

National Weed Incursion Plan

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Preparedness and response guidelines for Weed Managers

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Acknowledgements

Many people and organisations have contributed to the development of the National Weed Incursion Plan (NWIP). Appendix 1 describes the chronology of the NWIP.

The NWIP is based largely on current national response plans such as PLANTPLAN and AUSVETPLAN managed by Plant Health Australia and Animal Health Australia. The main resource documents used in the development of the NWIP were: the Weed Alert program: Weed Alert Plan Victoria 2007/2008. A surveillance and response plan for potential new and emerging weeds in Victoria (DSE & DPI 2008); PLANTPLAN Australian Emergency Plant Pest Response Plan (PHA 2008 version 1); the Draft Queensland Interagency Invasive Species Response Plan, The Pest Blue Book (Queensland Government IPMC, 2006); the Draft Land Protection Pest Event Response Procedure (Queensland Department of Natural Resources and Water, 2006); the Preparedness and Response Guide for Potential, New and Emerging Weeds 2003/2004 (Draft) (CRC for Australian Weed Management, 2004); the Core Baseline Capabilities - early detection and rapid response - weeds - national (DAFF/DNR&W 2005) and the Draft AusBIOSEC Inter-governmental Agreement.

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Executive summary

The National Weed Incursion Plan (NWIP) is an operational plan and guideline for managing national responses to weed incursions. Application of the NWIP is triggered by the detection of a high-risk weed species. Outlined in the document are procedures that are generic for all responses to weed incursions.

The NWIP sits within the AusBIOSEC framework and provides the essential steps required to execute a response to a high risk weed incursion. It is consistent with current major incident documents such as PLANTPLAN and AUSVETPLAN.

The NWIP covers the framework of emergency response (Prevention of weed incursions, Preparedness for weed incursions, Responses to weed incursions and Recovery from responses to weed incursions), Communication, Information systems and an Introduction. The Appendices provide significant detail on different components of the plan.

In particular, Appendix 3 contains information pertaining to the prevention and preparedness stages for weed incursions. This material underpins a jurisdictions capacity to deliver the NWIP. Appendix 4 contains the Weed Incursion Response Toolkit (WIR Toolkit) developed in conjunction with the NWIP. The WIR Toolkit supports the NWIP by providing incursion managers with structured methods used to assess and quickly respond to weed incursions.

Background information on the NWIP is provided in the Introduction. The purpose, objective, application, timeframe, underpinning principles and legislation and policy framework are described.

The main section of the NWIP is the Response to weed incursions section where the four phases of response are provided in detail as a step-by-step guide to those involved in an incursion response.

The Communication, Information systems sections are fundamental to the NWIP. These cover communication strategies, media, and information management for a response.

Authority for the development and maintenance of NWIP at present rests with the Australian Weed Committee (AWC).

However, with the present harmonisation of biosecurity emergency response arrangements being undertaken through the Harmonisation Working Group, established by AusBIOSEC steering committee, the continued development and maintenance of NWIP will need to be aligned with this process.

This plan was endorsed by the AWC at Meeting 17 on the 3rd September, 2008, and has been submitted to the National Biosecurity Committee.

1 Introduction

A response to a weed incursion is potentially a complex undertaking that requires rapid mobilisation and coordination of a diverse team of people and resources. The National Weed Incursion Plan (NWIP) provides an operational plan and guidelines for managing national responses to weed incursions.

Australian state/territory jurisdictions have responded in the past to a number of high-risk weed incursions (Appendix 2). The adequacy of response has been based on the jurisdictional capacity to deliver an eradication program. Jurisdictional capacity is underpinned by the prevention and preparedness stages in the response framework (Appendix 3). Adopting these stages within a jurisdiction reduces the threat, prevents or mitigates against, and prepares the jurisdiction for responses to weed incursions.

The Weed Incursion Response Toolkit (WIR Toolkit) (Appendix 4) underpins the NWIP and was developed for use in conjunction with the NWIP. The toolkit is a compilation of tools, drawing on research and policy structures for managing weeds. The next stage of this toolkit is for it to be web-based to provide a 'one-stop shop' for weed incursions managers.

The core section of the NWIP covers the phases in the response and recovery stages. A step-by-step guide is provided to handling responses to weed incursions. The phases in the recovery framework are included to provide guidance on actions that are specific to weeds in bringing an area back to a pre-incursion level of functioning.

The appendices support the NWIP with each appendix providing significantly more detail on various aspects of the NWIP.

The NWIP provides a nationally consistent guide to responses to weed incursions and, in combination with the Weed Incursion Response Toolkit (WIR Toolkit); state/territory jurisdictional managers should be better equipped to deal with incursions of high-risk weeds.

It is important to note that response plans may not be able to predict unforeseen events. The NWIP describes procedures for a response, but the steps may occur in a slightly different order or may occur concurrently depending on the situation. It would be beneficial to allow for modification, innovation and adaptation depending on the nature and size of the incursion, the availability and capability of personnel and the progress of the response.

In addition there are changes occurring nationally with the development of the Australian Biosecurity System for Primary Production and the Environment (AusBIOSEC) framework and the harmonisation of biosecurity emergency response arrangements. In due course the NWIP will include these changes.

1.1 Purpose of the NWIP

The purpose of a NWIP is to:

- provide policy and guidelines for the consistent management of responses to weed incursions by appropriately trained personnel in each state/territory;
- provide coherence with response plans;

- provide compatibility of operation and procedures between the Australian, state/territory and local governments and industry;
- improve the technical validity in the development of strategies to respond to weed incursions;
- provide a focus for training personnel in response procedures; and
- provide guidelines for the development of standard operating procedures for personnel involved in response management.

1.2 Objectives of the NWIP

- Prevent the introduction and establishment of new weed incursions into Australia on public and private land.
- Support Australian Quarantine and Inspection Service (AQIS) and state/territory governments to prevent the introduction of new weeds.
- Support a surveillance program to enhance the reporting of new weed incursions in Australia.
- Determine the appropriate type of response to each category of new weed incursion.
- Assess the potential impact on agricultural, environmental and social values of each incursion of high-risk weeds.
- Monitor, report and evaluate the type and number of new responses to high-risk weed incursions and the effectiveness of on-ground management and eradication programs.
- Review the NWIP biennially to improve and enhance preparedness and response outcomes.

1.3 Application of the NWIP

The NWIP will be used by the Commonwealth and state/territory agencies to ensure that weed incursions are dealt with in a rapid, effective and consistent manner.

1.4 Timeframe for NWIP

The NWIP has a currency of two years from the time of publication, from 2008 to 2010, when it will be reviewed. Review may occur before a two-year period time frame if a response to a weed incursion has occurred.

1.5 Principles underpinning NWIP

The NWIP is underpinned by the seven principles from the Australian Weeds Strategy (AWS).

1. Weed management is an essential and integral part of the sustainable management of natural resources for the benefit of the economy, the environment, human health and amenity;
2. Combating weed problems is a shared responsibility that requires all parties to have a clear understanding of their roles;
3. Good science underpins the effective development, monitoring and review of weed management strategies;
4. Prioritisation of and investment in weed management must be informed by a risk management approach;
5. Prevention and early intervention are the most cost-effective techniques for managing weeds;
6. Weed management requires coordination among all levels of government in partnership with industry, land and water managers and the community, regardless of tenure;
7. Building capacity across government, industry, land and water managers and the community is fundamental to effective weed management.

1.5.1 Goals of the Australian Weed Strategy

The Australian Weeds Committee developed the *Australian weeds strategy: A national strategy for weed management in Australia* (2006) through public consultation and input from key stakeholders. This strategy was endorsed for release by the Natural Resource Management Ministerial Council in November 2006.

The following principles, goals and strategic actions support the development of the NWIP

Principle 5: Prevention and early intervention are the most cost-effective techniques for managing weeds.

Goal 1: Prevent new weed problems.

Objective: Ensure early detection of, and rapid action against, new weeds.

Strategic Action 1.2.2: Develop and implement a nationally agreed weed response plan for eradication or containment.

Outcome: New weed incursions are identified and addressed.

1.6 Legislation and policy framework

The NWIP fits into an hierarchy of frameworks, strategies, and legislation within Australia (Table 1). AusBIOSEC provides an overarching framework for whole of government and cross sector-approaches to the management of biosecurity threats.

The Australian Weeds Committee (AWC) provides the inter-governmental forum for identifying and resolving weed issues at a national level and the AWS (2006) is the overarching policy for weed management in Australia.

The NWIP has been developed to ensure it supports the objectives and intentions of AusBIOSEC. The WIR Toolkit is a supporting document to the NWIP (Appendix 4).

Table 1: Weed incursion response framework, policy and legislation hierarchy

	Framework	Strategy/Policy	Legislation	Administering agency
National				
	AUSBIOSEC			Department of Agriculture, Fisheries and Forestry
		Intergovernmental Agreement on Enhancing the AusBIOSEC		Department of Agriculture, Fisheries and Forestry Department of the Environment, Water, Heritage and the Arts
			<i>Commonwealth Quarantine Act 1908, Wildlife Protection (Regulations of Exports and Imports) Act 1982</i> <i>Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)</i>	Department of Agriculture, Fisheries and Forestry Department of the Environment, Water, Heritage and the Arts
	Australian Weeds Committee	Australian Weeds Strategy		
		National Weed Incursion Plan		
		Weed Incursion Response Toolkit		
State/territories				
Queensland	Biosecurity Strategy for Queensland (in development)	Queensland Weeds Strategy 2002-2005 (2002)	<i>Land Protection (Pest and Stock Route Management) Act 2002</i>	Department of Employment, Economic Development and Innovation
New South Wales	Biosecurity Strategy for NSW (2007)	NSW Invasive Species Plan 2007-2015 (at community consultations stage)	<i>Noxious Weeds Act 1993</i>	NSW Department of Primary Industries
Victoria	Biosecurity Strategy for Victoria (in development)	Victorian Pest Management: A Framework for Action - Weed Management Strategy (2002)	<i>Catchment and Land Protection Act 1994 (CaLP Act)</i>	Department of Sustainability and Environment Department of Primary Industries
			<i>Plant Health and Plant Products Act 1995</i>	Department of Primary Industries
			<i>Fisheries Act 1995</i>	Department of Primary Industries
South Australia	Biosecurity Strategy for South Australia (2005) currently is being revised.	A Weed Strategy for South Australia (1998)	<i>Natural Resources Management Act 2004</i>	Department of Water, Land and Biodiversity Conservation

Western Australia		Western Australia's State Weed Plan: (2001)	<i>Agriculture and Related Resources Protection Act 1976 (ARRPA)</i> <i>Plant Diseases Act 1989 (PDA)</i> <i>Biosecurity and Agriculture Management Act 2007</i>	Department of Agriculture and Food
Northern Territory		The Northern Territory Weeds Management Strategy 1996-2005 (1996)	<i>Weed Management Act 2001</i>	Department of Regional Development, Primary Industry, Fisheries and Resources
Tasmania	Tasmanian Biosecurity Strategy (2006)	Weed Plan: A Tasmanian Weed Management Strategy (2005)	<i>Weed Management Act 1999</i> <i>Plant Quarantine Act 1997</i>	Department of Primary Industries, and Water
Australian Capital Territory		ACT Weeds Strategy (1996)	<i>Pest Plants and Animal Act 2005</i>	ACT Department of Urban Services (Environment ACT)

2 Response and preparedness for weed incursions in Australia

Preparedness for a response to a weed incursion requires a number of key elements; these include:

- early detection and verification;
- known reporting lines;
- agreed decision-making processes;
- contingency response plans; and
- coordinated response procedures.

Planning for a response occurs at four levels – commonwealth, state/territory, regional and local.

Stakeholders include government weed management authorities, industry and community.

The NWIP is consistent with current major incident response documents such as:

- AIIMS_ICS - Australian Inter-agency Incident Management System Incident Control System;
- PLANTPLAN - Australian Emergency Plant Pest Response Plan;
- AUSVETPLAN - Australian Veterinary Emergency Plan;
- EMPPlan - Australian Emergency Marine Pest Plan;
- AQUAPLAN - Australian National Strategic Plan for Aquatic Animal Health;
- AQUAVETPLAN - Australian Aquatic Veterinary Emergency Plan; and
- AusBIOSEC – Draft Inter-governmental Agreement to enhance Australia’s Biosecurity System for primary production and the environment.

Authority is devolved through the Australian Weeds Committee to the Consultative Committee on Exotic Plant Incursions (CCEPI), the key technical body for coordinating national responses to exotic weed incursions in Australia. Linkage to state/territory weed response plans ensures consistent preparedness and response across Australia (Figure 1).

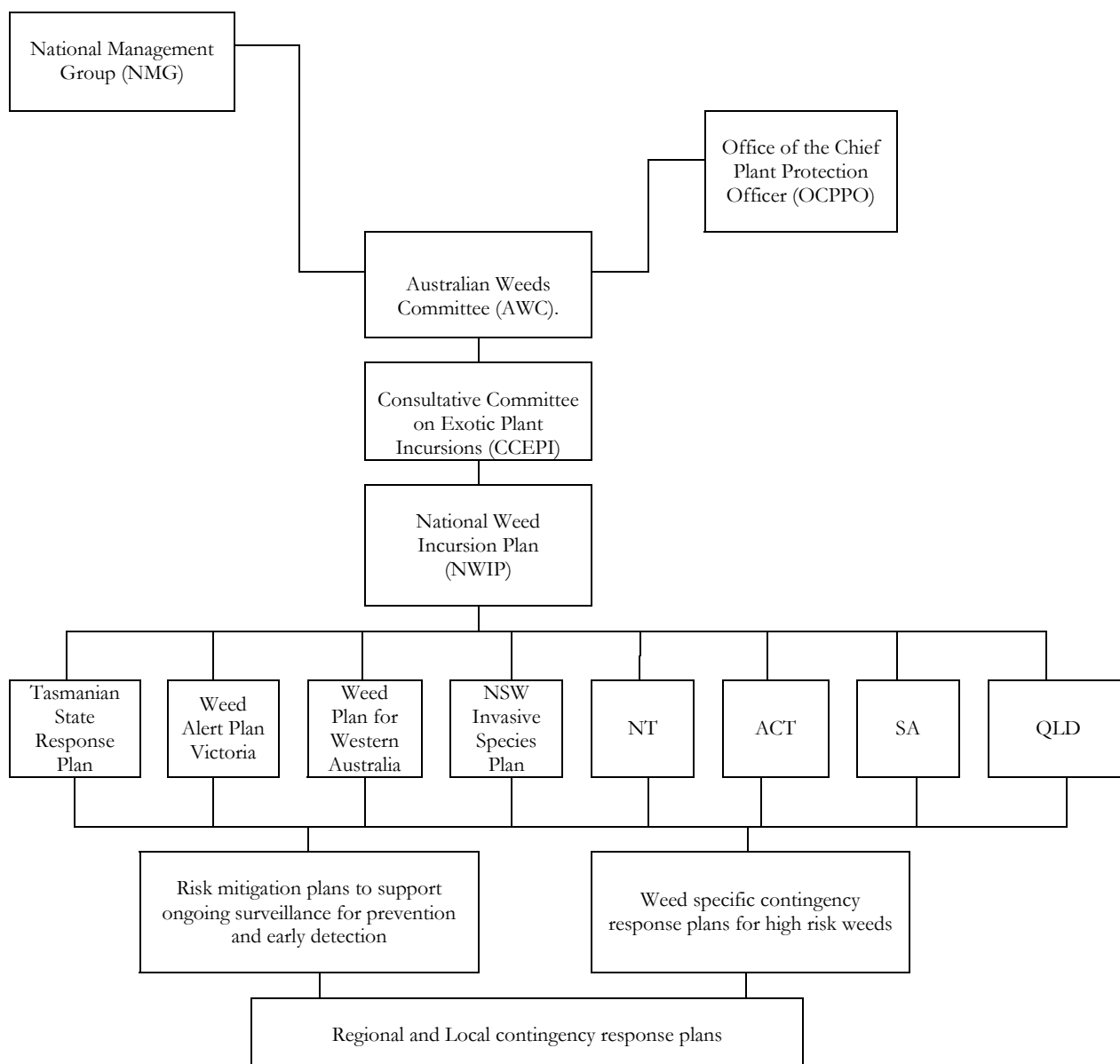


Figure 1. National structure for response preparation and planning

2.1 Stages of the National Weed Incursion Plan

Responses to weed incursions in Australia are managed in a similar way to responses to bushfires and other natural disasters. To ensure a common understanding of incursion response this document uses both the Australian Inter-service Incident Management System-Incident Control System (AIIMS-ICS) and PLANTPLAN as baselines (Appendix 5). Both models divide incident management into four core stages: prevention, preparedness, response and recovery (Figure 2).

