



**JANDAKOT AIRPORT
WEED MANAGEMENT PLAN**

**CONSERVATION MANAGEMENT PLAN
APPENDIX B**

Jandakot Airport Holdings Pty Ltd
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1 Introduction

All methods of weed control (chemical, physical, or biological) need to be considered for their application at Jandakot Airport. Ecological considerations place constraints on weed control because side-effects, such as those on native plants or habitat, may rule out the use of some techniques. There are also financial constraints on the amount of weed control that can be carried out.

Guidance for weed management at Jandakot Airport is provided by *Weeds on Department of Conservation and Land Management Policy Statement No. 14* (CALM 1986), and the *Environmental Weed Strategy for Western Australia* (Department of Conservation and Land Management, 1999). This plan is consistent with the Jandakot Airport Environment Strategy 2009.

In determining weed control JAH will consider the following matters:

- Recognition of weed potential (invasiveness, distribution and environmental impact)
- Maintaining areas that have vegetation in good condition as a priority
- Control of weeds that impact on significant species and threatened species and communities as a priority
- Opportunity to eradicate weed species whilst population size is low or has limited distribution.

It is at times important to discuss weed control with leaseholders and neighbours to enable a more coordinated effort of weed control to be implemented. The planting of non-local plant species within Jandakot Airport is discouraged and JAH promote the planting of local species in landscape areas consistent with the Jandakot Airport Landscape Design Guidelines.

Previous versions of this Weed Management Plan contained details of monitoring regimes and management actions directly related to rehabilitation requirements detailed in the Jandakot Airport Offset Plan (March 2010) associated with the rehabilitation of Precincts 7 and 8. As subsequent decisions have resulted in alternative offsets being approved (refer EPBC Referral 2009/4798), relevant details have been removed from this version of the Weed Management Plan.

2 Weed Species and Priority Targets for Control

An initial weed survey was undertaken (Geo & Hydro, 2010) to map species locations and densities in the conservation areas. A second survey (Ecoscape 2011) was undertaken to complete more thorough, grid point based weed mapping and to assess the bushland condition of the vegetation (Figures 1 and 2).

The priority rating of weed species observed during the 2010 and 2011 surveys were determined after examining:

- The ratings under the *Environmental Weed Strategy of Western Australia* (EWSWA) by the Department of Conservation and Land Management (CALM 1999)
- The ratings under the *Environmental Weed Census and Prioritisation* (EWCP) by the Department of Environment and Conservation (DEC 2008)
- Whether it was listed under the Department of Agriculture and Food Western Australia (DAFWA) (1976) *Agricultural and Related Resources Protection Act* (ARRPA)
- Whether it was listed as a *Weed of National Significance* (WONS).

Using the resulting information, species have been allocated a 'treatment priority' (see Table 1) based on the threat (and opportunity) posed by each species. Using this and other relevant information (Attachment A), the control of weeds is able to be undertaken more

efficiently and effectively by using species-specific methods of management such as herbicide selection, concentration, application timing, hand pulling and slashing.

2.1 Environmental Weed Strategy of Western Australia

The role of EWSWA is to highlight which weed species pose significant environmental risk in Western Australia. The EWSWA rating provides a basis for determining which weeds are most critical to control. The three characteristics used for determining the EWSWA rating are:

- *invasiveness* – ability to invade bushland in good to excellent condition
- *distribution* – wide current or potential distribution including consideration of known history of wide distribution elsewhere in the world
- *environment impacts* – ability to change the structure, composition and function of ecosystems, in particular to form a monoculture in a vegetation community.

EWSWA weed species were rated accordingly:

- *High* – have all three of the characteristics
- *Moderate* – have two of the characteristics
- *Mild* – have one of the characteristics
- *Low* – not deemed to have any of the characteristics.

Although the EWSWA was developed in 1999, the Department of Parks and Wildlife (DPAW) consider the strategy itself is still relevant but Appendix 3, the "List of Environmental Weed Species of Actual and Potential Significance in WA" is out dated. Some ratings having been revised and new weed species have since been identified. Also, the ratings are a general application across Western Australia, so they do not necessarily accurately reflect the specific invasiveness and threat status within the Swan Coastal Plain.

2.2 Environmental Weed Census and Prioritisation

In 2008, the DEC (now DPAW) published the *Environmental Weed Census and Prioritisation* (EWCP), which rates weeds species as a threat in Perth bushland conditions. A total of eight ratings are used in the EWCP, according to the risk each species poses to environmental assets in the region, based on invasiveness, ecological impact, current and potential distribution, and thus priority for management (DEC 2008):

- Very High
- High
- Further Assessment Required (FAR)/ High
- Moderate/ High
- Moderate
- Low/ Moderate
- Low
- Further Assessment required (FAR).

During 2008-2010, a series of workshops were held in each of the DPAW Regions to prioritize weed species according to their threat to the natural environment. DPAW staff and other land managers use the results of this process to identify priorities for weed control at a regional level.

2.3 Agricultural and Related Resources Protection Act 1976

The type of control for DAFWA ARRPA declared weed species are listed below:

- *P1* – Prohibits movement of plants or their seeds within the State. This prohibits the movement of contaminated machinery and produce including livestock and feed.

- *P2* – Eradicate infestation to destroy and prevent propagation each year until no plants remain. The infested area must be managed in such a way that prevents the spread of seed or plant parts on or in livestock, fodder, grain, vehicles and/or machinery.
- *P3* - Control infestation in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery. Treat to destroy and prevent seed set all plants.
- *P4* – Prevent the spread of infestation from the property on or in livestock, fodder, grain, vehicles and/or machinery. Treat to destroy and prevent seed set on all plants.

