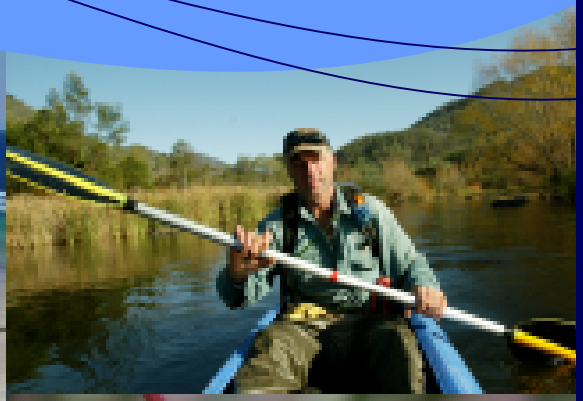
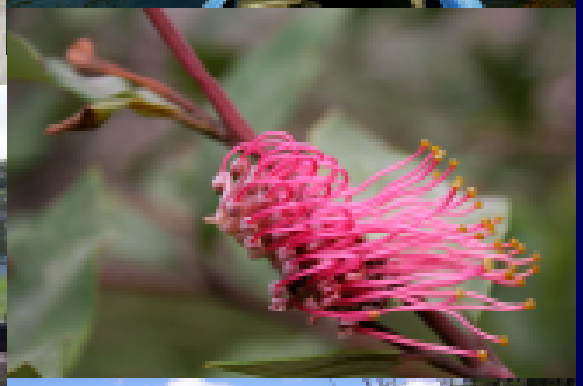
Southern Rivers
CATCHMENT MANAGEMENT AUTHORITY



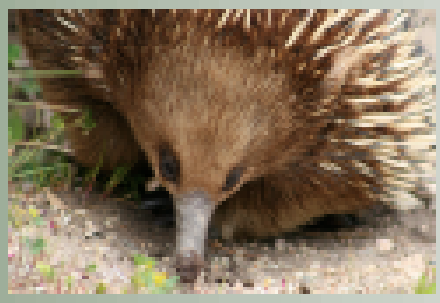


Catchment Action Plan

Southern Rivers CMA CATCHMENT MANAGEMENT AUTHORITY

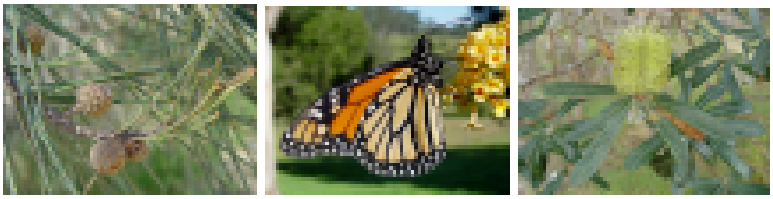
SECTION 3:

Biodiversity Program


BIODIVERSITY PROGRAM

3.1 INTRODUCTION



The Southern Rivers region includes large areas of national park, State forest and Crown land containing a diversity of landscapes and habitats.

The community in the region is aware of environmental issues and participation in conservation initiatives is high. However, certain landscapes have already been largely cleared of native vegetation and unfortunately species and population loss continues throughout the region.

A growing body of literature indicates that species loss is accelerated when a landscape's native vegetation declines below 30% of its original distribution. Many landscapes in the Southern Rivers region, such as its woodlands, floodplains and river flats, are already below this threshold. Such areas provide core habitat, prime food resources and refuges for a disproportionately high number of the region's plants and animals.

Southern Rivers CMA has developed its Catchment Action Plan to protect, improve and connect the remnant vegetation in these over-cleared and impacted landscapes.

The state of the region's biodiversity resources, the continuing pressure on these, and the way the catchment action plan directs effort to improve their condition is described in Table 4. The factors considered in developing the strategic direction and targets of the catchment action plan's biodiversity program are discussed below.