The NWIP covers the response and recovery stages. The prevention and preparedness stages are contained in Appendix 3. Adopting the prevention and preparedness stages within a jurisdiction reduces the threat, prevents or mitigates against, and, prepares the jurisdiction for responses to weed incursions.

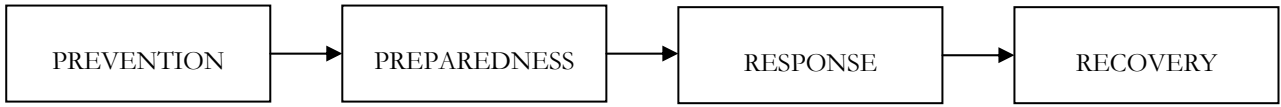


Figure 2. Stages of the NWIP

3 Responses to weed incursions

There are four phases of NWIP activated in a response to a weed incursion:

- Investigation/Trigger;
- Alert/Scoping;
- Operational/Response (eradication and containment); and
- Stand Down

This section provides a step by step guide to handling responses to weed incursions.

It is important to note that:

- while the phases of the NWIP are represented as separate events, they should all be viewed as part of a continuous process;
- because of the potential urgency and changing timeline of an incident, the Investigation Phase can invariably move immediately into the Alert Phase, and/or the Operational Phase may be commenced prior to all activities in the Alert Phase being completed;
- the actions described in this NWIP are advisory in nature and during the course of a response additional actions may be performed or some actions listed will not be carried out; and
- there is a requirement for all phases of this response section to be carried out in conjunction with a communication strategy discussed in Section 5.

Table 2 provides a guide to the trigger points for each of the four phases. There are specific trigger points that continue through out all four phases.

Table 2. Trigger points along the phases of the response continuum

	Detection	Verification Notification	Weed Risk Assessment	Surveillance	Planning	Response	
Phases of response	Investigation	Initial detection of suspect weed	Suspect weed verified and notified	Preliminary WRA (could be based on existing WRA)	Notify national authority (CCEPI)		
	Scoping/Alert	Detections of suspect weeds may occur at all phases of the response	Verification and notification of suspect weeds may occur at all phases of the response	Final WRA	Scoping and delimitation at weed incursion site	Establish interim restricted and control area	
						Instigate Weed Incursion Response Plan	
						Set up control centres depending on the level of response	
	Operational - Containment	Detections of suspect weeds may occur at all phases of the response	Verification and notification of suspect weeds may occur at all phases of the response		Trace back & trace forward programs in region	Establish quarantine areas	Application of chemical treatments or integrated weed management
						Decision on eradication vs. containment	
Operational - Eradication				Delimitation program in area	Develop Exit strategy	Application of chemical treatments or integrated weed management	
				Delimitation program continues in area	Endorse successful eradication or recommend termination		
				Ongoing surveillance, trace back and mapping			
Stand down				Ongoing surveillance, trace back and mapping	Implement Exit Strategy	Application of chemical treatments or integrated weed management	
				Develop site/local/regional rehabilitation plans			
Recovery				Ongoing surveillance, trace back and mapping	Implement site/local/region rehabilitation plans	Application of chemical treatments or integrated weed management	

Legend

	Early stages
	Major decision in early stage
	Ongoing /Established stages
	Major decision in ongoing phase
	Wind down stages
	Final end point
	Major decision in final stages

3.1 Investigation phase

The investigation phase involves the reporting of a suspect weed, verification of the species and the initial investigation of the weed species by the relevant authorities.

Steps in the investigation phase

3.1.1 Detection

The investigation phase begins with the initial detection of a suspect weed. A weed spotter, landholder, community group member, consultant, state/territory or local agency person or other individual reports the detection or provides a specimen to a relevant state/territory departmental officer or directly to state/territory herbaria. The state/territory departmental officer should forward the specimen onto a state/territory herbarium for verification.

3.1.2 Initial verification and formal notification

The initial verification from the state/territory herbarium of the weed species is notified to: the Lead Agency(s) Weed Manager (WM) in the relevant state/territory agency; the officer who provided the initial specimen; and any other relevant persons involved in the detection of the weed incursion. If further information is required by the state/territory herbarium to assist with the verification, the state/territory herbarium usually requests this from the officer who provided the initial specimen. Further taxonomic work may be required. (e.g. identification to subspecies level may be needed to select the most effective control measure)

3.1.3 Lead Agency(s) WM coordinates relevant information

The Lead Agency(s) WM coordinates the collection of relevant information for the initial report to the head/manager of the state/territory department.

The Lead Agency(s) WM must ensure that chain of evidence requirements for collection and retention of specimens are satisfied (refer to Appendix 6). This requires that appropriate measures and documentation procedures be followed at all times. An unbroken chain of evidence must be maintained for results to be admissible in court.

3.1.4 Notification to head/manager of state/territory agency

The Lead Agency(s) WM advises the head/manager of their department of the notification of a confirmed or suspected weed incursion.

3.1.5 Preliminary Weed Risk Assessment (WRA)

The Lead Agency(s) WM carries out a preliminary WRA on the confirmed or suspected weed incursion using an agreed National Weed Risk Assessment System (This will only apply if the weed species is not on the Proposed National Eradication Target (PNET) list (Appendix 7) or there is no WRA prepared under the PNET list).

3.1.6 Notify national authority (Consultative Committee on Exotic Plant Incursions (CCEPI))

The Lead Agency(s) head/manager notifies CCEPI of the confirmed or suspected weed incursion within 24 hours of becoming aware of the weed incursion.

3.1.7 Notify local, state/territory and national authorities, peak industry bodies.

The CCEPI is to advise the AWC, NMG, the AusBIOSEC reporting point and AQIS, and any peak industry bodies that may be affected by the incursion.

3.1.8 CCEPI to convene meeting

The CCEPI is to convene and chair a meeting that includes AWC members, the scientific advisory panel, technical experts from CSIRO, AQIS, weed research organisations, PHA, industry representatives and the Lead Agency(s) head/manager. (Appendix 8 provides an agenda template for this meeting).

3.1.9 Lead Agency(s) WM informs immediate relevant persons of the weed incursion

The Lead Agency(s) WM to inform the landholder and the local pest management officer of the weed incursion and the process that will be taken to address the weed incursion.

Table 3. Summary of the actions taken in the Investigation/Trigger phase.
(Bold text - action, *Italic text - responsible party*)

State/Territory Functions	National Functions
Investigation/Trigger Phase	
<p>Detection of a suspect weed incursion <i>Weed spotter, landholder, community group member, consultant, state/territory or local agency person or other individual submits suspect weed incursion</i></p>	
<p>Initial verification and formal notification <i>State/territory herbarium provides verification and notification to the Lead Agency(s) WM</i></p>	
<p>Lead Agency(s) WM coordinates relevant information <i>Lead Agency(s) WM collects relevant information for initial report</i></p>	
<p>Notify head/manager of state/territory agency <i>Lead Agency(s) WM reports notification</i></p>	
<p>Preliminary WRA <i>Lead Agency(s) WM carries out a preliminary WRA</i></p>	
<p>Notify national authority. <i>Lead Agency(s) head/manager reports incursion to the CCEPI</i></p>	
<p>Lead Agency(s) WM informs immediate relevant persons of the weed incursion <i>Lead Agency(s) WM</i></p>	
	<p>Notify state/territory and national authorities, peak industry bodies <i>CCEPI advises AWC, NMG, the AusBIOSEC reporting point, AQIS and any affected industry peak bodies of the incursion</i></p>
	<p>Convene CCEPI <i>CCEPI convenes a meeting with AWC, scientific advisory panel, technical experts from CSIRO, AQIS, weed research organisations, PHA, industry representatives and the Lead Agency(s) head/manager</i></p>

N.B Some actions may occur simultaneously

3.2 Scoping/alert phase

The scoping/alert phase is to delimit the extent of the incursion and provide further information for decisions about the type or level of response required. Actions within this phase cover the assessment of the weed species, its impacts and determining the appropriate nature and magnitude of the operational response.

Steps in the scoping/alert phase

3.2.1 Begin activities to confirm identification (if required)

More detailed taxonomic work may be required or further specimens collected and sent interstate or overseas to confirm identification to a precise taxonomic level.

3.2.3 Initial containment and scoping

The Lead Agency(s) WM is to delegate officers in the affected state/territory to conduct initial surveys, inspect properties and collect specimens to delimit the extent of the incursion (Appendix 9 contains delimitation templates). This will determine the extent of the interim restricted and control areas. Hygiene protocols need to be activated and quarantine measures established.

The Lead Agency(s) WM should utilise the prepared Weed Incursion Preparedness Plan (WIPP) (Appendix 10) for the weed incursion to support the initial survey work (if available).

Other state/territories need to check their weed records and/or conduct preliminary surveys.

3.2.4 Develop the preliminary Weed Risk Assessment (WRA) into a final WRA

The Lead Agency(s) WM is to develop the final WRA based on the preliminary WRA work in the Investigation Phase, information from the initial containment and scoping exercise and other research.

3.2.5 Develop a Weed Incidence Response Plan (WIRP)

The Lead Agency(s) WM is to develop a WIRP (Appendix 10). This can be adapted from an existing Weed Incidence Preparedness Plan (WIPP) if available. The plan should also include a range of decision triggers for declaring a successful eradication.

3.2.6 Announcement of the weed incursion

The WM notifies the CCEPI and prepares a report on the weed incursion for the CCEPI; this should include the initial containment and scoping exercise, the WIRP and the final WRA.

3.2.7 CCEPI convenes meeting

The CCEPI convenes a meeting to provide technical advice on appropriate actions in the WIRP and, where necessary, oversees the implementation of a program to investigate the feasibility of eradication.

It is important to note that WIRPs can become too prescriptive and may preclude future, unforeseen events. It would be beneficial to allow for modification, innovation and adaptation when an unexpected event occurs.

3.2.8 Weed Incursion Communication Strategy (WICS)

The CCEPI in conjunction with the WM and the lead agency communication/media liaison officer is to coordinate the development of a national/state/territory Weed Incursion Communication Strategy (WICS) (Refer to Section 5).

Table 4. Summary of the actions taken in the Alert/Scoping phase.
(**Bold text - action**, *Italic text - responsible party*)

State/Territory Functions	National Functions
Alert/Scoping Phase	
<p>Begin activities to confirm identification (if required) <i>State/territory herbaria in conjunction with international herbaria</i></p>	
<p>Initial containment and scoping <i>WM delegates officers in the affected state/territory to conduct initial surveys, inspect properties, and take specimens to delimit the extent of the incursion.</i></p>	
<p>Develop the initial WRA into a final WRA <i>WM to prepare the WRA</i></p>	
<p>Develop a WIRP <i>WM</i></p>	
<p>Announce the outbreak <i>WM notifies and delivers a report on the outbreak to the CCEPI</i></p>	
	<p>Convene Consultative Committee <i>The CCEPI provides technical advice on appropriate actions, oversees implementation of a program to investigate the feasibility of eradication.</i></p>
<p>Development of a Weed Incursion Communication Strategy (WICS) <i>WM</i></p>	<p>Development of a WICS <i>CCEPI</i></p>

N.B Some actions may occur simultaneously

3.3 Operational phase

The operational phase begins when the CCEPI agrees to implement the WIRP with the aim to eradicate the weed incursion. The operational phase should be carried out in conjunction with a WICS as discussed in Section 5.

Steps in the Operational - Containment phase

3.3.1 Communicate WIRP to property owner

WM to advise the affected property owner/agencies of the decision by the CCEPI to implement the WIRP. This should include any plans to quarantine the owner/agencies property/ies and any potential impacts to the property owner.

3.3.2 Communicate WIRP to government and affected industry

WM and the CCEPI to brief the Commonwealth, state and territory governments and industry of the decision to implement the WIRP. This should include any plans to quarantine areas and any potential impacts to stakeholders.

3.3.3 Implement containment

WM is to set up a Weed Incursion Team (WI team) responsible for the strategic control of the weed incursion. This includes policy and research development, liaison with media and affected stakeholders, financial and personnel administration and operational control procedures. The control procedures agreed by the CCEPI are implemented at this stage to contain the outbreak while the feasibility of eradication is investigated. Measures might include:

- official quarantine areas established under state/territory legislative proclamations;
- interstate quarantine restrictions coordinated by the biosecurity agency;
- implementation of quarantine controls (vehicle wash downs, inspection of equipment etc);
- official surveillance and trace back programs, including mapping of affected sites, recording of survey data and further delimitation work where required (Appendix 9 contains a delimitation survey template, Section 6 provides detail on Information systems);
- restricted area movement and permit system;
- application of chemical treatments or integrated weed management;
- research established into optimal control methods, seedbank longevity, life cycle phenology, dispersal and detection;
- emergency permit requirement via Australian Pesticides and Veterinary Medicines Authority (APVMA);
- public awareness campaign (Weed Incursion Communication Strategy Section 5); and
- Weed Incursion Response Training (WIR Training) for the WI team where applicable (Appendix 11 describes the WIR Training techniques).

Appendix 12 describes the Operational Phase of responses to weed incursion based on the Australian Inter-service Incident Management Systems (AIIM's) model. This is dynamic and can be adapted depending on the type of incursion.

3.3.4 Coordinate containment program

CCEPI to liaise with the WM to ensure effective and timely implementation of response actions.

3.3.5 Assess international trade impact (if applicable)

DAFF and DFAT to consider trade implications if applicable and notify relevant trading partners.

3.3.6 Seek expert advice (if applicable)

CCEPI may seek further technical advice from experts within Australia or overseas.

For serious incursions, the CCEPI may invite an overseas expert to visit the outbreak site.

3.3.7 Technical feasibility business plan and cost benefit analysis

CCEPI to facilitate with the affected state jurisdiction to prepare a scoping package for National Management Group (NMG) containing a technical feasibility business plan and cost-benefit analysis of proposed options to assist decisions on response actions.

3.3.8 Report to the CCEPI

WM to provide regular progress reports and other information on the incursion needed to assess the feasibility of eradication.

3.3.9 Decision on eradication vs. containment

CCEPI to convene to consider the feasibility of eradication, considering the weed incursion distribution, available control methods, triple bottom line impact, efficacy of containment measures and cost-benefit analysis.

