





From the Regional Director, Natural Resources Alinytjara Wilurara



Welcome to the 2017 Summer edition of *Palya,* where we share stories from the Alinytjara Wilu<u>r</u>ara Natural Resources Management Board and DEWNR's Natural

Resources Alinytjara Wilurara (NR AW).

I'm delighted to say that I'm still with the Alinytjara Wilu<u>r</u>ara team and have

INVITATION

The Alinytjara Wilurara NRM Board invite you to join us on Facebook www.facebook.com/awnrm

AW weather stations

Check out data from the weather stations in the AW region on... http://aws.awnrm.sa.gov.au/

Next AW NRM Board meeting: March 2018, Adelaide

AW NRM's Adelaide meets the Bush

Voices - Artworks from across the region Exhibition at Tandanya Gallery 8 - 30 March 2018

15 March 2018 - National Close the Gap Day

enjoyed acting as the Regional Director, including learning so much about the region, over the past six months.

Working in this region, and with this team, has brought with it a raft of new understandings for me and a real appreciation for the remote country we help care for, the incredible people who live there and the ancient culture that they willingly share with us.

One of the highlights was in early October, when our team members from both the Adelaide and Ceduna Natural Resources Centres met in Ceduna to discuss future strategies and to share stories about the work that everyone was involved in.

We invited staff from Natural Resources Eyre Peninsula as we are co-located at the Ceduna Natural Resources Centre and work closely with them in a number of areas. It was a productive and educational couple of days that finished with a tour of various places of interest around the local area. Meeting some of the incredibly dedicated people who work in the area and help support Aboriginal skills development and care was very informative.

I'd like to thank the AW team and DEWNR for the support shown to me and wish them, and all our readers a safe and enjoyable summer break.

Palya,

Mary-Anne Healy

Regional Director,
Natural Resources Alinytjara Wilurara

Natural Resources Alinytjara Wilurara staff happy to see each other at Koonibba Football Club, Ceduna

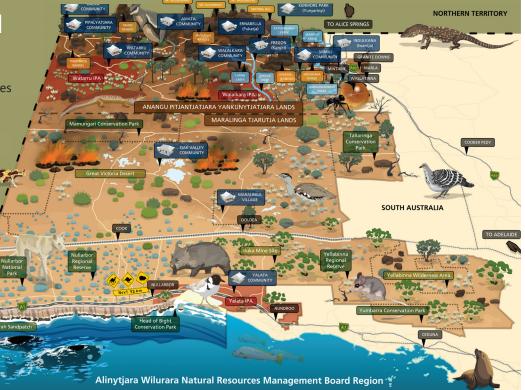


Where we are and what we do

The Alinytjara Wilurara Natural Resources Management Region covers the northwest quarter of South Australia. In Pitjantjatjara, alinytjara means 'north' and wilurara means 'west'. The Region spans more than a quarter of a million square kilometre and has a population of approximately 2000 people, many of whom identify with the Pitjantjatjara, Yankunytjatjara, Ngaanyatjarra, Kokatha, Mirning or Wirangu peoples.

Natural Resources Management (NRM) is an approach to protecting land for the mutual benefit of people and the environment.

The AW NRM Board is the only all Aboriginal NRM Board in Australia.



02 Board Meeting on Country



AW NRM Board meets at Scotdesco Aboriginal Community

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Friends of the Great Victoria Desert

Nullarbor coastal cliffs safer for visitors and for rare species

From the Presiding Member



Welcome to the Summer edition of Palya 2017. With a new year just around the corner I would like to thank the Board members and

staff of Natural Resources Alinytjara Wilurara for their hard work and dedication over the past 12 months.

Together we have built new and important collaborative partnerships with Traditional Owners from across the region, with NRM Boards across the state and with cross-border organisations who share the common goal of Aboriginal people being employed to care for country.

Being elected as Chair of NRM Regions in October allows me to bring a national focus to our region and, as was acknowledged by the Minister, more broadly to the work being done across DEWNR. I'm also proud to say that the AW region continues to contribute to national NRM standards.

Throughout 2017 we have actively facilitated a range of Aboriginal capacity building programs, working in partnership with Aboriginal organisations to deliver Conservation and Land Management Certifications and practical hands-on training in various remote locations.

Lastly, but certainly not least, I would like to congratulate Mary-Anne Healy on being appointed to the position of Natural Resources Alinytjara Wilurara's Regional Director. I look forward to working with Mary-Anne in 2018.

On behalf of the Board, I wish you a safe and enjoyable festive season and look forward to continuing to serve the people and country of the AW region in the new year.



Parry Agius
Presiding Member
Alinytjara Wilurara Natural
Resources Management Board



In support of Aboriginal enterprises, the Alinytjara Wilurara Natural Resources Management (AW NRM) Board held their October meeting at Scotdesco (Tjilkaba) Community.

Scotdesco is a small Aboriginal community just off the Eyre Highway 25 km west of Penong, in an area known as Bookabie in South Australia.

Focussed on ensuring an economically sustainable future for their young people, Scotdesco Community took a proactive approach to building economic resilience through development of a number of innovative enterprises.

With only 7,000 ha of the 25,000 ha of land owned by Scotdesco being arable, the local Traditional Owners sought out and invested in a herd of 8,000 Wiltipolls sheep, a breed well suited to arid grasslands.



Developed in Australia, Wiltipolls produce quality, excellent tasting, lean lamb with the added benefit that their short white fleece, which has no commercial value, sheds completely each year. This means that there are no expenses associated with shearing or crutching.

Saltbush, which grows in abundance in the area, is not only ideal feed for the Wiltipoll sheep, but also has commercial value as a tasty addition to a range of recipes. Promoted by the community, a number of high profile international and domestic chefs have visited the region seeking new flavours.







There is now a keen interest from restaurants around the nation for Scotdesco saltbush.

A great place to stay

Another of Scotdesco's successful endeavours is the construction of accommodation and recreational areas, function rooms with catering facilities and a cafe at the Community.

Holding the AW NRM Board meeting on country, closer to where many of the Board members live, proved very successful.

During the meeting, the Board heard from subject experts regarding a number of significant NRM issues impacting on the region. As a result key actions were determined and dates set for follow up.

On the final evening, attendees were treated to a delicious BBQ dinner. lamb, of course, with homemade salads created by the marvellous ladies who manage kitchen catering.

