REGIONAL WEED MANAGEMENT PLAN

1.1 PLAN TITLE: **Blackberry** Regional Weed Management Plan

1.2 PLAN PROPONENTS

Regional Weeds Advisory Committee: Southern Tablelands & South Coast Noxious Plants Committee

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Signature: Chairperson: Date:

1.3 NAME OF PLANT(S) **WONS** Y/N Yes

Botanical name(s): *Rubus fruticosus* Common name(s): blackberry

1.4 PLAN PERIOD

Starting date: 1st July 2002 Completion date: 30th June 2007

1.5 AREA OF OPERATION: Southern Tablelands and South Coast Region

1.6 AIM: To ensure blackberry control continues at an effective rate and is strategically directed for maximum benefit for effort.

1.7 OBJECTIVES:

1. To stop the spread of blackberry into those uninfested areas identified in the 2002 mapping
2. To coordinate on-the-ground control efforts between shires and agencies
3. To provide education and extension programmes for private landholders
4. To apply long term effective management strategies
5. To promote native restoration and rehabilitation or pasture improvement in blackberry -affected areas

2.0 STAKEHOLDERS

2.1 Signatories

The following organisations have signed an agreement to implement the Plan:
NSW Agriculture
Councils of the Southern Tablelands and South Coast Region
Rural Lands Protection Boards

2.2 Other Stakeholders

The following organisations have been involved in the planning process, either through notification or actual participation:
NSW National Parks and Wildlife Service
Environment Australia (Booderee National Park)
Environment ACT
NSW State Forests
ACT Forests
Aboriginal Land Councils
Catchment Management Boards
State Rail Authority
Roads and Traffic Authority
Nursery Industry Association
National Farmers Association
Landholders / Dairy Farmers / Cattle Producers
Landcare
Coastcare

3.0 BACKGROUND

3.1 Reason for Plan

Blackberry threatens much of southern Australia. It may dominate pasture and native ecosystems and invade disturbed urban areas (ARMCANZ & ANZECCFM 2001). The species threatens recreational and amenity values of the Region, which may in turn affect regional tourism. The declaration of blackberry as a noxious weed throughout NSW indicates the extent of its ecological and economic importance. Planning and implementation of strategic and sustained control measures are required to control blackberry.

Null hypothesis: If control activities are not undertaken, it is anticipated that blackberry infestations will continue to infill currently uninfested areas in the Southern Tablelands and South Coast Region. In addition, individual taxa of the blackberry aggregate (see Section 3.4) may extend their range and invade previously uninfested areas.

Furthermore, if active control is abandoned, blackberry may quickly invade areas where it has been previously removed or excluded. There is community expectation that blackberry control will continue and community criticism may be significant if blackberry control is discontinued.

3.2 Description of the problem

Blackberry is one of the most serious agricultural and environmental weeds of southern Australia. Blackberry invasions have the following impacts (from ARMCANZ & ANZECCFM 2001):

- Economic impacts are felt in the agricultural sector due to the cost of blackberry control and loss of primary production. A 1984 survey estimated that annual losses attributed to blackberry infestations in NSW, Victoria and Tasmania were $42 million due to reduced production and the cost of control (Parsons & Cuthbertson 1992). However this figure is outdated and does not account for economic impacts on natural ecosystems;
- Agricultural impacts are evidenced through increased costs to plantation forestry, particularly during the establishment phase by impeding access for manual silvicultural operations, reduced pasture production, reduced property values and impeded stock access to water and land. In addition, blackberry may be a host for the fruit fly (Blood 2001);
- Biological impacts include competition with native species in riparian and other native ecosystems. Blackberry infestations suppress native plants and reduce the diversity of wildlife habitat. Blackberry invasions are threatening populations of at least four plant taxa listed as nationally endangered and seven listed as nationally vulnerable. Within the Region, populations of *Grevillea iaspicula* (endangered), *Grevillea wilkinsonii* (endangered) and *Discaria nitida* (rare) are threatened through habitat invasion by blackberry (refer to Briggs, 1998). In addition, blackberry thickets provide habitat and / or forage for feral vertebrates such as the rabbit, fox and common starling (Davies 1998);
- Fire hazards may increase with substantial amounts of dead canes present in blackberry thickets
- Soil erosion may be accelerated around blackberry root masses on watercourses;
- Recreational and tourism values may decrease due to restricted access to pursuits such as fishing, water sports and birdwatching. Furthermore, aesthetic values of blackberry - affected areas may be compromised.

