



## REGIONAL WEED MANAGEMENT PLAN

### 1.1 PLAN TITLE: Sydney Tree and Shrub Weed Management Plan

**1.2 PLAN PROPONENTS:** Sydney North Regional Weeds Committee; Sydney Central Regional Weeds Committee; South West Sydney Regional Weeds Committee; Sydney West ~ Blue Mountains Regional Weeds Committee

Address: PO Box 61 DOUBLE BAY NSW 1360

Contact person: Jeff Hill

Telephone number: 9391 7980

Email address: jeff.hill@woollahra.nsw.gov.au

Signature: ..... Date: .....

### 1.3 NAME OF PLANTS

WONS: Indicated with \*\*\*

Scientific Name	Common Name
<i>Acacia saligna</i>	Golden Wreath Wattle
<i>Acer negundo</i>	Box Elder
<i>Ailanthus altissima</i>	Tree of Heaven
<i>Celtis sinensis</i>	Chinese Celtis/Chinese Hackberry
<i>Celtis australis</i>	European Hackberry
<i>Cestrum parqui</i>	Green Cestrum
<i>Chrysanthemoides monilifera</i> ssp. <i>rotundata</i>	Bitou Bush
<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>	Boneseed
<i>Cinnamomum camphora</i>	Camphor Laurel
<i>Cotoneaster glaucophyllus</i>	Cotoneaster
<i>Cytisus scoparius</i>	Broom (Scotch)
<i>Duranta erecta</i>	Duranta
<i>Erythrina crista-galli</i>	Cockspur Coral Tree
<i>Erythrina x sykesii</i>	Coral Tree
<i>Fraxinus griffithii</i>	Himalayan Evergreen Ash
<i>Genista monspessulana</i>	Cape Broom
<i>Genista linifolia</i>	Flax Leaf Broom
<i>Gleditsia triacanthos</i>	Honey Locust
<i>Lagunaria patersoniana</i>	Norfolk Island Hibiscus
<i>Lantana camara</i> ***	Lantana ***
<i>Ligustrum lucidum</i>	Privet - Large leaved
<i>Ligustrum sinense</i>	Privet - small leaved
<i>Lycium ferocissimum</i>	African boxthorn
<i>Ochna serrulata</i>	Ochna
<i>Olea europaea</i> ssp. <i>cuspidata</i>	African Olive
<i>Phoenix dactylifera</i>	Date Palm
<i>Pinus patula</i>	Mexican Weeping Pine
<i>Pinus radiata</i>	Monterey Pine
<i>Polygala virgata</i>	Purple Broom
<i>Raphiolepis indica</i>	Indian Hawthorn
<i>Ricinus communis</i>	Castor Oil Plant
<i>Salix cinerea</i> ***	Willow (Pussy) ***
<i>Salix fragilis</i> ***	Willow (Crack) ***
<i>Salix nigra</i> ***	Willow (Black) ***
<i>Sapium sebiferum</i>	Chinese Tallow
<i>Schefflera actinophylla</i>	Umbrella Tree
<i>Senna pendula</i>	Cassia
<i>Senna septemtrionalis</i> (prev <i>S. floribunda</i> )	Winter Senna
<i>Schinus terebinthifolius</i>	Broadleaf/Brazilian Pepper
<i>Tecoma stans</i>	Yellow Bells
<i>Toxicodendron succedaneum</i>	Rhus
<i>Ulex europaeus</i> ***	Gorse ***
<i>Ulmus parvifolia</i>	Chinese Elm

#### 1.4 PLAN PERIOD (not to exceed five years)

Starting date: **July 2010**

Completion date: **June 2015**

#### 1.5 AREA OF OPERATION

This plan extends over the geographical area represented by the four regional weeds committees in the Sydney region.

#### 1.6 AIM

To reduce the impact of tree and shrub weeds on the biodiversity of the Sydney region and to protect native vegetation from future tree and shrub weed threat.

#### 1.7 OBJECTIVES

1. Determine the location and extent of new and existing tree and shrub weed infestations by January 2011.
2. Identify where tree and shrub weeds are having the greatest impact on biodiversity and prioritise areas of works by July 2011, to ensure management where it will deliver the greatest benefit.
3. Prevent the establishment, eradicate where possible and prevent the spread of **emerging** tree and shrub weeds.
4. Reduce the impact of **widespread** tree and shrub weeds on biodiversity and assets.
5. Pursue the declaration of tree and shrub weeds that are or are likely to impact on biodiversity, if needed for effective management.
6. Undertake whole of community, education, awareness and training, to encourage best practice control of tree and shrub weeds on remnant vegetation
7. Ensure a continued strategic and adaptive focus to control of tree and shrub weeds through ongoing surveys, monitoring and evaluation.

## 2.0 STAKEHOLDERS

- Councils, state and federal government agencies managing public land and in particular high conservation areas. Land as represented on the four Regional Weeds Committees in the Sydney region
- Natural environmental conservation organisations
- Land holders protecting remnant natural vegetation, in particular those in high conservation areas, and adjacent to public land remnants.
- Private landholders in the vicinity of priority control zones.
- Wholesale & retail nurseries, including chain stores;
- Public and private gardeners and garden clubs;
- Landscaping organisations;
- Australian Association of Bush Regenerators;
- Catchment Management Authorities

### 3.0 BACKGROUND and JUSTIFICATION

#### 3.1 DESCRIPTION OF THE PROBLEM

Tree and shrub weeds are proving to have serious impacts on the biodiversity and natural environment of the Sydney region. This plan has been developed to co-ordinate a regional, strategic approach to managing tree and shrub weeds in the Sydney region.

Tree and shrub weeds included in this plan have been determined by representatives of the Sydney Weeds Committees and are those considered to be of greatest concern. For example; Willows, Gorse and Tree of Heaven are problematic in Sydney's greater west; African Olive continues to have a particularly strong hold in western and south western Sydney, and Chinese Celtis is emerging as a problem in Sydney central and Sydney north.



Gorse infestation, photo: Sandy Leighton

This plan supersedes the following Sydney regional plans;

- Sydney-Wide Bitou Bush and Boneseed Regional Management Plan 2004-09 (until the new discrete plan for Bitou and Boneseed is finalised with WONS co-ordinator)
- Sydney-Regional Gorse, Scotch Broom and Cape Broom Management Plan 2004-09
- Sydney-wide Green Cestrum Regional Management Plan 2006-11
- Sydney-Regional Privet Management Plan 2005-10
- Willow Management Plan for the Sydney Region 2008-13

Tree and shrub weeds pose a serious risk to the biodiversity of the Sydney region for several reasons including:

- displacement of indigenous tree and shrub species, frequently forming impenetrable thickets and monocultures beneath which little else will grow. Typical examples are privet in the Sydney north, central and south areas; and the emerging African Olive monocultures of Sydney south and west.
- domination of the banks of streams and rivers, tree and shrub weed infestations poses enormous problems to riparian areas. They can slow water movement, encourage sedimentation, reduce aeration and variability in water temperatures and alter the shape of stream beds which can lead to increased flooding and erosion problems<sup>(4)</sup>, e.g. Willows, Honey Locust. Healthy riparian zones are vital for creek / river bank and bed stability; protection of water quality; providing shade and shelter for fish and other aquatic fauna.
- changing the nature of fuel load and altering fire behaviour to endanger sclerophyll communities. Privets particularly, are known for this.

Threatened species and endangered ecological communities are at threat from tree and shrub weed invasions. For example, Privet is threatening *Persoonia mollis* habitat and the Blue Gum High Forest in the Sydney north region while African Olive is seriously threatening the endangered Cumberland Plain Woodland of western Sydney.

The collaboration between the (former) departments of Environment and Climate Change (DECCW) and Primary Industries, catchment management authorities and local practitioners

which investigated the impact of high priority widespread weeds on biodiversity<sup>1</sup> has provided Sydney Weeds Committees with accurate information on which to determine priority areas for management in the Sydney Metropolitan and Hawkesbury Nepean catchments, (the area covered by the Sydney Weeds Committees). One or more of the tree and shrub weeds included in this plan are further damaging sites containing the (already) threatened regional flora and fauna species and/or endangered ecological communities listed below.

Threatened Flora Species:

*Acacia pubescens, Allocasuarina portuensis, Eucalyptus camfieldii, Persoonia hirsuta, Persoonia Mollis, Pimelea spicata, Pomaderris brunnea, Pterostylis saxicola and Pultanea glabbra.*

Threatened Fauna Species:

*Cumberland Land Snail; Grey-headed Flying-fox; Masked Owl; Red Crowned toadlet; Regent Honeyeater; Speckled Warbler; Stuttering Barred Frog and Turquoise Parrot.*

Endangered Plant Communities

Basalt cap forest at Mt. Wilson; Blue Gum High Forest; Castlereagh Swamp Woodland Community; Coastal Saltmarsh; Cooks River/ Castlereagh Ironbark Forest; Cumberland Plain Woodland; Duffys Forest; Eastern Suburbs Banksia Scrub; Freshwater wetlands on coastal floodplains; Hygrocybeae Community of Lane Cove Bushland Park; Kurnell Dune Forest; Littoral Rainforest; Moist Shale Woodland; River-Flat Eucalypt Forest on Coastal Floodplains; Shale Gravel Transition Forest; Shale/Sandstone Transition Forest; Southern Sydney Sheltered Forest; Southern Highlands Shale Woodlands in the Sydney Basin Bioregion; Sun Valley Cabbage Gum Forest in the Sydney Basin Bioregion; Sydney Freshwater Wetlands; Sydney Turpentine-Ironbark Forest; Swamp Oak floodplain forest; Swamp Sclerophyll Forest on Coastal Floodplains; Temperate Highland Peat Swamps on Sandstone; White Box -Yellow Box Blakely's Red Gum Woodland; and Western Sydney Dry Rainforest.

