

# State NRM Program Case Studies 2009-10

Strategic and Regional Competitive Projects

April 2011



**Government  
of South Australia**

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Department of Environment  
and Natural Resources

**For further information please contact:**

Department of Environment and Natural Resources

Phone Information Line (08) 8204 1910, or

see SA White Pages for your local

Department of Environment and Natural Resources office.

Online information available at: <http://www.environment.sa.gov.au>

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Written requests for permission should be addressed to:

Design and Production Manager

Department of Environment and Natural Resources

GPO Box 1047

Adelaide SA 5001

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## Introduction

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Strategic and Regional Competitive projects were delivered in 2009-10 by the eight regional NRM boards and state NRM agencies as part of the State NRM Program. Strategic projects were determined by the Minister for Environment and Conservation and included issues of specific priority. Regional Competitive funding involved an open call for project applications and an assessment process. Both Strategic and Regional Competitive investment were designed to complement the smaller scale NRM Community Grants. Case studies for a selection of Strategic and Regional Competitive projects are featured in this report.

## Implementing priority Torrens Taskforce actions

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*Adelaide City Council staff explains the Torrens Lake revegetation trial site*



*Gross Pollutant Trap installation at Fifth Creek*

**Proponent:** Adelaide and Mount Lofty Ranges (AMLR) NRM Board

**Funding amount:** \$481,600

**Program funding component:** Regional Competitive

### Introduction

The River Torrens and its catchment of just over 500 km<sup>2</sup> is a vital natural resource for the state, providing important ecological, economic and social capacity. The catchment supports a range of productive agricultural, rural living and commercial uses, as well as being a watershed for Adelaide's public water supply. However, important areas of remnant vegetation and wildlife habitat in the catchment are under intensive pressure from past and present development. To address these threats to the health of the River Torrens, the Torrens Taskforce was established in 2006, with the assistance of the AMLR NRM Board. Reflecting the breadth of the Taskforce's work, a number of partners are involved including multiple councils, state NRM agencies, SA Water, SARDI and UniSA.

This project incorporated a number of restoration and preventative activities in both the urban and rural catchment. The key aim of the project was to improve water quality in the River Torrens using a whole-of-catchment approach. The River is under various jurisdictions (e.g. City of Adelaide is responsible for the Torrens Lake) and has a range of stakeholders at different locations along its route. Such diversity of interests combined with the urban river's use for sporting activities such as rowing has historically made management of the River complex and challenging.

### Project methodology

The urban component of this project was overseen by the Torrens Taskforce, coordinated by AMLR NRM Board staff and delivered by partners such as the Adelaide City Council and Campbelltown City Council. Rural activities such as watercourse fencing and riparian revegetation were delivered as part of the AMLR NRM Board's existing on-ground Land Management Program. Here, NRM Board staff work directly with landholders in developing property management plans to guide NRM activities on their land.

### Foundational outcomes

- During the summer months, the Torrens Lake may be affected by cyanobacterial algal blooms which negatively impact upon the aesthetics of the precinct and force closure of the Lake. This in turn prevents recreational and sporting activities from taking place. To work towards addressing this issue, an Amenities Flows Strategy was developed, investigating options to avoid algal blooms occurring in the future.
- As part of an integrated carp management plan, a monitoring program was established in partnership with the Adelaide City Council and SARDI to track 25 carp in the Torrens Lake using acoustic receivers. Results were interesting with carp behaviour and movements varying widely. Data was used to map fish movements and will inform the future removal of carp, which are estimated to account for around 80 per cent of the Lake's biomass.
- Also in conjunction with the Adelaide City Council, a potentially innovative biological filtration system was reviewed. A further trial will determine whether the Lake's water quality can be effectively treated to improve light penetration and aquatic plant growth.

- Work occurring through this project in the rural catchment area contributed to further property management plans being secured with landholders under the Board's Land Management Program.

#### Immediate outcomes

- In designing and constructing a Gross Pollutant Trap (GPT) at Fifth Creek, the Board partnered with the Campbelltown City Council. This facility adds to the expanding network of GPTs in the catchment, minimising the amount of debris and leaf litter entering the River Torrens, thereby reducing nutrient levels which negatively affect water quality and encourage algal blooms. Adjusted flow regimes associated with the trap also reduce the silt and suspended solids load of the River, thus reducing turbidity levels and improving overall water quality.
- As water runoff from rural areas eventually finds its way into the River, engaged landholders with watercourses on their properties have excluded stock from these areas through the provision of fencing materials and incentives for weed removal and revegetation. Through this project, 7.3 km of riparian zone was fenced and protected and 4.4 km of riparian habitat was revegetated.

#### Intermediate outcomes

- Although it is difficult to detect short term water quality improvements, there was a reduction in cyanobacterial outbreaks forcing closure of Torrens Lake over 2009-10 from previous years. This could also possibly be a result of improved sampling techniques as well as water quality.