For any enquires related to Scotdesco's many offerings contact: Robert Larking on 86256222 or at scotdesco.ceo@outlook.com

Left: Community Chief Executive Officer Robert Larking and AW NRM Board's Parry Agius at Scotdesco

Below left: Community members providing tourists with a unique on-country experience... preparing damper to cook on an open fire

Below Centre: Yarding the Wiltipoll sheep Below: AW's Keisha Weetra and Helen Donald take a tour of Scotdesco's saltbush nursery





The AW NRM Board farewells, welcomes and congratulates

Combining the wisdom and commitment of respected Elders with the energy and creativity of emerging leaders from across the region, the all-Aboriginal AW NRM Board is uniquely qualified to effectively represent the AW region's environmental assets, together with the interests of the people who live there.

With the retirement of Gary Lewis (APY Lands) and Ian Crombie (AMYAC) the Board welcomes two new members and a deputy member from the APY Lands.

Anton Baker was born in Ernabella Mission and grew up in Fregon. He has worked across the APY Lands and now lives in Kanpi. Anton wants to ensure Aboriginal Culture is kept strong and is keen to share his knowledge and the thoughts of his community with the Board and provide feedback to community.

Nyukana Norris grew up in Fregon and, as a long time resident of the community, she is committed to improving childrens' school attendance and is teaching painting and sharing culture. She works at the communitybased Aboriginal art centre.

Also welcomed is Mrs Norris' deputy Sally Scales who, after attending her first Board meeting at Scotdesco, has already proven to be a valuable addition to the Board. Sally's obvious willingness to learn and determination to make a real difference in her community and across the Lands provides a new spark to the Board.





Mima Smart and granddaughter Alinta Smart at the SA Women's Honour Roll personation at Government House.

The Board is also delighted to welcome back Mima Smart, who in addition to receiving the NAIDOC SA Person of the Year Award, and an Order of Australia for service to the Indigenous community in SA, was further recognised last month with her name being added to the Governor's South Australian Women's Honour Roll.

Mima's deep understanding of Aboriginal connection to country and strong connections at a local level are greatly valued by the Board.

Bottom Left: Nyukana Norris Below Bottom: Sally Scales Below: Anton Baker







Community supporting community

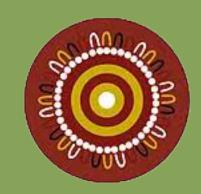
The Southern Region Nunga Tag Carnival is a fantastic initiative held annually in the southern region of Adelaide by Christies Beach High School's Aboriginal Education Team in partnership with SA's National Rugby League team.

The carnival's objective is to engage Aboriginal and Torres Strait Islander students, families and community within the school environment in a positive and inclusive way.

The event provides an opportunity to network with services as well as with other families and schools from within and around our region.

The Carnival is also an opportunity to showcase the sporting talents of Aboriginal and Torres Strait Islander students, and exemplifies culture and pride in identity, individually and together as Aboriginal people.

The event promotes healthy living, not only through sport and healthy eating but also through decision making, sportsmanship, teamwork and encouragement.



Nunga Tag Carnival Shirt Design for 2017 - Thanks to Allan Sumner from Aboriginal Contemporary Arts for this deadly design



Natural Resources Alinytjara Wilurara's Ecologist Brett Backhouse added his expertise to a team of Bush Blitz scientists whose September expedition to the heart of the Great Victoria Desert delivered a wealth of insight into the region's fauna and flora.

This was the most remote expedition ever undertaken by the Bush Blitz team. The Great Victoria is the largest desert in Australia covering a vast area of 348,750 square kilometres. Its pristine, arid wilderness includes red sand dunes, stony plains and dry salt lakes, and is home to a number of Aboriginal communities.

Traditional Owners and rangers from Maralinga Tjarutja, Pila Nguru (Spinifex People) and Anangu from around the region assisted the team of 18 researchers from the South Australian and Western Australian Museums, South Australian and Western Australian Herbaria, and PhD students and researchers from the University of Adelaide, University of NSW and Flinders University.

Bush Blitz is Australia's largest nature discovery project - a unique multimillion dollar partnership between the Australian Government (through Parks Australia and the Australian Biological Resources Study), BHP Billiton Sustainable Communities and Earthwatch Australia to document plants and animals across Australia.

Since the program began in 2010 Bush Blitz has discovered more than 1,350 new species and added thousands of records to Australian scientific data banks. The expansion of such knowledge helps us protect our biodiversity for generations to come.

Although there had been heavy rainfall across much of the study area last summer, the lack of recent substantial rain meant that the flora and fauna were not at their peak.



What they found...

Over the five days this amazing team found and recorded, gathered and identified hundreds of fauna and flora species and specimens making an extraordinary contribution to knowledge of our country's natural heritage.

Botanists from Western and South Australia were delighted to discover the first Acacia eremophila ever recorded in South Australia, along with pea Tephrosia sphaerospora, and a collection of the pea Swainsona kingii, which is listed as Vulnerable in SA. The botanists also obtained viable seed from this species for the SA Seed Conservation Centre.

Above: Brett Backhouse checks the fauna traps (photo by Tyrie Starrs)

Left: West Coast Banded Snake Simoselaps anomalus (photo by Brett Backhouse)

Below: Pea Swainsona kingii listed as Vulnerable in SA (photo courtesy of SA Seed Conservation Centre)





... increasing scientific knowledge to help protect biodiversity for future generations

Amongst the 115 specimens of bug collected, many could only be accurately identified through extensive lab work. Of particular interest were ant-mimics and a feather-legged assassin bug.

Finding a species of *Myrtlemiris*, which was thought to only be endemic to SW WA represented a massive range extension.

A species of wasp that had previously only ever been recorded on Kangaroo Island and in the Flinders Ranges was recorded. Indicating a huge and surprising range extension.

Other notable finds were a new species of scorpion and a jewel beetle specimen Castiarina which had not previously been recorded in SA.

Twelve species of native mammals were recorded, including seven species of native rodents (e.g. hopping mice), carnivorous marsupials (e.g. dunnarts and ningauis) and kangaroos (western grey and red) as well as five introduced species (e.g. camels, cats, etc.).

"The mammals captured were in good condition although, with the exception of large numbers of microbats, the abundance was generally very low", said Brett Backhouse.

Three species of microbats were collected (and echo-locating calls of a 4th species heard), with all present at each site visited. This was probably due to the proximity of long-unburnt old-growth marble gum woodland that provided numerous roosting hollows.

To determine the presence of the subterranean marsupial mole, a trench was dug that, much to the delight of the researchers, revealed numerous mole tunnels.

Prior to the Bush Blitz, nobody knew whether reptile fauna of the GVD study area would resemble the distinctly different reptiles of arid areas to the north or south. The study recorded many southern range extensions, including a 180 km southward range extension of the distinctive night skink, Liopholis striata.

A spectacular new species of lerp, which is a much relished food of traditional owners, was discovered on a stand of Marble Gums. Witchetty grubs expert Conrad Bilney collected 70 specimens, mainly Lepidoptera and Coleoptera, and another species which is not yet classified.