If no action is taken to control tree and shrub weeds there will be:

- Continued loss of biodiversity
- Continued impact on threatened species and endangered ecological communities
- Further spread and establishment of tree and shrub weeds across Sydney
- Continual re-infestation of controlled areas
- Increased cost of control in the future

### **3.2 CURRENT DISTRIBUTION OF INFESTATIONS**

The tree and shrub weed problem in the Sydney region is extensive; current distribution tables are presented in Appendix 1, pages 20-21.

Further surveying and mapping is needed to determine the full extent of distribution of tree and shrub weeds in the region, and details of plans for this are documented in the action tables, sections 6.1 and 6.2 (pgs 14-18).

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<sup>1</sup> The collaborative DECCW/DPI/CMA assessment of weed impact on threatened species based on site analysis is the basis for determining priority sites for tree and shrub (and other weed species management). It is reported on in Coutts-Smith, A.J. and Downey, P.O. (2006). *Impact of weeds on threatened biodiversity in New South Wales*. Technical Series no. 11, CRC for Australian Weed Management, Adelaide .

### 3.3 HOW THE PLAN INTENDS TO MEET ITS OBJECTIVES

To meet the objectives of the plan, tree and shrub weeds have been categorised into two broad groups; emerging or widespread weeds. Different actions and performance measures have been developed for each of these broad groups; detailed in the action tables for widespread and emerging weeds in sections 6.1 and 6.2 (pgs 14-18). This approach is consistent with the goals of the *NSW Invasive Species Plan 2008-2015*.

The Rod Randall process was used to determine these two broad groups; those that were awarded a 'P' for priority weed were classified as emerging weeds. 'P' weeds in the Rod Randall process are those weeds that are not at their full distribution potential and 'with early intervention could be eradicated or at least prevented from spreading further'. Those weeds that weren't awarded a 'P' were classified as widespread weeds.

These two groups have been further broken down, with two categories in each, to assist setting clear actions which meet the objectives of the plan. These categories, shown in Table 1, have been based on the scores awarded to each weed in the Rod Randall process, according to the following guidelines:

**Emerging Weeds 1:** 'Priority' weeds with a Rod Randall score of 85 or more

**Emerging Weeds 2:** 'Priority' weeds with a Rod Randall score below 85 (or recent notifications not previously scored by that method\*)

**Widespread Weeds 1:** Widespread weeds with a Rod Randall score of 85 or more

**Widespread Weeds 2:** Widespread weeds with a Rod Randall score below 85

This categorisation has allowed for the development of actions which are strategic and cost effective. While many actions have been developed (see Action tables, pps. 14-18), the differences in the actions for widespread and emerging weeds involve 'Planning and On-ground Work Actions' and 'Declaration Actions', summarised at p.7.

*\*The NSW Weed Risk Assessment Process is now in place and this will be used to determine declarations of species for which risk status is not yet clearly identified.*

<b>Table 1: Categories of Tree and shrub Weeds, based on Rod Randall Weed Prioritisation scores</b>		
<b>Weed Category / Common Name</b>	<b>Scientific Name</b>	<b>Weed Ranking Score</b>
<b><i>Emerging 1 Weeds</i></b>		
Bitou Bush	<i>Chrysanthemoides monilifera ssp. rotundata</i>	116.6P
Gorse	<i>Ulex europaeus</i>	106.7P
Willow (Pussy)	<i>Salix cinerea</i>	94.6P
Chinese Tallow	<i>Sapium sebiferum</i>	92.4P
Willow (Black)	<i>Salix nigra</i>	92.4P
Broom (Scotch)	<i>Cytisus scoparius</i>	90.2P
Willow (Crack)	<i>Salix fragilis</i>	86.9P

<b>Emerging 2 Weeds</b>		
Tecoma stans	<i>Yellow Bells</i>	84.7P
Coral Tree	<i>Erythrina x sykesii</i>	83.6P
Tree of Heaven	<i>Ailanthus altissima</i>	76P
Chinese Celtis/Chinese Hackberry	<i>Celtis sinensis</i>	73.7P
Eurpoean Hackberry	<i>Celtis australis</i>	*
Honey Locust	<i>Gleditsia triacanthos</i>	72P
Boneseed	<i>Chrysanthemoides monilifera ssp. monilifera</i>	68.2P
Box Elder	<i>Acer negundo</i>	60.5P
Chinese Elm	<i>Ulmus parvifolia</i>	*
Indian Hawthorn	<i>Rhaphiolepis indica</i>	*
Winter Senna	<i>Senna septemtrionalis</i> (prev <i>S. floribunda</i> )	*
Golden Wreath Wattle	<i>Acacia saligna</i>	*
Himalayan Evergreen Ash	<i>Fraxinus griffithii</i>	*
Purple Broom	<i>Polygala virgata</i>	*
Norfolk Island Pine	<i>Lagunaria patersoniana</i>	*
Mexican Weeping Pine	<i>Pinus patula</i>	*
Monterey Pine	<i>Pinus radiata</i>	*
Umbrella Tree	<i>Schefflera actinophylla</i>	*
Broad-leaf/Brazilian Pepper	<i>Schinus terebinthifolius</i>	*
<b>Widespread 1 Weeds</b>		
Lantana	<i>Lantana camara</i>	103
Privet - small leaved	<i>Ligustrum sinense</i>	94
Privet - Large leaved	<i>Ligustrum lucidum</i>	94
Camphor Laurel	<i>Cinnamomum camphora</i>	88
African Olive	<i>Olea europaea ssp. cuspidata</i>	87
Cotoneaster	<i>Cotoneaster glaucophyllus</i>	*
<b>Widespread 2 Weeds</b>		
Cape Broom	<i>Genista monspessulana</i>	77
Cockspur Coral Tree	<i>Erythrina crista-galli</i>	76
African boxthorn	<i>Lycium ferocissimum</i>	72
Green Cestrum	<i>Cestrum parqui</i>	71
Ochna	<i>Ochna serrulata</i>	71
Cassia	<i>Senna pendula</i>	68
Date Palm	<i>Phoenix dactylifera</i>	62
Castor Oil Plant	<i>Ricinus communis</i>	61
Rhus	<i>Toxicodendron succedaneum</i>	60
Duranta	<i>Duranta erecta</i>	45

**Notes:** Weed categories are based on results of Rod Randall weed prioritisation process, according to the following guidelines: Emerging 1 Weeds - Priority weeds with scores of 85 and above; Emerging 2 Weeds - Priority weeds with scores below 85 (or recent notifications not previously scored \*); Widespread 1 Weeds - Non-priority weeds with scores of 85 and above; and Widespread 2 Weeds - Non-priority weeds with scores below 85. Asterisked vary across Sydney and these will be reviewed first through the NSW Weed Risk Assessment Process

## **Summary of Planning and On-Ground Works Actions**

Diagram 1, following, illustrates the different approaches taken in the planning and on-ground work actions for the categories of emerging and widespread weeds. Strategic site prioritisation is critical to achieve objectives 3 and 4.

To achieve objective 3: 'Prevent the establishment, eradicate where possible and prevent the spread of **emerging** tree and shrub weeds', site prioritisation for **emerging weeds** will be based on;

- the category of the weed (i.e. emerging 1 or emerging 2 weed),
- the position of the weed in the catchment,
- the path of spread of the weed, and
- its proximity to bushland areas and or assets

By target weeding of prioritised work sites, emerging weeds will be eradicated or prevented from spreading further.

To achieve objective 4: 'reduce the impact of **widespread** tree and shrub weeds on biodiversity and assets', a different approach is taken to planning and on-ground works. Control will occur first in areas providing the greatest potential biodiversity outcome. Standard bush regeneration techniques will be used in these areas determined by:

- biodiversity conservation significance (noting that further additions to the dbase of sites first published in 2008 for priority control areas is possible)<sup>2</sup>
- the locations of tree and shrub weeds

The results of the study of weeds impacting threatened species (footnotes 1, 2) is critical to achieving objective 4.

