

New and revised plant declarations in South Australia

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Summary South Australia has conducted a comprehensive review of plant declarations under the *Natural Resources Management Act 2004*. Various sections of this Act allow for prohibition of sale and road transport of declared plants, legal requirements for landholder control and formal notification of their presence. Declarations are based on risk assessment and policies adopted for each species. The review has occurred over four phases with 155 weed policies revised or newly developed. Policies cover broad goals and objectives, state risk assessment and regional management actions.

There are currently 140 declared plants in SA with another five currently under consideration. These are alisma (*Alisma lanceolatum* With.), coastal tea-tree (*Leptospermum laevigatum* (Gaertn.) F.Muell.), dune onionweed (*Trachyandra divaricata* (Jacq.) Kunth), giant reed (*Arundo donax* L.) and parrot feather (*Myriophyllum aquaticum* (Vell.) Verdc.).

Keywords Declaration, legislation, review.

INTRODUCTION

Declared plants are plants that are regulated under the *Natural Resources Management Act 2004* due to their weed threat to South Australia's primary industries, natural environments and/or public safety. The Minister for Sustainability, Environment and Conservation may declare a weed when some of the powers of the Act are needed to implement one or more of the eight Natural Resources Management (NRM) boards' regional strategic plans to manage the weed. Declaration provides a legislative tool to limit the establishment and spread of a plant, thereby reducing future costs from its weed impacts and control costs. Plant species are declared under various sections of the NRM Act relating to:

- Movement – The declared plant must not be moved on a public road (e.g. as a cutting, seed or potted specimen). Inadvertent movement of the plant on animals, soil, vehicles, machinery or produce may also be prohibited.
- Sale – The declared plant must not be sold at any outlet including nurseries, pet shops and market stalls. Sale of any animal, soil, vehicle, machinery or produce contaminated with the plant may also be prohibited.

- Notification – The presence and locations of the declared plant must be reported to the regional NRM Authority by the owner of the land.
- Control – Land owners are required to take action to destroy or control certain declared plant species present on their property. NRM Authorities are also responsible for controlling these declared plants on road reserves, and may have the power to recover costs of control from the adjoining landowners.

The first comprehensive review of plants declared under weeds legislation in South Australia in 20 years, as described in Heinson *et al.* (2014), commenced in 2010. The review was split into phases and is now in its fourth and final phase. For each phase a revised or new, state-level policy was prepared for a plant. Elements of the policy document include a succinct management plan with dot-points for outcome/s, objective/s and implementation; a table consolidating regional management actions based on a regional risk assessment (Virtue 2010); a declaration statement with sections of the NRM Act which apply; a state-level risk assessment; and synonymy.

A 'plant' as declared under the Act may mean a defined subset of a species, a whole species, two or more species or rarely a whole genus (Cooke 2016). Its circumscription may be modified by the exclusion of particular cultivars assessed as having negligible weed risk, or by restricting the declaration to 'feral' individuals growing outside cultivation. Hybrids between a declared plant and a non-declared plant fall outside the declaration.

This paper summarises changes to the schedule of declared plants arising from the review. The schedule and policies for each declared plant are available on the Biosecurity South Australia website (www.pir.sa.gov.au/biosecurity/weeds_and_pest_animals).

PLANTS REMAINING ON THE SCHEDULE

New policies have been adopted for 104 plants that remain declared on the schedule. However, the specific declaration has changed for many plants. A common change has been uniform declaration of a species across NRM regions, removing anomalies between local government areas. The plants which are declared as notifiable has been rationalised to those

that are not known to be or are rarely established in a region or the state. Some plants are now declared for control by land owners in fewer regions, due to being widespread and/or posing a lesser weed risk than other plants.

NEW PLANTS DECLARED

Since the review commenced, 32 new species have been added to the schedule of declared plants (Table 1). This includes the twelve additional Weeds of National Significance that were listed in 2012.