During the 2017 expedition, the Blitz team collected over 100 different species some of which were undoubtedly new. Interestingly there appeared to be little overlap between the species collected this year and the 80 species collected on a previous trip to the GVD, in 2015 and eight weeks earlier in the season.

Below bottom: Map of Bush Blitz locations pre 2017

Below: the carnivorous marsupial ningauis

Below right: Western spiny-tailed gecko Strophurus strophurus, nearest previous records were around Ilkurlka Roadhouse, 200 km west of the study area



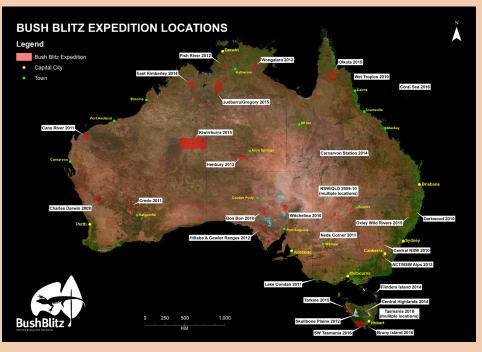


Brett chats with a local thorny devil Moloch horridus (Tyrie Starrs)

Below: Jewel beetle specimen Castiarina











Sandalwood... going, going, gone

Moves are afoot to change the status of sandalwood Santalum spicatum, native to southern parts of Western Australia and South Australia, from Vulnerable to Threatened and make it a prescribed species under the National Parks and Wildlife Act.

Sandalwood is a parasitic small tree that establishes on the roots of a host tree. The wood is heavy, yellow, and fine-grained, and unlike many other aromatic woods, retains its fragrance for decades. Popular throughout the world, the oil is also renowned for its antibacterial and anti-inflammatory properties.

Widespread in arid and semi-arid regions of SA, sandalwood species Santalum album and S.spicatum both grow in Australia, the latter being a wild South Australian species. A third species, S.fernandezianum, was once abundant in Australia but is now classed as extinct as a result of overharvesting.

Harvesting wild sandalwood in the 1840s



Australian Sandalwood has been exported since the 1840's. In the 19th Century early European settlers were exporting up to 14,000 tonnes of Western Australian sandalwood per year from Fremantle Port to Asia.

The price of sandalwood has recently soared as a result of over harvesting, both legitimate and illegal, of native populations of Santalum album in China, India, Indonesia and the Philippines. The prospects of regeneration in these areas is low.

Western Australian stocks are now the largest wild resource left in the world and are the major global source of wild sandalwood. This inevitably means that South Australian wild stands will also be sought after.

Already under threat from farm grazing pressures, introduced herbivores, and reduced numbers of native animals that disperse the seed, actions to halt the illegal removal of wild stock are becoming increasing urgent.

Transporting sandalwood by rail to Fremantle



What is being done...

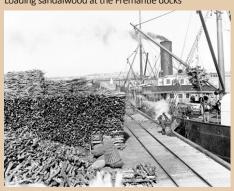
In South Australia the sandalwood home range mostly falls within the Natural Resources Alinytjara Wilurara (AW) region.

Natural Resources AW currently monitor all known sandalwood stands growing in the Maralinga Tjarutja lands and Googs Lake region and record and monitor new locations as they become apparent.

All trees are assessed for damage and photographed to assess changes over time. This will likely indicate how damage (if any) is occurring (eg from feral herbivores, climate change, human pressures, poaching).

DNA cataloguing of specimens will also be undertaken so that sandalwood found in any corner of the globe can have its origins accurately identified. If the stock is found to have been sourced illegally, purchasers may be fined and poachers found and prosecuted.

Loading sandalwood at the Fremantle docks







Illegally harvested sandalwood

Illegal harvesting has occurred for many years throughout both South Australia and Western Australia.

Surveys of previously known stands of Santalum spicatum in South Australia's remote areas have revealed that poaching has decimated some populations.

The sites from which the sandalwood was taken had been stripped bare of any remnant plants making it highly unlikely that recruitment would occur in that area.

In all of these poaching incidents, only the more significant tree trunks are kept with the smaller branches being discarded.

A number of cases of illegal sandalwood harvesting have been prosecuted in SA.

Illegally harvested sandalwood discovered during transport interstate



DEWNR has set up a working group to stop illegal harvesting. This includes:

- considering reclassification of the species to make it a prescribed species and give it the level of protection it needs
- supporting the regions and communities to identify illegal activities and what to do
- working collaboratively with state and federal government agencies to regulate the take, sale and export of the resource
- masking historical data on geo sites
- working with mining companies to revegetate certain areas
- delivered training to Oak Valley/ Maralinga Tjarutja and Spinifex Rangers to upskill in what to do, how to do it and who to tell.

Article based on presentations delivered by David Wilkinson and Brett Backhouse to the AW NRM Board



Dingoes... Water diviners

DNA studies estimate that the dingo arrived on the Australian continent between 4,700 and 18,000 years ago, representing perhaps the earliest example of human-assisted oceanic migration. They were adopted into Aboriginal society, maintaining a symbiotic partnership that lasted thousands of years, and for this reason have been celebrated as a cultural keystone species.

The dingo's ability to locate water above and below ground was perhaps its most indispensable skill. Written records, artworks and photographs in museum archives reveal dingo water knowledge as recorded by European explorers. Records reveal a number of accounts of wild/semi-wild dingoes leading Europeans to lifesaving water springs.

In Australian cartography, a "Dingo Soak" refers to a waterhole dug by a mythical or live canine. There are other freshwater landmarks across the continent – "Dingo Springs", "Dingo Rock", "Dingo Gap".

In Aboriginal mythology, the travels of ancestral dingoes map out songlines, graphemic maps tracing pathways across the continent from one water source to the next. Their stories tell of the formation of mountains, waterholes and star constellations. In some accounts, dingoes emerged from the ground as rainbows; in others they dug the waterholes and made waterfalls as they travelled through the landscape.

Extract from article written by Dr. Justine M. Philip published in The Conversation, August 7, 2017





... sustaining the health and resilience of Australia's iconic desert country and its people

In August 2017, as part of the Ten Deserts Project (TDP), 40 land management rangers and other experts attended a workshop in Alice Springs to discuss and corroboratively plan previously identified priority projects.

The TDP is an Indigenous led, multiyear, multi-partner project that is being developed for potential funding by the BHP Billiton Foundation under their global Environmental Resilience Program. It focuses on supporting the conservation and sustainable use of the environment for future generations and deriving associated social and community benefits.

The AW NRM Board is an SA partner and will represent SA on the Ten Deserts Steering group. The Board is looking forward to hearing whether the project has been funded in Dec 2017. This will ensure that regional concerns and opportunities are considered as part of future plans.

