REVIEW OF PROGRESS TOWARDS THE CABOMBA STRATEGIC PLAN 2006-2007

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CABOMBA STRATEGIC PLAN 2006 - 2007

Executive Summary

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

Prevent the Spread of Cabomba
The Aquatic Weeds Early Detection project commenced with three aquatic weed identification workshops and follow up training sessions held in Northern NSW and North Central Victoria. The workshops aimed to increase the ability of stakeholders to monitor waterways for cabomba (and other priority aquatic weeds) and to report outbreaks.

Other achievements include:

- Aquatic weed identification workshops in Queensland and South Australia
- 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
- Written paper on aquatic weeds for the Nursery and Garden Industry Australia
- Aquatic weed spread advert published in NSW Freshwater Anglers club annual report, which was distributed to 24,000 members

Prevent the trade of cabomba
A weed risk assessment of aquatic plants in the ornamental plant trade commenced, which will ensure cabomba isn't replaced in the trade by other weedy species. The project has identified 46 aquatic plants within the trade with significant weed risk. After weed risk assessment 25 have been recommended for national ban whilst further information is needed for the remaining 21 species.

Minimise the impacts of cabomba
A full time project officer was appointed to oversee cabomba management at Lake Benalla, a high priority infestation due to its location in the Murray Darling Basin. The project officer has identified improved management techniques for the lake, conducted education and awareness and obtained further funding for the project.

The development of the Cabomba best practice manual commenced with the running of a workshop at Grafton in May 2006.

Funding obtained from Defeating the Weeds Menace to eradicate (using non herbicide techniques or contain isolated infestations near Benalla in Victoria and Noosa in Queensland.

Coordinate management
The National Aquatic Weeds Management Group continues to provide a platform for a coordinated approach to management of cabomba in Australia. The group identifies required tasks to address strategy priorities and reviews progress of strategies.

CABOMBA STRATEGIC PLAN 2006 – 2007

Introduction

Cabomba – Its history and impacts in Australia

Cabomba *(Cabomba caroliniana)* is a Weed of National Significance (WoNS) because of its severe impacts in freshwater ecosystems. It forms dense underwater thickets that adversely affect the biodiversity and functioning of aquatic ecosystems, water quality, water storage facilities, and recreation and amenity values.

Cabomba was introduced to Australia as an aquarium plant. It is thought that many streams were deliberately seeded with cabomba by aquatic plant traders. In 1986 a population was first noticed as naturalised in north Queensland. By 1989 it was first noticed as a weed (Mackey 1996) and infestations have since been discovered in Queensland from Cairns to Gold Coast, far and mid north coasts of NSW, North East Victoria, Darwin and in the Sydney basin.

A National Solution

The national cabomba strategic plan identifies a range of required tasks to reduce the impact of existing infestations, stop the illegal trade, prevent spread and increase coordinated management. 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 cabomba strategic plan are outlined below.

- Initiation of a biological control program in 2003, which involved the commencement of native range surveys in Argentina.
- Cabomba herbicide screening trial research identified two suitable herbicides for cabomba control, which if registered could replace 2,4-D as a suitable and safe herbicide.
- A cabomba infestation at Marlows Lagoon in the NT was treated with herbicide (following unsuccessful attempts using drawdown) and four years later there is no visible evidence of cabomba.
- A rapid response by the NT government to a cabomba outbreak in the Darwin river has seen the appointment of an aquatic weeds officer for the NT and the infestation reduced to around 1% of its original size.
- A reconnaissance methodology for aquatic weeds developed, which enables local weed control authorities to conduct prioritised cabomba surveys.
- Education and awareness activities including brochures, media articles, and displays by key stakeholders have increased awareness by stakeholders, including the aquarium and nursery industry.
- In late 2005 Cabomba the legal trade of cabomba was finally banned nationally following its declaration in Victoria. This closed a major vector for the dispersal of cabomba.
- The commencement of the development of a management plan for cabomba in Lake Benalla in Victoria. The plan aims to contain cabomba to current areas and protect downstream values.

Goals and Achievements in 2006/2007

1. Prevent and/or reduce the introduction and spread of Cabomba

Aquatic Weeds Early Detection activities increases monitoring of waterways and likelihood of successful detection/ intervention

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 cabomba and other aquatic weeds. This includes conducting prioritised surveys and monitoring waterways. Efforts in 2007/2008 will focus on these two regions and South East Queensland.

Noosa District Landcare conducted 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 are familiar enough with cabomba and high priority aquatic weeds to identify and report them.

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 aquatic plant trade is playing a greater role to improve industry awareness with:

a) Pet Industry DVD

The Pet Industry Association of Australia launched and distributed to its members the '*Responsible Handling of Aquatic Plants*' DVD, It 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

b) Nursery and Garden Industry Australia – paper on aquatic weeds

The paper '*reducing the water weed risk – how government and industry can contribute to a safer trade*' appeared in the June 2007 edition of the NGIA nursery papers series. The paper covers topics such as the impacts of aquatic weeds, actions the trade can take to reduce risk of future introductions and the aquatic plants weed risk assessment project. The paper was written by the National Aquatic Weeds Coordinator and reviewed and edited by NGIA representatives.