2.4 Weeds of National Significance

Weeds of National Significance (WONS) was jointly declared by the Minister for Forestry and Conservation, the Minister for Agriculture, Fisheries and Forestry and the Minister for The Environment in 1999 as part of the National Weeds Strategy. The four characteristics used for determining where the species was of national significance were:

- invasiveness
- impacts
- potential for spread
- socio-economic and environmental values.

Table 1. Weed species known to occur in Jandakot Airport Conservation Areas and allocated Treatment Priorities.

Taxonomic Name	Common Name	EWSWA	SRM EWCP	ARRPA	WONS	Incidence+ 2010	Incidence# 2011	Treatment Priority
<i>Anagallis arvensis var arvensis</i>	Pimpernel	Unrated	FAR			8.6%	20%q	Low – Treat opportunistically only.
<i>Arctotheca calendula</i>	Cape Weed	Moderate	Moderate			41.0%	30%q 0%g	Low - Disturbance Species – does not invade bushland.
<i>Asparagus asparagoides</i>	Bridal Creeper	High	Very High	P1	YES	6.4%	0%q 1%g	Very High (Treat as 1 st Priority)
<i>Asphodelus fistulosus</i>	Wild Onion	Mild	FAR			0.4%	0%q 2%g	Medium – Eradication possible if infestation is small.
<i>Avena barbata</i>	Bearded Oat	Moderate	Very High			15.8%	10%q 4%g	High
<i>Briza maxima</i>	Blowfly grass	Moderate	FAR			78.2%	70%q	Low
<i>Briza minor</i>	Shiver Grass	Moderate	FAR			0.8%		Low
<i>Bromus diandrus</i>	Great Brome	High	Very High			0.4%	0%q 0%g	High
<i>Conyza albida</i>	Fleabane	Low	Unknown			2.3%		Low – Treat opportunistically only.
<i>Cynodon dactylon</i>	Couch	Moderate	Very High			1.5%	0%q 0%g	Medium – Eradication possible if infestation is small.
<i>Disa bracteae</i>	South African Orchid	Moderate	Unknown			0.4%	0%q 0%g	Medium – Eradication possible if infestation is small.
<i>Echium plantagineum</i>	Paterson's Curse	Unrated	High	P1,P3,P4		2.6%	0%q 0%g	Very High (Treat as 1 st Priority)
<i>Ehrharta calycina</i>	Perennial Veldt Grass	High	FAR			79.7%	50%q 62%g	Medium
<i>Ehrharta longiflora</i>	Annual Veldt Grass	Moderate	FAR			15%	0%q 6%g	Medium
<i>Erodium botrys</i>	Storksbill	Low	FAR			4.5%		Low
<i>Euphorbia peplus</i>	Petty Spurge	Moderate	High			6.8%	0%q 5%g	Medium
<i>Euphorbia terracina</i>	Geraldton Carnation Weed	High	Very High			3.8%	0%q <1%g	High
<i>Freesia alba x leichtlinii</i>	Freesia	Unrated	Very High			0.8%	10%q 1%g	High - Eradication possible if infestation is small.
<i>Fumaria capreolata</i>	Climbing fumitory	Mild	Mod/High			0.8%	0%q 2%g	Medium – Eradication possible if infestation is small.
<i>Gladiolus caryophyllaceus</i>	Pink Gladiolus	Moderate	FAR/H			84.2%	80%q 89%q	Medium
<i>Helianthus sp.</i>	Sunflower	Unrated	Low			0.4%		Low
<i>Hordeum leporinum</i>	Barley Grass	Moderate	High			4.9%	0%q <1%g	Med – Treat opportunistically
<i>Hypochaeris glabra/radicata</i>	Flatweed	Moderate	High			77.4%	90%q	Low - Disturbance Species – only invades open ground within bushland
<i>Lactuca serriola</i>	Prickly Lettuce	Moderate	High			4.1%		Low
<i>Lagurus ovatus</i>	Hare tail	High	High			2.6%	0%q 0%g	High
<i>Leptospermum laevigatum</i>	Victorian Tea Tree	High	Very High				0%q 5%g	High
<i>Lolium perenne</i>	Perennial ryegrass	Low	Low			1.1%		Low
<i>Lupinus sp.</i>	Lupins	-	-			0.8%		Low
<i>Medicago polymorpha</i>	Medic	Mild	FAR			1.1%		Low
<i>Oxalis per-caprae</i>	Soursob	Mild	High			0.4%	0%q <1%g	Medium – Eradication possible if infestation is small.
<i>Pelargonium capitatum</i>	Rose Pelargonium	High	Mod/ High			5.6%	0%q 1%g	Medium/High
<i>Petrorhagia velutina/dubia</i>	Pink Velvet	Mild	Moderate			0.4%		Low
<i>Plantago sp.</i>	Plantain	Mild – Low	-			0.4%	0%q <1%g	Medium – Eradication possible if infestation is small.
<i>Poa annua</i>	Winter Grass	Mild	Low			0.8%		Low
<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed	Moderate.	Low			1.5%		Low
<i>Raphanus raphanistrum</i>	Wild radish	Mild	FAR			11.3%		Low
<i>Ricinus communis</i>	Castor Oil Plant	Medium	Unknown			-	0%q 0%g	Med – Treat opportunistically
<i>Romulea rosea</i>	Guildford Grass	High	FAR			2.6%	0%q 1%g	Medium
<i>Solanum nigrum</i>	Black Nightshade	Moderate	Moderate			1.9%		Low
<i>Sonchus asper</i>	Sow Thistle	Moderate	FAR			20.7%	1%q 0%g	Low
<i>Ursinia anthemoides</i>	Ursinia	Moderate	Moderate			66.5%	90%q	Low - Naturalised on Site – Treat as low priority.
<i>Verbascum virgatum</i>	Twiggy Mullein	Low	Unknown			0.4%		Low – Treat Opportunistically.
<i>Wahlenbergia capensis</i>	Cape Bluebell	Moderate	FAR			0.8%		Low - Disturbance Species – does not invade bushland.
<i>Watsonia sp.(species ID required)</i>	Watsonia	Low-High	Low – V.High			0.4%	0%q 2%g	Medium
<i>Yucca aloifolia</i>	Yucca	Low	Low			0.2%		Low – Treat Opportunistically.
<i>Zantedeschia aethiopica</i>	Arum Lily	High	Very High	P1,P4		0.8%	0%q 2%g	Very High (Treat as 1 st Priority)