Background

The Ten Deserts Project aims to sustain the health and resilience of Australia's iconic desert country and its people, in an area spanning ten deserts and 2.8 million km2. In addition the project aims to further develop Indigenous people's livelihoods and tenure options for long-term sustainable management, prioritising on-country and cultural programs.

The strategic importance and value of these vast arid lands has been well documented and are regarded as one of the few remaining great natural places remaining on Earth. They are also areas are of great cultural significance, rich in history and traditional ecological knowledge.



The Workshop

Key activities within the Ten Deserts Project discussed at the workshop included:

- supporting Indigenous groups to consult with Traditional Owners and increase the management of feral herbivores
- regional fire planning and building the capacity of groups to respond to altered fire regimes in high priority areas
- capacity building and knowledge exchange at a range of levels (eg national and international ranger exchanges)
- training workshops for rangers
- Buffel Free Great Victorian Desert a key demonstration project on managing the threat of Buffel grass

To build environmental resilience across Australia's outback requires:

- collaboration across Indigenous Protected Areas in the desert
- development of the Indigenous Desert Alliance
- development of new markets and revenue streams through tourism, fire carbon and co-benefit methodologies for arid landscapes



- cultural programs designed to reinforce Indigenous cultural and ecological knowledge; and
- support for new and emerging groups to map and look after natural and cultural values on their country and to access and secure on-going funding.

Camel management project activity

Over the past ten years, feral animals such as camels, donkeys and horses have become a major threat to the natural and cultural assets of the TDP area.

The project seeks to strategically reduce the impact of feral herbivores on the project area through the following activity goals:

- support Traditional Owners to engage and develop appropriate effective feral herbivore management strategies for their country
- encourage Traditional Owners to participate in annual regional planning processes to coordinate responses across the project area
- where Traditional Owner consent is provided, support aerial culling of feral herbivores to reduce overgrazing and the impact on highly valued water sources by reducing densities in key asset areas.



Fire Management project activity

Wild fire is a key threat that requires landscape scale intervention. Implementing a regional approach will shift away from gradual unplanned capacity building.

It is proposed that a regional fire coordinator be employed and a strategy developed that will form the basis of targeted regional activities. These would include training, on-ground fire operations and developing a pool of contract fire management staff for Indigenous land management organisations to access on a need basis.

Without a regional approach, groups will continue to develop slowly and on an ad-hoc basis reliant on the skill sets of ranger coordinators who may have no prior aerial incendiary or onground fire management experience.

Buffel free Great Victoria Desert project activity

Buffel grass is a major weed species in the desert which has the potential to change vegetation structures and significantly impact on native fauna.

In partnering with the TDP, the AW NRM Board will ensure that regional concerns and opportunities are considered as part of future plans.



A trial project is planned to develop more effective management strategies that limit and spread of Buffel grass and reduce new infestations, particularly along roads.

In the GVD, the partners and other stakeholders believe that the extent of Buffel infestation is manageable if this project is activated and organisations work collaboratively across the two state jurisdictions.

Regional tourism project activity

This project activity has the potential to increase revenues to remote desert communities and Indigenous land management organisations.

Lessons learnt dealing with commercial operators will be shared and resources or a toolkit developed to assist with negotiating more equitable and sustainable permit systems.

The project is already the largest connected network of Indigenous managed lands in the world (total of 18 Indigenous protected areas) and is recognised as a part of the National Reserve System.

For more information about the Ten Deserts Project visit: https://tendeserts.org/

Credit: Photos and statistical information from presentations made at the Ten deserts Forum









Warru update

Written by Brett Backhouse

keeping an eye on recovery

In October, remote motion cameras set up on Wamitjara captured the first images of young warru, known as 'iti'. This was hugely rewarding for the Warru Recovery Team (WRT) who had relocated a population of warru to the site only six months earlier.

This is the first time that warru (black-flanked rock wallabies) have inhabited Wamitjara since 2005, when the last remaining individuals disappeared. The presence of feral carnivores such as red fox and cat, and changes in fire regimes are considered to be the main reasons for this loss.

In June 2016, 40 animals were translocated to the isolated outcrop known as Wamitjara in the Anangu Pitjantjatjara Yankunytjatjara (APY) Lands. Twenty five came from the fenced predator-proof 'pintji' population and 15 from a wild, but WMT managed population at New Well.

The translocated warru were fitted with VHF radio collars that allow for each individual to be tracked and monitored.

Just call me...

In addition, each of the translocated warru were given a specific name. Local school children from Pukatja and Kenmore Park School communities eagerly took up the

challenge to create a list of great warru names. The list was given to the Warru Minyma (women Elders who have been involved in the recovery since its inception) and Warru Rangers to select names best suited to the individual warru. Names varied from Pitjantjatjara names such as 'Tjulily-Tjulily', 'Kilykilykari' and 'Matura' to those only children would think of such as 'Big Boy', 'Thunder Death' and 'Batgirl'.

For the first few months following translocation, all warru were tracked on a daily basis, to check that they were still alive, still present on Wamitjara and to see how far the animals dispersed from the point of release.

This routine then changed to tracking three times a week for the second month, then twice a week for the third and fourth months. Whenever possible, if warru left Wamitjara, they were retrapped and moved back to the site. This occurred a few times, with the furthest travelling several kilometres away.

Using the tracking collars, home ranges and key refuge points were also able to be recorded by 'denning' the warru. This involved actively walking (often climbing) towards a radio signal attempting to find the exact cave from where the signal was transmitted. The location was then recorded via GPS, providing an accurate measure of the





distance specific warru travelled from the release point. Denning was repeated at four, eight and 12 weeks post translocation, with results showing that some warru travelled very little once released, forming solid core areas, while others travelled large distances, moving constantly around Wamitjara.

Unfortunately, as with any translocation of native animals to unfenced areas, some deaths and loss is inevitable. To date 11 warru have been killed or have left the site and cannot be tracked. Some deaths have been proven to be caused by dingo, shown by the DNA on recovered collars. Other animals have disappeared, which may mean that they left Wamitjara and are out of radio tracking range or that there is a failure in the collar. Other collars have been located but can't be retrieved as they are deep within cave systems within the release area.

Despite these deaths and losses, the translocation is a huge success which can only be attribute to the hard work of APY Warru Rangers and Land Management team, private ecologists, external contractors and volunteers. With the committed. caring spirit shown by the local community and the Warru Recovery Team it looks like the future of the recovered warru population on Wamitjara will survive well into the future.

Natural Resources Alinytjara Wilurara are proud to support this program with funds made available through the Australian Government's National Landcare Program.





As a priority of the Yumbarra Conservation Park Co-management Board's Healthy Country Plan, work has begun to monitor the health and abundance of wombats in the region.