## **Summary of Declaration Actions**

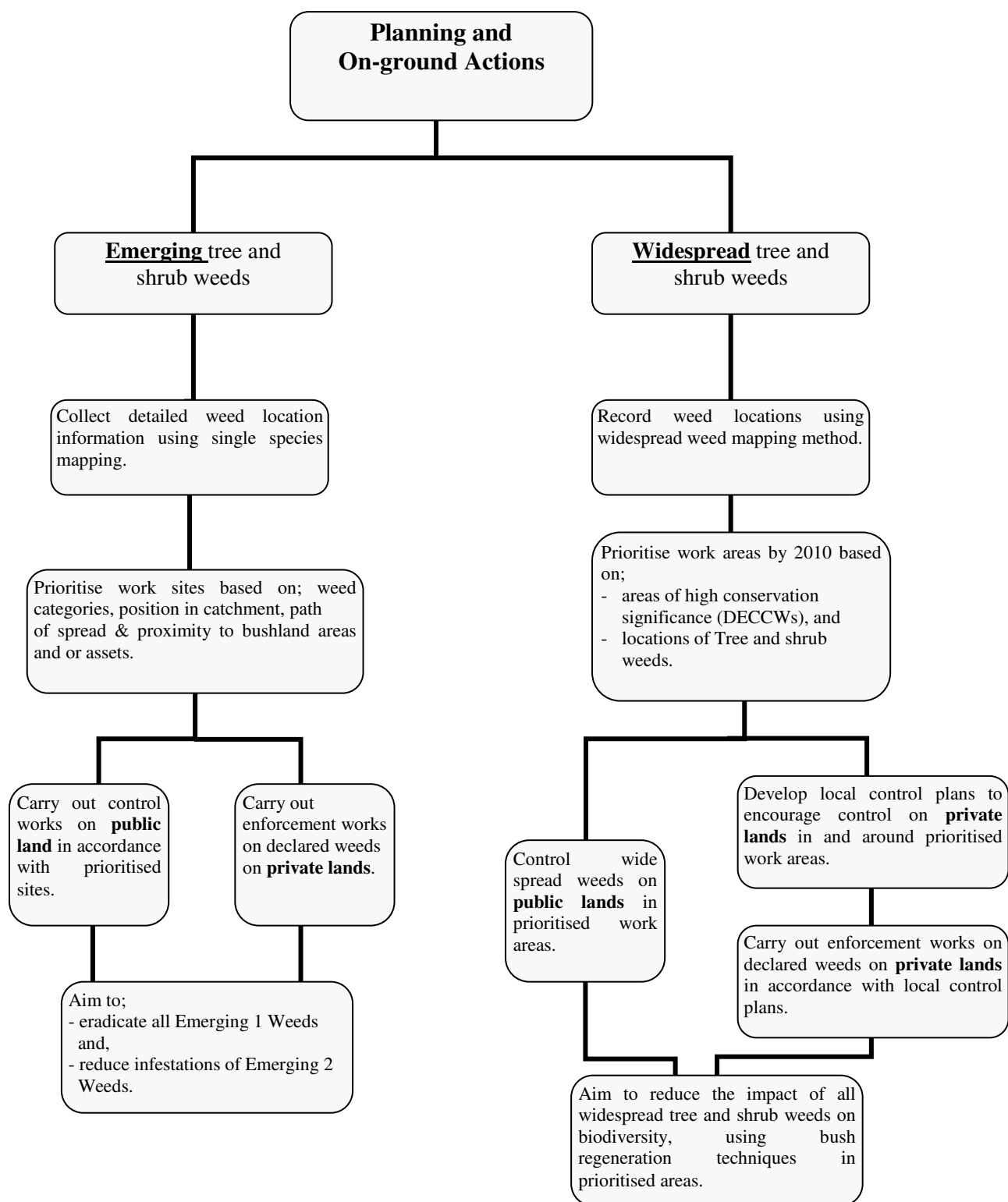
Diagram 2, p. 9 shows the differing time frames and recommended declaration classes for tree and shrub weeds in each of the weed categories. Those weeds at their most limited distribution and posing the highest threat to biodiversity, i.e. *Emerging 1 Weeds*, will require immediate declaration. By contrast widespread weeds with moderate threats to biodiversity could require Class 4 declarations in the medium to long term.

New declarations are necessary to enable enforcement activities on private lands, particularly in and or adjacent to priority work areas. Local Control Plan templates will be developed for **widespread** weeds which encourage enforcement efforts in and or around priority work areas (see action 6.2.10, p. 17). Some of the weeds in this plan are already declared in parts of Sydney. This plan encourages regionally consistent declaration.

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<sup>2</sup> As at January 2010 nominations were still being accepted for assessment as an extension of the collaborative study of the impact of weeds on threatened species based on site analysis, described in footnote 1.

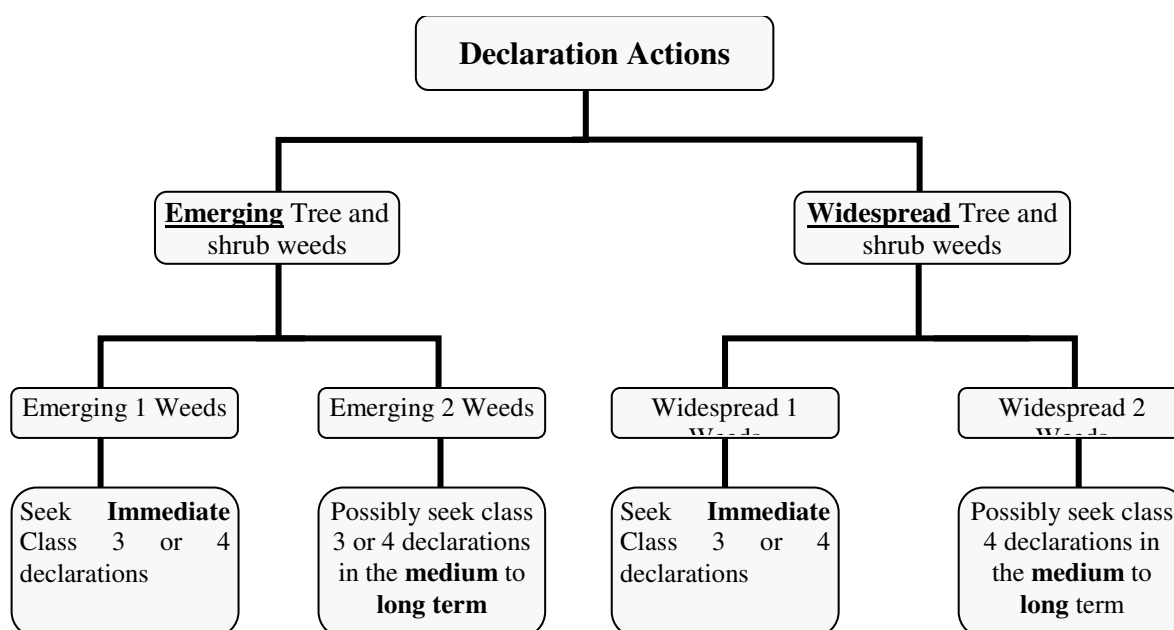
**Diagram 1:** Flowchart illustrating basic planning and on-ground work actions



N.B. This flowchart does not include all details of the action plan but illustrates the basic difference in planning and action-based approaches for emerging and widespread tree and shrub weeds.



**Diagram 2:** Flowchart illustrating timeframes for declaration based on weed categories



N.B. It is recommended that some Emerging 2 Weeds and Widespread 2 Weeds be declared sooner as they are either Weeds of National significance or have been identified as requiring immediate declaration in previous Sydney weed plans. These are noted in Appendix 3 and 4. Recommended classes for each weed are detailed in Appendix 3 and 4.

### 3.4 THE ROLE OF MAPPING

Mapping is critical to the planning and monitoring components of this plan. The following is an explanation of the approach.

#### *Overlaying information on maps to determine priority work areas*

High priority work areas for widespread weeds will be determined with GIS mapping by incorporating and overlaying various available digital information, including:

- those identified in the collaborative DECCW/DPI/CMA assessment of weed impact on threatened species based on site analysis, and
- locations of tree and shrub weeds identified via ‘Widespread Weed Mapping’<sup>3</sup>

#### *Widespread Weed Mapping*

Mapping of widespread weeds will be carried out using the ‘widespread weed mapping method’, requiring limited resources and less time. It will be used to assist in the prioritisation of sites and planning control of widespread weeds.

#### *Weed Density Mapping*

Single species weed density mapping will be used to record the locations and density of the emerging weeds. The ‘regional weed mapping standard’ developed by the Sydney Metro CMA will be used to ensure regional consistency. The mapping will assist in determining priority of control sites and will provide a basis for monitoring results of control of emerging tree and shrub weeds.

