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Traditional Owners and government scientists gathered at Yappala Station in June to talk about how groundwater rises to the surface in Hookina Creek, an important cultural site in the Flinders Ranges situated about 20 kilometres north-west of Hawker.

The meeting brought together L Viliwarinha Yura Aboriginal Corporation (VYAC) directors Zaaheer McKenzie, Malcolm McKenzie and Alwyn McKenzie, with hydrogeologists Lauren Houthuysen and Steve Barnett from the Department of Environment, Water and Natural Resources.

Steve and Lauren have been working to better understand the Hookina Creek system and especially the waterhole known as Hookina Spring (Punkga Pudanha).

Continued on Page 03



We're excited to be able to bring you the second edition of *Connected to Country*, a space where we share the variety of stories and natural resources management activities that are occurring on traditional lands across the SA Arid Lands region.

In this edition we are thrilled to share with our readers a broad spread of articles from a range of the region's language groups – including the Kokatha, Adnyamathanha, Wangkangurru-Yarluyandi and Antakirinja Matu-Yankunytjatjara peoples.

Finally, a special thank you to those who shared their stories with us – and to our readers for spreading the word about *Connected to Country*, a publication that we hope will grow to be an essential read for both Aboriginal and non-Aboriginal audiences alike.

Janet Brook

Presiding Member SA Arid Lands Natural Resources Management Board We also welcome contributions from other government and non-government agencies, native title holders and individuals so that we can collectively present ideas, stories and knowledge to raise awareness of natural resources matters in the region.



LIKE US ON FACEBOOK!

Connected to Country readers can also keep up to date with natural resources management activities in the SA Arid Lands region by liking the Natural Resources SA Arid Lands Facebook page. This page brings you news from the Co-management Boards and Advisory Committees that are taking care of our national parks, the SA Arid Lands NRM Board, Pastoral Board and our six district-based NRM Groups.

Our page is here www.facebook.com/ naturalresourcessaaridlands or search for Natural Resources SA Arid Lands on Facebook.

CULTURAL SAFETY WARNING

Readers should take care when viewing this document. We would like to advise Aboriginal people that this publication may contain images of deceased persons, significant places or items and may cause unintentional grief or upset.

All references to Aboriginal culture within this document (including images, quotes, stories and language) have copyright and cultural use protocols which apply. Any reproduction of this material must seek appropriate authority.

Representatives of the several stakeholder groups including VYAC and the Adnyamathanha Traditional Lands Association were involved in the hydrological study at Hookina waterhole

...from Page 01

In particular they are looking at the origin and age of Punkga Pudanha water and whether the spring is vulnerable to changes in land and/or water management at a local or regional scale.

Lauren explained how their research indicates that rain falling on the Yappala and Elder Ranges to the east, slowly infiltrates down into the fractured rock aguifers, and travels underground over several thousands of years before rising to the surface at Hookina Creek, the lowest point in the landscape.

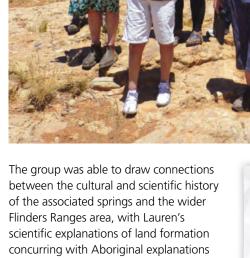
The flow appears to progressively increase downstream to the main Punkga Pudanha spring where the channel is restricted and flow has been gauged at 20 litres per second.

With the evidence pointing to a regional source for Pungka Pudanha, Lauren and Steve explained that the spring flow rate is unlikely to be impacted by local or short term influences such as droughts or local changes in land use and management.

However, significant increases in groundwater extraction to the east of Hookina Creek could reduce the spring flow.

Lauren also explained that during a particularly warm, dry period over 7,000 years ago, sea levels were up to 120 metres lower than they are today.

This would have meant that areas such as the Gulf St Vincent and Spencer Gulf, as well as the area between Kangaroo Island and the mainland would have been completely dry.



about traditional land and water use and the creation of lagoons existing in areas south of Port Augusta. Following the presentation and discussion, Alwyn McKenzie, VYAC Director said:

"This presentation adds weight to our people's oral stories and descriptions of country that is today covered by the sea the information is important and exciting." For Lauren, a Yamatji woman from

Western Australia, this was the first presentation she had given since graduating from the Aboriginal Groundwater Scholarship program in 2013, and it was a great opportunity to share her research and knowledge with the VYAC directors.