3.2 BIODIVERSITY INFORMATION IN THE SOUTHERN RIVERS REGION

Deciding on a strategic direction for conservation of biodiversity in the Southern Rivers region required the review of the most up-to-date and relevant information.

The Catchment Blueprints of the Southern and South-East Catchment Boards compiled information on the status of the region's native vegetation communities.

The Department of Environment and Conservation (DEC) and Department of Natural Resources (DNR) were a primary source for the data and analysis used in this planning.

Since that time, a new whole-of-government approach to natural resource management and other reforms has made available new biodiversity information from a number of sources. In particular, new vegetation mapping (DNR's Priority Area 5 Mapping and South Coast Regional Strategy Vegetation Mapping) and threatened species profiles (DEC/National Parks and Wildlife Service website) have become available and are used in the Property Vegetation Plan (PVP) biometric and threatened species tools. These data have been analysed and have informed the development of the biodiversity targets for this catchment action plan.

3.3 MONITORING AND EVALUATION

Vegetation

The main way in which Southern Rivers CMA aims to achieve improvement in the region's ecological functioning is by entering into property agreements with landholders to protect and enhance remnant native vegetation. The area of vegetation communities protected in this way will be totalled annually.

A selection of sites will have comprehensive assessment at the start of the management contract and at prescribed intervals for more detailed monitoring using the PVP biometric tool or a derivative. In this way, maintenance or improvement in extent, condition and connectivity (fragmentation) of the protected vegetation can be measured.

It is recognised that the monitoring program needs to be suitable and practical (within resources), meet the requirements of the funding bodies and have capacity for integration with the monitoring and reporting of other natural resource programs within Southern Rivers CMA.

Threatened species

The national monitoring and evaluation framework for natural resource management states that the health of native vegetation in regions is best represented by the extent and condition of the mapped regional vegetation communities. Ideally, the population biology of each and every species would need to be studied across known habitats to establish population health. This is not possible under current or any likely future circumstances.

The challenge faced by natural resource management agencies is to find and use a more accurate alternative indicator, to assess the effectiveness of the threatened species recovery actions. An approach being developed for future use in Southern Rivers is to select and monitor suitable indicators or indicator species to represent assemblages of species.

DEC is currently putting together multi-species or 'assemblage' recovery actions for inclusion in a multi-species recovery plan for Southern Rivers region. Southern Rivers CMA is informed this process will also include monitoring methodologies to accompany each group of actions.

The threatened entities target was difficult to develop because of the current state of knowledge in this branch of ecology. The multi-species recovery plan for the region will provide priority to the extensive list of recovery actions required for the region's threatened species, communities and populations. Once the plan is completed better estimates can be made of what the available funding will be able to achieve.

Weed and pest control

Some weeds have spread so extensively across the landscape and across tenures that individual programs focused on these particular weeds are needed to specifically address their impact on the environment and biodiversity.

In other words, *they cannot be effectively managed by only controlling them within isolated sites across the region*.

Similarly, specific programs are needed to focus on the control of key vertebrate pest (for example where they threaten a nesting site for shore birds or a Brush-tailed Rock-Wallaby habitat). For these reasons, in addition to controlling these pests as an integral part of managing native vegetation communities, Southern Rivers CMA has defined separate pest and weed targets

3.4 LINKS BETWEEN TARGETS

NATIONAL MATTER FOR TARGET

Biodiversity (threatened significant native special, ecological communities and ecologically significant species), native vegetation (native vegetation and community integrity) and forestry.

STATE TARGET

Biodiversity:

1. By 2015 there is an increase in native vegetation extent and an improvement in native vegetation condition.
2. By 2015 there is an increase in the number of sustainable populations of a range of native fauna species.
3. By 2015 there is an increase in the recovery of threatened species, populations and ecological communities.
4. By 2015 there is a reduction in the impact of invasive species.