Blackberry is widespread and established throughout the Region. Control and containment is therefore difficult. Community apathy, dispersal of seed by bird vectors, economic downturn in the rural sector and restricted pesticide use near waterways further jeopardize the success of blackberry control. Barriers and contingencies to the Plan are discussed in Section 5.5.

3.3 Distribution of infestations

Blackberry is a weed of temperate climates. It occurs in areas with an annual rainfall of at least 700mm and can occur at any altitude in Australia. Blackberry occurs in all States and Territories except the Northern Territory. The blackberry aggregate (see Section 3.4) has probably reached the climatic limit (based on rainfall and temperature) of its potential

distribution in Australia. However individual blackberry taxa of the aggregate continue to spread and, in the absence of control measures, all aggregates may occupy the full climatic range of blackberry in Australia (Bruzzese *et al.* 2000).

Blackberry occurs in all Local Control Authority areas of the Southern Tablelands and South Coast Region (refer to Map 1 and Appendix 2). It is a significant problem in pastures and native forests on the tablelands and coast and commonly occurs along streams, gullies, roadsides and disused areas. The mapping of Blackberry (refer to Appendix 2) is using the new procedures may have resulted in an overestimate of the control capabilities. It is anticipated that the proportion of core and marginal versus rare & isolated areas will increase at the next mapping review (refer to Action 1 in Section 6).

3.4 Weed biology / ecology

The *Rubus fruticosus* aggregate comprises at least 15 taxa of blackberry, some of which may be hybrids (ARMCANZ & ANZECCFM 2001). Blackberry is generally described as a scrambling, semi-prostrate to almost erect plant. The compound leaves consist of 3-5 oval leaflets. Leaves are usually dark green above with a lighter green undersurface. Short prickles cover the leaf veins and canes (ARMCANZ & ANZECCFM 2001).

Flowers are white or pink and occur in clusters. The fruit is a berry which changes colour from green to red to black as it ripens. The berry consists of an aggregate of fleshy segments, each of which contains a seed. Seeds are deeply and irregularly pitted, oval shaped, light to dark brown and 2-3mm long (ARMCANZ & ANZECCFM 2001).

Blackberry has a two-year growth pattern: young canes start growing in spring, flowering occurs from late November to late February and fruiting occurs from late December to April. Daughter plants develop at the tips of first year canes in autumn. Plants are semi-deciduous with most leaves shed in winter (Bruzzese *et al.* 2000).

Blackberry invades communities such as grassland, grassy woodland, sclerophyll forest (dry to wet), riparian communities, seasonal freshwater wetlands, cool and temperate rainforest and human modified environments such as roadsides, pastures, gardens and orchards. Blackberry tolerates a variety of conditions such as sun, shade and frost and responds favourably to disturbance such as drought and fire (Blood 2001).

Blackberry thickets displace native plant species and alter fauna habitat. Thickets may provide shelter and protection for small native birds. Blackberry fruit provides seasonal forage for some bird and animal species including introduced species (Blood 2001).

MAP TO BE INSERTED HERE

3.5 Method and rate of spread

Blackberry reproduces by seed, root suckers and by developing roots and daughter plants at stem tips. Each berry may contain up to 80 seeds and blackberry infested areas may support up to 13,000 seeds / m^2. The introduced honeybee may be the main pollinator which facilitates fruiting. The fruits are eaten and spread many kilometres by birds and mammals (*e.g.* foxes). Blackberry and foxes are believed to enjoy a mutually beneficial relationship: the fox disperses the seed and gains food and shelter (Bruzzese *et al.* 2000). Seed viability is generally low (10-30%) and seedlings are very susceptible to shading and competition from other plants (Bruzzese *et al.* 2000).

