ON TRACK

Delivering natural resources management in the SA Arid Lands 2010-11

Protecting our land, plants and animals

Understanding and securing our water resources

Supporting our industries and communities

Government of South Australia
South Australian Arid Lands Natural Resources Management Board

CARING FOR OUR COUNTRY

Welcome

It is with great pleasure that I introduce this first edition of *On Track*.

Having now completed the first year of delivery of the *South Australian Arid Lands* (SAAL) *Regional Natural Resources Management* (NRM) *Plan* which sets the direction for natural resources management in the region to 2020, *On Track* is a report to our community on the progress we made in 2010-11 on meeting the Plan's targets.

True to the SAAL NRM Board's platform and the spirit of natural resources management, *On Track's* focus is on community.

We showcase the variety of projects and activities where community members are working with the Board.

We share with you the experiences of some of the landholders and community members involved with our programs including Ecosystem Management Understanding™, Pest Management and Rangelands Rehabilitation, and our many volunteer projects.

We show you how all landholders are benefitting from our efforts to manage the region's pest plants and animals, protect our threatened species, rehabilitate our land, conserve our soils, and manage our water resources.

And we encourage you to get involved.

Indeed, *On Track* reveals that natural resources management really is about engaging people and working with them to improve their capacity to manage their backyard – and how critical it is to have your support to help deliver on the Plan.

With all landholders in the SAAL NRM Region now paying a regional (land-based) NRM levy, the publication is also significant in keeping us accountable and we trust that you will see that your contribution is being put to good use.

With my first year as Presiding Member not yet complete, I would like to acknowledge the achievements of former Presiding Member Chris Reed, previous members of the Board, and General Manager John Gavin. Almost all of the activities you will read about here were initiated through their efforts and the current Board is building on their endeavours.

This year was also marked by the establishment of the new Department of Environment and Natural Resources in July 2010 which brings together staff from the Outback office of the former Department for Environment and Heritage and the staff of the SAAL NRM Board.

This new integrated service will use a landscape approach to manage natural resources across public and private land and provide a single face for environment and natural resources services in our region.

This is a significant undertaking and, with integration taking place behind the scenes, the community will start to see the benefits of a more coordinated approach to the management of our region's natural resources.

Finally, on behalf of the Board and our dedicated staff, I thank our community, volunteers, NRM Groups, Advisory Committees, funding bodies, and partner organisations for their efforts in contributing to the sustainable management of our region's natural resources and encourage you to continue to get involved with our various programs.

Enjoy the read!

Janet Brook

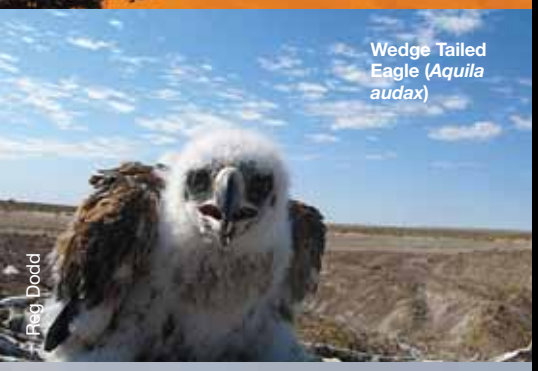
Presiding Member, SA Arid Lands Natural Resources Management Board

An Inland Bearded Dragon (*Pogona vitticeps*) Peter Pyman

An outback 4WD convoy Matt Turner


Matt Turner

Simpson Desert


Wedge Tailed Eagle (*Aquila audax*)

Reg Dodd


Algebuckina Bridge

Contents

Our region

Wilpena Pound, Flinders Ranges

The South Australian Arid Lands (SAAL) Natural Resources Management (NRM) Region covers over half of South Australia and includes some of the driest parts of the State.

It has the largest percentage of intact ecosystems and natural biodiversity in all of South Australia. The human population in this arid and semi-arid region is small – less than 2 per cent of the State – and geographically dispersed. The largest towns – Coober Pedy and Roxby Downs – are both associated with mining and are home to less than 5000 people, while the remaining scattered towns all have less than 1000 occupants.

There are 12 landholdings under Aboriginal management or co-management.

The region's environmental processes are determined by irregular rainfall and other episodic weather events that rarely follow predictable annual cycles.

Vast tracts of the region – over 40,000,000 hectares – are taken up by sheep and cattle stations and pastoralism remains the dominant land use. Although much smaller in area occupied, the mining, gas and petroleum industries have become increasingly significant land users.

Tourism has also exploded in recent years as unprecedented numbers of people visit the region to enjoy the outback experience including some of South Australia's most environmentally significant conservation reserves and National Parks, and its two great inland water systems, the Lake Eyre and the Great Artesian Basins.

In this region more than any other, communities and industries are intrinsically linked to the environment and to integrated natural resources management. Sheep and cattle are run extensively and rely on native vegetation for feed.

Natural landscapes provide the basis for the tourism industry, and water is a critical resource supporting biodiversity, communities and industries. Most water supplies in the region are sourced from the Great Artesian Basin, one of the world's largest underground water reservoirs.

Our Plan for the Region

On Track presents an overview of activities delivered by the SAAL NRM Board during 2010-11. These activities contribute towards achieving the short and long-term targets contained in the *SAAL Regional NRM Plan*.

The *SAAL Regional NRM Plan* is pivotal to achieving better management of the region's natural assets. It outlines a range of programs to help protect ground and surface water; ensure sustainable industries; achieve best practice management of pastoral lands; conserve natural ecosystems and biodiversity; and encourage community participation. The *SAAL Regional NRM Plan* is linked to both the *State NRM Plan* and *South Australia's Strategic Plan*, and provides direction, and outline priorities, for all partners who invest in the region.

The *SAAL Regional NRM Plan* was adopted by the Minister for Environment and Conservation in August 2010. It consists of two volumes: Volume 1 details the state of the region assessment and the policy and regulatory framework. It also contains a 10-year Strategic Plan, which includes an integrated framework of long- and short-term targets to achieve improvements in the condition of natural resources in the region. This is reviewed every five years.

Volume 2 describes the three-year Business Plan that represents the SAAL NRM Board's contribution towards achieving the region's vision and targets through the Board's actions and investments. The Business Plan identifies expected sources of investment funds and is reviewed annually.

Collaboration is the key to effective delivery of the *SAAL Regional NRM Plan* and the Board works closely with community groups, industry associations, government agencies, and individuals.

Contact the Board 8648 5977 for your copy of the *SAAL Regional NRM Plan.*

Measuring performance of the *SAAL Regional NRM Plan*

***SAAL Regional NRM Plan* adopted**

FIRST ANNUAL *ON TRACK*
Focus on SAAL NRM Board activities and overall progress towards MATs

WE ARE HERE (end of year 1)

2010 2012 2015 2020 2030

ANNUAL ACTIVITIES
Outputs that contribute to MATs and/or RCTs

1-5 YEAR MANAGEMENT ACTION TARGETS (MATs)
50 intermediate targets that contribute towards achieving 10-year resource condition targets

10 YEAR RESOURCE CONDITION TARGETS (RCTs)
10 long-term targets expressed in terms of the condition of status of natural resources. Reported 5-yearly

20-YEAR GOALS AND VISION
Three overarching goals and a vision expressing the long-term overall philosophy for natural resources management in the region

Our land & biodiversity

Plum-headed Finch (*Neochima modesta*)

Terry Dennis

157 properties participating in NRM activities

394 land managers participating in NRM activities

391,241 hectares managed for weeds

20,589,210 hectares managed for pest animals (including dingoes)

772,292 hectares managed for biodiversity/ sustainability

Maintaining the soils, native vegetation and native wildlife in the SAAL NRM Region is critical to the sustainability of our industries and communities.

The region contains some of the State's most environmentally significant and iconic terrestrial ecosystems including Sandy Deserts, Stony Plains, and the Gawler, Flinders and Olary Ranges. These ecosystems are home to a range of unique plants and animals, many of which are found only within this region. They also support our tourism industry which sees thousands of people flock here each year to enjoy our unique and diverse landscapes and native wildlife.

The production of cattle and sheep here is solely dependent on native vegetation as the grazing resource. Pastoralists, by far the largest land users, are legally responsible for maintaining land condition which means managing the pressure on native vegetation from the grazing of their stock but also from feral herbivores such as goats, camels, donkeys, horses and rabbits. Other pest animals include cats, pigs, foxes, and, where they occur south of the Dog Fence, dingoes.

Declared weeds that have demonstrated impacts in the region are cactus species, including Prickly Pear and Wheel Cactus, and African Boxthorn along watercourses. These species now occupy thousands of hectares of grazing land, undermining the long-term sustainability of pastoral production and biodiversity values of infested areas. There are also emerging weedy threats such as Pepper Trees and Buffel Grass as well as Weeds of National Significance – Athel Pine, Parkinsonia, Prickly Acacia and Mesquite.

While their current distribution and density is limited in South Australia, further introductions or spread of these weeds could occur via floodwaters, livestock movements or other means.

The SAAL NRM Board is working to gain a better understanding of many of the plant and animal communities in the SAAL NRM Region recognising that the key to their preservation relies on good land condition and in particular, healthy and sustainable vegetation communities where key threatening processes such as pests and soil erosion are managed effectively. Through our work with landholders to undertake on-ground recovery and conservation, we are finding the balance between biodiversity management and pastoral production.

10 YEAR RESOURCE CONDITION TARGETS

1. **Improve the average extent and condition of native vegetation**
2. **Maintain or reduce the risks to all species and ecological communities**
4. **Improve the condition of at least 50% of culturally-significant natural ecosystems which are suffering from disturbance**
5. **Reduce human-induced soil erosion**
6. **Maintain or improve the ecological sustainability of natural resource-based industries**

Threatened fauna program

19 pastoral properties surveyed

71 community members involved in project activities


Outback Field Naturalists near Irrapapana

The Board is committed to improving our knowledge of the distribution, behaviours and habitat of threatened and little-known fauna species in the SAAL NRM Region. As you will read in this snapshot of our projects in 2010-11 our work in this area relies significantly on community assistance and we extend our thanks to the many people who have contributed.

For further information, to contribute a sighting or a specimen, or to get involved with our volunteer groups, contact our Community Fauna Officer 8648 6977.

Plains Wanderer still eludes us

The quest to find out more about the Plains Wanderer (*Pedionomus torquatus*), a nationally endangered and poorly understood bird that is virtually impossible to find during the day, turned up just one confirmed sighting despite enlisting the assistance of nocturnal workers and landholders from key parts of the Plains Wanderer range.

Superficially resembling quail, the Plains Wanderer is a ground-dwelling bird found in sparse open plains. It is well-known in South Australia in a few areas of the North East Pastoral district. There are other scattered records across the arid zone but little is known about the Plains Wanderer's distribution or status in these areas.

Three kangaroo shooters and six landholders from the Marla-Oodnadatta and Marree-Innamincka NRM districts were shown Plains Wanderer, quail and other bird skins. Of five reported sightings several were followed up with spotlight searches across three properties.

Pernatty Knobtailed Gecko surveys

Found only within a small area of sand dune country to the south-west of Lake Torrens in South Australia, the known range of the Pernatty Knobtailed Gecko (*Nephrus deleani*) was extended this year by about 30 kilometres south.

In December and March, 10 volunteers from the Outback Field Naturalists and four local land managers participated in spotlighting surveys and trapping on Bosworth and South Gap Stations in an effort to better understand the northern and south-eastern extent of this species.

The Greenfield family of South Gap Station was thrilled to find the Pernatty Knob-Tailed Gecko on their patch with kids Nic and John contributing huge enthusiasm and labour to install and check trap lines and capturing a range of other interesting local critters.

Plains Rat and Woma Python surveys

Ten members of the Outback Field Naturalists from Roxby Downs and Coober Pedy, five staff from Anna Creek Station and four William Creek residents participated in Plains Rats (*Pseudomys australis*) and Woma Python (*Aspidites ramsayi*) surveys near William Creek during trips in January and April 2011.

The surveys recorded the nationally vulnerable Plains Rat in abundance during night-time spotlighting, as well as many signs and captures of other small mammals, including Spinifex Hopping Mice (*Notomys alexis*). An exciting capture also included a female Ampurta (*Dasycercus cristicauda*), the most southerly record of this species to date. Showing the critters to Anna Creek Station staff and William Creek locals led to further specimens and sightings of Plains Rats and other small mammals over the ensuing months.

Although no definite signs of Woma Pythons were found during the survey, the interest of locals was sparked and four additional sightings have been contributed since, representing important records from the south-west extreme of their known distribution (see p. 8 for further details).


Dusk Hopping Mice at Mundowdna Station, near Marree

Dusky Hopping Mouse extends its range

Pastoralists and other residents played a crucial role in surveys in the North East Pastoral, North Flinders and southern Marree-Innamincka NRM districts which confirmed the southerly range of the Dusky Hopping Mouse (*Notomys fuscus*) has expanded significantly in recent years.

A great deal of work during the 1990s suggested that this species was nationally vulnerable and restricted to a few key refuges, but since this time their range has extended to the south-west to areas well inside the Dog Fence and in habitats where they have not previously been recorded including stony plains and hilly areas.

The surveys were carried out across 13 pastoral properties with 42 local landholders, kangaroo shooters and other residents contributing many valuable specimens found dead on the road – or brought in by the cat – as well as anecdotal information and important local knowledge.

It is not known whether this current range expansion will be long-lasting. Future works will focus on revisiting the monitoring sites and investigating the influence of predators and competition with feral herbivores such as rabbits.

The survey was commissioned by the SAAL NRM Board and carried out by ecologists Rick Southgate (Envisage Environmental Services) and Katherine Moseby (Ecological Horizons).

Woma Python survey

Woma Python

Paul Waring

>150 public enquiries

89 Woma Python sightings from the general public

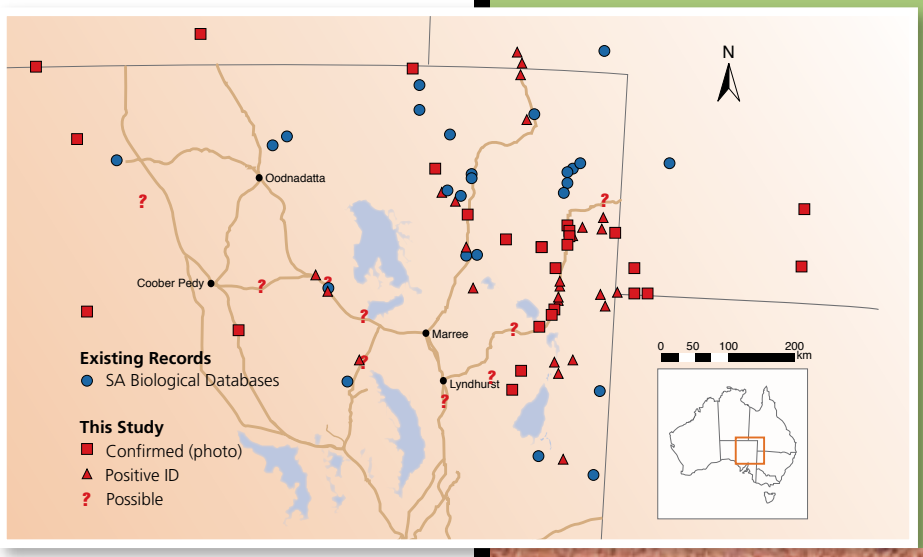
31 confirmed sightings

48 credible sightings

10 possible sightings

24 records of other snake species

The Woma Project, a unique idea to offer the general public the chance to win a fuel voucher in return for Woma Python sightings, finished up in 2011 after more than doubling the number of confirmed records of the species held in the SA Biological Databases and significantly adding to the knowledge held on this species in our State.



Nearly 90 Woma Python sightings were received since the call for sightings of these iconic desert pythons was first issued in *Across the Outback* in late 2009 and the offer of fuel vouchers grabbed the interest of local and national media.

Many of the sightings came from the north-east parts of the region, particularly from along the upper Strzelecki and Birdsville Tracks, areas well known for the species in South Australia.

A handful of sightings were also received from other areas not necessarily regarded as ideal Woma habitats, including stony plains and rocky areas – some a long way from any other known records.

Womas were formally widespread across arid Australia, particularly in sandy habitats, but the species has declined substantially in many areas and is now regarded as threatened in Western Australia, New South Wales and Queensland.

Its status in South Australia is not well understood despite its apparent disappearance from some areas, while remaining a commonly observed inhabitant in others, and the sightings by the public have made a significant contribution to our knowledge.

Woma Python

Kowari booklet and survey

Kowari

Land managers in the Marree-Innamincka NRM district who have Kowaris on their patch will be better able to recognise and manage this enigmatic critter after the release in May of the booklet *Kowari Country*.

