

REVIEW OF PROGRESS
TOWARDS THE ALLIGATOR
WEED STRATEGIC PLAN
2006-2007

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ALLIGATOR WEED STRATEGIC PLAN 2006 - 2007

Executive Summary

The National Aquatic Weeds Management Group (NAWMG), Australian Government and States continued to minimise the impacts of alligator weed in Australia. The activities supported by the management group helped prevent the spread of alligator weed and other aquatic weeds and minimised impacts on our waterways. Key achievements are summarised below.

Prevent Spread

The Aquatic Weeds Early Detection project commenced with three aquatic weed identification workshops plus follow up training sessions held in Northern NSW and North Central Victoria. A further 10 aquatic weed identification workshops were held in South East Queensland and South Australia. These workshops increased the capacity of stakeholders to monitor waterways for alligator weed and other high priority aquatic weeds and to report findings.

Other achievements include:

- The launch and distribution of the Pet Industry Association of Australia's (PIAA) responsible handling of aquatic plants DVD, which provides a tool for industry prevent aquatic weed introductions
- A paper prepared regarding aquatic weeds and the ornamental plant trade for the Nursery and Garden Industry Australia clippings series
- An aquatic weed spread advertisement published in the NSW Freshwater Anglers club annual report, which was distributed to 24,000 members

Identify and eradicate non-core infestations

A review conducted by the NAWMG of non core infestations management found all sites are under intensive management programs, which are containing infestations. Deficiencies were identified at some sites, which were passed on to site managers. Three new infestations were found, two at least 1 hectare in size.

Manage core infestations

Research commenced on host specificity of a potential alligator weed biological control agent following the host specificity failure of two other agents.

Funding was received to initiate a project to assess core alligator weed infestations for their potential to spread and/or potential impact. The outcome of the project will be a list of high risk sites (in terms of risk of further spread and/or impact), which will receive greater management effort in following years.

Coordinate management

NAWMG continues to provide a platform for a coordinated approach to management of alligator weed in Australia. The group identifies required tasks to address strategy priorities and reviews progress of strategies.

ALLIGATOR WEED STRATEGIC PLAN 2006 – 2007

Introduction

Alligator Weed – Its history and impacts in Australia

Alligator Weed (*Alternanthera philoxeroides*) is a Weed of National Significance (WoNS) because of its severe impacts in freshwater ecosystems. It adversely affects the biodiversity and functioning of wetland and riparian ecosystems, water quality, water storage and distribution infrastructure, recreation and amenity values.

Alligator weed was believed to have been first introduced into Australia through a ship discharging ballast water into the Hunter River during the 1950's. It has since spread throughout the Hunter floodplain, central coast and greater Sydney (which makes up the core infestation) and to a range of non core sites in New South Wales, Victoria and Queensland. Adding to management complexity is alligator weeds value as a food plant by some ethnic communities.

A National Solution

The national Alligator Weed strategic plan identifies a range of required tasks to prevent spread, eradicate non core infestations and manage the core infestations. Implementing the plan is the responsibility of a range of stakeholders from a landholder level to Australian Government.

Progress to Date

Key progress to date on the national Alligator Weed strategic plan includes:

- The successful containment of a 150ha alligator weed infestation near Griffith NSW. 10 years of control works has seen the infestation reduced to less than 50 plants in the Barren Box irrigation supply.
- Education and awareness campaigns with Sri Lankan and other ethnic communities has considerably reduced the use of this plant as a food source, thus preventing future spread.
- Biological control research for alligator weed has identified a range of potential new agents, some of which are undergoing host specificity testing.
- Herbicide trials have identified suitable herbicides for a range of aquatic and terrestrial infestations.
- All non core alligator weed infestations have active management programs aiming to contain infestations with long term goals of eradication. The National Aquatic Weeds Management Group reviewed all non core infestations and reassigned management expectations and timeframes.
- A range of robust alligator weed extension materials are available and have been distributed to the general public and land holders in key regions.
- Newly discovered alligator weed infestations were mostly small in size, indicating early detection. Such discoveries were often the result of awareness activities.
- An aquatic weed identification training course was developed to provide a platform for alligator weed and other aquatic weed identification training. A range of aquatic weed identification courses have been held in NSW, QLD and SA.
- Alligator weed taskforces are established in Hunter, Riverina and northern NSW regions to regionally coordinate and oversee alligator weed management.