SOUTHERN RIVERS CATCHMENT TARGET

Biodiversity Target

By 2016 actively manage for biodiversity conservation at least 40,000 additional hectares of the catchment's native vegetation communities.
By 2016 the regional status of regionally significant and threatened species, ecological communities and populations within the Southern Rivers catchment will be maintained or improved.

TABLE 4

BIODIVERSITY PROGRAM - Current state and pressures and proposed action plan responses

State of key natural resources in the Southern Rivers region	Pressure on natural resource condition	Response of the Catchment Action Plan
Extensive areas of natural vegetation and habitats contained in public lands. Continuing decline in extent, condition and connectivity of vegetation in landscapes that are already over-cleared, particularly in arable areas of the tablelands and the coastal valleys and plains. (Of the 168 vegetation communities in the region, 17 are already greater than 70% cleared and 59 are not adequately represented in the reserve system). Two thirds of the over-cleared vegetation remnants exist on private land, either on the tablelands or the coastal plains. Some continuing decline and loss of species, ecological communities and local populations, especially in areas of fragmented vegetation (the region is home to 97 threatened animal and 135 threatened plant species). Introduced animal and plant pest species taking hold in low condition and fragmented remnants. Diminishing condition and over-use of areas containing Aboriginal sites and landscapes and their natural surrounds. Wider community understanding of biodiversity issues but acceptance and uptake of recovery actions still lower than required for overall biodiversity improvement in the region. Environmental planning Instruments and management plans yet to fulfil their biodiversity potential.	Clearing of native vegetation for rural residential and urban development. Clearing of native vegetation for agricultural and forestry production. Overgrazing of native pastures and woodlands (pressure on regeneration). Large and varied number of widely distributed weed species ready to occupy natural vegetation niches when gaps appear. Region-wide pressure from vertebrate pest on threatened fauna, flora and ecological communities. Pasture improvement in grassy ecosystems. Removal of dead timber and neglect in forested remnants Diminishing condition and over use of Aboriginal sites and their natural surrounds due to a lack of identification and awareness, a lack of protection and appropriate access, neglect and misuse.	Manage for conservation at least 30% of the original distribution of each native vegetation community type, or if already cleared below 30% manage the remaining areas for conservation. Identify threatened species, communities and populations that rely on Southern Rivers as critical habitat. Work with state agencies, local government and community to implement recovery actions. Identify and provide incentives to support vegetation corridors to reduce habitat fragmentation at the landscape level, particularly in over-cleared landscapes. Raise community understanding and awareness of native vegetation and animal habitat issues. Support landholders to manage native vegetation and ecological communities for conservation through information and advice, joint preparation of management plans and financial incentives. Work with local government to protect biodiversity through environmental planning instruments, incentive schemes, and best practice. Work with state agencies, local government and community to reduce the impact of weeds and vertebrate pests particularly in priority vegetation types and threatened species, communities and populations. Work with the Aboriginal community in identifying and protecting sites and landscapes of cultural importance. Monitor and evaluate actions and provide feedback for adaptive management.

3.5 TARGETS OF THE CATCHMENT ACTION PLAN'S COMMUNITY BIODIVERSITY PROGRAM

Set out below are two biodiversity catchment targets, six management targets and detail on the intent, performance indicators and examples relevant to each management target.