+ : Incidence as presence in the proportion of locations surveyed 2010 (total n= 270).
#: Incidence as presence in the proportion of Quadrats (x%q) or Grid Points (x%g).
Spatial data/GPS coordinates of locations where weed species have been is held by the JAH Environment Manager.
This table is to be updated by JAH Environment Manager as required (e.g. following identification of a new weed species, or following a weed monitoring/survey event).

3 Weed Control

Weed control is an ongoing management requirement. The potential for weeds to regrow after weed removal strategies have been implemented is particularly high within urban areas. This Weed Management Plan assists with prioritising responses to the control of weeds based on the threat posed by each population. It also addresses:

- Documentation of weed control actions
- Establishing performance criteria
- Determining a monitoring regime
- Contingencies for where monitoring indicates performance criteria are not being met.

The recommended approach is therefore to control weeds as required on an on-going basis by spraying and/or removal. The eventual eradication of certain weed species is possible if a long term approach is taken.

A target of a maximum of 20% weed cover is considered appropriate considering the location of the sites (surrounded by urban development and infrastructure). With these factors taken into consideration it will be impossible to eliminate weeds altogether, and therefore a more realistic goal is to manage them in a way that they are not going to impede the establishment and growth of native species.

This target is based on the most current, available scientific information and does not pertain to any specific legislative requirement. It is a target which should be reached in order to ensure the optimum outcome is received for the property, from a visual amenity as well as an ecological perspective.

3.1 Weed Control Program

The Weed Control Program (Attachment A) identifies the weed species (and their priorities) that are to be targeted annually.

Areas of 'Degraded' bushland condition (i.e. >20% weed cover) will always be targeted for weed control as a priority, and the weed species within treated according to their treatment priority as detailed in Attachment A. Once 'Degraded' areas have been treated, the remaining resources will be directed at the high priority species elsewhere in the Conservation Precincts, followed by Medium and then Low priorities.

The Weed Control Program is a 'live' document and as such will require regular review and amendment in order to meet practical requirements on site as changing circumstances demand (e.g. following identification of a new weed species, following a weed monitoring/survey event, after formal changes in weed risk ratings etc.).

Weed contractors (or JAH staff) implementing the weed control program will utilise the following to ensure the program is targeted and effective:

- Existing weed maps such as those produced within the most recent five-yearly weed and bushland condition survey report
- Local knowledge (either first hand or sourced from others such as the JAH EM) as to the location of target weed species not previously mapped
- Systematic search in areas/habitat where target species are likely to occur (e.g. Arum lily is likely to be present low-lying melaleuca damplands).

4 Management and recording of Weed Control Activities

The JAH Environment Manager is responsible for maintenance of a Weed Register, where records relating to weed control activities are recorded. Maintenance of such information is essential in order to be able to assess the effectiveness of weed control measures that have been employed.

All personnel (whether site staff or contractors) undertaking weed control activities within the Jandakot Airport Conservation Precincts are required to complete Weed Control Record Sheets (see Attachment B) or similar documented evidence and submit to the JAH Environment Manager.

5 Monitoring Regimes and Survey Methods

5.1 Weed and Bushland Condition Surveys

A detailed weed mapping and bushland condition survey will be undertaken every five years by experienced botanical consultants. These surveys will essentially replicate that undertaken by Ecoscape in 2011, allowing for changes in distribution and abundance across the Conservation Precincts to be assessed. Ultimately, these surveys will determine the effectiveness of the existing Weed Control Program, and provide results and recommendations for ongoing weed management.

Bushland Condition will be assessed along with the five-yearly grid point weed survey. Assessment of Bushland Condition is another method of determining whether weed management regimes have been effective. As well as confirming the abundance of weeds within conservation precincts, it provides assurances that habitats required by significant fauna are being adequately maintained.

A Bushland Condition Scale has been modified by Ecoscape (2011) to ensure areas that exceed the 20% weed cover trigger are readily identified (see Table 2).

Table 2. Modified Bushland Condition Scale for Jandakot Airport.

