



REGIONAL WEED MANAGEMENT PLAN

1.1 PLAN TITLE: **Blue Heliotrope**

1.2 PLAN PROPONENTS

Regional weed advisory committee: Macquarie Valley Weeds Advisory Committee

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1.3 NAME OF PLANT(S)

WONS n

Botanical name: *Heliotropium amplexicaule* Common name: Blue Heliotrope

1.4 PLAN PERIOD (not to exceed five years)

Starting date: 01/07/2008

Completion date: 30/06/2013

1.5 AREA OF OPERATION

All Local Control Authorities (LCA's) and Rural Lands Protection Boards (RLPB's) of the Macquarie Valley Weeds Advisory Committee.

1.6 AIM

To successfully manage Blue Heliotrope in the Macquarie Valley.

1.7 OBJECTIVES

1.7.1 Considerably reduce impacts of existing weeds

1.7.2 Prevent new weed problems

1.7.3 Improve coordination and cooperation

1.7.4 Raise awareness of weeds issues within region

2.0 STAKEHOLDERS

2.1 SIGNATORIES

Participating Councils (LCA's):

- Bogan Shire Council
- Bourke Shire Council
- Brewarrina Shire Council
- Cabonne Council
- Cobar Shire Council
- Dubbo City Council
- Mid-Western Regional Council
- Narromine Shire Council
- Orange City Council
- Parkes Shire Council
- Unincorporated area of Western Division
- Wellington Council

Participating County Council:

- Castlereagh Macquarie County Council
- Upper Macquarie County Council

Participating Rural Lands Protection Boards:

- Bourke
- Brewarrina
- Central Tablelands
- Coonabarabran
- Coonamble
- Dubbo
- Molong
- Moree
- Mudgee / Merriwa
- Nyngan
- Walgett

2.2 OTHER STAKEHOLDERS

- NSW Department of Primary Industries (DPI)
- State Forests
- NSW Department of Environment and Climate Change (DECC) – National Parks and Wildlife Service (NPWS)
- Department of Lands
- Catchment Management Authorities (CMA's)
- Regional Landcare Coordinators
- Aboriginal Lands Councils
- Service providers – Country Energy, Telstra, Australian Rail Track Corp (ARTC)

3.0 BACKGROUND AND JUSTIFICATION

3.1 PLAN JUSTIFICATION AND DESCRIPTION OF PROBLEM

Blue Heliotrope (*Heliotropium amplexicaule*), also known as wild verbena, is a native of South America (Brazil and Argentina). It is now a naturalised weed in central and northern New South Wales and South-Eastern Queensland (Darling Downs). Blue Heliotrope infests more than 110,000 hectares in New South Wales.

Blue Heliotrope is a serious weed of the Macquarie Valley with all categories of infestations scattered throughout the region. It must be controlled to stop the spread to all western parts of the state. Blue Heliotrope is a weed of all agricultural activities and seriously affects stock through poisoning and is easily spread by cultivation. There are bio-agents available so that an integrated management plan can be implemented. It is a hard weed to eradicate especially when it becomes established on roadsides, waste places, and fallow and degraded pastures.

Blue Heliotrope covers the ground with dense foliage smothering competitors and will survive all weather conditions, as it possesses excellent drought resistance characteristics.

There exists a significant ecological impact associated with allowing the proliferation of the Blue Heliotrope as a rapid displacement of native vegetation occurs with almost a total loss of native species biodiversity within the thicket.

Blue Heliotrope is a dangerous plant and should not be allowed to grow and spread because of many factors including;

- The competitiveness of Blue Heliotrope seriously affects agriculture production
- Blue Heliotrope is a difficult weed to control and depending on seasonal conditions requires several inspections and treatments
- A single plant produces many seeds and have many means of spread that are major concerns of affected LCAs, RLPBs and landowners
- Blue Heliotrope has shown itself to be a significant weed in the Macquarie Valley by its ability to grow in all climates and topographical zones
- If given the chance, it will become a dominant species, replacing native and improved pastures
- Blue Heliotrope's capacity to replace desirable plant species and its effect on stock health makes it a threat to agriculture production

3.2 THE 'DO NOTHING' OPTION

Local control authorities have to minimise the damage by the spread of Blue Heliotrope to agricultural production, uninfested environmentally sensitive areas, stock poisoning and for human health reasons.

If nothing were done to suppress, reduce and manage Blue Heliotrope there would be

- An increase of displaced native and improved pastures
- An increase of stock and human health problems
- A total loss of agriculture production of infested land
- A decrease in land values
- Increase in weed control costs and
- Restrictions on types of agricultural production
- Loss of biodiversity

3.3 DISTRIBUTION OF INFESTATIONS

Blue Heliotrope has the potential to invade all soil types and areas in the Macquarie Valley. The specific details of current distribution are,

- Core infestations are to the North West of Hill End: in a band following the Dubbo/Wellington road and on the Dubbo/Dunedoo road in the Dubbo City area. It can also be found along the Narromine/Dubbo road and in the North West boundary of Coolah Shire Council. There is a larger area in the South West of Mudgee Shire Council.
- Scattered rare and isolated and marginal infestations are found in the Coonamble, Gilgandra and Warren Shire Councils.