The majority of newly declared plants are environmental weeds with impacts in terrestrial or freshwater natural ecosystems. Many of these were included in the Nursery and Garden Industry of South Australia's 'Grow Me Instead' booklet and hence there was already widespread awareness of their invasive properties. Most newly added environmental weeds are not uniformly declared for control across the state, with this being a decision of regional NRM boards. For example, gazania (*Gazania* spp.) is declared for control in two of the eight NRM regions. Additions to the list include non-indigenous Australian natives such as bluebell creeper (*Billardiera fusiformis* and *B. heterophylla*) and sweet pittosporum (*Pittosporum undulatum*).

Only a few agricultural weeds have been added to the list, reflecting the range of weed control measures available in farming systems to minimise weed impacts. These include the crop weed blue mustard (*Chorispora tenella*) and the pasture weeds apple of Sodom (*Solanum linnaeanum*) and spiny rush (*Juncus acutus*). Buffel grass (*Cenchrus ciliaris* and *C. peninsularis*), despite being a widely grown fodder plant in northern Australia, is now declared in South Australia due to the unacceptable biodiversity and fire risk it poses. Most of the newly declared plants were initially proposed by regional NRM boards following regional risk assessments and consultation.

PLANTS NO LONGER DECLARED

Ten plants have been removed from the schedule of declared plants during the review (Table 2).

Nine of the plants now removed from declaration were declared in the 19th or 20th centuries due to concerns about their impact on agricultural or pastoral lands. However, changing farming systems and weed control methods have meant that such species pose less weed risks. The routine use of Group B herbicides enables ready control of soursob (*Oxalis pes-caprae*), small-fruited pheasant's eye (*Adonis microcarpa*) and onion weed (*Asphodelus fistulosus*). Three thistle species have been removed from declaration (Table 2) as they are readily controlled by Group I herbicides

and regional management programs no longer require enforced control.

Wild carrots had been declared solely to enable carrot seed producers to contract with the former Animal and Plant Control Boards to control wilding carrots, a threat to the genetics of their crops, on public roadsides. This practice is no longer necessary.

PLANTS PROPOSED FOR DECLARATION

Five species are currently under consideration for declaration in Phase 4 of the review:

Alisma (*Alisma lanceolatum*) is an emergent water plant with large broad leaves and herbaceous flowering stems from a short underwater rhizome. It can be mistaken for a native *Alisma* found in the same areas that has been confused with the European *A. plantago-aquatica* L. but may be an undescribed species (J. Conran, pers. comm).

Coastal tea-tree (*Leptospermum laevigatum*) from eastern Australia is an invader of near-coastal native vegetation. Even in its native range it may behave as a seral species as habitats change, encroaching into heath from neighbouring, stabilized, calcarenite dunes, usually after a fire that temporarily raises the pH of acidic heathland soils (Burrell 1981). It was introduced to South Australia as a native ornamental/amenity plant, and now makes incursions into various coastal and near-coastal vegetation from plantings. Many of the public consider coastal tea-tree to be a native of SA, and it can be confused with native Myrtaceae such as *Leptospermum coriaceum* (F. Muell.) Cheel (green tea-tree).

Dune onionweed (*Trachyandra divaricata*) is a sandbinding perennial of coastal front dunes, introduced to Australia from southern Africa. It spreads by seed when dry plants break off and are rolled along beaches by the wind. It can be toxic to livestock by causing photosensitisation (Huxtable *et al.* 1987).

Giant reed (*Arundo donax*) is a large perennial grass growing on stream edges and wetlands, native to a wide region of Eurasia. It resembles the common reed *Phragmites australis* (Cav.) Trin. ex Steud. but is a larger plant. Giant reed is sterile but vegetative dispersal mainly occurs when stem or rhizome fragments are moved during flood events. It is a potential invader in the southern parts of South Australia as it tolerates a wide range of conditions and climates with moderate to high annual rainfall. Nonetheless, the draft policy recognises its potential for biofuel production and proposes measure to manage this risk in production systems (Virtue *et al.* 2010).

Parrot feather (*Myriophyllum aquaticum*) is a submerged aquatic plant introduced for use in ponds and aquaria. It interferes with water flow in streams,

Table 1. Plants added to the declaration 2012–2015.