Blackberry seeds may also be spread by bushwalkers eating the fruit. The movement of soil contaminated with blackberry roots, stem fragments or seed may also perpetuate spread (*e.g*. through cultivation). Finally, blackberry spreads vegetatively with daughter plants growing from stem tips (Bruzzese *et al.* 2000).

It is difficult to control the spread of blackberry as it is often spread by birds and vertebrates. Dispersal may be limited by controlling existing core infestations and reducing flower and fruit production through biocontrol agents and chemical control.

3.6 Roles and responsibilities of land managers

Implementation of the Regional Plan by the following land managers is considered critical to the success of the Plan:
Private landowners
Catchment Management Boards
NSW National Parks & Wildlife Service
Department of Land & Water Conservation
State Forests of NSW
Environment ACT
NSW Rail Authority

4.0 LEGISLATIVE SITUATION

4.1 Current declaration

Blackberry is currently declared a W2 noxious weed under the *Noxious Weeds Act 1993* in the following Councils: Bombala, Cooma-Monaro, Crookwell, Goulburn, Gunning, Illawarra District Weeds Authority (Wollongong, Shellharbour & Kiama Councils), Queanbeyan, Shoalhaven, Snowy River, Southern Slopes County Council (Boorowa, Harden, Yass & Young Councils), Tallaganda, Wingecarribee and Yarrowlumla.

Blackberry is currently declared a W3 noxious weed under the *Noxious Weeds Act 1993* in the following Councils: Bega Valley, Eurobodalla, Mulwaree and Wollondilly (associate member).

Finally, blackberry is a Declared Pest Plant under the *Land (Planning and Environment) Act 1991* in the Australian Capital Territory (refer to Appendix 1 for summary).

Under the *Noxious Weeds Act 1993* (NSW), W2 weeds must be fully and continuously suppressed and destroyed. W3 weeds must be prevented from spreading and numbers and distribution reduced. Under the *Land (Planning and Environment) Act 1991* (ACT) an order may be given to control pest plants. Consequently all land managers have a legal obligation to control W2, W3 or pest plants on their property.

4.2 Declaration changes

It is proposed that Eurobodalla Shire changes the current declaration of W3 to W2 (refer to Appendix 1). A W2 declaration is suitable as blackberry is rare / isolated in the Shire and landholders are able to suppress and destroy rather than simply contain infestations. No further declaration changes are recommended.

5.0 CONSIDERATIONS AND OPPORTUNITIES

5.1 Opportunities to be exploited

Funding sources to be investigated in the control of blackberry include:

- Noxious Weed Grant scheme for control on Council and RLPB land (administered through NSW Agriculture)
- Grants to Landcare, Rivercare and Bushcare groups that meet objectives of Catchment strategies and Natural Heritage Trust
- Vacant Crown Land funding (administered through DLWC)
- Possibility of establishing a program similar to the Victorian Good Neighbour Program which provides financial and in-kind assistance to landholders who share boundaries with public land (refer to Sorensen 1998)

Joint ventures may be pursued through:

- Establishment of integrated blackberry management and feral vertebrate control (rabbits and foxes) with Rural Lands Protection Boards (RLPB)
- Seeking sponsorship of blackberry control works by tourism agencies, recreational fishing groups *etc*.
- Involvement in industry development of biological controls for blackberry (CRC for Weed Management Systems) through provision of trial sites

No specific agreements have been reached on the above opportunities, however given the threat potential the plan has recommended a forum to investigate the above opportunities.

5.2 Species management

A combination of chemical, mechanical, rehabilitation, grazing management, application of fire, preventative measures and biological control (Bruzzese *et al* 2000) are required to reduce the spread and impact of blackberry in the Region. Refer to Bruzzese *et al* (2000) for information in the above control measures.

Grazing by goats and deer has been suggested as a control method for the species. However, such measures are effective only in the short-term and fencing is often required to confine grazing animals and protect off-target indigenous plants (Bruzzese *et al* 2000).

The presence of blackberry is symptomatic of wider land and water management issues. Removal of blackberry without follow up work and rehabilitation of the land is unlikely to ameliorate the weed problem. In native ecosystems, revegetation with locally indigenous plants may be required, while in pasture, sowing with desirable species may be necessary (Bruzzese *et al* 2000).