3.4 WEED BIOLOGY

A hairy prostrate perennial herb, 15 to 30 cm high, with many branched stems radiating from the apex of a rather woody rootstock to a diameter varying from 30 to 200 cm; hairs on stems, leaves and calyx of two kinds – long, narrow and tapering towards the apex or shorter and terminating in a glandular swelling. Plants reproduce by seed and root buds.

In November 2001, the release of a biological control agent, leaf-feeding beetle called *Deuterocampta quadrijuga*, happened and is successfully breeding up despite having to go through a 3 month drought. Further biological agents are to be released in the near future.

3.5 METHOD AND RATE OF SPREAD

Warm-temperate and sub-tropical regions, growing on a wide variety of soils ranging from sandy red earths through to calcareous red soils to deep red Volcanic loams. As a weed it is commonly found along roadsides, in waste places, fallows and degraded pastures.

Blue Heliotrope proliferates aggressively because of its abundant seed output and ready regeneration from root buds, especially those on root fragments left after mechanical disturbance. The wrinkled and tubercular nutlets readily stick to wool and animal fur, while seeds pass unharmed through the alimentary tracts of animals. Seeds also move in water flow over the soil surface and in mud sticking to hooves, machinery and other vehicles. Seed of Blue Heliotrope is occasionally found as a contaminant of hay and grain and the plant is readily dispersed along roadsides during grading.

Seeds germinate throughout summer usually with a major flush in late summer or autumn if moisture is available. Young plants are characterised by a group of four to six lance-shaped leaves forming a rosette. Several rather long, prostrate stems develop as the seedling ages. Flower stalks rise from the laterals at an early stage and flowering commences in November, continuing sporadically through summer unto March. In cool areas, growth ceases in late autumn but may continue slowly throughout winter in warmer places. Established plants produce a flush of new growth in spring and autumn, flowering profusely at these times. In warmer areas, a few plants may flower and set seed as early as July.

3.6 SPECIES MANAGEMENT

As with most species, Blue Heliotrope requires integrated weed management to achieve successful control.

Cultivation – only a short term solution but is also capable of increasing the problem

Pasture Management – a vigorous perennial pasture needs to be maintained in order to out-compete Blue Heliotrope. It is an effective long term solution.

Grazing Management – sheep (especially Merinos) and goats can be used (but not every year) and horses, cattle and pigs should never be used.

Chemical – only use registered herbicides

Biocontrol – the leaf beetle (*Deuterocampta quadrijuga*) and flea beetle (*Longitarsus* sp.)

3.7 KEY LAND MANAGERS

- LCA's
- RLPB's
- Landholders
- National Parks
- State Forests
- Department of Lands
- Service providers – Country Energy, ARTC
- RTA

4.0 LEGISLATIVE AND REGULATORY SITUATION

4.1 CURRENT DECLARATION

<i>Heliotropium amplexicaule</i> (Common Name: Blue Heliotrope) is declared as a Class 4 noxious weed in the following LCA areas across the Macquarie Valley region:	
Bogan Shire Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority

Bourke Shire Council	Not Declared
Brewarrina Shire Council	Not Declared
Cabonne Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Castlereagh Macquarie County Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Cobar Shire Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Dubbo City Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Mid Western Regional Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Narromine Shire Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority
Orange City Council	Not Declared
Parkes Shire Council	Not Declared
Unincorporated area of Western Division	Not Declared
Upper Macquarie County Council	Not Declared
Wellington Council	Class 4 noxious weed: The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority

4.2 DECLARATION CHANGES

No alteration to existing declaration is anticipated.

5.0 CONSIDERATIONS AND OPPORTUNITIES

5.1 FINANCIAL SUPPORT TO CARRY OUT THE PLAN

The majority of the financial support for this plan will be provided as part of LCA/RLPB weed control programs. Further support will be sought through DPI's group project funding program. Any other funding source deemed relevant by MVWAC will also be explored.

5.2 LINKS TO OTHER STRATEGIES

- Australian Weed Strategy
- NSW Invasive Species Plan (currently in draft form)
- MVWAC Regional Weed Strategy
- Catchment Action Plans

5.3 BARRIERS AND CONTINGENCIES

Barriers

- Blue Heliotrope spreading from infested areas.
- Sand quarrying and soil mining operations.
- Spread by road maintenance equipment.

