*, *A. incarnata* "Ice Ballet", *A. pubescens*, *A. purpurascens*, *A. speciosa*, *A. syriaca*, *A. tuberosa*.

Naturalised *Asclepias* spp. in Australia

The following *Asclepias* species have naturalised in Australia:

A. curassavica (NT, Vic, WA, NSW*, Qld)

* includes ACT

A. curassavica is a pasture weed in Australia (15) and has been promoted in Australia for its attractiveness to butterflies (16).

Australian legislative controls

The importation of *Asclepias syriaca* is prohibited under federal legislation.

In WA, *A. californica*, *A. cordifolia*, *A. eriocarpa*, *A. erosa*, *A. hallii*, *A. incarnata*, *A. solanoana*, *A. speciosa*, *A. sullivantii*, *A. syriaca* and *A. verticillata* are under legislative control. No other state/territory legislation applies to *Asclepias* species.

Potential impact of *Asclepias syriaca* in Australia

A. syriaca contains chemicals that are poisonous to livestock; livestock usually avoid it but there are reports of ingestion and death (7, 8, 6) particularly as a result of overgrazing or drought (1). The species has caused enormous problems for farmers in western United States where it has proved very difficult to remove, particularly from fertile soil (1). It absorbs nutrients and water efficiently (6) and may out-compete native plants or desirable grazing species. Fluffy seeds and milky sap may clog machinery (6). In agricultural crops, it can cause substantial losses in yield and quality (6).

Potential Australian distribution of *Asclepias syriaca*

Overseas data on the growing climate of *Asclepias syriaca* indicates that it is likely to establish in south-east Qld; north-east & south-west NSW; north-west Victoria; mid north of SA through to the Nullabor Plain; and the mallee region of south-west WA.



Potential Australian distribution of *Asclepias syriaca*

Another *Asclepias* spp. to watch out for in Australia...



Asclepias tuberosa

From Edwards, S. 1815 Botanical Register, Volume 1, Plate 76
Courtesy of Adelaide Botanic Gardens Library, South Australia

Asclepias tuberosa has been widely available from Australian nurseries during the past 20 years. Its long-lasting displays of bright orange flowers make it one of the more spectacular *Asclepias* species. It is common across much of its native North American range where it may show weedy tendencies. Urbanisation of its natural habitats has placed it under severe threat in others parts of the US (1).

In the United States, *A. tuberosa* has proved adaptable to a wide range of habitats including open woodlands and fields, dry prairies, steep limestone slopes, abandoned farms, roadsides, waste places and banks of streams. It is often found in dry, open areas and prefers dry, sandy, gravelly or well-drained soils. It can tolerate poor soils but not saline conditions. It prefers full sun but can tolerate shade. (2, 3, 4)

A. tuberosa is drought-tolerant. Its optimum growing temperature is 14 to 24 degrees but it can tolerate temperatures up to 30 degrees and winter temperatures below -32 degrees (5). Optimum annual rainfall for growth is 400–800 mm (5).

The importation of *Asclepias tuberosa* is permitted under federal legislation and no state/territory legislation currently applies to this species.

If the species establishes in Australia, it is likely to spread across much of central Australia extending to the eastern and western coastlines and into southern SA and parts of south-west WA.



Potential Australian distribution of *Asclepias tuberosa*

Equisetum spp.

Horsetails

Plant description

Equisetum is the only genus in the family Equisetaceae. All ancient and fern-like, there are approximately 30 species, largely native to temperate regions of the Northern Hemisphere including North America, Europe and Asia (1). There are no species native to Australia.

Equisetum species are perennial, non-flowering and non-fruiting plants which resemble rushes. Their erect, hollow stems are segmented and fine needle-like branches extend in whorls from the nodes, resembling *Casuarina* species. **Stems** are typically between 5-120 cm tall although *E. giganteum* (Giant Horsetail) can reach 9 metres (2, 3). **Leaves** are inconspicuous, emerging from the nodes along the stem and fused along their lateral walls. **Spores** are contained within **cones** that develop at the ends of fertile stems. These may look similar to sterile stems. **Roots** are comprised of subterranean stems (or rhizomes) which produce numerous wiry roots (1).

Stems Appear in autumn, often dying back in winter

Spores Released in spring/summer

Habitat

Equisetum species prefer acid soil and damp environments including riverbanks, lake margins, roadsides, railway embankments, shallow ponds, ditches, marshes and wet woodlands (4, 5). They also occur in well-drained sites or areas with sandy or gravelly soils and they invade pastures, orchards, nursery crops, hayfields, rice terraces and tea plantations (6, 7, 8).



Equisetum arvense in Kings Canyon National Park, California, United States

How the plant spreads

Reproduction occurs via spores or rootstock. Spore germination requires a prolonged period of moist conditions. Rhizomes frequently divide, spreading many metres horizontally and descending up to two metres in depth (5). Rootstocks do not die back in winter and the rhizomes continue to spread and penetrate the soil. Small fragments of rhizome produced as a result of ploughing (5) or left behind in garden rubbish, contaminated soil and machinery will re-sprout (9).

International weed status

Equisetum species are regarded as some of the worst weeds in the world (10) and almost half of all *Equisetum* species are weeds (9). In parts of Canada, the United States, South America and Europe, their aggressive and their adventitious rhizome system makes them difficult to eradicate. *E. arvense* has spread to New Zealand, South Africa and South America (3).

Uses

EQUISETACEAE



Various *Equisetum* species

Equisetum species are used in homeopathic remedies and medicines. It is used as a diuretic and as an external treatment for burns, wounds and fractures (11). It is administered as a liquid or as a dried herb (11). High silica content makes it a good abrasive and it has traditionally been used to scour and clean pots and pans (11).

Management

Integrated control methods are recommended including improving **drainage** and planting perennial grass cover with the use of a nitrogen **fertiliser** to encourage its growth (6). Fertile stems can be **cut** or **burnt** prior to the productions of spores (6). There are few effective **herbicides** and their use depends on the environment in which the *Equisetum* is growing (6). **Hand removal** is futile due to the deep root system and resprouting of fragmented rhizomes.

***Equisetum* spp. in Australian gardens**

The following *Equisetum* species are present in Australian gardens:

E. arvense, *E. hyemale*, *E. ramosissimum*

Equisetum species were nominated as one of the most invasive plants for sale in Victorian nurseries (6) and *E. arvense* may still be available for sale in Victoria and Queensland (7).

Naturalised *Equisetum* spp. in Australia

According to censuses of plants kept by state and territory herbaria, there are currently no naturalised *Equisetum* populations in Australia. However, infestations of *E. arvense*, *E. hyemale* and *E. ramosissimum* have occurred.

The genus is listed on the national Alert List for Environmental Weeds (12). *E. bogotense*, *E. debile*, *E. giganteum*, *E. palustre* and *E. scirpoides* have also been identified as potential threats to Australia (13).

Australian legislative controls

Federal legislation prohibits the importation of *E. arvense*, *E. diffusum*, *E. laevigatum*, *E. palustre*, *E. pratense*, *E. pyramidale*, *E. ramosissimum* and *E. variegatum*. *E. ramosissimum* is listed as a priority weed in the Northern Australian Quarantine Strategy (7).

State legislation applies to all *Equisetum* species. The ACT presently prohibits only *Equisetum arvense* whilst the NT does not have restrictions on this genus.

Potential impact of *Equisetum* spp. in Australia

Equisetum species are a serious threat to Australian agricultural and grazing industries (14). *Equisetum* species threaten Australia's wetlands and poorly-drained areas – including farms and pastures - that receive in excess of 500 mm annual rainfall (3). Due to their extensive underground rhizome system, they have the ability to withstand fire. Rhizome fragments are easily spread by farming equipment and machinery. Chemical substances produced by the plants inhibit the growth of native or desirable grazing species (9).

Equisetum species are very toxic to livestock (5) - particularly to horses that feed on contaminated hay – and poisoning of sheep and cattle has been reported (6).

Equisetum species also threaten Australia's native environment (3).

Potential Australian distribution of *Equisetum arvense* & *Equisetum ramosissimum*

Overseas data on the growing climate of *E. ramosissimum* indicates that it is likely to establish in sub-tropical/tropical parts of Qld, NT and WA whilst *E. arvense* has the potential to spread across most regions of Australia, affecting all states and territories.



Potential Australian distributions of *E. ramosissimum* and *E. arvense*

Prehistoric weed wants your garden

[Horsetail]... is a relative newcomer to New Zealand, imported in the early 1900s, from its native homeland – either Europe or North America – as a sort of curiosity.

The horsetail invasion has been quite slow. But now it has reached the Wanganui region and is spreading at a rate that is alarming.

One Wanganui city property, which used to have something of a show garden is now a mass of horsetail. The riverbank near Kaiwhaiki is the site of another major infestation. It has also spread on to farmland where it has the potential to poison horses if they eat it. Other stock apparently won't touch it.

...[T]he initial source of the pest was probably the gravel extraction and crushing sites on the Rangitikei River. Tiny pieces of horsetail root have been transported out in loads of roading metal and shingle destined for use in building mix.

Unless totally encased in concrete, horsetail will grow, sending out its nodulated root system over a wide area and digging itself in to a depth of up 2m.

...[T]he common types of weed sprays have no effect. Some of the sprays, used on tough weeds like gorse, will knock horsetail back. But that sort of treatment will, of course, destroy the surrounding plants and ultimately create a "chemical desert". And because of the root structure and the way the nodules fracture so easily, digging it out is impossible.

...[A]nyone bringing builder's mix or driveway metal on to their properties should inspect it thoroughly for signs of horsetail root – which looks like small, brown pieces of stick but with tiny rootlets.

© Extracts reproduced from Wanganui Chronicle
By Colin Rowatt, 19/1/2006

Festuca gautieri

Bear-skin fescue

POACEAE

Plant description

Festuca gautieri is native to France and Spain. It is one of about 300 species of clumping or tufted grasses which occur world-wide and usually in cooler climates (1). There are native species in Australia.

Festuca gautieri is a dense, stiff, clump-forming perennial grass 20-50 cm high. **Leaf** sheaths are tubular for three quarters of their length; leaf blade is about 1 mm wide, smooth and with a sharp tip. **Flower** heads (or *spikelets*) are borne on downy branches up to 7 cm long; these branches with spikelets are referred to as *panicles*. Fertile spikelets are usually at the base of the panicle and they break off at maturity. Spikelets occurring at the tips are often sterile. (1, 2, 3, 4)

Flowering Summer



© Jim Brockmeyer
<http://www.bluestem.ca/festuca-gautieri.htm>

3000 prohibited plants destroyed

GIPPSLAND A nurseryman with 3000 bear-skin fescue plants has destroyed them after discovering they were on Victoria's prohibited plant hit list.

Ben McClernon, who runs Blue Rock Ornamental Nursery at Willow Grove, 18km north of Trafalgar, said he was surprised to learn the plants were prohibited. "I was shocked because I had 3000 of these plants ready for sale, but my main priority then became destroying them," Mr McClernon said.

The Department of Primary Industries said Mr McClernon had put all the bear-skin fescue plants he had in plastic bags and buried them.

Mr McClernon said he was not aware that bear-skin fescue was a problem plant when he started growing it. But in March last year The Weekly Times revealed the nursery industry had imported the invasive bear-skin fescue for sale as an ornamental garden plant. In December last year the Victorian Government responded by freezing the sale of the plant under the emergency powers of the Catchment and Land Protection Act. By last week it had listed bear-skin fescue on the state's prohibited weeds list.

Mr McClernon said nurserymen were finding many more plants were being listed as prohibited weeds.

Staff at Bunnings in Frankston made a similar discovery, with 100 bear-skin fescue plants being identified.

DPI weed alert officer Kate Blood said many garden plants had the potential to become weeds. "DPI is working closely with Nursery and Garden Industry Victoria to ensure all responsible nursery wholesalers and retailers are aware of the weed potential of their stock plants," Ms Blood said.