Tamahina Cox, Ranger and Alinytjara Wilurara's (AW) Project Manager for Women's Projects works closely with Wanda Miller and other community members to deliver this project.

On 17 November, the first wombat monitoring work began with Tammy and AW's Regional Ecologist Brett Backhouse, guided by Wanda, positioning 10 remote sensor cameras on wombat holes throughout Scotdesco homeland, just over 100km west of Ceduna.

This project aims to monitor heavily populated wombat areas, specifically looking at distribution (approximate numbers per square km), seasonal behaviour, their condition, as well as the impact of traditional hunting practices and other threats.

The team also aims to survey/monitor specific areas outside the dogfence to compare populations in more remote locations and with greater predation.

The Wombat Monitoring Project involves a number of site visits, installing and monitoring the remote sensor cameras and potential day/ night spotlight surveys.

It is hoped to extend monitoring activities further west over the next few years potentially focusing on areas such as Yalata IPA, private landholdings and farms.

To raise awareness of this much loved species, and to manage and protect it for future generations, the monitoring team plan to develop a

'seasonal hunting wheel'. This would help Aboriginal and other communities, schools and other organisations such as DEWNR to better understand wombat behaviours, needs and how they are part of Aboriginal culture.

A Management Plan for the Far West Coast area's Southern Hairy-nosed Wombat, is also being considered that would incorporate the scientific and cultural knowledge gathered from these surveys.

This project is funded through the Australian Government's National Landcare Program.

Top: Wanda Miller

Top below: Wanda showed Brett locations of holes Centre: Brett setting up the motion sensor camera Bottom: One of many wombat holes on Scotdesco









Rangers from across Australia's deserts share knowledge and experience

Rangers Robbie Sleep and Tamahina Cox from the Alinytjara Wilurara/ Eyre Peninsula Natural Resources Centre in Ceduna travelled to Western Australia in mid-November to take part in a three-day Indigenous Deserts Alliance Forum. Natural Resources AW also sponsored Antakirinja Martu Yankuntjatjara Aboriginal Corporation (AMYAC) members Stephen Tzakarides and Josephine Lennon to attend.

Amongst the 130 attendees, ranger groups from desert regions across Australia's three western states were well represented including: Goldfields Land and Sea Land Management, Kanyirninpa Jukurrpa Martu (KJ), Birriliburu, Wiluna, Spinifex, Nyangumarta Warrarn, Ngadju Conservation, Ngurrara, Kiwirrkurra IPA Paruka. Representatives from APY Land Management, AMYAC and the Central Land Council also attended. Groups varied in experience, some forming ten years ago, while another, from Mt Tom Price, only formed a month ago.

The formation of Indigenous ranger teams is well supported by mining companies, NGO's, state and federal governments and is continuing to gain momentum Australia-wide.

The makeup of ranger teams is similar, usually consisting of a coordinator, a steering group made up of Traditional Owners (male and female), a Works

Supervisor/Senior Ranger, a core group of Rangers (usually male and female but not always), supported by a pool of casual or part time rangers.

It was widely agreed that having flexibility to employ casuals was the key to the success of many ranger groups.

Selection methods of employing rangers within communities varies. Many have a trial period and select a core group from those who showed most promise. In most cases this is decided by the community's Elders and leaders.

Financial models vary according to opportunities related to location. Some ranger groups operate under a fee for service model. Many groups don't have that option as funding is provided by a key stake-holder such as mining groups.

Opportunities for training

Marcus Sandford from Prime Minister and Cabinet, talked about compliance training and the forthcoming availability of \$30 million in Federal funds for youth engagement nationwide. This is being assessed for an appropriate implementation model through a steering committee.

Under this fund, the Federal government is looking for joint partnership arrangements/training opportunities likely based on a practical delivery model. Interestingly, this was exactly what Natural Resources AW provided through Morning Star training at the Southern Deserts Alliance Forum held at Ilkurlka in 2016.

The Specialised Indigenous Ranger Program, based on a Queensland model, is designed to strategically build rangers' capacity, usually through a Cert III or IV in Conservation and Land Management. Higher qualifications may be undertaken if required or requested.

CSIRO's Indigenous science, technology, engineering and mathematics (STEM) Education project works with remote schools, to undertake basic monitoring and environmental activities. Through the schools, a two-way science model with is taught with Community Elders/ leaders directly involved.

Tammy met up with an old family friend at the forum, Chris Deslandes from CSIRO who now lives in WA





Indigenous Protected Areas (IPAs)

There are currently 75 dedicated IPA's in Australia, with \$15 million set aside to assist with the formation of additional IPA's up till 2023.

There was one new IPA established in 2017, with six others currently under community consultation.

There were eight new Ranger groups formed in 2017, bringing the total for Australia to 117. Five of these new groups were formed in WA.

The Southern Deserts Alliance Forum held at Ilkurlka last June is seen as a real success story, by everyone.

The training delivered at Ilkurlka was very well promoted and received fantastic feedback. As a result, training will be a component of all Southern Desert Ranger forums into the future, capitalising on group delivery to aid with associated costs and logistics.

After consultation with a working group at the forum it was decided that the Indigenous Desert Alliance group would seek to become an incorporated body in the very near future.

Discussions were held around options for future domestic and international Ranger exchanges. One Ranger group had travelled to Kenya to work and observe Ranger team operations there.

On the last day of the forum the WA treasurer spoke to the attendees reinforcing his support for Ranger groups across Western Australia. Much to delight of all there, he announce that in this year's WA budget \$20 million was committed to Ranger program development across Western Australia over the next three years.

Other presentations included:

- Mega fires: Gareth Catt discussed fires in the landscape; how Traditional Owners routinely burned country; fewer people on country means less traditional burning; the danger of mega fires
- Bilby blitz (Feach Moyal and Thalie Partridge)
- Night parrot (Steve Murphy)
- Construction of a monitoring app (Feach Moyal and Thalie Partridge)
- Ranger exchange opportunities
- Animal Tracking training discussion, based on a Kenyan model
- Country needs People advocates (PEW) (Patrick O'Leary and Sophia Walter)
- IEK (Indigenous Ecological Knowledge) sharing traditional knowledge between the young and older members of the community.

Below right: After the forum Tammy found the sunset at Cottesloe Beach a great place to unwind

Below: CSIRO's David Broun's presentation slide about the STEM project was well received

Coordinating communications was discussed including best ways to promote and share information between Ranger Coordinators.

The forum was very inclusive, with the level of good will amongst groups and supporters constantly apparent.