- Landholders failing to control Blue Heliotrope.
- Lack of knowledge of Blue Heliotrope by Landholders and government agencies.
- Landholders lack the knowledge to use alternative methods to control the weed.
- Spread by vehicles, stock and water.

Contingencies

- Variable seasonal conditions
- Resource shortfall

6.0 ACTION PLAN

Objective	Action	Performance indicator	By whom
1.7.1 Considerably reduce impacts of existing weeds	All public lands to be inspected annually	100% of all roadsides, reserves and Travelling Stock Routes (TSR's) inspected.	LCA weed officers & RLPB rangers
	Control methods to be carried out on all infestations on LCA & RLPB lands as seasonal conditions allow	Group 1 and Narromine Shire All existing infestations on Council/Board controlled lands reduced by 50% Groups 2 & 3 and Wellington Council All existing infestations on Council/Board controlled lands reduced by 20%	LCA weed officers & RLPB rangers
	All private properties identified as having infestations are to be inspected annually and regulatory action taken as required	100% of identified properties inspected Group 1 and Narromine Shire Reduce rare and isolated infestations on private lands by 40% Reduce marginal infestations on private lands by 20% Groups 2 & 3 and Wellington Council Reduce rare, isolated and marginal infestations on private lands by 5% All core infestations on private lands will be contained.	Landholders & LCA weed officers
1.7.2 Prevent new weed problems	Inspect for Blue Heliotrope as part of routine property inspection program	Blue Heliotrope is included in the inspection routine	LCA weed officers & RLPB rangers
	Aspects of the rapid response program to be implemented when a new infestation is discovered	100% of located new infestations recorded and mapped 100% of new infestations treated 100% of new infestations to be monitored and follow-up treatment programs implemented	Landholders, LCA weed officers & RLPB rangers

	All infestations to be contained to prevent new weed problems	Buffer zones established around sites known to be infested	Landholders, LCA weed officers & RLPB rangers
1.7.3 Improve coordination and cooperation	All infestations to be recorded and mapped	Maps produced and updated regularly Data recording standards adhered to	LCA weed officers & RLPB rangers
	Plan implementation to be monitored and reviewed	Review process (as outlined in section 7.0) carried out	RPO, LCA weed officers & RLPB rangers
	Actively seek partnerships with other weed management agencies	Partnerships developed where necessary	RPO, LCA weed officers & RLPB rangers
	Develop on-ground management plans with neighbouring landholders, LCA's and RLPB's	Plans of management entered into and partnerships developed with neighbouring landholders, LCA's and RLPB's	LCA weed officers & RLPB rangers
1.7.4 Raise awareness of weeds issues within region	Blue Heliotrope to be part of a regional weeds awareness program	Advertisements on television Field days held Displays at local shows attended by Weed Officers Weed pamphlets distributed to landholders during property inspections Weed Calendars distributed by LCA's and RLPB's	DPI, RPO, LCA weed officers & RLPB rangers

NB:

Group 1	Cabonne Council
	Mid Western Regional Council
	Orange City Council
	Wellington Council
	Upper Macquarie County Council
Group 2	Dubbo City Council
	Narromine Shire Council
	Parkes Shire Council
	Castlereagh Macquarie County Council
Group 3	Bogan Shire Council
	Bourke Shire Council
	Brewarrina Shire Council
	Cobar Shire Council
	Unincorporated area of Western Lands

7.0 MONITOR AND REVIEW

There will be an annual review of the Blue Heliotrope Regional Management Plan to ensure the performance indicators are realistic and are being met. Member LCA/RLPB's weed officers and rangers will participate in the review process. This would include discussions on increases or decreases of range, new incursions, successful management strategies, expectations and results.

8.0 BENEFITS

The benefits of controlling Blue Heliotrope within the Macquarie Valley Weeds Advisory Committee area will be substantial to Agriculture/Horticulture, the environmental biodiversity and human health.

To have control work carried out by LCA and RLPB on land under their control will reduce further spread of Blue Heliotrope onto privately occupied land. Landholders that control Blue Heliotrope will:

- benefit the agricultural and urban communities through minimising the health risks to stock and humans
- have increased agricultural productivity
- allow clean hay production from previously infested areas
- have increased land values
- allow the estimate benefit from produce grown in the Macquarie Valley to be substantial

9.0 RESOURCES

External Material

- Blue Heliotrope Agfact: P7.6.45

References

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- Auld, B.A. and Medd, R.W. (1987) "*WEEDS: An illustrated botanical guide to the weeds of Australia*", Inkata Press, 255pp.
- Milvain H. Noxious Plants Advisory Officer Control of Noxious Weeds 1999. "*A Guide to Noxious Weed Control in non-crop situations*". Agriculture Protection, NSW
- Lamp, L. and Collet, F. (1979) "*A field guide to Weeds in Australia*" Inkata Press, 376pp.
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