<sup>3</sup> The DPI widespread weed mapping method, based on the Bureau of Rural Sciences Mapping Standards was further developed by Sean Brindle. Brindle, Sean, *Invasive Species Monitoring – Local Government Weed Survey*, NSW DPI, Orange NSW 2007-8, pp.81

### ***Standardised technique for monitoring bushland condition before and after control***

Many agencies have utilised bushland condition mapping for assessing bushland condition before and after works are carried out. In future projects the standardised monitoring technique adopted by DECCW and the Department of Industry and Investment (former DPI) will be promoted as the recommended method for monitoring control of widespread tree and shrub weeds.<sup>4</sup>

## **3.5 WEED BIOLOGY/ECOLOGY**

The preferred habitat of the species covered in this plan varies. Many of the species prefer water courses and areas of high nutrient, e.g. Willows, Privets. Some establish on poor soils e.g. Bitou Bush, Tree of Heaven. Distribution methods also vary with birds and foxes frequently distributing berry producing species, with others spreading vegetatively along water courses. Many species establish into thick impenetrable monocultures e.g. Privet, African Olive & Honey Locust.

Websites utilised for deriving detail of the weed biology of the tree and shrub weed species covered include:

<http://www.weeds.gov.au/>

<http://www.weeds.org.au/>

<http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/profiles>

<http://www.sydneyweeds.org.au/>

<http://www.northcoastweeds.org.au/>

## **3.5 KEY LAND MANAGERS**

All land managers within the boundaries of the Sydney Weeds Committees are considered critical to the success of this plan.

## **4.0 LEGISLATIVE and REGULATORY SITUATION**

### **4.1 CURRENT DECLARATIONS**

The current declaration status of these tree and shrub weeds in the Sydney Region is shown in Appendix 2, pp.22-23. Those species excluded are yet to undergo weed risk assessment. Many of the species in this plan are already declared in surrounding regions.

### **4.2 DECLARATION CHANGES**

The proposed declarations and timeframes are depicted in Appendixes 3 & 4, pps. 24-25. This plan seeks a consistent approach to declaration of these species across Sydney.

Declarations are considered necessary to meet the following key objectives of this plan;

- Prevent the establishment, eradicate where possible and prevent the spread of **emerging** tree and shrub weeds, and

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<sup>4</sup> Specifications for the standardised monitoring referred to in this plan are described in *Guidelines for monitoring weed control and recovery of native vegetation* by Bruce Auld, NSW Department of Primary Industries, 2009 and in the Standard Tier (or introductory level) of the *Monitoring manual for bitou bush control and native plant recovery*, by Hughes, NK, Burley, AL, King, SA and Downey, PO, Department of Environment and Climate Change NSW, Hurstville, 2009.

- Reduce the impact of **widespread** tree and shrub weeds on biodiversity and assets. The development of local control plan templates for **widespread** tree and shrub weeds which focus attention on controlling weeds on private land where they are having an impact on biodiversity provides a cost-effective approach to enforcement activities.

## 5.0 CONSIDERATIONS and OPPORTUNITIES

### 5.1 OPPORTUNITIES

This plan conforms to the *NSW Invasive Species Plan*, the HNCMA and SMCMA Weed Strategies and incorporates recent studies and methodologies undertaken in collaboration with DECCW. Implementation of its actions should also ensure eligibility for funding programmes involving mitigation of biodiversity loss due to invasive trees and shrubs.

There will also need to be a reliance on councils' operational and capital works budgets, and environmental levies.

Sydney Weeds Committees will continue to seek partnership projects to undertake large scale co-ordinated control. Councils' operational and capital works budgets and environmental levies can support this type of project i.e. involving Green Corps, Work for the Dole and corporate volunteers. Already Sydney Weeds Committees are working in partnership with an organisation able to utilise weed trees and shrubs as an animal food resource and hence assist removal of those controlled, often the most costly aspect.

Resources to enable on-ground control works, survey and mapping and intensive targeted education/public awareness programs are pro-actively identified by the four weeds committees working together on this issue. It is acknowledged that the capacity of councils and agencies to fund implementation of this plan will vary and it is the intention of the committees to seek external funding wherever possible to fill these gaps and/or to assign resources that are identified to where they will be of most use.

Irrespective of any additional funding, co-operative regional scale projects for on-ground control and education will continue to be funded through existing weed control and bushland management programs of councils and agencies, to be undertaken by staff, contractors and volunteers. Each local control authority recognises their responsibility and has made a commitment to effectively manage infestations of these tree and shrub weeds under the terms of this plan and in accordance with available resources.

### 5.2 SPECIES MANAGEMENT

Control methods for a number of the tree and shrub weeds covered in this plan are detailed in the **DPI Noxious and Environmental Weed Control Handbook** (4th edition), which can be found at;

<http://www.dpi.nsw.gov.au/agriculture/pests-weeds/weeds/publications/management/noxious-environmental-weed-control>.

Upon approval of this plan weed profile sheets with recommended control methods for each species, will be produced and placed on the Sydney Weeds Committees website.

### 5.3 EXTENSION AND EDUCATION

The focus for education and extension activities will be increase skills in identification and control of tree and shrub weeds of local and state agency staff, volunteers and landholders.

This will be achieved through numerous means such as:

- Annual training for field workers and contractors involved with the management of weed trees and shrubs along transport corridors. (This has already commenced).
- Internet accessible materials including filmed demonstration of control techniques
- Articles in ratepayer newsletters, bushcare newsletters and Mayoral columns, especially when declared in new LCAs.
- Raised profile during Weed Buster Week. Displays illustrating the potential damage of these species to native bush remnants will be prepared and this information displayed to the public at ABC Gardening Expo and the Royal Easter Show as well as a variety of sub-regional shows.
- The inclusion of these species in existing displays and educational material that are accessible to the entire community will also be translated into relevant languages.
- Hands on identification and best management practice training for some for these species was held in December 2008 and will continue throughout the life of the plan, via workshops/field days/site visits.
- Local media releases and community newsletter articles
- Sydney Weeds Committees website will identify and explain impact of these species.
- Regional brochures– e.g. ‘Stop the Spread’ and ‘Responsible Gardening Guide for Sydney’ to illustrate the problems of tree and shrub weeds have been prepared.
- Identification of these species will occur through specific WEEDeck cards

### 5.4 LINKS TO OTHER STRATEGIES

The plan is a direct outcome of both the *Hawkesbury Nepean and Sydney Metropolitan Weeds Strategies*, the strategies which guide the actions of the Sydney Weeds Committees.

The plan meets the following goals of the *NSW Invasive Species and New Weed Incursion Plans*:

1. Exclude – prevent the establishment of new invasive species.
2. Eradicate or contain – eliminate, or prevent the spread of new invasive species.
3. Effectively manage – reduce the impacts of widespread invasive species.
4. Capacity building – ensure NSW has the ability and commitment to manage invasive species.

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

It contributes to the Natural Resource Commissions (NRC) State-wide target; ‘By 2015 there is a reduction in the impact of invasive species’.

## **5.5 BARRIERS AND CONTINGENCIES**

The following barriers are addressed through the respective actions detailed in Section 6.0:

1. Further information regarding tree and shrub species not nominated in the DECCW/ CMA widespread weed study needs to be included to determine priority work locations for maximum reduction of impact on biodiversity, (Action 6.2.5);
2. Current control at the regional level is not strategic in reducing the impact on biodiversity (Actions 6.1.1 – 6.1.7 and 6.2.1 – 6.2.6)
3. The current extent of some tree and shrub weeds is not known (Action 6.1.6 & 6.2.6);
4. New infestations of emerging tree and shrub weeds need to be eradicated to prevent spread to new areas (Action 6.1.6)
5. Existing infestations of tree and shrub weeds need to be managed to reduce spread and impacts on biodiversity (Action 6.1.8, 6.1.9, 6.2.7 & 6.2.8)
6. Insufficient control of tree and shrub weeds on private property (Actions 6.1.10, 6.1.11, 6.2.9 – 6.2.11)
7. Lack of awareness of the impacts, identification and control of tree and shrub weeds (Action 6.1.12, 6.1.13, 6.2.12)
8. The nomination of ‘heritage’ trees impeding either declaration and/or control of either the species of the individual plant (Actions 6.1.10 and 6.2.9).