Produced with support from the Marree-Innamincka NRM Group, the booklet is aimed at increasing understanding of Kowaris, the types of habitat that they use, and the land management practices which may benefit them.

The booklet contains general information on Kowaris as well as information on recognising and managing Kowari country.

The booklet was launched at Cowarie Station with 10 participants from Birdsville Track properties taking part in trapping demonstrations and looking at Kowari habitat on the gibber plains.

Unfortunately some Kowari skins on loan from the South Australian Museum were the closest participants got to seeing a Kowari with formal surveys carried out in May and June capturing about 650 native Long-haired (or Plague) Rats (*Rattus villosissimus*).

While the number of Kowaris was well down on previous years, this is thought to be due to the good season – the monopolisation of the traps by the native rats and the exceptionally high amount of food available to Kowaris made them much less interested in the fish oil and dog biscuit baits on offer.

If you would like a copy of *Kowari Country* contact the Board 8648 5977.

Kowari facts

Kowaris (*Dasyuroides byrnei*) are a threatened native marsupial that belong to the same family as the Tasmanian Devil (*Sarcophilus harrisii*) and Quoll (*Dasyurus* sp.).

Once occurring more widely, within South Australia these small but feisty carnivores are now only found in the pavement gibber areas of Sturt's Stony Desert.

Over the last decade or so, much work has gone into trying to learn more about Kowaris and to monitor their population numbers and distribution.

They are an icon in the Marree-Innamincka NRM district and their survival relies on continued good management of their habitat.

Searching for Kowari's on Cowarie Station on the Birdsville Track

Pest management programs

1,252 hectares managed for Weeds of National Signficance

389,489 hectares managed for Opuntia

500 hectares of Buffel Grass controlled

1,666,586 hectares managed for feral herbivores

The Board works with landholders, volunteers, and contractors on a variety of pest animal and plant control programs. We provide a snapshot of the year's activities here including case studies on our Biteback program for dingo control and Pest Management and Rangelands Rehabilitation program. Community participation is critical to the success of our projects and we encourage you to contact our Pest Management Officer 8648 5977 to see how you can get involved.

Weeds of National Significance

This year we have continued our work with Rural Solutions to minimise the spread of three Weeds of National Significance, working in the North East Pastoral, Marree-Innamincka and North Flinders NRM districts to minimise the spread of Athel Pine (*Tamarix aphylla*) along watercourses, and in the Kingoonya and North Flinders districts to eradicate Mesquite (*Prosopis* spp.) and Parkinsonia (*Parkinsonia aculeata*). Work has been undertaken on 10 properties with several hundred trees removed or sprayed.

Pepper Tree

One of the few trees in the region that provides shade, the introduced Pepper Tree (*Schinus areira*) is becoming increasingly weedy in the SAAL NRM Region. We are currently reviewing the threat of this species along watercourses and assisting landholders with their removal with work occurring initially on one property in the North Flinders.

African Boxthorn

Work has also been undertaken to remove African Boxthorn (*Lycium ferocissimum*), a declared weed which congests waterways and competes with native vegetation, from two properties in the North East Pastoral district.

Buffel Grass

The SAAL NRM Board has also been working with landholders and the Department of Planning, Transport, Energy and Infrastructure to manage infestations of Buffel Grass (*Cenchrus ciliaris*) along roadsides, the main pathway by which this plant is spreading in the region. This work was funded after the Kingoonya NRM Group raised with the Board their concern that Buffel Grass is heading south. The Board has also initiated Buffel Grass control along the railway line between Tarcoola and Kingoonya.

African Rue

The SAAL NRM Board has an ongoing program to manage outlier populations of African Rue (*Peganum harmala*), a declared weed native to North Africa that is difficult to eradicate once established. This year, African Rue has been managed on five properties in the North East Pastoral and North Flinders NRM districts where it has most likely spread by vehicles or machinery from the original infestation. A workshop was held at Yunta in October bringing together various agencies with control programs for African Rue in place.

Goats

The SAAL NRM Board combined its resources with the Department of Environment and Natural Resources (DENR) to strategically remove over 6000 goats (*Capra hircus*) from the Flinders and Olary Ranges, the majority of them in the SAAL NRM Region.

Twenty-seven properties (including Parks and properties in the Northern and Yorke NRM Region) were targeted including 19 in the SAAL NRM Region. DENR's Bounceback program has been particularly successful in reducing the impact of goats, a declared pest, on native vegetation and increasing Yellow-Footed Rock Wallaby (*Petrogale xanthopus*) numbers in the North Flinders and Olary Ranges. This year's removal program has been important to keep goat populations at low levels.

Black Rats

Black Rats (*Rattus rattus*) are currently being managed on a property in the Marree-Innamincka NRM district after inadvertently being introduced in fodder for horses. The introduced Black Rat is not known to occur in the region and a trapping and baiting program is now underway on the property to eradicate this species. The SAAL NRM Board has been providing technical advice and assistance to prevent the spread of the rats and is continuing to monitor the situation.

Rabbits

Rabbit (*Oryctolagus cuniculus*) management plans have been paying off this year with a notable recovery to pasture on 11 properties in the North Flinders and North East Pastoral NRM districts where rabbit warrens have been progressively destroyed. There has been excellent regeneration after the year's rain events and improvements to properties particularly where rabbit control programs are maintained and warrens actively destroyed to prevent a ready home for future rabbits.

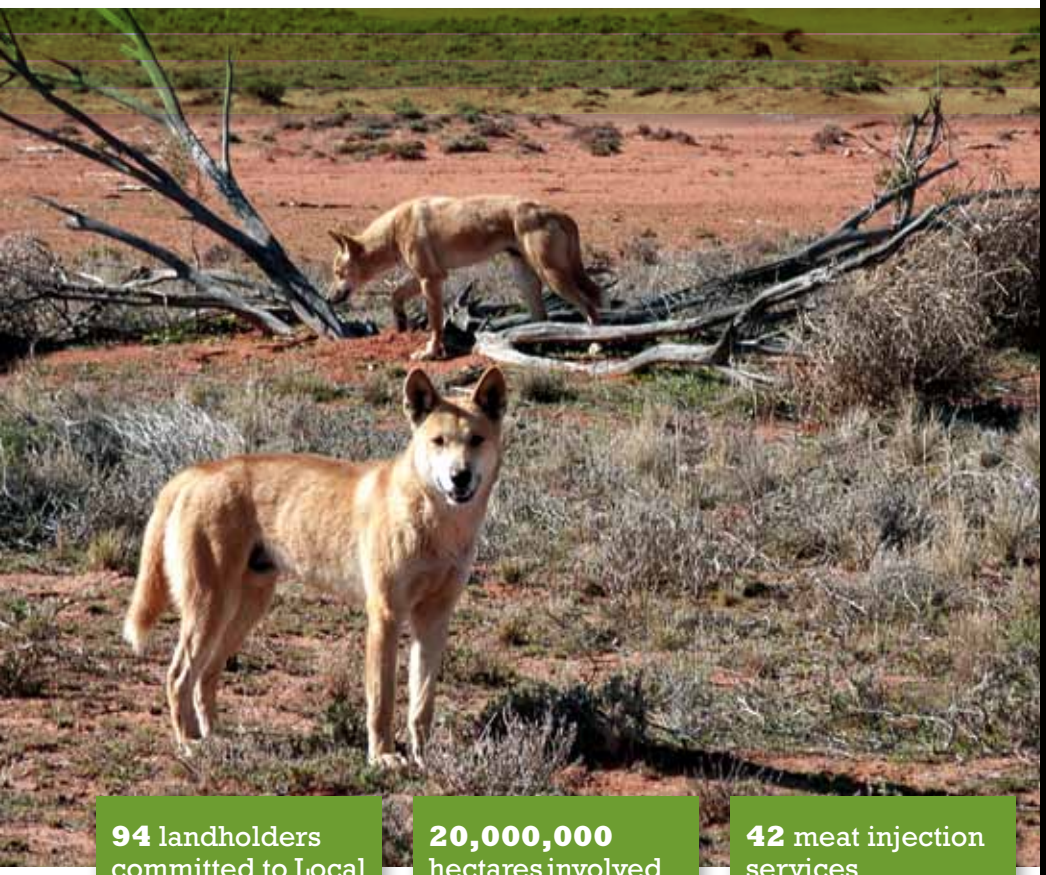
Pigs

For the first time, landscape-scale pig (*Sus scrofa*) control is being undertaken on pastoral properties in the SAAL NRM Region with the commencement of a feral pig control program that responds to concerns raised by the Marree-Innamincka NRM Group and local landholders in the far north-east of the State. The program is a cooperative effort driven by landholders, the SAAL NRM Board and Desert Channels Queensland which aims to prevent their spread into South Australia from Queensland – where the majority of feral pigs occur – along the Diamantina catchment. An aerial survey to assess current pig densities in the Diamantina catchment was delayed by rain but will take place in November 2011. DENR is managing a similar program along the Cooper Creek system.

Get involved

Help keep our region pest-free. Report any new plant or animal sightings to the Board 8648 5977 and always maintain good property and vehicle hygiene.

Biteback program for dingo control



94 landholders committed to Local Area Planning

20,000,000 hectares involved in dingo control

42 meat injection services

21 local area dingo control groups

13 applications for dogger funding

The Biteback program for dingo control increased its foothold in the SAAL NRM Region this year with 21 local area dingo control groups now operating in the districts south of the Dog Fence.

Nearly one hundred landholders are now actively participating in Biteback which was progressively rolled out to the eastern Gawler Ranges, Kingoonya and North East Pastoral districts during the year, having previously been established in the North Flinders-Marree NRM districts.

One of this year's key highlights was an additional $25,000 of funds from Australian Wool Innovation to supplement existing Sheep Industry Fund support allowing the Board to bring forward the roll out of the Biteback program to the Gawler Ranges district where landholders had reported an increasing issue with dingoes.

With trapping shown to be most effective when it follows a coordinated baiting program, landholders were also given access to a dogger, a professional trapper, to specifically target dingoes that have not taken baits.

Another big achievement was a policy change by the Minister for Environment and Conservation to allow private landholders to aerially dispense baits on their properties to manage dingoes.

Biteback has become a shining example of how landholders can work together and with government and industry to drive decisions on land and pest management in their districts and it is nationally recognised for improving participation in dingo control.

Heather Miller, Biteback Coordinator and the SAAL NRM Board's Dingo Project Manager, won the Animal Control Technologies Australia Award for Practical Pest Management Excellence before 300 attendees at the Vertebrate Pest Conference in Sydney in June.

Here's a snapshot of what happened in your district in 2010-11

North Flinders/Marree

An initiative of the community-based North Flinders NRM Group, Biteback has been running in this district for two years. Since then maps plotting 2009 and 2010 dingo sightings, movements and control measures have been developed and printed. Over 50 landholders were supplied meat at the October and March meat injection service.

North East/Kingoonya

Biteback commenced in both these districts in late December with four workshops held in the North East and 42 per cent of properties represented, and one workshop held in the Kingoonya district with 37 per cent of properties in attendance. Attendees discussed Local Area Plans; current dingo sightings, movements and control measures; trials of PAPP (para-aminopropiophenone), a new toxin for dingo control; the use of M44 ejectors, a baited, spring-activated control device; aerial baiting; the employment of doggers; and the use of freezers, drying racks and injection stations.

Eastern Gawler Ranges

Biteback commenced in the eastern Gawler Ranges with a Local Area Planning workshop in Port Augusta in December. Twelve landholders are involved in the eastern side and 25 per cent of properties were represented at the workshop. Local Area Planning workshops involved the collection of information on current dingo sightings, movements and control measures.

Get involved

The region experienced terrific rainfall in 2010-11, increasing the available food source for dingoes and providing an alternative to lambs and ewes, but unless dingoes are controlled now stock loss will occur when the inevitable dry times return and the current food source drops off.

Dingoes are a declared species south of the Dog Fence and the Biteback program offers a coordinated landscape-scale approach to control efforts.

Landholders in the SAAL NRM Region south of the Dog Fence who are not currently involved with the Biteback program are encouraged to get in touch with the Board 8648 5977 to find out how they can get behind the initiative.

Pest Management and Rangelands Rehabilitation

Wheel Cactus control

Forty landholders took part in the Pest Management and Rangelands Rehabilitation (PMRR) program in 2010-11, undertaking a variety of activities including rabbit control, weed control, and soil conservation works.

The PMRR program offers landholders a terrific opportunity to participate in a coordinated land and pest management program where the Board shares in the costs, helps with the paperwork, and provides technical support, and the landholder selects the contractor to carry out the work at a time that suits them.

Two landholders who participated in the PMRR program in 2010-11 share their experience here.

Get involved

Land degradation, weeds and feral animals are significant problems facing all land managers. We have funding available to assist 'land managers' so if you're a Progress Association or community group, or manage Aboriginal or pastoral land, you are eligible to apply.

There are a range of activities that will be considered including a number of priority pest animal and weed species that are serious threats to rangelands condition. Land rehabilitation projects may include erosion control and revegetation, contour furrowing, water ponding, and revegetation.

Contact one of the Board's NRM Officers for more information 8648 5977.

CASE STUDY

David and Carol Warwick, *Holowiliena South Station*

David and Carol Warwick of Holowiliena South Station in the North Flinders NRM district have ripped about 4000 rabbit warrens since 2008. Financial assistance from the Board's PMRR program has enabled them to vastly expand earlier work that had been undertaken privately.

By running their rabbit control program in conjunction with the Board's other programs for dingo (Biteback), rabbit, and goat control, the Warwicks have taken an integrated approach to their property management, seeing the benefits of this work through the regeneration of native vegetation, especially following the drought.

Without this financial assistance they say they would never have been able to treat such an extensive area.

'We have got great value for money from the PMRR program with the monies going directly into the program and not wasted in other areas such as administration.'

They also credit the programs for being ongoing and not just one-offs allowing them to work with their neighbours and local groups such as Cradock Landcare to combine their treatment efforts and coordinate the use of contractors/ equipment.

CASE STUDY

Gary Fuller, *Wabricoola Station*

Gary Fuller has ripped in excess of 6500 rabbit warrens and destroyed 250 African Boxthorn on Wabricoola in the North East Pastoral NRM district with the support of the SAAL NRM Board's PMRR program.

Gary has seen a great improvement in natural vegetation over the area ripped during the drought years, and particularly since the spring rains of 2010.

'Areas that were once damaged by rabbits and drought are now covered with bushes and grasses and there is no evidence of rabbits on large areas of the property. With low stocking rates much of this vegetation should be retained which will minimise dust storms and erosion in years to come.'

The rabbit control program started in mid-2007 with time set aside each year until ripping was completed in mid-2011.

Gary encourages land managers to apply for funding for similar pest control or land rehabilitation projects under the PMRR program, stating that the support the program offered made his long-term goals affordable and achievable.

'Without the support of the Board's staff and funding this work would not have gone ahead under the economic climate of the last decade.'

Ecosystem Management Understanding™

An aerial view of EMU™ in action on Todmorden Station

14 properties covering **3,742,600** hectares under EMU™ management

719,000 hectares of pest animal control

772,292 hectares managed for biodiversity/ sustainability

The EMU™ process, an approach to land management and property planning which combines local knowledge of country with scientific expertise, was running on 14 properties in 2010-11 including pastoral leases and conservation reserves.

Five new properties joined the EMU™ program and there is growing interest across the region.

Preparation is well underway for a field day on Todmorden Station planned for November 2011, an initiative of the Marla-Oodnadatta NRM Group and station owner Douglas Lillecrapp.

So how does EMU™ work?

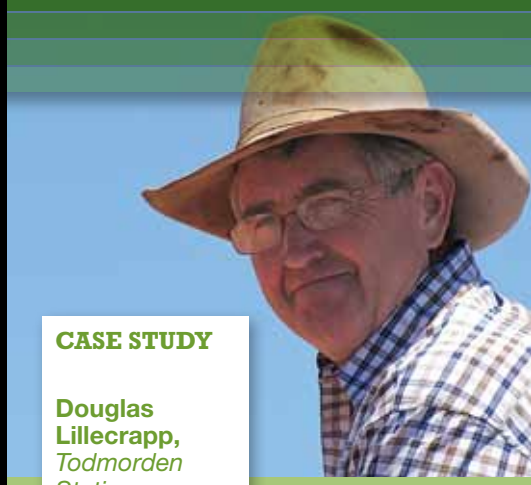
An initial property visit identifies baseline property features and areas of concern which are plotted on clear plastic overlays to develop a property map. Landscape processes and key areas of the property are further investigated with a fly-over and site visit and a visual record is developed of air and ground photos.

