

REGIONAL WEED MANAGEMENT PLAN

1.1 PLAN TITLE: Sydney Regional Pampas Grass Management Plan

1.2 PLAN PROPONENTS

Regional Weeds Advisory Committee: **Sydney West ~ Blue Mountains Regional Weeds Committee Sydney Central Regional Weeds Committee, South West Sydney Regional Weeds Committee, and the Sydney North Regional Weeds Committee.**

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1.3 NAME OF PLANT(S)

WONS N

Botanical name(s): *Cortaderia selloana*;
C. jubata

Common name(s): Common Pampas Grass;
Pink Pampas Grass.

1.4 PLAN PERIOD (not to exceed five years)

Starting date: **July 2004**

Completion date: **June 2009**

1.5 AREA OF OPERATION:

This plan extends over the geographical area covered by all four Sydney Regional Weeds Committees

1.6 AIM:

To protect the ecological and recreational value of creeklines, wetlands, heathland and other native vegetation communities through controlling, reducing and preventing the spread of Pampas Grass on public and private land in the Sydney region.

1.7 OBJECTIVES:

1. Determine and record the extent and location of Pampas Grass infestations in the Sydney Region.
2. Progressively reduce Pampas Grass infestations on public land and prevent the spread and establishment of new infestations by adopting a regional approach.
3. Strategically coordinate the control and eradication of Pampas Grass on private property.
4. Increase the awareness of Pampas Grass and its impacts in the general community.

2.0 STAKEHOLDERS

<p>Sydney West~Blue Mountains Regional Weeds Committee: Parramatta, Blue Mountains, (Penrith, Blacktown, Hawkesbury, Baulkham Hills) Hawkesbury River County Council, Auburn and Holroyd councils</p>	<p>South West Sydney Regional Weeds Committee: Camden, Bankstown, Campbelltown, Sutherland, Wollondilly, Fairfield, Liverpool and Campbelltown councils.</p>
<p>Sydney North Regional Weeds Committee: Hornsby, Ku-ring-gai, Pittwater, Warringah and Ryde councils, Willoughby and other Councils</p>	<p>Sydney Central Regional Weeds Committee: Ashfield, Burwood, Canada Bay, Strathfield, Leichhardt, Marrickville, Hurstville, Kogarah, Rockdale, South Sydney, Sydney City, Woollahra, Waverley, Randwick, Botany, and Canterbury councils</p>
Department of Environment and Conservation (DEC) – Parks Service (Sydney North, Sydney South and Sydney Central)	Department of Environment and Conservation (DEC) – EPA
Department of Infrastructure, Planning and Natural Resources (DIPNR)	Department of Education, and schools
Catchment Management Authorities (CMAs)	Department of Housing (DOH)
Department of Lands (DOL)	Rural Lands Protection Board
Sydney Water Corporation (SWC)	Cowan Catchment Weeds Committee
Rail Infrastructure Corporation (RIC)	Department of Defence (DOD)
NSW Agriculture	Bushcare and Landcare groups
Roads and Traffic Authority (RTA)	Private landholders
Rural Fire Service	Ingleside Landcare Group
Pittwater Natural Heritage Association (PNHA)	Metropolitan Lands Council
Sydney Harbour Trust	Sydney Harbour Foreshore Authority
Airports Corporation	

3.0 BACKGROUND and GENERAL FACTS

3.1 Weed Biology/ Ecology

Cortaderia is a medium sized genus of 24 species native to Brazil, Argentina and New Zealand. There are two species of Pampas Grass of concern in Australia. The most widespread is *Cortaderia selloana* (Common or Silver Pampas) while *Cortaderia jubata* (Pink Pampas Grass) generally has a more scattered distribution. For the purpose of this management plan, both species of *Cortaderia* are treated as Pampas Grass.

Pampas Grass is considered a weed of major concern in New Zealand, South Africa and Australia. It is widely naturalised in all states of Australia except the Northern Territory, and is particularly common throughout the more temperate areas from south-east Queensland south to Tasmania and west to south-west Western Australia. It was introduced as a fodder crop, for wind breaks, erosion control and dry flower arrangements and as a garden ornamental, being very trendy in the 1970s. Pampas Grass was even required by some Councils in the past to be used as a screen in private developments, often along landscaped boundaries with public footpaths and vacant allotments.

The first specimens to arrive in Australia came to Hobart in 1850. These original plants were all vegetatively propagated as female clones that did not produce seed. However, from around the 1970's plants have been propagated from seed imported from New Zealand that included higher fertility strains and male and bisexual plants with the consequence that plants are now freely reproducing and spreading from seed. The entry of Pampas Grass into Australia is now prohibited under federal quarantine legislation.