#### Further information

- [www.amlr.nrm.sa.gov.au](http://www.amlr.nrm.sa.gov.au)

Contact for further information: Alan Ockenden (AMLR NRM Board) at

[alan.ockenden@adelaide.nrm.sa.gov.au](mailto:alan.ockenden@adelaide.nrm.sa.gov.au)



*Watercourse fencing and riparian revegetation funded through the project*



*AMLR NRM Board staff explain a property management plan on a property near Kersbrook*

## Bringing back Warru: long-term conservation through building a Warru pintji

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Local Anangu by the pintji (APY/Jasmina Muhic)



Pintji construction (APY/Jasmina Muhic)

**Proponent:** Alintytjara Wilurara (AW) NRM Board

**Funding amount:** \$205,000

**Program funding component:** Regional Competitive

### Introduction

The Black-footed rock-wallaby, or Warru as it is known by the Traditional Owners of the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands, is South Australia's most endangered mammal. The Warru is listed as Endangered in SA (*NPW Act 1972*) and nationally Vulnerable (*EPBC Act 2001*). The total population is estimated to be around 150 - 200 animals but this number is continuing to decline due to the low survival and recruitment rates of juvenile animals that are likely being preyed upon by foxes and feral cats. Analysis suggests that Warru will be extinct in SA within five years without critical ongoing recovery actions.

This project involved the construction of a 100 ha predator-proof pintji (fence) in the APY Lands on Kenmore Park, for acclimatising Warru bred in captivity at Monarto Zoo prior to their release into the wild. The pintji will allow the Warru to safely adjust to local food sources, conditions and terrain without the immediate pressure of predators. This project built on previous successes from the high-profile Warru Recovery Project, a multi-partner initiative aimed at conserving and recovering populations of Warru in the APY Lands.

### Project methodology

A Warru Pintji Project Officer was employed in the APY Lands to coordinate the project and engage the community. The Project Officer was supported by the existing Warru Recovery Team, established under the Warru Recovery Project. Warru Recovery Team membership includes the AW NRM Board, DENR, APY Land Management, senior Anangu community members, Warru Rangers, Zoos SA, UniSA and Ecological Horizons Pty Ltd. To ensure the continuation of these existing collaborative relationships, the Warru Pintji Project Officer devoted considerable time to the provision of regular progress updates to all project partners.

The Warru Recovery Team and local Anangu were actively involved in all decision making processes relating to the pintji project. Four senior Anangu women have been involved in the Warru Recovery Project since the late 1990s, guiding the reintroduction of Warru raised in captivity back into the wild. The traditional ecological knowledge of these women was combined with contemporary science in selecting a suitable site for the pintji, as well as monitoring the site and motivating community members to get involved in the project.

### Foundational outcomes

- A Warru Pintji Management and Monitoring Plan and Warru Recovery Plan were both developed to guide and prioritise project activities. A new monitoring program was also developed based on these documents, establishing transects within and outside the pintji to monitor for foxes, cats, dingoes, as well as competitive herbivores including Euro and rabbits



- One of the Warru Reintroduction Rangers received intensive training from the fencing contractor and is now equipped with the skills to independently conduct ongoing maintenance on the fence. The Ranger also participated in a Warru trapping trip in the Musgrave Ranges where he was trained by Warru Recovery Team members to set Warru traps, handle 'wild' Warru and process all the Warru trapping data which includes microchipping, tagging, administering injections and conducting measurements and pouch inspections.
- Small areas of buffel grass have been mapped and will be the focus of management in 2010-2011.

#### Immediate outcomes

- Site preparation for return of Warru has begun, and has already seen removal of rabbits and Euro from the pintji area.
- Two fencing workshops were held involving a total of nine participants. A total of 13 community members (including two Warru Reintroduction Rangers and three Warru Recovery Rangers) have participated in construction of the pintji.
- The pintji was successfully completed with 4.3 km of fencing being erected to establish the 100 ha protected area.
- Three Anangu participated in Buffel grass and patch burning workshops conducted by the Warru Reintroduction Officer across a 97.5 ha area surrounding the site.

#### Intermediate outcomes

- The success of the project during 2009-10 and readiness of the Warru pintji has allayed longer-term concerns of ZoosSA regarding space for Warru breeding at Monarto Zoo.

#### Unintended outcomes

- One of the Warru Reintroduction Rangers enrolled into TAFE SA Certificate II in Conservation and Land Management (specialising in Indigenous Land Management). This means he will have formal qualifications for his work on the Warru pintji.
- The pintji fence line was marked and mapped by professional surveyors provided by the Australian Defence Force who were in the area conducting community projects at the time. As a result, the fence is unquestionably straight with accurate 90 degree corner angles.
- The project enhanced existing, and developed new, working relationships between Warru Recovery Team participants.
- A new Tjukurpa and song is being developed in preparation for the return of Warru to the APY Lands.

#### Further information

- [www.awnrm.sa.gov.au/Home.aspx](http://www.awnrm.sa.gov.au/Home.aspx)
- [www.anangu.com.au/land-management/threatened-species/warru-recovery-program.html](http://www.anangu.com.au/land-management/threatened-species/warru-recovery-program.html)
- [www.environment.sa.gov.au/science/species/warru.html](http://www.environment.sa.gov.au/science/species/warru.html)
- [www.zoossa.com.au/conservation-ark/conservation/conservation-programs?program=Black-flanked%20rock-wallaby%20\(Warru\)](http://www.zoossa.com.au/conservation-ark/conservation/conservation-programs?program=Black-flanked%20rock-wallaby%20(Warru))

Contact for further information: Harald Ehmann (AW NRM Board) at [thsp@aboriginalnrm.com.au](mailto:thsp@aboriginalnrm.com.au)



## East Meets West and Flinders-Olary NatureLinks targeting threats to biodiversity

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Parks of the Far West of SA



Rugged west coast cliffs



Arid mountain ranges Northern Flinders

**Proponent:** The former Department for Environment and Heritage (DEH)

**Funding amount:** \$394,500

**Program funding component:** Regional Competitive

### Introduction

NatureLinks is a priority SA Government initiative aimed at restoring and managing large areas of habitat across the State in order to conserve our unique species and ecosystems. The Flinders-Olary and East meets West NatureLinks are two of five corridors identified under Target 3.2 of South Australia's Strategic Plan. This multi-faceted project aimed to deliver strategic threat abatement activities across key landholdings in the Flinders-Olary and East Meets West NatureLinks to improve the condition of ecological communities and habitat, and to protect identified priority fauna and flora.