These activities provide a way of tracking landscape processes, condition and trend, helping the land manager to make timely, strategic and relatively simple management interventions in specific areas or sites that can have far-reaching positive consequences.

Read what Douglas Lillecrapp has to say about his involvement with the EMU™ project and how it has changed the way he manages Todmorden Station.

Get involved

If you are a land manager in the SAAL NRM Region who is keen to combine your knowledge with ecological science to develop sustainable land management practices on your property contact the Board's NRM Officers 8648 5977 to find out the opportunities to get involved.



CASE STUDY

Douglas Lillecrapp, *Todmorden Station*

Douglas Lillecrapp from Todmorden Station was one of the first South Australian rangelands pastoralists to take part in EMU™ in 2009, with funding from the SAAL NRM Board and Centralian Land Management Association.

While Douglas has focused on getting value for money out of the EMU™ process and concentrated on the most cost-effective interventions he has also taken a longer-term, whole-of-landscape approach with most of the restoration works on Todmorden focused on protecting and enhancing healthy landscapes.

'One of the benefits of EMU™ is it focuses on your best and healthiest country, not your most degraded country.'

'But I was also keen to include an area of Todmorden showing signs of topsoil stripping and lost productivity – it's an area I personally want to see fixed and I can try out different approaches that I can share with other land managers in the area.'

Through his participation in the EMU™ process, Douglas says he is better able to balance productivity and conservation.

'EMU™ has given me a much greater appreciation of the ecological management on Todmorden as well as the incentive and confidence to undertake land rehabilitation.'

'I have learned to identify and read landscape processes, condition and trend and apply this information to daily management practices.'

And he credits the program for allowing the land manager to guide the process.

'EMU™ is a helpful management tool as landholder experience is central to the success of the EMU™ concept. My opinions are recognised and incorporated into my new daily management program.'

And, according to Douglas, the building block approach means the more you do the more confidence you gain. 'Access to expertise was critical to get things started, but I am now starting to feel confident in managing and coordinating restoration activities, albeit with access to expert advice periodically.'

Significant Environmental Benefit offsets

Prominent Hill

With part funding from the Native Vegetation Council (NVC) and State NRM Program, the SAAL NRM Board appointed its Industry Support Officer in July to explore innovative ways to achieve Significant Environmental Benefits (SEBs) in the SAAL NRM Region under the *Native Vegetation Act 1991.*

Increased mining activities in the region are resulting in some large offsets to compensate for loss of vegetation.

This presents opportunities for pastoralists and other landholders to become the custodians of areas of native vegetation being preserved or enhanced to compensate for clearances.

Over the last 12 months the Board and the NVC have been working with mining and petroleum companies, pastoralists and other holders of large tracts of land in the SAAL NRM Region to explore ways in which they can partner on joint projects that derive SEBs.

The chief focus for this year has been the Gawler Craton minerals area – the area roughly between Port Augusta, Marla and Tarcoola – where most of the region's mining activities are occurring.

The Industry Support Officer is also a one-stop-shop for native vegetation issues in the region and is involved in reporting or commenting on native vegetation clearances.

In the SAAL NRM Region two major mines have been under development this year – Peculiar Knob and Wilcherry Hill – where there is the potential to return over $1m in environmental works.

Get involved

The SAAL NRM Board and the Native Vegetation Council recognises that landholders have a unique and often intimate knowledge of their country and are keen to hear ideas for how SEBs could be set up and managed in a manner that is both appropriate to the region and sustainable for landholders.

To submit your ideas contact the Board's Industry Support Officer 8648 5977.


Prominent Hill

What is a Significant Environmental Benefit?

When an application to clear native vegetation is approved by the Native Vegetation Council, conditions are attached to ensure that the clearance is offset by restoration work that provides a significant environmental benefit.

Examples of works commonly undertaken to offset authorised clearance include:

- the establishment and management of a set-aside area to encourage the natural regeneration of native vegetation
- the protection and management of an established area of native vegetation
- entering into a Heritage Agreement on land where native vegetation is already established to further preserve or enhance the area in perpetuity
- a payment to the Native Vegetation Fund (only where the above options are not possible).

National Total Grazing Pressure workshop

SATC

Sheep in the Flinders Ranges

A national workshop was held in Adelaide in February bringing together producers who are managing total grazing pressure on their properties.

The goal of the workshop was to discuss how best producers can be supported by government and industry to manage total grazing pressure, and how other pastoralists can be encouraged to undertake total grazing pressure management.

The workshop attracted nearly 50 people from across the country with 17 pastoralists participating from South Australia, Western Australia, New South Wales and Queensland and other attendees including government representatives and staff from various NRM organisations.

Participating pastoralists supplied case studies on how they manage total grazing pressure on their properties, what they see as the biggest issues regarding total grazing pressure management, and possible solutions to be considered.

The types of activities being used by the pastoralists to manage total grazing pressure ranged from implementing new infrastructure, to controlled grazing regimes across their properties, harvesting feral animals and implementing more strategic grazing practices through property planning.

Participants were also keen to see greater recognition at a national level of the value of total grazing pressure management in improving land condition in the rangelands of Australia.

This will be coordinated in conjunction with the National Rangeland NRM Alliance (see p. 16) as part of their initiative to raise the profile and investment in the rangelands.

The SAAL NRM Board provided funds for the coordination and facilitation of the event which was managed by Rural Solutions SA and supported by the Cooperative Research Centre for Remote Economic Participation.

Get involved

If you missed out on this workshop, make sure you check out *Grazebook*, a web-based forum for rangelands producers which was established after the workshop by pastoralists Ben Forsyth (WA) and Ashley McMurtrie (NSW), to continue discussions.

Visit www.grazebook.com

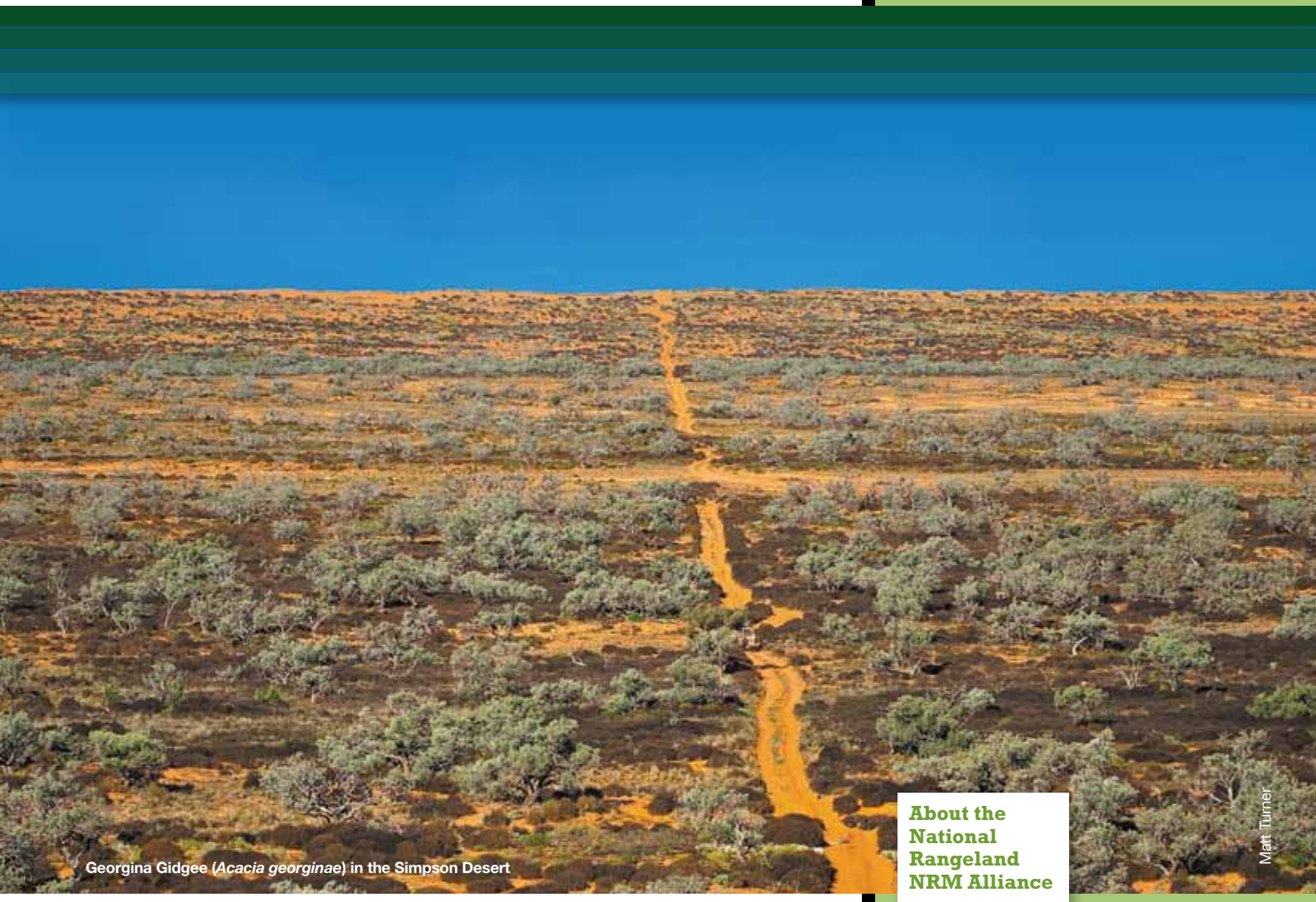
What is total grazing pressure?

Total grazing pressure refers to the combined effects of all grazing animals, native or introduced.

It is important to manage in the rangelands because it is the major driver of sustainable land management, resulting in positive results for production, environment and people.

Total grazing pressure is managed in different ways by different producers but the over-riding principle is to understand and manage the impact of grazing animals to improve vegetation diversity and cover.

National Rangeland NRM Alliance



Georgina Gidgee (*Acacia georginae*) in the Simpson Desert

Matt Turner

About the National Rangeland NRM Alliance

The National Rangeland NRM Alliance is a collaboration of 14 natural resources management bodies from across Australia, including the SAAL NRM Board.

Established in 2008, the National Rangeland NRM Alliance provides a forum for rangeland NRM bodies from Western Australia, Northern Territory, South Australia, New South Wales and Queensland to meet, share and collaborate for better outcomes. With its member groups presiding over 80 per cent of Australia, the driving force behind the Alliance is the recognition that national issues require a national approach and that regional competition for funding around these issues can be counter-productive. The Alliance works with the Australian Government and other funding bodies to get rangelands management on the national agenda.

For further information contact the Board's National Rangeland NRM Alliance Coordinator 8648 5977.

Members of the National Rangeland NRM Alliance met three times during the year with their main achievement being the progression of the Australian Rangeland Initiative (ARI).

ARI is being driven by a collaboration of organisations, agencies, land managers and interest groups to increase recognition that the Australian rangelands, with its inherent links between productivity, biodiversity, social and financial issues, needs to be seen and approached in a different manner.

A workshop in Sydney in April brought together representatives from a range of organisations with an interest in the rangelands (eg Australian Government, National Farmers Federation, Australian Wool Innovation, Meat and Livestock Australia, Australian Collaborative Rangelands Information System) who showed strong support for such an initiative and its two key result areas.

» 1. Building a national rangelands agenda

This will create a national awareness of the importance of Australia's rangelands, leading to a commitment to implement the *National Principles for Sustainable Resource Management in the Rangelands* as endorsed by the Natural Resource Management Ministerial Council in 2010.

» 2. Improving ground cover/biodiversity

The ARI will work to improve ground cover and therefore biodiversity across the extent of the Australian rangelands. This will have a significant impact on erosion including preventing soil leaving the landscape through dust storms and increasing carbon storage across Australia's rangelands.

Dingo Research Project

A juvenile dingo takes shelter in a cow carcass

Now in its third year, the SAAL NRM Board's Dingo Research Project continued its trials on unbaited and baited paddocks on four cattle stations situated north of the Dog Fence in 2010-11. And thanks to Santos we now have funds to see the project through to completion in 2014.

Every year the Dingo Research Project conducts pregnancy tests on cattle from 1080 baited and unbaited paddocks to establish the effectiveness of dingo baiting in reducing calf loss. This year pregnancy tests occurred only on Todmorden, Cordillo and Lambina Stations as Quinyambie's treatment paddocks had been destocked during the drought.

The baited and unbaited paddocks on all four properties also continue to be surveyed for wildlife activity (native and introduced animals) and their relative abundance, with surveys occurring on each property four times throughout the year. These surveys include the collection and examination of dingo scats (or poos) to observe dingo diet.

Quinyambie was central to a new partnership with the Invasive Animals Cooperative Research Centre and the trial of new poison baits containing PAPP (para-aminopropiophenone). PAPP is selectively more toxic to wild dogs than it is to native species and has an effective antidote. The results of the Quinyambie trial will build on work already conducted in New South Wales and Queensland and contribute to the possible registration of PAPP for dingo control.

Meanwhile, the Marla-Oodnadatta NRM Group initiated a flow chart for the process of obtaining dingo bait approvals north of the Dog Fence. This is currently under review with the Marla-Oodnadatta and Marree-Innamincka NRM Groups.

The SAAL NRM Board thanks the State NRM Program and Santos for their support. Santos made a further commitment of $625,000 over three years after an initial contribution of $125,000 through the Board's Industry Partnerships Program (see p. 29).

Why are we doing this research?

The SAAL NRM Board's Dingo Research Project has been operating since 2008 on four cattle stations situated north of the Dog Fence in the SAAL NRM Region – Lambina, Cordillo, Quinyambie and Todmorden.

North of the Dog Fence dingoes are neither specifically protected or declared, but are regarded as legitimate wildlife species with a valuable ecological role. In this area they are only baited at times necessary to provide temporary protection to calves when alternative prey sources are low due to seasonal conditions.

In order to develop best practice dingo management strategies it is crucial to understand the role that dingoes play in the ecosystem in this part of the region.

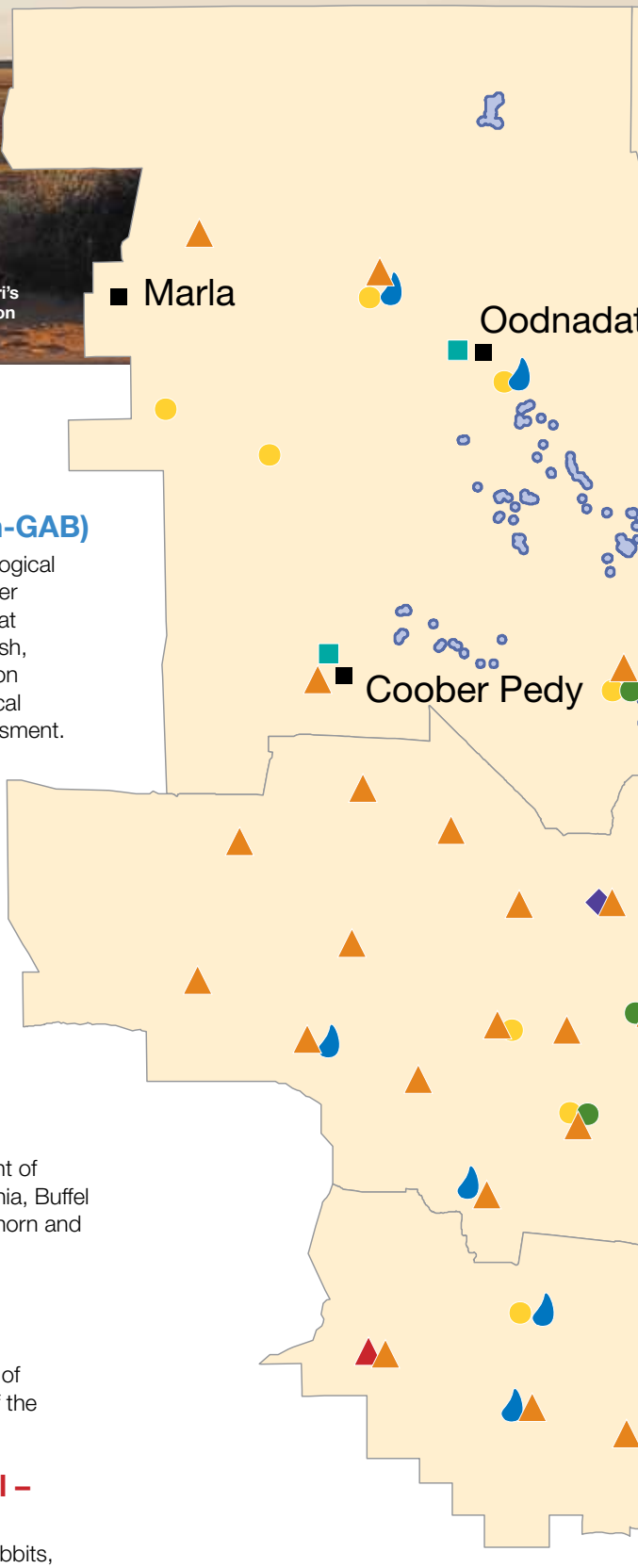
Each of the participating properties maintain 1080 baited and unbaited paddocks so that we can investigate the relationship between dingoes, 1080 baiting, calf predation and biodiversity. We are identifying the proportion of calf losses attributable to dingoes, the environmental factors associated with increased calf predation, and the ability of baiting to protect against predation. And we are collecting information on dingo movement and dingo diet to help establish the role of dingoes in the regulation of other predator and prey species (eg foxes, cats, kangaroos and rabbits).