If eradication is considered feasible, the CCEPI explores funding issues.

Note: a species is often designated an eradication target before it has been properly delimited, which may take up to several years. If this is the case then the weed incursion should be declared as a 'provisional eradication target' until it is delimited, at which time a realistic cost-benefit analysis can be done and the feasibility properly assessed.

3.3.10 Collect information for NMG paper

CCEPI and the WM to collect information such as, description of infested property or properties, survey results, progress of containment activities, trade restrictions, budget and cost-benefit analysis for submission to the NMG.

3.3.11 Develop cost-sharing proposal

CCEPI to develop a proposal for cost-sharing to fund response actions based on the Panetta et al (2002) discussion paper (Appendix 13).

3.3.12 Report to NMG on eradication

CCEPI to brief NMG on the technical feasibility of eradication.

If eradication is considered feasible based on current knowledge of incursion extent (which may be incomplete), CCEPI will recommend an appropriate strategy and propose Commonwealth and state/territory cost-sharing arrangements to be delegated by NMG.

3.3.13 Develop a Weed Incursion Exit Strategy

WM and the WI team in collaboration with CCEPI to develop a Weed Incursion Exit Strategy (WIES) to be used during the Stand Down Phase. This exit strategy will be used either when the weed incursion is confirmed eradicated or, when it is considered not cost/beneficial to continue with the weed incursion response.

The exit strategy should include:

- definitions of the trigger points for termination of the restricted and containment zones;
- the surveillance zone;
- restrictions to industry/agencies;
- time frames for long-term monitoring;
- revegetation strategy/s for affected area; and
- time frame for restoration of property/area free of weed incursion.

Table 5. Summary of actions – Summary of actions taken in the Operational: Containment phase
(**Bold text - action**, *Italic text - responsible party*)

State/Territory Functions	National Functions
Operational: Containment Phase	
Communicate WIRP to property owner <i>WM</i>	
Communicate WIRP to government and affected Industry <i>WM</i>	Communicate WIRP to government and affected Industry <i>CCEPI</i>
Implement containment campaign <i>WM convenes a WI team responsible for strategic control of the incursion, policy development, financial administration, and liaison with the affected stakeholders.</i>	
Technical feasibility business plan and cost benefit analysis <i>WM of affected state jurisdiction</i>	Technical feasibility business plan and cost benefit analysis <i>CCEPI to facilitate with affected state jurisdiction</i>
	Coordinate containment program <i>CCEPI and WM</i>
	Assess international trade impact (if applicable) <i>DAFF and DEAT.</i>
	Seek expert advice (if applicable) <i>CCEPI</i>
Report to the CCEPI <i>WM</i>	
	Decision on eradication vs. containment <i>CCEPI</i>
Collect information for NMG paper <i>WM</i>	Collect information for NMG paper <i>CCEPI</i>
	Develop cost-sharing proposal <i>CCEPI</i>
	Report to NMG on eradication <i>CCEPI</i>
Develop a WIES <i>WM</i> <i>WI team</i>	Develop a WIES <i>CCEPI</i>

N.B Some actions may occur simultaneously

Steps in the operational - eradication phase

3.3.14 Approve eradication campaign and cost- sharing arrangements

NMG to approve eradication campaign and funding for eradication programs.

3.3.15 Implement and manage eradication

Eradication procedures will usually be an extension of the WIRP where quarantine/operational activities are established in the containment phase and may include:

- the maintenance of quarantine zones;
- further surveillance and monitoring surveys;
- trial and application of chemical/physical controls;
- debrief sessions daily (if feasible); and
- communication programs.

3.3.16 Report to CCEPI

WM to provide regular progress reports and other information on the incursion needed to assess the progress of eradication.

3.3.17 Evaluate progress

CCEPI to review progress on a regular basis and prepare briefing papers for NMG etc. Renewal of funding for eradication after the first year is subject to approval by NMG.

3.3.18 Endorse successful eradication or recommend termination and brief NMG

CCEPI to brief NMG on whether to endorse successful eradication or recommend to terminate the eradication program.

Table 6. Summary of actions taken in the Operational: Eradication phase
(**Bold text - action**, *Italic text - responsible party*)

State/Territory Functions	National Functions
Operational: Eradication Phase	
	Approve eradication campaign and cost-sharing arrangements <i>NMG</i>
Implement and manage eradication <i>WM and the WI team</i>	
Report to CCEPI <i>WM</i>	
	Evaluate progress <i>CCEPI</i> <i>NMG</i>
	Endorse successful eradication or recommend termination and brief NMG <i>NMG</i>

N.B Some actions may occur simultaneously

3.4 Stand down phase

The stand down phase begins when either the eradication of the weed incursion is confirmed or, when it is considered to be not cost/beneficial to continue with the weed incursion response. Given that some weed incursions may take a number of years to eradicate, record keeping is important throughout the progress of the WIRP and all records should be compiled and stored appropriately at the end of the program. Acquittals of funds, documentation of the program, notifying trading partners and other stakeholders and conducting an incursion debrief are all important steps in the stand down phase. Section 6 discusses information and data management systems.

In addition, with the potential long-term time frames required to assess if eradication has been achieved the test will ultimately be based on ongoing monitoring programs, which may be undertaken with, or devolved to, local government and landholders.

Steps in the Stand down phase

3.4.1 Review and implement the WEIS

WM and WI team to implement the WEIS.

3.4.2 Acquittal of funds and program documentation

States and territories will be required to provide financial audit reports where cost sharing arrangements have been instigated. Final reports should be prepared and circulated to all relevant parties involved in the response.

3.4.3 Review intra- and interstate quarantine arrangements (if applicable)

CCEPI to review the intra-and interstate quarantine arrangements to define the weed incursion free zones. This will apply if the eradication is unsuccessful or the WIRP is terminated prior to completion.

3.4.4 Notify trading partners (if applicable)

If eradication is successful the Department of Agriculture, Fisheries and Forestry (DAFF) and Department of Foreign Affairs and Trade (DFAT) to advise relevant international trading partners and negotiate arrangements to reinstate trade.

3.4.5 Incident debrief and review the WIRP (WM/WI team)

WM to organise a debriefing workshop with the WI team and other operational staff. The debrief should occur within a reasonable time frame after the WIES has been implemented to evaluate the response and review the WIRP. Each phase of the operation should be examined and evaluated for suggested improvements to the WIRP incursion procedures.

WM to prepare a report documenting the suggested improvements and submit to CCEPI.

3.4.6 Incident debrief and review the NWIP (CCEPI)

CCEPI to convene and chair a debriefing meeting with key state/territory agency and industry stakeholders involved in the weed incursion response. The submitted evaluation report from the WM is to be discussed and endorsed if acceptable.

CCEPI to evaluate the NWIP, this should include the validity of the WRA, the transparency of the decision-making processes and the effectiveness of the communication strategy and reporting procedures.

3.4.7 Revise the NWIP

CCEPI to revise the NWIP following the outcomes of the convened debriefing

Table 7. Summary of actions taken in the sand down phase

(**Bold text - action**, *Italic text - responsible party*)

State/Territory Functions	National Functions
Stand Down Phase	
Implement WIES <i>WM</i>	Implement WIES <i>CCEPI</i>
Acquittal of funds and program documentation <i>WM</i>	Acquittal of funds and program documentation <i>CCEPI</i>
	Review intra- and interstate quarantine arrangements (if applicable) <i>CCEPI</i>
	Notify trading partners (if applicable) DAFF and DFAT
Incident debrief and review the WIRP <i>WM</i> <i>WI team</i>	Incident debrief and review the NWIP <i>CCEPI</i>
	Revise NWIP <i>CCEPI</i>

N.B Some actions may occur simultaneously

4 Recovery from responses to weed incursions

4.1 Review

This NWIP should be continually reviewed and evaluated to monitor the currency and application of the document. In the event of a response to a weed incursion the CCEPI are required to activate the definitive version of the NWIP. The NWIP has a currency of two years from the time of publication, from 2008 to 2010, when it will be reviewed again. Review should occur before the two-year period time frame if a response to a weed incursion incident has occurred.

4.2 Recovery

The recovery process involves returning the affected area to its normal level of functioning after an incursion event. This may include revegetation and habitat rehabilitation programs to reduce the potential for re-infestation from another weed species and the provision of ongoing surveillance programs to ensure the area continues to be free of the weed incursion.

In some situations the weed incursion may have already severely degraded high conservation value vegetation, which will have a severe impact on habitat value, connectivity and diversity. The recovery process may include revegetation strategies and plans for an area to facilitate the return of the high conservation value vegetation and the reconstruction of viable ecosystems.

Ongoing surveillance programs will be required to ensure the area continues to be free of the weed incursion. Surveillance models can be used to assess the time frame required for a monitoring program to guide the recovery phase.

Recovery may also include financial assistance to landholders or others in the community who were directly affected by the incursion event. This may require specific industry reconstruction funding which might be part of a national cost share arrangement.

4.3 A checklist of critical decisions to be made in the recovery phase

Table 8. Checklist of critical decisions during the recovery phase

Has the NWIP been reviewed and evaluated for currency and application?	<input type="checkbox"/>
Has funding been allocated for rehabilitation of the weed incursion site/s?	<input type="checkbox"/>
Has ongoing surveillance programs been set up to monitor for re-emergence of weed species?	<input type="checkbox"/>
Has the communication plan been reviewed and evaluated to include the recovery phase?	<input type="checkbox"/>
Are landholders and the general public being urged to report further sightings?	<input type="checkbox"/>
Is there further planning and financial assistance required to bring the affected area back to its normal level of functioning?	<input type="checkbox"/>

5 Communication

5.1 Communication

Communication planning is a fundamental component to the NWIP. Developing a communication strategy and plan will help maintain organisational and community support, participation, alertness, and awareness and ensure there is an effective flow of information during responses to weed incursions.

5.1.1 Weed Incursion Communication Strategy (WICS)

The WICS is the overarching document that guides the exchange of messages and information to a range of identified stakeholder/s groups involved or affected by a weed incursion response. The strategy should be a document developed for the duration of the response and ensure the effective flow of information during the incursion. It should include the objectives of the response, key messages that will be delivered to stakeholders, identification of target groups and consistent branding for the response program. The strategy should also detail methods, timing, budget and persons responsible for all aspects of the project communication.

The objectives for the communication strategy are to:

- create maximum possible awareness of the weed incursion, the problem, its potential and identification of the species;
- create a communications platform that encourages community to report sightings/infestations of the weed incursion;
- create and facilitate an effective working environment between Commonwealth, state/territory, regional, local agencies and the community;
- provide effective key messages that are consistent with the outcomes of the WIRP;
- provide quantifiable data into the future reporting requirements for the project;
- ensure all weed contingency and incursion action plans contain a communication component; and
- respect confidentiality and privacy requirements to protect affected landholders/managers and to not compromise investigations.

In each phase of the NWIP there will be a diverse range of stakeholders involved. Each of these will need to be engaged through a variety of methods and with a variety of messages. Appendix 14 lists the potential stakeholders involved in the NWIP.

5.1.2 Media

All information pertaining to the media will be listed in the WICS. This will include the format, responsibility and protocol for writing and releasing media statements and briefs during the response. Budgetary allocations for media components during the weed incursion should also be listed within the budget section of the WICS.

6 Information systems

Information and data management systems are essential to the NWIP. In a response to a weed incursion the information and data management system needs to be comprehensive, flexible and user friendly to allow for those individuals who may not use such systems during their normal duties. The system should be capable of disseminating data collected as part of project activities to the widest range of users and all data collected should be archived appropriately to ensure availability of data for multiple use and to safeguard the investment for future use.

6.1 Data Management

Presently, national funding has been allocated to the development of a new computer application BioSIRT. This application will eventually be the overarching data management tool for biosecurity incident response. It will contain three key components:

- SQCR — Surveillance, Quarantine, Control and Recovery. This component manages and records routine and emergency regulatory activities, control measures and surveillance on any Area Of Interest (AOI), especially activity surrounding emergency incident management. SQCR contains functions for recording summary information on traces, AOIs, diary and scheduled events, backgrounds, visits, observations, surveys, consumables, samples, diagnosis and status of incidents.
- CRIS — Client and Resource Information System. This component delivers spatial capacity and manages parties and their association with land. While SQCR has the capacity to store details of parties and land as text, CRIS brings the capacity to generate maps and perform other spatial tasks.
- RMP — Resource Management Package. This component manages detailed activities of teams, occupational health and safety, consumables, equipment, contractors, accommodation, etc. While SQCR identifies properties to be dealt with and can record subsequent actions, RMP has much higher capacity, as required for events involving hundreds or thousands of parties.

Until this application is available, data management systems for the NWIP are required to provide for collection of the following information:

- landholders, owners and locations of target properties;
- area status – containment zone and restricted area;
- revisit frequencies;
- statistics for surveillance and tracing activities;
- staff movement and premises visit details;
- movement permits applications;
- reports or information provided by the public or industry;
- expenditure records;
- statistics for control techniques and kill response;
- routine management and surveillance; and
- exchange of information across jurisdictions and sectors.

The system should also allow for:

- tracking of specimens and taxonomic verification, notification information;
- ecological and biological information on weed incursion;

- generation of progress reports on destruction, containment and eradication;
- generation of forms for scheduled property visits;
- data recorded to nationally agreed core attributes for measuring and recording weed monitoring programs/projects (Thackway et al 2004); and
- management of information in a manner that is consistent with Australia's international rights and obligations under the Sanitary and Phytosanitary Agreement.

6.2 Documentation

The proposed planning framework for the documentation of emergency management arrangements is contained in Appendix 15. This is based on the quality management system documentation hierarchy - AS ISO 10013-2003 *Guidelines for quality management system documentation*.

6.3 GIS mapping component

The use of geographic information systems (GIS) to map weed incursions in responses provides a system capable of integrating, storing, editing, analysing, sharing, and displaying geographically referenced information.

Using GIS techniques, the lead agency can facilitate the integration of other spatially registered databases to be used in analyses of the weed incursion (e.g. weather data, land cover classes, satellite imagery, etc). Weed incursion risk pathways can be geographically defined, analysed and managed in relation to other spatially referenced data.

These databases and GIS technology are a vital component in helping to investigate and/or control suspected or actual weed incursions. All state/territory jurisdictions should be committed to web-based access to data, including the production of real-time maps that show current status as well as temporal trends.

7 Appendices

Appendix 1. Chronology of the National Weed Incursion Plan

2007 - In October of 2007, Phillip Maher, Senior Project Officer, Biosecurity Queensland, Department of Primary Industries conducted a workshop on the National Weed Incursion Plan and the Weed Incursion Response Toolkit. This workshop provided many of the principles included in this plan. The workshop participants are listed here (please note that their locations are listed as they were in 2007):

Workshop participants

Dr Nigel Ainsworth, Principal Policy Officer - Pest Plants
Department of Sustainability and Environment, Victoria

Jeanine Baker, Biosecurity and Risk Sciences
Bureau of Rural Sciences

Alice Bielby, A/Director Weed Management Branch
Department of Natural Resources, Environment and the Arts, Northern Territory

Sonya Bissmire, Environmental and Marine Response, Post-Border Directorate
Biosecurity New Zealand, Ministry of Agriculture and Forestry.