NSW Fishing clubs advertisement
NSW DPI developed a half page "preventing aquatic weeds spread" advertisement for the NSW fishing clubs yearbook. 24,000 copies of the yearbook were distributed to members. Advertisement aims to make the audience aware of how boats and fishing equipment can spread aquatic weeds and what actions they can take to prevent spread (as per strategy 2.1.2 – change community attitudes and actions).

Discussion
2.1.2 Changing community attitudes and actions – This is an ongoing activity. Although considerable extension efforts have been conducted and robust extension materials are available gaps remain. Future extension efforts are required with audiences who may be unknowingly spreading cabomba (such as boating and fishing) and to increase adoption of early detection. This goal is 50% complete

2.1.3 Conduct regular monitoring of waterways for cabomba - The implementation of the AWED, aquatic weed identification workshops and with pasts efforts has made considerable contributions to this strategy. Future initiatives in this field will mostly relate to education and awareness campaigns (as per 2.1.2) to continue early detection efforts and scoping of how the early detection project can be implemented on a broader scale. This goal is 60% complete.

2.1.4 Improve aquarium plant industry cooperation - The PIAA and the Nursery and Garden Industry of Australia's (NGIA) involvement in the NAWMG and the aquatic plants weed risk assessment project demonstrates strong linkages and cooperation between weed managers and the industry, which is likely to continue. However, self regulation is a difficult concept and is unlikely to be further pursued. Future efforts for cooperation should include greater efforts by states to communicate impending aquatic plant declarations to the industry and reporting by the industry of plant sales and new species. This goal is mostly (80%) complete.

2.1.5 – Minimise potential for further spread - No progress on developing quarantine protocols to minimise potential for further spread. NAWMG need to discuss this item to determine just how realistic it is and where protocols would be of use.

2.1.6 Maintain natural characteristics of waterways - This strategy goal is being addressed by the regional catchment bodies nationwide. Efforts by NAWMG will be to ensure that such bodies recognise the importance of this work for aquatic weed management.

2. Prevent the trade of cabomba

Cabomba is banned from sale nationally.

Trade regulations prohibiting the sale of cabomba are enforced in each state and territory (as per all WoNS species). However, in May 2006 NAWMG identified the need for all state and territories to have nursery and aquarium shop inspection programs in place. Such inspection programs are in place in NSW and WA. An ongoing issue is the trade in aquatic weeds through the internet.

A Weed risk assessment aims to reduce the likelihood of other weedy aquatic plants replacing cabomba

In 2005/2006 the NAWMG recommended a strategy variation to provision of safe alternative plants due to difficulties and risks associated with selective safe alternatives at a national level. Instead NAWMG recommend that weed risk of pond and aquarium species in the trade be assessed.

The weed risk assessment of tradeable aquatic plants project commenced in August 2006. A project working group consisting of industry and government was formed and the National Institute of Water and Atmospheric Research (NIWA) from New Zealand were contracted to undertake the work. The project has identified that of the 401 species in the trade in Australia 45 have significant weed potential. 20 of these were recommended for national ban after a weed risk assessment. However, further evaluation is required on the remaining 25 before recommendations can be made. In addition, 25 aquatic plant species not yet naturalized in Australia pose a weed risk. On completion of this project the results will be submitted to the Australian Weeds Committee for review and action.

Stakeholders include NSW Department of Primary Industries, NAWMG, Biosecurity Queensland, Department of Primary Industries Victoria, NIWA, PIAA, Austral Watergardens, and PISCES plants.

Funding: Defeating the Weeds Menace and NSW Department of Primary Industries

Illegal aquatic plants poster provides industry with advice on regulation

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

Discussion

2.2.1 Provide uniform regulations on cabomba trade across Australia – Achieved, cabomba is banned from sale in all states and territories.

2.2.2 Provision of alternative pond plants - the original intent of this strategy was to ensure when plants are removed from the ornamental trade they're not replaced by other species. This strategy item cannot be finalised until the 25 species that require further evaluation are risk assessed. Future efforts will be directed here. The project also highlighted the threat food plants may pose to aquatic environments. Use of such plants by both ethnic communities and permaculture pose an ongoing threat and an investigation of this potential risk (including risk assessments) is required.

2.2.3 Develop accreditation regime for aquatic plants - No progress on accreditation although this item has been discussed. This project may not be necessary as the aquatic plants weed risk assessment aims to address the issues of aquatic plant propagation.

2.2.4 Enforce trade regulations – Inspection programs are undertaken in NSW and WA but further efforts required in other states and territories.

