Monitoring, Evaluating and Reporting

The Murrumbidgee CMA aims to ensure a systematic process of monitoring, evaluating and reporting to inform progress towards achieving the Catchment Action Plan targets, NSW State Plan Targets and Australian Government (Caring for our Country) priorities, along with adaptive management for improved Murrumbidgee CMA operating systems and ultimately natural resource management.

The intent of MER is to demonstrate how activities undertaken at a property, sub-catchment and catchment scale ultimately contribute to a state of improved natural resource management.

Performance stories

Output reporting based on ha’s of revegetation and km’s of stream bank rehabilitated, often doesn’t provide sufficient evidence of how long-term outcomes, such as improved water quality, will be achieved. Furthermore, such links may take many years to become evident.

The Murrumbidgee CMA is addressing this issue by developing a series Performance Stories to demonstrate how this process could be applied efficiently to future on ground MER processes.

Performance stories are a recognised method of reporting that helps link on-ground activities to intermediate and longer term outcomes where these links are not obvious through tangible evidence alone.

Performance stories involve participant interviews to demonstrate expected results and to answer key evaluation questions, in order to demonstrate the short term progress of a project towards long term expectations.

Performance stories add to the suit of project management and MER tools used by the Murrumbidgee CMA, such as output reporting for projects and asset/project evaluations.

A suite of Performance Stories has been developed to further enhance reporting mechanisms.
Involving Landholders in monitoring

A Landholder Logs are provided annually to landholders who have a PVP contract with the Murrumbidgee CMA. The logs are kept as part of the Landholder Project File, which is a record keeping system whereby landholders can store their PVP contract, project information, fact sheets and other related NRM information. Landholders are required to capture valuable site information, that can be reviewed and used for reporting by the Murrumbidgee CMA, on an annual basis. Essentially, the landholder logs encourage landholders to take note of changes and interesting developments in their PVP area.

Photopoints are recorded at project sites upon commencement of a PVP. These points are permanently marked at the site, and landholders are encouraged to take additional photos and make notes throughout the year - particularly after significant events such as bushfire, storms and bird breeding activity. Below is an example of a series of Photopoints on a PVP site.

As you can see in the original site assessment photo (Photo 1) there are many exotic grass species dominating the site – hence the unusually green cover.

Photo 2 shows the same site being prepared for revegetation, with weed control actions have been completed, including chemical application and crash grazing, and rip lines ready for planting.

Photo 3 shows the site with healthy stands of native grass. Exotic weeds on the site have now been significantly reduced with ongoing assessment of the site and active management by the landholder.
community asset
The Murrumbidgee CMA recognises that investing in the community’s capacity to better manage natural resources, and listening to our clients and partners key challenges, is critically important if we are to achieve Murrumbidgee CAP targets for improved natural resource management.

One of our key focuses during 2008-09 has been the involvement of youth in NRM. Youth forums were conducted at High Schools in twelve locations across the catchment, promoting youth participation and interest in our local environment.

Local government partnerships and programs have again been a cornerstone of on-ground action across the catchment, and we have continued to develop a strong focus on implementing opportunities for Traditional Owners and other Aboriginal people to manage and reconnect with ‘Country’.

Landholders have continued to make moves towards more sustainable land management practices through Property Vegetation Plans, with more than 1000 PVP agreements now active in the Murrumbidgee catchment.

**Murrumbidgee Catchment Action Plan Targets**

- **CRCT 1**: By 2016 the effectiveness of the Murrumbidgee CMA’s engagement and collaboration with identified key stakeholders is addressed
- **CRCT 2**: By 2016 increase the engagement of Traditional Owners and Aboriginal people in NRM and increase the wider communities understanding of indigenous values in NRM
- **CRCT 3**: By 2016 Catchment Action Plan targets are integrated in the planning frameworks and operations of all levels of government and other key stakeholders
- **CRCT 4**: By 2016 an improvement in community capacity to deliver NRM outcomes is achieved by increasing skills, knowledge and adoption of NRM activities as measured by monitoring of behaviour and subject to annual review

**State-wide Resource Condition Targets**

- **Target 12**: Natural resource decisions contribute to improving or maintaining economic sustainability and social well being
- **Target 13**: There is an increase in the capability of natural resource managers to contribute to regionally relevant NRM

**Caring for our Country Targets**

- Increasing community knowledge and skills
- Increasing participation in natural resource management
- Improving delivery of best practice

**5 year achievements**

<table>
<thead>
<tr>
<th>Community Engagement</th>
<th>Awareness raising events such as demonstrations, field days or study tours</th>
<th>756 events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Landholder agreements on title</td>
<td>Conservation agreements or other agreements attachment to title negotiated</td>
<td>925 agreements</td>
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</table>
A model for reconnecting Indigenous people with ‘Country’ and their cultural heritage has been developed by the Murrumbidgee CMA. This model provides Traditional Owners and Aboriginal people with accredited training and skills to rehabilitate the banks of the Murrumbidgee River and improve their future employment opportunities in natural resource management.

65 Indigenous trainees (including 7 females) are currently working on Traditional Owner River Restoration projects across the Murrumbidgee Catchment. Through these projects, the Murrumbidgee CMA works with a range of partners including local governments, group training companies, NSW and Australian governments, the Murrumbidgee CMA Traditional Owner Reference Group and other local stakeholders.

Project trainees study Certificate II Conservation and Land Management, through TAFE NSW. Trainees gain accreditation and skills including:

- Identifying and mapping areas/sites of cultural importance
- Senior first aid
- Fire fighting (NSW Fire Brigade)
- Blue card (safety) and White card (OHS)
- Chainsaw operation levels I and II
- ChemCert Chemical Users/Applications Certificate II
- Bobcat operation
- Excavator operation
- Truck operation
- Loader and traffic control

Increasing Indigenous Involvement in NRM

John Bamblett is part of the Darlington Point Traditional Owner River Restoration team who have been rehabilitating the banks of the Murrumbidgee River at ‘The Bunyip Hole’.