The project also aimed to increase community engagement and capacity in NRM projects in these areas through direct participation in threat abatement programs, targeted revegetation works, biodiversity workshops and biodiversity monitoring.

### Project methodology

The project was led by DEH staff, with support from numerous project partners across a number of NRM regions. The project involved four key components:

1. Delivering strategic threat abatement activities.
2. Increasing the involvement of Aboriginal communities in the delivery of NRM and biodiversity conservation programs.
3. Increasing community awareness and improving community capacity in relation to biodiversity conservation and threatened species management.
4. Improving landholder and community participation in addressing NRM priorities identified in the SAAL, AW, NY and EP Regional NRM Plans.

### Foundational outcomes

- With the approval of landholders, Yellow-footed rock-wallaby monitoring was conducted on private landholdings in the northern Flinders and Gawler Ranges. Ten bushland condition site assessments and monitoring sites were also established in the southern Flinders Ranges, with the goal of demonstrating the benefits of biodiversity management, through time. In total, 31 monitoring sites were either established or continued.
- 10 Property Management Plans were developed for private landholders, based on the findings of the Bushland Condition Site Assessments in the southern Flinders Ranges.
- Two reports were completed detailing findings from Yellow-footed rock-wallaby monitoring programs at three sites. A scientific report was written regarding Sandhill Dunnart monitoring plus a field report detailing findings from threatened flora surveys. The project contributed to the completion of a Conservation Action Plan and Investment Prospectus for the Southern Flinders Ranges.
- A survey was conducted for the vulnerably-listed shrub *Hibbertia crispula*. The survey report will outline the current distribution of the species, threats and future management recommendations.
- Partnerships between DEH, EPNRMB, Port Lincoln Aboriginal Community Council (PLACC) and the local community developed and strengthened through targeted environmental education and biodiversity conservation works.

#### Immediate outcomes

- Seven workshops held – attracting 89 participants. Feedback from landholders involved in workshops undertaken in the southern Flinders Ranges indicated that there was a large demand for information and training on a variety of NRM issues and management techniques.
- One 'Plant identification, seed collection and plant propagation' workshop was held in the southern Flinders Ranges.
- Success in involving landholders and the community varied considerably. Landholders in the northern and southern Flinders Ranges showed considerable interest and support for the program, whereas there was limited community involvement on the Eyre Peninsula and far west of the state.
- Recovery actions undertaken according to plans for seven threatened species including habitat enhancement through revegetation; establishment of food source plants; prescribed burning for habitat protection; distribution, post-fire and longevity surveys; and the establishment of community networks and agreements for threatened species protection.
- Pest animal control conducted across 22,500 ha in the AW NRM Region and over 800,000 ha in the SAAL NRM region, aimed at reducing threats from camels, feral goats, foxes and rabbits at key sites.
- Pest plant control conducted across 600 ha on the Eyre Peninsula and over 1,500 ha in the Northern Flinders, targeting a range of species including Boxthorn, Wheel cactus and Pepper trees.
- A prescribed burn was undertaken to protect critical habitat for the Sand Hill Dunnart (by providing a mosaic of fire age classes in Spinifex country).
- 206 volunteers involved in the program – around 5,000 hours contributed towards program activities in the Eyre Peninsula, Gawler Ranges and Flinders-Olary. Activities in the latter two areas comprised mostly members of the Hunting & Conservation Branch of the Sporting Shooters involved with goat and predator control.

#### Intermediate outcomes

- Native vegetation condition has been managed / improved across 1,136 ha.
- Native ecosystems re-established through over 400 ha of revegetation works including 11.5 ha of plantings on the Eyre Peninsula and 400 ha of contour direct seeding in the North Flinders.
- Impacts of pest plant and animals reduced at ten sites.

#### Further information

- East meets West NatureLinks Plan  
[www.environment.sa.gov.au/naturelinks/emw/emw.html](http://www.environment.sa.gov.au/naturelinks/emw/emw.html)
- NatureLinks  
[www.environment.sa.gov.au/naturelinks/](http://www.environment.sa.gov.au/naturelinks/)
- WildEyre  
[www.environment.sa.gov.au/naturelinks/emw/wild-eyre.html](http://www.environment.sa.gov.au/naturelinks/emw/wild-eyre.html)
- Flinders Olary NatureLink Plan  
[www.environment.sa.gov.au/naturelinks/flinders-olary/fo-corridor.html](http://www.environment.sa.gov.au/naturelinks/flinders-olary/fo-corridor.html)
- Bounceback  
[www.environment.sa.gov.au/biodiversity/programs/bounceback.html](http://www.environment.sa.gov.au/biodiversity/programs/bounceback.html)

Contact for further information: Jody Gates (DENR) at [jody.gates@sa.gov.au](mailto:jody.gates@sa.gov.au)

# Implementing the National Action Plan for feral camels in South Australia's Aboriginal Lands and Rangelands

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*A herd of camels in the Simpson Desert (DENR)*



*Arid habitat under threat from camel grazing (DENR)*

**Proponent:** The former Department of Water, Land and Biodiversity Conservation

**Funding amount:** \$ 749,700

**Program funding component:** Strategic

## Introduction

Management of feral camels across the Australian rangelands is a complex issue. There are currently over 1 million camels and this population will double in the next 8-10 years and beyond. At this population level, feral camels are having significant negative environmental, social, cultural and economic impacts across their extensive range and are expanding into new areas.