Philip Blackmore, Regional Coordinator (Weeds)
Department of Primary Industries, New South Wales

Kate Blood, Senior Project Officer, Weed Alert
Department of Primary Industries, Victoria

Leanne Brown, Biosecurity and Risk Sciences
Bureau of Rural Sciences

Professor Mark Burgman FAA
Director, Australian Centre of Excellence for Risk Analysis
University of Melbourne

Oscar Cacho, School of Business, Economics and Public Policy
University of New England

Mike Cole, Deputy Chief Plant Protection Officer
Commonwealth Department of Agriculture, Fisheries and Forestry

Tim Coutts, Office of the Chief Plant Protection Officer
Commonwealth Department of Agriculture, Fisheries and Forestry

Jon Dodd, Senior Research Officer, Weed Science, Modelling and Climatology
Department of Agriculture & Food, Western Australia

Glen Fisher, Manager Land Protection Coordination
Invasive Plants and Animals, Biosecurity Queensland, Department of Primary Industries and Fisheries

Julian Fox, Research Fellow, Geographical Sciences and Planning
The University of Queensland

Kylie Galway, Acting Team Leader Conservation Planning
Environmental Protection Agency, Queensland

Cindy Hauser, Post-doctoral fellow
Australian Centre of Excellence for Risk Analysis
University of Melbourne

Daniel Joubert, Senior Project Officer, Weed Alert
Department of Primary Industries, Victoria

Cory Lindgren, Senior Program Specialist,
Invasive Plants Canadian Food Inspection Agency

Phillip Maher, Project Manager
Invasive Plants and Animals, Biosecurity Queensland, Department of Primary Industries and Fisheries

Jane Morton, National Weed Detection Project Officer
CRC for Australian Weed Management

Dane Panetta, Principal Scientist
Invasive Plants and Animals, Biosecurity Queensland, Department of Primary Industries and Fisheries

Neil Smith, Project Manager
Department of Primary Industries, Victoria

John Thorp, National Weed Management Facilitator
John Thorp Australia, Tasmania

John Virtue, Senior Weed Ecologist
Department of Land, Water and Biodiversity Conservation, South Australia

Philip Warren, Manager Branched Broomrape Eradication Program
Department of Land, Water and Biodiversity Conservation, South Australia

Dr David Westcott
CSIRO, Sustainable Ecosystems

2008 – In January, Jane Morton was appointed as the Senior Project Manager for the National Weed Incursion Plan, Biosecurity Queensland to collate, write and add further contributions to the National Weed Incursion Plan. The draft NWIP went out for comment on April 30th 2008 to the workshop participants, the reference group for the NWIP and representatives from Australian herbaria listed below.

NWIP reference group

Mike Askey-Doran, Principal Weed Management Officer
Department of Primary Industries and Water, Tasmania

John Burley, Director Invasive Plants and Animals
Biosecurity Victoria, Department of Primary Industries, Victoria

Mike Cole, Deputy Chief Plant Protection Officer
Commonwealth Department of Agriculture, Fisheries and Forestry

Tim Coutts, Office of the Chief Plant Protection Officer
Commonwealth Department of Agriculture, Fisheries and Forestry

Glen Fisher, Manager Land Protection Coordination
Invasive Plants and Animals, Biosecurity Queensland, Department of Primary Industries and Fisheries

Jane Morton, Senior Project Manager
Invasive Plants and Animals, Biosecurity Queensland, Department of Primary Industries and Fisheries

Dane Panetta, Principal Scientist
Invasive Plants and Animals, Biosecurity Queensland, Department of Primary Industries and Fisheries

Mark Ramsey, Manager, Animal and Plant Control
Department of Land, Water and Biodiversity Conservation, South Australia

Representative from Australian herbaria

Ailsa Holland, Chief Scientist
Queensland Herbarium, Environment Protection Agency, Queensland

Roger Spencer, Horticultural Botanist
Council of Heads of Australasian Herbaria representative, Royal Botanic Gardens, Melbourne

2008 – The final version of the NWIP was submitted to DAFF and AWC for endorsement on August 15th 2008.

Appendix 2. History of responses to weed incursions requiring national support

Table 9. History of responses to weed incursions requiring national support.

Weed	Detection date	State/Territory	Location	Eradicated (-) Still present (+) On-going monitoring (#)	National Cost Sharing
<i>Blainvillea gayana</i>	2000	QLD	Kuttabul & Nth of Proserpine	#	
	2005		Dryander National Park, Nth Proserpine	#	

Weed	Detection date	State/Territory	Location	Eradicated (-) Still present (+) On-going monitoring (#)	National Cost Sharing
<i>Centaurea maculosa</i>	1999	ACT	Casuarina Sands		
<i>Chromolaena odorata</i>	1993	QLD	NE of Double Mountain, Nth Qld Bingal Bay, Nth Qld Tully, Nth Qld	#	YES
	1994			#	
	1998			#	
	2003			#	
<i>Clidemia birta</i>	2001	QLD	Julatten, Nth Qld	#	YES
	2006			#	
<i>Cleome rutidosperma</i>	2000	NT		-	
<i>Croton birtus</i>	2004	QLD	Scherger RAAF Base, Weipa district	#	YES
<i>Cyperus surinamensis</i>	2001	WA			
<i>Eulophia graminea</i>	2001	NT	Nightcliff	-	
<i>Galactites tomentosa</i>	2001	VIC			
<i>Hieracium pilosella</i>	2001	TAS			
<i>Hypericum canariense</i>		WA			
<i>Limnocharis flava</i>	2001	QLD	Kuranda & Cairns Black River, Townsville Atherton & Feluga, Anderson Park Botanical gardens Townsville El Arish	#	YES
	2002			#	
	2003			#	
	2006			#	
<i>Miconia racemosa</i>	2002	QLD	Kuranda	#	YES
<i>Miconia calvescens</i>	1997	QLD	Kuranda Whyanbeel Innisfail El Arish Daintree National Park	#	YES
	1999			#	
	2001			#	
	2006			#	
	2007			#	
<i>Miconia nervosa</i>	2004	QLD	Whyanbeel Daintree National Park	#	YES
	2007			#	
<i>Mikania micrantha</i>	1998	QLD	Mission Beach, Bingal Bay, Forrrest Beach & Wongaling Beach Speewah & Ingham	#	YES
	2001			#	
<i>Orobanche ramosa</i>	1999	SA		+ #	YES
<i>Nassella tenuissima</i>	1998	VIC			
<i>Neurada procumbens</i>	2002	NT			
<i>Phytolacca rivinoides</i>	2002	QLD	Whyanbeel Creek Miallo Whyanbeel Creek NW of Mossman.	#	
	2004			#	

Appendix 3. Capacity to deliver the NWIP

Australian state/territory jurisdictions have responded in the past to a number of high-risk weed incursions (Appendix 2). The adequacy of response has been based on the jurisdictional capacity to deliver an eradication program. Jurisdictional capacity is underpinned by the development, implementation and support of national, state/territory programs, which reduce the threat of future weed incursions. Adoption of the prevention and preparedness stages within and across jurisdictions will reduce the threat, prevent or mitigate against, and, prepare a jurisdiction for responses to weed incursions.

1.0 Prevention of weed incursions

Prevention is an important component of the NWIP. Prevention systems need to be in place to reduce the threat of future weed incursions. This involves identifying the weed threats to Australia and assessing the risks if that weed species were to be found in Australia and taking action to avoid the establishment of the weed species. Figure 3 shows the main steps involved in the prevention phase. At the end of this section a checklist is supplied for the critical decisions to be checked off for the prevention phase.

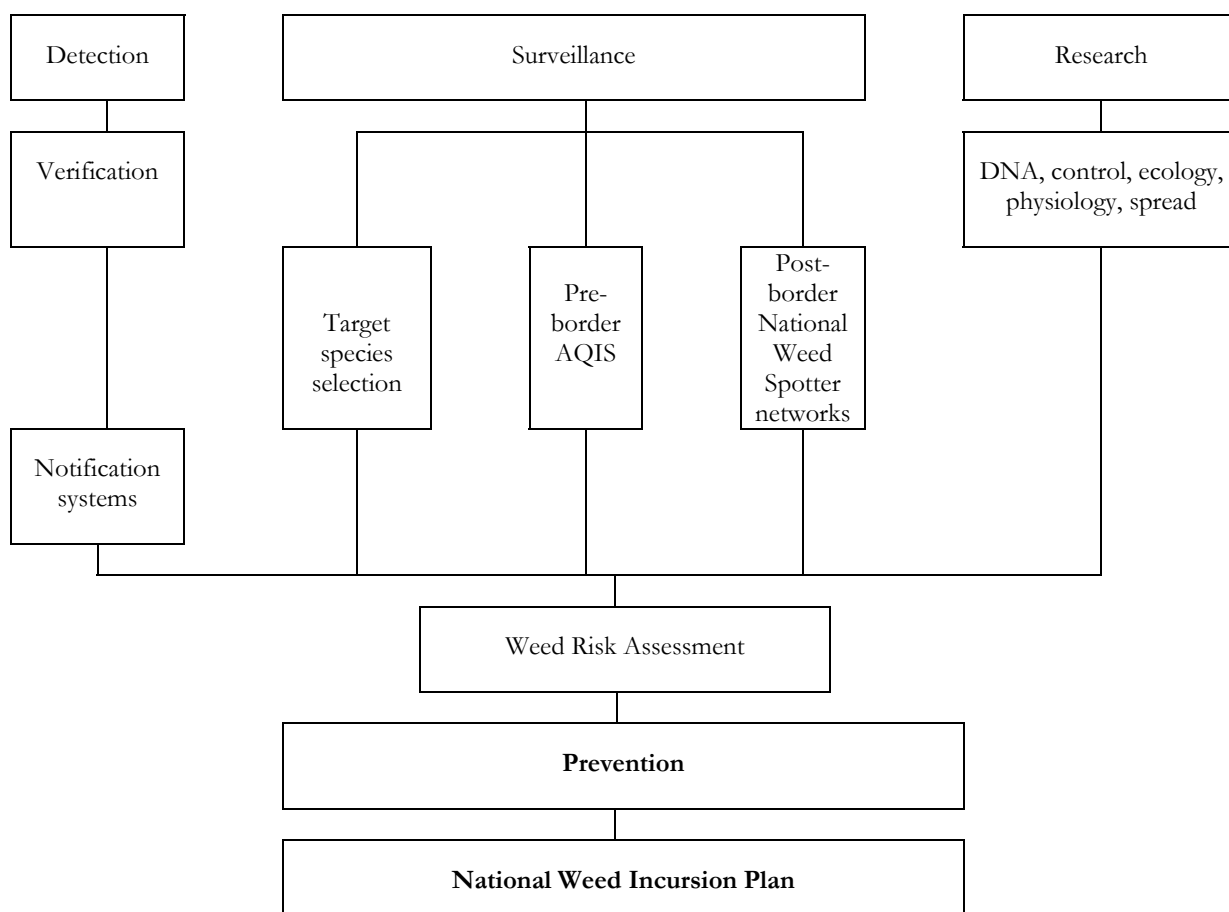


Figure 3. Main steps required in the prevention phase

1.1 Target species selection

There is a need to develop a national list of eradication targets (Proposed National Eradication Targets: PNET), so that finite resources can be focused on species that pose the greatest threats to Australia. Once these targets have been selected, all the states and territories could impose uniform statutory restrictions on the import and sale of these species. When such state-level restrictions are harmonised with Australian government quarantine controls, a powerful barrier can be put in place to prevent entry and establishment of high-risk target species, hopefully avoiding or at least delaying, costly eradication programs.

Currently, a list of national eradication targets does not exist. However, a system to select species for such a list is currently under development (National Categorisation Project (NCP) - AWC 2008) (Appendix 7). While the NCP will not develop a national list of eradication targets, it is expected to reach national agreement on the criteria that could be used to assess candidate taxa with a view to selection of a target list of priority species.

1.2 National categorisation project

The NCP has proposed five weed management categories. The objective of this category is to seek a consistent and coordinated national approach to the eradication of certain high-risk species that would eventually be listed in this category. Currently, the NCP has proposed a number of 'selection criteria' that could be applied to select targets for national eradication. These selection criteria are: (1) species that are present in Australia; (2) species for which eradication is feasible; (3) species that pose 'national significant threats; (4) species with an impact that extends across more than one state or territory. A project outside the scope of the current NCP will need to apply the proposed selection criteria to a large number of candidate species and develop a final agreed list of national eradication targets.

1.3 Prediction and risk assessment

Australia is relatively free of many of the major weeds present in other parts of the world. To safeguard this status, Plant Biosecurity (within Biosecurity Australia) adopts a pre-emptive approach in developing lists of prohibited species and quarantine policies that prohibit the entry of identified weeds. This information is held on the AQIS Import Conditions Database (ICON) which is updated continuously as new information is received.

Prediction of serious weed threats requires the scientific rigor of a weed risk assessment (WRA). This is the evaluation or estimation of the actual or potential impact and distribution of a weed species. In Australia there are a number of different systems used: the border system used by Biosecurity Australia (Pheloung et al. 1999); a national protocol for post-border weed risk management (Virtue et al. 2006); and the post-border state/territory systems such as Victoria (Weiss and McLaren 2002), South Australia (Virtue 2004) and Queensland (Walton 2005).

1.4 Detection

Detection of new and emerging weeds is often the weakest point in early management of invasive species. A failure to detect a weed incursion soon after establishment at a site is a major factor limiting an effective response action. Even with structured surveillance programs in place these systems will not detect all incursions. It is likely that when a 'not seen before' or 'this is new' weed species is received it has arrived via an ad hoc pathway rather than a structured plan. New and emerging weeds will more likely be detected through strengthened national networks of

state/territory coordinated Weed Spotters, supported surveillance programs outside AQIS and raised public awareness

1.5 Surveillance

Surveillance refers to searching for, watching for, collecting and documenting potential weed incursions. Pre-border surveillance is considered the first line of defence and minimises the risk of a new species entering the country. Post-border surveillance, the second line of defence ensures a rapid response if a new species is found to have 'slipped through the net'.

1.5.1 Pre-border surveillance

Pre-border surveillance activities are overseen by AQIS; state/territory agencies do not have a direct role in border detection of most pests. AQIS carries out cooperative surveillance programs in the countries north of Australia through the Northern Australia Quarantine Strategy (NAQS). NAQS program conducts surveys along our northern coastline and neighbouring countries, for early signs of new weeds, pests or diseases. The NAQS program has a high presence in the Torres Strait, monitoring traffic between the Papua New Guinea and Australian mainlands and ensuring high public awareness of people living in this strategically important quarantine zone.

The NAQS program operates along Australia's northern coastline from Broome in the west to Cairns in the East. This includes the Torres Strait, but excludes the metropolitan areas of Darwin and Cairns. NAQS offshore activities are limited to Australia's nearest northern neighbours: Indonesia, Timor Leste and Papua New Guinea.

AQIS uses a range of technologies and approaches including research, shared international resources and intelligence, to help prevent the introduction of weeds. Surveillance and monitoring of risk areas is also critical along with border control activities, which focus on intercepting and quarantining potential threats at Australia's airports, seaports and international mail centres.

State/territory agencies need to have good communication with AQIS so they know when new species of interest are being found at the border and to assist in targeting post border surveillance activities.

1.5.2 Post-border surveillance

Post-border surveillance activities can fall into two categories:

1. Incidental - weed incursions observed during daily activities. This is a passive form of surveillance and there are four important aspects required to facilitate incidental sightings and reporting:

- awareness and weed identification material provided to the community to help people recognise important plants;
- a simple, quick and easy procedure to follow for reporting a sighting;
- rapid response to new weed incursions if warranted; and
- prompt feedback from the jurisdictional state/territory agency to the reporting person to confirm the plant's identity and advise what will happen next.