On completion of this project in 2014, the Board expects to have gathered the necessary data to better manage dingoes for cattle production while maintaining populations of dingoes as a wildlife species and for any biodiversity services they may provide.

Our activities

Mapping the SAAL NRM Board's influence in 2010-11

Searching for Kowari's on Cowarie Station on the Birdsville Track



This map shows the location of NRM activities delivered across the region by the SAAL NRM Board during 2010-11. Each icon represents a project or activity undertaken on a property but is not representative of the area covered.

Biodiversity projects

Projects in which community members have participated, such as surveys, monitoring, research and workshops which have contributed information about threatened species in the region, including the Dusky Hopping Mouse, Kowari, Pernatty Knob-tailed Gecko, Plains Wanderer, Woma Python, Bronzeback Legless Lizard and Plains Rat.

Aboriginal community projects

Projects undertaken across five Aboriginal communities, including pest animal and plant control, fencing and plant surveys, all of which help reduce threats to local flora and fauna as well as opportunities for sharing of scientific and traditional ecological knowledge.

Land management – EMU™

Activities relating to the delivery of the EMU™ process for land management and property planning.

Land management – other

A range of other activities focused on sustainable productivity for pastoral lands management, such as landscape-scale property management planning workshops, erosion control, feral animal and plant control and biodiversity conservation.

Water projects (non-GAB)

Covers the evaluation of the ecological characteristics of permanent water holes that are not part of the Great Artesian Basin (GAB), including fish, flora and fauna surveys, vegetation condition assessment, hydrological measurements, and threat assessment.

Water projects – (GAB)

Shows GAB springs that have been assessed, resulting in robust hydrological, hydrogeological and ecological data. This is part of a longer-term project funded through the National Water Initiative and the map shows all sites assessed over the past three years.

Weed control

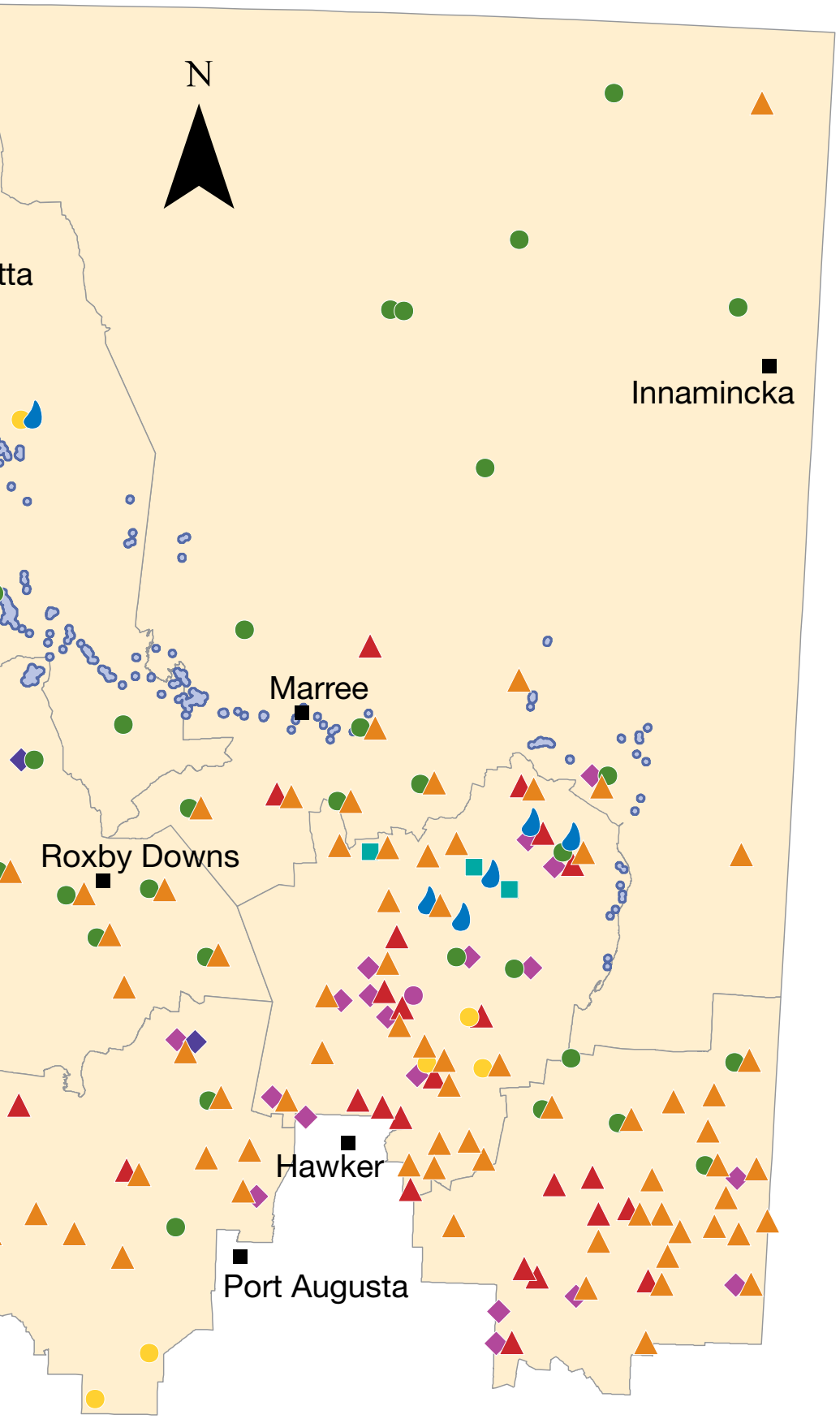
Activities include the management of Cactus, Prickly Acacia, Parkinsonia, Buffel Grass, African Rue, African Boxthorn and Pepper Tree.

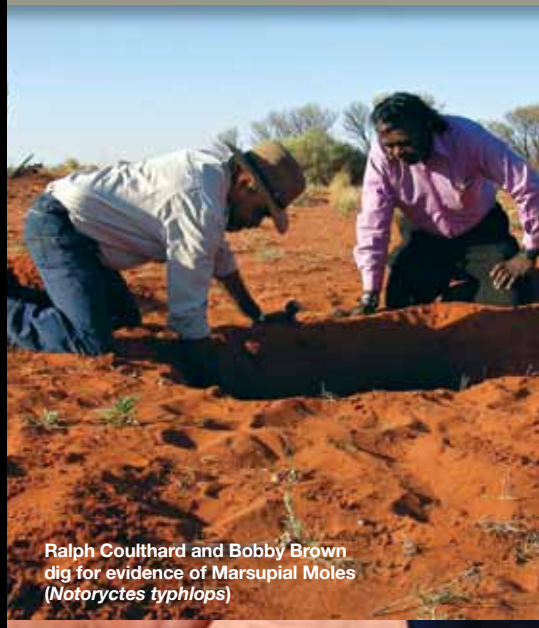
Pest animal control – dingo

Relates only to the management of dingoes, both north and south of the Dog Fence.

Pest animal control – other

Relates to the management of rabbits, camels, goats and pigs.

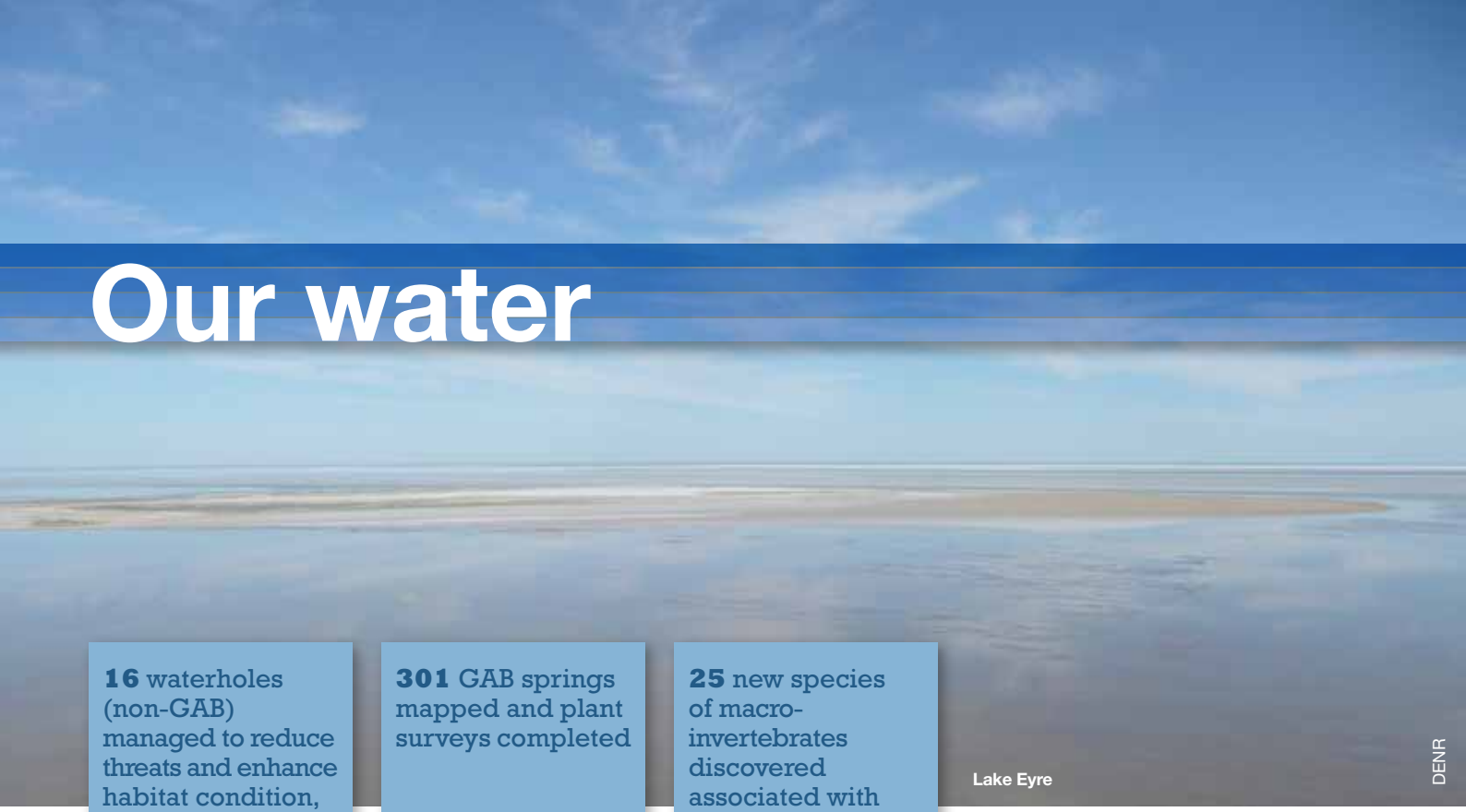



Ralph Coulthard and Bobby Brown dig for evidence of Marsupial Moles (*Notoryctes typhlops*)


Ampurta (*Dasycercus hillieri*)


Dingo (*Canis lupus*)

Our water



Lake Eyre

DENR

16 waterholes (non-GAB) managed to reduce threats and enhance habitat condition, resilience and connectivity

301 GAB springs mapped and plant surveys completed

25 new species of macro-invertebrates discovered associated with GAB springs

In the SAAL NRM Region water is the magnet that attracts people, biodiversity and industry. It is the key resource in an otherwise dry environment. For a region where rainfall is so low, there is an amazing ability to support a huge diversity of life through a phenomenon known as 'boom and bust'.

North of the Dog Fence the region is dominated by four major catchments – Neales-Peake, Cooper Creek, Georgina-Diamantina, and Macumba – large surface draining networks which terminate at Lake Eyre. In 'boom' periods floodwaters from interstate and major rainfall events enter the catchments and recharge the region's lakes, dams and wetlands including the RAMSAR-listed Coongie Lakes.

Plants regenerate and waterbirds and fish use the opportunity to breed in large numbers attracting thousands of visitors wishing to experience this unique phenomenon.

During frequent and prolonged droughts or 'bust' periods, waterbodies with permanent fresh water such as Algebuckina Waterhole in the Neales River catchment and Cullyamurra Waterhole in the Cooper Creek catchment provide critical refuges for plants and animals.

Underlying the Lake Eyre Basin is the Great Artesian Basin (GAB), one of the largest groundwater basins in the world. The GAB is characterised by groundwater-fed springs which support unique aquatic life forms. Dalhousie Springs, a popular tourist destination, is one of the best examples of a GAB spring complex in Australia. It supports a number of endemic aquatic species.

In the southern region, including the Gawler Ranges and North Flinders, the rainfall is low and the catchments are generally small. Surface water flows are generated on hilly-rocky headwaters and the majority is rapidly lost as the flows pass onto the plains or into shallow terminal lakes where it is lost through evaporation. Rain-fed rockholes and groundwater-fed springs are important cultural and ecological features in these landscapes.

The water resources of the SAAL NRM Region are to a large extent unmodified and in good condition. However, there is a threat from pest species and pressure from the tourism and mining sectors for water requirements.

In such an unpredictable climate with high variability from year to year and with so much life dependent on a healthy water supply, careful management of water in the region is critical. The SAAL NRM Board is responsible for the region's *Water Allocation Plan* and is committed to understanding and maintaining healthy water flows, preserving and restoring water quality, recording local knowledge about the region's water resources, and providing physical protection from feral plants, animals, and erosion. The Board is actively working to understand how these systems function by collecting valuable baseline data to determine the health and status of these systems and maintain them for future generations.

10 YEAR RESOURCE CONDITION TARGETS

3. Improve or maintain the extent and condition of at least 50% of priority aquatic ecosystems

7. Improve or maintain the average quality and pressure of groundwater

8. Improve or maintain flow regimes and water quality in surface water systems

Allocating and maintaining GAB water

Tail of The Bubbler mound spring

4691 GAB springs mapped to survey standard (since 2008)

25 new species of macro-invertebrates discovered associated with GAB springs

360-470 megalitres per year returned in environmental flows through weed removal

The $17 million multi-disciplinary 'GAB project' had a busy third year with the various agencies involved wrapping up their field work for what will be an intense period to bring the research together into a series of reports.

Coordinated by the SAAL NRM Board, the 'GAB project' aims to further our knowledge of groundwater processes in the western margins of the Great Artesian Basin to increase our capacity to sustainably manage the resource.

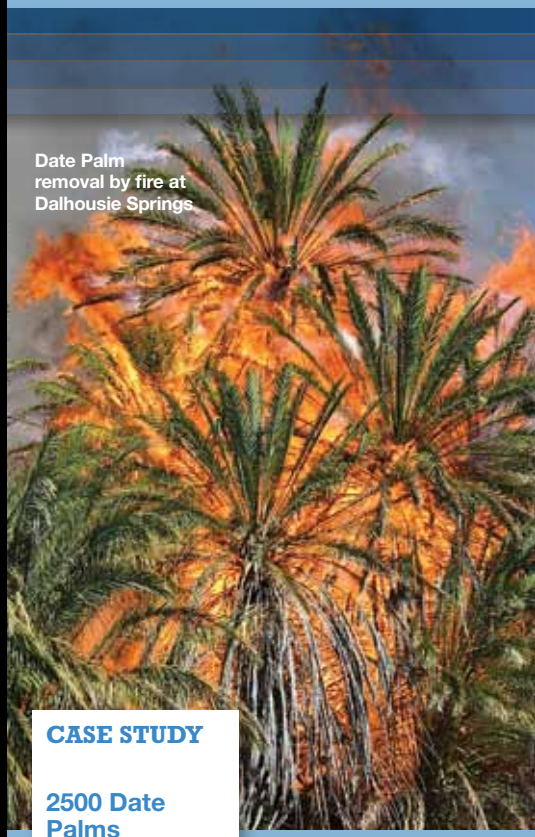
The GAB provides essential water supplies for pastoralists, rural communities and industries and it is therefore vital to have an accurate understanding of the system in order to balance user requirements with those of the environment.