The Darlington Point Traditional Owner River Restoration team is one of eight Indigenous teams restoring key environmental and cultural sites across the Murrumbidgee Catchment.
Overview
Six Aboriginal trainees have been hard at work restoring key environmental sites at Adelong Creek, Gilmour Creek, Riverglade Wetlands and Brungle village.

The team has undertaken on-ground works including invasive weed control, fencing and replanting native trees, shrubs and grasses.

Thanks to the work the team have undertaken, access and use of Riverglade wetlands and the Gilmour Creek area has improved considerably. Through the removal of weeds and the construction of walkways and signage, the team has facilitated a greater connection to the natural environment and Cultural Heritage for locals and tourists.

Since the project commenced in 2008, the team have:
- Controlled 2km invasive weeds
- Planted 3240 native trees and shrubs
- Constructed 1.45km fencing to protect waterways
- 50 nesting boxes erected for native birds and animals
- 2km path constructed for improved access

Snapshot:
Location: Tumut
Partners: Murrumbidgee Catchment Management Authority, Tumut Shire Council, Snowy Works, Tumut Aboriginal Community, TAFE NSW
Yindyamarra Showcase

More than 200 people attended a celebration of Indigenous involvement in natural resource management projects, hosted by the Murrumbidgee CMA at the Wagga Wagga Civic Theatre, in August 2008.

Attendees of the Yindyamarra Showcase were welcomed to country by Wiradjuri Elder and Murrumbidgee CMA Board Member, Ms Flo Grant, and heard from keynote speaker Mr Rod Mason from National Parks and Wildlife Service and Steven Ross of the Murray Lower Darling Rivers Indigenous Nations.

Murrumbidgee CMA Chairperson, Mr Lee O’Brien, said the showcase was a great success, shedding light on the many Aboriginal projects across the Murrumbidgee catchment and NSW that are working towards increased Traditional Owner and Aboriginal people’s participation in natural resource management.

The Showcase was an opportunity for attendees to hear about seven different Aboriginal projects being delivered by the Murrumbidgee CMA in partnership with local councils and landholders. Projects and stories were also shared from neighbouring CMAs, Lachlan and Central West.

Ms Grant said our past plays a major part in where we are today, and the Yindyamarra Showcase helped celebrate Aboriginal involvement in natural resource management, as well as inspiring us to move forward.

“The concept of the Showcase was to promote and acknowledge the outstanding work local Indigenous people have undertaken in caring for ‘Country’. There are so many wonderful stories and great lessons to be learnt from local people,” she said.

Member for Wagga Wagga, Mr Daryl Maguire, attended the Showcase and presented the Murrumbidgee CMA Traditional Owner River Restoration Teams with certificates of recognition, for the valuable restoration works they have undertaken along the Murrumbidgee River.
“Students genuinely want to help preserve the environment for the future”

- Adrian Wells, Murray Darling Association

Listening to students about catchment management

During 2008-09, the Murrumbidgee CMA conducted a series of youth forums across the Murrumbidgee catchment to engage with local secondary school students about natural resource management and hear their views on managing the environment.

The forums were an opportunity to engage over 250 young people in natural resource management, identify environmental issues of concern and help them understand the role of the Murrumbidgee CMA and Murrumbidgee Catchment Action Plan.

The Murray Darling Association facilitated the forums that were held at Balranald, Griffith, Hay, Leeton, Wagga Wagga, Gundagai, Tumut, Queanbeyan and Cooma.

Around 30 key natural resource management issues were identified by students. The biggest issues were drought and a lack of water in the rivers for social, economic and environmental sustainability.

Murrumbidgee CMA Chairperson, Mr Lee O’Brien, said the Board was delighted with the student responses to the forums.

“It was pleasing to note that students were interested in the need for more careful use of water and that everyone in the community had a responsibility to care for our precious and fragile environment”, Mr O’Brien said.

Murrumbidgee CMA catchment officer Peter Bennetts analysing water invertebrates with a group of students from Kildare Catholic College, at the Youth Forum in Wagga Wagga.
Managing Climate Risk

With the majority of NSW having been in drought for the past ten years, understanding weather and climate change is imperative for farmers who constantly make business decisions based on the weather.

Workshops addressing climate change and variability were held across the Murrumbidgee catchment as part of the Murrumbidgee CMA’s program to help land managers better prepare for extreme climatic events.

The Murrumbidgee CMA supported nine workshops in partnership with local Landcare networks, with a total of 70 landholders participating.

*The farmer’s guide to managing climate risk workshop*, delivered by NSW DPI, taught landholders skills in assessing and reviewing local climatic data to determine the probability of climate events occurring, and how to develop strategies to better manage potential risks.

**Overview**

A youth forum was conducted at Cootamundra High School, involving 26 students from years 10, 11 and 12.

The forum program was developed in conjunction with the school and staff from the Murrumbidgee CMA Wagga Wagga and Cootamundra, and encouraged students to find a balance between environmental, social and economic needs.

A bus tour was held, involving visits to various properties to look at erosion control; willow management; drought management; new cropping techniques; sediment; tree planting; and managing stubble. Two NSW Department of Primary Industries staff gave the students a talk on crop rotation and stubble management. A farmer also addressed the students on sheep management, drought and sediment management.

Students commented that activities such as the forum were helping them to better understand environmental issues within the catchment and how they can help manage problems.

**Snapshot:**

**Location:** Cootamundra  
**Partners:** Murrumbidgee Catchment Management Authority, Murray Darling Association, Cootamundra High School, Cootamundra Shire Council, Department of Primary Industries.
Overview
The Junee Area Landcare Network joined the Murrumbidgee CMA in hosting *The farmer’s guide to managing climate risk workshop* at the Junee Ex-Services Club.

The workshop was invaluable for Junee land managers, as they learnt how to read and interpret weather maps, analyse local and regional climate history and understand seasonal patterns.