Weed Spotters

The best examples of incidental surveillance programs are the Victorian and Queensland Weed Spotters. Weed Spotters are people who assist each state/territory jurisdiction by, reporting and/or collecting new and emerging weed species and extensions of range of existing weeds. Training and feedback is provided to increase knowledge and maintain enthusiasm.

2. Surveys - surveys are an organised and deliberate form of structured (active) surveillance. Focussing on small areas or a sweep of a larger area and are carried out by trained or experienced individuals.

NAQS

The best example of structured surveillance as an operational strategy is the AQIS Northern Australia Quarantine Strategy (NAQS), which is built around structured surveillance to protect Australia from exotic pests and diseases entering from South East Asia and the Pacific.

1.6 Verification

The expertise and knowledge required to identify and verify a weed species resides within Australian and International Herbaria. Australian herbaria need to have the capability and resources to validate weed species through taxonomic expertise and national and international networks associated with plant taxonomy. It is the plant taxonomist with detailed knowledge of plant species who identifies non-indigenous taxa when first encountered.

It is essential for voucher specimens to be obtained and subsequent actions be based upon authoritative taxonomic identifications that meet international standards. This, together with detailed descriptive information about the location and characteristics of the plant, provides the chain of evidence required in a response to a weed incursion.

Voucher specimens of invasive plant species provide fundamental data for screening of quarantine pests, ecological indicators for biological control, information, and morphological and genetic research materials.

Hygiene protocols for safe handling, disposal and storage of high risk weed species in Australian herbaria will reduce the risk of further spread of a potential threat (Queensland Herbarium 2007).

1.7 Notification systems

Once verification of a weed species is obtained, an efficient and timely system needs to be in place for notification of authorities involved with invasive species management. A consistent formal early warning system for Australian herbaria would include protocols and procedures for herbaria to report PNET and new state/territory and national weed species records to the state/territory weed management/biosecurity authority. Linkages to the Australian Virtual Herbarium Early Warning System will provide consistency in data across jurisdictions.

1.8 A checklist of critical decisions to be made in the prevention phase

Table 10. Checklist of critical decisions during the prevention phase

Are there formal notification systems in place in each state/territory herbaria?	<input type="checkbox"/>
Is there available taxonomic expertise to verify weed species?	<input type="checkbox"/>
Does the weed species fit into Category 1 or 2 of the Proposed National Eradication Targets?	<input type="checkbox"/>
Is there a definitive Weed Risk Assessment available on the weed species?	<input type="checkbox"/>
Are there hygiene protocols in place at state/territory herbaria for safe handling of high-risk weed species?	<input type="checkbox"/>
Are there existing post-border surveillance networks available to link into?	<input type="checkbox"/>

2.0 Preparedness for weed incursions

Being in a state of readiness (preparedness) significantly reduces the response time to new weed incursions, ultimately improving the outcomes of management efforts.

2.1 Incursion contingency planning

Incursion contingency plans are strategic or operational plans for responding to weed incursions. These plans are usually developed through consultation with key organisations and individuals and formally agreed to by the lead biosecurity agency, industries directly affected by the weed incursion and any other parties likely to contribute substantial resources to the response. Incursion contingency plans can be developed for weeds not in Australia (Weed Incursion Preparedness Plans) and new incursions found in Australia or new incursions to a specific state/territory jurisdiction (Weed Incursion Response Plans).

2.1.1 Weed Incursion Preparedness Plans

Weed Incursion Preparedness Plans (WIPP) should be prepared for weed species that are not yet in Australia and are considered a serious threat. The preparedness details should be outlined in anticipation of the weed being found in Australia in the future. Examples of such plans can be found in PLANTPLAN, AUSVETPLAN and EMPPlan.

For the NWIP all species that fit criteria Category 1 (National exclusion) listed as PNET should have a WIPP developed in anticipation of entry into Australia (Appendix 10). A WIPP is generally prepared as a national plan. It should contain a surveillance protocol. The plans should also include eradication criteria to define when eradication has been achieved.

2.1.2 Weed Incursion Response Plans

If a new incursion has occurred and is ranked as a high priority, a WIRP may be prepared. If a WIPP has already been prepared for that weed, the information from the WIPP will form the basis of the WIRP (Appendix 10). All Category 2 species (Eradication targets) listed as PNET should have WIRPs developed for effective incursion management response. These plans can form an umbrella-planning framework for individual site action plans. Plans should contain a surveillance protocol. The plans should include eradication criteria to define when eradication has been achieved. WIRPs have been prepared for some national cost-share and environmental alert species.

2.1.3 Hygiene and disposal protocols

Each preparedness and response plan should contain a hygiene and disposal protocol to ensure weeds are not spread from their incursion location or source, including commercial premises. Disposal of potted plants, plants removed from the field etc., should be planned as part of the WIRP. It is important that plants are contained in transit and that disposal is adequate. Dumping at landfill may not be sufficient for some weeds. A list of quarantine-standard landfill, autoclave and incineration facilities should be established, including available washdown facilities (Queensland Department of Primary Industries 2008).

2.2 Funding arrangements

Cost sharing principles endorsed by the AWC are used by the CCEPI to firstly determine the need for national cost-sharing arrangements (with contributions from the Commonwealth, state and territories) (Appendix 13). Once a determination is agreed to, the actual amount is decided by the NMG using a variety of formulae to ensure the cost to key stakeholders is equitable.

2.3 Research and development

A research and development program is required in conjunction with the planning to develop response preparedness and event response plans, particularly for high-risk species. Such work is probably best conducted by the agencies normally providing such service for groups of weed species. All government agencies have specific research facilities located around Australia such as Commonwealth Scientific and Industrial Research Organisation (CSIRO) and many state/territory agencies also cooperate with universities and Cooperative Research Centers (CRC) –two of which have some involvement in weed management: National Plant Biosecurity CRC and CRC for Australian Weed Management.

2.4 A checklist of critical decisions to be made in the preparedness phase

Table 11. Checklist of critical decisions during the preparedness phase

Is there a definitive Weed Incursion Preparedness Plan ready for use in preparedness to a response?	<input type="checkbox"/>
Is there a definitive Weed Incursion Response Plan ready for use in a response event?	<input type="checkbox"/>
Does the weed species meet the Australian Weeds Committee cost sharing principles (Appendix 13)?	<input type="checkbox"/>
Is there existing research available on the weed species?	<input type="checkbox"/>

Appendix 4. WIR Toolkit

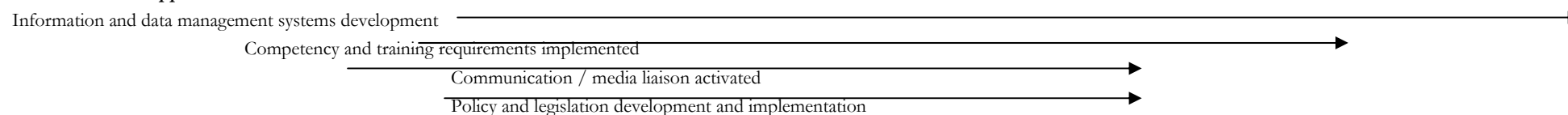
The Weed Incursion Response Toolkit (WIR Toolkit) was developed in conjunction with the NWIP. The WIR Toolkit supports the NWIP by providing incursion managers with structured methods used to assess and quickly respond to weed incursions.

The first phase of the toolkit is a compilation of tools, drawing on research and policy structures for managing weeds. The second phase of this toolkit is to be web-based to provide a 'one-stop shop' for weed incursions managers.

Appendix 5. Generic incursion management framework

PREVENTION*	PREPAREDNESS	RESPONSE			RECOVERY		
PRE-EVENT		RESPONSE			RECOVERY		
Prevention	Preparation (Preparedness)	Investigation (Trigger/ Containment)	Alert (Scoping)	Operational (Operational response)	Review	Recovery (Industry reconstruction)	Stand Down
<ul style="list-style-type: none"> • Border quarantine • Risk assessment / surveillance in high risk countries • Monitoring and surveillance (post border) 	<ul style="list-style-type: none"> • Incursion contingency planning • Organisation arrangements and responsibilities • Legislation • Funding arrangements • Compensation arrangements where applicable • Awareness raising/ training • R&D 	<ul style="list-style-type: none"> • Initial report of suspicious species • Preliminary assessment • Consultative committee meets • Lead agency nominated • Role of stakeholders defined • Containment of problem 	<ul style="list-style-type: none"> • Characterisation and assessment of species and event • Determine nature and magnitude of operational response required <ul style="list-style-type: none"> - no action - containment - control - eradication • Prioritise response 	<ul style="list-style-type: none"> • Predetermined or devised strategies implemented • Actions underpinned by legislation, funding arrangements and administrative support 	<ul style="list-style-type: none"> • Evaluation and review of management actions • Consideration of necessity of continuing a national response • Operational response may be; <ul style="list-style-type: none"> - completed - amended - ineffective and therefore modified 	<ul style="list-style-type: none"> • Possibility of rehabilitation programmes either as a direct government response or through existing government programmes • Surveillance continued to ensure area freedom 	<ul style="list-style-type: none"> • Review of arrangements • Acquittal of funds and programme documentation • Notification of trading partners • Incursion debrief

Involvement of support functions:



Source: Plant Health Australia (2001), originally adapted from Murray, G (1997). (*Text in red - AHMS terminology / Text in blue - Plant Health terminology)

Figure 4. Generic incursion management framework

Appendix 6. Chain of evidence

Chain of Evidence

In the event that a person takes legal action against the Lead Agency a demonstrable chain of custody and record of evidence from the time of specimen collection until trial is essential for evidence to stand up in court.

The specimens taken from the infected premises and contact premises are likely to be one of the most important forms of evidence for the Lead Agencies and the courts.

Protocols are therefore required to maintain confidence in the integrity of the specimens and their value as evidence. The Lead Agencies must be able to ensure:

1. The collection of the specimens is authorised by law;
2. The specimens collected come from the Infected Premises or Contact Premises;
3. The persons collecting the specimens have appropriate training, experience and authority; and
4. The specimens are properly identified, recorded, stored and handled between the time of collection and trial.

In order to maintain continuity of evidence, collection and survey teams and herbarium staff should follow these protocols when collecting and handling response weed incursion samples. Chain of Evidence protocols do not have to be followed for samples from general surveys.

Chain of evidence protocols will be reviewed as part of the annual review of the National Weed Incursion Plan to ensure the protocols are relevant and reflect best practice.

Collection of the specimens is authorised by law

If a specimen is to be used as evidence, the Lead Agencies must ensure that the persons collecting the sample are authorised to do so by law. If the collection of the specimen is not authorised, a court may refuse to accept the specimen as evidence or, if accepted, accord it little or no weight.

The specimens collected come from the Infected Premises or Contact Premises

The person or persons collecting the specimen must be able to establish that the specimens were collected from the Infected Premises or Contact Premises.

To help establish that the specimens were collected from the Infected Premises or Contact Premises and how the specimens were collected, the person or persons collecting the specimens should make a written record of collection at the time the specimen is collected and take a GPS point. It would then be appropriate for those persons to mark the point or points of collection on a map of the Infected Premises or Contact Premises and to photograph the scene.

The persons collecting the specimen have appropriate training and experience

The training and experience of the persons collecting specimens is vital. The chain of evidence is only as good as the people who operate it and there are risks throughout the collection process of things going wrong: people making an error in identification or compromising the integrity of the specimen, or misinterpreting results.

Lead Agencies must ensure that everyone involved in the collection process is trained and competent to collect, store and handle specimens. In addition persons packing specimens will have to be trained appropriately by state/territory herbaria if specimens are to be transported by air.

The specimens are properly identified, recorded, stored and handled between the time of collection and trial.

Chain of evidence protocols should be followed for all specimens taken from Infected Premises or Contact Premises. Appropriate handling and documentation procedures are required when collecting and handling specimens to preserve the integrity of the evidence. All specimens must be uniquely numbered by the collector.

The written record should be sufficiently detailed to:

- Permit the Lead Agency to call witnesses who could explain how the specimens were collected, identified, stored and handled between the time of collection and trial; and
- Permit another expert to be able to identify what has been done to a particular specimen and to independently assess the Lead Agency's findings.

The collection team will complete a botanical specimen label form at the time of collection. This will form part of the Evidence Register. Botanical specimen label forms may be supplied by the state/territory herbaria to which the specimens are being sent but must include at least the following information:

- collector
- collector unique number
- date
- location (address if applicable)
- location (GPS and distance from nearest town)
- taxon name
- description of the plant (shrub, herb, vine, tree, bark etc)
- description of the situation (garden, cultivated field, roadside, forest etc.)
- abundance (number of plants, age classes, clump size, density etc)
- collectors signature and date
- witness signature and date

Specimens of material pertaining to the response to the weed incursion may be held by state herbaria, in a Quarantine Approved Facility (QAP) if this is available on premises, or alternatively, in a securely locked cupboard or room set aside for the purpose and controlled by the collections manager or other suitably qualified person until such time as legal action is completed or for a minimum period of ten years.

Marking the exhibit

The collection team (or person collecting specimens) will allocate each specimen with the collector's name and collector's unique number. The specimen should be marked by securely attaching a tag to the specimen. The collector should write their name and collection number for the specimen on one side of the tag and initial and date the other side of the tag. The specimen should be placed in a plant press for the appropriate drying procedure. The hand written botanical specimen label form must be included with the specimen for continuity of evidence and remain with the specimen at all times. When the specimen is incorporated into a herbarium collection the hand written label form is to be kept with the specimen at all times.

Evidence Register

Once the state/territory herbaria takes possession of the specimen, the following procedures must occur immediately;

1. The specimen is identified by a qualified botanist (usually the curator of that family) and a legal statement of identification is provided, including the name of the collector and the collector's unique number, and other information relevant to the chain of evidence e.g. date of receipt, from whom, and where and how the specimen is to be housed. It is recommended that the identification botanist initial and date the specimen tag as well.
2. The specimen may be referred to as a voucher specimen and may be assigned a database number on incorporation for later internal tracking purposes (but see 5.). It is recommended that this number is also included on the statement if available.
3. Information that could be used to identify person or properties associated with impending legal action must not be databased or given out to the public or hosted on the world wide web or in any other way compromise the person's privacy.
4. The specimen is processed immediately and retained in a QAP or other suitably secured area for a period of at least ten years. The original hand written label must be retained with the specimen, along with a copy of the statement of identification.
5. the specimen must not be discarded, loaned or gifted for at least ten years.

Appendix 7. Proposed National Eradication Targets

Currently, a list of proposed national eradication targets does not exist. However, the National Categorisation Project (NCP) (AWC 2008) is currently underway to develop the decision-making framework that could be applied to develop such a list.

Selection of a national eradication target list will be a separate exercise and outside the scope of the existing Defeating the Weed Menace-funded NCP.

The NWIP refers to the NCP as the over-arching national framework that enables weed species to be prioritised and listed in a consistent, objective manner across state and territory jurisdictions.

Support for the National Categorisation process is recommended to identify a National Target Weed List for the National Weed Incursion Plan.