Keighery 1994 Condition Scale	Kaesehagen 1995 Condition Scale	Modified Keighery Condition Scale for Jandakot Airport
Pristine No obvious signs of disturbance	Very Good – Excellent <ul style="list-style-type: none"> 80 – 100% Native Flora composition Vegetation structure intact or nearly so Cover/abundance of weeds less than 5% Minor signs of disturbance 	Pristine No obvious signs of disturbance 100% Native Flora composition No cover/abundance of weeds
Excellent Vegetation structure intact, disturbance only affecting individual species and weeds are non-aggressive species		Excellent Vegetation structure intact, disturbance only affecting individual species and weeds are non-aggressive species 80 – 100% Native Flora composition Cover/abundance of weeds less than 5%
Very Good Vegetation structure altered, obvious signs of disturbance e.g: repeated fires, aggressive weeds, dieback, logging and grazing.	Fair – Good <ul style="list-style-type: none"> 50 – 80% Native Flora composition Vegetation structure modified or nearly so Cover/abundance of weeds 5 – 20% Disturbance influence moderate 	Very Good Vegetation structure altered, obvious signs of disturbance eg: repeated fires, aggressive weeds, dieback, logging and grazing. 50 – 80% Native Flora composition Cover/abundance of weeds 5 – 20%
Good Vegetation structure altered, obvious signs of disturbance. Retains basic vegetation structure or ability to regenerate it. The presence of very aggressive weeds at high density, partial clearing, dieback, logging and grazing.		Good Vegetation structure altered, obvious signs of disturbance. Retains basic vegetation structure or ability to regenerate it. The presence of very aggressive weeds at high density, partial clearing, dieback, logging and grazing. 50 – 80% Native Flora composition Cover/abundance of weeds 5 – 20%
Degraded Basic vegetation structure severely impacted by disturbance. Requires intensive management. The presence of very aggressive weeds at high density, partial clearing, dieback, logging and grazing.	Poor <ul style="list-style-type: none"> 20 – 50% Native Flora composition Vegetation structure completely modified Cover/abundance of weeds 20 – 60% Disturbance incidence high 	Degraded Basic vegetation structure severely impacted by disturbance. Requires intensive management. The presence of very aggressive weeds at high density, partial clearing, dieback, logging and grazing. 20 – 50% Native Flora composition Cover/abundance of weeds 20 – 60%
Completely Degraded Vegetation structure is no longer intact and the area is completely or almost completely without native flora. 'Parkland Cleared'.	Very Poor <ul style="list-style-type: none"> 0 – 20% Native Flora composition Vegetation structure disappeared Cover/abundance of weeds 60 – 100% Disturbance incidence very high 	Completely Degraded Vegetation structure is no longer intact and the area is completely or almost completely without native flora. 'Parkland Cleared'. Cover/abundance of weeds 60 – 100% 0 – 20% Native Flora composition

5.2 Weed Monitoring Quadrats

Weed monitoring quadrats were established in the Jandakot Airport Conservation Precincts in 2011 so that the success of the weed control methods can be easily assessed between the more detailed five-yearly weed and bushland condition surveys (Figure 3). The timing of monitoring is seasonally dependent and will be determined by the bushland weed experts engaged to undertake the task. Photo monitoring of the weed control quadrats will also occur on the same frequency, providing additional information as to the general condition of the sites containing the quadrats.

The quadrats will be initially monitored annually. The future ongoing frequency of weed quadrat monitoring will be guided by the results and recommendations reported within the annual weed quadrat monitoring reports by bushland weed experts.

5.3 Informal Weed Inspections

The exact timing for seasonal weed control for particular species can vary from year to year and is dependent on factors such as temperature and rainfall. The JAH Environment Manager will undertake regular informal inspections of the weed populations within Conservation Precincts to ensure that:

- Weed control contractors (or JAH staff) are engaged to undertake work at the appropriate time for the species being targeted
- The priority areas, as identified in previous weed surveys, contain the target weed species
- Any new species (or an existing species in a new location) not identified in previous weed surveys can be assessed and included in the annual weed control program if warranted.

These weed inspections are informal and are often undertaken opportunistically during general site inspections and whilst undertaking other works within Conservation Precincts. Such inspections serve only to assist in the preliminary planning requirements of the annual weed control programme, and as such there is no requirement to document these inspections.

6 *Phytophthora cinnamomi* Dieback Control

A Dieback Management Plan has been prepared for Jandakot Airport in accordance with the airport's Environment Strategy and forms a component (i.e. Appendix C) of the Jandakot Airport Conservation Management Plan. For this reason issues associated with dieback and its management are not covered in this document

7 Rehabilitation and Revegetation Guidelines

The need to undertake rehabilitation or revegetation within the Conservation Precincts of Jandakot Airport can be triggered by the impact of weeds as well as other factors such as bushfires and dieback impacts.

To date, no areas within the Jandakot Airport Conservation Precincts have been identified as requiring rehabilitation or revegetation. However, in the event that revegetation is required to be undertaken at some future point, the Rehabilitation and Revegetation Guidelines (Conservation Management Plan Appendix D) have been developed to assist in planning. As the rehabilitation and revegetation requirements of a specific area will be determined by many factors, including the vegetation community in which works are to occur and the cause of the vegetation condition loss (e.g. weeds, dieback, bushfire etc.), it is not possible to develop a site-specific revegetation plan in advance.

8 Thresholds for Triggering Further Management Intervention

The following goals are set for outcomes of weed control activities within the Conservation Precincts at Jandakot Airport:

- A target of no more than 20% weed cover is considered appropriate considering the location of the precincts (surrounded by urban development and infrastructure). This equates to a maintaining a bushland condition value of 'Good' or above (see Figure 2).
- Stable or declining species richness/weed diversity.

These standards are based on the most current, available scientific information and do not pertain to any specific legislative requirement.

If monitoring results indicate that weed cover is reaching densities above 20%, or species richness (i.e. number of weeds species at a particular location) has increased significantly, weed spraying (or other relevant weed control method) will be undertaken in the weed control window following the monitoring event (noting that the period in which weed control is undertaken is dependent on both the species and the control method employed).