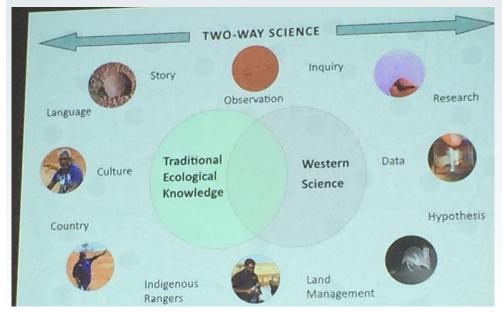
Ongoing funding for the next seven years is dependant on the outcome of a current funding application submitted by Desert Support Services and partner organisations to BHP Billiton.

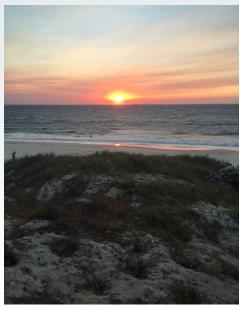
The next Southern Deserts Forum is planned to be held 70 km from Kalgoorlie, on a pastoral block and will be hosted by the Goldfields Rangers.

AW funded their attendees through the Australian Government's National Landcare Program.

Rangers from the Goldfields (Kalgoorlie) and Birriliburu Rangers (Willuna, WA) shared their experience from the 2016 Southern Desert Rangers Forum









Maintaining ecological sustainability requires an understanding of the natural resources that occur in the area and knowledge of how to look after them. It also requires a monitoring program that is sensitive enough to detect changes in populations of flora and fauna to determine whether management needs adjusting.

Natural Resources Alinytjara Wilurara supported by funding from the National Landcare Program (Sustainable Agriculture) commissioned Andrew Schubert from Desert Wildlife Services to undertake extensive research and create a report on the natural resources of the APY Grazing Leases.

Arnie Frank looking at urkri palya (good grasses) on Gunsite PDL, August 2016. Knowing what cattle are eating is important in working out land condition and carrying capacity

This involved collating existing data with new information collected on vegetation, land types and current land condition.

APY grazing leases cover an area of over 19.000 km2 in the far north of South Australia. These leases are comprised of 48 "paddocks" under the control of 16 different licensees, from the proposed grazing area of Arkawala in the far south-east to Amata in the far north-west.

Some of the grazing leases have cattle grazing under agistment agreements managed by the APY cattle business, and others are not currently stocked.

While cattle grazing can potentially bring income and employment opportunities for Anangu, grazing can also have negative impacts.

The Natural Resources of the APY Grazing Leases report aims to improve sustainability of the APY grazing

Below right: Eremophila rotundifolia near Myall Swamp Below: Abundant herbage indicates poor condition of hill fringing country on Sentinel Hill

perspectives. Lack of information about the

lands through a holistic approach

that considers cattle grazing in the

context of environmental and social

distribution of land types, current land condition, and locations of threatened and rare plants and animals that may be negatively affected by cattle grazing, has previously hindered effective planning and management.

The report addresses some of these limitations through collation of existing biological and environmental data with additional field data collected during this project. Data collected in the field included the recording of dominant plant species, land type and land condition information at over 1000 sites spread along roads and tracks across the grazing leases. In addition, 26 land condition monitoring sites were set up at intermediate grazing distance from watering points, mostly with the involvement of Anangu from







the relevant areas. Monitoring sites were concentrated on those areas currently under grazing.

Several areas of high biological importance were noted during the field surveys: ephemeral swamps of the eastern leases (particularly Bully's and Lennon Swamp), the diverse chenopod shrublands in the Myall Swamp areas on Bully's, and spinifex communities on sand over limestone containing rare plants on West Bore and Morrison's.

Weeds were relatively scarce apart from around highly disturbed areas where common and widespread weeds that are generally regarded as non-invasive were abundant. Of particular concern was the apparent rapid spread of two introduced African grasses, red natal grass (Melinus repens and Eragrostis cylindriflora). Buffel grass (Cenchrus ciliaris) is dominant across substantial areas of creek banks and alluvial woodland country in particular, with high potential for further spread.

While buffel may be a valuable pasture grass, its environmental impacts are of major concern. Options for grazing management of buffel grass are discussed, and include the use of "virtual fencing" to allow fine control of stock.

Rabbits have also had a major impact on land condition, particularly in

calcareous country. While much damage is historical, rabbits were present on many leases and represent a resurgent problem. In some areas donkeys and horses are adding to the grazing pressure, while large feral camels are regularly causing damage to fencing and other infrastructure.

Information from field work enabled the production of vegetation mapping for all grazing lease areas including detailed descriptions of the different vegetation types. The report includes Vegetation Mapping of the APY Grazing Leases. Vegetation mapping was used with estimated stocking rates for each vegetation type to calculate both current and potential carrying capacities for each paddock.

The majority of the grazing lease areas, were found to be in fair to poor condition, with overgrazing evident in most areas; numbers of cattle may be exceeding the long-term safe carrying capacity for most paddocks. Natural Resources AW is working with APY Pastoral to address these concerns.

This report represents a significant step towards developing informed effective management plans for the APY Lands' grazing areas considering both environmental health and sustainability and the economic potential to support the people who live in the region.



Lignum swamp, west of Arapingi Bore is being degraded by cattle could perhaps be fenced off. Lignum can be an important habitat for some bird species.



Toad Rush (Juncus bufonius) Apara Spring NW of Amata

Flowering Acacia ammobia in the east of Centre Bore Paddock. This is only the second known location for this species in South Australia.



Dense wildflowers (Swainsona villosa) at the base of granitic hills NE of Katjikatjitjara. The dominance of short-lived forbs such as this around the granitic hills is a sign over overgrazing, as forbs take over when grasses are eaten out.





Article coursesy of Nicholas White (Victorian Speleological Association)

Nicholas White has been leading a team of cave explorers on a yearly trip to the South Australian Nullarbor Plain since 2005 and before that on the Western Australian portion of the Plain. The team, from the Victorian Speleological Association (VSA) also includes members from other Australian Speleological Federation (ASF) clubs. The team's strategy is to find and document all caves and karst features such as dolines and rock holes in a 30 x 40 square kilometre area on each expedition. To do this, one member systematically flies a single seat ultralight plane and uses a GPS to locate features which are then found and documented by ground parties either on foot or on motor cycles.

Above: Golf Course Cave, so named for its 9 roof hole entrances Photo: S Milner

Ken Boland in ultralight plane, "Kitty Fox" Photo G Leeder

All members play a critical role in the success of these expeditions with Nicholas leading and ensuring that the correct permits are obtained, Ken Boland flying his ultralight plane, a team to map and process data and another to organise catering and supplies.

In total, this team has discovered and explored more than 2,500 new caves and karst features in the 18 years of these expeditions and in doing so also answered many questions about how the caves formed.