5.3 Extension and education

Research indicates that farmers learn and develop new skills through “farm networks, direct hands-on involvement in field days and specific demonstrations of new technologies and techniques rather than through traditional educational institutions” (NWAC 1996).

To date, blackberry extension and education programmes have included:

- dissemination of blackberry Agnotes and Council information sheets
- pasture management advice
- media releases
- field days

Most landholders are readily able to identify blackberry and implement control measures. However integrated control of the species and limiting the potential for infilling of established infestations should be encouraged through innovative extension and education programmes. The following initiatives are proposed:

- improved coordination among Councils regarding extension and education programmes: the widespread distribution of blackberry in the Region means that coordinated media releases, radio segments and field days immediately prior to the optimal control period (*i.e*. flowering-fruiting period) may achieve improved blackberry control regionwide. In addition, a coordinated approach to Weedbuster Week should be arranged to maximise dissemination of regional weed information

- development of pasture management protocols in riparian zones

- education of absentee landholders on noxious weed control obligations *e.g*. leaflet distributed with rates notices

5.4 Links to other strategies

All direct funding proposals and priorities for the blackberry Regional Plan will support the goals of the NSW Weeds Strategy and the Regional Weeds Strategy.

Land management agencies such as the NSW NPWS and State Forests of NSW may have weed control plans or weed management strategies as part of other management plans for specific areas. Representatives from the above agencies have provided input for this Plan.

In addition, the Plan conforms to the following strategies:

- NSW Weeds Strategy
- NSW Agriculture Corporate Plan 2001/2004
- The National Weeds Strategy – a strategic approach to weed problems of national significance
- Weeds of National Significance Blackberry (*Rubus fruticosus* L. agg.) Strategic Plan
- Catchment Management Board plans (*e.g*. Southern Catchment Management Board Blueprint 2001)

5.5 Barriers and contingencies

The following barriers may limit the success of blackberry control programmes. These barriers have been addressed by specific actions in Section 6 below:

- There is community apathy about the blackberry problem: as it is a long-established, well-known weed where control has had a reasonable level of success. Community apathy could result in the extension of blackberry into new areas or reinvasion of areas not rehabilitated (Action 8)
- Private landholders may not have the skills, motivation, money or infrastructure to control blackberry (Action 8)
- Blackberry is not recognised as a new and emerging weed species and may therefore receive less funding from agencies such as the Department of Agriculture (Action 12)
- Some existing infestations are in locations where it is costly and difficult to control or eradicate (Action 3, Action 4 and Action 8)
- Absentee and small acreage landholders may be less committed to blackberry control (Action 10)
- The maintenance of effective on-going control in core and heavily infested areas may be difficult which may in turn result in the infestation of currently clean properties within these core areas or expansion into marginal and other less affected areas (Action 12).
- Blackberry provides habitat for some threatened species (*e.g.* Southern Brown Bandicoot) and many bird species (White-browed Scrubwrens, Red-browed Firetails). Large scale removal of blackberry infestations in some locations may alter / remove important habitat (Action 9)

- Removal of blackberry infestations without land rehabilitation may promote reinvasion by blackberry propagules and other highly invasive weed species (Action 9)

- The *Pesticides Act 1999* makes it an offence to harm off-target species. In addition, landholders may avoid controlling blackberry in riparian areas as some herbicides are not registered for use near waterways (Action 11)

The following contingencies cannot be overcome in blackberry control:

- Vertebrates (especially birds) often facilitate dispersal of blackberry seed. Landholders are unable to control such vectors (Action 4).

- Dispersal of blackberry is accelerated during major flood events with the transportation of blackberry stems throughout a catchment (Action 3)

- In many parts of the Region, the rural sector is in decline. Reduced funds are available to private landholders to control invasion by weed species such as blackberry (Action 12)

- Blackberry provides fruit for domestic and commercial use and nectar / pollen for honey production (Action 9 and Action 10)

- Restrictions to the use of herbicides in proximity to watercourses reduce available control mechanisms in some areas (Action 11)

- Many blackberry infestations are inaccessible and remote (Action 2-8 and Action 12)

6.0 ACTIONS AND PERFORMANCE INDICATORS

Current actions associated with the control of blackberry include extensive landholder and government agency on-ground control, field days, information brochures, inspections *etc*.