## 6.0 ACTION PLAN

<b>6.1 ACTION PLAN FOR CONTROL OF EMERGING TREE AND SHRUB WEEDS:</b>	Performance indicator	Who	Addresses which objectives. (Number)
<b>Planning and Surveying</b>			
6.1.1 Establish a regional tree and shrub control task force	Regional tree and shrub control task force established by 2011	Sydney Weeds Committees	7
6.1.2 Seek endorsement of this regional plan from relevant organisations	Regional Plan endorsed by all relevant organisations by June 2011	LCAs, Sydney Weeds Committees	5
6.1.3 Reassess the level of threat of emerging tree and shrub weeds using the NSW Weed Risk Management System and adjust current weed groupings (see Table 1), as necessary.	Tree and shrub weeds re-assessed using the NSW Weed Risk Assessment by 2011	Tree and shrub Control Task Force, Sydney Weeds Committees	7
6.1.4 Continue to assess any new emerging trees or shrub weeds as they arise and add them to this plan as deemed necessary by Sydney Weeds Committees.	New emerging tree and shrub weeds assessed and added to this plan as deemed necessary by Sydney Weeds Committees.	Tree and shrub Control Task Force, Sydney Weeds Committees	7
6.1.5 Collect detailed information on the <u>current</u> location and extent of emerging tree and shrub weeds and record on geographical information system.	Detailed information on current locations of emerging tree and shrub weeds are collected and recorded on geographical information system by 2011.	LCAs, Sydney Weeds Committees	1
6.1.6 Carry out survey works to locate and record <u>new</u> infestations of emerging tree and shrub weeds.	Surveys and inspections undertaken annually and new infestations recorded on geographical information system as discovered.	LCAs, Sydney Weeds Committees	1,7
6.1.7 Prioritise ‘work sites’ for emerging tree and shrub weeds, based on weed categories (see Table 1), position in catchment, path of spread, proximity to bushland areas and/or assets, etc.	Emerging tree and shrub weed ‘work sites’ prioritised by 2011.	Tree and shrub Control Task Force, Sydney Weeds Committees	2
<b>On-ground works</b>			
6.1.8 Carry out control works of emerging tree and shrub weeds on public lands, in accordance with prioritised ‘work sites’, with the following goals; - Control all ‘Emerging 1’* tree and shrub weeds, - Reduce infestations of ‘Emerging 2’* tree and shrub weeds.  <i>*See Table 1, pg 6</i>	- “Emerging 1”* tree and shrub weeds are continually eradicated from public lands, in accordance with prioritised work sites. - Infestations of ‘Emerging 2’* tree and shrub weeds are reduced on public lands over the life of this plan, in accordance with prioritised work sites.  <i>*See Table 1, pg 6</i>	LCAs, DECCW, CMAs, Sydney Weeds Committees	3
6.1.9 Promote incentives programs to encourage proactive control of emerging tree and shrub weeds on private lands (e.g. Wollondilly Privet Project)	- LCAs, DECCW and CMAs are encouraged to implement incentives programs. - Information to promote incentives programs for control of tree and shrub weeds is provided to relevant organisations by June 2012.	LCAs, CMAs, DECCW, private landholders	3,6

## 6.0 ACTION PLAN

<b>6.1 ACTION PLAN FOR CONTROL OF EMERGING TREE AND SHRUB WEEDS:</b>	<b>Performance indicator</b>	<b>Who</b>	<b>Addresses which objectives. (Number)</b>
	<ul style="list-style-type: none"> <li>- Incentives programs are evaluated based on; participation, pre- and post- surveys to determine participants' knowledge, skills, behaviour changes, verbal feedback and assume on ground control monitored according to standard weed control monitoring procedures adopted by Sydney Weeds Committees.</li> </ul>		
<b>Declarations and Enforcement</b>			
<p>6.1.10 Seek consistent regional declarations from NWAC for emerging tree and shrub weeds as per the timeframe and recommended class in the 'Declaration timeline' (Appendix 3), and/or as deemed necessary by the committee. (Where nomination as 'heritage' tree is an apparent impediment to declaration within a local control authority provide access to protocol established by the federal Department of Defence in relation to heritage tree listings.)</p>	<p>Tree and shrub weeds are declared in 70% of all relevant LCAs as per the class and timeframe in 'Declaration timeline' (Appendix 3).</p>	<p>LCAs, Sydney Weeds Committees</p>	5
<p>6.1.11 Promote enforcement of control on private lands for declared tree and shrub weeds.</p>	<ul style="list-style-type: none"> <li>- Increase in annual inspection for declared tree and shrub weeds on private lands.</li> <li>- Increase in number of landholders carrying out control works and/or number of notifications per annum.</li> </ul>	<p>LCAs</p>	3,4,5
<b>Education</b>			
<p>6.1.12 Implement a Weed Alert process, in accordance with the NSW Invasive Species and New Weed Incursion plans when a new tree or shrub weed species or infestation is discovered.</p>	<p>A weed alert process incorporating tree and shrub weeds, records and acts on new tree and weed infestations and feeds into planned state wide procedures in accordance with the NSW Invasive Species and New Weed Incursion plans</p>	<p>Sydney Weeds Committees, DEPT.I&amp;I</p>	6
<p>6.1.13 Provide information and increase technical skills for the community and agency staff, on the identification and appropriate control methods of the emerging tree and shrub weeds.</p>	<ul style="list-style-type: none"> <li>- Media blitz when tree and shrub weeds are declared in local newspapers.</li> <li>- Articles in Mayoral columns and ratepayers newsletters (once annually).</li> <li>- Information distributed to agency staff on identification and management of tree and shrub weeds.</li> <li>- Tree and shrub weeds included in weed displays and at other times in conjunction with local festivals, tree giveaways, etc.</li> </ul>	<p>LCAs, DECCW, CMAs, Sydney Weeds Committees</p>	6

## 6.0 ACTION PLAN

<b>6.1 ACTION PLAN FOR CONTROL OF EMERGING TREE AND SHRUB WEEDS:</b>	Performance indicator	Who	Addresses which objectives. (Number)
	- Tree and shrub weeds included in regional weed brochures, WEEDeck and the committees' website.		
<b>Monitoring and evaluation</b>			
6.1.14 Monitor the success of on-ground works using Weed Density Mapping.	Mapping is incorporated into contracts and/or carried out by relevant organisations every 12 months.	LCAs, DECCW, CMAs, Sydney Weeds Committees	7
6.1.15 Monitor biology of emerging tree and shrub weeds for incidence of interbreeding	New infestations are checked off by tree and shrub weed task force for characteristics as reported	Sydney Weeds Committees, DEPT.I&I	6/7
6.1.16 Review Tree and shrub Management Plan	Tree and shrub Management Plan reviewed 2015.		7



<b>6.2 ACTION PLAN FOR CONTROL OF WIDESPREAD TREE AND SHRUB WEEDS:</b>	Performance indicator	Who	Addresses which objectives. (Number)
<b>Planning and Surveying</b>			
6.2.1 Establish a regional tree and shrub control task force	Regional tree and shrub control task force established by 2011	Sydney Weeds Committees	7
6.2.2 Seek endorsement of this regional plan from relevant organisations	Regional Plan endorsed by all relevant organisations by June 2011.	LCAs, Sydney Weeds Committees	5
6.2.3 Reassess the level of threat of widespread tree and shrub weeds using the NSW Weed Risk Management System and adjust current weed groupings (see Table 1) as necessary.	Widespread tree and shrub weeds re-assessed using weed risk management system by 2011	Tree and shrub Control Task Force, Sydney Weeds Committees	7
6.2.4 Record locations of widespread tree and shrub weeds using the 'DPI Widespread Weed Mapping method,' (see note 1, bottom of action plan).	Widespread tree and shrub weed locations are recorded using 'Widespread Weed mapping method,' by 2011	Tree and shrub Control Task Force, Sydney Weeds Committees	1
6.2.5 Identify and prioritise work areas by incorporating and overlaying on maps, the following: <ul style="list-style-type: none"> <li>o specific areas of high conservation significance (See note 2, bottom of action plan),</li> <li>o locations of tree and shrub weeds identified via 'Widespread Weed Mapping' (above) and in the collaborative study of regional sites referred to in note 2.</li> </ul>	<ul style="list-style-type: none"> <li>- The priority of the sites listed in DECCW/DEPT.I&amp;I/CMA assessment of weed impact on threatened species is reviewed upon further nominations.</li> <li>- Initial work areas are identified and prioritised by the task force based on current local knowledge by September 2010</li> <li>- Priority of areas for control is reviewed annually.</li> </ul>	Tree and shrub Control Task Force, Sydney Weeds Committees	2
6.2.6 Survey areas of high conservation significance for new infestations of widespread tree and shrub weeds.	Areas of high conservation significance are surveyed for new infestations of widespread tree and shrub weeds, annually.	LCAs, CMAs, DECCW, Sydney Weeds Committees	7
<b>On-ground works</b>			
6.2.7 Carry out works to control infestations of widespread tree and shrub weeds in prioritised work areas on public lands.	<ul style="list-style-type: none"> <li>- Works to control widespread tree and shrub weeds in prioritised work areas on public land commence by December 2010 and are progressively implemented as resources permit.</li> <li>- The impact of widespread tree and shrub weeds on prioritised work areas is reduced over the life of the plan.</li> <li>- Standard bush regeneration techniques are used to carry out control works.</li> <li>- Local indigenous plants are used to revegetate areas where required.</li> </ul>	LCAs, DECCW, Sydney Weeds Committees	4