A band of blowholes which are only a couple of metres deep with small extensions, mostly less than ten metres in length, relates to a former shoreline that existed about 6 million years ago. This band is about 70 to 100 km inland from the present coastline.

There is a section with very few caves 10 to 20 km south of the blowhole band and further south, nearer the coast, is a better known band of caves some of which are deep and water filled.

Many of these caves, formed in a wet period of the Pliocene, contain important contents such as the bones of trapped animals or remnants from being used as carnivore dens.

"What keeps bringing us back every year is the thrill of discovery. It's giving us a better understanding of why and where the caves are. Each cave is different but it's the cave contents that are of most interest whether this is animal bones, bird use of the caves or evidence of Aboriginal use" said Nicholas.

Some of the caves display red ochre hand stencils, a clear indication that these provided Aboriginal shelter in the past.

Rockholes

Rockholes in the limestone pavements sometimes fill with water that is used by animals and people.

There are a number of well known major rockholes in the region. The VSA team have also located many others where stone artefacts provide evidence that they were once an integral part of early hunting and travelling routes.





Documenting past and present

During these exploration trips this team of scientific experts locate, explore and document the caves and their features.

Where caves are found to contain important contents such as bones separate trips are organised to ensure a relevant expert is able to view and assess the find.

Collecting scientific evidence

Most recently, in November 2017, palaeontologists from Adelaide University and the SA Museum focused on caves which had owl roosting sites.

This was a result of a request by Dr Pat Wooley from Latrobe University who asked the team to collect fresh owl pellets to help identify their food sources. Of particular interest was the mulgara, a small dasyurid marsupial.

After several years collecting owl pellets it was obvious that owls lived on a very restricted diet compared to the much richer bone piles that collect under the owl roosts in the caves. On this trip the group collected bones associated with the roosts to define the original owl diet from the residual bones.

Barn owls and masked owls of the genus *Tyto* were focussed on as the pellets they regurgitate still have easily identifiable bones. Owl pellets collected in 2013, 2015 and 2016 have only had one to four species of small mammals in the pellets, mostly the introduced house mouse.

Previous work from caves on the Western Australian Nullarbor from the 1960's showed that there were as many as 18 mammal species in the owl roost bone piles. This changed diet is probably attributable to the introduction of cats, foxes and the house mouse. Rabbit competition probably also contributed to what represents regional extinction of a number of species. These caves are all north of where sheep or cattle grazed as part of the pastoral industry.

The devastating effect camels were having on the waterholes and shrubs on the Nullarbor was very apparent. With camel management strategies undertaken by Natural Resources Alinytjara Wilurara over the past few years, scrub (such as *Eremophilia* sp.) in the protected habitat around caves appears to be recovering. The mulga (Western Myall) on ridges on the Southern edge of the Plain appear to be retreating southwards. There is no regeneration even though rabbits are in very low numbers but it is also not known if this is a lower rainfall effect.

Photo: S Milner

Some dingo skulls were collected from several caves which will be analysed by Dr Alan Cooper, Adelaide University for defining pre-1788 dingo DNA as so many dingoes now have interbred with European dogs. We also collected a skull of the Tasmanian devil which will have its DNA analysed and will be dated. Both the Tasmanian wolf and the Tasmanian devil are extinct on the mainland. This has been attributed to competition from dingoes which first came to Australia about 5,000 years ago. It is not known when they disappeared.

"We were disappointed that Mirning custodians could not join us on this last trip as we enjoyed having them with us for part of the 2015 expedition. Each trip to the Nullarbor provides a new and exciting experience and we look forward to future expeditions to this very special part of the world" said Nicholas.

Dingo skulls, Golf Course Cave

Photo K Kiernan



Owl pellets on residual pile of bones, Golf Course Cave Photo K Kiernan



Expedition members November 2017 Palaeontological Reconnaissance Trip L to R A Curry, M Curry, Ann-Marie

Binnie, A Treloar, L Reed, S White, N White, G Leeder, D Marsh, I Curtis, J Treloar, S Milner





keeping visitors and the landscape safe

Over the past 12 months work teams from Natural Resources Alinytjara Wilurara and Eyre Peninsula have worked tirelessly along the Nullarbor coastal cliffs, within Nullarbor National Park, to improve visitor safety and minimise risks of environmental damage.

Over 600,000 people travel across the Nullarbor Plain each year with an estimated 8 - 10 % of them visiting coastal lookouts. Many of the ancient cliffs that drop dramatically from the Plain into the waters of the Great Australian Bight are undercut and present a constant risk of unexpected collapse.

Aerial view of Wontan lookout, approximately halfway between Nullarbor Roadhouse and the WA border

Initially the network of existing tracks along the coastal strip were mapped and rationalised to determine which to rehabilitate and which to upgrade. Beginning at the Eyre Highway turnoffs, work has now progressed through to the cliffs where crews have been busy landscaping the tracks and lookouts.

During September, a team supported by Natural Resources Alinytjara Wilurara constructed stone cairns from local rock with interlinking chains to control and guide visitor movement on three sites along the Nullarbor cliffs.

These constructions effectively confine visitors to designated parking and walkway areas reducing damage to surrounding vegetation, including the Nullarbor Daisy which is only found in

the Nullarbor region.

Pubic feedback regarding the design and works to date has unanimously been positive, particularly the aesthetics of 'natural' structures over the old style of wood and steel fencing.

Eighty two stone cairns have been completed interlinked with 3.5 km of steel chain.

Previous attempts at visitor and traffic control in the area had not been as effective as hoped. People had jumped the flimsy fences to take photographs and much of the timber work had been vandalised.

Below: Adam Coleman (Ceduna Aboriginal Corporation)



Adam Coleman and Isaac Lawrie









Working with AW's Codee Spitzcowsky and Robbie Sleep, Anthony Kennedy and Kyle Watters from the EP region assisted in the final clean up and running chain on the last 2 lookouts.

Anthony, with many years experience working on access management in the lower EP region had considerable expertise to offer. Kyle's experience, gained across several DEWNR regions, also proved valuable in the team achieving such a great result. Both thoroughly enjoyed being there for the completion of that phase of the project.

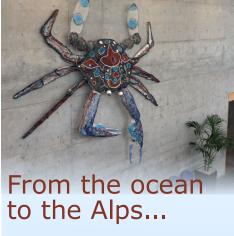
Professional stone mason Baz Vaughan, who undertook the bulk of the stone work provided basic training for four traditional owners in the construction of stone cairns and general stone masonry. Old walkways and tracks,

where the ground was compacted and bare, were ripped to stimulate native vegetation regrowth and minimise visitor impacts.

To date, 5.47 ha of degraded clifftop are now protected by traffic management structures. This includes closed access to the network of old tracks. These areas have been ripped to encourage natural revegetation and to deter off-road driving.