Appendix 8. Template agenda for the Consultative Committee on Exotic Plant Incursions

Teleconference:

Date:

Time (EST):

DRAFT AGENDA

ITEM

PRESENTER

Attendees

1 OPENING

Chair

Papers distributed

2 REPORTS

2.1 Situation report

Affected jurisdiction

2.1.1 Overview

2.1.2 Location of infested sites — grid reference and map

2.1.3 Description of situation on sites

– description of weed

– density and distribution of weed

2.1.4 Duration of the infestation

2.1.5 Has the source of infestation been identified

2.1.6 Other susceptible areas in vicinity

2.1.7 Results of preliminary tracing/surveillance

2.1.8 Action taken to date

2.1.8a Existing media interest/public awareness

2.1.8b Stakeholder impacts

2.1.9 Resources used to date (personnel and/or equipment)

2.1.10 Feasibility of eradication, other response actions

2.2 Herbarium identification of suspect plant

[Taxonomic specialist]

2.3 Technical update on weed

[Invasion biologist/CSIRO]

3 PROPOSED ACTION

Affected jurisdiction

3.1 Response plan

3.1.1 Eradication, containment and/or risk mitigation techniques

3.1.2 Decontamination requirements

3.1.3 Clean-up methods

3.2 Quarantine and movement controls

3.2.1 Quarantine sites

3.2.2 Restricted Area movement and security — draft proclamation and map

3.2.3 Restricted movement provisions / draft proclamation (and map if other than entire State/Territory)

3.3 Tracings

3.4 Surveillance

4 DISCUSSIONS/CONCLUSIONS OF CCEPI

Chair/Representatives

5 MOVEMENT AND TRADE ISSUES

5.1 Intrastate - outside Restricted/Control Areas

5.2 Interstate

5.3 International

6 ADMINISTRATIVE ARRANGEMENTS

6.1 Additional staff/resources

6.2 Estimates of cost

7 NOTIFICATION TO INDUSTRY/INTERNATIONAL SECTORS

7.1 Local

7.2 State

7.3 National

7.4 International

8 MEDIA RELEASE

Affected jurisdiction

8.1 Local

8.2 State

8.3 National

9 RECOMMENDATIONS TO NATIONAL MANAGEMENT GROUP

Chairperson

9.1 Advice of the occurrence of the weed

9.2 Feasibility and mechanisms for response

9.3 Invoking the Commonwealth/States interim cost-sharing agreement

10 OTHER BUSINESS

11 NEXT MEETING

12 CLOSE

Appendix 9. Delimiting operational plan template

(NAME OF WEED) DELIMITATION OPERATIONAL PLAN

AIM:

Insert aim of project here

BACKGROUND:

Insert background information here

SCOPE:

Insert the scope of the project here

ECOLOGY:

Insert info on reproduction, vectors and dispersal mechanisms, growth and spread rate, seedbank and budbank persistence, growth and flowering calendar, tolerances, biology and ecology

COMPONENTS:

Survey boundaries

Describe the survey boundaries here

Pathway analysis

Ecology of Weed Incursion

Distribution

Sources

Machinery (used)

Military movements (historic)

Seed trade

Timber imports

Military movements (current)

Island trade

Container cargo

Cyclonic winds

Pathways

Stock

Earthmoving machinery

Sand/gravel

Produce

Unknown loci on military land

Water

Fauna

Bushwalkers/backpackers

Seed

Wind

Destinations

Undiscovered and unrelated incursions

Secondary spread from

Risk Assessment

Consultation Process

Risk management

Survey rigour

Active Survey

Introduction

Search theory

Program use

Discussion

Developments

Passive survey

Introduction

Search theory

Program use

Discussion

Developments

Survey methodology

Survey methods

Physical survey

Active survey

Passive survey

Desktop survey

Survey tasks (see below)

Survey of infested and adjoining catchments

Trace forward from

Survey for remainder of Australia

Data recording

Budget

Active survey

Passive survey

PRIORITIES:

List the priority areas for the delimitation survey

AGENCY SUPPORT:

What types of partnerships/collaborations exist in the project

PERFORMANCE MANAGEMENT:

Data management

Data evaluation

Progress reporting

CRITICAL PRIORITIES

List the critical priorities required for project to move forward.

Examples of SURVEY TASKS

	TASKS	ACTIVITIES	PERSON DAYS	COMPLETION	OFFICER
1.	SURVEY OF INFESTED AND ADJOINING CATCHMENTS				
		-Prepare aerial map of existing and adjoining catchments			
		-Advise aerial operators of proposed surveillance			
		-Identify existing treatment zones and proposed delimitation surveillance zones			
		-Identify all waterways, roads, tracks and cleared land within existing catchments.			
		-Identify all waterways, roads and tracks in adjacent catchments			
		-Develop and confirm optimum detectability scenarios			
		-Implement surveillance based on risk and resources			
		-Identify projected costings for 95% confidence levels.			
		-Review, Document and Report Outcomes			
2.	TRACE FORWARD SURVEYS				
	Properties	-Determine Location, Ownership and Contact Details			
		-Liaise with property owners to determine Spread Potential of each property			
		-Determine survey methodology per property (Phone call, visit or direct survey)			
		-Conduct phone calls, surveys or visits			
		-Review, Document and Report Outcomes			
	Machinery within Catchment	-Identify relevant industries (earthmovers, slashers, trucking operators etc.)			
		-Confirm known movements with property owners and operators			
		-Develop a log of operators			
		-Confirm highest risk activities			
		-Conduct trace forward surveillance			
		-Review, Document and Report Outcomes			
	Sand/Gravel within Catchment	-Identify and contact all businesses operating within or			

TASKS	ACTIVITIES	PERSON DAYS	COMPLETION	OFFICER
	sourcing from the catchments			
	-Develop a log of operators			
	-Document all pathways and assess risk			
	-Conduct trace forward surveillance (direct or by phone.)			
	-Review, Document and Report Outcomes			
People/Vehicles within Catchment	-Contact all infested properties and document known, regular movements, especially via infestations			
	-Contact Tourist Operators?			
	-Follow up surveillance			
	-Review, Document and Report Outcomes			
Slashing within Catchment	-Develop a log of Operators			
	-Determine routes and destinations			
	-Conduct follow up surveillance			
	-Review, Document and Report Outcomes			
Stock Movements beyond Catchment	-Determine stock movements with landowners			
	-Check Saleyards			
	-Review, Document and Report Outcomes			
Machinery beyond Catchment	-Identify relevant industries (earthmovers, slashers, trucking operators etc.)			
	-Confirm known movements with property owners and operators			
	-Develop a log of operators			
	-Confirm highest risk activities			
	-Conduct trace forward surveillance			
	-Review, Document and Report Outcomes			
Sand/Gravel beyond Catchment	-Identify all businesses operating within or sourcing from the catchments			
	-Develop a log of operators			
	-Conduct trace forward surveillance (direct or by phone.)			
	-Review, Document and Report Outcomes			
Stock Movements within Catchments	-Identify saleyards			

TASKS	ACTIVITIES	PERSON DAYS	COMPLETION	OFFICER
	-Identify relevant land holders			
	-Determine routes and destinations of stock			
	-Categorise risk and conduct appropriate follow up			
	-Review, Document and Report Outcomes			
Bushwalker/Backpackers	-Contact catchment tourist operators and wildlife/outdoors groups			
	-Develop a log of clients (bird watchers, SGAP, Catchment Groups etc.)			
	-Disseminate pest information			
	-Conduct trace forward surveillance (direct or by arrangement with third parties)			
	-Review, Document and Report Outcomes			
Slashing beyond Catchment	-Develop a log of Operators			
	-Determine routes and destinations			
	-Check yards and holding depots			
	-Conduct follow up surveillance			
	-Review, Document and Report Outcomes			
Seed beyond Catchment	?			
Fauna within Catchment	-Determine ground migratory fauna and potential routes			
	-Liaise with property owners to determine likely tracks			
	-Survey tracks			
	-Review, Document and Report Outcomes			
Timber within Catchment	-Determine sources/suppliers			
	-Liaise directly with suppliers			
	-Arrange trace forward inspections as necessary			
	-Review, Document and Report Outcomes			
Hay/Mulch within catchment	-Determine sources/suppliers (liaise with landowners and contact produce suppliers)			
	-Conduct trace forward surveillance			
	-Review, Document and Report Outcomes			

	TASKS	ACTIVITIES	PERSON DAYS	COMPLETION	OFFICER
	Seed within Catchment	-Determine sources/suppliers (liaise with landowners and contact produce suppliers)			
		-Conduct trace forward surveillance			
		-Review, Document and Report Outcomes			
	Hay/Mulch beyond Catchment	-Determine sources/suppliers (liaise with landowners and contact produce suppliers)			
		-Conduct trace forward surveillance			
		-Review, Document and Report Outcomes			
	Wind within Catchment	-Liaise with BOM to Determine High Risk Areas			
		-Conduct Aerial Surveys based on risk			
		-Review, Document and Report Outcomes			
	Fauna beyond Catchment	-Determine ground migratory fauna and potential routes			
		-Liaise with property owners to determine high traffic tracks			
		-Survey tracks			
		-Review, Document and Report Outcomes			
	Timber beyond Catchment	-Determine sources/suppliers			
		-Liaise directly with suppliers			
		-Arrange trace forward inspections as necessary			
		-Review, Document and Report Outcomes			
	Bushwalkers/Backpackers within Catchment	-Contact tourist operators and wildlife/outdoors groups			
		-Develop and maintain a log of clients (bird watchers, SGAP, Catchment Groups etc.)			
		-Disseminate pest information			
		-Conduct trace forward surveillance (direct or by arrangement with third parties)			
		-Review, Document and Report Outcomes			
3.	SURVEY OF REMAINDER OF AUSTRALIA				
	Container Cargo	-Determine and Document AQIS procedures for Cargo Containers			
		-Review, Document and Report Outcomes			

	TASKS	ACTIVITIES	PERSON DAYS	COMPLETION	OFFICER
	Cyclonic Winds	-Liaise with Bureau of Meteorology			
		-Determine High Risk Areas and conduct surveillance as necessary			
	Other?				

Appendix 10. Weed Incursion Preparedness Plans and Weed Incursion Response Plans.

Refer to Draft Intergovernmental Agreement on Enhancing the Australian Biosecurity System for Primary Production and the Environment (AusBIOSEC) template generic preparedness and response plans.

Appendix 11. Weed Incursion Response Training

A key component of the NWIP is to ensure that suitable and effective training is provided to staff involved in responses to weed incursions. Each response will be different depending on the type and extent of the weed incursion, as a result it can be difficult to predict the specific skills required and deliver these in advance of the response event. In addition to this, staff who are involved with responses to weed incursions, are often shadow-posted from other roles and may have limited expertise and understanding of weed management.

The following lists the essential training that should be delivered in a response:

- WIR organisational structure and function;
- WIR reporting structure;
- roles involved in the response;
- weed incursion identification;
- how to report and collect weeds;
- weed incursion hygiene and disposal techniques;
- how to use various types of recording equipment (GPS, camera);
- weed incursion surveillance techniques;
- weed incursion information management;
- weed incursion operational response management; and
- Occupational Health and Safety.

This training is more than likely to be delivered through a 'Just-In-Time Training' (JITT) technique. This type of training is rolled-out, or launched, immediately prior to its usage. The advantage of implementing JITT is the shortened time between learning and application and the flexibility of delivery.

The JITT training where applicable should be aligned to the Conservation and Land Management Training package (RTD02) for nationally consistent skills.

Existing state/territory agency staff involved daily in weed surveillance, management and weed incursion response should already have expertise in this area. These staff will also be required to participate in the Weed Incursion Response Training during the response to refresh skills and teach new skills to provide a competent professional workforce.

In addition, there should be opportunities for professional development exercises within and across state/territory jurisdictions to provide simulation exercises through desktop and operational environments to increase existing staff skills and knowledge in a response prior to an event.

Appendix 12. Organisational arrangements.

The delivery of a response to a weed incursion requires clear management and coordination systems to be in place to ensure those involved in the management of the incursion have a strong grasp of their roles and responsibilities and know who the relevant stakeholders are to contact in each organisation.

As part of the AusBIOSEC, harmonisation of biosecurity emergency response arrangements it is recommended that the Australian Inter-service Incident Management System (AIMMS) be adopted as a basis for the management of responses to biosecurity emergencies (National Resource Management and Primary Industries Standing committees, Biosecurity Committee, Agenda Paper, Item 3.3)

AIIMS provides a system that facilitates the coordination of all activities by all parties involved in the resolution of an emergency. It is designed to work within the legislative, policy and operational arrangements of each jurisdiction or organisation. AIIMS provides a common framework and terminology for organisations working in emergency management.

AIIMS is based on three key principles. These are:

- Management by objectives: i.e. the development of clearly stated and communicated objectives that are documented in an Incident Action Plan;
- Functional management: encompassing the four functions of control, planning, operations and logistics (the relationship of these functions is illustrated in Figure 5); and
- Span of control: identifying that each role has no more than 5-7 roles/groups reporting to it.

AIIMS is adaptable and scalable according to the nature and complexity of an incident. As the size of an incident increases or decreases, the functions are either delegated or combined. It is useable by either a single organisation or multiple organisations working together.

AIIMS uses common terminology and structure with appropriate communication between organisations at all levels of the incident. Terminology such as command, control and coordination underpin AIIMS (Figure 5).

Using the AIIMS_ICS framework as the basis for surveillance and response plans the following principles should be implemented:

- One manager – it is essential that a suitable person (through training and/or experience) be selected as the manager. They are responsible for managing the entire response. Once designated, they should be provided with the necessary organisational support to ensure effective command, control and coordination.
- Functional delegation – a system of delegation should be established to ensure all management functions are identified and performed. These functional areas include: control, management of the incursion; operations, the direction of agent's resources in combating the incursion; planning, the collection and analysis of incursion information and the planning of response activities; and logistics, the provision of facilities, services and materials required to manage the incursion. Further delegation may be appropriate as an incursion or surveillance exercise escalates.
- Management of objectives – management of a surveillance campaign or incursion response requires an objective or desired outcome to be identified. The management of the incursion depends on the objective being communicated to all those involved in the operation.

- Management plans – once the objective has been established, a plan outlining the strategies and tactics to be used to manage the incursion is developed. It will: describe the overall operational objective and strategies; ensure continuity of control operations; provide effective use of resources; and identify the total resources needs.
- Span of control – response structures will take account of the number of groups or individuals who can be successfully supervised by one person.
- Command within agencies – factors such as legislation and agency policies need to be taken into account to ensure adaptability to different situations in which multiple agencies will be involved. The system needs to ensure that the integral command structure of an agency is retained.

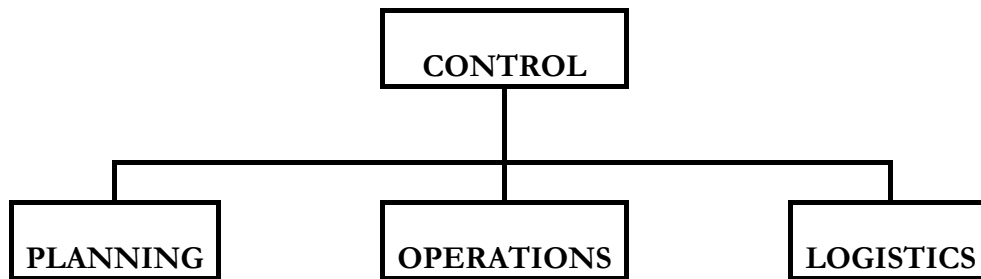


Figure 5. Australian Inter-service Incident Management System

Appendix 13. Principles to be used when determining a national cost-sharing arrangement

Principles to be utilised in determining when an exotic plant incursion warrants a nationally coordinated response with cost-sharing

A discussion paper endorsed by the Australian Weeds Committee

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31 May 2002

Introduction

The following principles are intended to assist the Australian Weeds Committee Consultative Committee on Exotic Plant Incursions (AWCEPI) in formulating recommendations for the nationally coordinated management of new exotic plant incursions. P1 to P4 are decision principles and P5 to P10 are “rule-setting”

principles.