This training has enabled land managers to understand the issue of climate risk, how it may impact on them and what can be done to mitigate against the risks to their enterprise.

Murrumbidgee CMA and Landcare: a common goal

In 2008-09, the Murrumbidgee CMA has continued to support and partner with Landcare networks throughout the Murrumbidgee catchment. The Murrumbidgee CMA provides training opportunities and partnership projects for local Landcare group members, as well as continued in-kind support.

All Murrumbidgee CMA staff have allocated support time for Landcare as part of their workplan. Each of the 12 Murrumbidgee Landcare networks has agreed terms of reference with the Murrumbidgee CMA for their input into the management of Natural Resource Officers.

I In partnership with the Landcare Networks, the Murrumbidgee CMA produces regular newsletters for the various networks. The Murrumbidgee CMA also hosts internet sites for the 12 Landcare Networks.

Case study

Better planning for wind, rain and frost

Snapshot:
Location: Junee
Partners: Murrumbidgee Catchment Management Authority, NSW
Department of Primary Industries, Junee Area Landcare Network.

The Murrumbidgee CMA recently hosted the 2009 Murrumbidgee Regional Landcare Awards. Recognition was given to Landcare Groups, individual landcarers, schools and local government. Winners at the regional level were sponsored to attend the NSW Landcare awards and the State Landcare Forum.

Adapting to climate change
The Murrumbidgee CMA’s projects to assist landholders adapt to drought and climate change have resulted in:
- 126 landholders trained in preparing for drought
- Installation of fencing, stock feeding and watering infrastructure
- Vegetation management to protect water quality and provide shade for stock
Phragmites were planted near the water line to ensure sufficient water for seedlings survival.

Case study

hay community tackles river bank erosion

Snapshot:
Location: Murrumbidgee River, Hay
Partners: Murrumbidgee CMA, Hay Trees on Plains Landcare Inc, Hay Ski Club, Hay War Memorial high school, St Mary's Primary, Hay community members.

Overview

The Hay Trees on Plains Landcare Group, in collaboration with the local Ski Club, decided to plant Phragmites seedlings along sections of actively eroding areas of the Murrumbidgee riverbank in order to stabilise the banks and prevent further erosion. The local schools and community members were invited to participate.

Approximately one kilometre of the Murrumbidgee riverbank was planted with 4,430 Phragmites seedlings to mitigate erosion and provide habitat for native fish species during four planting days.

These events, and the subsequent media releases, also raised the profile of the natural resource management issues affecting Hay and the surrounding area.

The Phragmites seedlings are now well-established and will be effective in stabilising erosion resulting from the fluctuating water levels.

The community, particularly the school students, are more aware of some of the environmental issues affecting the town. This was demonstrated during the presentation assembly at Hay War Memorial High School.
Passion and commitment prove strong at landcare awards

The outstanding contribution of individuals and community groups in improving environmental outcomes for the Murrumbidgee catchment were celebrated at the Murrumbidgee CMA Regional Landcare Awards held at Griffith in March 2009.

The awards were an opportunity for the Murrumbidgee CMA to formally recognise the environmental stewards of the Murrumbidgee catchment, thanking groups and individuals making remarkable contributions to a healthier and sustainable Murrumbidgee catchment.

Murrumbidgee CMA Chairperson, Mr Lee O’Brien, said the extraordinary vision, tireless commitment and personal sacrifice of the entrants, and others like them, that is brightening the future of our catchment.

“It’s inspiring to see the high standard of nominee submissions. It proves that ordinary, everyday people are achieving great things - keeping the Landcare ethic alive,” said Mr O’Brien.

The 2009 Murrumbidgee Regional Landcare Awards were designed by the Murrumbidgee CMA in collaboration with Landcare Networks from across the catchment.

Winners of the 2009 Murrumbidgee Regional Landcare Awards will enter the NSW Landcare Awards to be held later this year at Port Macquarie.
Biodiversity
Native vegetation is often used as a measure of biodiversity, and the Murrumbidgee catchment is well regarded for the high diversity of native vegetation types. The Murrumbidgee CMA understands the importance of maintaining diversity and balance in our natural systems, and is working with the community to ensure its preservation.

In 2008-09 the Murrumbidgee CMA introduced a new system for improving the preservation of biodiversity by way of introducing a market-based tendering process for landholders through the Box Gum Grassy Woodlands and Lower Murrumbidgee EcoTender projects.

Improving biodiversity in and along our waterways has again been a priority in 2008-09, with willow control and stream bank revegetation projects making major headway in promoting a cleaner, healthier river system.

Almost all projects undertaken by the Murrumbidgee CMA, result in improved biodiversity outcomes to varying degrees. Threatened species protection, both flora and fauna, is a major consideration in the design and targeting of all our projects, as is educating landholders and community about the production benefits of maintaining biodiversity.

### Murrumbidgee Catchment Action Plan Targets

- **BRCT 1:** By 2016 an increase in the area of terrestrial native vegetation classes of the Murrumbidgee catchment managed for biodiversity
- **BRCT 2:** By 2016 selected threatened species, populations and ecological communities (for both terrestrial and aquatic ecosystems) will be managed for biodiversity conservation
- **BRCT 3:** By 2016 the distribution of priority environmental pest animals within the Murrumbidgee catchment will be restricted using a coordinated approach
- **BRCT 4:** By 2016 high priority areas affected by priority environmental weeds, including feral native plant species, will be treated within the Murrumbidgee catchment using a coordinated approach

### State-wide Resource Condition Targets

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

### Caring for our Country Targets

- Increasing native habitat
- Reducing the impact of rabbits
- Reducing the impact of weeds

### 5 year achievements

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<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Area (ha)</th>
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<tr>
<td>Native vegetation</td>
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</tr>
<tr>
<td>Protecting flora and fauna</td>
<td>Area protected by fencing specifically for significant species or ecological community protection</td>
<td>42628</td>
</tr>
<tr>
<td>Managing invasive species</td>
<td>Area of pest plant control measures implemented</td>
<td>42628</td>
</tr>
</tbody>
</table>
Biodiversity Stewardship: The green investment

With the unmistakable force of dry conditions taking its toll on rural properties across the catchment, it’s no surprise land managers are looking to diversify into new income streams to supplement their agricultural income.