9 Reporting Requirements

Reporting against actions described in this plan will be included within the Jandakot Airport Annual Environment Report (AER). In line with the *Airports (Environmental Protection) Regulations 1996*, the AER will be submitted to the Department of Infrastructure and Regional Development (DIRD) by 28th October each year. A copy of the report will be provided to the Department of the Environment (DOE) by 28th October each year.

10 Review and Amendment of Weed Management Plan

As with the overarching Conservation Management Plan, the Weed Management Plan is a 'live' document and as such will require regular review and amendment in order to meet practical requirements on site as changing circumstances demand.

Where amendments are unlikely to have a material impact on matters protected under the EPBC Act or the intent of EPBC 2009/4796 conditions of approval, copies of the amended plan, including appropriate rationale and justification for each amendment, will be provided to DOE and DIRD. If DOE deem it necessary, the amended plan will be elevated for the Minister's approval.

Where amendments to the Weed Management Plan impact matters protected under the EPBC Act or are deemed not to be in accordance with that approved by the Minister (ref Conditions 6 and 12 of EPBC 2009/4796 approval), the amended Plan will be submitted to DOE for review and approval by the Minister.

The Weed Management Plan will undergo a comprehensive review every 5 years. This is designed to coincide with the revision of the Jandakot Airport Master Plan and Environment Strategy. The next comprehensive review will be undertaken in 2018 prior to the completion of Master Plan 2019.

11 Summary of Actions

The Table below contains a list of summary actions relating to the Jandakot Airport Weed Management Plan.

Table 3. Weed Management Plan Summary of Actions.			
Action		Responsibility	Timing
Weed Control			
WMP1	Undertake targeted weed control in line with the Weed Control Program Attachment A.	JAH EM	Annually
WMP2	Maintain a Register documenting details of weed control undertaken.	JAH	Annually
Monitoring			
WMP3	Undertake Weed and Bushland Condition Survey and update mapping every 5 years (refer also CMP1).	JAH EM	End of 2016
WMP4	Undertake Weed Quadrat Monitoring.	JAH EM	Spring Annually
Reporting Requirements			
WMP5	Report against actions of the WMP within the Jandakot Airport Annual Environment Report (AER) and provide copies to DIT and DOE.	JAH EM	28 October Annually
Review and Amendment of WMP			
WMP6	Review and amend the Weed Control Program (Attachment A) following completion of the 2017 weed and bushland condition survey and mapping.	JAH EM	2017 or earlier if required (based on monitoring results, identification of new species, formal changes in weed risk status, opportunistic observations etc.)
WMP7	Update and revise the existing Environmental Weed Management Plan.	JAH EM	2018

12 References

Department of Conservation and Land Management (1986). Policy Statement No. 14, Weeds on CALM Land.

Department of Environment and Conservation (1999). Environmental Weed Strategy for Western Australia.

Ecoscape (2011). *Jandakot Airport Weed Assessment and Bushland Condition*. Prepared for Jandakot Airport Holdings Pty Ltd.

Geo & Hydro (2010). *A Weed Survey of the Jandakot Airport Conservation Areas*. Prepared for Jandakot Airport Holdings Pty Ltd.

13 Glossary.

AER	Annual Environment Report
ARRPA	Agricultural and Related Resources Protection Act
CALM	Department of Conservation and Land Management (now known as DEC)
CMP	Conservation Management Plan
DEC	Department of Environment and Conservation. On 1 July 2013 the Department of Environment and Conservation will be separated into two agencies, the Department of Parks and Wildlife and the Department of Environment Regulation.
DAFWA	Department of Agriculture and Food Western Australia
DEWHA	Department of Environment, Water, Heritage and the Arts (now DOE)
DIRD	Department of Infrastructure and Regional Development (previously DIT)
DIT	Department of Infrastructure and Transport (now DIRD)
DOE	Department of the Environment (previously DEWHA and DSEWPaC)
DPAW	Department of Parks and Wildlife (formerly DEC).
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (Previously DEWHA and now DOE)
EPBC	Environmental Protection and Biodiversity Conservation Act 1999
EWCP	Environmental Weed Census and Prioritisation
EWSWA	Environmental Weed Strategy of Western Australia
JAH	Jandakot Airport Holdings
JAH EM	Jandakot Airport Holdings Environment Manager
WONS	Weeds of National Significance
WMP	Weed Management Plan