© The (Melbourne) Weekly Times
By Daniel Le Grand, 19/4/2006

Festuca gautieri

Habitat

Festuca gautieri occurs in gravelly, well-drained soil in rocky outcrops and alpine troughs with full or partial sun (5). It is drought tolerant in cooler climates (5).

How the plant spreads

Festuca gautieri reproduces from seeds or fragmentation of clumps.

International weed status

Festuca gautieri is naturalised in England after escaping from cultivation (6).

Uses

Several *Festuca* species are important lawn and pasture grasses and they may be used for erosion control (7). *Festuca gautieri* may be used as a ground cover and ornamental grass as well as in rock gardens and in bonsai (5).

Management

No management options are known.

***Festuca* spp. in Australian gardens**

The following *Festuca* species are present in Australian gardens.

F. amethystina, *F. glauca*, 'Auslese', *F. ovina* var. *glauca*, *F. 'Peninsula Blue'*

Festuca gautieri was first observed in a Victorian nursery in November 2004 (1).

Naturalised *Festuca* spp. in Australia

Censuses of plants kept by state and territory herbaria indicate that the following introduced *Festuca* species have naturalised in Australia:

F. arundinacea (Vic, SA, Tas, WA, NSW?, doubtfully naturalised in Qld); *F. elatior* (NSW*, NT); *F. nigrescens* (NSW*, Tas); *F. pratensis* (SA, WA, NSW*, doubtfully naturalised in Qld); *F. rubra* (NSW*, WA, Tas, SA, Vic)

* includes ACT

Native *Festuca* spp. in Australia

Censuses of plants kept by state and territory herbaria indicate that the following *Festuca* species are native to Australia:

F. archeri (Tas: considered extinct);
F. benthamiana (SA); *F. muelleri*, *F. asperula* (NSW, Vic); *F. plebeia* (Tas)

Australian legislative controls

The importation of the following *Festuca* species is prohibited by federal legislation because they have been assessed as weeds:
F. airoides, *F. altissima*, *F. argentina*, *F. buchtienii*, *F. caprina*, *F. diffusa*,

F. filiformis, *F. heteromalla*, *F. juncifolia*,
F. kashmiriana, *F. lemanii*, *F. litorea*, *F. lugens*,
F. modesta, *F. octoflora*, *F. parvigluma*,
F. rupicola, *F. sulcata*, *F. trachlepis*, *F. vierhapperi*, *F. vivipara*.

Festuca gautieri is under legislative control in WA, Vic and Tas.

Potential impact of *Festuca gautieri* in Australia

Festuca gautieri is of low palatability to livestock. Avoidance of this species by livestock will contribute to its spread and reduce pasture holding capacity (1).

Festuca gautieri may also compete with native grasses, reducing their biodiversity in natural environments (1).

A fungus occurring in *Festuca* spp. can poison horses and cause abortions in mares (7).

Potential Australian distribution of *Festuca gautieri*

Overseas data on the growing climate of *Festuca gautieri* indicates that it is likely to establish in southern Australia extending across the Nullabor Plain from south-west Western Australia into southern South Australia, southern New South Wales, Victoria and eastern Tasmania.



Potential Australian distribution of
Festuca gautieri

Hieracium spp.

Hawkweeds

ASTERACEAE

Plant Description

Hieracium (sometimes referred to by its synonym *Pilosella*) is a complex genus; the species hybridise easily and consequently it is often difficult to tell them apart (1). Depending on the species concept applied, the genus consists of as many as 1000 species or as few as 90 species (2). They are largely native to temperate and mountainous regions of the Northern Hemisphere – particularly Europe and Asia – but a few species are native to South America and southern Africa. There are no species native to Australia.

Hieracium species are perennial herbs up to 90 cm tall. **Leaves** contained in a basal rosette are simple and entire or toothed. **Stems** may be leafy, leafless or with one or two small leaves. Stems and leaves are covered in stiff, bristly hairs and produce a milky juice when broken. **Flowers** are usually yellow to orange-yellow and occur in solitary or a few heads at the top of erect stems. **Seeds** are tiny and topped by a bristly plume. **Roots** are fibrous and emerge from the nodes of shallow, horizontal runners (*stolons*). (2, 3, 4, 5)

Flowering Late spring/summer/early autumn

Seeding Summer/autumn

Germination Autumn but may occur throughout the year with the right conditions

Habitat

Hieracium species prefer moist grasslands and have been found along roadsides or drains and in waste ground or disturbed areas as well as in cleared areas, alpine meadows, forest openings, pastures – particularly those that are poorly managed – hayfields, ski fields, open woodland and near garden areas from which the plants escape (1, 6, 7). They can tolerate poor, gravelly or acidic soils as well as heat, frost and snow. Whilst they prefer full sun they can tolerate part shade (1).

How the plant spreads

Hieracium species are prolific seeders with an adventitious root system. One square metre of *Hieracium* can reportedly produce up to 40,000 seeds whilst species which produce runners easily break and re-sprout from fragments (8). Seeds and runner fragments may be spread by animals, vehicles, machinery, wind, water and garden waste (9).

International weed status

Hieracium species are agricultural weeds in North America and New Zealand and are recorded as weeds in Patagonia and Japan.

On New Zealand's South Island - where the grazing industry is well established - *Hieracium* species dominate over 500,000 hectares of tussock grasslands (10) and dense monocultures have reportedly reduced stocking rates by as much as 30% (11).



Hieracium aurantiacum

© 1995-2005 Missouri Botanical Garden <http://www.illustratedgarden.org>

Uses

Hieracium species were introduced to the United States from Europe in the 19th century (7) for homeopathic remedies and as ornamentals (12, 13). In Australia, they were introduced to Tasmanian gardens in the 19th century (8). They are a popular and attractive garden plant and are often included within packets of wildflower seeds (8).

Management

Integrated control methods are recommended. Small infestations can be removed by **hand-pulling** before seed production and when the soil is moist but care must be taken to remove all the root stock and any fragmented runners (13). In pastures, once *Hieracium* species have been removed, grass cover should be encouraged by reseeding and by the use of a nitrogen fertiliser if necessary (13). Disturbance should be minimised and over-mowing and over-grazing should be avoided as this will encourage the spread of runners (1). Drainage should also be improved. Formerly infested areas should be monitored for several years in order to remove any seedlings emerging from the seed bank (13). Research into **biological control** agents is being conducted in New Zealand (11, 13, 14). For large infestations, a selective broadleaf **herbicide** may be used but new pasture growth must be encouraged to avoid re-occupation (1).

Hieracium spp. in Australian gardens

The following *Hieracium* species are present in Australian gardens:

H. aurantiacum (*Pilosella aurantiaca*),
H. brunnoecroceum, *H. lanatum*, *H. murorum*,
H. pilosella (*Pilosella officinarum*), *H. praelium*,
H. sylvaticum, *H. villosum*.

Naturalised Hieracium spp. in Australia

The following *Hieracium* species have naturalised in Australia:

H. aurantiacum (Tas, Vic, National Alert List for Environmental Weeds); *H. pilosella* (Tas); *H. murorum* (NSW*); *H. praelium* (Vic).

Australian legislative controls

Federal legislation prohibits the importation of *Hieracium aurantiacum*, *H. pilosella*, *H. praelium*, *H. pratense* and *H. umbellatum*.

Legislation applies to *Hieracium* species in Victoria, New South Wales, Tasmania and Western Australia.

Potential impact of Hieracium spp. in Australia

Hieracium species aggressively compete with native species and agricultural crops and pastures to form dense monocultures, reducing biodiversity and the forage and cropping value of land (7). *Hieracium* species also produce a chemical that hinders the growth of desirable and/or native plants (9).

Hieracium mainly threaten tussock grasslands and tablelands in alpine and temperate regions of the eastern states of Australia, particularly where annual rainfall ranges from 500 - 1200 mm (8, 9).

Hieracium are likely to threaten native plants that occupy the area between tussock grasses. In Tasmania almost 40 of the native plants that occupy the inter-tussock spaces in areas of tussock grassland are already rare or threatened (9, 15).

Hieracium species have previously been identified as a potential threat to the grazing industries of Australia (16).

Potential Australian distribution of Hieracium aurantiacum

Overseas data on the growing climate of *Hieracium aurantiacum* indicates that it is likely to establish on the Fleurieu Peninsula, Kangaroo Island and the Lower South East in SA extending into southern Vic and north into south-west NSW. It is also likely to establish across eastern Tas and in an isolated pocket in the north-west corner.

Alaska battle over invasive weed threatens to turn activists into garden outlaws

JUNEAU, Alaska -- Activists scored a minor victory when their Hawkweed Manifesto...helped stop officials from spraying herbicides on a non-native plant at a small Alaskan airport.



Potential Australian distribution of *Hieracium aurantiacum*

The battle has moved from the tiny community of Talkeetna...to the state Legislature, where a bill has been introduced to outlaw the importing and cultivating of two nonnative plants, orange hawkweed and purple loosestrife.

Officials say the two could invade Alaska's wildlands and choke out native species.

Hieracium aurantiacum...was blanketing the gravel surface of a helicopter pad...District officials feared the plant's barbed seeds would hop a helicopter ride into Alaska's wilderness, where it would muscle out native wildflowers and other plants.

Authors of the Hawkweed Manifesto...scoffed at the idea of Orange Hawkweed going wild.

"These plants spread into disturbed areas, not wilderness," said Paul Bratton.

"The more they spray, the more we will propagate," the declaration read. "Let the Hawkweed bloom free."

Kristie Renfrew, the general manager of the Susita soil and water district, calls the move "ecoterrorism."

"Shame on them," she said. "We don't need those plants ruining our beautiful wildlands."

After seeing the manifesto on the Internet, officials at the soil and water conservation district in Kodiak convinced Rep. Gabrielle LeDoux, R-Kodiak, to back legislation outlawing the plants.

Though a native hawkweed exists, Brown said Orange Hawkweed probably arrived in Alaska more than 40 years ago as someone's potted plant. Under LeDoux's bill, having that potted plant could net the offender as much as a \$10,000 fine and a year in jail.

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Associated Press
By Anne Sutton, 3/2/2006



Hieracium aurantiacum

© 2005 Louis-M. Landry

Inula helenium

ASTERACEAE

Elecampane

Plant description

Inula helenium is widespread throughout Europe and western and central Asia. It is one of approximately 100 species of *Inula* native to this region and Africa. There are no native species in Australia.

Inula helenium is an erect, sturdy and showy perennial herb 0.6–2.5 m high. The plant is densely covered with short hairs. **Leaves** are simple, alternate and their margins are finely-toothed. They have a rough upper surface and are densely hairy on their underside. There are two types of leaves. Basal leaves are elliptically-shaped, on a long stem and form a rosette. Higher leaves are smaller, slightly heart-shaped, without a stalk and partially enclose the stems on which they are borne. **Flowers** arise from the leaf/stem junction and are few, large, yellow and showy. Flower heads consist of a flat disc surrounded by an outer whorl of strap-like “petals”. At the base of the flower head, layers of hairy, overlapping bracts look like small leaves. **Fruits** (or *achenes*) are small, smooth and oval with a single seed topped with a tuft of long hairs. The **root** is thick, fleshy and rhizomatous. (1, 2, 3)

Flowering Summer

Seeding Ripen summer/spring

Habitat

Inula helenium is commonly found in forest openings, forest margins, along moist roadsides, tracks and fences, on rough, rocky ground and in pastures, abandoned fields and thickets (3, 4, 5, 6). It adapts to light, medium, heavy, acidic and alkaline soils (5) but it will flourish in moist, loamy soil that is well-drained (6) and can grow in part shade or full sun (7).

How the plant spreads

Inula helenium reproduces from seed and from root fragments (6). Seeds and fragments of root may be spread by people, machinery and in soil.