In South Australia, feral camels occur in northern parts of the state with major concentrations in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands and Simpson Desert. This project is a joint initiative of DENR, PIRSA, the Alinytjara Wilurara NRM Board and the SA Arid Lands NRM Board to implement the Commonwealth Government National Feral Camel Action Plan within South Australia. The project aims to establish a series of activities that will deliver a long term solution to the feral camel problem in South Australia.

## Project methodology

During the planning stage, it was recognised that effective feral camel management is landholder driven and requires effective landholder engagement to negotiate and facilitate strategic, integrated and cost effective feral camel removal. As such the project followed a model of engaging, prioritising and allocating investment in the form of Removal Assistance to landholders in order to facilitate feral camel removal.

The project aimed generally at reducing impacts by removing feral camels from targeted areas. It also focused on protecting specific environmental and cultural assets under threat from feral camels. Recognising the need for a consolidated approach to managing feral camels, numerous stakeholders were involved including Aboriginal communities, pastoral and conservation land managers and the broader community. Through the project, methods were developed to census camel populations and monitor their impacts.

## Foundational outcomes

- A feral camel congregation intelligence network of over 40 people spread across the SA Aboriginal lands and pastoral fringes was developed and monthly surveys are undertaken to inform removal activities. Network intelligence utilises the skills and experience of rural residents and is one of the most cost effective and readily available methods to gather congregation data.
- A South Australian focussed, decision support tool was developed to inform the identification of priority areas for camel removal activity.
- In collaboration with Spatial Scientific Technologies and Flinders University, the project team sought to develop an effective data collection methodology for feral camel density, distribution, removal and impacts. This included the use of Thermal InfraRed (TIR) cameras was further explored and developed. Camel Finder software was further developed for the automated analysis of TIR video data, with the software now able to filter camel-like thermal signals.
- A state workshop was held regarding monitoring needs and techniques. The main outcome of the workshop was the recognition that monitoring methods are all likely to be expensive and difficult to

implement due to the large area to be surveyed necessitating considerable travel and large number of 'representative plots' to sample.

- However, the further development and implementation of TIR technologies was supported for inclusion in observer based aerial surveys.
- A survey was undertaken to record the attitudes and perceptions of Aboriginal people in the arid lands of South Australia to camel management and their desired role in management activities. The study included the Oak Valley and Yalata communities and traditional owners for the Witjira National Park and the Simpson Desert Conservation Park.
- An extensive aerial camel survey of the SA portion of the Simpson Desert was conducted in May 2010, covering 36,820 km<sup>2</sup>. The survey produced a corrected estimate of 14,788 camels (+/-2,958) equating to ~0.4 camels/km<sup>2</sup>.
- An Asset Prioritisation Tool was developed, giving relative scores to identified asset types. This then allows the total asset value of an area to be calculated.
- A strong relationship was formed with the APY Executive & Land Management Unit and developed considerably as a result of collaboration through the project.

#### Immediate outcomes

- The aerial cull conducted in May 2010 removed a total of 3,260 camels from approximately 40,000 km<sup>2</sup> of high priority cross border management zones. This area included the Simpson Desert National Park, the adjoining properties of Kalamurina and Macumba, and also the Kokatha and Moonaree stations adjoining the Gawler Ranges National Park.
- Also involving effective cross border collaboration in high priority zones, 3,188 camels were mustered across approximately 24,000 km<sup>2</sup> of the APY Lands.
- The AW NRM Board began constructing eight structures to protect high priority cultural and biodiversity assets in consultation and collaboration with Maralinga Tjarutja Council. These structures will provide ongoing asset protection and will be monitored and maintained by the AW NRM Board.

#### Further information

- [www.pir.sa.gov.au/biosecuritysa/nrm\\_biosecurity](http://www.pir.sa.gov.au/biosecuritysa/nrm_biosecurity)
- [www.feralcamels.com.au/](http://www.feralcamels.com.au/)

Contact for further information: John Virtue (PIRSA) at [john.virtue@sa.gov.au](mailto:john.virtue@sa.gov.au)



## **Towards 2050: Eyre Peninsula Climate Change Program**



*Western coast of Eyre Peninsula within the WildEyre conservation action plan area*



*EP NRM Board Landcare Officer (right) with landholder inspecting groundcover at erosion prone Elbow Hill. An MBI approach has been developed to protect this susceptible area.*

**Proponent:** Eyre Peninsula (EP) NRM Board

**Funding amount:** \$400,000

**Program funding component:** Strategic

### Introduction

The Eyre Peninsula NRM Board has demonstrated regional leadership in facilitating the development of a regional climate change sector agreement that will coordinate the efforts of local government, the Regional Development Australia Board and the Eyre Peninsula Natural Resources Management Board with the Minister for Climate Change. This sector agreement is the first of its kind incorporating an entire NRM region and establishes a coordinated regional response to help tackle climate change.

This project had a broad climate change focus and included a range of smaller projects including the coordination and implementation of research and on-ground activities. Some of these projects included:

- 'Aboriginal communities: pilot assessment of likely impacts of climate change'
- 'Eyre Peninsula climate change vulnerability assessment - pilot study'
- 'Practical solutions to supporting adaptation to climate change on Eyre Peninsula'.