The Murrumbidgee CMA has seen the value in supporting the trend to diversify, by offering landholders a dollar rate per hectare to retain and actively manage native vegetation on their properties.

Delivered by way of a Property Vegetation Plan, a stewardship agreement is determined on the biodiversity values of the vegetation, with some allowance for future management actions.

The biodiversity value of existing remnant vegetation is very high and this program encourages landholders to invest in securing their existing natural capital.

Case study

Graziers turn to biodiversity production for profit

Overview
Over the next 10 years ‘Part Beverly Hills’ will be managed for conservation through a biodiversity stewardship with the Murrumbidgee CMA.

The landholders of ‘Part Beverly Hills’ are using stewardship payments to maintain, protect and enhance large continuous areas of High Conservation Value White Box, Red Ironbark and Stringybark Open Forest.

They are improving and enhancing biodiversity by:
- excluding stock during seed set for target native flora species
- retaining fallen timber, native regrowth and rocks
- controlling weed infestations and feral animals
- maintaining established firebreaks

A significant percentage of the vegetation community on the property has been cleared from its original extent, and up to 39 threatened species are thought to occur on site. The partnership with the Murrumbidgee CMA is helping the Landholders improve the quality and extent of this valuable ecological community, and in turn, improve biodiversity in the area.

Only one year into the project and the Landholders of ‘Part Beverly Hills’ have noticed dramatic changes to native ground cover, with ever increasing areas of wild flowers and native grasses.

Snapshot:
Location: Carabost Hills, South-East Tarcutta
Property: ‘Part Beverly Hills’
Protecting vegetation makes good business sense

The Murrumbidgee CMA’s Lower Murrumbidgee EcoTender was a new initiative in 2008-09 that allowed landholders to bid for funding to improve the quality and extent of remnant priority native vegetation on their properties, in the Lower Murrumbidgee catchment.

As part of the Australian Government’s Caring for our Country program, the Lower Murrumbidgee EcoTender provided Landholders with financial support, for up to 15 years, to establish environmental enterprises that protect and enhance wetlands and threatened wildlife habitat, such as native grasslands for the Plains-wanderer and box gum woodlands and River Red Gum forests for the Superb Parrot.

This market-based approach signalled a new direction for investment in the Murrumbidgee catchment’s natural resources, and resulted in the protecting of over 2500 hectares of threatened native vegetation communities.

Case study

Cash for on-farm conservation

Overview

The Davies family were one of ten landholders who were successful in securing funding as part of the Lower Murrumbidgee EcoTender.

The Davies family have fenced and protected 24 hectares of very old Rosewood trees. Though a relatively small area, it is quite significant protection of these trees due to the little regeneration of Rosewood trees in the district.

The site is both environmentally and culturally significant, with Aboriginal sites of significance, including traditional camp ovens, present in the area.

Rabbit control and grazing management will be undertaken by the landholders as part of a ten year agreement with the Murrumbidgee CMA. These management actions will assist with revegetation and natural regeneration of the area.

Snapshot:
Location: Hay
Property: ‘Walgrove’

Andrew and David Davies discuss their PBP with Murrumbidgee CMA Chair Lee O’Brien on “Walgrove”
A return for native assets

Box Gum Grassy Woodland is a distinct ecological community distributed over 405,000 hectares through the wheat/sheep belt of Queensland, New South Wales and Victoria. It is estimated that less than five per cent of the original community remains and much of this is in small isolated patches.

The Box Gum Grassy Woodland Project was developed as part of the Australian Government’s Caring for our Country program, delivered through a partnership between the Murrumbidgee and Lachlan Catchment Management Authorities.

The project was developed to protect the habitat for at least 19 threatened species, including the Superb Parrot, the Swift Parrot and the Tiger Quoll.

Landholders with White box, Yellow Box and Blakely’s Red Gum Grassy Woodland were called upon to prepare a bid for funding to protect these assets.

Overview

‘Jilliby’ owner David Tooke, knew he had a scattering of Yellow Box, Blakely’s Red Gum and White Box on his property ‘Jilliby’, but was not sure if they where suitable for the Box Gum Grassy Woodland Project. After a field visit by a Murrumbidgee CMA officer, it became apparent that his back paddock had the right vegetation types to be a perfect candidate for submission.

David submitted a bid and was successful in securing annual environmental stewardship payments to manage and enhance his 16 hectares of Box Gum Grassy Woodland for 15 years. As part of his stewardship responsibilities, David will improve and protect the area by:

- fencing for stock management
- grazing strategically
- controlling weeds and feral animals
- planting locally native seedlings

Before the project, David had his farm on the market ready to sell. After discovering the worth of Box Gum Grassy Woodlands he is now keeping the farm and enjoys a renewed passion for balancing production with improving the environmental health on ‘Jilliby’. His integrated approach has improved dams, creeks and vegetation by protecting remnants, fencing and revegetating 16 kilometers of creek, linking tree corridors and fencing dams to create small wetland areas.

Case study

Back grazing paddock reveals endangered treasure

The cluster of Yellow Box on the back paddock at ‘Jilliby’ revealed an endangered ecological community needing protection.

Snapshot:
Location: North of Humula
Property: ‘Jilliby’
Protecting Narrandera’s Koala Population

A specialised Koala-proof fencing project has been supported by the Murrumbidgee CMA to prevent Koalas being killed when crossing the Newell Highway at Narrandera.

The Murrumbidgee CMA has joined the Narrandera Koala Regeneration Centre Supervisory Committee, Department of Environment and Climate Change and Narrandera Shire Council to improve the management of this precious Koala colony.