6.2 ACTION PLAN FOR CONTROL OF WIDESPREAD TREE AND SHRUB WEEDS:	Performance indicator	Who	Addresses which objectives. (Number)
6.2.8 Implement incentives programs to encourage proactive private property control of widespread tree and shrub weeds in and around; <ul style="list-style-type: none"> <li>- prioritised work areas, and</li> <li>- the path of spread of the weed (e.g. waterways)</li> </ul>	<ul style="list-style-type: none"> <li>- LCAs, DECCW and CMAs are encouraged to implement incentives programs.</li> <li>- Incentives programs to control widespread tree and shrub weeds are implemented by June 2013.</li> <li>- Incentives programs are evaluated based on; participation, pre and post surveys to determine participants' knowledge, skills, behaviour changes, and verbal feedback.</li> </ul>	LCAs, private landholders	4, 6
<b>Declarations and Enforcement</b>			
6.2.9 Seek regionally consistent declarations from NWAC for widespread tree and shrub weeds as per the 'Declaration timeline' (Appendix 4) or as deemed necessary by the committee. (Where nomination as 'heritage' tree is an apparent impediment to declaration within a local control authority provide access to protocol established by the federal Department of Defence in relation to heritage tree listings.)	Tree and shrub weeds are declared in 70% of all relevant LCAs as per the class and timeframe in 'Declaration timeline' (Appendix 4)	LCAs, Sydney Weeds Committees	5
6.2.10 Develop Local Control Action Plan templates, which include policies to assist in controlling widespread Tree and shrub from areas in and around; <ul style="list-style-type: none"> <li>- prioritised work areas, and</li> <li>- the path of spread of the weed (e.g. waterways)</li> </ul>	<ul style="list-style-type: none"> <li>- Templates for Local Control Action Plans are developed for 'Widespread 1 Weeds'* by 2012.</li> <li>- Templates for Local Control Action Plans are developed for 'Widespread 2 Weeds'* as needed.</li> </ul> <i>*See Table 1, pg 6</i>	Sydney Weeds Committees	4, 5
6.2.11 Promote control of declared widespread tree and shrub weeds on private lands in accordance with local control plans.	<ul style="list-style-type: none"> <li>- Promote annual inspections by local control authorities on private lands</li> <li>- Increase in number of landholders carrying out control works and/or number of notifications per annum</li> </ul>	Sydney Weeds Committees, LCAs	4
<b>Education</b>			
6.2.12 Provide information and increase technical skills for the community and agency staff, on the identification and appropriate control methods of the widespread tree and shrub weeds.	<ul style="list-style-type: none"> <li>- Media blitz when tree and shrub weeds are declared in local newspapers, and annual reminders.</li> <li>- Articles in Mayoral columns and ratepayers newsletters (once annually).</li> <li>- Information distributed to agency staff on identification and management of tree and shrub weeds, especially</li> <li>- Tree and shrub weeds included in weed displays and at</li> </ul>	LCAs, DECCW, CMAs, Dept.I&I, Sydney Weeds Committees, Regional Tree and Shrub Weed Task Force	6

6.2 ACTION PLAN FOR CONTROL OF WIDESPREAD TREE AND SHRUB WEEDS:	Performance indicator	Who	Addresses which objectives. (Number)
	other times in conjunction with local festivals, tree giveaways, etc. - Tree and shrub weeds included in regional weed brochures, WEEDeck and the committees' website.		
<b>Monitoring and evaluation</b>			
6.2.13 Monitor on-ground works through standard method.	- Monitoring is carried out in work areas on an annual basis. - Standard monitoring of bushland condition reflects improvement in work areas by June 2015. - Decreased occurrence and density of widespread tree and shrub across region by June 2015.	LCAs, CMAs, Sydney Weeds Committees	7
6.2.14	- Monitor tree and shrub weeds for incidence of interbreeding e.g. African and European Olive ( <i>Olea europaea</i> ssp. <i>europaea</i> with <i>Olea europaea</i> ssp. <i>cuspidata</i> )	Sydney Weeds Committees, DEPT.I&I	6/7
6.2.15 Review Tree and Shrub Weed Management Plan	Tree and Shrub Weed Management Plan reviewed by 2013, or as deemed necessary by the committee.	Regional Tree and shrub Control Task Force	7

Note 1: The DPI widespread weed mapping method, based on the Bureau of Rural Sciences Mapping Standards was further developed by Sean Brindle. It is broad scale mapping which requires limited resources and can be done at the desktop in a short time.

Note 2: The collaborative DECCW/DPI/CMA assessment of weed impact on threatened species based on site analysis is the basis for determining priority sites for tree and shrub weed management. It is reported on in Coutts-Smith, A.J. and Downey, P.O. (2006). *Impact of weeds on threatened biodiversity in New South Wales*. Technical Series no. 11, CRC for Australian Weed Management, Adelaide .

## 7.0 MONITOR and REVIEW PROCESS

Works to monitor and review this plan are integral to the success of the plan.

The following monitoring methods for on-ground works will be incorporated into contracts or carried out by relevant organisations on a 6 monthly basis;

- 'Bushland condition mapping' and/or 'Widespread Weed Mapping' will be carried out in widespread weed work areas (see action 6.2.13).
- Weed Density Mapping will be carried out in emerging weed work sites (see action 6.1.14).

Survey works to locate new infestations of emerging and widespread weeds will be carried out annually (see actions 6.1.6 and 6.2.6).

The regional plan will be reviewed in 2013, or as deemed necessary by the committee annually to allow for any additional/new information (see action 6.1.15 and 6.2.14).

## 8.0 BENEFITS

The implementation of this plan will reduce the impacts to biodiversity caused by widespread tree and shrub weeds and eradicate and prevent the spread to new locations of emerging tree and shrub weeds. It will assist in the conservation of various Endangered Ecological Communities and Threatened species listed under the *Threatened Species Conservation Act 1995*.

## 9.0 RESOURCES

(1) Ensbey, R & Johnson, A. *Noxious and Environmental Weed Control Handbook – a guide to weed control in non-crop, aquatic and bushland situations 4th edition* (2007) NSW DPI.

(2) Parsons, W.T. & Cuthbert, E.G; (1992) *Noxious Weeds of Australia*. Inkata Press.

(3) Upper Parramatta River Catchment (2003) Willow Management Strategy

(4) WEEDECK: *Weeds of Concern in the Sydney Region*. Sydney Weeds Committees.

(5) Websites:

<http://www.sydneyweeds.org.au>

<http://www.weeds.org.au>

[http://www.weeds.crc.org.au/weed\\_management](http://www.weeds.crc.org.au/weed_management)

<http://www.dpi.nsw.gov.au/weeds>

**Appendix 1: Known Distribution of Tree and shrub Weeds in Local Government Areas of Sydney**

Common name	African Olive	African boxthorn	Box Elder	Cape Broom	Bitou Bush	Boneseed	Broom (Scotch)	Camphor Laurel	Castor Oil Plant	Chinese Celtis	Cockspur Coral Tree	Coral Tree	Chinese Tallow	Date Palm	Duranta	Green Cestrum
Scientific name	<i>Olea europaea</i> ssp. <i>cuspidata</i>	<i>Lycium ferocissimum</i>	<i>Acer negundo</i>	<i>Genista monspessulana</i>	<i>Chrysanthemoides</i> ssp. <i>monilifera</i> <i>rotundata</i>	<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>	<i>Cytisus scoparius</i>	<i>Cinnamomum camphora</i>	<i>Ricinus communis</i>	<i>Celtis sinensis</i>	<i>Erythrina crista-galli</i>	<i>Erythrina x sykesii</i>	<i>Sapium sebiferum</i>	<i>Phoenix dactylifera</i>	<i>Duranta erecta</i>	<i>Cestrum parqui</i>
Ashfield	X		X	X			X	X	X	X	X	X	X	X	X	X
Auburn	X		X	X			X	X	X	X	X	X	X	X	X	X
Bankstown	X		X	X	X	X		X				X	X	X	X	X
Baulkham Hills	X	X	X	X		X	X	X	X	X	X	X	X	X	?	X
Blacktown	X	X	X			X		X	X		X	X	X	X		X
Blue Mountains	X		X	X		X	X	X	X				X			X
Botany Bay																
Burwood	X		X	X			X	X	X	X	X	X	X	X	X	X
Camden	X	X						X	X			X				X
Campbelltown	X	X				X		X	X	X		X		X		X
Canada Bay	X					X		X	X	X	X	X	X	X	X	X
Canterbury	X		X	X				X	X	X	X	X	X	X	X	X
DECCW - Sydney	X							X	X	X		X				X
Fairfield	X	X		X	X	X		X	X		X	X	X	X		X
Hawkesbury	X	X	X	X		X		X	X	X			X	X		X
Holroyd	X	X		X	X	X		X	X		X	X	X	X		X
Hornsby	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hunters Hill	X		X	X				X		X		X				X
Hurstville	X		X	X		X		X	X	X	X	X	X	X	X	X
Kogarah	X		X				X	X	X	X		X	X	X		X
Ku-ring-gai	X		X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lane Cove			X	X	X	X		X	X		X	X	X			X