Proposed actions for control of blackberry during the period 2002 - 2007 are given below. As a general principle, rare and isolated infestations should be given priority (including all new incursions), followed by marginal infestations and then core infestations. However, it is important to continue strategic control in areas mapped as marginal and core (refer to Appendix 2) as per actions listed below. Actions flagged with an asterisk (*) are considered essential components of the plan.

	ACTION	Performance indicator	Who is to be responsible (add others involved)	*Objective number*
Mapping				
1	a) Revise 2002 mapping to ensure consistency across land tenure and LCAs b) Update mapped information (preferably on GIS) at least every second year including clearer separation of mapped rare and isolated infestations (refer to Appendix 2) c) Seek NHT funding to assist with mapping: use Strategy 2.2.5 of the blackberry National Strategy as justification	a) 2002 maps revised in 2003 b) Maps updated at least every second year c) NHT application submitted by May 2003	**ST&SCNPC** (Councils, NPWS, Environment ACT, DLWC, Environment Australia)	4
Strategic response				
2	a) Establish a work schedule to coordinate blackberry aerial spraying across LGAs and agencies to reduce costs to individual Councils	a1) Work schedule devised by September 2002 a2) Blackberry control undertaken concurrently by 3 or more adjoining Councils and / or agencies each year	**ST&SCNPC** Local Council Weeds Officers, Government agencies	2
3	a) Contact all Catchment Management Boards in the Region to develop catchment-based strategies for control of blackberry in riparian habitats. b) Devise work schedule based on outcomes	a) Catchment Management Board representatives invited to ST&SCNPC meeting in July 2003 b) Work schedule devised by September 2003	**ST&SCNPC**, Catchment Management Boards	1
4	a) Contact all RLP Boards in the Region to determine whether the spread of blackberry can be reduced with strategic feral vertebrate control work (specifically Fox control).	a1) RLPB representatives invited to ST&SCNPC meeting in November 2004 a2) Strategic control of blackberry and feral vertebrates effected by 2006	**ST&SCNPC**, Local Councils, RLPB	2
5	**Rare and Isolated populations** a) * all new incursions into areas currently mapped absent are to be eradicated[*1] within 2 years b) * At least 50% of all known isolated infestations eradicated[*1] c) density and/or distribution of rare infestations reduced by 50% or more	a) all new incursions eradicated[*1] within 2 years b) At least 50% of currently known isolated infestations eradicated by July 2006. At least 20% of the required work (region wide) to occur each year and verified through annual reports.	**Affected LCAs** (ST&SCNPC Ann Herbert)	4

	ACTION	Performance indicator	Who is to be responsible (add others involved)	*Objective number*
	d) Request Landcare groups and other organisations 'selectively' give priority to rehabilitation where rare and isolated infestations have been eradicated e) All Isolated infestations and appropriate rare populations inspected annually f) Management plans produced by all landowners affected by isolated popn. g) Follow-up assessment of management plans occur annually	c) Currently known rare infestations reduced by 50% by July 2006. At least 20% of the required work (region wide) to occur each year and verified though annual reports. d) Sites where eradication has occurred are rehabilitated within 1 year e) Annual reports indicate inspections completed f) Management plans exist for all affected lands by July 2006 g) Follow-up assessments reported in annual reports		
6*	**Riparian populations** a) Identify priority riparian control areas and prepare control strategies b) Liaise with Catchment Management Boards	a) Priority riparian control areas and strategies identified by March 2003 b) Catchment Board representatives address July 2003 ST&SCNPC meeting	**ST&SCNPC** Catchment Management Boards	
7*	**Marginal populations** a) 25% of all known marginal infestations treated	a1) Currently known marginal infestations reduced by 25% by July 2006. At least 20% of the required work (region wide) to occur each year and verified though annual reports. a2) All sites where control has occurred are rehabilitated within 1 year of eradications*[1]	**Affected LCAs** (ST&SCNPC Ann Herbert)	4
8	**Core populations** a) Encourage and where possible assist landowners with clean properties in core areas b) Develop integrated management practices to contain and ultimately reduce core infestations in the Region c) Seek funding from NHT for work (use Strategy 2.1.1 as justification)	a) Actions recorded in annual reports b) Integrated management practices developed at July 2004 ST&SCNPC meeting c) NHT funding submission sent by May 2003	**Affected LCAs** (ST&SCNPC Ann Herbert)	4