### Project methodology

This project was driven by the EP NRM Climate Change Sector Agreement. This was developed cooperatively by the cross agency / jurisdictional steering committee. Strategies developed under this agreement aim to:

- coordinate and manage the research effort for climate change relevant to Eyre Peninsula, including on-ground application
- ensure that the appropriate communication and engagement strategies are developed
- coordinate on-ground works and address agreed priorities for stakeholders.

### Foundational outcomes

- The *Eyre Peninsula Regional Sector Agreement* was signed on 18 August 2010 by multiple partners from various jurisdictions. The agreement sets strategic priorities to focus climate change work in the region and defines partner roles and responsibilities. Agreement partners meet at a regular forum to collectively prioritise key issues and identify funding opportunities.
- A technical review of climate change focussed activities undertaken in the past 2 years was conducted. Also, previous research projects were analysed to identify key gaps and areas for further research.

### Immediate outcomes

- A market-based instrument (MBI) approach for sustainable grazing management in the WildEyre area (western / central EP) was scoped and developed, which covers approximately 1.2 million ha.

Also, an MBI process was initiated around agricultural practice change to increase ground cover and reduce erosion risk.

- Project staff worked with regional Aboriginal communities to monitor and manage changing resource conditions relating to climate change. This included:
  - the development of baseline data from piezometers
  - land systems management on Aboriginal properties
  - the creation of a seed bank and plant propagation nursery at Emu Farm, Ceduna
  - the collation of GIS data from sand dune systems in western Eyre.
- A tender process developed for the temporary closure of Sheoak grassy woodlands to allow for sustainable grazing and ecosystem recovery.

Further information

- [www.climatechange.sa.gov.au/uploads/Sector%20Agreements/Eyre Peninsula Agreement.pdf](http://www.climatechange.sa.gov.au/uploads/Sector%20Agreements/Eyre_Peninsula_Agreement.pdf)

Contact for further information: Annie Lane (EP NRM Board) at [annie.lane@sa.gov.au](mailto:annie.lane@sa.gov.au)

## Engaging Kangaroo Island landholders to manage biodiversity and restore habitat

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Parndana Year 10 students setting hair tubes for southern brown bandicoot, Parndana Conservation Park.



Planting native tubestock at 'Strepera' property, Middle River catchment, through a habitat restoration incentive.

**Proponent:** Kangaroo Island (KI) NRM Board

**Funding amount:** \$64,000

**Program funding component:** Regional Competitive

### Introduction

Areas of remnant native vegetation on Kangaroo Island (KI) support a unique flora that includes 15 nationally threatened plant species and at least 28 additional endemic plant taxa, many of which are in decline. These remnants in the agricultural landscape also provide significant habitat for a range of fauna, including the nationally endangered Southern brown bandicoot and KI Dunnart. Additionally, the extensive KI coastline provides nesting sites for a number of state listed bird species, including the Hooded plover, Osprey and White-bellied sea-eagle.

### Project methodology

To address threats to the Island's abundant biodiversity, this project utilised a multi-pronged approach, incorporating three smaller sub-projects. Firstly, an incentive scheme was offered along with technical assistance, to support landholder habitat restoration projects for biodiversity benefit. Secondly, a contractor was engaged to undertake control works for high risk environmental weeds. Thirdly, the community was encouraged through participation in small mammal surveys to support private land conservation.

### Foundational outcomes

- Friends of Parks were involved in searching unburnt and burnt vegetation areas in Flinders Chase National Park for fresh signs of Southern brown bandicoot (diggings) in order to target hair tube and remote camera surveys. This activity investigated Southern brown bandicoot survival following a major fire in December 2007 which burnt over 90 per cent of this significant reserve on western Kangaroo Island.
- Increased community awareness resulting from project publicity also resulted in several new sighting records of this endangered species in the park.
- Since these findings, project staff met with ecologists from DENR Fire Management Unit to finalise the State-wide Ecological Fire Management Strategy for Southern brown bandicoot.

### Immediate outcomes

- 102 school students participated in 11 classroom and field activities in relation to environmental weeds, protecting the Southern brown bandicoot and native birds. As a result of increased student awareness following these activities, new records were obtained of Bluebell creeper and Sweet pittosporum weeds, and the Southern brown bandicoot in the Parndana area.



- Project staff worked with the Parndana Progress Association to increase their awareness of significant environmental weeds which infest native vegetation around this township. The Association later conducted an all day working bee to deal with major weed infestations.
- An environmental weeds brochure was produced, describing significant weeds in the area. The Parndana Progress Association distributed the brochure to 120 households.
- Project staff provided a management plan and on-going assistance to a landholder for a four ha habitat restoration project in the Middle River catchment.
- An assessment report was produced identifying issues regarding the re-establishment of native vegetation in the Harriet River catchment following flood damage after a dam burst in 2009.
- Herbicide treatments were administered with supplementary hand pulling of Italian buckthorn, Bluebell creeper, Sweet pittosporum and Coastal tea-tree at ten sites encompassing 15 ha across Kangaroo Island.
- A DENR Project Officer worked closely with KI NRM Board Sustainable Landscapes Program staff to maintain environmental weed spatial databases and to carry out joint and complementary weed eradication programs on Kangaroo Island.

#### Further information

- Report: 'Assessment of natural regeneration along Harriet River following flood in July 2009'.
- Brochure: 'Environmental weeds that have invaded Parndana' produced for Parndana Progress Association letter drop.