Goals and Achievements in 2006/2007

1. Prevent spread

Aquatic Weeds Early Detection efforts are increasing capacity to identify and report infestations early

The Aquatic Weeds Early Detection (AWED) project started with identification workshops for weeds officers in Northern NSW and Waterwatch in North Central Victoria. The project aims to train weed control authorities, resource management staff and Waterwatch to implement protocols (originally developed by NAWMG) for detecting alligator weed and other aquatic weeds. This includes conducting prioritised surveys and monitoring waterways at high risk sites (as per 2.1.2). Efforts in 2007/2008 will focus on the above two regions and South East Queensland.

Noosa District Landcare delivered 9 aquatic weed identification workshops in south East Queensland and 1 in South Australia. As a result more than 165 community people in both states who utilise waterways have an increased capacity to identify and report alligator weed (and high priority aquatic weeds) infestations.

Early detection stakeholders include NSW Department of Primary Industries (AWED proponent), Noosa District Landcare Waterwatch Victoria, Department of Primary Industries Victoria, Local governments in NSW and NAWMG.

Funding: Defeating the Weeds Menace, Burnett Mary Regional Management Group, South East Queensland Catchments, and Department of Water, Land and Biodiversity Conservation SA.

The launch of the Pet Industry DVD teaches the aquatic plant trade about alligator weed

The Pet Industry Association of Australia launched and distributed to members the 'Responsible Handling of Aquatic Plants' DVD. This DVD provides aquarium and pet shop owners with a tool to learn more about the impact of aquatic weeds and how their industry can prevent their introduction and spread. The outcome will be a more informed and responsible industry. This project was a cooperative effort as members of the NAWMG provided assistance.

Funding: Defeating the Weeds Menace

Illegal Aquatic Plants poster helps prevent illegal trade of alligator weed

NSW Department of Primary Industries national poster on illegal aquatic plants provides the aquarium and nursery industry with a state by state guide to illegal aquatic plants. Posters have been distributed to the industry, weed control authorities and the general public. PIAA, Nursery and Garden Industry and all States/Territories had input into this project.

Funding: Natural Heritage Trust

NSW Fishing clubs advertisement aims to help boat owners prevent spread

A half page advertisement about preventing aquatic weeds spread was developed by NSW DPI for the NSW fishing clubs yearbook. Around 24,000 copies of the yearbook distributed to members. The advert aimed to make the audience aware of how boats and fishing equipment can spread aquatic weeds and what actions they can take to prevent spread.

The National Aquatic Weeds Management Group are overseeing the national plan

The establishment of the NAWMG means the plan is being implemented and reviewed on a regular basis, and the national management of alligator weed coordinated at a national level. The NAWMG meets twice per year and holds at least two teleconferences per year. This goal has been achieved but requires ongoing efforts from NAWMG and stakeholders to ensure that:

- outputs continue to be delivered,
- outcomes are achieved and
- key issues are identified and recommendations for solutions and improvements are made.

The stability, commitment, and regular attendance of members of the NAWMG have contributed to its effectiveness. Over 90% attendance at meetings are always achieved and six of the original ten inaugural members remain on the group since its inception in 2003.

Stakeholders during 2006/2007 include: NSW DPI, Biosecurity Qld, PIAA, DPI VIC, Lake McDonald Catchment Care, Local Government, CSIRO, community members and Department of Primary Industries and Arts NT.

Discussion

Efforts from 2006/2007 and previous years reduced the potential for alligator weed to spread to new locations. Items 2.1.1, 2.1.2, 2.1.3 and 2.1.5 have been implemented or are in the process of being implemented. The early detection is a long term concept and its effectiveness for detecting infestations early may not be known for some years.

Future initiatives for preventing spread will mostly relate to education and awareness campaigns (as per 2.1.4 – national awareness program). A national campaign is needed for alligator weed and other high priority aquatic weeds on preventing their spread, detection and control. Further work is required to continue early detection efforts and scope how the early detection project can be implemented on a broader scale.

2. Identify and eradicate non-core infestations

Eradication, containment and survey efforts are in place and being maintained.

Following the re-emergence of an old alligator weed infestation at Woomargama NAWMG conducted a review of the management of all non-core infestations. Responses showed that treatment and surveillance programs were in place at all sites. Some deficiencies in treatment programs were identified and reported back to the relevant stakeholder.