	ACTION	Performance indicator	Who is to be responsible (add others involved)	*Objective number*
Rehabilitation				
9	a) Encourage rehabilitation of sites where blackberry has been removed - obtain appropriate local vegetation to replace treated blackberry (Strategy 2.1.3 of National Strategy) b) Liaise with Landcare groups to develop guidelines for blackberry control where rare and threatened species occur (*e.g.* staged removal to retain habitat while native regeneration occurs).	a) Educational material includes information on rehabilitation and appropriate species to replace blackberry infestations b) A set of guidelines aimed at volunteer bush regeneration and weed removal groups is prepared by December 2003	**ST&SCNPC and NPWS** Landcare Bushcare	5
Training, education and extension				
10*	a) Maintain education campaign to remind land managers of the importance of controlling blackberry. Blackberry identification, impacts, control measure and correct procedures for follow-up of regrowth information may be selectively disseminated via rates notices, council pamphlets and field day material. Absentee and small acreage landholders to be specifically targeted	a) Actions recorded in annual reports. Blackberry brochures and / or discussion included in all field days over the next 5 years	**ST&SCNPC** **Councils, DoA**	3
11	a) Promote methods of reducing off-target mortality at field days and in information brochures	a) Methods of reducing off-target mortality during weed control are specifically addressed at all field days during 2002-2007.	**Councils, DoA**	4
Other actions				
12	a) Investigate funding options for blackberry control (*e.g*. propose Victorian Good Neighbour program as a prototype: see Section 5.1 above)	a) Discussed at July ST&SCNPC meeting in 2004. Any action from discussion taken by December 2004	**ST&SCNPC**	1-5
13	Seek declaration as a W2 noxious weed in Eurobodalla Shire (see Section 4.2 above)	a1) Submission sent by July 2003 a2) Blackberry W2 declaration approved in Eurobodalla Shire	**Eurobodalla Shire Council**, DoA	1, 4

*1 refer to Appendix 2 for definition of “eradicate”

It is anticipated that at a regional scale the application of the above actions should restrict the spread and infilling of existing blackberry infestations. Encouraging blackberry control across all tenures, focusing on control along riparian corridors and provision of education / extension programmes are essential if the Plan is to succeed. Appendix 3 provides a checklist to improve accountability and ensure the actions and performance indicators in Section 6 are met.

7.0 MONITOR AND REVIEW PROCESS

Stakeholders will provide an annual progress report that details their success in meeting the performance indicators within the Plan. This includes an updated distribution map required at least every second year. A brief regional report will be submitted to NWAC each year. The regional report will address any modifications to actions and performance indicators which may improve the outcomes of the Plan.

The Plan is to be reviewed and updated after five years *i.e.* prior to July 2007.

In the event of a key stakeholder failing to meet an objective as given in the Plan, the Committee will assist the stakeholder to meet requirements: *e.g*. determine an appropriate action for the stakeholder and / or other members of the Committee. If the stakeholder is still unable to meet the objective, the Committee will review the mechanism and performance indicators related to the required action.

In accordance with the National blackberry Strategy (Strategy 2.2.2), the Regional Plan must remain flexible and monitor techniques, impact levels and chosen management methods and ensure that the latest knowledge and technology are utilised to provide the best outcome within the five year currency of the Plan.

8.0 BENEFITS

Benefits to industry following implementation of the blackberry Plan include:

- improving access for tillage and silviculture operations and stock access to watering points;
- maintaining property values;
- reducing the likelihood of soil erosion along watercourses.

Benefits to the environment following implementation of the blackberry Plan include:

- promoting maintenance of native species diversity;
- allowing native species access to watercourses;
- reducing refuges for pest animals such as rabbits and foxes;
- reducing unnatural bushfire fuel.