- P1 The identification of the suspected weed must be authoritatively confirmed
- P2 The weed must be a potentially serious weed of Australia
- P3 Eradication must be feasible, the infestation confined to a small area and without there being major biological/ecological impediments to eradication
- P4 Cost-benefit of eradication must be favourable – there should be a clear and significant net benefit to Australia
- P5 A weed would be eligible for a national cost-sharing arrangement even where just one State is threatened.
- P6 A national, cost-shared eradication effort must be directed at all occurrences of the species in Australia
- P7 There is no lower limit to the size of a national cost-sharing program
- P8 The proposed program must include an estimate of the resources required for eradication, an operational program and an estimate of the time to eradication
- P9 All potential weeds must individually meet the criteria for national cost-sharing but may be managed in a joint program for operational convenience
- P10 A program must be subject to regular review against the agreed criteria and must continue to meet these criteria

These principles, and the guidelines to be followed in applying them, are discussed in greater detail in the following sections.

The Plant Health Australia (PHA) discussion paper, Funding and Compensation for emergency eradication of exotic plant pests and diseases, discusses principles in chapter 4 (Appendix). This paper addresses principle 2 and addresses principles 1, 4, 6, 7, 8 and 9 for government stakeholders.

Stage 1

The basic criteria determining the need for national cost-sharing arrangements (with contributions from the Commonwealth, States and Territories) to eradicate incursions of new exotic plants should be based on:

- a) potential weed impact of the plant (including where this is likely to occur in Australia) and
- b) feasibility of eradication.

Identification

P1 The identification of the suspected weed must be authoritatively confirmed

1. No program should be funded until there has been reliable confirmation of the name of the suspected weed. As the species is exotic, confirmation of the identification should be made by a taxonomic specialist working with the species concerned. A suitable taxonomist may be determined following consultation with Australian herbarium staff, preferably ones dealing with the family to which the weed belongs.

Potential impact

P2 The weed must be a potentially serious weed of Australia

2. The plant must be well documented as a serious weed elsewhere in the world¹. In addition, reliable documented overseas information should be applied to Australian conditions. The information should:
 - a) be used to quantify the impact on production systems, natural ecosystems and human welfare at risk;
 - b) include data on production losses and negative impacts upon natural ecosystems and human welfare;
 - c) at minimum demonstrates a match of climate between extra-Australian occurrences and substantial areas within Australia. Preferably, a match of soils, plant community types and land use should also be demonstrated.

Eradication feasibility

P3 Eradication must be feasible, the infestation confined to a small area and without there being major biological/ecological impediments to eradication

3. An essential requirement for eligibility for national cost-sharing arrangements is that a delimiting survey has been undertaken. The extent of the infestation must be established with a reasonable degree of confidence. This should be achieved by:
 - a) a systematic/structured examination in the immediate vicinity of the infestation;
 - b) examination of additional sites selected on the basis of potential dispersal pathways and communication with personnel associated with linked sites;
 - c) an increased public awareness of the target species, achieved by communication via media.
4. Typically, the infestation should be restricted to a small area or exist as a low number of small, localised infestations. The upper limit of feasibility will depend on the biological/ecological factors discussed in point 6, as well as the ease of detection (cf an easily observed species in an open, easily traversed environment v. a relatively cryptic species in dense vegetation).
5. Biological/ecological factors that are relevant to an eradication program should be assessed:
 - a) can the plant be easily targeted? for example:
 - a shrub, as opposed to a parasitic annual herb;
 - occurrence in cropland, as opposed to native vegetation in steep terrain;
 - other restrictions on finding the weed.
 - b) availability of effective control measures (e.g. ease of kill);

- c) attributes of the targeted species that influence its tenacity and capacity for self perpetuation and rate of increase/spread such as:
 - capacity for vegetative reproduction;
 - length of the juvenile period;
 - breeding system;
 - seed production;
 - seed longevity;
 - seed dispersal by human mediated and natural means.

P4 Cost-benefit of eradication must be favourable – there should be a clear and significant net benefit to Australia

6. Eradication of a potentially serious weed (providing eradication is feasible) is certain to deliver very substantial benefits relative to the cost of eradication, thus a detailed cost-benefit analysis for eradication should not be necessary. Nevertheless, an assessment of the magnitude of costs likely to be incurred, if the weed became established, should be attempted, based on experience elsewhere and including:
 - a) productivity losses (in dollar or volume terms);
 - b) impacts on trade (identify domestic and international markets at risk and make quantitative estimates in dollar or volume terms);
 - c) projected control costs (in dollar terms, e.g. costs of labour and chemicals) are significantly lower than the 'costs' of living with the weed;
 - d) degradation of amenity values (e.g. identify managed outdoor parks, recreational areas and road verges at risk);
 - e) effects on natural ecosystems/biodiversity²;
 - f) effects on human health (e.g. severe allergens).

Other Considerations

P5 A weed would be eligible for a national cost-sharing arrangement even where just one State is threatened.

7. The extent of the threat to various States will be determined through the matching exercises undertaken (point 2c). Given a substantial potential impact, only the Commonwealth and the affected State(s)/Territories(s) would be expected to contribute to an eradication effort.

P6 A national, cost-shared eradication effort must be directed at all occurrences of the species in Australia

8. AWCEPI State/Territory representatives must determine and advise if the weed is present in their jurisdiction, including as cultivated plants in public or private gardens.
9. Many weeds in Australia have marketable attributes, providing the basis for a well recognised pathway for their introduction. For such species to be eligible for a national, cost-sharing arrangement, steps must be taken:
 - a) to ensure that the species is not available for sale in Australia;
 - b) to prohibit further trade if the species has been for sale;
 - c) to ensure the species is prohibited by AQIS.

P7 There is no lower limit to the size of a national cost-sharing program

10. If a weed is detected very early in the invasion, the annual cost of the eradication program will be minimal. However, if the weed meets the criteria in Stage 1 it is important to ensure that national eradication is achieved. No lower limit should, therefore, be set on the cost of eradication that would qualify for a national cost sharing arrangement. A State/Territory may bear the full cost where administrative costs of joint funding outweigh the benefits. Such situations would be determined on a case by case basis.

Stage 2

Where Stage 1 criteria have been met, Stage 2 criteria should be addressed.

Methodology

P8 The proposed program must include an estimate of the resources required for eradication, an operational program and an estimate of the time to eradication

11. An estimate should be made of the resources required for eradication of the target species, including costs of:
 - a) staffing and overheads;
 - b) consumables (e.g. chemicals);
 - c) capital expenditure.
12. Care should be taken to avoid underestimating overall eradication costs. Requests for increased resources during the course of an eradication campaign would need to be based on circumstances that were not reasonably foreseeable. It may be appropriate to incorporate a business risk scenario analysis and associated cost framework.
13. A program of activities should be outlined, including:
 - a) surveillance and monitoring procedures: this should not be underestimated or underdone as effective surveillance provides the measure of progress towards eradication;
 - b) the use of quarantine and containment procedures;
 - c) research required in support of the eradication effort;
 - d) methods utilised to increase public awareness of the target species;
 - e) community support programs where required.
14. Cost-sharing arrangements at present involve the Commonwealth (50%) and the States/Territories affected or at risk. It is further noted that:
 - a) this is an interim arrangement: industry contributions and compensation are outside the scope of national cost-sharing arrangements, pending the outcome of Plant Health Australia negotiated arrangements with industry;
 - b) partitioning responsibility across government agencies, according to the ecosystems under threat (production, amenity and natural) needs to be addressed but is outside the scope of this paper;
 - c) the formula for dividing costs between States/Territories may be based simply on area at risk, but should include additional factors such as the value of threatened production and natural ecosystems, and the capacity of the State or Territory to contribute (based, for example, on population of the jurisdictions);
 - d) costs involved in conducting the delimiting surveys and other activities to determine the extent of the weed (point 4) and keep it contained are to be borne by the State or

Territory undertaking these actions. These costs may be recoverable after cost-sharing arrangements are agreed.

15. Time frame:
- nationally-funded eradication campaigns cannot be open-ended;
 - an estimate of the time frame for eradication must be made;
 - alternative exit points should be identified. For example, if eradication is unsuccessful, what ongoing containment or suppression programs should be established and how should they be funded?

Multiple potential weeds

P9 All potential weeds must individually meet the criteria for national cost-sharing but may be managed in a joint program for operational convenience

16. Where weeds subject to eradication are in the same area and with similar program components, the eradication may be conducted and reported on as a combined program.

Stage 3

P10 A program must be subject to regular review against the agreed criteria and must continue to meet these criteria

17. Reporting and Review
- A report on the progress of the eradication campaign must be submitted annually, at which time the national cost-sharing arrangement will be reviewed;
 - If, during the course of an eradication campaign, sufficient new infestations are located as to markedly reduce the feasibility of eradication, funding support may be discontinued;
 - Independent, biennial or triennial reviews should be undertaken to assess progress against predetermined milestones.
18. Extension of Funding
- National cost-sharing arrangements are provided for a designated period. Extension beyond this period will only be considered where progress and substantial benefits to date can be demonstrated and upon clear evidence that eradication is still feasible. Such evidence might include:
 - substantial overall reductions in the extent and densities of infestations
 - over the period;
 - absence of development (or limited development) of further infestation
 - foci within the period;
 - achievement of eradication in at least some of the infestation foci;
 - marked reductions in seed banks within the targeted areas.
 - Applications for extension of national cost-sharing arrangements for an eradication campaign must be accompanied by a new cost-sharing proposal that includes a detailed estimate of further resources required, as well as a contingency plan to be implemented if the program could be considered too small for national cost-sharing. If a decision is made that the species cannot be eradicated, containment plan requirements may then be requested.

1 If, in time, reliable methods are developed to estimate potential impacts of species with no history

of invasiveness and weediness elsewhere, it may be appropriate to broaden the scope of taxa for which national cost-sharing arrangements would be considered. This is of particular importance for assessment of potential invasiveness in natural ecosystems as prior history of such invasions may not be well documented.

- 2 It is probable that fully funded eradication of all candidates that satisfy the criteria (i.e. high feasibility of eradication, with potential impacts outweighing costs of eradication) will exceed resources available. Further development of tools and principles to rank and prioritise candidates will be necessary if limited resources are to be allocated most effectively. The development of such tools is a key research objective of the CRC for Australian Weeds Management.

Appendix

Principles for funding and cost-sharing are listed in Chapter 4 of *Funding and Compensation for emergency eradication of exotic plant pests and disease* (Plant Health Australia 2001, <http://www.planthealthaustralia.com.au>):

1. Immediate reporting of, and rapid response to, suspected exotic disease outbreaks.
2. Incursions capable of being eradicated and/or contained.
3. Beneficiary contributes¹.
4. Equitable sharing of financial burden.
5. No one better or worse off as a result of reporting an incident.
6. Certainty in funding and compensation.
7. Certainty, consistency, integration and efficiency of structures and processes.
8. Stakeholders who share the costs of incursion management to have a role in decision-making.
9. Accountability to stakeholders who fund incursion management.
10. Simplicity.
11. Major risk creators contribute².

Chapter 5 of the PHA discussion paper also gives a framework (reproduced with minor alteration in Figure 1) for considering when eradication of an exotic incursion is justified. That flowchart provides a consistent framework for the principles and associated guidelines discussed here.

¹ The main point of contention

² An additional principle that is conceptually sound but difficult to implement

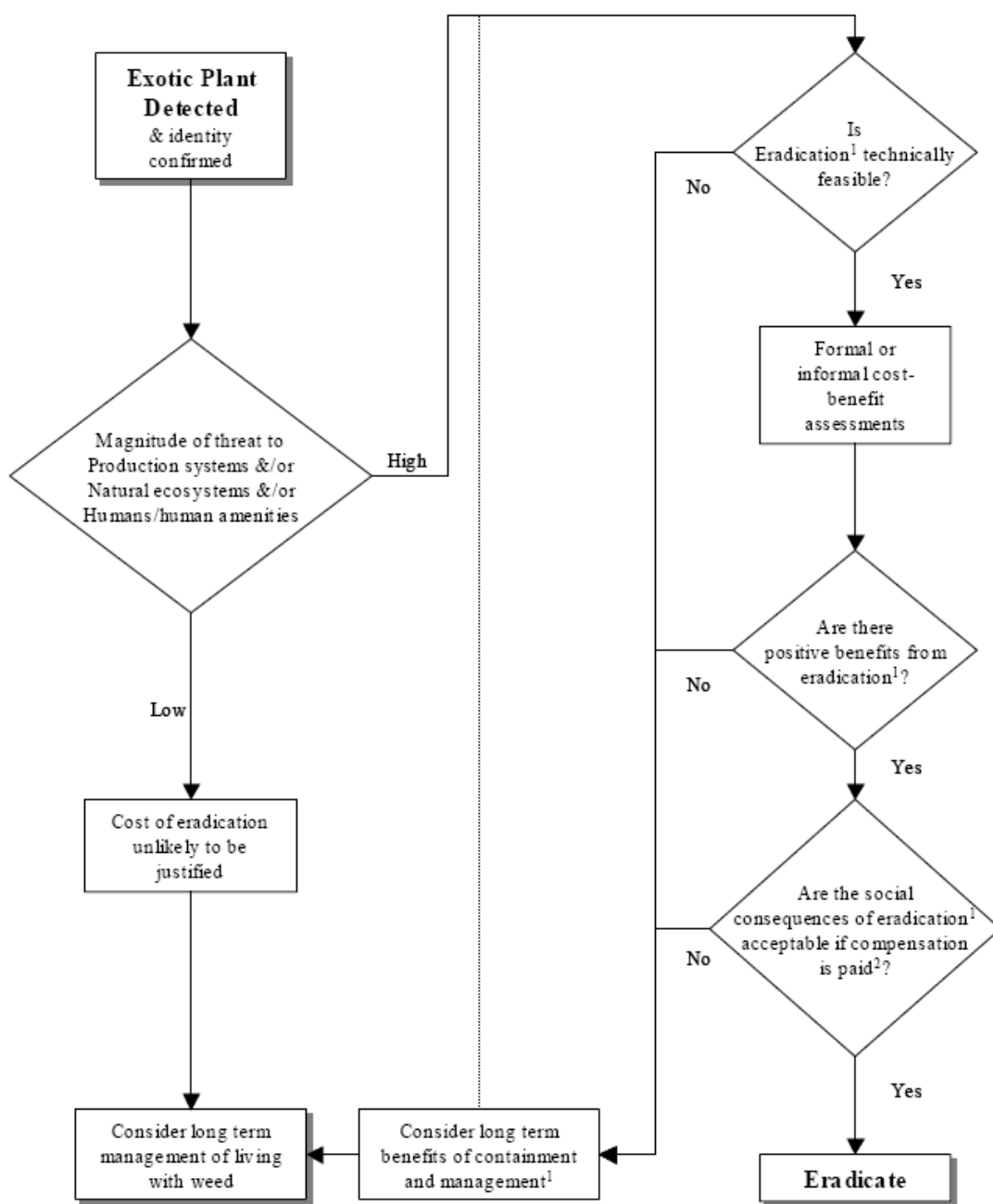


Figure 1. Framework for considering whether or not to eradicate an exotic incursion. Adapted from figure 5.1 of *Funding and Compensation for emergency eradication of exotic plant pests and disease* (Plant Health Australia 2001, <http://www.planthealthaustralia.com.au>).