The biodiversity catchment targets

Biodiversity catchment target 1: By 2016 there is an improvement in native vegetation condition and an increase in connectivity and extent.	
Intent	The objective of this target is to build a resilient landscape in the Southern Rivers CMA region with good vegetation connectivity that conserves biodiversity and maintains productivity for land managers. This is to be achieved by managing existing remnants for conservation, improving their condition and connectivity and integrating with the Native Vegetation Act 2003. Southern Rivers CMA will be targeting remnants of those vegetation communities that are least represented in the reserve system as the priority. The priority vegetation communities to be targeted for conservation are those with less than 30% of their original distribution currently being managed for conservation both in reserves and on private land. Southern Rivers CMA has identified those native vegetation community types that currently do not meet this 30% target (see appendix 3 for hectares and appendix 4 for distribution). Of these the highest priority communities will be those listed as Ecological Endangered Communities or those where there is less than 30% of the original distribution existing in the landscape. This is a long-term aim of Southern Rivers CMA and requires a total of an additional 160,000 ha to be managed for conservation. A Southern Rivers CMA total target of 40,000 ha over the next 10 years has been set and is a realistic and achievable target based on the current level of investment in biodiversity conservation. At least 30,000 of the 40,000 hectares will be the priority vegetation communities and up to 10,000 ha will be other native vegetation for the purpose of increased connectivity and landscape value. Work to achieve this target will mainly be undertaken with private but also public land managers in negotiated voluntary management agreements that conserve biodiversity and continue to support productivity. Current science indicates that maximum biodiversity outcomes can be achieved through protecting and enhancing existing remnants, particularly those in good condition. This is the focus of this catchment target, not revegetation. Nevertheless, this catchment target is likely to result in some increase to the extent of native vegetation, through establishing connectivity between remnants and buffers around remnants. While vegetation clearing will continue in the catchment due to routine agricultural practices and development, overall extent is expected to be maintained as a result of the Native Vegetation Act, which prevents broad-scale clearing.
Performance indicators	• The total number of hectares of priority vegetation community type managed for conservation against the overall hectare target (as per appendix 3). • The total number of hectares managed for purposes of connectivity and landscape value. • Achievement of biodiversity management targets designed to contribute to achievement of this catchment target • Monitoring will be carried out at state level that identifies the level of vegetation extent in the catchment. This will be expanded to include condition and connectivity as information and technologies become available.

The biodiversity catchment targets

Biodiversity catchment target 2: By 2016 the regional status of priority threatened and regionally significant species, ecological communities and populations within the Southern Rivers catchment is maintained or improved.	
Intent	The objective of this target is to work in partnership with private and public land managers to initiate new management actions and support and complement existing and past actions that protect priority threatened species, ecological communities and populations in the Southern Rivers region. This approach recognises that it is only through collaboration across all jurisdictions and tenures that viable and long lasting conservation solutions for the region's fauna and flora will be achieved. A prioritised multi-species approach is necessary to ensure available resources are used efficiently. The priority ecological communities, populations and species to be targeted by Southern Rivers CMA will be those that are identified as threatened (under the Threatened Species Conservation Act 1995), whose overall NSW distribution and/or population is largely within the boundaries of the Southern Rivers region and are most threatened but have the capacity to respond to recovery actions. It also may include significant local populations of unlisted species that are under local threat and that represent a valuable indicator of landscape health around which community support for biodiversity issues can be focused. Identifying these priorities will involve a process of analysing the 'Priority Action Statement' being developed by DEC against the existing Southern Rivers CMA program, liaising with DPI (Fisheries) re aquatic species and consideration of local significance. Together with the target to have 30,000ha of priority vegetation communities managed for conservation, Southern Rivers CMA aims to significantly improve the biodiversity values of the region.
Performance indicators	The protection of endangered ecological communities will be assessed both by outputs and outcomes. Outputs will be reported on, such as the area of habitat placed under conservation management or the number of baits taken and the likely number of foxes/dogs removed from a habitat this represents. Outcomes for the native species, the ultimate measure of success, are more difficult to measure and performance indicators for these will be built upon over time. They will include the direct measurement of population health such as the number of breeding pairs, the number of plants recorded within a study area and so forth.

TABLE 5

The biodiversity management targets

Biodiversity management target B1 – community and landholder knowledge and skills

B1 By 2016 there will be an increase in the number of land managers who adopt management practices that conserve biodiversity and promote sustainable production

Biodiversity management target B2 and B3 – native vegetation conservation

B2 By 2016 through voluntary participation by land managers, the area of land actively managed to conserve priority vegetation types will increase from 11,000 hectares to at least 41,000 hectares.