International weed status

Inula helenium has naturalised in north-eastern, west-central and north-western United States as well as in Canada. It has also naturalised throughout the British Isles where it has escaped from cultivation.

Uses

Inula helenium has been widely cultivated for use as an ornamental plant and for its medicinal properties (2). It has been used to treat digestive and respiratory illnesses, fungal and bacterial infections and it has been externally administered for the treatment of skin disorders (2, 5, 6, 8). It has been used in the production of absinthe; its leaves can be cooked; and the roots have been candied and eaten as confectionary (2, 5, 6, 8). The plant has also been used in veterinary medicine (6, 8).



Inula helenium

Courtesy of Wikimedia/Koehler's Medicinal-Plants 1887
<http://commons.wikimedia.org/wiki/Image:Koeh-210.jpg>

Management

No management options are known. However, *Inula helenium* germinates slowly (9) which could complicate control measures and germination may continue after control efforts have taken place.

Growing Elecampane in America...

Of all the great yellow daisies in my garden, only one group is not American. But they must be mentioned, for they have, in look at least, a kinship with the American plants, and they have virtues that recommend them strongly for the border or for naturalizing. These are the inulas, one species of which, the elecampane (*Inula helenium*), has been grown for centuries as a medicinal plant. Because it has made itself so much at home in North America, many people assume it is native. It grows to six feet and is nice in rough places or at the back of a large border, where it produces robust clusters of bristly foliage and fringy, bright-yellow flowers up to three inches across.

© Extracts reproduced from Horticulture
Sep 1990, v 68(9), p. 18

***Inula* spp. in Australian gardens**

The following *Inula* species are present in Australian gardens:

I. helenium, *I. helenium* 'Goliath', *I. conyzae* (formerly *I. conyza*), *I. dysenterica*, *I. ensifolia*,
I. erithmoides, *I. hookeri*, *I. magnifica*, *I. magnifica* 'Sonnestrahl', *I. orientalis*, *I. racemosa*,
I. rhizocephala, *I. royleana*

Naturalised *Inula* spp. in Australia

Censuses of plants kept by state and territory herbaria indicate that there are no *Inula* species naturalised in Australia. However, two *Dittrichia* species, both belonging to the genus *Inula* prior to 1973, have naturalised:

Dittrichia graveolens (formerly *Inula graveolens*): Vic, WA, NSW*, SA, Tas, NT

D. viscosa (formerly *I. viscosa*): WA

* includes ACT

Australian legislative controls

Federal legislation prohibits the importation of *I. brittanica*, *I. cappa*, *I. caspica*, *I. conyza*, *I. conyzae*, *I. crithmoides*, *I. germanica*, *I. heterolepis*, *I. hirta*, *I. indica*, *I. japonica*, *I. linearifolia*, *I. oculus-christi*, *I. salicina* and *I. salsoloides*.

With the exception of *I. conyzae* and *I. indica* in WA, *Inula* species are not controlled by state/territory legislation. *Dittrichia graveolens* (formerly *Inula graveolens*) is under regional control in Victoria.

Potential impact of *Inula helenium* in Australia

Inula helenium is toxic so it will be avoided by livestock and spread because of reduced competition from the over-grazed pastures. The likely outcome of significant infestations would be reduced stocking rates.

Potential Australian distribution of *Inula helenium*

Overseas data on the growing climate of *Inula helenium* indicates that it is likely to establish in south-east Queensland, north-west New South Wales, southern South Australia, most of Victoria and south-west Western Australia.



Potential Australian distribution of *Inula helenium*



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http://commons.wikimedia.org/wiki/Image:Inule_helenium.jpg

Lonicera spp.

Honeysuckles

CAPRIFOLIACEAE

Plant description

Lonicera has approximately 180 species largely native to the Northern Hemisphere (1) including tropical and temperate Asia, Europe and North America (2). There are no species native to Australia but they are popular garden plants.

Lonicera species are deciduous, rarely evergreen, perennial twining shrubs and vines. **Stems** can be hairy or glabrous. **Leaves** are opposite, simple and entire. **Flowers** are often showy, white to pink or yellow and fragrant. Occurring in groups of 2 or more, flowers are 2-lipped from a long tube, and have five petals and five stamens. **Berries** are abundant, orange to red or black and contain few or many **seeds**. (1, 2, 3)

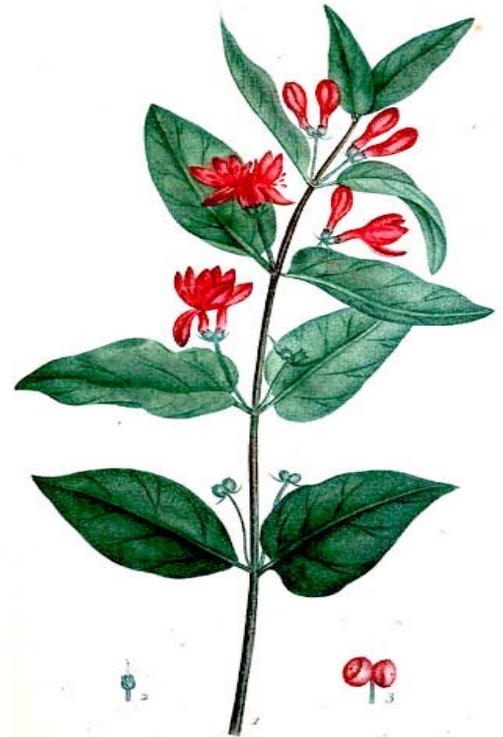
Flowering Spring/summer

Fruiting Late summer/autumn and usually persistent into winter.

Leaves Appear early in spring, remain into late autumn.

International weed status

Many of the *Lonicera* species introduced to North America from Europe and Asia are invasive weeds. One of the most invasive - *L. japonica* - is a weed in Asia, South America and Europe and has caused significant environmental damage in New Zealand and North America.



Lonicera tatarica

Introduced *Lonicera* spp. in North America

Rural infestations of the introduced Bush Honeysuckles – including *L. maackii*, *L. morrowii*, *L. tatarica*, *L. fragrantissima*, *L. standishii*, *L. xylosteum* and the hybrid species *Lonicera x bella* – are spreading throughout much of eastern and mid-western United States and south-central Canada.

Uses

Lonicera species were largely introduced to North America in the 18th and 19th centuries where they were planted for wildlife cover, as ornamentals, for landscaping and for soil erosion control (2, 3, 4). They have been promoted for these purposes by US State & Federal agencies including the US Department of Agriculture (5).

Habitat

Lonicera species are adapted to a wide range of habitats and moisture regimes (6). Relatively shade intolerant, they often occur at forest edges and woodlands – especially within those that have been grazed or disturbed - as well as in abandoned fields and pastures and along roadsides (2, 3, 7, 5, 4, 6). *Lonicera* species are highly adapted to medium and coarse textured soils and reasonably tolerant of saline conditions; they also have a high tolerance to fire and drought and withstand extreme temperatures of -50 to 45 degrees (8).

How the plant spreads

Lonicera species seeds are spread by animals that consume the berries (3, 5). In North America, at least 20 bird species - including starlings (8, 9) - eat the fruits of *Lonicera* species and they also provide a food source for small mammals (4). Seedlings are often found beneath trees upon which birds perch (6). A period of cold stratification may be required to break seed dormancy (6, 9). In established populations, *Lonicera* species may also spread by vegetative reproduction (3, 7).

Management

There are no **biological control** agents available (7), although the introduced European Honeysuckle aphid can control flower and fruit production in some of the introduced honeysuckles (5, 6). *Lonicera* species tend to be fire tolerant, re-shooting after fires, but repeated **prescribed burning** will kill seedlings (2). **Herbicides** can be applied to cut stems of honeysuckles; in North America this method has proved most effective in late summer/early autumn or in winter when the plant is dormant (2). **Hand-pulling** of seedlings, small plants or light infestations in moist conditions can be effective but care must be taken to remove the entire root stock to avoid resprouting and reinfestation (5, 6).

Lonicera spp. in Australian gardens

The following *Lonicera* species are present in Australian gardens:

L. albiflora, *L. alpigena*, *L. x Americana*, *L. x brownii*, *L. caprifolium*,
L. ciliosa, *L. coerulea*, *L. confuse*,
L. etrusca, *L. etrusca* 'Superba', *L. flava*,
L. fragrantissima, *L. x heckrottii*, *L. x heckrottii* 'Gold Flame', *L. henryi*,
L. hildebrandiana,
L. implexa, *L. japonica*, *L. japonica* 'Aureo-reticulata' 'Halliana', *L. korolkowii*,
L. korolkowii 'Blue Smoke', *L. ledebourii*, *L. maackii*, *L. nitida*,
L. nitida 'Aurea' 'Baggesen's Gold' 'Little Nikki' 'Silver Beauty',
L. periclymenum, *L. pileate*,
L. prostrata, *L. reticulata*, *L. rupicola*,
L. sempervirens, *L. similis* var. *delvayi*,
L. splendida, *L. syringatha*, *L. tatarica*,
L. tragophylla, *L. xylosteum*

Naturalised *Lonicera* spp. in Australia

The following *Lonicera* species have naturalised in Australia:

L. japonica (Tas, WA, NSW*, Vic, SA, Qld);
L. fragrantissima (NSW*, doubtfully naturalised in Qld);
L. periclymenum (Tas).

* includes ACT

L. japonica is one of the most serious invasive plants available in Australian nurseries (12) and a potential environmental weed (13).

Australian legislative status

Federal legislation prohibits the importation of *L. caprifolium x etrusca*, *L. subspicata*, *L. x italica*, *L. x notha* and *L. x xylosteoides*.

With the exception of *L. periclymenum* in WA, no state/territory legislation applies to *Lonicera* species.

Potential impact of *Lonicera* spp. in Australia

The North American experience with *Lonicera* species indicates that these are highly invasive plants adaptable to a wide range of habitats - including pastures and areas disturbed by grazing (7) - and tolerant of fire, saline conditions and variable moisture regimes (9).

Whilst the threat to livestock is not certain, the mature fruits of *L. tatarica*, *L. maackii* and *L. xylosteum* are thought to be toxic. Ingestion of fruits has reportedly poisoned children in Europe (10, 11).

Adapted to a wide range of habitats, *Lonicera* species produce chemicals that leach into the soil and inhibit the growth of other plants (2). In North America, the plants have a long photosynthetic period with an extended period of leaf coverage; the shade generated from their leaves inhibits light availability to and growth of native plants (5, 6, 7). *Lonicera* species also compete for pollinators reducing the seed set of native plants (4). Migrating birds that feed on the carbohydrate-rich fruits of *Lonicera* species instead of the high-fat native plants do not get the energy they need to make their long flights (4).

Potential Australian distribution of *Lonicera caprifolium* & *Lonicera tatarica*

Overseas data on the growing climate of *L. caprifolium* indicates that it is likely to establish in south-western WA extending across the Nullabor into southern SA, Victoria, and into southern NSW. *L. tatarica* is likely to establish in isolated pockets of Australia including the mallee/wheat-belt regions of south-west WA, across the mid north of SA and in a small pocket of south-east NSW extending into north-east Victoria.



Potential Australian distributions of
L. caprifolium & *L. tatarica*

A native North American *Lonicera* sp. to watch for in Australia

Dry cliffs, woodland edges, roadside thickets, old farmsteads - for weeks or even months from spring to mid-summer, these neglected places take on an unaccustomed glory when ablaze with the slender scarlet tubes of trumpet honeysuckle [*Lonicera sempervirens*].

[F]ew other climbing plants offer trumpet honeysuckle's winning combination of dazzling flowers, long blooming period, and handsome, deep green foliage.