Koalas regularly move along the extensive corridors of the Murrumbidgee River and wetlands at Narrandera, with up to 8 Koalas killed along this section of the highway annually. In recent years, the impact of drought has increased the Koala movement, as they search for food, mating partners and security.

Protective fencing works involved the completion of rigid steel fencing adjacent to footpaths and irrigation infrastructure. These works included the construction of Koala-proof chain-wire fencing across floodplain land, adjacent road and river entry and exit areas. Hazard warning signage was also installed to educate motorists and visitors about Koalas.

Completion of the project resulted in further development of critical river side, wetland and high use recreation land with Narrandera Shire Council, complementing other Murrumbidgee CMA supported works in adjacent and connected areas, including storm water management wetlands, major willow removal activities and indigenous managed river restoration work programs.

The Narrandera community was active in supporting the project, undertaking significant voluntary work to construct the fence and to ensure on-ground activities were carried out smoothly.
Renewing the Yass River Biodiversity

In early 2006, a collaborative project was established between the Murrumbidgee CMA, Yass Area Network of Landcare Groups, Yass Council and local landholders to improve the biodiversity and water quality of the Yass River system.

The Yass River supplies the town water requirements for Yass and the surrounding villages of Bowning and Binalong. The river was identified as having highly modified and depleted stream-side vegetation, large infestations of weeds (mainly willows), areas of riverbank erosion and uncontrolled stock access to the river. Project sites were prioritised for restoration on the reaches of Yass River with the focus on sites which would deliver the best biodiversity outcomes for minimal investment and areas identified by the community as a priority for treatment.

Restoration of sites included re-establishing native vegetation, removing willow infestations, constructing management fencing for grazing control and providing alternative stock water supply, controlling bank erosion along with bank stabilisation works.

Very positive feedback has been received from landholders and the wider community regarding the restoration works along the Yass River.
Overview

‘Greenfield Farm’ is one of ten Yass properties that have undertaken a Property Vegetation Plan to specifically address the management of stream banks along the Yass River.

Willows were removed from 2.7 kilometres of riverbank on ‘Greenfield Farm’ followed by the construction of fencing to exclude grazing stock from the stream banks, as well as revegetating the area with local native trees and shrubs. An alternative water supply of a dam, tank and six troughs was also constructed, to enable adequate stock water supply.

Removal of willows from the Yass River has improved the health and aquatic habitat of the river by reducing sedimentation, reducing annual nutrient loads, improving river side biodiversity through vegetation management and revegetation. ‘Greenfield Farm’ is directly opposite and adjacent to other Yass River works and is value adding to the work on upstream and downstream properties in this priority reach of the Yass River. Together this ensures large stretches of the priority reach of the Yass River are now free of weeds and provide a continuous corridor of native river side vegetation.

Case study

Healthy river-flow restored

The Yass River at ‘Greenfield Farm’ is flowing once again thanks to willow control works.

Snapshot:

Location: South-east Yass
Property: ‘Greenfield Farm’

The Murrumbidgee CMA has partnered with private landholders and councils throughout the Murrumbidgee catchment to:

- Remove 70km willows along the Murrumbidgee River
- Revegetate 100ha of steam bank
- Fence and protect 60ha of creek and river bank
Land asset

River Red Gum forest along the Murrumbidgee River, Yanco
A significant focus of the Murrumbidgee CMA in the land asset is to improve overall soil health to increase the resilience of our farming systems to the likely impacts of climate change and seasonal climate variability. This will also ensure improved productivity through higher stocking rates and improved nutritional value of groundcover. Longer pasture phases in cropping rotation and increased perenniality in grazing paddocks will also ensure reduced landscape degradation including soil erosion and dryland salinity.

In 2008-09 the Murrumbidgee CMA has continued to work with landholders to reduce the prevalence of dryland salinity and improve water quality in the Murrumbidgee River. A targeted sub catchment approach has been used to address areas contributing the greatest amount of salt into the Murrumbidgee system. Within these priority sub-catchments a combination of revegetation, grazing management and strategic infrastructure changes, are achieving positive outcomes in managing salinity and complementing on-farm production and biodiversity benefits.

Improved grazing management and the reconfiguration of paddocks to reflect land capability has also been a significant focus for the Murrumbidgee CMA in 2008-09. This has involved supporting landholders to change their management to maintain healthy groundcover for longer periods of time and thereby reduce soil erosion, increase biodiversity in pasture species and reduce impact of salinity. The Murrumbidgee CMA has also assisted land managers access training in best management practices so they can combine on-ground works and improved management to adopt more sustainable grazing regimes.

2008-09 has seen the continuation of a partnership between the Murrumbidgee CMA and Murrumbidgee and Coleambally irrigation corporations in the Murrumbidgee catchment. This partnership is vital in minimising the impacts of irrigation salinity on our landscape, increase water use efficiency and improved biodiversity outcomes.

### Murrumbidgee Catchment Action Plan Targets
- LRCT 1: Support sustainable farming enterprises by improving key soil health indicators
- LRCT 2: Improved water use efficiency within cropping systems
- LRCT 3: Reduce the extent of dryland salinity and outbreaks
- LRCT 4: Increase the perennial content in both grazing systems and the pasture phase of farming systems

### State-wide Resource Condition Targets
- Target 10: by 2015 there is an improvement in soil condition
- Target 11: By 2015 there is an increase of the area of land that is managed within its capability

### Caring for our Country Targets
- Improving land management practices
- Increasing landscape scale conservation
- Improving knowledge and skills of land managers

### 5 year achievements

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<td>Soil Management</td>
<td>Area of soil treatment for other than erosion or acid sulphate soils</td>
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Evergraze in the Murrumbidgee

The Murrumbidgee Catchment Management Authority’s Evergraze project has benefited landholders trying to increase livestock profitability and long term pasture sustainability.

The project commenced in January 2006 and builds on research undertaken by Charles Sturt University and the NSW Department of Primary Industries.