Contact for further information: Trish Mooney (DENR) at [trish.mooney@sa.gov.au](mailto:trish.mooney@sa.gov.au)

## Managing biodiversity through increased community capacity and landholder participation

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*A workshop on the southern Yorke Peninsula organised by DENR and Trees for Life regarding plant identification, seed collecting and plant propagating.*

**Proponent:** Northern and Yorke (NY) NRM Board

**Funding amount:** \$205,000

**Program funding component:** Regional Competitive

### Introduction

As significant areas of high conservation value exist on private lands, the ability to conserve biodiversity is often dependent on the community's willingness to support and actively participate in conserving these areas. Prior to commencement of this project, there was strong demand amongst landholders in the NY NRM Region for support and facilitation services to assist them to undertake biodiversity and other NRM projects.

Through providing this support, this project sought to increase the level of community and landholder participation in the management of the Region's biodiversity, threatened species and ecological communities. The southern Flinders Ranges and the southern Yorke Peninsula were focus areas for this landscape recovery due to a number of factors. Extensive conservation planning had already been undertaken and many NRM networks had already been developed. Additionally, these areas had been identified as biodiversity 'hotspots'.

### Project methodology

This project was developed jointly by the NY NRM Board and the former Department for Environment and Heritage NY Regional Office. It involved direct landholder engagement and capacity building, as well as the formation of biodiversity focused land-care groups. Project staff utilised the extensive networks already existing within the region to provide technical support and project facilitation to landholders and the community. This was done to increase levels of awareness and ownership, as well as the economic and social capacity to adopt and implement landscape-scale biodiversity management practices.

### Foundational outcomes

- Three landscape-scale landholder groups were established, with a focus on achieving an improvement in the biodiversity value of private lands in the southern Flinders Ranges and southern Yorke Peninsula. These groups were provided with technical advice and support, including the development of nine technical briefing reports to address knowledge gaps that the groups identified as lacking in their shared skills base.
- A new monitoring program was established using the Nature Conservation Society of SA Bush Condition Monitoring Index. This is being used as a means to both engage landholders and to document biodiversity outcomes. By undertaking repeat visits, landholders will be able to see the benefits of their management practices.
- Bush Condition Monitoring site assessments were undertaken on lands owned by members of the developing landholder groups. Subsequently, 25 management plans were developed to provide landholders with advice and direction on the management of biodiversity on their properties. Landholder groups then developed biodiversity management projects based largely on common threats to biodiversity identified through the site assessments.

- Two brochures were developed to assist landholders in identifying and managing threatened Iron-grass native temperate grasslands and Peppermint box grassy woodlands.
- Seven media articles were produced based on topics that were identified as issues of concern to members of the landholder groups.

#### Immediate outcomes

- Four community workshops entitled 'Biodiversity and your farm' were held at Warooka and Orroroo involving 37 landholders. Topics included: biodiversity and its value to landholders in the region, managing threats to biodiversity, 'Baiting for Biodiversity' – a fox control program and opportunities for landholders to diversify into responsible nature-based tourism.
- One workshop entitled 'Plant identification, seed collection and plant propagation' was held at Stenhouse Bay involving 15 landholders.
- One workshop regarding Iron-grass native temperate grasslands and Peppermint box grassy woodlands was held in Clare involving 25 landholders.
- A crucial product of these workshops was the identification of the specific NRM skills, techniques and knowledge that the landholders would need to contribute towards the biodiversity targets in the NY Regional NRM Plan.

#### Further information

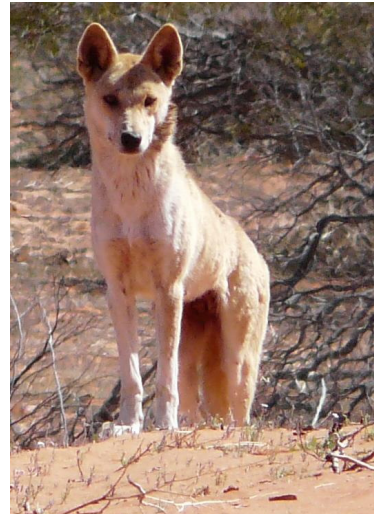
Contact for further information: Andy Sharp (DENR) at [andy.sharp@sa.gov.au](mailto:andy.sharp@sa.gov.au)

## NRM Sustainability in the SA Arid Lands

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Cattle yarded for pregnancy testing



Dingo

**Proponent:** SA Arid Lands (SAAL) NRM Board

**Funding amount:** \$355,000

**Program funding component:** Strategic

### Introduction

North of the dog fence, the dingo (*Canis lupus dingo* and hybrids) is regarded as a legitimate wildlife species and although unprotected, is afforded a level of protection by the South Australian Dingo Policy (DWLBC, 2005). At the same time, dingo predation on beef cattle is a significant issue that can cause economic losses to beef producers. This project builds on existing work seeking to provide information to assist in protecting the beef cattle industry from the impacts of excessive dingo predation, whilst also ensuring the continued survival of the dingo and its ecological role as a top-order predator.

Assisting natural resource-based industries to maintain or improve their ecological sustainability is a target of the SAAL Regional NRM Plan. An Industry Partnerships Program was developed to facilitate industry investment in projects of combined interest to industry and government. Through this initiative, businesses are assisted by natural resource managers in a partnership arrangement to target priority NRM issues.

Additionally, the SAAL Regional NRM Plan recognises the need to develop clearer arrangements for vegetation clearance offsets in the SAAL NRM Region. This project sought to establish industry partnerships and make information more accessible about the benefits of contributing to and participating in natural resources management, including understanding clearance offset requirements.