Principally, the data will refine the current Water Allocation Plan for the Far North Prescribed Wells Area thereby increasing our capacity to sustainably allocate the resource. This will become increasingly important in coming years as the demands on the Great Artesian Basin intensify due to the projected growth in mining, petroleum and geothermal industries in the region.

Commencing in 2008, the four-year project has engaged staff from various agencies, including some of the world's best hydrogeologists, ecologists, spatial analysts and geophysicists.

The reports – on hydrogeology; groundwater recharge and groundwater flow; groundwater discharge; remote sensing and spatial mapping; management of spring ecosystems; and spring classification and risk assessment – will be available in 2012.

The 'GAB project' is a partnership with the National Water Commission, SA Department for Water, SA Department of Environment and Natural Resources, NT Department of Natural Resources, Environment, the Arts and Sport, and the Commonwealth Scientific and Industrial Research Organisation.



Date Palm removal by fire at Dalhousie Springs

CASE STUDY

2500 Date Palms removed from Dalhousie

The completion of the second phase of Date Palm (*Phoenix dactylifera*) removal at Dalhousie Springs in August 2010 is a massive win for the spring environment.

Just under 2500 palms have been removed from the springs since removal efforts began in 2005 which has seen the return of environmental flows and the recolonisation of springs by sensitive wetland fauna, including the endemic Dalhousie Yabbie (*Cherax albidus*).

Date Palms are voracious consumers of water with individual palms using as much as 180,000 litres of water per year and the removal of the Date Palms at Dalhousie Springs is conservatively estimated to have returned between 360-470 megalitres per year in environmental flows.

Date Palms also wage chemical war on other plants in the area by releasing toxic substances into the soil and water that suppress the growth of rival plants.

This kills the phytoplankton which causes the death of nearly all of the fauna associated with the spring. At Dalhousie Springs this has resulted in the localised extinction of several endemic species in springs badly affected by Date Palms.

An outcome of the 'GAB project', the 2010-11 removal work was a partnership between the SAAL NRM Board, National Water Commission and Traditional Owners with on-ground work coordinated by the Department of Environment and Natural Resources.

An assessment of the Neales River and Cooper Creek catchments

Cooper Creek, near Innamincka

SATC

The SAAL NRM Board is working to identify, maintain and secure priority aquatic ecosystems associated with important drainage lines, floodplains and wetlands in the SAAL NRM Region.

The Board currently has two projects underway – in the Neales River and Cooper Creek catchments – that are establishing baseline information that will increase our understanding and inform the management of these catchments to ensure they are sustainably managed for future generations.

One of the key objectives of these projects is to identify the catchments' 'critical refugia'. Critical refugia are bodies of permanent surface water (eg springs, waterholes) that provide oases for aquatic plants and animals during periods of drought. The values of these as refuge areas have rarely been assessed and an understanding of the processes that influence these systems will help with setting management priorities for the region.

The projects draw from a wide range of technical expertise including hydrology, aquatic ecology, terrestrial ecology, geomorphology, and cultural landscape assessment to identify the key processes and threats that influence the health of the catchments.

The projects work with local communities, industries and government bodies, providing recommendations for on-ground management at priority sites that address threats such as erosion, over-grazing, invasive pests, and tourism and mining impacts.

Here is a snapshot of the Neales River and Cooper Creek catchment projects.

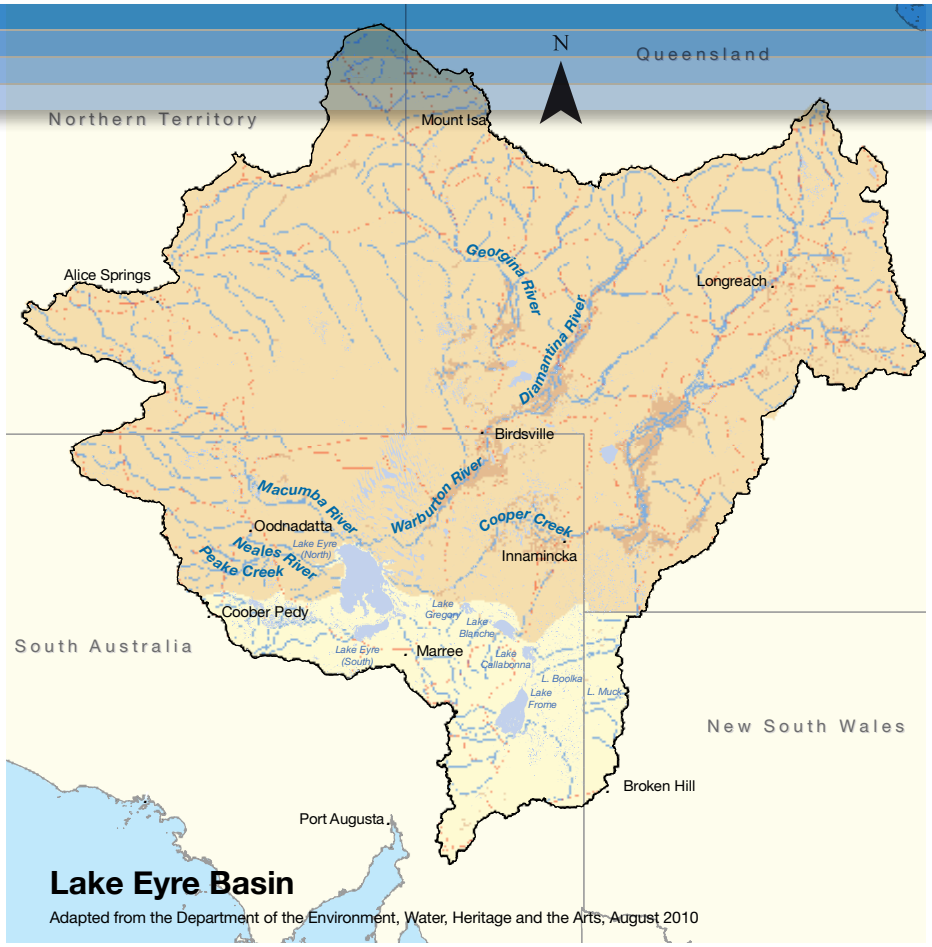
Neales River catchment

Fortuitously timed to coincide with the breaking of the drought in the region, the Neales River catchment project results emphasise a significant variability in the characteristics of this system (eg water flow) since records have been kept over the last 10-20 years. It is critical to continue to monitor flows, assess refugia characteristics, and manage impacts from tourism and industry.

The work has highlighted the importance of maintaining natural flow regimes within the catchment to assist in the conservation and protection of this system's social, cultural and ecological values.

Other key outcomes included:

- The 'cease-to-flow' depths of 20 surveyed waterbodies (dams, GAB springs, waterholes) revealed that Algebuckina Waterhole is the deepest, largest and most persistent waterhole in the Neales River catchment (see p. 23)
- Algebuckina Waterhole contained 10 species of fish, more than any other waterbody surveyed in the Neales River catchment, and had the highest habitat variability
- The salinity level of waterbodies in the Neales River catchment increases with the proximity to Lake Eyre while the species diversity drops
- There would be catchment-wide extinction of a number of fish species if there was a period of no flow of 24-30 months which would result in the complete drying of all waterholes
- Artificial bore-fed wetlands (see p. 25) and GAB springs are source populations for Gambusia (or Mosquito Fish, *G. holbrooki*) – a highly invasive and aggressive introduced fish that out-competes native fish and



frogs – and a simple control strategy is to regulate open bores which have no production value

- Hookeys and Algebuckina Waterholes are priorities for investment due to their importance in the catchment as aquatic refugia
- Tree removal and reduced leaf litter are causing severe impacts at certain waterholes (eg reduced habitat and increased soil erosion) and it is recommended that grazing and recreational activities are restricted at these sites
- Pastoral lessees within the Neales River catchment are participating in the EMU™ program (see p. 13), improving the capacity of land managers to identify key management issues and carry out restoration works that will improve catchment condition and minimise soil loss and gullying, as well as improving the production value of their land.

Technical reports which summarise the results of the project in the area of geomorphology, hydrology, aquatic ecology, terrestrial ecology and cultural landscape assessment will be available on the Board's website www.saalnrm.sa.gov.au in 2012.

Cooper Creek catchment

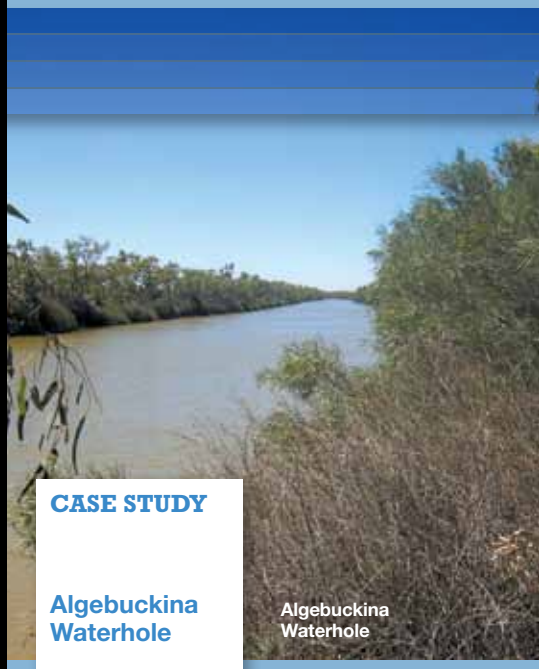
The SAAL NRM Board commenced a new project this year investigating the natural features and human influences on key waterholes and wetlands along the Cooper Creek.

The Cooper Creek is an important but relatively poorly understood wetland system and the project uses the rare opportunity of the large 2010-11 flood to gather important ecological information to improve our understanding of how the Cooper Creek catchment responds during flooding.

Fieldwork will involve fish identification and monitoring, plant identification, and looking for evidence of pest animals, such as Gambusia, and pig and rabbit activity.

Fieldwork sites include Cullyamurra Waterhole, a permanent waterhole and popular fishing and camping spot, Lake Hope, Coongie Lakes and a number of other waterholes closer to Lake Eyre.

The data gathered is expected to inform management strategies for the catchment including parks and tourism. The Board plans to present information gathered about the key pest threats to the catchment at a community workshop in Innamincka in 2013.


Algebuckina Waterhole

CASE STUDY

Algebuckina Waterhole

This project has confirmed that the most important refuge in the Neales River catchment is the Algebuckina Waterhole.

Situated on the Neales River about 55km south-east of Oodnadatta, the Algebuckina Waterhole is a key refuge in the SAAL NRM Region for wildlife and tourists alike and it is a significant site for Aboriginal people. The permanent nature of the waterhole means that in times of drought, long after other waterholes have become dry, it provides a critical safe haven for fish, birds and other native animals.

For tourists travelling the Oodnadatta Track, it is also a tourism drawcard as it is home to the longest bridge in South Australia which used to take the Ghan train over the Neales River, and its shady banks provide welcome relief and good fishing.

The impact of increased tourist numbers is being seen at Algebuckina. The removal of key species (eg Coolabah) for firewood can upset the vegetation canopy, and compaction of the waterhole banks through camping and vehicles can lead to erosion and loss of groundcover, in turn leading to increased sedimentation.

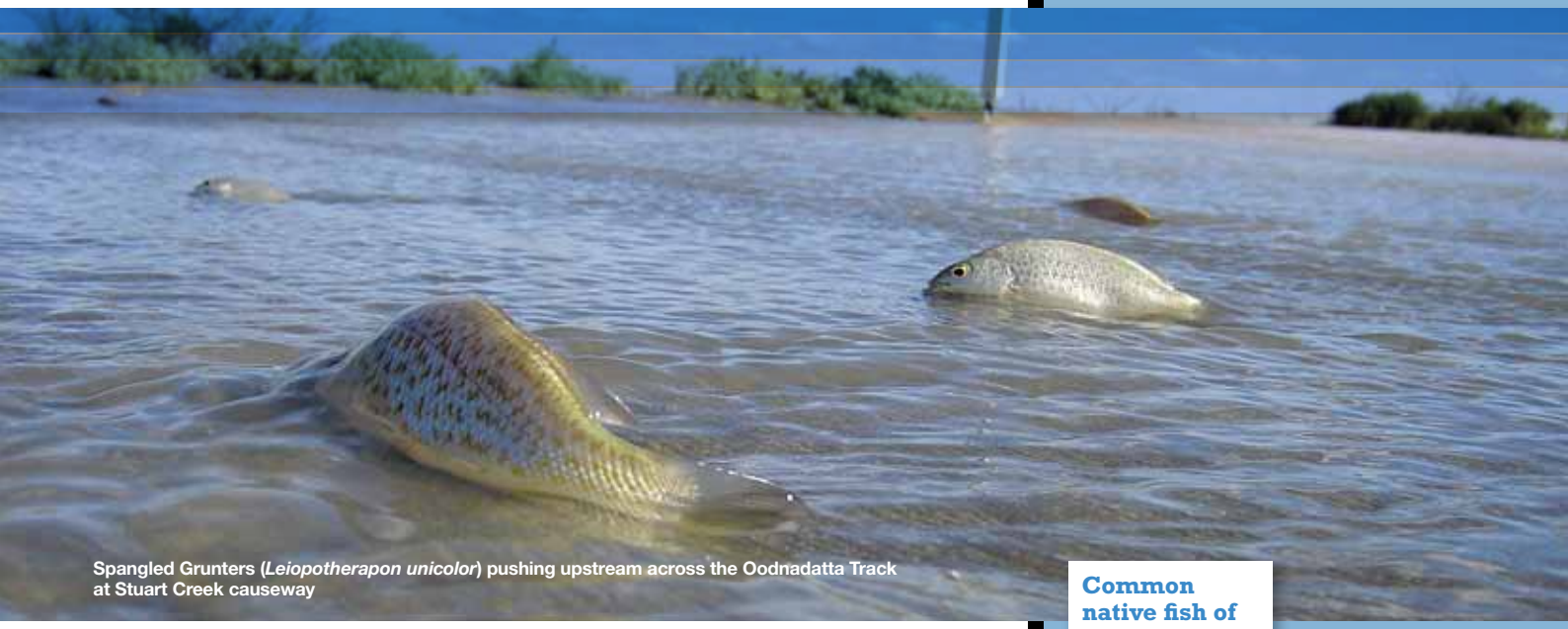
Litter reduces the aesthetic appeal and there is potential for contamination of the waterhole through human waste.

Through its work on the Neales River catchment, the Board has a better understanding of the importance of Algebuckina to the health of the Neales River catchment and the communities and wildlife it supports.

Management recommendations aim to lessen impacts from recreational activities and pest species and to maintain sustainable grazing management.

The challenge will be to maintain the visitor experience while also protecting the ecological value of this critical wildlife refuge.

Neales River catchment native fish surveys



Spangled Grunters (*Leiopotherapon unicolor*) pushing upstream across the Oodnadatta Track at Stuart Creek causeway

In conjunction with the South Australian Research and Development Institute (SARDI), the SAAL NRM Board has completed its report on a survey of native and introduced fish populations in the Neales-Peake River catchment, providing important data to understanding the fish resources, their condition and their habitat use in the region.

The survey was conducted in drought conditions when there had been several years of low flow. It was repeated in 2010 after the drought had broken and water was returning to the region's waterholes after rain events.

Twenty-two refuge waterbodies in the catchment were surveyed along with nine GAB springs and artificial bore-fed wetlands.

Golden Perch (*Macquaria* sp.)

Bony Herring (*Nematalosa erebi*)

Desert Rainbow Fish (*Melanotaenia splendida*)

Collectively the surveys captured 40,000 fish representing nine species.

Of these only one introduced fish species was captured – Gambusia – which occurred in low numbers in waterholes in the Neales and Peake Rivers but in greater numbers in some springs and bore drains

The surveys revealed that the recovery from drought occurred across the Neales-Peake River catchment and the rapid recolonisers (eg Spangled Perch, Bony Herring, Desert Rainbow Fish and pest Gambusia) were present throughout the entire catchment.

Interestingly, Golden Perch were found in all the waterholes throughout the catchment during 2009 but only observed at Algebuckina Waterhole in the 2010 survey.

Understanding the association between the region's waterbodies and its fish communities, and where those fish are likely to be found in drought and wet conditions, will help to appropriately and sustainably manage these sites for future generations.

The report will be available on the Board's website in 2012 and look out for future editions of *Across The Outback* or next year's *On Track* when we report on the native fish surveys in the Cooper Creek catchment.

Common native fish of the Lake Eyre Basin rivers

A new brochure *Common native fish of the Lake Eyre Basin rivers* highlights the importance of taking care of waterholes in the SAAL NRM Region and profiles 20 native species of fish found in the Lake Eyre Basin.