Pampas Grass is a large perennial grass growing from 2 to 6m tall, with long upward arching grey green leaves up to 1.8m long to 2cm wide, and rough serrated edges. Flowers are large soft white, yellowish or purple feathery plumes 25-100cm long on a stem to 3m and are produced from March to May. Mature plants can produce 40 to 50 flower heads. Underground fibrous roots rise from short robust rhizomes and extent to 4m radially and 3.5m deep.

3.2 Method of Spread

Pampas Grass is spread by seed which is easily dispersed by wind over long distances (for up to 25 kilometres). Flower heads can contain up to 100,000 seeds, with viability exceeding 75% and remaining viable for a maximum of two years. Many previously infertile females are now producing large quantities of seed.

Established plants increase in size as new tillers develop from the rhizomes on the perimeter of the clumps. Large dense clumps several metres across may have a root area occupying over 110m³ of soil. Severed rhizomes can regrow after ineffective grubbing, cultivation or refuse dumping.

3.3 Description of the Problem

Pampas Grass has the ability to grow and flower in a wide variety of environmental conditions and on a wide range of soils and to prodigiously reproduce itself, forming large dense clumps. These plants can also tolerate full sun to light shade, frost to - 20°C when mature, periodic inundation, salty conditions, salt spray, drought and grazing. Pampas also recolonises burned areas rapidly, and resprouts after fire, posing a significant threat to post fire regeneration.

Consequently, Pampas Grass poses a significant threat to native plant communities in the Sydney region even those in relatively good condition, where it can form large dense clumps outcompeting native species by shading and root competition. It is found in a wide variety of vegetation communities including coastal heathland, woodland, open forest, riparian vegetation, and freshwater wetlands, including Endangered Ecological Communities such as the Kurnell Dune Forest, Blue Gum High Forest, Sydney Freshwater Wetlands, Cumberland Plain Woodland, Eastern Suburbs Banksia

Shrub, Duffys Forest, and Sydney Turpentine Ironbark Forest. Pampas Grass is also very adept at colonising disturbed ground, roadside ditches, vacant land, waste areas and quarries.

Pampas Grass can also pose a safety hazard due to its sharp knife edged leaves, especially to children, along walking tracks, in home gardens and along boundaries between private land and public footways, thus reducing the recreational and aesthetic values of open space areas. The windborne distribution of the seed is also reported to contribute to respiratory problems in the urban community.

3.4 Reason for the Plan

Pampas Grass is recognised as a high priority noxious weed throughout the Sydney region, due to the environmental, social and aesthetic impacts described above.

Three year plans for Pampas Grass were commenced in 1999 by both the Sydney North Regional Weeds Committee and the South West Sydney Regional Weeds Committee. Funding under these plans has identified the major infestations and addressed all significant primary infestations, as conveyed in the relevant annual reports. These programs have resulted in a significant reduction in Pampas Grass infestations in these region, to the point that it is now only occasionally found.

As these two regional plans expired in June 2002, the Sydney North and South West Sydney participants have elected to participate in this 5 year Sydney-wide regional plan proposed to commence in July 2004 to maintain areas worked and address any new infestations.

This plan aims to consolidate and build upon the success of the above expired plans and broaden it to the Sydney region as a whole. It includes the Sydney Central and Sydney West ~ Blue Mountains regional weeds committee regions, where to date there have been no plans to regionally target Pampas, and will address this issue with a more holistic and planned approach, and facilitate coordinated control between land managers throughout the Sydney region

If this plan is not implemented, Pampas Grass will continue to spread and be managed on an ad-hoc basis, further threatening the region's biodiversity, recreational and aesthetic values.

3.5 Distribution of the infestations

Pampas Grass is widely distributed across the entire Sydney region, on both public and private land.

Sydney Central and Sydney West~Blue Mountains regions

The extent of infestations in the Sydney Central and Sydney West~Blue Mountains regions will be determined within the first year of this plan's implementation.

Sydney North and South West Sydney regions

Mapping and control programs have been undertaken throughout these regions as part of the regional group projects under the previous plans. Previously worked areas are now followed up as part of on-going maintenance programs.

4.0 LEGISLATIVE and REGULATORY SITUATION

4.1 Current Declaration

Pampas Grass is a gazetted W2 noxious weed throughout the Sydney region under the Noxious Weeds Act (1993). A W2 weed is one that *must be fully and continuously suppressed and destroyed*.

4.2 Declaration Changes

No declaration changes or additions are required.