FIGURE 1. WEED GRID POINT LOCATIONS 2011

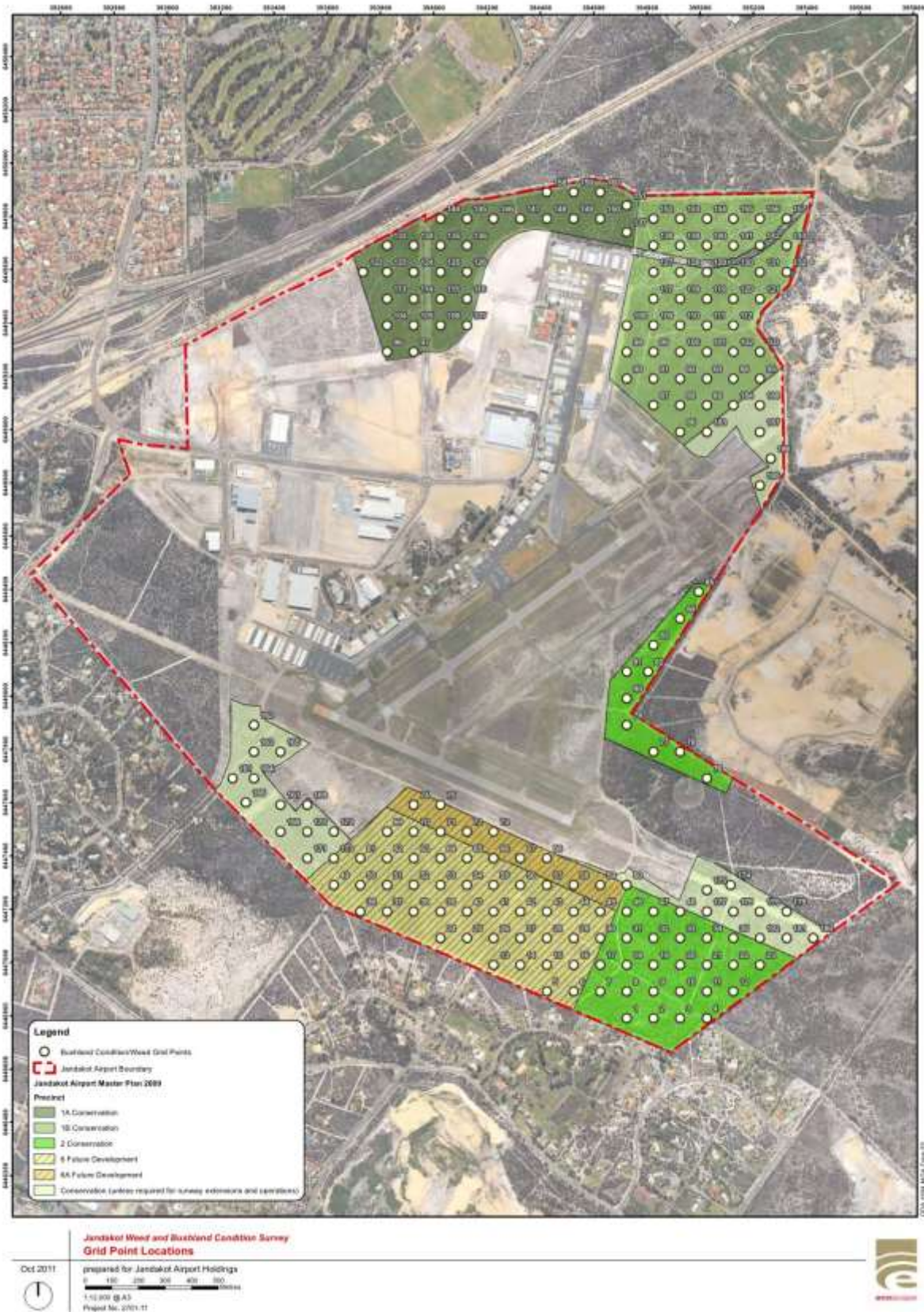
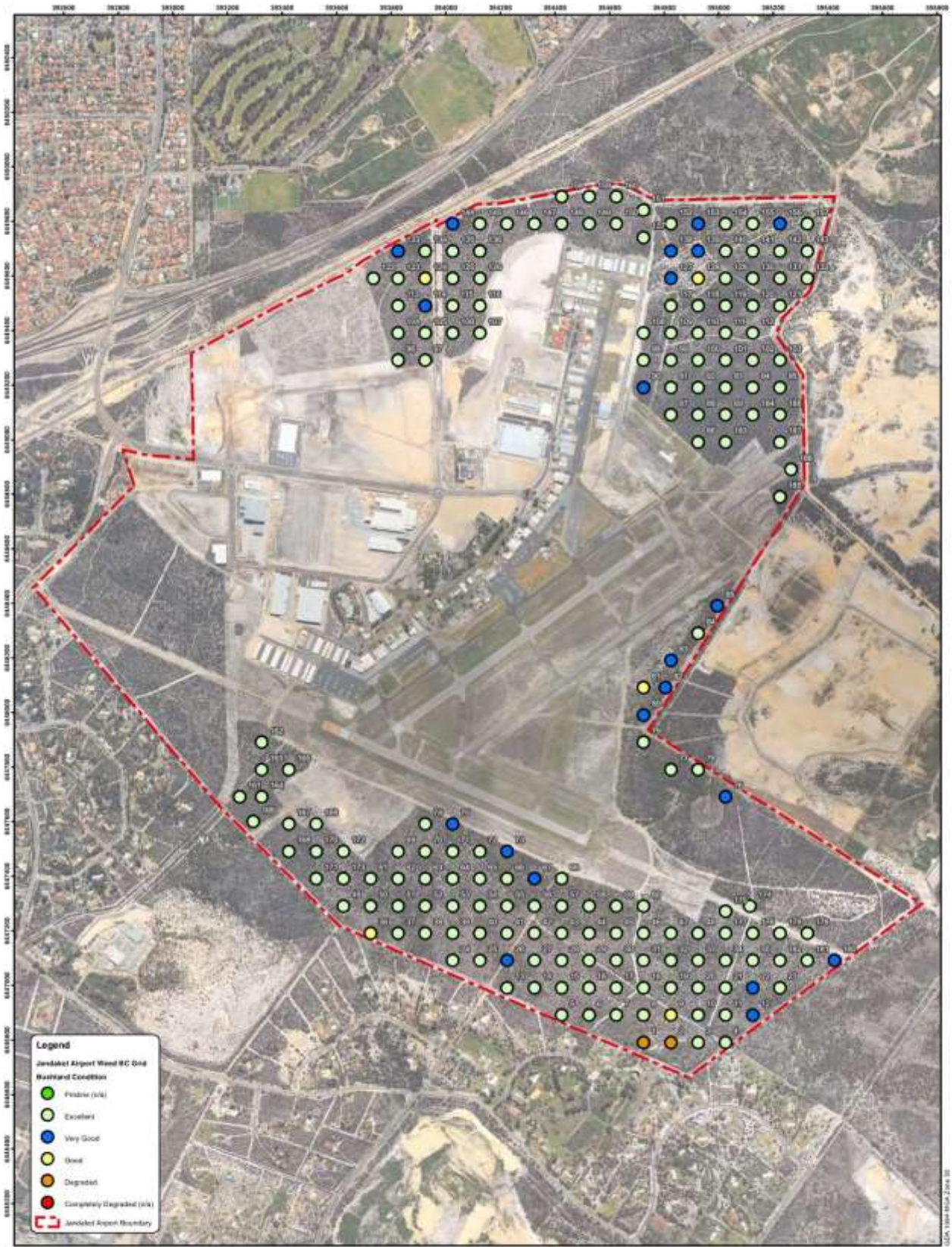