B3 By 2016 through voluntary participation by land managers, an additional 10,000 hectares of native vegetation will be actively managed to build a resilient landscape with good connectivity that conserves biodiversity

Biodiversity management target B4 – native species conservation

B4 By 2016 the priority recovery actions identified in the Southern Rivers threatened species strategy will have been implemented

Biodiversity management target B5 and B6 – invasive species threats

B5 By 2016 vertebrate pest species will be controlled in key locations

B6 By 2016 priority weed species will be controlled in key locations

Details on biodiversity management target B1 – community and landholder knowledge and skills

Management target B1: **By 2016 there will be an increase in the number of land managers who adopt management practices that conserve biodiversity and promote sustainable production.**	
Intent	Community and landholder understanding, management skills and commitment to conservation management are essential to achieving a full range of healthy ecological communities that will support sustainable production. Southern Rivers CMA will support public and private land managers to actively manage the ecological communities by providing a range of services including advice and incentives to increase the existing voluntary participation in conservation management. In particular land managers with key ecological communities on their land will be encouraged to understand the importance of these areas and the availability of incentive programs to assist in their conservation.
Performance indicators	• number of workshops • number of management plans and agreements prepared with landholders • number of people participating in conservation networks • number of people participating in incentive programs
Examples of catchment activities that would support this target	Actions such as Southern Rivers Bush Incentives and Eurobodalla Biodiversity Conservation Program support landholders to understand and manage ecological communities for conservation. Establishment and support of conservation management networks (on the Monaro and coast) provide landholders with information about vegetation management through newsletters and opportunities to meet with other landholders. Conduct training and workshops on the values and management of ecological communities. Engage with Aboriginal landowners to exchange skills and understanding about cultural values and biodiversity.
Related targets	C1, C4, SLC1, SLC6, W1, W2, CM1, CM2

Details on biodiversity management targets B2 and B3 – native vegetation conservation

Management targets B2 and B3: **Management target B2: By 2016 through voluntary participation by land managers the area of land actively managed to conserve priority vegetation types will increase from 11,000 hectares to at least 41,000 hectares.** **Management target B3: By 2016 through voluntary participation by land managers an additional 10,000 hectares of native vegetation will be actively managed to build a resilient landscape with good connectivity that conserves biodiversity.**	
Intent	The intent of **management target B2** is to increase the areas of priority vegetation communities under conservation management on private and public land by at least 30,000 hectares. The priority vegetation communities to be targeted for conservation will be those with less than 30% of their original distribution currently being managed for conservation. The Southern Rivers CMA has identified those native vegetation community types that currently do not meet this 30% target (see appendix 3 for hectares and appendix 4 for distribution). Areas managed for conservation should include representation from all recognised vegetation communities. This ensures that the widest range of native plants, animals and associated habitats will be retained into the future. In order to achieve this, vegetation communities that require conservation as a priority have been identified. These are vegetation communities for which there is less than 30% of their original distribution managed for conservation. This includes vegetation communities that are listed as threatened under state or commonwealth legislation, are poorly represented in our formal reserve system and/or are highly fragmented at a regional level. For those vegetation communities where less than 30% exists across the landscape, it is Southern Rivers CMA's aim to have those remaining remnants managed for conservation. It is important to understand: • 10% of vegetation communities in Southern Rivers CMA have been cleared beyond 30% of their original distribution. Although the 30% conservation target for these communities is not achievable in the next 10 years, Southern Rivers CMA will assist landholders who wish to voluntarily manage these highest priority remnants, especially if they are in good condition. • Managing land for conservation does not exclude land from being managed for production or other purposes. For example, some native grassy environments require grazing to maintain their values. Southern Rivers CMA incentives provide an opportunity for landholders to make changes to their land management that they might not otherwise be able to afford. Many times these changes support productivity of other areas of the property. • The 30% conservation target relates to 30% of vegetation communities being managed for conservation on either public reserves such as national park or on private land. It does not refer to any particular landscape such as the region, a sub-catchment or an individual property. It refers directly to the vegetation community type.