Targeting high rainfall (above 550mm) grazing areas of the Murrumbidgee catchment, the project aims to increase perennial vegetation to control recharge and therefore address dryland salinity in mid to upper areas of the catchment.

The project also helps landholders understand the production and sustainability benefits of perennial systems, including pasture and shrubs.

This program builds landholders capacity to apply sustainable natural resource management practices that will benefit both production and environmental outcomes.

Overview

The Murrumbidgee CMA has three replicated demonstration sites, designed to assess the impacts (positive, negative or nil) that alternative fertilisers have on native perennial pastures.

The demonstration sites are used to provide landholders information on the positive soil and pasture benefits that may be derived from the application of non-traditional fertiliser products.

One of the three demonstration sites is on the Bookham property ‘Glen Iris’. Ten different commercially available and organically derived fertilisers have been applied to a native perennial pasture and the site monitored to determine differences in plant growth and soil parameters under the varying products applied.

On-going monitoring of demonstration sites will take place until 2012. This monitoring data will be collated to help landholders make fertiliser decisions that will aid native pasture production and benefit the environment.

Case study

Assessing the impacts of alternate fertilizers

Merino ewes graze lucerne during joining to test for a boost in conception rates

Snapshot:
Location: Bookham
Property: ‘Glen Iris’
Grazing Management training for sustainability and profitability

A number of the incentives offered by the Murrumbidgee CMA involved improved management of native, introduced perennial pastures and the adoption of more sustainable grazing management practices - the outcomes of these improvements being erosion, biodiversity, salinity and water quality benefits. To ensure landholders had the capacity to improve the management of their pastures the Murrumbidgee CMA provided a range of grazing management training options to landholders.

Landholders who entered into a Property Vegetation Plan to improve and manage perennial pastures, where required to undertake training in grazing management as a pre-requisite. The training was delivered in various locations across the Catchment, with approximately 150 landholders participating.

Better grazing management and an increase in native perennial pasture has multiple benefits, such as improving the overall biodiversity and sustainability of grazed lands. An increase of perennial species, both native and introduced can result in increased soil water usage and consequently a decrease in dryland salinity. Perennials act as important groundcover and can help to reduce the occurrence of erosion.

Overview
Victoria Fowler and her family signed up for an incentive PVP with the Murrumbidgee CMA that included strategic grazing management.

Victoria is one of a new generation of farmers who are looking for new ways to balance the sustainability and profitability of their farming system.

The grazing management PVP was specifically related to the 540ha of native perennial grass land on the property, however, Victoria undertook Prograze™ training to manage all grazed areas on the property.

Prograze™ training gave Victoria the skills to manage new grazing regimes on all pastures, both native and non-native. The area of native perennial pasture was subdivided to allow the implementation of more strategic grazing.

Victoria said that course was a “real eye opener” and that she had learnt the importance of understanding pasture growth and quality, and the need to give strategic rests at different times of the growing season.

Since 2004, the Murrumbidgee CMA has assisted:
- Land managers improve 12,000ha through grazing management
- Install alternative stock watering troughs
- 746 land managers access training to improve grazing management practices.

Don’t let the grass get too low

Case study

Victoria and her family have noticed a significant increase in native pastures and decline in Paterson’s curse since implementing management techniques from the ProGraze training.
Sub-catchment Salinity

Salinity is still a major environmental problem facing Australian agriculture, causing losses in crop and pasture production. Salinity also affects remnant vegetation, stream and river dependant eco-systems and contributes to erosion. Through extensive research, monitoring and on-site assessments, the Murrumbidgee CMA has identified the ‘hot spot’ sub-catchments generating the majority of the salinity problems throughout the catchment.

Since 2005, the Murrumbidgee CMA has worked with landholders in these targeted sub-catchments of Yass, Jugiong, Muttama, Cooneys, Tarcutta and Kyemba catchments, to address the effects of dryland salinity, with funding from the Australian and NSW Government’s National Action Plan for Salinity and Water Quality.

Landholders have entered into Property Vegetation Plan agreements with the Murrumbidgee CMA to implement on-ground activities in specific parts of the landscape to address salinity. These include planting salt tolerant plants and other native vegetation, improving pasture management, rehabilitating discharge sites, erosion control and management of riparian areas, adjacent to rivers and streams.

Overview

Garry and Elaine Kelly implemented an incentive PVP with the Murrumbidgee CMA to revegetate several gullies and establish a saline pasture.

Over 6000 native trees and shrubs were planted along gullies to address erosion problems and provide shelter belts for stock.

As part of the PVP the Kelly’s also established a 12ha saline pasture to increase and improve groundcover in a paddock that had previously been almost entirely bare, but for an infestation of wire weed.

To enable the implementation of more strategic grazing, 5km of new fencing was constructed and three alternative stock watering points were established.

Garry said “Without the Murrumbidgee CMA funding we would not have been able to carry out the project – particularly on such a large scale.”

He was particularly pleased with the establishment of the saline pasture as it has transformed what was once a bare, unproductive piece of land into a well-covered, productive paddock.

Case study

Grasses and tree planting – A remedy for salt

The establishment of a saline pasture has seen a bare, unuseable piece of “Jakara” transformed into a well-covered, productive paddock.

Snapshot:
Location: Cootamundra
Property: ‘Jakara’

The Murrumbidgee CMA’s partnerships with landholders to address dryland salinity have resulted in:

- 15km fencing constructed to rehabilitate and protect streams
- 2,400ha native trees planted to address dryland salinity
- Installment of alternative stock watering troughs to protect river health
Environmental focus for irrigators

The Murrumbidgee CMA has maintained extremely strong partnerships with Murrumbidgee Irrigation Limited and Coleambally Irrigation Limited. These partnerships have focussed on reducing the volume of salt in water that drains from the irrigation areas to the Murrumbidgee River, and generally adopting more sustainable irrigation practices through the implementation of the Land and Water Management Plans (LWMP) developed by each Corporation.