FIGURE 2. VEGETATION CONDITION MAPPING 2011



Map 3

Jandakot Weed and Bushland Condition Survey
Bushland Condition

Sep 2011

prepared for Jandakot Airport Holdings



0 100 200 300 400 500
1:11,398 GJ AJ
Project No. 2731-01



FIGURE 3. WEED MONITORING QUADRAT LOCATIONS 2011



Attachment A. Weed Control Program.

Taxonomic Name	Common Name	Treatment Priority	Suggested Method of Management & Control	Timing
<i>Anagallis arvensis var arvensis</i>	Pimpernel	Low – Treat opportunistically only.		
<i>Arctotheca calendula</i>	Cape Weed	Low - Disturbance Species – does not invade bushland.	Contain/Control.	
<i>Asparagus asparagoides</i>	Bridal Creeper	Very High (Treat as 1 st Priority)	Spray glyphosate 1% + pulse or metsulfuron methyl 0.04 g/10L + Pulse. For larger areas of infestation, consider Biological Control methods (rust fungus and/or leaf hopper). Refer to: http://www.weeds.gov.au/publications/guidelines/wons/pubs/a-asparagoides.pdf http://www.agric.wa.gov.au/obitwr/imported_assets/content/pw/weed/decp/bridal_creeper.pdf	Aug - Sep
<i>Asphodelus fistulosus</i>	Wild Onion	Medium – Eradication possible if infestation is small.	Hand pull small infestations. Metsulfuron-methyl 0.1g/10L + 100 mL spray oil when flowering	Hand Pull any time of year. Spray during flowering (Jun-Oct) prior to seed set.
<i>Avena barbata</i>	Bearded Oat	High	Prevent seed set. Spray at 3-5 leaf stage with Fusilade 10ml/10l (500 ml/ha) + wetting agent; repeat over following 2 years.	During growing season (Winter-Spring)
<i>Briza maxima</i>	Blowfly grass	Low	Prevent seed set. Spray at 3-5 leaf stage with Fusilade 10ml/10l (500 ml/ha) + wetting agent; repeat over following 2 years.	During growing season (Winter-Spring)
<i>Briza minor</i>	Shiver Grass	Low		
<i>Bromus diandrus</i>	Great Brome	High	Prevent seed set. Spray at 3-5 leaf stage with Fusilade 10ml/10l (500 ml/ha) + wetting agent; repeat the following year.	During growing season (Winter-Spring)
<i>Conyza albida</i>	Fleabane	Low – Treat opportunistically only.		
<i>Cynodon dactylon</i>	Couch	Medium – Eradication possible if infestation is small.		
<i>Disa bracteae</i>	South African Orchid	Medium – Eradication possible if infestation is small.		
<i>Echium plantagineum</i>	Paterson's Curse	Very High (Treat as 1 st Priority)	Containment. To eradicate Paterson's curse the weed must be stopped from seeding. Small areas can be grubbed, mowed or cultivated until the plants are killed. Chlorsulfuron or metsulfuron methyl at 0.02 g/litre (1g/50L) is effective when spot spraying. Spraying can start about three weeks after germination. Refer to: http://agspsrv95.agric.wa.gov.au/dps/version02/01_plantview.asp?page=6&contentID=48&	Hand pull prior to seed set in December- January. Spot spray in late Autumn with 0.5g/10L chlorsulfuron + wetting agent.
<i>Ehrharta calycina</i>	Perennial Veldt Grass	Medium		
<i>Ehrharta longiflora</i>	Annual Veldt Grass	Medium		
<i>Erodium botrys</i>	Storksbill	Low		
<i>Euphorbia peplus</i>	Petty Spurge	Medium		
<i>Euphorbia terracina</i>	Geraldton Carnation Weed	High	Hand pull or spot spray with metsulfuron methyl 0.1g/15L. Hand pulling can take place at any time. Should aim for flowering period before seed set in late spring. Take care when handling the plants the sap can cause skin irritation and blindness (temporary) if rubbed in eye.	Spray prior to seed set (Sep-Nov). Hand pulling any time.
<i>Freesia alba x leichtlinii</i>	Freesia	High - Eradication possible if infestation is small.	Containment/Asset Based Protection. Hand remove very small populations. Sift Soil to find all corms. Some control spraying metsulfuron methyl 0.2g/15L + glyphosate 1%.	July-Oct (Just on flowering at corm exhaustion).
<i>Fumaria capreolata</i>	Climbing fumitory	Medium – Eradication possible if infestation is small.		
<i>Gladiolus caryophyllaceus</i>	Pink Gladiolus	Medium		
<i>Helianthus sp.</i>	Sunflower	Low		
<i>Hordeum leporinum</i>	Barley Grass	Med – Treat opportunistically		
<i>Hypochaeris glabra/radicata</i>	Flatweed	Low - Disturbance Species – only invades open ground within bushland		
<i>Lactuca serriola</i>	Prickly Lettuce	Low		
<i>Lagurus ovatus</i>	Hare tail	High	Containment. Prevent seed set. Spray with 10ml/10L Fusilade + spray oil at 2-8 leaf stage before stem elongation.	Spray prior to seed set during the growing season (Winter – Spring).
<i>Leptospermum laevigatum</i>	Victorian Tea Tree	High	Hand pull seedlings. Fell mature plants. Where resprouting has been observed, apply 250 ml Access® in 15 L of diesel to bottom 50 cm of trunk (basal bark).	Can be targeted any time of year, preferably July to October.
<i>Lolium perenne</i>	Perennial ryegrass	Low		
<i>Lupinus sp.</i>	Lupins	Low		
<i>Medicago polymorpha</i>	Medic	Low		
<i>Oxalis per-caprae</i>	Soursob	Medium – Eradication possible if infestation is small.		
<i>Pelargonium capitatum</i>	Rose Pelargonium	Medium/High	Hand pull isolated plants taking care to remove entire stem – will reshoot from below	Can be targeted any time of year, preferable before seed set