Intent (continued)	The intent of **management target B3** is to enhance biodiversity regionally through active management of an additional 10,000 hectares of native vegetation. This work will frequently involve direct protection of priority vegetation communities as in biodiversity management target 2. But the intention is to provide opportunity to extend beyond specific sites of priority vegetation communities to support work that increases biodiversity resilience and cultural values at the landscape level through: • improved connectivity; • responding to community commitment and identification of sites of significant local biodiversity and cultural value; and • making an overall contribution to reduce the impact of climate change through preservation of high value native vegetation. Reduced connectivity can occur: • in association with particular vegetation types because they occur predominantly in small islands; • within blocks of native vegetation because the block is sparsely populated as a result of pressures such as grazing; and • within areas identified as important corridors at the local, catchment or regional level. Increasing each of these types of connectivity supports improved biodiversity. The additional 40,000 hectares of these two management targets include at least 20,000 hectares under conservation management agreements and the balance of hectares that meet at least the following criteria: • the land is managed under a conservation management plan and/or • the landholder has received incentive funds for conservation activities on that site.
Performance indicators	Indicators include the number of hectares brought under conservation management that increase connectivity as measured by: • priority vegetation types that predominantly occur as small islands • connectivity within blocks of priority vegetation • vegetation assessment of reduced fragmentation within identified corridors. An estimate of how the additional 40,000 hectares under conservation management will be distributed throughout the Southern Rivers CMA sub-regions, based on previous experience, is as follows: • Bega Eden: 5000 ha. • Eurobodalla: 2,500 ha. • Monaro: 16,000 ha. • Upper Shoalhaven: 13,500 ha. • Lower Shoalhaven: 1,500 ha. • Illawarra: 1,500 ha.
Examples of catchment activities that would support this target	There are currently a range projects that provide advice, and also funds under contract, to support landholders to manage native vegetation for conservation and to reduce fragmentation including: • Eurobodalla Shire Biodiversity conservation program • Bega/Eden Biodiversity Conservation Program • Southern Rivers Bush Incentives (delivering funds under competitive tender). • Monaro and Tablelands Grassland Programs.
Related targets	**B2:** C1, C2, C3, C4, C5, W5, CM1, CM2 **B3:** C1, C2, C3, C4, C5, W5

Details on biodiversity management target B4 – native species conservation

Management target B4: **By 2016 the priority recovery actions identified in the Southern Rivers Threatened Species Strategy will have been implemented.**	
Intent	There is currently a range of recovery actions for priority threatened species that fall under a range of jurisdictions. Priority is provided for those species considered regionally significant. Southern Rivers CMA has recognised the need to develop a strategy to increase cost effective recovery on a regional basis. The Southern Rivers threatened species strategy will be developed with the input of a number of partners including State and local government and the community. The intent of this target is to adopt an integrated, multi-species approach with a broad collaboration of partners across all land tenures. Southern Rivers CMA is working with the Department of Environment and Conservation to review the state-wide Priority Action Statement for threatened species in terms of actions relevant to Southern Rivers region and synergies between species. Consideration will then be given to how other programs within Southern Rivers CMA (such as conservation management of vegetation communities and feral pest control management) fit into the overall approach. The result will be a more strategic regional threatened species strategy to be completed and adopted in 2006. The strategy will identify priority actions, many of which will involve a multi-species approach. These priority actions will be implemented in the ten years to 2016.
Performance indicators	• Sites verified for threatened species presence • Sites where threat abatement activities are undertaken • Volunteers involved in recovery programs • Population, condition and size at a protection site It is recognised that the status of threatened species, animals in particular, is difficult to document and that on-going research and pilot programs will be required to ensure future broad-scale recovery actions are successful. The threatened species strategy will identify specific targets, actions and performance indicators.
Examples of catchment activities that would support this target	Current actions include threatened species recovery projects in Bega Valley, Eurobodalla and the Illawarra. On-ground actions include improved management of ecological communities, protection of endangered ecological communities, reducing threats from weeds or pest animals, protection of nesting sites or sites with known threatened species. Preparing a regional threatened species strategy Raising awareness of threatened species and their conservation.
Related targets	C5, CM4