2.3 Minimise the impacts of Cabomba

Cabomba is been managed at some strategic sites

Cabomba management programs continue at Lake McDonald (SE QLD), Ewan Maddock dam (SE QLD), Darwin River (NT) and at Lake Benalla (VIC). These actions are helping to contain the infestations and prevent further spread by plant fragments attached to boats and trailers.

The Darwin River site has been reduced to less than 1% of original size and eradication is the long term goal.

Benalla City Council have employed a project officer to oversee cabomba management at Lake Benalla and identify further funding opportunities. Also a management plan for Lake Benalla has been completed. The plan identifies a range of actions required to contain cabomba to current levels and prevent its downstream spread.

Funds have been obtained from Defeating the Weeds Menace to contain or eradicate outlying cabomba infestations in the Benalla and Noosa districts. It's a joint project between the Goulburn Broken CMA, Benalla Council and Noosa District Landcare. It will utilise non herbicide methods such as drawdown, shading and heat treatment.

Funding: NT Government, Noosa Council, Caloundra City Council, Benalla Council, Goulburn Broken Catchment Management Authority, Defeating the Weeds Menace.

Development of a best practice manual has commenced

A cabomba workshop was held in May 2007 to commence the development of a cabomba best practice manual. The manual is expected to be completed by July 2008.

NAWMG are working with manufacturers to register new herbicides

Meetings between NAWMG members and FMC (manufacturer) have identified required tasks to collect the necessary data to support a registration on a highly effective herbicide for cabomba.

A potential biological control agent is undergoing host specificity testing

A small thrip (*Hydrotimetess natans*) has been selected by CSIRO Entomology for host specificity testing, which will be conducted during 2007/2008.

Following the discovery of seeding cabomba in the Northern Territory searches have been conducted in Queensland, New South Wales and Victoria for seeding populations. This search discovered cabomba seeds at Lake Benalla (Vic). It is not known though if such seeds are viable. The discovery of cabomba seeds at Lake Benalla may pose additional management challenges.

Discussion

2.3.1 Strategic control of all infestations – Without an effective registered herbicide for cabomba this strategy has not been sufficiently adopted, which poses a serious risk for further spread. Efforts are underway to facilitate the registration of new herbicides and such efforts need to be maintained until products are registered. In the meantime efforts should also focus on identifying priority sites for treatment when registered herbicides are available.

Potentially adding to the complexity of cabomba management at Lake Benalla

2.3.2 Improve understanding of cabomba - Although efforts are underway to develop a best practice manual there is a lack of options and information on submerged weeds management. Future efforts to develop a range of controls and integrate them are required. This strategy is less than 10% complete

2.3.3 Implement biological control – If agents identified in native range surveys prove to be host specific a mass rearing, release and monitoring program will be required. The progress of this strategy cannot be quantified until agents have been released and assessed.

2.2.4 Quantify impacts on cabomba – No further progress from NAWMG review of aquatic weed management expenditure in Australia. 10% complete.

2.4 Coordination of Management

The National Cabomba strategy is being coordinated

The NAWMG and stakeholders continue to manage implementation of the plan, provide cooperative frameworks and help ensure that resources are strategically utilised. All national cabomba projects proposals submitted during 2006/2007 were successfully funded.

An example of the national coordination and cooperation is the successful obtainment of funds for the eradication of outlying cabomba infestations project, which is a joint effort between Benalla City Council (Victoria) and the Noosa District Landcare Group (Queensland).

The National Weeds Facilitator briefed the Murray Darling Basin Committee on the threat cabomba and other aquatic weeds pose to water resources in the Murray Darling Basin.

Discussion

2.4.1 National assessment of distribution and impacts – A database on national distribution was established in 2006 by NSW DPI and has been updated since. However, the impacts of cabomba are not well understood and further efforts are required to quantify these impacts (both economic and environmental, as per 2.2.4). The lack of impact information means this strategy item is 50% complete.

2.4.2 Manage implementation of plan - The establishment of the NAWMG means the cabomba plan is being implemented and reviewed on a regular basis, and the national management of cabomba coordinated. 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 outputs continue to be delivered and outcomes achieved.

The stability, commitment, and regular attendance of members of National Aquatic Weeds Management Group 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.

2.4.3 Maximise the availability and use of resources – The NAWMG, national aquatic weeds coordinator and stakeholders are obtaining funds from Defeating the Weeds Menace, local and state government and regional Natural Resource Management bodies to implement the plan. This strategy item is in place but will remain ongoing for the life of the strategy.

2.4.4 Provide cooperative frameworks – Cooperative frameworks now exist between the NAWMG and a range of other stakeholders. Waterwatch, Landcare and the aquatic plant trade industry have all had involvement in the management of cabomba. Outstanding items include the need to involve the fishing industry and the development of effective management plans for cabomba. This strategy item is 30% complete.

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 Petroeschevsky

Corresponding members

Department of Water, Land and Biodiversity Conservation (SA)	Dennis Gannaway
Nursery and Garden Industry Australia	Robert Chin
Environment ACT	Kerrin Styles
WA Agriculture	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 Cabomba distribution map