It should be noted that many of the ecological benefits of controlling blackberry infestations will not be measurable during the life of the Plan – ecosystems require a substantial weed free period to allow full recovery of composite species.

Benefits to the community following implementation of the blackberry Plan include:

- improved aesthetic and recreational values;
- improved tourism opportunity and appeal;
- reduced bushfire hazard;
- improved community involvement and ownership as objectives and performance indicators are met.

9.0 RESOURCES

References

Agriculture & Resource Management Council of Australia & New Zealand, Australian & New Zealand Environment & Conservation Council and Forestry Ministers (ARMCANZ & ANZECCFM) 2001. *Weeds of National Significance Blackberry (Rubus fruticosus L. agg.) Strategic Plan*. National Weeds Strategy Executive Committee, Launceston.

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Appendix 1: Current and proposed declarations for Blackberry in the Region

LCA	Current declaration	Proposed declaration
ACT	D	D
Bega Valley	W3	W3
Bombala	W2	W2
Cooma-Monaro	W2	W2
Crookwell	W2	W2
Eurobodalla	W3	W2
Goulburn	W2	W2
Gunning	W2	W2
IDWA	W2	W2
Mulwaree	W3	W3
Queanbeyan	W2	W2
Shoalhaven	W2	W2
Snowy River	W2	W2
Southern Slopes	W2	W2
Tallaganda	W2	W2
Wingecarribee	W2	W2
Yarrowlumla	W2	W2

Appendix 2: Density classes used to map Blackberry

Density / distribution class	Comment
Core	A 'core' area is where, using realistic resource levels and advances in technology*[1], it is NOT FEASIBLE in the long term*[2] to: - significantly reduce*[3] the density and distribution of the species, OR - maintain the current density and distribution of the species, with a decreasing amount of expenditure/effort*[4] Note: Although core areas are ultimately likely to be lower priority areas, they will continue to require at least site specific control measures. However for the ST&SCNPC to support grant funding for these sites they will need to meet the 'core area' priority criteria in the Regional Strategy Plan.
Marginal	A 'marginal' area is where, using realistic resource levels and advances in technology, it IS FEASIBLE in the long term to,: - significantly reduce*[3] the distribution and density of the species, or - maintain the density and distribution of the species, with a decreasing amount of expenditure/effort

Rare and/or isolated	A 'rare and/or' isolated area is where, using realistic resource levels and advances in technology, it IS FEASIBLE in the long term to:
	- eradicate*[5] the species where it occurs as an isolated*[6] population
	- where the population is rare*[7] to:
	  - eradicate the species, OR
	  - maintain it at a level where it has an insignificant environmental and economic effect*[8], with a minimum and preferably decreasing expenditure/effort

Absent	- requires a high level of certainty that weed is absent. Rare and/or isolated may be a better class to use if uncertain. - may represent all of the area not covered by the first 3 classes - where possible, indicate what environmental constraint or history is causing the absence

*[1] 'realistic resource levels and technology advances' should be based upon your experience over the last 5 years with some informed judgement on what is expected over the next five years. If in doubt assume a continuation of the same level of funding and effort. Resources include funding and labour. Technology includes new control techniques such as biological control and integrated management.

*[2] 'Long term' means greater than 5 years.

*[3] Significantly reduce means reduce by approximately 75% from 2001 levels of distribution and abundance in 5 years

*[4] 'Decreasing expenditure/effort' means that the amount of funding, resources and effort (including 'non-costed' labour from private land owners/managers) to control the weed over the past five years will decrease over the next five years.

*[5] 'Eradicate' means: (a) remove or destroy all above ground biomass of the weed species population. This definition recognises the weed seed bank will remain viable and follow up work may be required beyond the term of this plan.
(b) remove populations of the weed from the local area to the extent that little or no follow up is required *i.e.* the weed seed bank is largely exhausted. It is recognised that this may not achievable within the currency of the plan.

*[6] 'Isolated' means the population is considerably separate from other local populations (*i.e.* seed source from other local populations can not re-establish the local population) and is small enough to be eradicated. If eradicated it is assumed re-invasion is unlikely to occur.