### Project methodology

The project focussed on increasing the levels of industry and landholder awareness and ownership of NRM issues, as well as the economic and social capacity to adopt and implement landscape-scale biodiversity management practices. It was recognised early that engaging industry and involving landholders as participants was the preferred way to achieve the long term outcomes sought. Consequently, the project was delivered through direct industry and landholder engagement and capacity building, as well as the provision of technical support.

Key elements of the project included:

- undertaking dingo research in the far north of South Australia in order to improve pastoral productivity and biodiversity outcomes
- working with pastoral land managers to ensure they apply best practice measures for dingo management
- establishing the Industry Partnership Program to capitalise on opportunities for collaboration with industry

- further development of processes for managing native vegetation clearance offsets (Significant Environmental Benefit offsets).

#### Foundational outcomes

- Trials previously commenced on four key properties in the SAAL NRM Region to understand and pilot best practices for dingo control, were continued during 2009-10. Landholders on these properties directly participated in the research undertaken.
- The dingo research trials included comparison of 1080 baited and unbaited paddocks. Activities included cattle pregnancy testing to determine calf loss due to dingoes and GPS tracking of dingoes across two properties to further understand dingo movement. Wildlife activity surveying and scat collection and analysis were undertaken to increase knowledge of the factors driving dingo predation and the impacts of dingo baiting on other species.
- The research has contributed data that will add to existing information from 2008-09 and is planned to be added to again in 2010-11. Interim results indicate that paddock-level dingo baiting is only effective in reducing calf losses under certain conditions. The information generated is being used to add value to the regional strategy for dingo management that is currently in place.
- An Industry Partnership Program was established which has initiated a process for business partners from mining, petroleum, tourism and pastoral industries to contribute to the management of natural resources. The program is supported by an information webpage and printed flyer highlighting points of interest to attract industry involvement.
- An Industry Support Officer has been appointed to further develop industry partnerships that will connect the interests and investment of industry with natural resource managers in order to address key issues such as water security, pest management, threatened species conservation and community engagement. This position is continuing into 2010-11 and will focus on establishing on-ground projects through Significant Environmental Benefit offset and partnership funding.

#### Immediate outcomes

- Five bi-monthly dingo updates were distributed throughout the SAAL NRM Region via the regional newsletter and more widely via the SAAL website.
- Land managers on each of the participating properties were directly engaged in the collection of calf loss data (through identification of dry cattle at mustering and ear tagging of cattle for identification purposes), totalling 240 hours of volunteer time.
- A major organisation in the mining industry was successfully engaged as the first partner in the SAAL NRM Board's Industry Partnership Program. Santos has committed \$125,000 to support NRM priorities in the region.
- The Industry Support Officer has become a regional point of contact for all stakeholders interested in Significant Environmental Benefit offsets, including industry, environmental groups, local communities and the scientific community.

#### Intermediate outcomes

- Four land managers are now using and applying best practice dingo control and management across an area of approximately 118,200 ha.

#### Unintended outcomes

- Prey remains collected in dingo scat surveys, have added to knowledge of the distribution of the EPBC listed species Plains rat (*Pseudomys australis*). Additionally, unconfirmed hair samples of the invasive Black rat (*Rattus rattus*) were collected for DNA confirmation.

#### Further information

Contact for further information: Deb Agnew (SAAL NRM Board) at [deb.agnew@saalnrm.sa.gov.au](mailto:deb.agnew@saalnrm.sa.gov.au)



## On-ground works and community engagement for wetland biodiversity and ecological restoration

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Community monitoring at Paiwalla wetlands (E349880 N6214948)



Southern bell frog caught during a fish survey at Beldora Lagoon (E444773 N6200007)

**Proponent:** SA Murray-Darling Basin (SAMDB) NRM Board

**Funding amount:** \$280,300

**Program funding component:** Regional Competitive

### Introduction

This project was an integrated package of works that built upon the SAMDB NRM Board's existing Wetland Program. SAMDB NRM Board staff oversaw on-ground works at community wetland project sites which were prioritised based on ecological values, levels of community participation and practical feasibility.

The project included partnerships with multiple state NRM agencies, as well as a number of Local Action Planning (LAP) groups on the region. It also engaged school students, landholders and volunteers in monitoring and restoring habitat for nationally threatened species, in particular two species listed as vulnerable, the Regent parrot and the Southern bell frog.

### Project methodology

Activities included designing water manipulation structures, installing carp control infrastructure and undertaking investigations to support future installations. To support the on-ground works, the project incorporated a monitoring component to assess the success of works completed, inform the delivery of future works and to involve the community. The project also included the development of a plan outlining recommendations for on-ground works and management of a new priority wetland site.

### Foundational outcomes

- A new management plan was prepared for the Nigra Creek / Schillers Lagoon wetland complex. The plan analyses current data for the wetland and suggests the most appropriate hydrological regime (wetting and drying) and ongoing management and monitoring activities for the wetland.
- The project supported 16 wetland groups including four new groups at Molo Flat, Hogwash Bend, Wigley Reach and Weila. These four groups received equipment and support regarding wetland monitoring and management, including advice on appropriate wetting and drying regimes.
- Twelve community monitoring days were held involving 60 local volunteers, who undertook a total of 480 hours of work. Activities included photo point monitoring and surveying key indicators of wetland health including the abundance of frog, fish and bird species; tree health; salinity, turbidity and pH levels of surface water; and ground water levels and salinity. Monitoring standards were upheld by professional field staff that assisted community members in their efforts.