Common name	African Olive	African boxthorn	Box Elder	Cape Broom	Bitou Bush	Boneseed	Broom (Scotch)	Camphor Laurel	Castor Oil Plant	Chinese Celtis	Cockspur Coral Tree	Coral Tree	Chinese Tallow	Date Palm	Duranta	Green Cestrum
Scientific name	<i>Olea europaea</i> ssp. <i>cuspidata</i>	<i>Lycium ferocissimum</i>	<i>Acer negundo</i>	<i>Genista monspessulana</i>	<i>Chrysanthemoides</i> ssp. <i>monilifera</i> <i>rotundata</i>	<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>	<i>Cytisus scoparius</i>	<i>Cinnamomum camphora</i>	<i>Ricinus communis</i>	<i>Celtis sinensis</i>	<i>Erythrina crista-galli</i>	<i>Erythrina</i> x <i>sykesii</i>	<i>Sapium sebiferum</i>	<i>Phoenix dactylifera</i>	<i>Duranta erecta</i>	<i>Cestrum parqui</i>
Leichhardt	X		X					X	X	X	X	X	X			X
Liverpool	X	X	X					X	X			X				X
Manly	X					X	X	X	X	X		X	X	X		X
Marrickville	X		X					X	X	X	X	X	X			X
Mosman	X		X	X	X	X		X	X	X	X	X	X	X		X
Nth Sydney	X		X	X				X	X	X	X	X	X	X	X	X
Parramatta	X	X	X	X		X	X	X	X		X	X	X	X	X	X
Penrith	X	X	X					X	X	X		X	X			X
Pittwater	X		X	X	X	X		X	X	X	X	X		X		X
Randwick	X		?		X	X	X	X	X	X		X	X			X
Rockdale	X		X	X				X	X	X	X	X	X	X	X	X
Ryde	X						X	X	X	X	X	X	X	X		X
Strathfield	X			X	X	X	X	X	X	X		X	X	X		X
Sutherland	X		X		X	X	X	X	X	X	X	X	X			X
Sydney City	X		X					X	X	X	X	X	X	X	X	X
Warringah	X		X	X	X	X		X	X	X	X	X	X	X	X	X
Waverley	X		?		X	X	X	X	X	X		X	X			X
Willoughby	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Wollondilly	X	X	X			X		X	X	X		X				X
Woollahra			X			X		X	X	X	X	X	X			X

**Appendix 1 - Continued: Known Distribution of Tree and Shrub Weeds in Local Government Areas of Sydney**

Common name	Gorse	Honey Locust	Indian Hawthorn	Lantana	Ochna	Privet - small leaved	Privet - large leaved	Rhus	Smooth Senna	Cassia	Yellow Bells	Tree of Heaven	Willow (Black)	Willow (Crack)	Willow (Pussy)
Scientific name	<i>Ulex europaeus</i>	<i>Gleditsia triacanthos</i>	<i>Rhaphiolepis indica</i>	<i>Lantana camara</i>	<i>Ochna serrulata</i>	<i>Ligustrum sinense</i>	<i>Ligustrum lucidum</i>	<i>Toxicodendron succedaneum</i>	<i>Senna septentrionalis</i> (prev <i>S. floribunda</i> )	<i>Senna pendula</i>	<i>Tecoma stans</i>	<i>Ailanthus altissima</i>	<i>Salix nigra</i>	<i>Salix fragilis</i>	<i>Salix cinerea</i>
Ashfield		X		X	X	X	X	X	X	X	X	X	X		X
Auburn		X		X	X	X	X	X	X	X	X	X	X		X
Bankstown		X	X	X	X	X	X	X		X		X	X		
Baulkham Hills	X	X	?	X	X	X	X	X	?	X	?	X	X	X	X
Blacktown		X		X	X	X	X		X	X					
Blue Mountains	X	X	X	X	X	X	X	X		X		X	X	X	X
Botany Bay															
Burwood		X		X	X	X	X	X	X	X	X	X	X		X
Camden	X	X		X		X	X	X					X		
Campbelltown		X		X	X	X	X	X	X	X		X	X		
Canada Bay		X		X	X	X	X	X		X					
Canterbury			X	X	X	X	X	X							
DECCW - Sydney			X	X	X	X	X			X					
Fairfield	X		X	X	X	X	X	X	X			X	X	X	
Hawkesbury		X	X	X	X	X	X		X	X		X	X	X	X
Holroyd		X		X	X	X	X	X	X	X			X	X	X
Hornsby	X	X	X	X	X	X	X	X	X	X	X	X	X		X
Hunters Hill			X	X	X	X	X	X		X					
Hurstville		X		X	X	X	X	X		X					
Kogarah				X	X	X	X	X		X					
Ku-ring-gai	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Lane Cove			X	X	X	X	X	X		X		X			

**Appendix 1 - Continued: Known Distribution of Tree and Shrub Weeds in Local Government Areas of Sydney**

Common name	Gorse	Honey Locust	Indian Hawthorn	Lantana	Ochna	Privet - small leaved	Privet - large leaved	Rhus	Smooth Senna	Cassia	Yellow Bells	Tree of Heaven	Willow (Black)	Willow (Crack)	Willow (Pussy)
Scientific name	<i>Ulex europaeus</i>	<i>Gleditsia triacanthos</i>	<i>Rhaphiolepis indica</i>	<i>Lantana camara</i>	<i>Ochna serrulata</i>	<i>Ligustrum sinense</i>	<i>Ligustrum lucidum</i>	<i>Toxicodendron succedaneum</i>	<i>Senna septentrionalis</i> (prev <i>S. floribunda</i> )	<i>Senna pendula</i>	<i>Tecoma stans</i>	<i>Ailanthus altissima</i>	<i>Salix nigra</i>	<i>Salix fragilis</i>	<i>Salix cinerea</i>
Leichhardt				X		X	X	X		X		X			
Liverpool		X		X	X	X	X	X	X			X		X	
Manly		X	X	X	X	X	X	X	X	X					
Marrickville				X		X	X	X		X		X			
Mosman		X		X	X	X	X	X		X		X		X	X
Nth Sydney		X		X	X	X	X	X		X					
Parramatta		X		X	X	X	X	X		X		X	X		
Penrith		X	X	X		X	X					X	?	?	?
Pittwater			X	X	X	X	X	X		X	X	X			
Randwick		X	X	X	X	X	X	X		X	X	X			
Rockdale			X	X	X	X	X	X							
Ryde				X	X	X	X	X	X	X		X			X
Strathfield				X	X	X	X	X		X			X	X	
Sutherland	X			X	X	X	X	X		X	X	X			X
Sydney City		X	X	X	X	X	X	X		X		X			
Warringah			X	X	X	X	X	X	X	X		X			
Waverley		X	X	X	X	X	X	X		X	X	X			
Willoughby			X	X	X		X	X		X		X	X	X	
Wollondilly	X	X	X	X		X	X			X		X	X	X	X
Woollahra			X	X	X	X	X					X	X		

x



**Appendix 2 – Current declaration status of Tree and Shrub weeds in the Sydney Region**

Common Name	Box Elder	Tree of Heaven	Chinese Celtis	Green Cestrum	Bitou Bush	Boneseed	Camphor Laurel	Cotoneaster	Broom (Scotch)	Duranta	Cockspur Coral Tree	Coral Tree	Cape Broom	Honey Locust	Lantana	Privet - large leaved
Scientific Name	<i>Acer Negundo</i>	<i>Ailanthus altissima</i>	<i>Celtis sinensis</i>	<i>Cestrum parqui</i>	<i>Chrysanthemoides monilifera</i> ssp. <i>rotundata</i>	<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>	<i>Cinnamomum camphora</i>	<i>Cotoneaster glaucophyllus</i>	<i>Cytisus scoparius</i>	<i>Duranta erecta</i>	<i>Erythrina crista-galli</i>	<i>Erythrina x sykesii</i>	<i>Genista monspessulana</i>	<i>Gleditsia triacanthos</i>	<i>Lantana camara</i>	<i>Ligustrum lucidum</i>
Ashfield				3	3	3									4	4
Auburn				3	3	3									4	4
Bankstown				3	3	3									4	
Baulkham Hills				3											5	4
Blacktown				3											5	4
Blue Mountains				3	3	3	4		4				4		5	4
Botany Bay				3	3	3									4	
Burwood				3	3	3									4	
Camden				3											5	4
Campbelltown				3											4	4
Canada Bay				3	3	3									4	4
Canterbury				3	3	3									4	4
Fairfield				3	3	3									4	4
Hawkesbury				3											5	4
Holroyd				3	3	3									4	4
Hornsby				3	3	3	4		4				3		4	4
Hunters Hill				3	3	3			4				3		4	4
Hurstville				3	3	3									4	4
Kogarah				3	3	3									4	4
Ku-ring-gai				3	3	3	4		4				3		4	4
Lane Cove				3	3	3			4				3		4	4
Leichhardt				3	3	3									4	4
Liverpool				3	3	3									4	
Manly				3	3	3					4		3		4	4
Marrickville				3	3	3									4	
Mosman				3	3	3									4	4