Lonicera sempervirens

The hardiest of our native honeysuckles, it will thrive well into New England and the upper Midwest, growing happily in any kind of soil, provided it is well drained, and accepting full sun to dense shade. Although it appreciates a steady supply of moisture, it is fairly drought-resistant once established. The plant's long, fibrous roots resent disturbance, however, so be sure to purchase young, container-grown specimens.

Natural range: Connecticut to Florida; west to Nebraska and Texas

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the Magazine of American Gardening

Miscanthus floridulus

Giant Chinese Silver Grass

POACEAE

Plant description

Miscanthus floridulus is native to Japan, Taiwan and the Pacific Islands. It is one of approximately 20 species native to India, Asia, Malaysia and the Pacific Islands (1). There are no native *Miscanthus* species in Australia.

Miscanthus floridulus is a large robust perennial grass up to 5 m high and 2-3 m wide. Arching **leaves** arise from a central clump of upright, reed-like **stems** (or *culms*); the leaf blade is flat, somewhat folded and deep green with a white mid-vein. Pinkish **flower** heads are projected above the leaves on long stems. While the flower heads persist for a long time and turn silvery as the **seeds** set, the leaves may become purplish with decreasing temperatures, eventually turning a uniform reddish-brown before being shed, leaving only the clump of culms. (1, 2, 3, 4, 5)

Flowering Late Summer/Autumn

Habitat

Miscanthus floridulus can tolerate coastal areas, cold climates, strong winds, snow and drought as well as a range of soil types – sand, loam or clay, acid, neutral or alkaline – as long as they are well drained and remain moist and in full sun (2, 6, 7, 8). The species is less aggressive and tends to “flop” in shadier locations (8).



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<http://www.colostate.edu/Depts/CoopExt/4D>

Miscanthus floridulus

How the plant spreads

Rhizomatous roots are responsible for the gradual increase in size of clumps (8). Reproductino may also occur from seeds (6). Rhizomes and seeds may be spread by people, soil and dirty machinery.

International weed status

Miscanthus floridulus is an agricultural weed in Japan and an invasive weed in the United States (10, 11). It is a noxious weed in Hawaii and invasive in Guam & other Pacific Islands outside of its native range (1).

Uses

Miscanthus floridulus is cultivated as an ornamental grass and for windbreaks, screens and hedges (2, 6, 7). Cattle will feed on *Miscanthus floridulus* during times of need (5). Research has been conducted into the usefulness of *Miscanthus* spp. as a biomass fuel (11, 12).

Management

No mangement options are known. However, they can not be controlled by burning as they quickly regenerate from their underground parts (13).



Miscanthus floridulus

© Judy Sedbrook
<http://www.colostate.edu/Depts/CoopExt/4DMG/images/florid1.jpg>

Miscanthus spp. in Australian gardens

The following *Miscanthus* species are present in Australian gardens:

M. floridulus, 'Giganteus' (*M. sacchariflorus* x *sinensis*), *sacchariflorus*, *sinensis*, 'Fleming', 'Gracillimus', 'Graziella', 'Sarabande', 'Silberfeder', 'Variegatus', 'Yaku-jima', 'Zebrinus', *sinensis* var. *purpurascens*, *M. transmorrisonensis*

Naturalised *Miscanthus* spp. in Australia

The following *Miscanthus* species have naturalised in Australia:

Miscanthus sinensis (NSW, WA, SA)

Australian legislative controls

The importation of *Miscanthus japonicus* is prohibited by federal legislation because it has been assessed as a weed.

Miscanthus floridulus is under legislative control in WA.

Potential impact of *Miscanthus floridulus* in Australia

Miscanthus floridulus forms dense communities (13) which may impede stock access. Sharp bladed grasses can inflict damage to the mouths of stock leading to ulcers and weight loss.

Potential Australian distribution of *Miscanthus floridulus*

Overseas data on the growing climate of *Miscanthus floridulus* indicates that it is likely to establish in the northern regions of Western Australia and the Northern Territory as well as Cape York Peninsula in Queensland extending south along the coast into north-east New South Wales.



**Potential Australian distribution of
*Miscanthus floridulus***

Nassella tenuissima

POACEAE

Mexican feather grass

Plant Description

The genus *Nassella* is comprised of approximately 80 species of grasses, mainly native to South America (1). *Nassella tenuissima* is native to New Mexico, Texas, Mexico, Chile and Argentina. It is closely related to *N. trichotoma* and the two species can be difficult to separate (2, 3, 4). There are no native *Nassella* species in Australia.

N. tenuissima is a dense but finely textured perennial tussock grass 70-100 cm high. **Leaves** are numerous, hair-like and rough. They are rolled tightly inward. Green to purplish **flower heads** – or **spikelets** – are borne on smooth, hairless **stems (culms)** to 70 cm high. Stems have 2-3 unthickened nodes. Each spikelet contains a single **floret**. Enclosed with each floret is a 2-3 mm **seed** topped with a long, bent appendage (**awn**). **Roots** are wiry and fibrous. (2, 3, 4, 5, 6, 7)

Flowering Spring/summer

Seeding Spring/summer

Germination Usually autumn/winter

Habitat

N. tenuissima is very adaptable and tolerant of many soil types and climactic extremes including drought. It prefers well-drained soil and sunny, dry conditions with limited vegetation cover (5). It has established itself in agricultural areas, rangelands and grasslands, forests, shrublands and along waterways (8).

How the plant spreads

N. tenuissima produces many thousands of seeds annually (5, 8). Seeds are dispersed by wind, water, machinery, contaminated soil and animals (5, 7, 8).

International weed status

N. tenuissima is a declared weed in South Africa where it threatens native grasslands (9). It has also spread from gardens and naturalised in New Zealand and the United States where it has been difficult to control (10).

Uses

N. tenuissima is cultivated as a garden ornamental and favoured as a drought-tolerant species and for landscaping (11, 12). It may also be used for erosion control (11). In 2004 it was promoted for its "light and airy nature" in a leading Australian gardening magazine (13).

Management

To control small infestations, the plants may be dug up and **burned** before seeds are produced. Larger infestations should be treated with a **herbicide** before flowering and seeding. **Revegetation** and growth of desirable plants should be encouraged in the treated areas. Follow up inspections should be made to remove any seedlings that emerge from the seed bank. **Mowing** should not be conducted when the plants are seeding (1).



Nassella tenuissima

Courtesy of USDA-NRCS PLANTS Database / Hitchcock, A.S. (rev. A. Chase), 1950. Manual of the grasses of the United States. USDA Misc. Publ. No. 200. Washington, DC.

Mexican feather grass gives new garden look

The Mexican feather grass, known botanically as *Stipa tenuissima*, will bring an entirely new look to the garden.

The silky, hair-like flowers glisten in the light. It has shown cold-hardiness and also is a trooper in the sweltering hot summer. This is an environmentally friendly grass with virtually no pests or diseases.

When placed in the background where backlit from the setting sun or landscape lighting, they glisten like they have a small coat of ice.

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By Norman Winter, 29/7/2002



© Park Seed Company, South Carolina

© Landscape Resources, Arizona

Nassella spp. in Australian gardens

N. tenuissima was discovered in a Victorian nursery in 1998 (3). It had been imported, propagated and sold under its old name - *Stipa tenuissima* (3). It has also been sold as Elegant Spear Grass, a name more usually applied to the Australian native grass *Austrostipa elegantissima*. (2, 14).

There are no *Nassella* species recorded in the consulted Australian nursery stock references although *N. tenuissima* was recently listed as one of the most serious invasive plants for sale in Victoria (13).

Naturalised *Nassella* spp. in Australia

In 2004, only eight years after it had been introduced to Australia, *N. tenuissima* was found naturalised in Tamworth, New South Wales (2). This population has been eradicated and presently there are no known naturalised populations of *N. tenuissima* in Australia.

The following *Nassella* species have naturalised in Australia:

N. charruana (Vic, National Alert List for Environmental Weeds); *N. hyalina* (NSW*, National Alert List for Environmental Weeds); *N. leucotricha* (Vic, SA); *N. megapotamia* (NSW); *N. neesiana* (Tas, NSW*, SA, Weed of National Significance); *N. trichotoma* (Tas, NSW*, Weed of National Significance)

* includes ACT

Australian legislative controls

Federal legislation prohibits the importation of *N. tenuissima*, *N. trichotoma*, *N. neesiana* and synonyms *Stipa trichotoma* and *S. neesiana*. *S. tenuissima* – the name under which *N. tenuissima* gained entry into Australia – is not under import controls.

State/territory legislation applies to the following species:

N. cernua (WA); *N. charruana* (Vic, WA, ACT); *N. hyalina* (SA, WA); *N. leucotricha* (SA, WA); *N. neesiana* (SA, WA, Tas, Qld, ACT, NSW); *N. tenuissima* (Vic, SA, WA); *N. trichotoma* (Vic, SA, WA, Tas, Qld, ACT, NSW).

Potential impacts of *Nassella tenuissima* in Australia

Nassella tenuissima is unpalatable to livestock and it aggressively competes with desirable pastoral species (5). If livestock are forced to feed on *N. tenuissima*, the undigested plant matter will cause serious illness or death (8). Sharp seeds may also cause injury to stock – including blindness – and devalue wool and skins (15).

The highly adaptable nature of *N. tenuissima* has led to projections of a potential distribution of 14 million hectares – much of it grazing land (16). This is approximately 6 times the potential range of *N. trichotoma*, a species which has cost the New South Wales grazing industry an estimated \$40m in lost production (17) and can reduce the productivity of infected pastures by up to 95% (18). It is predicted that *N. tenuissima* may be more invasive than *N. trichotoma* because of its ability to adapt to a wide range of climates (13). If left to spread, the economic cost to Australia over the next 60 years is estimated to be \$39m annually (19).

Potential Australian distribution of *Nassella tenuissima*

Overseas data on the growing climate of *N. tenuissima* indicates that it is likely to establish in isolated pockets of Australia including in arid central Western Australia; in southern South Australia extending into north-west Victoria and south west New South Wales; and across central Queensland extending into south-west

Queensland, west into Northern Territory, east to the coast and south into coastal New South Wales and north-east Victoria.



Potential Australian distribution of *Nassella tenuissima*

The spread of *N. tenuissima* in New Zealand

Merivale garden grows noxious weed

Grave fears are held over the discovery of a new plant pest in a Merivale garden. The discovery sparked alarm at the Canterbury Regional Council and among Landcare Research botanists. The plant, from central and South America, is finestem needlegrass or *stipa tenuissima*, and has not been recorded in the South Island before. It was bought from a nursery near Taihape about three years ago. Rob McCaw, the council's biosecurity team leader, said it was discovered in New Zealand in 1994 and was spreading through the Bay of Plenty and Waikato. It looked and behaved like *nassella tussock* [*N. trichotoma*], he said. Seeds were sprouting in pot plants in the Merivale garden and on the driveway, Mr McCaw said. The herbarium curator at Landcare Research, Kerry Ford, said all *Stipa* species were on a national plant surveillance list and could not be sold, propagated, or distributed.

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Courtesy of Wikimedia/Stan Shebs.
http://commons.wikimedia.org/wiki/Image:Nassella_tenuissima.jpg

Onopordum nervosum

Cotton thistle

ASTERACEAE

Plant Description

Onopordum nervosum (syn. *O. arabicum*) is native to Portugal and Spain (1). It is one of 40-50 species of biennial or perennial *Onopordum* thistles largely native to the northern hemisphere, including south-western Europe, northern Africa, Canary Islands, western and central Asia and parts of the Middle East (2, 3). There are no native species in Australia.