This year the Murrumbidgee CMA has delivered over $2,600,000 for LWMPs, with funding from the Australian and NSW governments. LWMPs achieve water efficiency, biodiversity and improved land management practices through strategic training and incentives for producers in the irrigation areas of the Murrumbidgee catchment.
Overview
In the first round of the BioTender in 2008 Bruce and Julie Armstrong of ‘Corynnia Station’ tendered to protect and enhance their 415ha swamp of remnant Black Box and Lignum to encourage more birdlife, bats, reptiles and other native species on the site.

They tendered for MI’s BioTender stewardship program to enhance the site, using the funds to clean up a large rubbish dump area and undertake weed reduction and management. The Armstrong’s also reduce stock to strategic grazing levels and maintained the site as a conservation zone by retaining dead and fallen timber and regrowth.

The Armstrongs are already reporting an increase in birdlife with two new nesting wedge-tailed eagles and increasing numbers of ant eaters.

It is hoped through the stewardship tender program, the scarce remnant vegetation of the Murrumbidgee Irrigation Area will be protected and improved.

Snapshot:
Location: Wahwah
Property: ‘Corynnia Station’

Murrumbidgee
Murrumbidgee Irrigation’s EnviroWise program provides incentives to MI customers to promote natural resource management, with the aim to improve the overall health of the Murrumbidgee Irrigation Area environment. Since the inception of Murrumbidgee Irrigation’s EnviroWise program in 2000 over 880ha of biodiversity enhancements have been completed and more than 1420 land managers have completed the FarmWise education program - building their capacity to improve water and natural resource management and implement best management practices.
Overview

In March 2006, the NSW Government created the Coleambally Irrigation Biodiversity Reserve (CIBR). The Reserve is managed for environmental protection and Coleambally Irrigation has been appointed to manage the Reserve Trust.

Since establishment of the Trust, Coleambally Irrigation and the Department of Lands have undertaken a PVP with the Murrumbidgee CMA. The agreement provides Coleambally Irrigation with funding to undertake a range of activities including native plant revegetation, pest and weed control, bushfire management and fencing.

In the last two years Coleambally Irrigation has managed about 1600 hectares of land under the Trust in 11 separate blocks (ranging from 40ha to 400ha).

Coleambally Irrigation Biodiversity Officer Mark Robb says in the last two years a lot of regeneration has taken place and the weed control and pest control has worked very effectively.

Case study

Restored reserve becomes educational hub

These Trust blocks are now being used by the local community for educational and tourism purposes. Several school groups, farmers, tourists and other groups interested in natural environment have visited and appreciated the management of Trust land.

Snapshot:
Location: Coleambally
Project Site: Coleambally Irrigation Biodiversity Reserve

CEO John Culleton of CICL inspects the completed Recycle System on a Coleambally farm owned by Jim and John White

Primary School Students attend CIBR Field Day
Water asset

Murrumbidgee River, Adaminaby
The Murrumbidgee River is the third largest river in Australia. It supports a unique set of plants and animals and landscapes – many of national and international significance. The Murrumbidgee is one of the most reliable water sources in the Murray Darling Basin, and supports vast areas of food and fibre production, as well as over a million people.

There are many threats to the health of the river and the Murrumbidgee makes up a big part of what is a listed Threatened Ecological Community in NSW. High sediment loads cause a decline in the health of a river. The Murrumbidgee CMA is working to reduce sediment entering the Murrumbidgee River by protecting stream banks from over-grazing and stream bank erosion.

The management of groundwater resources continues to be a high priority for the community of the Murrumbidgee catchment. The Murrumbidgee CMA works with communities, local government, the NSW and Australian governments, and private users of groundwater to find solutions to sharing the resource.

The wetlands of the Murrumbidgee act as the lungs of the river system. The unique communities of plants and animals in the wetlands of the Murrumbidgee are critical to the long term health and biodiversity of the river. The Murrumbidgee CMA understands the pressures on wetlands, including demand for water, and is working to protect and restore wetlands across the catchment.

### Murrumbidgee Catchment Action Plan Targets

- **WRCT 1**: By 2016 predicted annual average suspended sediment levels in the Murrumbidgee River are reduced by 15%
- **WRCT 2**: By 2016 river salinity at Balranald is less than 245EC for 50% of the time and less than 320EC for 80% of the time
- **WRCT 4**: By 2016 the extent (hectares), diversity, condition and connectivity of inland aquatic systems is increased

### State-wide Resource Condition Targets

- **Target 5**: By 2015 there is an improvement in the condition of riverine ecosystems

### Caring for our Country Targets

- Protecting Ramsar wetlands

### 5 year achievements

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<td>Riparian areas</td>
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<td>Wetlands</td>
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Case study

From tired old creek to ecological oasis

Overview

Spring Creek feeds directly into Tarcutta Creek, a tributary to the Murrumbidgee River. After hearing about the river restoration project, ‘Spring Gully’ owner Reg Meigel knew it was the prefect thing to revitalize the tired old creek that cut his property in two. Stock had free run over the creek and Reg could see the banks erode after rain. The provision of alternate water made fencing out the creek all the more feasible.

Reg decided that the entire 1.3 kilometre stretch of Spring Creek would need to be fenced out and planted to protect the banks and improve water quality. The 9.4 hectare area was fenced and planted with 3220 trees and shrubs. Water tanks and troughs were also provided on both sides of the creek.

Reg has been amazed at the number of different plants growing on there own since fencing out the creek. By excluding stock the plants are doing a great job in holding the banks together and clearing the water, the creek is also full of frog and bird activity.

A year later, creek water is clearer, planted trees are 2 meters tall and banks are naturally regenerating.

Snapshot:
Location: South-East Tarcutta
Property: ‘Spring Gully’

Before the project Spring Creek was eroding and had insufficient vegetation on its banks.
Sizeable solutions for a serious problem

The Murrumbidgee CMA has been actively addressing stream-side zones that are particularly degraded due to erosion, to reduce sediment and nutrient loads and improve water quality in rivers of the Murrumbidgee Catchment.