5.0 CONSIDERATIONS and OPPORTUNITIES

5.1 Opportunities to be exploited

To assist in the implementation of this plan, additional sources of funding will continue to be sought for on-ground works and education and awareness projects, from various state and federal government agencies, including NSW Agriculture, CMAs (NHT2 and other catchment blueprint implementation funding), DOL (Crown Land grants), and Environment Australia (Envirofunds).

5.2 Species Management

Control methods include:

- Handpulling or digging seedlings or immature plants (sometimes called 'grubbing')
- Carefully removing any seed heads and securely bagging to avoid further seed spread, and spraying mature plants with glyphosate
- Plants can be slashed to make root removal easier with a mattock, or brush-cut and then the regrowth sprayed with glyphosate.

Follow up work is required to check for any regrowth and new seedlings. A comprehensive control program will identify other priority weeds in the environs and include their management, and the encouragement of native replacement species.

Pampas grass may provide suitable habitat for a range of native fauna, including the diamond python and blue tongue lizards, and this should be taken into consideration when work is planned.

All Pampas Grass control will be undertaken in accordance with the Noxious Weeds Act 1993, Protection of the Environment Operations Act (1997), and the Pesticides Act (1999).

5.3 Extension and Education

The main focus of the education and extension activities will be to increase awareness in the identification and control of Pampas Grass, and of its regional importance. This will build on and expand upon existing awareness raising initiatives developed under the previous regional plans and will include:

- Undertaking regional Pampas Grass field days.
- Training for field staff, bushcare volunteers and residents.
- Promote co-operative approaches to Pampas Grass control between Councils, private landowners and other government authorities.
- Media articles in local newspapers and community newsletters;
- Production of Pampas Grass alert brochures to be sent to private landholders; and
- Installation of signs, for example, "XXX Council is now targetting Pampas Grass" and eventually, for example, "XXX is a Pampas Free Suburb".

5.4 Links to other Strategies

This plan conforms to the Mission Statement for the **National Weeds Strategy** "...to reduce the detrimental impact of weeds on the sustainability of Australia's productive capacity and natural ecosystems", and to Objective 3.2: 'encourage the development of strategic plans for weed management at all levels'.

The plan also meets several 'Desired Outcomes' of the **NSW Weeds Strategy**:

- The development and implementation of programs to reduce environmental degradation and the loss of biodiversity through weed invasions.

- The implementation and monitoring of weed control programs on public and State-owned and Crown Land to ensure that objectives are achieved in an efficient and cost effective manner;
- An effective and efficient system for delivery of noxious weeds control and the enforcement of weeds legislation.

This plan falls within the Sydney and Hawkesbury Lower Nepean Catchment Management Authority (CMA) regions and assists in the implementation of the following Catchment Blueprints:

- **The Hawkesbury Lower Nepean Catchment Blueprint**, in particular:
 - Management Target 12: Weeds and pests:
By 2006 implement adequately funded and closely linked strategies and effective actions plans for all major and potential terrestrial and aquatic weed/pest species; and
 - Prioritised Management Actions for Biodiversity 6:
Resource and implement closely linked strategies and effective action plans developed on a catchment basis for all major aquatic and terrestrial weeds and pests using environmentally appropriate management practices, and develop contingency plans for potential invasive weeds and pests.
- **The Southern Sydney Catchment Blueprint**, in particular:
 - Management Target 14:
By 2012 the threats posed to aquatic and terrestrial ecosystems by pest species are measurably reduced; and,
 - Management Action 4:
Implement closely linked strategies and effective action plans, supported by government for all major aquatic and terrestrial weeds, pests and pathogens using environmentally appropriate management practices, and develop contingency plans for potential invasive weeds and pests.
- **The Sydney Harbour Catchment Blueprint**, in particular:
 - Management Action 33:
Develop and implement integrated pest/weed/pathogen management plans for the Board area (aquatic and terrestrial).

5.5 Barriers and Contingencies

More effective regional management of Pampas Grass will be achieved by overcoming the following barriers through the implementation of the respective Actions detailed in Section 6.0:

- Extent of infestations not recorded in many areas to facilitate planning and control programs (Actions 6.1 & 6.2)
- Inconsistency of effective weed management between land managers (Actions 6.3 & 6.4)
- Ease of spread of the weed and reinfestation (Action 6.5)
- Inaccessible areas – not all areas can be surveyed and mapped due to topographical barriers such as difficult terrain and water bodies (Action 6.6)
- Limited awareness of Pampas Grass and its impacts (Action 6.7)