A biennial plant to 2.5 to 4 m tall, *Onopordum nervosum* develops over two growing seasons before dying off. A rosette is produced in the first season and abundant flowers and fruits are produced in the second season. **Stems** are hairy, erect and yellowish. **Leaves** are oblong-shaped and taper at their apex. They are without a stalk, green with whitish veins and their lower parts are hairy. Leaf margins have 6-8 pairs of triangular lobes (or *wings*) along their length with a pronounced network of veins. Each lobe is topped with a spine up to 10 mm long. **Flowers** are typical of Scotch thistles. The base or *capitulum* is cone-shaped or egg-shaped and almost hairless; it is made up of numerous bracts or *phyllaries* that taper to a rigid spine. The top of the flower (the *corolla*) is pink. **Fruits** (or *achenes*) are small, dry and greyish-brown. Each contains a single seed topped by a tuft of fine hairs. (1, 2, 3)

Flowering Summer

Seeding Summer

Germination Autumn & spring

Habitat

Onopordum species naturalise on wasteground, rough or stony ground, roadsides, pastures, rangelands, abandoned cropland, grasslands and along the banks of watercourses (2, 3, 4). Naturalised populations in Australia are found on high nitrogen, fertile soils in the high winter rainfall areas (500 - 900 mm) of the south-east (5).

How the plant spreads

A single *Onopordum* plant may produce up to 40,000 seeds which may remain viable in the soil for 8 to 30 years (4, 6, 7). Seeds are spread by wind, water, animals, humans and farm machinery as well as in contaminated hay and grain (8).

With the right soil conditions, *Onopordum* may also spread by root fragments (5).

International weed status

Onopordum nervosum has naturalised on British wastegrounds and on rough ground (1). It is still available as seeds from British nurseries (9).

The related species, *O. acanthium*, *O. illyricum* and *O. tauricum* are invasive weeds in the United States (4, 10). *O. acanthium* is also a weed in Canada, New Zealand and Japan whilst *O. illyricum* is established in Japan.



ONOPORDE D'ARABIE

Onopordum nervosum

Uses

Onopordum species were introduced to temperate regions of North America and Australia as garden ornamentals and have since become invasive weeds (3).

Management

Sporadic germination of *Onopordum* species throughout the year can make the implementation of a management plan for large infestations difficult (6). **Chemical control** is expensive and problematic because a single herbicide or application may not account for the different life stages present within a population (10). In Australia, **biological control** measures for invasive *Onopordum* species are in place with the introduction of several species of insect including weevils, flies and a moth (11). These insects target the different life stage of the plants (12). Good **pasture management** is also important. Overgrazing should be avoided and desirable species encouraged to revegetate treated areas (5). Goats are a useful control for some *Onopordum* infestations with flowers and seedlings proving palatable (5, 8, 13). Small infestations or single plants of *Onopordum* species can be removed by **hand-pulling** but care must be taken to remove the entire root system (5). **Mowing** tends not to be helpful because cut stems may still resprout or produce fertile seeds (5).

Onopordum spp. in Australian gardens

Only *Onopordum acanthium* was recorded in the consulted Australian nursery stock references but *O. nervosum* was available in nurseries in New South Wales and Victoria (14). A small infestation of *O. nervosum* in New South Wales was the result of an Internet mail-order purchase (6).

Naturalised *Onopordum* spp. in Australia

Censuses of flora kept by state and territory herbaria indicate that the following *Onopordum* species have naturalised in Australia:

O. acanthium: SA, Vic, NSW*, Tas

O. acaulon: SA, Vic, NSW*, WA, Tas

O. illyricum: SA, Vic, NSW*

O. tauricum: SA, Vic

* includes ACT

A small infestation of *O. nervosum* was eradicated from New South Wales (6).

Australian legislative controls

Federal legislation prohibits the importation of *Onopordum acanthium*, *O. carduelinum*, *O. nogalesii*, *O. illyricum* and *O. nervosum*.

Legislation applies to all *Onopordum* species in Tasmania. In Victoria and New South Wales, *O. acanthium*, *O. acaulon* and *O. illyricum* are under regional restrictions. In WA, legislation applies to *O. acanthium*, *O. illyricum*, *O. nervosum* and *O. acaulon*.

Potential impact of *Onopordum nervosum* in Australia

Onopordum species compete with desirable pasture grasses, reducing the grazing capacity of pastoral land (4, 15). Impenetrable thickets and spines of *Onopordum* species can repel livestock (6, 8) often causing injury. Their palatability depends on the life stage of the plant (13) but dense spines inhibit grazing and favour their spread (8, 15).

Onopordum infestations in New South Wales have been so damaging to the pastoral industry that farmers have partly subsidised biological control measures for *O. acanthium* and *O. illyricum* (11).

The projected economic cost to Australia of an outbreak of *Onopordum nervosum* in terms of control measures and productivity loss is estimated to be \$43m (16).

Potential Australian distribution of *Onopordum nervosum*

Overseas data on the growing climate of *Onopordum nervosum* indicates that it is likely to establish in Western Australia's south-west; in eastern Tasmania; and across much of southern South Australia extending into south-west New South Wales and much of western Victoria.



Potential Australian distribution of *Onopordum nervosum*

Two horticultural perspectives

Cotton Thistle recommended for Australian gardens...

With their architectural shapes and feathery flower heads, thistles are easily recognisable to gardeners and non-gardeners alike.

Although native to Europe, Mediterranean and Western Asia, they have found a niche in some gardens where they are grown for their tall silvery foliage and statuesque appearance.



Onopordum nervosum

Thistles are plants that can quickly become weeds and indeed many thistles are considered to be noxious weeds in parts of Australia. The scotch thistle, *Onopordum acanthium*, is the weedy thistle often seen in paddocks, wastelands or along roadsides. The so-called cotton thistle, *Onopordum nervosum*, is however only known in Australia as an ornamental garden plant.

© Extracts reproduced from *Burke's Backyard* website
http://www.burkesbackyard.com.au/1998/archives/26/in_the_garden/weeds_and_garden_pests/cotton_thistle

From "Cotton Thistle Factsheet" 1998

...whilst US gardeners pay the consequences

One year, early in our career, we planted seeds of what we thought would be an exotic statement plant in our garden. The plant grew more than 6 feet tall with stunning purple flowers. It was *Onopordum nervosum*.

The first year it was gorgeous, although prickly, rather Gothic looking in a torturous way. It seeded prolifically, and it took us a decade to eradicate those seedlings from our garden.

Onopordum nervosum turned out to be a thistle.

The first year it was a garden flower, a statement plant, but it very quickly became a weed.

© Extracts reproduced from *Maine Today*

as "One person's weed another's delight"
By Tom Atwell, 5/9/2004

Ornithogalum nutans

Nodding star of Bethlehem

HYACINTHACEAE / LILIACEAE

Plant description

Ornithogalum nutans is native to south-eastern Europe including Greece, Turkey, Ukraine and Bulgaria (1). It is one of approximately 100-150 *Ornithogalum* species most of which are native to Eurasia and Africa (2). There are no native species in Australia.

A perennial herb 15-60 cm tall, *O. nutans* usually reproduces from a **bulb** which produces numerous bulblets. **Leaves** are hairless, long and thin, with a white stripe on the upper surface; there are 3-6 leaves per individual plant each emerging from the base of the plant. **Flowers** are silvery white, opening into a star shape, surrounded by bracts and with a wide green stripe on their outer surface. They are found at the apex of an erect, hairless stem or *scape* which emerges directly from the ground. Flowers number 5-12 per inflorescence and open in succession as the stem grows; they "nod", particularly when the plant is in full bloom. **Fruit** is a papery, angular *capsule* which splits open to expose numerous black, spherical to egg-shaped **seeds**. (3, 4, 5)

Flowering Spring

Habitat

O. nutans is commonly found in fields, waste places, abandoned gardens and grassy places (6). It naturalises easily preferring full sun or partial shade and tolerating a wide range of soil types (7). It is frost tolerant and grows in cool to tropical climates (8).



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Ornithogalum nutans

Related species *Ornithogalum umbellatum* spreads by its bulbs which may be carried in water (5). Seeds may be spread by animals, people, machinery and soil.

International weed status

Ornithogalum nutans is widely cultivated and naturalised in temperate areas including Britain and north-east, north-west and west-central United States (1, 4, 5, 6, 9).

Uses

Ornithogalum nutans is widely cultivated as an ornamental plant and is widely available from nurseries and through mail order (7, 10, 11). The ease with which this species naturalises is often promoted (7, 10, 11).

Management

No management options are known.



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© http://commons.wikimedia.org/wiki/Image:Ornithogalum_nutans_plant.jpg

How the plant spreads

***Ornithogalum* spp. in Australian gardens**

The following *Ornithogalum* species are present in Australian gardens:

O. arabicum, *O. balansae*, *O. caudatum*,
O. collinum, *O. conicum*, *O. dubium*,
O. longibracteatum, *O. montanum*, *O. nutans*,
O. pyrenaicum, *O. refractum*, *O. saundersiae*,
O. sigmoideum, *O. tenuifolium*, *O. thyrsoides*,
O. umbellatum

Naturalised Ornithogalum spp. in Australia

The following *Ornithogalum* species have naturalised in Australia:

O. angustifolium (Tas); *O. arabicum* (SA, Vic, WA NSW); *O. longibracteatum* (Vic, NSW*, WA);
O. pyramidale (NSW*); *O. pyrenaicum* (SA);
O. thyrsoides (SA, NSW*, WA); *O. umbellatum* (SA, Vic, Tas, NSW*).

Australian legislative controls

Federal legislation does not prohibit the importation of any *Ornithogalum* species into Australia.

With the exception of *O. pyrenaicum* and *O. umbellatum* in WA, *Ornithogalum* species are not controlled by state or territory legislation.

Potential impact of *Ornithogalum nutans* in Australia

Ornithogalum species can dominate pastures crowding out all other species and lowering stocking rates. They are also toxic (poisonous bulbs) and livestock will not graze them (2). Reproducing from bulbs that are carried by water movement, *Ornithogalum* species can crowd out native plants growing along river banks (5).

Potential Australian distribution of *Ornithogalum nutans*

Overseas data on the growing climate of *Ornithogalum nutans* indicates that it is likely to establish across southern South Australia extending east into south-west New South Wales and north-west Victoria and west across the Nullabor Plain and into Western Australia. It may also establish in south-west Western Australia.



Potential Australian distribution of
Ornithogalum nutans

Tamarix gallica

French tamarisk

TAMARICACEAE

Plant Description

Tamarix gallica belongs to a genus comprised of shrubs or small trees that are native to the dry areas of southern Europe, Asia and Africa. There are no species native to Australia. The genus includes 50-75 species which are distinguished with difficulty and usually only by their fruits or flowers (1). Hybridisation of *Tamarix* species may occur and recent molecular work indicates that some *Tamarix* species are genetically indistinguishable (1, 2).

Tamarix gallica is a deciduous shrub or small tree with a long taproot and a bushy habit of 5–8 m. **Leaves** are inconspicuous, narrow, alternate and without hairs or a stalk. They are borne on erect, grey-green **branchlets** which emerge from numerous slender branches and shed easily. These branchlets resemble pine needles and may be mistaken for cylindrical leaves (as with *Casuarina* and *Allocasuarina*). **Bark** is smooth and reddish-brown when young, becoming brownish-purple, rough and furrowed as the plant ages. Large masses of white or pink **flowers** occur in small spikes emerging from branch ends. **Fruits** are capsules divided into 3-5 compartments, each containing thousands of minute seeds. **Seeds** are short-lived. (3, 4, 5, 8)

Flowering Spring/summer

Seeding Summer

Habitat

Tamarix gallica prefers moist conditions, often establishing along the margins of rivers, streams, lakes, ponds and ditches as well as coastal areas, moist rangelands and pastures (3, 4). It has also established in arid regions where it often occupies riverbanks and tolerates large temperature extremes. It is drought and fire-tolerant (6). *T. gallica* favours moist, fine-grained soil but is tolerant of highly saline soils and alkaline conditions (5, 6).

How the plant spreads

Tamarix gallica can produce hundreds of thousands of seeds annually which are dispersed by wind, water or animals (4). In warm, moist conditions, seeds may germinate within 24 hours and the plant may form dense stands (6). Almost 20,000 *Tamarix* sp. seedlings per square metre have been observed in south-western United States (6).