Details on biodiversity management target B5 – invasive pest species threats

Management target B5: **By 2016 vertebrate pest species will be controlled in key locations**	
Intent	The intent of this target is to address the threat of vertebrate pests to our ecological communities and threatened species. It is recognised that the control of invasive species requires the co-operation of public and private land managers across the landscape. Southern Rivers CMA is currently working with rural land protection boards, the Department of Environment and Conservation, local government, land managers, landholders and the community to: a) implement a range of feral pest control actions; and b) develop a more strategic feral pest strategy. The strategy will prioritise actions and locations to ensure invasive threats are addressed where they can be shown to make a measurable long term difference to the conservation status of the key ecological communities and species of the Southern Rivers catchment. Complementary actions also occur as part of the conservation management of vegetation communities under management targets 2, 3 and 4.
Performance indicators	In addition to the indicators in management target 4: • hectares of pest control; • number of landholders involved in control activities; • numbers of pests killed as evidenced by baits taken or pests trapped/shot; • measuring response of fauna likely to be impacted on by pests at select sites; and • survival and condition of protected flora species such as *Irenepharus trypherus* from the impact of goat and deer. Because of the scale of invasion by vertebrate pests, experts in the field consider it is not always practical, affordable or most effective to measure performance by focusing on the invasive species themselves. The regional strategy will continue monitoring current indicators as a measure of the level of effort. Additionally, the strategy will identify, where ever possible, performance indicators that focus on outcome, ie, the reduced impact of the invasive pest on the identified resources to be protected.
Examples of catchment activities that would support this target	• Fox control programs in Bega, Eurobodalla, Milton, the northern Shoalhaven area and the Illawarra. • Goat control activities are funded in the Shoalhaven Gorge. • Goat/deer control is funded in the upper Kangaroo Valley area. • Other priority pests include wild dogs, wild pigs, wild horses, wild cats, rabbits and alien fish such as Carp, Weather Loach and Gambusia.
Related targets	SLC8

Details on biodiversity management target B6 – invasive week species threats

Management target B6: **By 2016 priority weed species will be controlled in key locations.**	
Intent	Weed control is undertaken across all land tenures and requires strong collaborative approaches. Consequently, weed control will be used as a management action for a number of Southern Rivers CMA programs including native vegetation conservation, river and waterway rehabilitation and coastal biodiversity conservation. However, some weeds have spread so extensively across the landscape that a strategic program is needed to specifically address their impact on the environment and biodiversity. It is recognised that the control of such weeds requires co-operative local programs implemented across tenures and involving all relevant land managers. It is important that the causes of weed invasion are addressed rather than simply treating the symptom. However, biodiversity conservation may require treatment of specific locations. Complementary actions also occur as part of the conservation management of vegetation communities under management targets 2, 3 and 4. NSW Department of Primary Industries is currently working with Southern Rivers CMA, the NSW Department of Environment and Conservation, local government and communities to: a) identify and map weeds that are having the greatest impact on biodiversity and land productivity and identify their key locations; b) develop a more strategic approach to their control. High priority weeds include: African Lovegrass, Bitou Bush, Blackberry, Bridal Creeper, Broom, Caulerpa, Chilean Needle Grass, Fireweed, Giant Parramatta Grass, Lantana, Pine Wildings, Privet, Salvinia, Serrated Tussock, Spiny Burr Grass, St John's Wort, and Willow.
Performance indicators	In addition to the indicators in management target 4: • number of hectares in priority locations where targeted species have been removed and where control is maintained.
Examples of catchment activities that would support this target	Southern Rivers CMA is currently funding: • Privet control in Kangaroo Valley and Broughton Creek catchments • Bitou Bush control along the coast of Illawarra, the Shoalhaven and the Bega Valley • Weed control projects in Bega Valley Shire and the Monaro.
Related targets	SLC7

3.6 RISK TO TARGET ACHIEVEMENT

The risk to achieving the biodiversity targets relates to how success is measured. The reasons for landscape change are often difficult to identify and more difficult to prove.