The key challenges mostly related to the distance from the nearest town of Ceduna (330 km). This made collecting stone, ferrying sand for mortar and working around contractor's personal commitments difficult.

Acknowledgement: Robbie Sleep and Codee Spitzcowsky for their assistance with this article.



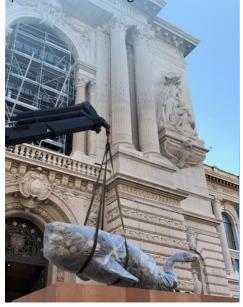
Marine debris sculptures, Jidirah and Guldamara, have drawn international focus to the impact that marine debris has on marine life.

Jidirah, a four-meter long sculpture of a southern right whale, and Guldamara, a spectacular sculpture of a blue swimmer crab were both created using marine debris collected by Aboriginal women from beaches along the Far West coast of South Australia.

Sculpted by Aboriginal artists from the Far West Coast in collaboration with GhostNets Australia, both are currently on tour Europe.

Natural Resources Alinytjara Wilurara is proud to have contributed to these projects and to its inception in 2014.

In January 2018, they will be housed in a private collection in Switzerland dedicated to the long term preservation of Indigenous art.



Nullarbor Lookouts - Protected Areas













Friends of the Great Victoria Desert bring their expertise to the arid lands

Following discussions with the Maralinga Tjarutja Community Council, the Friends of the Great Victoria Desert (FoGDV) were asked to contribute to an extensive survey of camel damage to quandong trees in the Great Victoria Desert.

As part of Natural Resources Alinytjara Wilurara's (NR AW) quandong survey team, Regional Ecologist Brett Backhouse from Ceduna, provided training to the FoGDV on how to record findings using GPS, ground photography and drones.

Simple mobile phones (without SIM cards) were provided for data entry. When a quandong tree was located all that needed to be done was to enter information about its condition, take a photo and use the phone's GPS to record the position.

The team were joined by two cultural advisers, Clayton Queama and Thomas Sandimar from the Oak Valley Community, who accompanied them along the Maralinga to Emu track.



"The hardest part was picking out quandong trees while driving - the presence of Clayton and Thomas proved to be essential for this. We were in awe of their powers of observation and knowledge of the country" said Bill Dowling, leader of the Quandong team.

Heading out from Ceduna on Thursday 18 May the FoGDV organised themselves into 3 distinct groups to:

- locate the quandong
- record site using drone photography
- photograph the site's vegetation

Each vegetation site was photographed from the surface then the wider area was photographed from above using the drone.

Peter Facy, who led the photography team enjoyed learning about the country from a cultural perspective from the Traditional Owners.

"During the trip Clayton and Thomas shared their knowledge on where to find Bush Tucker and told stories about their heritage which was very enlightening" he said.

During this very successful trip, two "missing" veg sites were relocated and 37 sites were photographed in all.

Before the teams set off, Brett asked them to record the locations of any weeds they came across. Fortunately there was little evidence of infestations with the exception of a few patches of Buffel grass which were duly noted.

For the last ten years, the Friends of Great Victoria Desert Parks have undertaken a rotation program of rephotographing existing vegetation photo points rotating around different segments of the desert to ensure each photo point is re-photographed every three to four years.

Previous quandong surveys undertaken further west recorded more than 100 trees, but on this trip the team only found 30 – all of them along the Maralinga to Emu track and north of Emu itself. This is consistent with Australia's herbarium maps which show that quandongs become scarcer to the northeast.

This program has provided the herbarium, Department of Environment staff and NRM ecologists as well as the local community Boards an overview of the vegetation changes taking place in different localities over time.

Above: Margaret Mead, Ian Jackson, Peter Facy, Clayton Queama, Thomas Sandimar, Phil Prust. Bob Baxter, Bill Dowling and Jan Forrest at Emu campsite. Photos: Jan

Extract from the Friends of the Great Victoria Desert Parks Newsletter, written by Bill Dowling June 2017



Have your say... Draft Management Plans for the Far West Coast Parks

After being reviewed by the **Nullarbor Parks Advisory Committee** (NPAC) and Yumbarra Conservation Park Co-management Board (YCPCB), the Far West Coast parks Draft Management plans are now available for public comment.

Valuable feedback from the NPAC and YCPCB was incorporated into the draft management plans for the Nullarbor parks and the Yellabinna and Warna Manda parks.

The Draft Management Plans were informed by the Far West Coast (FWC) Healthy Country Plan that was developed and signed off by the NPAC and YPCMB in 2016.

The FWC Healthy Country Plan identifies the important things to look after in the parks, the challenges and opportunities and the objectives and strategies to keep the parks healthy and enable Far West Coast people to maintain their culture.

The Nullarbor Parks Draft Management Plan and the Yellabinna and Warna Manda Parks Draft Management Plan explain how the parks will be managed through the partnership between Far West Coast people and Department of Environment, Water and Natural

Resources. This partnership is formalised through the comanagement agreements that detail the role of the Nullarbor Parks Advisory Committee and Yumbarra Conservation Park Co-management Board.

The action plan which details the activities that will be carried out on the ground to reduce the threats will deliver both the Far West Coast Healthy Country Plan and the park management plans objectives.

Monitoring activities are included to check how well the plan is working. Department of Environment, Water and Natural Resources staff and Far West Coast people will work together to carry out the on-ground activities such as maintaining rock holes.

Submissions on the plans close on 27 January 2018.

Both documents are at: YourSAy.sa.gov.au.

Copies of the plans are also available at the Ceduna Natural Resources Centre at 50B McKenzie St., Ceduna and the Adelaide Natural Resources Centre at 81-95 Waymouth St, Adelaide.

Farewell Jamal



After 12 months doing a great job working for Alinytjara Wilurara at the Ceduna NRC, Jamal Le Bois decided to put environmental work to one side (temporarily we hope) and take up another opportunity.

All his colleagues and the Board are sad to lose our quiet achiever who, in his role of Regional Landcare Facilitator, proved himself to be a hard working team player.

Jamal, who's family originates from Maralinga Tjarutja, initially joined DEWNR as a Trainee Land Manager, after former careers in mining and as a professional footballer.

Over the past year Jamal completed his Certificate 3 in Conservation and Land Management and was a valuable member of the Ceduna NRC team.

Sadly for us, the lure of bright lights, and the prospect of more money proved irresistible. He recently moved to Adelaide in order to take up a position in the mining sector on a fly in fly out basis.

We wish Jamal all the best for his future endeavours, and will happily welcome him back any time.







Mima Smart Yalata Community

Serving the PEOPLE, COUNTRY, WATER of the Alinytjara Wilurara Region



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