### Immediate outcomes

- The SAMDB NRM Board worked in conjunction with established community networks with the capacity to undertake works. Officers from eight different LAP groups undertook on-ground works at a number of sites within the SAMDB NRM region, including levy bank and access road repairs at Murbpook Lagoon, Hart Lagoon and Nigra Creek.

- At the Paiwalla Wetlands, the levee bank was reshaped and new pipes were installed. Ongoing monitoring is occurring at these sites via a web-based information sharing program. Forty-one groundwater bores were developed at various wetlands ranging from Paringa to the Lower Lakes. A leaking water regulation structure at Hart Lagoon was repaired to enable the implementation of a wetland operational plan.
- Two carp control structures were designed and installed at Overland Corner Wetland and Spectacle Lakes Wetland. The devices were designed in line with the latest research to allow for the movement of small bodied native fish in and out of the wetlands.
- Approximately 500 ha of revegetation was carried out within the Pike floodplain. This project is being watered using irrigation flushing water. The installation of a tank, pipes, fittings and drippers will enable this project to continue.

#### Intermediate outcomes

- The SAMDB NRM Board's own monitoring program has revealed an improved condition of water dependent ecosystems at a number of wetlands, particularly those that were the recipients of water during the drought. Monitoring revealed that Molo Flat, Overland Corner, Akuna, Wigley Reach, Markaranka, Wiela, Hogwash Bend and Noonawirra have all had increased numbers of frog and bird species breeding and feeding in the wetlands during inundation, as well as an improvement in tree health. Understorey and riparian vegetation in these wetlands has also responded positively. Ongoing monitoring of these and other wetlands in the region has been essential for determining the appropriate watering regimes for wetlands.

#### Further information

- [www.samdbnrm.sa.gov.au/BoardProjects/MonitoringandEvaluation/CommunityMonitoring.aspx](http://www.samdbnrm.sa.gov.au/BoardProjects/MonitoringandEvaluation/CommunityMonitoring.aspx)

Contact for further information: Alyson Dunhill (SAMDB NRM Board) at [alyson.dunhill@samdbnrm.sa.gov.au](mailto:alyson.dunhill@samdbnrm.sa.gov.au)



## Healthy wetlands on private land – supporting landholders in the South East to restore and manage aquatic habitat

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*Silky tea tree habitat fringing protected through fencing, Bachmanns Swamp.*



*Fencing erected to protect wetland, Nora Creina.*

**Proponent:** South East (SE) NRM Board

**Funding amount:** \$74,300

**Program funding component:** Regional Competitive

### Introduction

Historically, a significant proportion of the SE NRM Region's native habitat was undisturbed wetland. Today, following extensive draining and clearing, only 6 per cent of wetlands in the Region remain, with about 10 percent of these in good condition. This small amount of remaining wetland continues to support a large amount of the Region's biodiversity, as well as providing valuable habitat for a range of migratory bird species of international significance.

Over seventy percent of wetlands in the SE NRM Region are privately owned and managed. Recent programs aimed at classifying and cataloguing these areas, combined with community education programs, have generated a growing awareness amongst landholders of the need to conserve wetlands. This in turn has created a demand for funds to undertake on-ground restoration activities (revegetation, fencing, etc) and for complementary technical advice on how to manage wetlands. Run in partnership with the Department of Environment and Natural Resources, this project provided these resources and acted as a pilot initiative to test this model of dual delivery.

### Project methodology

Wetlands of particular environmental value were targeted by referring to existing sites registered in the South Australian Wetland Inventory Database (SAWID). Landholders ranged from primary producers who have never undertaken conservation works to those who have a long history of conservation activities. The project funded these landholders to undertake activities focussed on protecting the function and ecological value of their wetlands. DENR staff provided technical advice and assistance to landholders and ensured that sites were monitored effectively.

Staff worked one-on-one with landholders to improve their understanding of the values of their wetlands and landholders in turn demonstrated a high degree of willingness to be involved in conservation activities.

### Foundational outcomes

- 86.5 ha of native wetland vegetation habitat was mapped across nine properties where restoration activities were conducted. This included qualitative observations of both vegetation condition and diversity.
- While the project initially only set out to target five properties, there was significant interest resulting in the target to be almost doubled.
- A management action plan was developed for each property that recorded information about the site as well as recommendations and time frames for planning additional restoration works.

#### Immediate outcomes

- 86.5 ha of native wetland vegetation was protected, including 13.75 km of fencing being erected to exclude stock from these areas.
- Three resources were developed including a general identification and management guide for wetlands in the SE NRM Region and two specific factsheets.

#### Intermediate outcomes

- The dual model of delivery – financial incentives with technical advice – has proven to be successful. As a result of improving landholders' knowledge of their environmental assets and the difference they can make, twelve landholders have changed their management practices, giving up productive land to promote conservation. For example, a former natural creek that had been managed by the landholder as a drain was being 'cleaned out' every year to improve flow and prevent flooding of agricultural land. After threatened fish were found at the site, the landholder agreed to leave the drain in its current condition (with aquatic vegetation intact) in order to support the fishes' habitat.

#### Unintended outcomes

- One property fenced as part of this project was subsequently found to be home to the critically endangered (in SA) Australian mudfish and the nationally vulnerable Yarra pygmy perch.

#### Further information

##### Links:

- All Wetlands Great and Small: a Guide to the Wetland Diversity of the South East
- Guide to Managing Puddles in Paddocks
- Guide to Managing Habitat for Freshwater Fishes.

Contact for further information: Melissa Herpich (DENR) at [melissa.herpich@sa.gov.au](mailto:melissa.herpich@sa.gov.au)