T. gallica may also spread by suckering roots or submerged stems (4, 7).

International weed status

Tamarix gallica is recorded as a weed in the United States, South America and Europe.

Uses

Tamarix species have been planted as ornamentals and for erosion control, shade/shelter and coastal windbreaks (2, 3). The wood is also used for fuel, turnery and general construction. The branches and leaves of *T. gallica* have been used as a diuretic and to treat diarrhoea whilst natural colourants and tannins produced by the plant have been used by the tanning industry and as a dye (3).



Tamarix gallica

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Management

For larger infestations, **integrated control methods** work most effectively but they are expensive. **Mechanical control** measures – such as root ploughing and bulldozing – are useful for dense stands although they are destructive and regrowth from root fragments may occur (8). Dense thickets can be thinned by **burning** or cutting (8). **Flooding** entire populations of *Tamarix* species with water can be effective if the plants are left inundated for at least three months (8, 9). **Herbicides** can be applied as a foliar or aerial spray, a basal bark treatment or to cut stumps or roots (8, 9). **Re-vegetation** and growth of native plants should be encouraged. **Hand-pulling** or digging-up seedlings and saplings may be suitable for small infestations but care must be taken to remove all the roots and stems to avoid regeneration. Research into **biological control agents** suitable for *Tamarix* species is continuing in the United States. (2, 8).

References (for case studies)

General references

Naturalised species in Australia

This information was collected from Australian state & territory herbarium census data:

- Barker, B., Barker, R., Jessop, J., Vonow, H., 2005 Census of South Australian Vascular Plants. 5th edition. *Journal of the Adelaide Botanic Gardens*. Supplement 1. <http://www.flora.sa.gov.au/census.html>
- Botanic Gardens Trust. *FloraSearch in PlantNET – The Plant Information Network System of Botanic Gardens Trust, Sydney, Australia*. <http://plantnet.rbgsyd.nsw.gov.au>
- Henderson, R.J.F. (ed.) 2003 *Names and distribution of Queensland plants, algae and lichens*. (Queenlands Herbarium, Environmental Protection Agency, Toowong.)
- Northern Territory Herbarium. *Checklists of the Northern Territory Flora*. <http://www.nt.gov.au/nreta/wildlife/plants/checklist.html>
- Royal Botanic Gardens Melbourne. *Census of Vascular Plants of Victoria*. http://www.rbg.vic.gov.au/research_and_conservation/plant_information/viclist
- Tasmanian Herbarium. *Tasmanian Vascular Plant Census*. (Tasmanian Museum & Art Gallery, Tasmania.) <http://www.tmag.tas.gov.au/Herbarium/Herbarium2.htm>
- Western Australian Herbarium. *FloraBase: the Western Australian Flora*. (Department of Conservation and Land Management, Western Australia.) <http://florabase.calm.wa.gov.au/>

Australian legislative controls

- Import Conditions Database*. Australian Quarantine & Inspection Service. http://www.aqis.gov.au/icon32/asp/ex_alertscontent.asp
- Weeds Australia Database*. Noxious weeds list. <http://www.weeds.org.au/noxious.htm>
- Western Australian Department of Agriculture and Food. *Declared plants list*. http://www.agric.wa.gov.au/servlet/page?_pageid=449&_dad=portal30&_schema=PORTAL30&p_start_url=/pls/portal30/docs/FOLDER/IKMP/PW/PH/PLANT_INDEX.HTM
- Western Australian Department of Agriculture and Food. *Permitted & quarantine species list*. http://www.agric.wa.gov.au/servlet/page?_pageid=449&_dad=portal30&_schema=PORTAL30&p_start_url=/pls/portal30/docs/FOLDER/IKMP/PW/PH/PLANT_INDEX.HTM

Species in Australian gardens

This information was obtained from publications listing Australian nursery stock:

- Bodkin, F. 1986 *Encyclopaedia Botanica: the essential reference guide to native and exotic plants in Australia*. 1st edition. (Collins/Angus & Robertson, Sydney).
- Hibbert, M 1997 *The Aussie Plant Finder 1997/1998*. (Florilegium, Australia).
- Hibbert, M 1998 *The Aussie Plant Finder 1998/1999*. (Florilegium, Australia).
- Hibbert, M 1999 *The Aussie Plant Finder 1999/2000*. (Florilegium, Australia).
- Hibbert, M 2000 *The Aussie Plant Finder 2000/2001*. (Florilegium, Australia).
- Hibbert, M 2002 *The Aussie Plant Finder 2002 for 2*. (Florilegium, Australia).
- Hibbert, M 2004 *The Aussie Plant Finder*. (Florilegium, Australia).
- Hutchison, F. 1993 *The Australian Plant Finder: 9000 plants and where to find them*. Simon & Schuster, Australia.
- Platt, K. 2002 *The Seed Search*. 5th edition. (Karen Platt, Sheffield, UK).

References enumerated in text

Asclepias syriaca

1. "Milkweeds." (Weed Science Society of America.) http://www.wssa.net/photo&info/larrymitich_info/milkweeds.html
2. "PLANTS Database: PLANTS Profile for *Asclepias syriaca*". (National Resources Conservation Service, United States Department of Agriculture.) <http://plants.usda.gov/java/profile?symbol=ASSY>
3. "Plant Guide: Common Milkweed." (Natural Resources Conservation Service, United States Department of Agriculture.) http://plants.nrcs.usda.gov/plantguide/pdf/cs_assy.pdf
4. "*Asclepias syriaca* L. – Common Milkweed." http://www.missouriplants.com/Others/Asclepias_syriaca_page.html
5. Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H. (Eds.) 1973 *Flora Europaea Vol. 3 Diapensiaceae to Myoraceae*. (Cambridge University Press, London).
6. "Nova Scotia Noxious Weeds." (Department of Agriculture, Fisheries and Aquaculture, Nova Scotia, Canada.) <http://www.gov.ns.ca/nsaf/rir/weeds/milkweed.shtml>
7. "Weeds Act: Frequently asked questions." Ministry of Agriculture, Food and Rural Affairs, Ontario, Canada.) http://www.omafra.gov.on.ca/english/crops/facts/faq_weeds_act.htm
8. Crockett, L.J. 1977 *Wildly successful plants*. (Macmillan Publishing, New York).
9. Salzman, F., Renner, K., Kells J. 1997 "Controlling common milkweed." <http://web1.msue.msu.edu/msue/iac/ipm/milkweed97.htm>. IPM Facts. Michigan State University Extension Bulletin E2246.
10. "*Asclepias syriaca*: Silk Weed." <http://www.discoverlife.org/nh/tx/Plantae/Dicotyledoneae/Asclepiadaceae/Asclepias/syriaca/>
11. "Pest Fact Sheet: *Asclepias syriaca* L." (North American Plant Protection Organisation.) <http://www.nappo.org/PRA-sheets/Asclepiassyriaca.pdf>
12. Hartzler, R.G., Owen, M.D.K. 1995 *Agricultural Weed Management Category 1A: a guide for commercial pesticide applicators*. (Iowa State University Co-operative Extension Service, Iowa.) <http://www.extension.iastate.edu/Publications/CS9.pdf>
13. "*Asclepias syriaca* L." (Centre for New Crops & Plants Products, Purdue University, Indiana.) http://www.hort.purdue.edu/newcrop/duke_energy/Asclepias_syriaca.html
14. Bolas, C. 2004 Butterflies & Larval Food Plants. *Mother Earth News* 204: 72.
15. "Noosa Environmental Weed List: Vegetation of Noosa Shire Edition 2." (Noosa Council, Queensland.) <http://www.noosa.qld.gov.au/docs/WeedList.pdf>
16. "Gardening: how to attract butterflies." (Better Homes and Gardens Australia.) <http://www.bhg.com.au/display.cfm?objectid=354B24EB-D6E8-4D5E-AD24FFC8BB840732&navid=D455FB56-94DD-4ECA-8CD1B6C426BD252B>

Asclepias tuberosa

1. "Comprehensive report for *Asclepias tuberosa*." (NatureServe Explorer: an on-line encyclopaedia of life.) <http://www.natureserve.org/explorer/>
2. Gilman, E.F. 1999 "*Asclepias tuberosa*" (University of Florida Co-operative Extension Service, Institute of Food and Agricultural Science.) <http://hort.ufl.edu/shrubs/ASCTUBA.PDF>
3. "Plant Guide: Butterfly Milkweed." (Natural Resources Conservation Service, United States Department of Agriculture.) http://plants.nrcs.usda.gov/plantguide/pdf/cs_astu.pdf
4. Sievers, A.F. 1930. *The Herb Hunters Guide*. Misc. Publ. No. 77. (USDA, Washington DC.) <http://www.hort.purdue.edu/newcrop/herbhunters/butterflyweed.html>
5. "Ecoport Record: *Asclepias tuberosa*". http://ecoport.org/ep?Plant=3466&entityType=PL****&entityDisplayCategory=full

Festuca gautieri

1. Spafford Jacob, H., Randall, R., Lloyd, S. 2004 *Front door wide open to weeds: an examination of the weed species permitted for import without weed risk assessment*. (WWF Australia, Sydney).
2. "*Festuca*." Flora of Taiwan. http://www.efloras.org/florataxon.aspx?flora_id=1050&taxon_id=112750
3. Clayton, W.D., Harman, K.T., Williamson, H. 2005 "World Grass Species: *Festuca gautieri*." (The Board of Trustees, Royal Botanic Gardens, Kew, London.) <http://www.rbghkew.org.uk/data/grasses-db/www/imp04511.htm>
4. Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H. (Eds.) 1980 *Flora Europaea Vol. 5: Alismataceae to Orchidaceae*. (Cambridge University Press, London).
5. "Annie's Annuals: *Festuca scoparia*." http://www.anniesannuals.com/signs/list/parent_redirect.htm
6. Hill M., Baker R., Broad G., Chandler P.J., Copp, G.H., Ellis, J., Jones, D., Hoyland, C., Laing, I., Longshaw M., Moore N., Parrott D., Pearman D., Preston C., Smith R.M., Waters, R. (2005). Audit of non-native species in England. *English Nature Research Reports* N° 662.
7. "*Festuca*." Wikipedia. <http://en.wikipedia.org/wiki/Festuca>

Equisetum spp.

1. McCarthy, P.M. (Ed.) 1998 *Flora of Australia: Ferns, Gymnosperms and Allied Groups* vol. 48. (Australian Biological Resources Study/CSIRO Publishing.)
2. Husby, C.E. 2003 "How large are the giant horsetails?" <http://www.fiu.edu/~chusb001/GiantEquisetum/HowLarge.html>
3. Csurhes, S & Edwards, R 1998 *Potential environmental weeds in Australia: candidate species for preventative control*. (Environment Australia, Canberra).
4. "Equisetum". *Flora of North America* Vol. 2. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=111897
5. Navie, S.C. 2004 *Declared Plants of Australia*. CD-ROM. (The University of Queensland, St. Lucia.)
6. "Horsetail (Equisetum)" Crop protection: weed control factsheet. (Ministry of Agriculture and Lands, Government of British Columbia.) <http://www.agf.gov.bc.ca/cropprot/hrsetail.htm>
7. "Northern Australian Quarantine Strategy (NAQS) target lists of weeds, insects, plant and animal pests and diseases." (Australian Quarantine and Inspection Services, Department of Agriculture, Fisheries & Forestry.) <http://www.affa.gov.au/content/output.cfm?ObjectID=D2C48F86-BA1A-11A1-A2200060A1B01784>
8. "*Equisetum ramosissimum* subsp. *debile*." Pacific Island Ecosystems at Risk (PIER). http://www.hear.org/Pier/species/equisetum_amosissimum_subsp_debile.htm
9. "Alert list for environmental weeds: weed management guide. Horsetails: Equisetum species." (Department of the Environment & Heritage, Australia.) <http://www.deh.gov.au/biodiversity/invasive/weeds/weeds-alert/pubs/equisetum.pdf>
10. Holm, L.G., Plunkett, D.L., Pancho, J.V., Herberger, J.P. 1977. *The World's Worst Weeds – distribution and biology*. (University Press of Hawaii, Hawaii).
11. Ecoport Record: *Equisetum arvense*. http://ecoport.org/ep?Plant=5723&entityType=PLCR**&entityDisplayCategory=full
12. *National Alert List for Environmental Weeds*. (Department of the Environment & Heritage.) <http://www.deh.gov.au/biodiversity/invasive/weeds/alert-list.html>
13. Faithfull, I. 2003 "Horsetails: state prohibited weed." Landcare Notes. (Department of Primary Industries, Victoria; Keith Turnbull Research Institute, Frankston.) [http://www.dpi.vic.gov.au/dpi/nreninf.nsf/93a98744f6ec41bd4a256c8e00013aa9/274fb0f2115d2616ca256e720024b618/\\$FILE/LC0375.pdf](http://www.dpi.vic.gov.au/dpi/nreninf.nsf/93a98744f6ec41bd4a256c8e00013aa9/274fb0f2115d2616ca256e720024b618/$FILE/LC0375.pdf)
14. Randall, R.P & Kessal, O. 2004 *National list of invasive and potentially invasive garden plants*. (WWF Australia, Sydney).