Common Name	Box Elder	Tree of Heaven	Chinese Celtis	Green Cestrum	Bitou Bush	Boneseed	Camphor Laurel	Cotoneaster	Broom (Scotch)	Duranta	Cockspur Coral Tree	Coral Tree	Cape Broom	Honey Locust	Lantana	Privet - large leaved
Scientific Name	<i>Acer Negundo</i>	<i>Ailanthus altissima</i>	<i>Celtis sinensis</i>	<i>Cestrum parqui</i>	<i>Chrysanthemoides monilifera</i> ssp. <i>rotundata</i>	<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>	<i>Cinnamomum camphora</i>	<i>Cotoneaster glaucophyllus</i>	<i>Cytisus scoparius</i>	<i>Duranta erecta</i>	<i>Erythrina crista-galli</i>	<i>Erythrina x sykesii</i>	<i>Genista monspessulana</i>	<i>Gleditsia triacanthos</i>	<i>Lantana camara</i>	<i>Ligustrum lucidum</i>
Nth Sydney				3	3	3							3		4	4
Parramatta				3	3	3			4				3		4	4
Penrith				3											5	4
Pittwater				3	3	3									4	4
Randwick				3	3	3									4	4
Rockdale				3	3	3									4	4
Ryde				3	3	3	4						3		4	4
Strathfield				3	3	3									4	4
Sutherland				3	4	4									4	
Sydney City				3	3	3									4	4
Warringah				3	3	3									4	4
Waverley				3	3	3									4	
Willoughby				3	3	3	4						3		4	4
Wollondilly				3											5	
Woollahra				3	3	3									4	

**Appendix 2 – Continued: Current declaration status of Tree and shrub weeds in the Sydney Region**

Common Name	Privet - small leaved	African boxthorn	Ochna	African Olive	Date Palm	Indian Hawthorn	Castor Oil Plant	Willow (Pussy)	Willow (Crack)	Willow (Black)	Chinese Tallow	Cassia	Smooth Senna	Yellow Bells	Rhus	Gorse	Chinese elm
Scientific Name	<i>Ligustrum sinense</i>	<i>Lycium ferocissimum</i>	<i>Ochna serrulata</i>	<i>Olea europaea</i> ssp. <i>cuspidata</i>	<i>Phoenix dactylifera</i>	<i>Rhaphiolepis indica</i>	<i>Ricinus communis</i>	<i>Salix cinerea</i>	<i>Salix fragilis</i>	<i>Salix nigra</i>	<i>Sapium sebiferum</i>	<i>Senna pendula</i>	<i>Senna septentrionalis</i> (prev <i>S. floribunda</i> )	<i>Tecoma stans</i>	<i>Toxicodendron succedaneum</i>	<i>Ulex europaeus</i>	<i>Ulmus parvifolia</i>
Ashfield	4						4	5	5	5					4		
Auburn	4						4	5	5	5					4		
Bankstown							4	5	5	5					4		
Baulkham Hills	4	4						5	5	5					4		
Blacktown	4	4						5	5	5					4		
Blue Mountains	4	4						3	5	3					4	3	
Botany Bay							4	5	5	5					4		
Burwood							4	5	5	5					4		
Camden	4	4						5	5	5					4	3	
Campbelltown	4	4					4	5	5	5					4	3	
Canada Bay	4						4	5	5	5					4		
Canterbury	4						4	5	5	5					4		
Fairfield	4						4	5	5	5					4		
Hawkesbury	4	4						5	5	5					4		
Holroyd	4						4	5	5	5					4		
Hornsby	4		4				4	5	5	5					4		
Hunters Hill	4						4	5	5	5					4		
Hurstville	4						4	5	5	5					4		
Kogarah	4						4	5	5	5					4		
Kuringai	4		4				4	5	5	5					4		
Lane Cove	4		4				4	5	5	5					4		
Leichhardt	4						4	5	5	5					4		
Liverpool							4	5	5	5					4		
Manly	4		4				4	5	5	5		4			4		
Marrickville							4	5	5	5					4		

Common Name	Privet - small leaved	African boxthorn	Ochna	African Olive	Date Palm	Indian Hawthorn	Castor Oil Plant	Willow (Pussy)	Willow (Crack)	Willow (Black)	Chinese Tallow	Cassia	Smooth Senna	Yellow Bells	Rhus	Gorse	Chinese elm
Scientific Name	<i>Ligustrum sinense</i>	<i>Lycium ferocissimum</i>	<i>Ochna serrulata</i>	<i>Olea europaea</i> ssp. <i>cuspidata</i>	<i>Phoenix dactylifera</i>	<i>Rhaphiolepis indica</i>	<i>Ricinus communis</i>	<i>Salix cinerea</i>	<i>Salix fragilis</i>	<i>Salix nigra</i>	<i>Sapium sebiferum</i>	<i>Senna pendula</i>	<i>Senna septentrionalis</i> (prev <i>S. floribunda</i> )	<i>Tecoma stans</i>	<i>Toxicodendron succedaneum</i>	<i>Ulex europaeus</i>	<i>Ulmus parvifolia</i>
Mosman	4						4	5	5	5					4		
Nth Sydney	4		4				4	5	5	5					4		
Parramatta	4						4	5	5	5					4		
Penrith	4	4						5	5	5					4		
Pittwater	4		4				4	5	5	5					4		
Randwick	4						4	5	5	5					4		
Rockdale	4						4	5	5	5					4		
Ryde	4		4	4			4	5	5	5		4			4		
Strathfield	4						4	5	5	5					4		
Sutherland							4	5	5	5					4		
Sydney City	4						4	5	5	5					4		
Warringah	4		4				4	5	5	5					4		
Waverley							4	5	5	5					4		
Willoughby	4		4				4	5	5	5		4			4		
Wollondilly		4						5	5	5					4	3	
Woollahra							4	5	5	5					4		

**APPENDIX 3: EMERGING WEED CATEGORIES AND DECLARATION TIMELINE**

Weed Category and Common name	Scientific name	Weed Ranking Score	Seeking Declaration Class * *subject to WRA outcome	Declaration Timeline	
				Immediate	Medium to Long term
<b>Emerging 1 Weeds</b>					
Bitou Bush	<i>Chrysanthemoides monilifera</i> ssp. <i>rotundata</i>	116.6P	3	*	
Gorse	<i>Ulex europaeus</i>	106.7P	3 or 4	*	
Willow (Pussy)	<i>Salix cinerea</i>	94.6P	3 or 4	*	
Chinese Tallow	<i>Sapium sebiferum</i>	92.4P	4	*	
Willow (Black)	<i>Salix nigra</i>	92.4P	3 or 4	*	
Broom (Scotch)	<i>Cytisus scoparius</i>	90.2P	4	*	
Willow (Crack)	<i>Salix fragilis</i>	86.9P	3 or 4	*	
<b>Emerging 2 Weeds</b>					
Tecoma stans	<i>Yellow Bells</i>	84.7P	4		*
Coral Tree	<i>Erythrina x sykesii</i>	83.6P	4		*
Tree of Heaven	<i>Ailanthus altissima</i>	76P	4		*
Chinese Celtis	<i>Celtis sinensis</i>	73.7P	3 or 4	* (identified as priority in previous plan)	
Honey Locust	<i>Gleditsia triacanthos</i>	72P	4		*
Boneseed	<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i>	68.2P	3		*
Box Elder	<i>Acer negundo</i>	60.5P	4		*
Indian Hawthorn	<i>Rhaphiolepis indica</i>	**	4		*
Winter Senna	<i>Senna septemtrionalis</i> (prev <i>S. floribunda</i> )	**	4		*
Chinese Elm	<i>Ulmus parvifolia</i>	**	4		*

**NOTES**

- Future weed risk analysis could alter these recommendations.

**APPENDIX 4: WIDESPREAD WEED CATEGORIES AND DECLARATION TIMELINE**

Weed Category and Common name	Scientific name	Weed Ranking Score	Seeking Declaration Class *subject to WRA outcome	Declaration Timeline	
				Immediate	Medium to Long term
<b>Widespread 1 Weeds</b>					
Lantana	<i>Lantana camara</i>	103	4	*	
Privet - small leaved	<i>Ligustrum sinense</i>	94	4	*	
Privet - Large leaved	<i>Ligustrum lucidum</i>	94	4	*	
Camphor Laurel	<i>Cinnamomum camphora</i>	88	4	*	
African Olive	<i>Olea europaea subspecies cuspidata</i>	87	4	*	
Cotoneaster	<i>Cotoneaster glaucophyllus</i>	n/a	4	*	
<b>Widespread 2 Weeds</b>					
Cape Broom	<i>Genista monspessulana</i>	77	3 or 4		*
Cockspur Coral Tree	<i>Erythrina crista-galli</i>	76	4		*
African boxthorn	<i>Lycium ferocissimum</i>	72	4		*
Green Cestrum	<i>Cestrum parqui</i>	71	Na - Already Class 3		*
Ochna	<i>Ochna serrulata</i>	71	4		*
Cassia	<i>Senna pendula</i>	68	4		*
Date Palm	<i>Phoenix dactylifera</i>	62	4		*
Castor Oil Plant	<i>Ricinus communis</i>	61	4		*
Rhus	<i>Toxicodendron succedaneum</i>	60	Na - Already Class 4		*
Duranta	<i>Duranta erecta</i>	45	4		*

**NOTES**

- Future weed risk analysis could alter these recommendations

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