1. Cost benefit arrangements for containment have not been considered to date. If it were to be, the term containment would be substituted for eradication in the appropriate boxes.
2. Compensation is not a component of current cost-sharing arrangements.

Appendix 14. Key stakeholders involved in the NWIP

This is a generic list of potential stakeholders. This list is dynamic depending on the level of response to the weed incursion.

Key Stakeholder

National

Australian Weeds Committee
Consultative Committee on Exotic Plant Incursions
Natural Resource Management Ministerial Council
Natural Resources Management Standing Committee
Plant Health Australia
Cooperative Research Centre for Australian Weed Management
Council of Australian Weed Societies
Council of Heads of Australasian Herbaria
Nursery and Garden Industry
Australian Agricultural Contractors Association

Commonwealth

Office of the Chief Plant Protection Officer
Australian Biosecurity System for Primary Production and the Environment
Australian Commonwealth Scientific and Industrial Research Organisation
Commonwealth Department of Agriculture, Fisheries and Forestry
Commonwealth Department of the Environment, Water, Heritage and the Arts
Commonwealth Government, Biosecurity Australia
Australian Quarantine and Inspection Service
Commonwealth Government, Department of the Environment, Water, Heritage and the Arts
Northern Australia Quarantine Strategy

State - Weed Incursion Policy/Management/Research

Western Australian Government, Department of Agriculture and Food

Western Australian Government, Department of Environment and Conservation

Victorian Government, Department of Primary Industries

Victorian Government, Department of Sustainability and Environment

Tasmanian Government, Department of Primary Industries and Water

Tasmanian Government, Department of Tourism, Arts and the Environment.

South Australian Government, Department of Land, Water and Biodiversity Conservation

South Australian Government, Department of Environment and Heritage

Australian Capital Territory Government, Department of Territory and Municipal Services

New South Wales Government, Department of Primary Industries

New South Wales Government, Department of Environment and Climate Change

Queensland Government, Department of Natural Resources, Mines and Water

Queensland Government, Department of Employment, Economic Development and Innovation, Biosecurity

Queensland

Queensland Government, Environmental Protection Agency

Northern Territory Government, Department of Regional Development, Primary Industry, Fisheries and Resources

State Herbaria

Western Australian Government, Department of Environment and Conservation, Western Australian Herbarium

Royal Botanical Gardens Melbourne, National Herbarium of Victoria

South Australian Government, Department of Environment and Heritage, Plant Biodiversity Centre, SA Herbarium

Queensland Government, Environmental Protection Agency, Queensland Herbarium

New South Wales Government, Department of Environment and Climate Change, National Herbarium of New South Wales

Northern Territory Government, Department of Natural Resources, Environment and The Arts, Northern Territory Herbarium

Australian National Botanic Gardens, Australian National Herbarium

Tasmanian Government, Department of Tourism, Parks, Heritage and the Arts, Tasmanian Herbarium

State

Victorian Weed Spotters - Victorian Government, Department of Primary Industries

Queensland Weed Spotters - Queensland Government, Environmental Protection Agency and the Department of Primary Industries and Fisheries, Biosecurity Queensland

State Transport Department

Regional

Natural Resource Management Bodies/Catchment Management Authorities

Local Weed Incursion Policy/Management

Local Governments

Local

Community Groups

Aquarium suppliers

Landcare groups

National/State/Local

Conservation Groups

Horticultural Media Association

Landcare Australia

National Farmers Federation

Non Government Organisations

The Australian Fodder Industry Association

Educational Institutions

Garden Club Associations

Horticultural Associations

Horticultural Wholesalers and Retailers

Landscape Industries Associations

Appendix 15. Proposed planning framework for the documentation of Biosecurity Emergency arrangements

(Taken from the National Resource Management and Primary Industries Standing committees, Biosecurity Committee, Agenda Paper, Item 3.3)

The proposed planning framework is based on those arrangements that currently exist and identifies some that are being proposed either by this forum or other related activities. It also connects the biosecurity emergency management planning framework to the all hazards, whole-of-government emergency management planning framework. Arrangements that can be applied across sectors have been shaded in the diagram (Figure 7).

The proposed planning framework attempts to define its component parts and align them to the quality management framework in an endeavour to avoid duplication and overlap between the different sectors. In accordance with AS ISO 10013-2003 *Guidelines for quality management system documentation a quality management system documentation* hierarchy will include: policy and objectives, manuals, procedures, work instructions and forms. The following describes the component parts against this framework.

Policy and Objectives

Australian Emergency Plan — All hazards, whole of government response and recovery plan for the Australian Government and state/territory governments (covering fire, flood, disease, etc. - under development).

Jurisdictional Emergency Plans — All hazards, whole of government response and recovery plans in each state/territory to ensure the coordinated response to emergencies by all agencies having responsibilities and functions in emergencies (covering fire, flood, disease, etc. - in existence in all state and territories).

National Biosecurity Emergency Arrangements — Generic policy and objectives arrangements for emergency preparedness, response and initial recovery for any biosecurity emergency (does not exist).

Jurisdictional biosecurity plans — Whole of government, response and recovery plans in each state/territory for any biosecurity emergency (exist in most jurisdictions as emergency animal disease plans, plant emergency plans, etc.).

Sectoral Biosecurity Policy, Objectives and Arrangements — Sector specific policy, objectives and overall arrangements for managing the response to and initial recovery from a biosecurity emergency in that sector (these partially exist, e.g. in the animal sector as the Emergency Animal Disease Response Agreement and AUSVETPLAN Summary Document). **National Weed Incursion Plan fits into Sectoral Biosecurity**

Manuals

Technical Manuals – disease or species specific — Policy and strategies in relation to the eradication or containment of invasive species (plant pest, animal and aquatic animal disease control strategies exist).

Technical Manuals – location or enterprise specific — Biosecurity plans for specific risk enterprises (exist in animal, aquatic animal and plant health sectors).

Operational Manuals — Manuals describing specific emergency response functions and what needs to be done to fulfill the requirements of the function. They do not include detail on how a particular function or task is done (exist in animal, aquatic animal and plant health sectors).

Procedures

Procedures describe a range of tasks that may be required to fulfill a particular function. They provide guidance on the circumstances under which these tasks are performed (application or scope), the resources required, how the various tasks are to be performed and are generally supported by work instructions, forms etc.

Nationally Agreed Standard Operating Procedures (NASOPs) — Nationally agreed procedures that have application across most, if not all, jurisdictions. (A NASOP template has been developed by the Sub Committee for Emergency Animal Disease (SCEAD) and a number of them are currently under development).

Jurisdiction Specific Standard Operating Procedures (SOPs) — Procedures that have application within a specific jurisdiction. SOPs may be sector specific or have application across all sectors. They are developed and maintained by jurisdictions in accordance with their emergency management arrangements (SOPs have been developed by all jurisdictions, although the level of detail and their application varies from jurisdiction to jurisdiction).

Work Instructions

Work instructions are task specific and describe in some detail how a particular task should be undertaken. Work instructions are developed to describe the performance of all work that could be adversely affected by the lack of such instructions. Work instructions may be imbedded in procedures or can stand alone (Some jurisdictions have developed work instructions for hazardous or critical activities). Work Instructions can be sector specific or have application across all sectors.

Forms and Templates

Forms and templates are developed and maintained for the collection, collation and dissemination of information. There is a mix of sector specific and generic forms and templates that can be used nationally or have specific application within a jurisdiction or sector.

These component parts and their relationship with the AS ISO 10013-2003 *Guidelines for quality management system documentation* are illustrated in Figure 6.

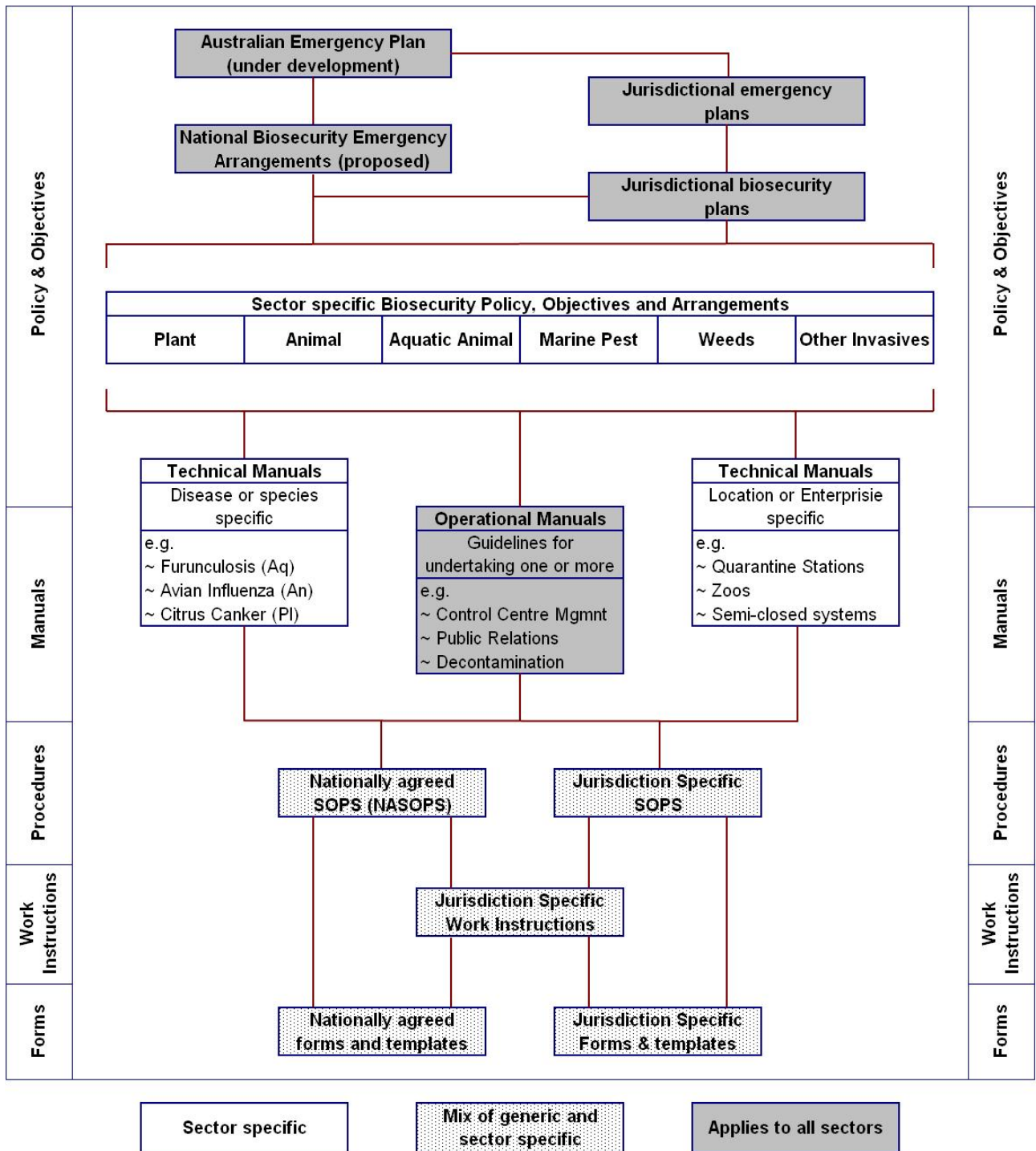


Figure 6. Proposed planning framework

Abbreviations

ACT	Australian Capital Territory
AIIMS_ICS	Australasian Inter-agency Incident Management System Incident Control System
AQIS	Australian Quarantine and Inspection Service
AQIS ICON	Australian Quarantine Inspection Service Import Conditions Database
AusBIOSEC	Australian Biosecurity System for Primary Production and the Environment
AUSTVETPLAN	Australian Veterinary Emergency Plan
AWC	Australian Weeds Committee
BioSIRT	Bio-security, Surveillance, Incident Response and Tracing
CCEPI	Consultative Committee on Exotic Plant Incursions
CHAH	Council of Heads of Australasian Herbaria
CRC	Cooperative Research Centre
CSIRO	Australian Commonwealth Scientific and Research Organisation
DAFF	Commonwealth Department of Agriculture, Fisheries and Forestry Commonwealth Department of Environment, Water, Heritage and the Arts
DEWHA	Arts
EMPPan	Australian Emergency Marine Pest Plan
GIS	Geographical Information Systems
NAQS	Northern Australia Quarantine Strategy
NCP	National Categorisation Project
NMG	National Management Group
NT	Northern Territory
NWIP	National Weed Incursion Plan
NTWL	National Target Weed List
OCCPO	Office of the Chief Plant Protection Officer
PHA	Plant Health Australia
PLANTPLAN	National Plant Health Response plan
PNET	Proposed National Eradication Targets
QLD	Queensland
DPI&F	Department of Primary Industries and Fisheries
EPA	Environmental Protection Agency
NRMW	Department of Natural Resources, Mines and Water
SA	South Australia
TAS	Tasmania
VIC	Victoria
WICS	Weed Incursion Communication Strategy
WIRP	Weed Incursion Response Plan
WIES	Weed Incursion Exit Strategy
WM	Weed Manager
WI team	Weed Incursion Team
WIPP	Weed Incursion Preparedness Plan
WIRT	Weed Incursion Response Training
WRA	Weed Risk Assessment

Glossary

Containment: Restriction of an incursion to a limited area, perhaps with quarantine measures enforced in order to prevent further spread. Containment may be an adjunct to or an approach used in an eradication campaign.

Eradication: the elimination of a weed incursion species from an area. Eradication is indicated by the species no longer being detectable.

Establishment: the weed incursion species is perpetuated, for the foreseeable future, within any area and where it is not feasible (whether in terms of technical feasibility or a cost: benefit analysis) to eradicate the weed incursion species.

Incursion: the detection of a species in a place where it has not previously been found.

Invasive species: an exotic species that establishes a wild population and spreads beyond the place of introduction and becomes abundant.

Native species: a species found within its native range (in Australia this means that it is indigenous to Australia).

Naturalised species: a species with a free-living self-sustaining population outside its native range.

Surveillance: the systematic investigation, over time, of a population or area to collect data and information about the presence, incidence, prevalence or geographical extent of a weed incursion species.

Cost sharing: the process of proportional funding of a weed incursion event response by some or all of the parties.

Emergency response to weed incursions: the actions taken in anticipation of, during and immediately after, an outbreak to ensure that its impacts are minimised and may include:

- (a) actions constituting an initial response to an outbreak
- (b) actions that form part of a national biosecurity event response.

Proof of freedom: surveillance activities carried out by the parties in accordance with the approved Weed Incursion Response Plan have indicated that the weed incursion species has been eradicated.

Weed incursion: is an invasion or an introduction of a weed, especially one of sudden character, with detrimental consequences, to a place or territory

Lead Agency: the affected agency taking the lead in the event response

Rehabilitation: actions that seek to quickly repair damaged ecosystem function, particularly productivity. Indigenous species and ecosystem structure and function are the targets for rehabilitation.

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