Hieracium spp.

1. "Best Management Practices: Hawkweeds – *Hieracium* spp." King County Noxious Weed Control Program. (Department of Natural Resources and Parks, Water and Land Resources Division, Seattle.) <http://dnr.metrokc.gov/wlr/lands/weeds/pdf/hawkweed-control.pdf>
2. "Hieracium." Digital Flora of Taiwan. http://www.efloras.org/florataxon.aspx?flora_id=101&taxon_id=115448
3. "Field guide to noxious and other selected weeds of British Columbia: Orange Hawkweed." (Ministry of Agriculture and Lands, Government of British Columbia.) <http://www.agf.gov.bc.ca/cropprot/weedguid/orangehw.htm>
4. "Orange Hawkweed, *Hieracium aurantiacum*." Weeds of the North Central States. http://www.ag.uiuc.edu/~vista/html_pubs/WEEDS/219.html
5. Navie, S.C. 2004 *Declared Plants of Australia*. CD-ROM. (The University of Queensland, St. Lucia.)
6. "Blackfoot Drainage New Weeds Risk Assessment." Invaders Database System. (The University of Montana, Missoula.) http://invader.dbs.umt.edu/blackfoot/spp_summ.htm#Hieracium%20aurantiacum
7. Prather, T.S., Robins, S.S., Morishita, D.W., Lass, L.W., Callihan, R.H., Miller, T.W. 2003 "Idaho's Noxious Weeds." (Department of Plant, Soil and Entomological Sciences, College of Agricultural and Life Sciences, University of Idaho, Idaho.) <http://info.ag.uidaho.edu/pdf/BUL/BUL0816.pdf>
8. "Alert list for environmental weeds: weed management guide. Orange Hawkweed: *Hieracium aurantiacum*." (Department of the Environment & Heritage, Australia.) http://www.weeds.crc.org.au/text_ver/main/wom_orange_hawkweed_0105.html
9. Faithfull, I. 2003 "Hawkweeds: state prohibited weed." Landcare Notes. (Department of Primary Industries, Victoria; Keith Turnbull Research Institute, Frankston.) [http://www.dpi.vic.gov.au/dpi/nreninf.nsf/9e58661e880ba9e44a256c640023eb2e/95bbaf3e612a8352ca25714800809baf/\\$FILE/LC0253.pdf](http://www.dpi.vic.gov.au/dpi/nreninf.nsf/9e58661e880ba9e44a256c640023eb2e/95bbaf3e612a8352ca25714800809baf/$FILE/LC0253.pdf)
10. Duncan, R.P, Colhoun, K.M., Foran, B.D. 1997 The distribution and abundance of *Hieracium* species (Hawkweeds) in the dry grasslands of Canterbury and Otago. *New Zealand Journal of Ecology* 21 (1): 51-62.
11. Espie, P.R. 2001 *Hieracium* in New Zealand: ecology and management. (AgResearch Ltd., New Zealand.)
12. Ecoport Record: *Hieracium pilosella*. http://ecoport.org/ep?Plant=6718&entityType=PL****&entityDisplayCategory=full
13. "Mouse-ear Hawkweed." Wikipedia. http://en.wikipedia.org/wiki/Mouse-eared_hawkweed
14. Weed database presentation: mouse-ear hawkweed." (Massey University, Palmerston North, New Zealand.) <http://weeds.massey.ac.nz/weeds.asp?pid=94>
15. "Weeds, pests & diseases. Mouse-ear hawkweed: *Hieracium pilosella*." (Department of Primary Industries & Water, Tasmania.) <http://www.dpiwe.tas.gov.au/inter.nsf/WebPages/TPRY-52R8XS?open>

16. Grice, A. 2003 *Weeds of significance to the grazing industries of Australia*. Weeds CRC report for Meat and Livestock Australia. (Meat and Livestock Australia, North Sydney).

Inula helenium

1. Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H. (Eds.) 1976 *Flora Europaea Vol. 4: Plantaginaceae to Compositae (and Rubiaceae)*. (Cambridge University Press, London).
2. Ecoport Record: *Inula helenium*. http://ecoport.org/ep?Plant=6901&entityType=PL****&entityDisplayCategory=full
3. "Ontario Weeds: Elecampane." (Ministry of Agriculture, Food and Rural Affairs, Canada.) <http://www.omafra.gov.on.ca/english/crops/facts/ontweeds/elecampane.htm>
4. "*Inula helenium*." (The Burke Museum of Natural History and Culture, Washington.) <http://biology.burke.washington.edu/herbarium/imagecollection.php?Genus=Inula&Species=helenium&Comp=Overview>
5. "*Inula helenium*." Plants for a Future: Edible medicinal and useful plants for a healthier world. <http://www.pfaf.org/database/plants.php?Inula+helenium>
6. "A modern herbal by Mrs M. Grieve." <http://botanical.com/botanical/mgmh/e/elecam07.html>
7. "Get Growing Gardening Tips: *Inula helenium*." (Devonian Botanic Garden, University of Alberta, Canada.) <http://www.devonian.ualberta.ca/getgro72.html>
8. "Elecampane." Wikipedia. <http://en.wikipedia.org/wiki/Elecampane>
9. "Perennials Germination Tips." <http://www.anet.com/~manytimes/index.htm>

Lonicera tatarica

1. Wilson, A.J.G. (Ed.) 1994 *Flora of Australia: Oceanic Islands 1 vol. 49*. (Australian Biological Resources Study/CSIRO Publishing.) <http://www.anbg.gov.au/abrs/abif/flora/stdtdisplay.xsql?pnid=5908>
2. Williams, E.C. "Invasive alien plant species of Virginia – Bush Honeysuckles." (Virginia Native Plant Society, United States.) <http://www.vnps.org/invasive/invlosp.htm>
3. "Invasive plants of the eastern United States: Bush Honeysuckles." (Invasive.org: a joint project of University of Georgia's Bugwood Network, USDA Forest Service and USDA APHIS PPQ.) <http://www.invasive.org/eastern/srs/BH.html>
7. "Plant invaders of Mid-Atlantic natural areas: Exotic Bush Honeysuckles." (Invasive.org: a joint project of University of Georgia's Bugwood Network, USDA Forest Service and USDA APHIS PPQ.) <http://www.invasive.org/eastern/midatlantic/loni.html>
5. Batcher, M.S., Stiles, S.A. "Element Stewardship Abstract for The Bush Honeysuckles" (The Nature Conservancy, Virginia.) http://tncweeds.ucdavis.edu/esadocs/documnts/loni_sp.html
4. "PCA Alien Plant Working Group: Exotic Bush Honeysuckles (*Lonicera* spp.)" (Alien Plant Working Group, Plant Conservation Alliance, Washington.) <http://www.nps.gov/plants/alien/fact/loni1.htm>
6. "Vegetation management guideline: Bush honeysuckles." (Illinois Natural History Survey, Illinois.) <http://www.inhs.uiuc.edu/chf/outreach/VMG/bhnysckl.html>
8. Mehrhoff, L.J. The non-native honeysuckles occurring without cultivation in Connecticut. (University of Connecticut, United States.) <http://www.eeb.uconn.edu/bioconctr/publications/publication-2.html>
9. "Species abstracts of highly disruptive exotic plants at Effigy Mounds National Monument: *Lonicera tatarica*." (Northern Prairie Wildlife Research Centre, United States Geological Survey, US Department of the Interior.) <http://www.npwrc.usgs.gov/resource/othrdata/exoticab/exoticab.htm>
10. "Notes on poisoning: *Lonicera tatarica*." (Canadian Biodiversity Information Facility, Canada.) http://www.cbif.gc.ca/pls/pp/ppack.info?p_psn=120&p_type=all&p_sci=sci&p_x=px
11. "Notes on poisoning: *Lonicera xylosteum*." (Canadian Biodiversity Information Facility, Canada.) http://www.cbif.gc.ca/pls/pp/ppack.info?p_psn=233&p_type=anim&p_sci=sci&p_x=px
12. Groves, R.H., Boden, N., Lonsdale, W.M. 2005 *Jumping the garden fence: invasive garden plants in Australia and their environmental and agricultural impacts*. CSIRO Report for WWF Australia. (WWF Australia, Sydney.)
13. Csurhes, S & Edwards, R 1998 *Potential environmental weeds in Australia: candidate species for preventative control*. (Environment Australia, Canberra).

Miscanthus floridulus

1. Meyer, F.G., Walker, E.H. (Eds.) *Flora of Japan*. (English edition.) (Smithsonian Institution, Washington.)
2. "*Miscanthus floridulus*." Floridata. http://www.floridata.com/ref/M/misc_flo.cfm
3. Taylor, G. 1992 *Ornamental Grasses, Bamboos, Rushes and Sedges*. (Cassell Imprint, London.)
4. Clayton, W.D., Harman, K.T., Williamson, H. 2005 "World Grass Species: *Miscanthus floridulus*." (The Board of Trustees, Royal Botanic Gardens, Kew, London.) <http://www.rbgekew.org.uk/data/grasses-db/www/imp06313.htm>
5. "*Miscanthus floridulus*." Flora of Taiwan. http://www.efloras.org/florataxon.aspx?flora_id=1050&taxon_id=120798
6. "*Miscanthus floridulus*: Giant Chinese Silver Grass." Michigan State University Extension. <http://web1.msue.msu.edu/imp/modzz/00002220.html>

7. "*Miscanthus floridulus*." Plants for a Future. http://www.ibiblio.org/pfaf/cgi-bin/arr_html?Miscanthus+floridulus
8. "*Miscanthus floridulus*." Kemper Centre for Home Gardening. <http://www.mobot.org/gardeninghelp/plantfinder/Plant.asp?code=E240>
9. "*Equisetum ramosissimum* subsp. *debile*." Pacific Island Ecosystems at Risk (PIER). http://www.hear.org/pier/wra/pacific/miscanthus_floridulus_htmlwra.htm
10. "Plants profile: *Miscanthus floridulus*." Plants Database. (Natural Resources Conservation Service, US Department of Agriculture.) <http://plants.usda.gov/java/profile?symbol=MIFL3>
11. "*Miscanthus* research." (University of Minnesota, United States.) <http://horticulture.coafes.umn.edu/miscanthus/research.html>
12. "*Miscanthus*." Wikipedia. <http://en.wikipedia.org/wiki/Miscanthus>
13. Space, J. 2002 "Invasive species present on Pohnpei, Federated States of Micronesia". A product of the Pacific Island Ecosystems at Risk project (PIER) www.hear.org/pier/pohnpei.htm