It also profiles Gambusia, a highly-invasive and aggressive introduced fish that presents a serious threat to native fish and frogs in the region.

Developed by the SAAL NRM Board in conjunction with SARDI, the brochure will be of interest to the entire Arid Lands community but particularly schools, anglers, landholders and tourists.

To obtain a copy contact the Board 8648 5977.

GAB spring and waterhole management survey

Waterhole on the Neales River catchment

Thirty-nine groups and individuals with a stake in the management of the Great Artesian Basin (GAB) springs and waterholes in the Marla-Oodnadatta district were canvassed in a survey commissioned by the SAAL NRM Board to gather their views on the ecological, social and cultural importance of these waterbodies.

Those surveyed included representatives of the pastoral and mining industries, Aboriginal communities, and government and non-government organisations.

The survey questions were informed by a literature review of grazing of waterholes and GAB springs and a review of the native Common Reed (*Phragmites australis*) and its influence on GAB springs.

The survey confirmed that where stock is excluded from GAB springs this can promote the growth of Common Reed and Bulrush (*Typha domingensis*) suppressing the growth of other native species and affecting the flow of GAB springs. However, where stock have access to the springs there can be damage from grazing, trampling and fouling of the wetland areas.

The survey also showed that pastoral managers have employed a conservative approach to the stocking of GAB springs and waterholes, and waterholes tend to be more important than springs from a stock-watering perspective.

Active management of GAB springs is needed in order to strike an appropriate balance between resource use and conservation. No single management prescription can be described as management objectives may differ from one spring or spring group to another.

Trials involving controlled grazing and controlled burns, and fencing selected sites to assess the impacts of grazing pressure, would be useful. Further collection of baseline data is needed, particularly for waterholes, and ongoing monitoring is critical.

Responses also indicated a strong cultural connection with both the GAB springs and waterholes and the importance of involving local Aboriginal people in their management.

The survey results will contribute to a model for best-practice grazing management for biodiversity benefits and production.

A report will be available on the Board's website www.saalnrm.sa.gov.au in 2012.

Muloorina Wetlands

Bore-fed wetlands

In consultation with landholders, draft management plans have been completed this year on five properties for six bore-fed wetlands – Coward Springs, Callana and Morphetts Bore, Muloorina Wetlands, Dulkaninna Wetlands and Clayton Wetlands.

The SAAL NRM Board has been describing the values of each wetland to provide a basis for determining their water allocation under the *Water Allocation Plan for the Far North Prescribed Wells Area* and drafting management plans to ensure these values are protected.

Bore-fed wetlands are man-made habitats resulting from flowing artesian bores. There are 19 bore-fed wetlands identified in the SAAL NRM Region fed by the Great Artesian Basin, some of which were drilled over a century ago to access groundwater for watering stock. Today many of these wetlands have significant social, recreational, amenity and environmental values that are important to landholders, regional visitors and tourists.

Protecting rockholes in the Gawler Ranges

A Gawler Ranges rockhole site

SA Native Title Service

In collaboration with Traditional Owners and local pastoralists, the SAAL NRM Board has completed an inventory of culturally-important rockholes in the Gawler Ranges Native Title Claim Area.

The project was initiated in response to the limited cultural and ecological information available on rockholes across the SAAL NRM Region; to enhance the knowledge and understanding of the cultural, ecological and pastoral value of rockholes; and to allow for the protection and management of those rockholes that are culturally significant.

Eighteen surface water sites (rockholes, claypans, soaks and pools) were assessed across seven pastoral leases. The plants and animals associated with those sites were also recorded to help us understand how these ecosystems function.

A key outcome of the project was the development of a cultural database that is actively being used to store, record and manage ecological and traditional knowledge. Access to this sensitive information and data is regulated.

The project also developed protocols that allowed the project to be undertaken within a framework that respectfully met the needs of individual pastoralists and the Gawler Ranges Aboriginal community.

Developed with input from Aboriginal representatives and pastoralists at a workshop on Mt Ive Station in August 2010, the project contributed to the Gawler Ranges Caring for Country Plan 2010-15 which sets the priorities for the collaborative and culturally-sensitive management of the Gawler Ranges Native Title Claim Area, and identifies appropriate protection works, such as rockhole cleaning, regulating vehicle access, and pest control. Regular site visits by Traditional Owners are also recommended.

The Board commissioned the SA Native Title Services and Department for Water to carry out the work with support from the Gawler Ranges Title Management Committee.

The report will be available on the Board's website www.saalnrm.sa.gov.au in 2012.

See p. 30 for examples of other projects where the Board has been working with Aboriginal communities.

About rockholes

Rockholes are of significant value to Aboriginal people living in arid areas of Australia. They provide a crucial water supply in an otherwise dry landscape where there is little permanent surface water, assisting in travel across the landscape and access to a larger range of resources. In the early years of pastoralism, before the advent of bores and wells, they were also important water resources for stock.

Flinders Ranges Mogurnda survey

Disease-free Flinders Ranges Mogurnda

In partnership with the South Australian Research and Development Institute, the SAAL NRM Board has completed its investigation of the extent and population of the Flinders Ranges Mogurnda, a species of fish that is listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999*.

The project was initiated after evidence that individuals in remaining populations may be suffering from a disease.

The Flinders Ranges Mogurnda *(Mogurnda clivicola)* has been recorded in only three separate locations in a small area of the Vulkathunha-Gammon Ranges National Park which lies approximately 750km north of Adelaide and 110km from Leigh Creek.

The survey found that there are now only two populations remaining where they can be found in adequate numbers to sustain viable population sizes. The Nepouie Spring population is thought to be translocated while the population at Weetootla Spring is known to be a remnant population. Fourteen other springs were surveyed with no new populations recorded.

Populations remain stable with estimates of approximately 4000 individuals similar to those made a decade ago.

Fish appeared to be in relatively good physical condition but up to 20 per cent of adult fish in both populations exhibited discolouration and growths posing a significant threat to population stability due to the species' limited range.

A rapid assessment of vegetation and habitat condition was also undertaken at spring sites where the Mogurnda are likely to occur as part of a wider assessment of spring condition in the northern Flinders Ranges.

The Board has made a number of recommendations to protect and manage the existing Mogurnda populations including determining whether the species is genetically distinct from other interstate populations; investigating the potential for relocating the species to other suitable habitats; confirming the cause of the disease; undertaking regular population and habitat monitoring; and establishing the importance of the Mogurnda to the local Aboriginal community.

The report will be available on the Board's website www.saalnrm.sa.gov.au in 2012.

Little Bubbler mound spring

Review of surface and groundwater monitoring requirements

The SAAL NRM Board is responsible for monitoring the surface and groundwater resources of the region in cooperation with other agencies including the Bureau of Meteorology, Environment Protection Authority and Department for Water.

Our primary goal is to understand and protect the hydrology and related environments within the region.

The Board commissioned a report in 2010-11 to review all historical and current monitoring activities; identify partnerships and stakeholders currently involved in monitoring work; establish a committee to coordinate and optimise monitoring activities, including data storage; and recommend appropriate monitoring programs to assess surface and groundwater in the region.

The report is located on the Board's website www.saalnrm.sa.gov.au

Our community

Friends of Mound Springs volunteers at The Peake Station

4439 hours contributed by volunteers – equivalent of $100,617

548 participants in NRM activities

19 community groups supported to deliver projects

40 communications products developed

14 training/ awareness raising events

While the SAAL NRM Region's vastness and remoteness have provided crucial protection to our native plants and animals and ensured the region retains some of the State's most intact ecosystems, with few on-ground managers in proportion to the region's size their continued conservation and management can be problematic.

The SAAL NRM Board recognises that people are a critical element to ensuring that our natural resources are managed sustainably – we all have a role to play in adopting sustainable practices, and in supporting and participating in programs and projects as groups and individuals. Effective engagement between the Board and local communities is essential for meeting targets identified in the *SAAL Regional NRM Plan* and we recognise and salute the outstanding efforts of our community striving to reach these shared goals.

Previous sections in *On Track* have already highlighted the range of activities which are primarily driven and delivered by our community, including industry, local landholders, schools and volunteers.

Specifically, the Board:

- develops and disseminates up-to-date information on best practice management of NRM issues through newsletters, factsheets, reports, site visits, workshops, forums and field days
- provides advice and other support to land managers to help improve knowledge and skills in NRM practices, including sustainable pastoral productivity, grazing management, pest animal and plant control and property planning
- encourages the participation of Aboriginal people in NRM activities, including biodiversity conservation projects, sharing traditional and scientific ecological knowledge, property planning, and fencing sensitive sites
- provides advice, support and opportunities to individual volunteers and community groups, including planning and delivery of projects such as community gardens, weed control, fencing areas of high conservation value, and participation in field trips
- develops and delivers appropriate information on NRM issues and their management for inclusion in school programs, such as local fauna and flora ecology, and interactive workshops to learn how to identify fauna species and class books
- engages with industry operating in the area (including mining and tourism companies) to negotiate mutually satisfactory NRM outcomes.

The SAAL NRM Board will continue this commitment to improving the capacity of all landholders, residents and industry in the region to manage their backyard effectively, by providing support to develop the necessary skills and ensure access to appropriate information, expertise and programs.

10 YEAR RESOURCE CONDITION TARGETS

9. Equip all people who are actively involved in NRM with the information, knowledge and skills needed to support the achievement of *SAAL Regional NRM Plan* priorities

10. Increase by 30% the number of people actively involved in NRM and supporting the achievement of the *SAAL Regional NRM Plan* priorities

Industry Partnerships Program

Brachina Gorge, Flinders Ranges SATC

The SAAL NRM Board launched its Industry Partnerships Program in late 2010 – and it quickly attracted the attention of Australian energy pioneer Santos.

A unique initiative in South Australia, the Industry Partnerships Program sees businesses partner with the SAAL NRM Board to accelerate the achievement of the region's natural resources management goals, particularly where these are issues of concern to industry.

The $750,000 funding provided by Santos in 2010-11 supports important research into the economic impacts and ecology of dingoes in northern SA – this will assist land managers to develop optimum dingo management strategies while maintaining the animal's valuable ecological role in this region (see p. 17).

'Santos is delighted to support natural resources management in the north of South Australia in this way,' said Mr Trevor Whitelaw, Stakeholder Advisor. 'Through this investment, the biodiversity of the region and the tourism and pastoral industries will benefit.'

'Important knowledge will flow back to the regional community with the research also informing our own approach to dingo management at Moomba.'

Tourism, mining and petroleum and pastoral companies are big players in the region and the Board is keen to work with them and for them to get behind natural resources management.

And, while the security and sustainability of the region's natural resources will ultimately be the big winner, participating businesses will be rewarded with an improved triple bottom line as they derive social, ecological and financial benefits from the Program.

The Industry Partnerships Program addresses priority issues at the most appropriate scale and utilises best available knowledge.

It combines both the interests and investment of industry and government with the expertise of scientists and natural resource managers to address issues and drive improvements in the condition of key natural resources.

Get involved

With just two criteria to meet, joining the SAAL NRM Board's Industry Partnerships Program is simple.

As long as the business operates within the SAAL NRM Region and utilises or impacts natural resources as part of its operations, then the Board would be keen to explore partnership opportunities.

There are a wide variety of programs that could be addressed via the Industry Partnership Program including aspects of water security, pest management, threatened species conservation and community engagement.

Interested organisations are encouraged to contact the Board 8648 5977 to discuss how they might get involved.

Aboriginal community projects

Identifying plants during a workshop at Aroona (Copley)

Keep updated with *Aboriginal NRM News*

With three editions produced this year and a growing mailing list, *Aboriginal NRM News* is increasingly becoming an important read for the region's Aboriginal communities as it bring updates on community NRM projects and other relevant NRM news. Contact the Board if you would like a copy 8648 5977.

The SAAL NRM Board supported five of the region's Aboriginal communities this year – Umoona, Aroona, Dunjiba, Iga Warta and Nipapanha – to help develop, fund and implement the communities' ideas for local NRM projects.

Each project was developed by the community in partnership with the Aboriginal Engagement team. The team uses participatory planning methods meaning community members play an integral role in the planning, development, implementation and reporting phases of the project. Here's a snapshot of what was achieved.

Umoona (Coober Pedy)

A common area within the Umoona Aboriginal community has been transformed after a revegetation project saw the planting of 200 local native plants. Several significant trees under threat from erosion and destruction of new growth, were also fenced, and walking trails and a viewing platform that looks over the community and the town were erected.

This project was carried out in partnership with the Umoona Aboriginal Council who put together a 'green team' of community members to carry out the work.

Aroona (Copley)

Members of the Aroona Aboriginal community saved their cemetery after it was nearly washed away by floods at the end of 2010. The project saw the reinstatement of existing levee banks and the creation of new ones to protect the cemetery from future flood waters. The soil was stabilised with the planting of around 150 local native plants using seed collected by members of the Nipapanha and Aroona communities during an earlier plant survey. The knowledge gained from the plant survey is owned by the community and will be stored at the Aroona Aboriginal Council for future reference and to continue sharing knowledge with young people in the community.

The project was carried out in partnership with Aroona Aboriginal Council with the assistance of members of the local Community Development Employment Program and the local copper mine.

Iga Warta (North Flinders)

An important native bush plot established to restore dwindling populations of Iga (Native Orange, *Capparis mitchellii*), Uti (Quandong, *Santalum acuminatum*) and Udlura (Native Sandalwood, *Santalum lanceolatum*) has been protected from the impacts of rabbits after community members fenced the area. A community workshop resolved that fencing and trapping were the best methods for controlling the rabbits which are difficult to manage due to the terrain and proximity of Iga Warta to tourist campgrounds. The community is now monitoring the area to determine the success of the program.

Get involved

Does your community have a project in mind? Call the Board's Aboriginal Engagement Officers 8648 5977 or look out for the car when they are on community.

Nipapanha (North Flinders)

Three culturally sensitive rockholes polluted from animals falling into the water have been cleaned and surrounded by uniquely designed cages that will provide access to water for animals while avoiding further pollution. An irrigation system has also been installed on the outskirts of the community to reduce the impact of dust and erosion caused by local traffic. Revegetation and stabilisation with local native plants will occur next year.

This project was carried out in partnership with the Nipapanha Community Council.

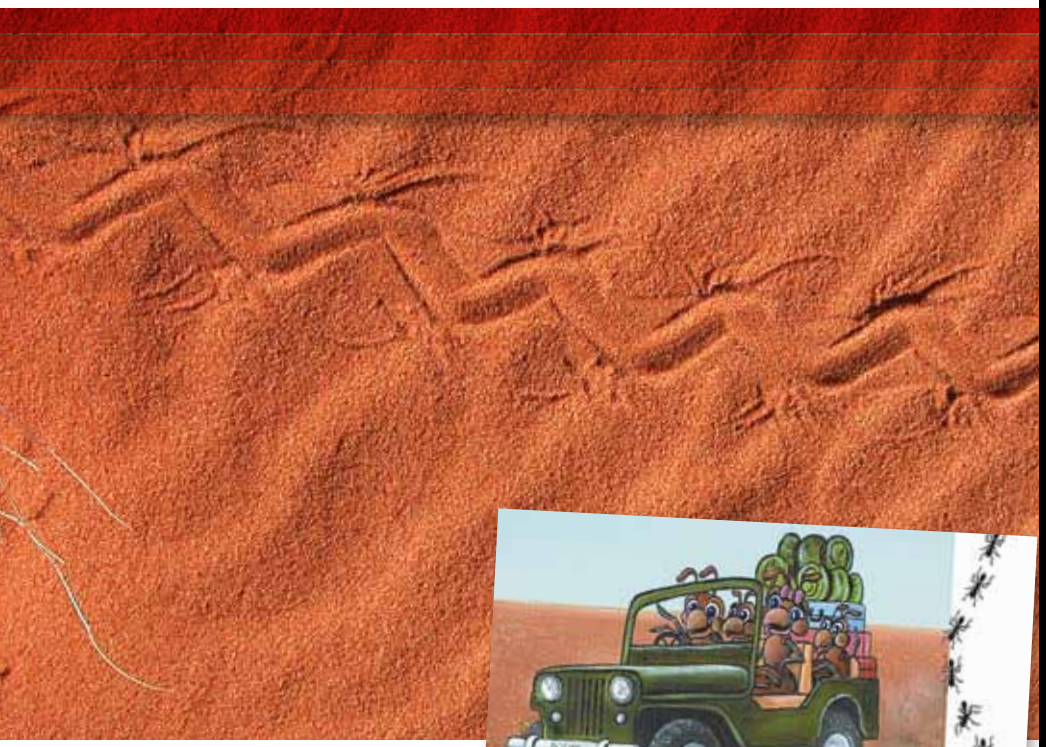
Dunjiba (Oodnadatta)

Hookeys Waterhole, a significant site for the Dunjiba Aboriginal community and an important permanent refuge for wildlife, has been re-fenced after a flood took the fence away. The project responds to community concerns about gaps in the existing fencing which allowed cars access to the site, destabilising the banks in areas. There are also plans to remove the bamboo that has encroached on the waterhole once the water levels return to safe levels. A sign will soon be erected to inform visitors of the significance of the site and the importance of protecting it from further damage. A community workshop was held in May to discuss options for preventing further impact to the waterhole.