*[7] 'Rare' means a species is very uncommon, but unlike isolated may be scattered over a wider area at a very low density.

*[8] 'Insignificant environmental and economic effect' means that the level of expenditure and effort required to keep the species at a 'rare level' is insignificant, and the population does not 'adversely and significantly' affect natural (including biodiversity), cultural and social values.

Appendix 3: Checklist for completion of control actions

Year	Action (see Sect. 6)	Action	Responsibility	Sign and date when completed
2002	2a	Work schedule to coordinate aerial spraying devised by September 2002	ST&SCNPC Chairperson	
	5a	At least 20% of eradication work completed and verified through annual reports	Ann Herbert	
	5b	All rare populations reduced to required levels	Ann Herbert	
	5d	Annual reports indicate inspections on all isolated and appropriate rare infestations completed	Ann Herbert	
	7a1	At least 20% of work on marginal infestations completed and verified through annual reports	Ann Herbert	
2003	1a	Revise 2002 mapping	ST&SCNPC Chairperson	
	1c	NHT application submitted by May 2003	ST&SCNPC Chairperson	
	3a	Catchment Management Board representatives invited to ST&SCNPC meeting in July	ST&SCNPC Chairperson	
	3b	Work schedule devised by September 2003	ST&SCNPC Chairperson	
	5a	At least 40% of eradication work completed and verified through annual reports	Ann Herbert	
	5b	All rare populations maintained at at appropriate levels	Ann Herbert	
	5d	Annual reports indicate inspections on all isolated and appropriate rare infestations completed	Ann Herbert	
	6a	Priority riparian control areas and strategies identified by March	ST&SCNPC Chairperson	
	6b	Catchment Management Board representatives address July 2003 meeting	ST&SCNPC Chairperson	
	7a1	At least 40% of work on marginal infestations completed and verified through annual reports	Ann Herbert	
	9b	Guidelines prepared by December	ST&SCNPC Chairperson	
2004	4a1	RLPB representatives invited to November ST&SCNPC meeting	ST&SCNPC Chairperson	
	5a	At least 60% of eradication work completed and verified through annual reports	Ann Herbert	
	5b	All rare populations maintained at appropriate levels	Ann Herbert	
	5d	Annual reports indicate inspections on all isolated and appropriate rare infestations completed	Ann Herbert	

Year	Action (see Sect. 6)	Action	Responsibility	Sign and date when completed
	7a1	At least 60% of work on marginal infestations completed and verified through annual reports	Ann Herbert	
	12a	Funding options discussed at July meeting. Any action from discussion taken by December	ST&SCNPC Chairperson	
2005	1b	Blackberry distribution and density maps updated	ST&SCNPC Chairperson	
	5a	At least 80% of eradication work completed and verified through annual reports	Ann Herbert	
	5b	All rare populations maintained at appropriate levels	Ann Herbert	
	5d	Annual reports indicate inspections on all isolated and appropriate rare infestations completed	Ann Herbert	
	7a1	At least 80% of work on marginal infestations completed and verified through annual reports	Ann Herbert	
2006	4a2	Strategic control of blackberry and feral vertebrates effected	ST&SCNPC Chairperson	
	5a	100% of eradication work completed and verified through annual reports	Ann Herbert	
	5b	All rare populations maintained at appropriate levels	Ann Herbert	
	5d	Annual reports indicate inspections on all isolated and appropriate rare infestations completed	Ann Herbert	
	5e	Management plans exist for all affected lands	Ann Herbert	
	7a1	100% of work on marginal infestations completed and verified through annual reports	Ann Herbert	
		5 year review of Plan completed	ST&SCNPC Chairperson	
As required		Sites where eradication has occurred are rehabilitated within 1 year	Ann Herbert	
	7a2	All sites where control has occurred are rehabilitated within 1 year	Ann Herbert	
	9a	Educational material includes information on rehabilitation and appropriate species to replace blackberry infestations	ST&SCNPC Chairperson	
	10a	Actions recorded in annual reports. Brochures and / or discussion included in al field days	Ann Herbert	
	11a	Methods of reducing off-target mortality addressed at all field days	ST&SCNPC Chairperson	