Assessment of the on-ground outcomes of conservation actions comes with the problems of separating out the background trends, effectively measuring results, and capturing the reasons for change. However, at the paddock scale, analysis of data from paired sample sites within and outside an area designated for conservation can at least test for improvement against local trends and conditions. Depending on the number and distribution of the monitoring sites this approach may also prove useful in making comment on the trends at the landscape scale.

Risks identified with the approach taken in the biodiversity section include:

- low level of community and landholder acceptance and involvement

- inadequate allocation of financial and technical resources climate change and delayed impacts from past events
- failing to correctly prioritise threatened species, community and population recovery actions.

These are discussed below.

Low level of community and landholder acceptance and involvement

The degree of success in achieving the targets will rely on the level of community involvement and ultimately uptake of incentives and adoption of best practice.

Targets at risk: All

Response: Southern Rivers CMA is responding to this risk through its 'engagement and partnership strategy' to be finalised in late 2006. The strategy will identify changes in community needs, methods of engagement, and development and identification of partnership opportunities.

Inadequate allocation of financial and technical resources

Priority recovery actions will be identified in the Southern Rivers threatened species strategy. Also, a large number of property agreements are required to meet the 10-year catchment action plan target figures for the protection of priority vegetation communities. To implement these actions, Southern Rivers CMA will identify and obtain technical and financial assistance in a competitive funding environment.

Targets at risk: B2, B3, B4, B5, B6

Response: Actions directed through the catchment action plan will be supported through the three-year investment strategy. Staff will develop strategies to identify sources of technical and additional financial assistance required for their projects. This will be developed through the Southern Rivers CMA project management system.

Climate Change and delayed impacts from past events

Human-induced climate change has the potential to alter vegetation communities and habitats, and open up new opportunities for weed and pest invasion into natural bushland. In addition, delays associated with the onset of climate change, or the impact of poor land management practices may yet contribute to further pressures on natural systems, rendering planned CMA activities ineffective.

Targets at risk: B2, B3 B4, B5, B6

Response: Raise level of awareness of potential impacts of climate change, the necessity for region-wide connection of vegetation and habitat, and the need for adoption of more sustainable land management practices. The Southern Rivers CMA's long-term strategy to develop broad regional habitat corridors to sustain regional biodiversity aims to protect current vegetation communities and the native animals they support from this threat.

Inadequate landscape scale monitoring

A regional-scale methodology for monitoring natural resource condition has not been agreed to by state and national bodies. Regional and landscape monitoring is important to establish whether the CMA's local actions are proving effective against bro ad scale environmental decline.

Targets at risk: All

Response: Southern Rivers CMA will not target its activities and outcomes to the regional, state and national context until this has been resolved. The Southern Rivers CMA approach is one of focusing on region-wide priorities at the property scale, using actions that are known to be effective and to monitor and support these actions into the future. Southern Rivers CMA addresses the inherent risks of landscape scale conservation through conservation planning policy that is consistent with the best scientific advice and by targeting expenditure within landscape (sub-catchment) programs to priority issues the community can be involved in.

Failing to correctly prioritise threatened species, community and population recovery actions

The state of science in habitat improvement and the complex ecology of elements such as predator/prey relationships restrict the CMA's ability to make predictions on the success of recovery actions.

Targets at risk: B4, B5, B6.

Response: Southern Rivers CMA is to focus attention on those threatened species that are most vulnerable, are endemic to the area and can be supported by best available science and adequate resourcing. The recovery actions will also link with complementary natural resource management threat abatement developed by partner organisations.