Two NAWMG representatives (Maitland City Council and Victoria's DPI) attended a workshop to develop an action plan for the Woomargama infestation. A combination of local and National expertise resulted in an action plan that once implemented successfully removed the immediate threat of downstream spread and put in place long term control measures.

The alligator weed best practice manual will improve eradication efforts

The development of the alligator weed best practice manual commenced with workshops identifying a range of management and eradication techniques for alligator weed. The final manual will contain a range of suppression and eradication strategies for alligator weed and will form a platform for future eradication plans for non core infestations. The manual will be printed and launched during 2007/2008.

New technologies for aquatic weeds reconnaissance are proposed

A project submitted for funding by Sydney University aims to develop sensors attachable to Autonomous Aerial Vehicles (UAV's) that are capable of detecting alligator weed. If successful this could provide a low cost tool to survey waterways for aquatic weeds in non-core or high risk areas.

Stakeholders include Sydney University (proponent), NSW Department of Primary Industries, NAWMG Maitland City Council, Farm Dam Control and Sunwater Qld.

Rapid responses to recently discovered infestations

Treatment programs implemented following the discovery of two significantly large new alligator weed infestations (both approx 1 hectare) were found downstream of non core infestations near Lismore NSW and Frankston Vic.

A treatment program was implemented immediately following the discovery of a new infestation near Forster NSW. The treatment program consisted of an integrated approach using herbicides and mechanical removal.

Stakeholders include NSW Department of Primary Industries, NAWMG, Biosecurity Queensland, Department of Primary Industries Victoria, Melbourne Water and local councils.

Funding: Defeating the Weeds Menace, NSW Department of Primary Industries, local councils, Biosecurity Queensland and Far North Coast Weeds.

Funding received to eradicate or contain alligator weed in the Murray Darling Basin

A DWM grant was received to eradicate or contain all alligator weed infestations in the Murray Darling Basin. A range of on ground works are to be implemented to eradicate infestations whilst extension efforts will attempt to increase reporting of back yard infestations in the ACT. This is a multiple agency project with cash and inkind input from ACT Government, Murrumbidgee Irrigation, Hume Shire Council, Griffith Shire Council, NSW DPI and

Funding: Defeating the Weeds Menace, ACT Government, NSW DPI

Discussion

Active containment/eradication programs at all sites demonstrates this goal is being implemented. However eradicating infestations is proving to be difficult. Further research and development is required under this goal including the development of improved eradication strategies (particularly the integration of herbicides and mechanical efforts for control of alligator weed) and improved surveillance techniques, including further UAV development if the concept proves feasible. Best practice and early detection training for weed control operators and community are also required.

2.3 Manage core infestations

A risk assessment will help contain the spread of the core alligator weed infestation

A successful DWM grant for GHD Consulting will enable the Core infestations in Greater Sydney and Hunter to risk assessed in terms of their ability for further spread and/or impact. The project will define criteria for assessing potential spread and impact, and then apply the criteria to known infestations to identify high risk sites. The outcome of such a process will be the identification of high risk sites that require intensive treatment to contain and prevent potential spread, as per strategy goal 2.3.1. The project will be completed by June 2008 with intense on-ground works treatment works to follow post project.

Funding: Defeating the Weeds Menace.

Containment procedures are underway following June 2007 floods

Steps are in place to ensure appropriate surveillance occurs in the Hunter region following the 1-100 year flood, which has increased the spread of alligator weed. NSW DPI and local governments are coordinating this effort.

Containment works continue in the core infestation areas

Efforts in 2006/2007 include containment works across the entire core infestation area and mapping of infestations in South West Sydney.

Alligator weed biocontrol agents undergoing host specificity testing.

The third new potential biological control agent is undergoing host specificity testing by CSIRO Entomology, Brisbane (previous two not host specific). Permission obtained to import a fourth agent and an application is under development to import a fifth agent.

Funding: Defeating the Weeds Menace

Other research is improving our understanding of alligator weed and its management in core areas

Research conducted by the CSIRO found selective herbicides such as brush off deplete below ground biomass faster than non selective herbicides. Research commenced to examine integration of grazing and herbicide application.

CSIRO commenced other research including genetic studies to determine the origins of Australian populations a study to determine why alligator weed is invasive. CSIRO have also received funding to commence a study on Perri Urban aquatic weed issues.

Developing the alligator weed best practice manual helped identify new strategies for core infestation management.