Scientific name	Common name	Comments
<i>Acer negundo</i> L.	box elder	exemption of a male cultivar is proposed
<i>Amelichloa brachychaeta</i> (Godr.) Arriaga & Barkworth	espartillo	
<i>Andropogon gyanus</i> Kunth	gamba grass	
<i>Anredera cordifolia</i> (Ten.) Steenis	Madeira vine	
<i>Asparagus aethiopicus</i> L.	ground asparagus	the cultivar ‘Myersii’ is exempt
<i>Asparagus africanus</i> Lam.	ornamental asparagus	
<i>Asparagus plumosus</i> Baker	climbing asparagus fern	
<i>Asparagus scandens</i> Thunb.	asparagus fern	
<i>Billardiera fusiformis</i> Labill. <i>Billardiera heterophylla</i> (Lindl.) L.W.Cayzer & Crisp	bluebell creeper	two species that may eventually become synonyms
<i>Casuarina glauca</i> Sieber ex Spreng. <i>Casuarina obesa</i> Miq.	swamp oaks	two similar species; exemption of a sterile cultivar is proposed
<i>Cenchrus ciliaris</i> L. <i>Cenchrus pennisetiformis</i> Steud.	buffel grass	two species with similar ecology and weed risk
<i>Cenchrus setaceus</i> (Forssk.) Morrone	fountain grass	including all cultivars
<i>Chorispura tenella</i> (Pall.) DC.	blue mustard	
<i>Coprosma repens</i> A.Rich.	mirror bush	
<i>Dipogon lignosus</i> (L.) Verdc.	dolichos pea	
<i>Dolichandra unguis-cati</i> (L.) L.G.Lohmann	cats claw creeper	
<i>Erica arborea</i> L.	tree heath	
<i>Erica baccans</i> L.	berry heath	
<i>Fraxinus angustifolia</i> Vahl	desert ash	the cultivar ‘Raywood’ is exempt
<i>Gazania</i> Gaertn., all species	gazania	some cultivars are exempt
<i>Genista linifolia</i> L.	flaxleaf broom	
<i>Hieracium aurantiacum</i> L.	orange hawkweed	
<i>Jatropha gossypifolia</i> L.	bellyache bush	
<i>Juncus acutus</i> L.	spiny rush	
<i>Orbea variegata</i> (L.) Haw.	carrion flower	
<i>Pittosporum undulatum</i> Vent.	sweet pittosporum	
<i>Polygala myrtifolia</i> L.	polygala	including all cultivars
<i>Retama monosperma</i> Webb & Berthel. <i>Retama raetam</i> (L.) Boiss.	white weeping brooms	two very similar species
<i>Rhamnus alaternus</i> L.	Italian buckthorn	
<i>Rubus laudatus</i> A.Berger	Bundy blackberry	
<i>Senecio madagascarensis</i> Poir.	fireweed	
<i>Solanum linnaeanum</i> Hepper & P.-M.L.Jaeger	apple of Sodom	
<i>Tamarix parviflora</i> DC. <i>Tamarix ramosissima</i> Ledeb.	tamarisks	two species with similar ecology and weed risk
<i>Zantedeschia aethiopica</i> (L.) Spreng.	arum lily	including all cultivars

Table 2. Plants removed from declaration 2012–2015.

Scientific name	Common name
<i>Adonis microcarpa</i> DC.	small-fruited pheasant's eye
<i>Asphodelus fistulosus</i> L.	onion weed
<i>Carduus tenuiflorus</i> Curt.	slender thistle
<i>Cirsium vulgare</i> (Savi.) Tenore	spear thistle
<i>Daucus carota</i> L.	wild carrot
<i>Hirschfeldia incana</i> (L.) Lagr.-Foss.	Buchan weed
<i>Oxalis pes-caprae</i> L.	soursob
<i>Picnomon acarna</i> (L.) Cassini	soldier thistle
<i>Reseda phyteuma</i> L.	rampion mignonette
<i>Sclerolaena birchii</i> (F.Muell.) Domin	galvanised burr

recreational freshwater fishing and use of rivers for recreation (Parsons and Cuthertson 2001); and competes with native aquatic plants for habitat. Parrot feather resembles some native *Myriophyllum* species.

CONCLUSION

Pending the outcome of Phase 4, it is likely that the schedule will consist of 145 declared plants at the conclusion of the review.

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