This project was carried out in partnership with Dunjiba Aboriginal Council with support from the Oodnadatta Aboriginal School and Allendale Station for the community workshop.

See p. 26 for another example where the Board has been working with Aboriginal communities.

NRM Education



Tracks & Scats

A Tracks & Scats recognition workshop was held with 18 School of the Air students (and their parents) at Carriewerloo Station to showcase the power of animal tracks in increasing our understanding of arid zone critters and to foster the interest of the land managers of tomorrow in the natural environment around them.

Kids were given a structured activity sheet to complete which involved identifying and recording the various animal tracks they saw (eg sheep, foxes, small mammals, birds and reptiles) and collecting animal scats (or poo!), a very useful method for identifying critters of all sorts. The workshop also included demonstrations of pitfall and Elliot traps. The students successfully set and checked the traps to find some Sandy Inland Mice (*Pseudomys hermannsburgensis*), as well as a few common House Mice (*Mus musculus*).

All participants in the workshop received a copy of the manual *Tales in the Sand* which aims to increase our understanding of the distribution and abundance of a range of threatened and introduced animals in the arid zone through examination of their tracks, scats, burrows or diggings.

Andy the Ant's Arid Adventures

Andy the Ant's Arid Adventures is a terrific activity pad which helps school-aged kids understand the unique natural resources of the region, its people, and the pastoral, mining and tourism industries that the natural resources support.

The free, 20 page, full colour activity pad is perfect for keeping the kids inspired – and occupied – while travelling through the SAAL NRM Region. Kids follow Andy the Ant across the region, meeting Robby the Rascally Rabbit, Camilla Camel, Barry the Bearded Dragon, Wanda the Wedge-Tailed Eagle, and Pete and Pam the Pastoralists and test their knowledge with activities including sudoku, crosswords, dot-to-dot and find-a-word.

Andy the Ant's Arid Adventures was developed by the SAAL NRM Board with input from former teachers and will be available in the major Visitor Information Centres from October 2011.

Get involved

If you are a resident of the SAAL NRM Region and would like to know how your school can take part in a Tracks & Scats workshop or you would like a copy of *Tales in the Sand* or *Andy the Ant's Arid Adventures*, contact the Board 8648 5977.

Oodnadatta police Jeff Page and Bobby Bailes pitch in with planting

Greening our towns

Residents of Andamooka, Blinman and Oodnadatta may be feeling a little cooler in summers to come. Six hundred locally sourced native plants, including Eucalytpus and Acacia trees, were planted in the towns thanks to the work of the local Progress Associations and funding from the SAAL NRM Board.

The gardens will offer recreational and aesthetic pleasure while helping hold together the towns' soils and reducing dust in the summer months.

Residents of the townships and members of the Progress Associations were all involved in the planting days leading to a real sense of ownership and commitment to care for the plants.

In Oodnadatta, where twenty residents turned out to help with the planting and the installation of a watering system, Dunjiba Council Chair, Anthony Smith, remarked that 'the kids who helped plant the trees are now encouraging other kids to make sure they aren't damaged so their work is protected.'

Here, the trees will be watered at least once a week by Community Development Employment Project workers and Oodnadatta Progress Association members.

In Blinman, now 260 plants greener, not a plant went to waste with those left over from the community garden planted in other gardens around the town.

In Andamooka, the project was combined with a grant from Planning SA to purchase a solar-powered watering system to pump water to the native garden.

NRM Volunteers

86 volunteers

4439 hours

$100,617 contributed (equivalent)

Volunteers on Alpana Station show off their new safety gear

The SAAL NRM Board supports a number of volunteer groups and their contribution to natural resources management in the region can not be overstated.

The majority of the Board's volunteers are either involved in our pest plant and animal control programs or with our threatened fauna work.

In 2010-11 a significant amount of work on cactus control was completed by volunteers in the SAAL NRM Region who were kept busy removing hundreds of seedlings that had germinated due to extensive rains. Here's a snapshot of the activities that took place.

French's Forest Baptist Church, NSW

Fifteen young adults undertook cactus and feral animal control, and general maintenance, on Bullyaninnie Station in the North East Pastoral NRM district in July.

Australian Retired Persons Association & 4 Seasons Bushwalking Club

Seventeen members treated several hundred Wheel Cactus plants in harsh country through Parachilna Gorge on Alpana Station in the North Flinders in August.

Adelaide Bushwalking Club

Sixteen members continued their work supporting the Blinman Parachilna Pest Plant Control Group's (BPPPCG) project on Gum Creek Station in the North Flinders in August. This year marked the fourth year that this group has been involved in the cactus control program, allowing them to complete the first cycle of their four-year treatment rotation.

Mitsubishi 4WD Club

Eleven volunteers were involved in cactus control for the second year as well as some infrastructure/general maintenance work on Moolooloo Station in the North Flinders in October.

Overland 4WD Club

Eight members visited Oratunga Station in the North Flinders in June to provide follow-up treatment of Wheel Cactus, supporting the BPPPCG project.

Toyota Landcruiser Club

Twenty-six volunteers continued their work supporting the BPPPCG project on Gum Creek Station in June.

Threatened fauna program

A number of local residents also provided volunteer support to the Board's threatened fauna program (see p. 7 and Case Study, this page).

Thank you

The Board extends its gratitude to all its volunteers for their contributions this year.

If you would like to find out what opportunities exist for volunteering with the Board please contact our Community Engagement Officer 8648 5977. There are a variety of activities – office and field-based – that you can get involved with.

CASE STUDY

Tim Webb, Critter Catcher

The Board was fortunate to have the continued support of three volunteers this year to assist our Coober Pedy Opal Shaft Fauna Monitoring project which sees modified nine litre plastic buckets sunk into abandoned, uncapped opal mine shafts around Coober Pedy to catch, identify and monitor the sorts of critters that are falling in.

Tim Webb, a retired opal miner, has dedicated hundreds of hours to the project since it began in 2008 and shares his experiences as a volunteer here.

Tim's involvement in the project is simply motivated by a healthy curiosity in the natural world around him.

Having retired from the opal mining game several years ago, a venture that also saw him live in Lightning Ridge and Mintabie, he pursued his interest in plants, photographing and cataloguing the local plants of Coober Pedy, and amassing a collection of 5000 photographs in five years as well as impressive records of local birdlife.

This interest in the local environment led Tim to Janet Walton, a NRM Officer with the SAAL NRM Board based in Coober Pedy, who soon introduced him to Reece Pedler, our Community Fauna Officer, thus beginning the transfer of Tim's plant recording and recognition skills to the town's local animals.

Every week Tim undertakes a 60-90 minute round trip to check his twenty-five buckets with the furthest located 11 kilometres from Coober Pedy.

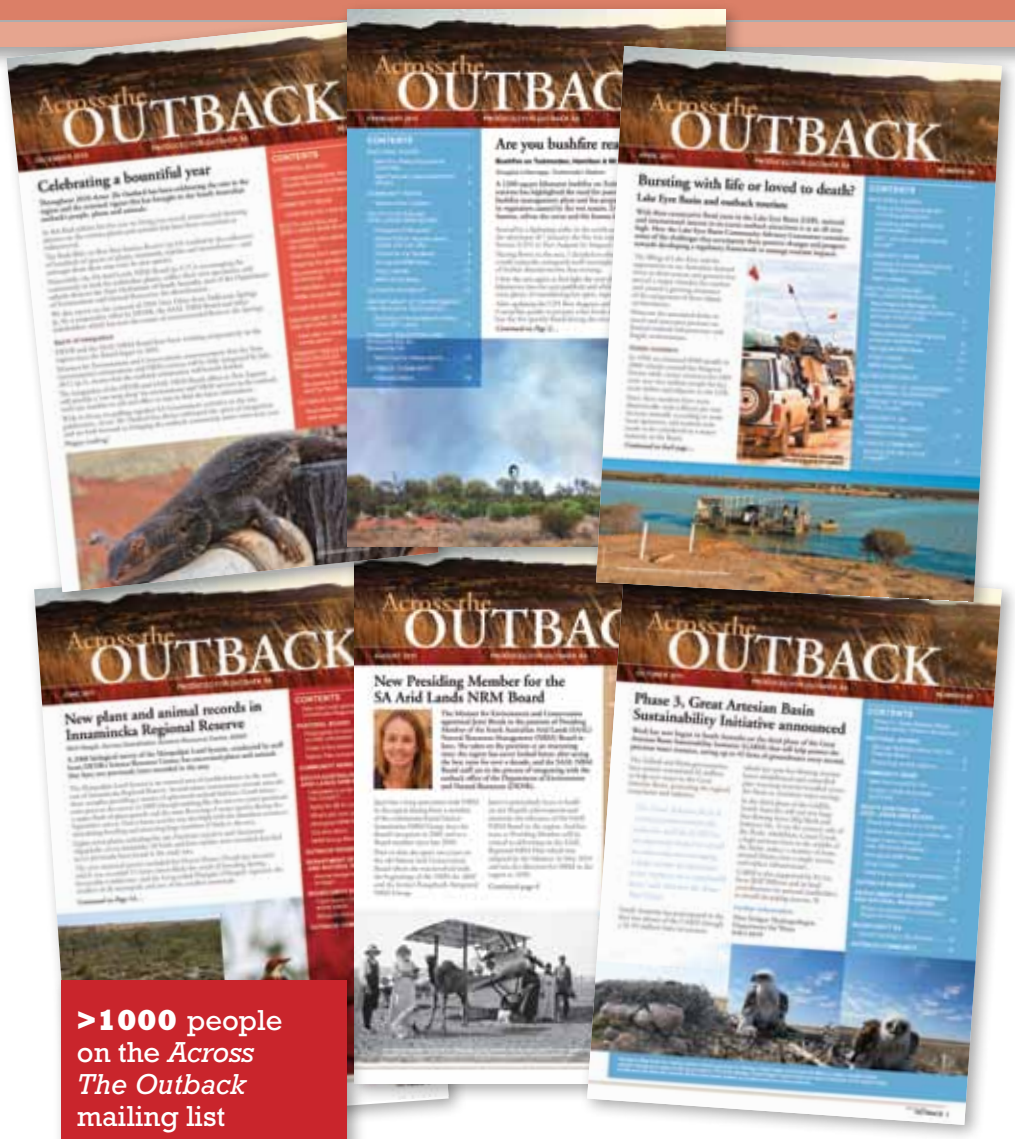
His photography skills have come in handy: 'After checking the buckets I catalogue any finds, photograph any unusual animals to send to Reece for identification, and then release them.'

Tim's weekly dedication to the project is important and his concern for the welfare of the animals is clear: 'The buckets need to be checked every week, otherwise the animals will die – we put food in the buckets for the rats and mice but nothing will survive too long in the hot weather.'

This year, Tim has been trialling the use of deeper traps made from PVC stormwater pipe to target small mammals and larger reptiles. These have captured a range of species not previously caught in the original trap design.

Tim's catalogue now includes 25 different species of reptiles and small mammals, including a Mallee Black-headed Snake (*Parasuta spectabilis*) previously only known from south of Port Augusta, and one of several species of reptile that has had its known range significantly increased through Tim's dedicated efforts. He has also been greeted by a Stripe-faced Dunnart (*Sminthopsis macroura*) and a one-metre long Sand Goanna (*Varanus gouldii*).

NRM Communications



>1000 people on the *Across The Outback* mailing list

57 media opportunities

4436 unique website visitors

Across The Outback

The SAAL NRM Board has continued its support of *Across The Outback*, a respected newsletter of 20 years standing that provides our community with a 'one-stop-shop' to information from the SA Government agencies operating in the region.

Issued six times per year to over 1000 individuals or organisations with a stake or interest in the region, the newsletter has become an essential read, particularly for local pastoralists and the local media but also conservation, recreation and tourist groups.

In 2010, the SAAL NRM Board expanded the newsletter to make room for more *ad hoc* contributions from other government agencies or community groups operating in the region. In addition to the Board's website it remains the chief source of information for all things NRM.

If you would like to join the mailing list contact the Board's Communications Officer 8648 5977.


Sharon Bell (Dulkaninna Station) speaks with Petria Ladgrove (ABC North & West)

NRM in the media and on the web

The local media (eg ABC North & West, the Roxby Downs papers, and the Port Augusta Transcontinental) remains an important avenue for raising community awareness about a range of NRM issues and the SAAL NRM Board regularly issues media releases about its programs, particularly where it is looking for community involvement.

Our staff are regularly approached to comment on emerging issues and for project news with stories picked up by local media often getting a run in Adelaide metropolitan and national media outlets.

This year there were reports in the media in relation to our dingo research and Biteback program, pest control programs (feral pigs, rabbits, and the spread of weeds African Rue and Boneseed), and threatened fauna programs (Woma Python, Flinders Ranges Purple-Spotted Gudgeon), as well as general reports on the booming populations of native wildlife as a result of the good season, the adoption of the *SAAL Regional NRM Plan,* consultation on the Board's draft 2011-12 Business Plan, and the Industry Partnerships Program.

Check out our website

Our website is a hub of activity containing the latest NRM news, publications and events as well as providing the background to our operations.

If you are after NRM Group or Board meeting details, a factsheet, report or newsletter, positions vacant, information for schools or volunteers or just the latest on NRM in the region, check out the Board's website www.saalnrm.sa.gov.au

NRM Group activities

Innamincka causeway

The SAAL NRM Board is supported in its role by five active NRM Groups at the district level which each provide a vital link in relaying community issues to the Board and a local perspective on implementing on-ground projects. A sixth NRM district has been gazetted in the North East Pastoral district and the Board has advertised for community members.

North Flinders

The NF Group continued their support for the Biteback program for dingo control which they first initiated in 2009 with two of the members now the contact for their Local Area Planning group (see p. 11).

The Group also provided feedback to the Board's Pest Management Officer on the draft North Flinders weed strategy which sets the priorities for weed management in the district for the next five years.

Concerns were raised about the invasiveness of Pepper Trees in the district and the Group proposed and provided input into a Pepper Tree removal workshop to take place in Blinman in September 2011.

The Group also considered how goat trailers in the region could be managed to improve landholder access for private control programs and continued their support and involvement in Wheel Cactus and Oleander removal as part of the Blinman-Parachilna Pest Plant Control program.

Keith Slade took on the position of Chair in April taking over from Leonard Nutt who is now a SAAL NRM Board member. Ian Ferguson joined the Group this year.

Marla-Oodnadatta

The MO Group gave advice on a new landholder-driven project aimed at controlling the spread of Mimosa Bush (*Acacia farnesiana*) in The Peake Creek catchment, purchasing a spray unit for use by the district's landholders to control Mimosa Bush and other weeds.

The EMU™ process is now in operation on five properties in the MO district – Todmorden, Evelyn Downs, Allendale, Wintinna and The Peake – and the Group continues to be a strong proponent of this approach to land management with members promoting the project to other landholders in the area (see p. 13).

The Group also provided input into the development of a procedure for landholders to obtain baits for dingo control in areas of the SAAL NRM Region that are north of the Dog Fence (see p. 17), while representatives from OZMinerals presented to the Group to raise awareness about its copper-gold mine operations at Prominent Hill, situated 130 kilometres south-east of Coober Pedy.

Mark Fennell took on the position of Chair in December taking over from Douglas Lillecrapp. New member were Caroline Thomas and Simon Hilder replacing Kylie Fuller (who is now a Board member) and Gordon Warren.

Kingoonya

The K Group continued their support for the Western Myall White Fly (*Zaphanera paprocarpae*) program – in its second year in 2010-11 – providing on-site support for contractors as they continued to monitor infestation sites across the district.

Feedback on the draft Kingoonya weed strategy which sets the priorities for weed management in the district for the next five years led to the decision to purchase a portable spray tank for the district's landholders to use for weed control. The Group also provided input into the roll-out of the Biteback program for dingo control and how to maximise landholder participation in the district (see p. 11). Members raised their concern about Buffel Grass spreading from the north leading the Board to fund some work along the Kingoonya roadsides.