Nassella tenuissima

1. Botanic Gardens Trust. *FloraSearch in PlantNET – The Plant Information Network System of Botanic Gardens Trust, Sydney, Australia*. <http://plantnet.rbgsyd.gov.au/cgi-bin/NSWfl.pl?page=nswfl&lvl=gn&name=Nassella>
2. Maguire, A. 2005 "Agfacts: Mexican Feather Grass." (NSW Department of Primary Industries.) <http://www.ricecrc.org/reader/weed-list/mexican-feather-grass.pdf?MIvalObj=25579&doctype=document&MItypeObj=application/pdf&name=/mexican-feather-grass.pdf>
3. Faithfull, I. 2004 "Mexican feather grass: state prohibited weed." Landcare Notes. (Department of Primary Industries, Victoria; Keith Turnbull Research Institute, Frankston.) [http://www.dpi.vic.gov.au/dpi/nreninf.nsf/93a98744f6ec41bd4a256c8e00013aa9/b1d5649984143eacea256e8d001bcabf/\\$FILE/LC0263.pdf](http://www.dpi.vic.gov.au/dpi/nreninf.nsf/93a98744f6ec41bd4a256c8e00013aa9/b1d5649984143eacea256e8d001bcabf/$FILE/LC0263.pdf)
4. Jacobs, S.W.L., Everett, J., Torres, M.A. 1998 *Nassella tenuissima* (Gramineae) recorded from Australia, a potential new weed related to Serrated Tussock. *Telopea* 8 (1): 41-46.
5. "Environment Waikato: Nassella tussock and fine-stemmed needle grass." (Waikato Regional Council, New Zealand.) <http://www.ew.govt.nz/enviroinfo/pests/plants/tussock.htm>
6. Clayton, W.D., Harman, K.T., Williamson, H. 2005 "World Grass Species: *Stipa tenuissima*." (The Board of Trustees, Royal Botanic Gardens, Kew, London.) <http://www.rbgekew.org.uk/data/grasses-db/www/imp10071.htm>
7. Navie, S.C. 2004 *Declared Plants of Australia*. CD-ROM. (The University of Queensland, St. Lucia.)
8. "*Nassella tenuissima*." Global Invasive Species Database. (IUCN/SSC Invasive Species Specialist Group (ISSG), New Zealand.) <http://www.invasivespecies.net/database/species/ecology.asp?si=463&fi=1&sts=>
9. Milton, J. 2004 Grasses as invasive plants in South Africa. *South African Journal of Science* 100: 69-75.
10. "Weed Alert: Mexican feather grass." (NSW Department of Primary Industries.) <http://www.agric.nsw.gov.au/reader/weed-alerts/mexican-feathergrass.pdf?MIvalObj=24934&doctype=document&MItypeObj=application/pdf&name=/mexican-feathergrass.pdf>
11. "Rainy Side Gardeners in the Pacific Northwest: *Nassella tenuissima*." http://www.rainyside.com/features/plant_gallery/grasses/Nassella_tenuissima.html
12. "*Nassella tenuissima*." Floridata. http://www.floridata.com/ref/N/nass_ten.cfm
13. Groves, R.H., Boden, N., Lonsdale, W.M. 2005 *Jumping the garden fence: invasive garden plants in Australia and their environmental and agricultural impacts*. CSIRO Report for WWF Australia. (WWF Australia, Sydney.)
14. Macguire, A. 2005 "Agfacts: Mexican feather grass." (New South Wales Department of Primary Industries, Australia.) <http://www.agric.nsw.gov.au/reader/weed-list/mexican-feather-grass.pdf?MIvalObj=25579&doctype=document&MItypeObj=application/pdf&name=/mexican-feather-grass.pdf>
15. Biosecurity New Zealand. <http://www.biosecurity.govt.nz/pests-diseases/plants/risk/n-p-tag-assessments.pdf>
16. Glanznig, A. 2005 *Making state weed laws work: an issues paper*. (WWF Australia, Sydney.) <http://www.wwf.org.au/publications/makingstateweedlawswork.pdf>
17. "Weeds of National Significance: weed management guide. Serrated tussock: *Nassella trichotoma*." (Department of the Environment & Heritage, Australia.) <http://www.deh.gov.au/biodiversity/invasive/publications/pubs/n-trichotoma.pdf>
18. McFadyen, R. 2005 Closing the front door to new weeds: benefits for the cattle industry. *Weeds CRC Briefing Notes*. (CRC for Australian Weed Management, Adelaide.) http://www.weeds.crc.org.au/documents/bn%20_cattle.pdf
19. Centre for International Economics 2001 The CRC for Weed Management Systems: an impact assessment. *Technical Paper No. 6*. (CRC for Weed Management Systems, Adelaide).

Onopordum nervosum

1. Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H. (Eds.) 1976 *Flora Europaea Vol. 4: Plantaginaceae to Compositae (and Rubiaceae)*. (Cambridge University Press, London).
2. "Onopordum." Factbug.org. <http://www.factbug.org/cgi-bin/a.cgi?a=1509558>
3. "Onopordum." Wikipedia. <http://en.wikipedia.org/wiki/Onopordum>

4. "Onopordum acanthium." Global Invasive Species Database. (IUCN/SSC Invasive Species Specialist Group (ISSG), New Zealand.) <http://www.issg.org/database/species/ecology.asp?si=295&fr=&sts=tss>
5. Williamson, R. 2003 "Scotch Thistle." Landcare Notes. (Department of Primary Industries, Victoria; Keith Turnbull Research Institute, Frankston.) [http://www.dpi.vic.gov.au/dpi/nreninf.nsf/9e58661e880ba9e44a256c640023eb2e/a18932274f7d6044ca256e720024e411/\\$FILE/ATTAGLY5/LC0176.pdf](http://www.dpi.vic.gov.au/dpi/nreninf.nsf/9e58661e880ba9e44a256c640023eb2e/a18932274f7d6044ca256e720024e411/$FILE/ATTAGLY5/LC0176.pdf)
6. Dellow, J., Holtkamp, R. 2005 "Agfacts: Scotch, Illyrian and stemless thistles (*Onopordum* spp.)" (NSW Department of Primary Industries.) <http://www.ricecrc.org/reader/weed-list/scotch-illyrian-thistles.pdf?MlvalObj=24405&doctype=document&MItypeObj=application/pdf&name=/scotch-illyrian-thistles.pdf>
7. "Weeds BC: identification and management; Weed Profile: Scotch Thistle." <http://www.cdfa.ca.gov/phpps/ipc/weedinfo/onopordum.htm>
8. "Tamar Valley Weed Strategy: Cotton Thistle." <http://www.weeds.asn.au/weeds/txts/ctnthtle.html>
9. "Cotswold Garden Flowers." <http://www.cgf.net/plants.php?genus=ONOPORDUM&variety=NERVOSUM>
10. "Information about *Onopordum* genus." (California Department of Food & Agriculture, United States.) <http://www.cdfa.ca.gov/phpps/ipc/weedinfo/onopordum.htm>
11. Briese, D.T., Walker, A., Pettit, W., Sagliocco, J-L., Espiau, C., Thomann, T. 2001 "Research Projects: Biological control of *Onopordum* thistles." (CSIRO Entomology, CSIRO Australia.) http://www.ento.csiro.au/research/tr95-97/weedm_tempweeds.html
12. "Release of the *Onopordum* Rosette Weevil." (CSIRO Entomology, CSIRO Australia.) <http://www.ento.csiro.au/weeds/pdf/tricho.pdf>
13. "Noxious thistles to be aware of." (Boer Goat Breeders' Association of Australia, Armidale, NSW.) http://boergoat.une.edu.au/technical%20articles/issue26_noxiousthisltes.pdf
14. "Factsheets: Cotton Thistle." Burke's Backyard. http://www.burkesbackyard.com.au/1998/archives/26/in_the_garden/weeds_and_garden_pests/cotton_thistle
15. "South Coast Weeds Species Profile: Thistles." (Eurobodalla Shire Council, NSW.) <http://www.esc.nsw.gov.au/Weeds/Sheets/herbs/H%20Thistles.htm>
16. Centre for International Economics 2001 The CRC for Weed Management Systems: an impact assessment. *Technical Paper No. 6.* (CRC for Weed Management Systems, Adelaide).

Ornithogalum nutans

1. Clement, E.J., Foster, M.C., Kent, D.H. 1994 Alien Plants of the British Isles. (Botanical Society of the British Isles, London.)
2. "*Ornithogalum*." Flora of North America Vol. 26. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=111897
3. "*Ornithogalum nutans*." Flora of North America Vol. 26. http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=111897
4. Tutin, T.G., Heywood, V.H., Burges, N.A., Valentine, D.H. (Eds.) 1980 *Flora Europaea Vol. 5: Alismataceae to Orchidaceae.* (Cambridge University Press, London).
5. "DCNR Invasive Exotic Plant Tutorial for Natural Land Managers: *Ornithogalum nutans* and *Ornithogalum umbellatum*." (Pennsylvania Department of Conservation and Natural Resources, United States.) http://www.dcnr.state.pa.us/forestry/invasivetutorial/star_of_bethlehem.htm
6. Stace, C. 1997 *New Flora of the British Isles 2nd edition.* (Cambridge University Press, London.)
7. "Mantel Holland: Quality Bulbs." <http://www.mantelholland.com/egroepen/enornithogalumnutans.html>
8. "Tesselaar Bulbs." <http://www.tesselaar.net.au/shop/ornithogalum/silver%2Dchimes/>
9. "*Ornithogalum nutans*." http://www.missouriplants.com/Whitealt/Ornithogalum_nutans_page.html
10. "Gay Gardener." <http://www.gaygardener.com/gardenspot/bulbs019.phtml>
11. "www.rareplants.de" http://www.rareplants.de/shop/product.asp?cookiecheck=yes&P_ID=5954&numLanguageID=1

Tamarix gallica

1. Gaskin 2003 Molecular systematics and the control of invasive plants: a case study of *Tamarix* (Tamaricaceae.) *Annals of the Missouri Botanical Garden* 90: 109-118.
2. Gaskin, J.F., Schall, B.A. 2003 Molecular phylogenetic investigation of US invasive *Tamarix*. *Systematic Botany* 28 (1): 86-95.
3. "Ecoport Record: *Tamarix gallica*. http://ecoport.org/ep?Plant=10278&entityType=PL****&entityDisplayCategory=full
4. "*Tamarix*" Wikipedia. <http://en.wikipedia.org/wiki/Tamarix>
5. "*Tamarix* spp." (United States Army Corps of Engineers.) http://el.erdc.usace.army.mil/pmis/plants/html/tamarix_.html
6. Stevens, L.E. "Exotic Tamarisk on the Colorado Plateau." <http://www.cpluhna.nau.edu/Biota/tamarisk.htm>
7. Carpenter, A.C. "Element Stewardship Abstract for Saltcedar." (The Nature Conservancy, Virginia.) http://tncweeds.ucdavis.edu/esadocs/documnts/loni_sp.html

8. "Saltcedar." (Plant Conservation Alliance, National Park Service, US Department of the Interior.)
<http://www.nps.gov/plants/alien/fact/tama1.htm>
9. Bossard, C.C., Randall, J.M., Hoshovsky, M.C. (Eds.) 2000 *Invasive Plants of California's Wildlands*. University of California Press, United States.
10. Grubb, R.T., Sheley, R.L., Carlsrom, R.D. 2002 "Saltcedar (Tamarisk.)" Montana State University Extension Service.
<http://www.montana.edu/wwwpb/pubs/mt9710.html>
11. DeLoach, J.C. "Abstract. Biological Control of Saltcedar."
<http://www.invasivespeciesinfo.gov/docs/news/workshopSep96/deloach-abs.html>