Restoration and protection activities implemented have included major structural engineering control works, construction of fencing to protect streams and native revegetation.

Specific erosion sites were initially identified through a study of stream reaches that had the highest potential to deliver sediment and nutrients to the Murrumbidgee River system. Landholders in these targeted areas were approached to enter into a Property Vegetation Plan to provide incentive funding for engineering works to control two severely eroded gullies.

Structural erosion control works have been constructed at total of 22 sites. Each of these sites were fenced to manage stock access and revegetated with native plants. A total of 50km of stream-side land has been restored and protected.

“Both gullies were revegetated with over 600 native trees and shrubs, further strengthening structural engineering for long-term erosion control”

Case study

Stopping gully erosion in its tracks

Overview

Tanya and Robert Nokaes had ambitions to plant more trees on their Michelago property, to improve biodiversity and address gully erosion problems. With the property situated in a Murrumbidgee CMA targeted area for waterway erosion, the Noakes’ were eligible to receive incentive funding for engineering works to control two severely eroded gullies.

The larger, and more degraded, of the two gullies had eroded 140 metres of the surrounding valley. The gully extends to a tributary that runs into the Murrumbidgee River, which would have ultimately delivered sediment directly to the river. Sediment run-off from eroded gullies such as this significantly contributes to water quality decline in our river systems. As part of the Noakes’ PVP agreement with the Murrumbidgee CMA, a rock chute was constructed to stabilise the main gully. A rock bar was secured at the bottom of the chute to pond water and trap sediment before it reaches the river.

Both gullies were revegetated with over 600 native trees and shrubs, further strengthening structural engineering for long-term erosion control. The Noakes’ will continue to monitor and manage weeds and exclude stock from the gullies to ensure maximum results from the erosion control works.

Snapshot:
Location: Michelago

Since 2004, Murrumbidgee CMA engineering projects have resulted in:

- 11km stream bank erosion stabilised
- 820km stream-side vegetation protected and enhanced
- Improved water quality in the Murrumbidgee River
Wetlands act as the sponges and filters of the catchment’s water resources and are vital for their critical roles in maintaining water quality and balance within the Murrumbidgee catchment. They improve water quality by capturing sediment and recycling nutrients and support a diversity of aquatic and terrestrial plants and animals by providing water and habitat for their survival.

Wetlands can become degraded through changes in land use and are often a critical part of livestock production by providing water and grazing opportunities for landholders. Recognising the importance of wetlands, the Murrumbidgee CMA provides incentives to encourage landholders to protect wetlands by providing incentives to fence and install alternative watering infrastructure, removing invasive plants species such as willows, helps re-establish wetland plant species, and continues to acquire and consolidate wetland information.

Farmers, local governments and community members across the Murrumbidgee catchment have engaged in activities that have raised awareness and knowledge about wetlands and helped in protection and rehabilitation. On grounds works have included removal of mature willows, revegetation, fencing and installation of alternative watering systems.

The Indigenous community has been reconnected to country through projects with local governments that improve the riparian environmental along the Murrumbidgee and Tumut Rivers.
Overview

‘The Bulls Run’ is a large property on the Murrumbidgee floodplain. It hosts many wetlands and billabongs, especially close to the river on the southern boundaries of the property. As the owners of ‘The Bulls Run’, Paraway Pastoral Company has a Property Vegetation Plan with the Murrumbidgee CMA to protect these wetlands and billabongs.

One of the most significant wetlands in the agreement is the large wetland on the Old Narrandera Road, locally known as ‘The Swamp’. This wetland is very important regionally because it has a basin of 127ha and is surrounded by an additional 148ha of fenced River Red Gum woodland. This makes ‘The Swamp’ the largest floodplain wetland under a PVP in the mid Murrumbidgee.

Although it is on the floodplain, ‘The Swamp’ fills more frequently from local runoff and provides valuable breeding opportunities when the Murrumbidgee River is not in flood.

The Murrumbidgee CMA has helped conserve this valuable wetland by providing stewardship payments to help control weeds and stock movement in the wetland basin. Weeds have become a major problem at ‘The Swamp’ since the extended dry period from 2003.

Wetlands like ‘The Swamp’ will serve as valuable refugia for many wetland species in the predicted future of a drier climate in the Murrumbidgee.
The Murrumbidgee Wetlands Resource Book was launched by Murrumbidgee CMA Chairperson, Mr Lee O’Brien, beside the River at a reserve outside of Cooma.

The book was put together largely by Murrumbidgee CMA Wetlands expert, Dr Patricia Murray, and contains useful maps and data for any one who wants to learn more about wetlands of the Murrumbidgee.

“Wetlands are often misunderstood,” said author Pat Murray. “Names given to them include marsh, swamp, billabong, clay pans, bog, fen, peatland or that boggy patch in the back paddock.”

The book is a valuable aid for natural resource management professionals, local government, schools and universities.

Detailed maps reveal the locations of the many wetlands within the Murrumbidgee catchment between Wagga Wagga and Hay, an area which includes three wetlands recognised in international agreements.

The production of resources such as the Murrumbidgee Wetlands Resource Book are helping to improve habitat conditions for many water birds, such as the iconic ‘dancing’ Brolga, the rare and threatened Freckled Duck and migratory species such as the Black-tailed Godwit, which are listed under international agreements with countries such as China and Japan.

“The Murrumbidgee Catchment Action Plan, a document based on extensive community consultation, will direct improvements in the condition of approximately 400 hectares of Murrumbidgee River floodplain billabongs and maintain the extent and improve the ecological character of 1,800 hectares of other wetlands by 2016,” said Lee O’Brien.

The Murrumbidgee Wetlands Resource Book provides a wealth of data with which to inform decisions about the Murrumbidgee catchment and to balance the needs of both wetlands and irrigation. In fact, the technical information contained within the Resource Book is already being used to build a decision support system for improved wetland management.