The Group also held a meeting at Prominent Hill with the visit including a tour of the OZMinerals copper-gold mine, including its Significant Environmental Benefits area (see p. 14), and a presentation from an OZMinerals representative.

Group members continued support to EMU™ projects in the district (see p. 13) and provided feedback on the Trialing Landscape Assessment Tools project which uses remote sensing for monitoring and GIS for landscape assessment.

Julie Mould remains the Chair and Peter Paisley joined the Group.

Marree-Innamincka

The MI Group's activities were dominated by the continued development of *Birdsville Strzelecki: Legendary tracks of the Marree Innamincka District*, an informative and concise brochure for travellers on the Strzelecki and Birdsville Tracks. This full-colour, 12-page brochure promises to be a useful resource for tourists and includes a summary of history and origin, environment and ecology, and contemporary landuse as well as maps showing points of interest along the Tracks. Look out for it in 2012!

The Group also provided support to the Innamincka Progress Association's application for funds to conduct an opportune biological survey of plants and animals in the far north east of the Marree-Innamincka district following exceptional rainfall events across the north of the State. A plant survey targeting species for which there are limited collections was carried out by a team from the State Herbarium of South Australia in May. A number of new observations were made and the collected plant specimens (including seed) will be incorporated into the herbarium. Further animal and plant surveys are due to take place in September 2011.

The Group also continued its input into the MI fish ladder project, a collaborative effort between the local community, Santos, the Department of Environment and Natural Resources and other government agencies to investigate the feasibility of modifying the existing Innamincka Causeway to allow fish to move across during low Cooper Creek flows.

Maree Morton took on the position of Chair in April taking over from Janet Brook who became the SAAL NRM Board's Presiding Member. Jacqueline Ogilvy replaced Murray Tyler.

Gawler Ranges

The GR Group were involved in a range of activities, with one of their key achievements alerting the Board to a growing dingo problem and supporting the Board's application for industry funding to bring forward the roll-out of Biteback to the eastern Gawler Ranges (see p. 11).

Members also provided feedback on the draft Gawler Ranges weed strategy which sets the priorities for weed management in the district for the next five years.

In May the Group combined their meeting with a tour of a revegetation trial on Thurlga Station which compared direct seeding and ripping methods to identify the most efficient method of reintroducing Bladder Saltbush (*Atriplex vesicaria*) to pastures.

EMU™ is operating on one property in the district and the Group has maintained its interest in this program and its progress in the region (see p. 13).

The Group was also represented at Mt Ive Station where local pastoralists and members of the Gawler Ranges Native Title Management Committee came together to discuss how they could work to manage the district's rockholes (see p. 26).

Sandy Morris remains the Chair. Leonard Newton left the Group in 2010-11.

North East Pastoral

There may not be an operating NRM Group in the North East Pastoral district, but the Board has been undertaking several programs in this area.

Cactus, African Boxthorn and rabbit control have been undertaken on several properties with a number of pastoral lessees participating through the Board's Pest Management and Rangelands Rehabilitation program (see p. 12); Board staff conducted a workshop in Yunta on the management of the invasive weed African Rue; and a volunteer group from French's Forest Baptist Church in Sydney assisted with pest control and general maintenance on Bullyaninnie Station (see p. 32).

The Biteback program for dingo control was rolled out to the NEP district in December (see p. 11) and Dusky Hopping Mouse surveys (see p. 7) took place on several sites in the northern parts of the district.

The Board's Industry Support Officer has been building relationships with exploration and mining companies in the NEP and encourages any landholders with issues relating to exploration or mining, or ideas for Significant Environmental Benefits offsets (see p. 14), to get in touch.

There has also been an expression of interest to participate in EMU™ (see p. 13) and the Board held a public meeting in Yunta as part of its annual review of its Business Plan in February (see p. 37).

Interested in becoming a Group member?

Do you live or have an interest in the Arid Lands region?

Are you interested in providing a local perspective to the Board on key NRM issues in your district or driving NRM projects?

NRM Groups are skills-based with members selected based on their knowledge of one or more of the following areas

- **Community affairs at a district level**
- **Primary production or pastoral land management**
- **Soil conservation and land management**
- **Water resource management**
- **Business administration**
- **Local governance or administration**
- **Aboriginal interest in land and water, and Aboriginal heritage**
- **Pest animal and plant control**
- **Natural and social science**
- **Mining and petroleum exploration**
- **Tourism**

Contact the Board's NRM Officers 8648 5977 to register your interest.

Volunteer Tom Davidson (Australian Retired Persons Association) conducts cactus removal on Alpana Station

Our finances

Coober Pedy

Dilbert, our much loved Ampurta and regular visitor to local schools, sadly passed away this year

Through the activities of the SAAL NRM Board your community is supported in the sustainable use of its natural resources and in maintaining its natural ecosystems. You and your community benefit from:

- improved care of sites and areas of environmental and cultural significance
- programs that help protect valuable ground and surface waters; support industries to operate sustainably; improve pastoral land management; conserve natural ecosystems; and encourage community participation
- improved partnerships and integration with regional community groups as well as peak body non-government organisations (NGOs)
- support for township economies including maintaining industries, water supplies and tourism opportunities
- monitoring and control of pest animals and plants both for industry and for biodiversity
- support to community groups involved in the sustainable management of the region's natural resources
- a coordinated and integrated approach to managing the natural resources in the SAAL NRM Region over the next 10 years.

However, these benefits do require an investment of funds.

The Board is funded through four main sources:

- State recurrent funding
- Commonwealth funding
- An NRM levy
- Industry and other opportunistic funds

Sturt's Desert Pea (*Swainsona formosa*)

Dog Fence

What is the NRM Levy?

The *Natural Resources Management Act 2004* provides for a regional (land-based) NRM levy and a NRM water levy to provide additional funding for the Board to take care of our natural resources for future generations.

Who pays the NRM levy?

All landowners (including lessees) in the SAAL NRM Region pay the regional NRM levy. The NRM water levy is payable on water allocated to the mining, energy, gas and petroleum sector (collectively called industrial licences), for town water suppliers, irrigators and for commercial operations such as tourist park operators in the Far North Wells Prescribed Area. The NRM water levy is not payable on water licences held for stock and domestic use.

Who collects the NRM levy?

Local councils collect the regional (land-based) NRM levy annually from their ratepayers and forward the collected funds to the Board. The levy is shown separately on council rates notices. Outside council areas the regional NRM levy is collected annually by the Department of Environment and Natural Resources. The Department for Water collects the NRM water levy from water licence holders.

How is the NRM levy spent?

The regional (land-based) NRM levy and NRM water levy contribute less than 10 per cent of the Board's total budget but they are critical for leveraging extra funds from other sources including State and Australian Governments. The Board is also actively promoting other partnerships (eg with industry) to secure additional funding for natural resources management (see p. 29). We apply these investments wisely to carry out the work, showcased in *On Track*, that we believe is necessary to achieve sustainability of the region's natural resources.

2010-11 Income

INCOME SOURCE	
Carry-over funds	$3,970,577
NRM levies	
Regional (land-based) NRM levy	
Inside Council	$78,750
Outside Council	$80,883
NRM water levy	$384,932
State Funding	
State recurrent allocation – NRM Fund	$1,000,000
State NRM Competitive	$292,760
Payroll tax refund	$50,000
Commonwealth Funding	
Caring for Our Country – base funding	$1,659,000
Caring for Our Country – competitive	$607,121
Australian Government Water Fund	$1,180,562
Other Sources	$348,782
Interest	$79,767
TOTAL INCOME	**$9,733,134**
Carryover to 2011-12	$3,841,000

2010-11 Expenditure

EXPENDITURE AREA	
Program 1: Functioning Ecosystems Program	$2,223,976
Program 2: Sustainable Use Program	$1,482,616
Program 3: Active Communities Program	$996,854
Support to Groups	$125,291
Board governance, communications & administration	$1,063,397
TOTAL EXPENDITURE	**$5,892,134**

Have your say in 2012

The Board is consulting on the proposed amendments to its Business Plan 2012-13 – 2014-15 with comments due by 10 February 2012.

Beginning 23 January 2012, public meetings will be held across the region in Leigh Creek, Marree, Andamooka, Coober Pedy, Oodnadatta, Iron Knob and Yunta and you are invited to hear about the proposed amendments to the Business Plan (including changes to the NRM levy), learn more about the Board's activities and how you can get involved, and provide comment/feedback.

For details of the meetings and a copy of the draft Business Plan, Factsheet and Feedback Form please contact the Board 8648 5977 or visit our website www.saalnrm.sa.gov.au

Poached Egg Daisies

What activities would you like to see funded?

The Board's three-year Business Plan – part of the wider 10-year *SAAL Regional NRM Plan* – is reviewed annually under the *Natural Resources Management Act 2004*.

We hold public meetings throughout the region to gather feedback on how we plan to generate and invest our income over the following three years. These meetings are a terrific opportunity to meet with Board members and comment on how the Board plans to raise and invest its income and about natural resources management issues in general.

Thank you

The Board thanks those community members who turned out in February 2011 for regional public meetings to provide feedback on the proposed amendments to our Business Plan for 2011-12 – 2013-14.

The consultation period ran for 31 days from 26 January to 25 February 2011 with public meetings across the region the cornerstone of the process. While the wet weather and road closures forced the Board to revise its travel arrangements and cancel meetings at Iga Warta and Nepabunna, the Board was pleased to meet with Aboriginal community members in Oodnadatta, Coober Pedy, Leigh Creek and Copley. The feedback and contribution from Progress Associations, especially in terms of out-of-council regional (land-based) NRM levy arrangements, was also appreciated.

Contact the Board 8648 5977 for a copy of the consultation report.

'Our performance' shows how the SAAL NRM Region is tracking against the 50 1-5 year Management Action Targets (MATs) that contribute to achieving the 10-year Resource Condition Targets (RCTs) and, ultimately, the longer-term goals identified in the *SAAL Regional NRM Plan*. It is important to note that these targets are contributed to by the actions of all those operating in the region, including all levels of government, industry organisations, land managers and members of the community.

Our performance

MANAGEMENT ACTION TARGET	STATUS
1. Develop register of regionally significant sites and areas that warrant specific protection measures and develop policies for management and protection by 2014 and ensure on-ground protection of priority sites/areas is under way by 2016	
2. Review resource requirements associated with the Pastoral Assessment Program and ensure adequate resourcing by 2014	
3. Ensure that 100% of land managers have sufficient information to incorporate biodiversity stewardship into enterprise decision-making by 2014	
4. Develop a revised methodology and format for the timely production of land management plans, that avoid biodiversity decline, for the installation of new water points by 2013	
5. Develop best practice guidelines and related extension programs for sustainable grazing management – taking into account land type and drought responsiveness – by 2014	
6. Ensure that at least 50% of pastoralists are engaged in best practice management programs by 2014	
7. Complete initial mapping of pest distributions and determine priorities for control, and establish process for updating of mapping data by 2014	
8. Ensure programs are in place aimed at achieving reductions in the distribution and numbers of identified priority pests by 2014	
9. Ensure high risk potential pathways for the introduction of pest animals and plants are identified; high risk and vulnerable sites are being monitored regularly; and a framework for eradication or management of potential new incursions is in place by 2014	
10. Undertake risk assessment process by 2015 to identify: - pest species that could be advantaged by climate change - native species & ecological communities that may be vulnerable to climate change - potential implications of climate change for water resources management - other potential implications of climate change for natural resources management	
11. Ensure all relevant land managers are engaged and supported in pest control programs by 2014	
12. Develop cross boundary protocols and guidelines regarding pest control with adjoining NRM boards and equivalent adjoining interstate bodies by 2014	
13. Ensure research needs in support of MATs 7 to 12 are identified by 2011 and that priority research is underway by 2014	
14. Complete surveys and mapping of regional ecosystems, including environmental water requirements by 2016	
15. Develop programs to support the management and recovery of 50% of the conservation priorities identified within the SAAL Biodiversity Strategy by 2016	
16. Determine the current status and potential for decline of 50% of species, ecological communities and ecological processes not currently identified as conservation priorities by 2016	
17. Commence research to improve knowledge regarding ecosystem function and services for priority ecosystems by 2014	
18. Improve the capacity of terrestrial and aquatic ecosystems to adapt to climate change through the enhancement of the public, private and indigenous protected areas network and sympathetic land management programs within 80% of all IBRA subregions by 2017	
19. Identify GAB springs that warrant priority in protection from total grazing pressure by 2012 and ensure that 50% of those are protected by 2018	
20. Identify other aquatic ecosystems that warrant priority in protection from total grazing pressure by 2014 and ensure that 50% of those are protected by 2018	
21. Develop a regional action plan for the control of animal and plant pests in aquatic ecosystems in the SAAL NRM Region by 2014	
22. Ensure that the *Water Allocation Plan for the Far North Prescribed Wells Area* is being fully implemented by 2014	
23. Ensure that a sustainable program for monitoring and repair of leaking artesian bores is in place by 2014	
24. Ensure that a management/rehabilitation plan for currently flowing artesian bores is completed by 2012 and implemented by 2016	

MANAGEMENT ACTION TARGET	STATUS
25. Ensure the policies and actions to sustain the GAB in the SAAL NRM Region are integrated within national policies and actions by 2014	
26. Develop guidelines for water extraction from surface water systems for stock, domestic and other uses by 2014	
27. Ensure that administrative processes re Water Affecting Activities are in place and that relevant land managers are aware of their responsibilities by 2011	
28. Review the Water Affecting Activities set out in Part 4 of this plan, to ensure that they are consistent with the objectives of maintaining natural flow regimes in the SAAL NRM Region by 2014	
29. Implement protection, management and/or rehabilitation measures in at least ten priority ecosystems (priority at local/community level) by 2016	
30. Develop a regional water resources research register, highlighting information gaps, priorities, responsibilities and potential funding sources by 2012	
31. Ensure that high research priorities are being addressed by 2014	
32. Work with Aboriginal people to establish an agreed process for their consultation and involvement in NRM planning and programs by 2013	
33. Develop landscape assessment framework for the SAAL NRM Region by 2014 and ensure all development and best practice land management standards incorporate ESD principles by 2016	
34. Review the extent and priority of impacts upon natural resources associated with features of cultural importance by 2016	
35. Identify regional soil erosion priority areas and initiate on-ground management by 2014	
36. Establish consultative arrangements for the assessment of soil conservation implications of proposed new infrastructure by 2012	
37. Develop register of infrastructure sites associated with significant soil disturbance/erosion and initiate on-ground management at priority sites by 2014	
38. Ensure that 50% of pastoral and other broad-acre land managers are applying best practice measures for dingo and fox control and management by 2014	
39. Establish strategic response protocols regarding overabundant native species by 2014	
40. Establish process for managing native vegetation clearance offsets in the SAAL NRM Region by 2014	
41. Develop best practice NRM guidelines relating to tourism by 2014	
42. Ensure 50% of tourism operators are accredited for Environmentally Aware Tourism by 2014	
43. Review feasibility of expanded partnerships between the SAAL NRM Board and regional industry and identify priority areas/issues for partnerships by 2014	
44. Develop a predictive water demand model for the SAAL NRM Region by 2014	
45. Review policies and practices for management of wastewater by 2014	
46. Ensure that programs are in place to provide up-to-date NRM information to all sectors of the community in accessible and digestible form by 2014	
47. Develop a support program to increase the participation of Aboriginal people in natural resources management projects that link with Aboriginal priorities by 2013	
48. Establish ongoing dialogue with relevant educational bodies and ensure inclusion of regionally relevant NRM issues in local school programs by 2014	
49. Review adequacy of current training programs and other opportunities for community skills development in NRM by 2012	
50. Identify any significant barriers to effective natural resources management associated with infrastructure by 2014	

Our Board

Section 25 of the *Natural Resources Management Act 2004* provides for the appointment of the South Australian Arid Lands Natural Resources Management Board. The Board comprises up to nine members appointed by the Governor of South Australia on the recommendation of the Minister for Sustainability, Environment and Conservation.

Janet Brook
Presiding Member

Leanne Liddle

Leonard Nutt

Kylie Fuller

Daryl Bell

Ross Sawers

Catherine Hollingsworth

Rick Barrett

Murray Tyler

Michael Malavazos
(Primary Industries and Resources South Australia)

Neil Power
(Department for Water)

Toni Bauer
(Outback Communities Authority)

In addition to the appointment of community representatives, there are three non-voting Board members authorised by the Minister to represent the interests of the State.

Contact us

SA Arid Lands Natural Resources Management Board
PO BOX 2227 Port Augusta SA 5700
08 8648 5977
SAAridlands@saalnrm.sa.gov.au
www.saalnrm.sa.gov.au

About this report

Cover image
Simpson Desert, Matthew Turner

Graphic design
elevenacross.com.au