6.0 ACTIONS and PERFORMANCE INDICATORS

ACTION PLAN FOR CONTROL:	Performance indicators	Who	Addresses which objectives
6.1 Survey to map and monitor locations of new and existing Pampas Grass infestations on council and other agency land in the Sydney region.	Infestations located throughout the region and maps produced by June 2007.	LCAs, DEC, DOL, Bushcare volunteers, RTA, RIC, DOH, SWC, DOD, Regional Weeds Committees	1. Determine and record the extent and location of Pampas Grass infestations in the Sydney Region.
6.2 Strategically undertake private property inspections of all known/suspected infestations.	No. of private properties inspected. Known infestations located and maps produced by June 2007.	LCAs, private landholders	1. Determine and record the extent and location of Pampas Grass infestations in the Sydney Region.
6.3 Strategically control, reduce and eradicate Pampas Grass infestations on Council and government authority land, with a coordinated approach, using best management practice techniques.	All known infestations on Council and government authority land controlled, reduced or eradicated by June 2008. A more co-operative approach to Pampas Grass control between Councils, private landowners and other government authorities can be demonstrated. Mapped infestations show reductions and eradications over time.	LCAs, DEC, DOL, Bushcare volunteers, RTA, RIC, DOH, SWC, DOD	2. Progressively reduce Pampas Grass infestations on public land and prevent the spread and establishment of new infestations.
6.4 Notify private landholders whose properties contain Pampas Grass of their obligations to eradicate the weed, provide technical advice and assistance, and enforce the Noxious Weeds Act if required.	No. of landholders who treat Pampas Grass Mapped infestations show reductions and eradications over time.	LCAs, private landholders	3. Strategically coordinate the control and eradication of Pampas Grass on private property.

6.5 Re-inspect treated areas on an annual basis.	Re-inspections undertaken on an annual basis and any regrowth treated and new seedlings removed.	LCAs, DEC, DOL, Bushcare volunteers, RTA, RIC, DOH, SWC, DOD	<p>1. Determine and record the extent and location of Pampas Grass infestations in the Sydney Region.</p> <p>2. Progressively reduce Pampas Grass infestations on public land and prevent the spread and establishment of new infestations.</p>
6.6 Undertake aerial mapping in inaccessible areas.	Aerial inspections undertaken over remote inaccessible areas and maps produced.	DEC, LCAs	1. Determine and record the extent and location of Pampas Grass infestations in the Sydney Region.
6.7 Implement new and expanded Pampas Grass awareness campaigns	<p>Displays and educational material related to Pampas Grass developed and shown at field days, Weed Buster Week activities etc.</p> <p>One training workshop held per annum in each region.</p> <p>One field day held per annum in each region.</p> <p>At least 2 media releases regarding Pampas Grass program per year in northern and southern Sydney</p> <p>No. of Pampas Grass alert brochures distributed.</p> <p>No. of Pampas Grass road signs installed (minimum 2 per council).</p>	LCAs, DEC Regional Weeds Committees	4. Increase the awareness of Pampas Grass and its impacts.

7.0 MONITOR and REVIEW PROCESS

Regular progress meetings will be held to report back on work in progress and work scheduled, to plan community events, and to discuss problems incurred. Minutes will be distributed to all participating councils and key stakeholders. Updates on the plan will be reviewed at each regional weeds committee meeting.

Participating organisations will also provide the detail required for the noxious weeds regional group project reports, highlighting progress towards the performance indicators. These annual report documents will indicate progress, plan reviews and further funding applications.

All known infestation sites will be monitored, and follow-up treatments undertaken where required, as part of the on-going implementation of the action plan. The effectiveness of the control techniques will also be monitored and modified as required.

Follow-up inspections and mapping will be undertaken annually to measure changes in the extent of Pampas Grass infestations and if there has been a reduction in the size and numbers of infestations.

8.0 BENEFITS

The implementation of this plan will address a serious threat to biodiversity in the region, and significantly reduce the wide environmental damage caused by Pampas Grass infestations on Council managed land, private property, and federal and state managed lands. Controlling Pampas will allow for the regeneration of native flora in creeklines, wetlands and bushland and increase habitat for native fauna, as well as improve the recreational and aesthetic values of open space areas.

The plan will also result in improve public relations and substantially increase community awareness of this noxious weed in the region

The plan will foster a more positive and cooperative approach to Pampas Grass management by key stakeholders on a regional basis

Eradication of the plant also has the potential to reduce the incidence of respiratory illnesses such as asthma and hayfever.

9.0 RESOURCES

Parsons, W.T. and Cuthbertson, E.G. (1992). **Noxious Weeds of Australia**. Melbourne: Inkata press.

Control of Noxious Weeds Handbook (1999) published by NSW Agriculture.