Taxonomic Name	Common Name	Treatment Priority	Suggested Method of Management & Control	Timing
<i>Petrorhagia velutina/dubia</i>	Pink Velvet	Low	ground level. Spot spray metsulfuron methyl 8g/ha + Pulse. Easy target after fire.	(flowers Aug – Dec).
<i>Plantago sp.</i>	Plantain	Medium – Eradication possible if infestation is small.		
<i>Poa annua</i>	Winter Grass	Low		
<i>Pseudognaphalium luteoalbum</i>	Jersey Cudweed	Low		
<i>Raphanus raphanistrum</i>	Wild radish	Low		
<i>Ricinus communis</i>	Castor Oil Plant	Med – Treat opportunistically	Not located during survey but observed on site. Containment. Hand pull seedlings; cut or scrape and paint – 50% glyphosate; basa bark – triclopyr or garlon (spr-sum).	
<i>Romulea rosea</i>	Guildford Grass	Medium		
<i>Solanum nigrum</i>	Black Nightshade	Low		
<i>Sonchus asper</i>	Sow Thistle	Low		
<i>Ursinia anthemoides</i>	Ursinia	Low - Naturalised on Site – Treat as low priority.		
<i>Verbascum virgatum</i>	Twiggy Mullein	Low – Treat Opportunistically.		
<i>Wahlenbergia capensis</i>	Cape Bluebell	Low - Disturbance Species – does not invade bushland.		
<i>Watsonia sp.(species ID required)</i>	Watsonia	Medium		
<i>Yucca aloifolia</i>	Yucca	Low – Treat Opportunistically.		
<i>Zantedeschia aethiopica</i>	Arum Lily	Very High (Treat as 1 st Priority)	Spot Spray with Chlorsulfuron, Metsulfuron, 2,4-D amine or Paraquat. Refer: http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/weed/decp/arum_lily.pdf	July – Sep (during early flowering stages before seed is set.)

This table is to be updated by JAH Environment Manager as required (e.g. following identification of a new weed species, or following a weed monitoring/survey event).

- Weeds in areas of 'Degraded' bushland condition (i.e. >20% weed cover) will always be targeted for weed control as a priority.
- Species identified as Very High and High Priority (RED) will, if present, be subjected to weed control activity on an annual basis.
- Species identified as Medium Priority (ORANGE) will, if present, be treated only if there are sufficient resources available and/or they can be treated opportunistically whilst undertaking weed control of High Priority species.
- Species identified as Low Priority (GREEN) are unlikely to be treated unless additional resources become available and all other priorities (Medium – Very High) have been addressed.
- Suggested methods of Management & Control have only been completed for Very High/High priority species. Reference should also be made to Florabase prior to treating weeds. Completion for Low- Medium priority species will be addressed at a future date, or at such time the information is required by weed practitioners undertaking weed control works. However, it is anticipated that weed control practitioners will be suitably experienced and have access to the most up-to-date resources in order to control weed species appropriately and effectively.

Attachment B – Weed Control Record Sheet Page 1 of 2

This form is to be completed by for all weed control activities undertaken in the Conservation Precincts of Jandakot Airport. Completed forms are to be submitted to the Environment Manager. The Environment Manger will ensure all records are entered on the Weed Management Register.

1. PROPERTY/AREA.....DATE.....

2. EQUIPMENT USED

Basic Unit	Nozzle Type	Pressure KPa	Discharge Rate litres/min	Speed km/hr

3. QUANTITIES ADDED TO TANK

Carrier Fluid		Herbicide		Surfactant	
Type	Vol.(litres)	Type	Quantity litres,kg	Type	Quantity litres

4. SECTIONS TREATED

Description and GPS Location	Area (ha/m ²)	Chemical/Rate (If chemicals not used, specify control method)	Target Weed

5. WEATHER

Overcast.....Fine.....Temperature.....°C Humidity: Low Medium High

Wind: Direction N S E W Speed km/hr

First Rain After Spraying: Date.....Time.....(24hr clock)

Quantity: Heavy Medium Light up to 24 hours

6. REMARKS AND FACTORS AFFECTING PERFORMANCE

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Please use map to indicate (as either a point or polygon) the area treated for weeds as detailed on page 1 of this form.