A range of eradication and containment strategies were identified through the alligator weed best practice manual development, which in future will help improve the management of the core infestation areas.

Discussion

Whilst the management of the core infestation has received much efforts, it's a complex management environment that requires ongoing efforts by stakeholders to keep alligator weed contained. Improved management techniques and planning are required to increase effectiveness of programs.

It is hoped that the availability of the best practice manual and the results of the core infestation risk assessment will result in improvements to strategic plans, leading to better containment, prevention of spread and reduced impact at strategic sites, as per strategy goals 2.3.1 and 2.3.2.

Future on ground and management efforts are likely to include implementing on ground works (as per risk assessment recommendations) and ongoing management of other core infestations. The availability of the alligator weed best practice manual in 2007/2008 will likely improve the management of core infestations, however training of weed control operators in best practice techniques is required.

Future research and development efforts are required to continue the current biological control programs. If agents prove to be host specific funds will be sought to begin a mass rearing, release and monitoring program. Other areas of research include integrated management methods to improve our capacity to manage core infestations and to investigate new control technologies such as steam, which could provide an alternative to herbicide application in areas of high conservation value.

Attachment A – National Aquatic Weeds Management Group (as of 30 June 2007)

Membership group

| Organisation | Name |
|--|-----------------------|
| Community (Hunter) | Margaret McMahon |
| CSIRO Entomology | Shon Schooler |
| Pet Industry Association of Australia | Anthony Ramsey |
| Community (Noosa & District Landcare Group) | Phil Moran |
| NSW Department of Primary Industries | Syd Lisle |
| Biosecurity Qld (Department of Primary Industries) | Phil Maher |
| Department of Primary Industries (Victoria) | Lalith Gunasekera |
| Community (Hawkesbury/Nepean) | Neale Tweedie (Chair) |
| Local Government | Paul Rasmussen |

Technical advisors

| | |
|--------------------------------------|---------------|
| NSW Department of Primary Industries | Rod Ensbey |
| Maitland City Council | Brian Worboys |

Coordinator

| | |
|--------------------------------------|----------------------|
| NSW Department of Primary Industries | Andrew Petroeshevsky |
|--------------------------------------|----------------------|

Corresponding members

| | |
|---|------------------|
| Department of Water, Land and Biodiversity Conservation (SA) | Dennis Gannaway |
| Nursery and Garden Industry Australia | Robert Chin |
| Environment ACT | Kerrin Styles |
| Department of Agriculture and Food (WA) | Simon Merewether |
| Department of Primary Industries, Water and Environment (Tas) | Andrew Crane |
| Department of Environment and Arts (NT) | Steve Wingrave |

**Attachment B – Financial Reporting Table for Aquatic WoNS management
(Alligator Weed, Cabomba and Salvinia)**

| 2006-07 | | Planned budget | | Actual Expenditure | |
|---|--|---|---|---|--|
| Employees & Positions Held | Recipient's Contributions (without GST) | Funds paid by the Commonwealth (without GST) | Recipient's Contributions Expended (without GST) | Commonwealth Funds Expended (without GST) | |
| Co-ordinator salary and on-costs | | 85,200 | | 85,500 | |
| Management, admin support, research officers | 86,000 | | 86,000 | | |
| NRM groups, state /territory community support inputs | 31,300 | | 31,300 | | |
| | | | | | |
| A | Total Employment Costs | \$117,300 | \$85,200 | \$117,300 | \$85,500 |
| | Operating Cost Items | Recipient's Contributions (without GST) | Funds be paid by the Commonwealth (without GST) | Recipient's Contributions Expended (without GST) | Commonwealth Funds Expended (without GST) |
| | Management Group travel & meeting expenses | 23,000 | 41,600 | 23,000 | 27,000 |
| | General operating costs and extension | 5,100 | 12,500 | 5,100 | 12,800 |
| B | Total Operating costs | \$28,100 | \$54,100 | \$28,100 | \$39,800 |
| | | | | | |
| C | Total Cost (without GST) (A+B) | 145,400 | \$139,300 | 145,400 | \$125,300 |
| D | GST (10%) | \$14,540 | \$13,930 | \$14,540 | \$12,530 |
| E | Total Cost (including GST) | \$159,940 | \$153,230 | \$159,940 | \$137,830 |

Attachment C National Alligator Weed Distribution Map