"They asked many detailed questions at this meeting which led to a very rewarding and in-depth discussion about the unique setting of the Hookina Spring region and how it could be managed in the future."

SAAL NRM Board, Natural Resources SA Arid Lands, Department of Environment, Water and Natural

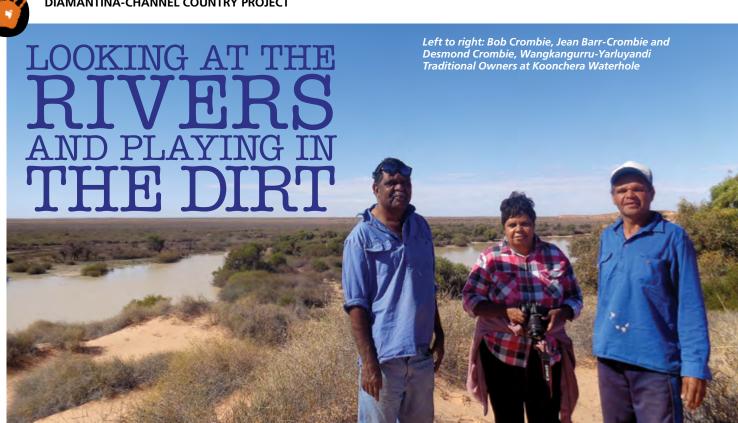
Hookina Creek is as an important cultural, archaeological, biological and hydrological site and is the only registered storyline in South Australia under the Aboriginal Heritage Act 1988.

The Hookina Creek storyline runs from Hawker through to Lake Torrens and some of the highest densities of archaeological sites (both registered and unregistered) in South Australia are located along the creek banks.

Hookina Spring (Punkga Pudanha) is an important healing spring and there is strong interest from the local Kuvani Adnyamathanha community to maintain the sustainability of the spring and to protect it from threats such as erosion, livestock grazing, water extraction, tourism, weeds and feral animals.

Yappala Station is an **Indigenous Protected Area** managed on behalf of the Kuyani Adnyamathanha people by the Viliwarinha Yura Aboriginal Corporation (VYAC).

We hope to bring you more on this story in a future edition of Connected to Country



Des Crombie, Wangkangurru-Yarluyandi man, joined the scientific team on the "Diamantina-Channel Country project" as a field assistant for the first time in May this year. On his return, he told his young son, "I've been out bush, sleeping under the stars, looking at the rivers and playing in the dirt". And it was an experience he is keen to have again.

The project is in the second year of its four year duration and is focusing on the natural features of key refuge waterholes and wetlands along the Diamantina River, Warburton River and Kallakoopah Creek as well as the human influences on these systems.

Working with the Wangkangurru-Yarluyandi Native Title group to improve understanding of the cultural significance and protection priorities of important cultural sites is a vital component of the project.

In addition to the cultural contribution the project pulls together a broad range of scientific expertise to understand how ecosystems function in the area, including flow paths and flooding extent, bird and fish species presence, vegetation responses to flooding, soil types and the extent of Coolibah recruitment, an important desert tree.

Eight project team scientists and seven field assistants undertook their second field trip into the study area and Des described the work undertaken with one of the two scientific teams working on collecting data on the Coolibah.

Des joined plant ecologists Jake Gillen and Richard Reilly in collecting core samples and cross sections from 27 Coolibah trees at 11 different waterholes. These samples provide a way to date the trees and estimate the growth rates. Samples were taken from different places, like waterholes and from the drier, outer floodplain. A small, gnarly tree growing out on the floodplain may prove to be as old as one growing near a waterhole that is twice its size.

samples from Coolibah trees to be sent on for genetic analysis. The results of this testing will indicate if the trees sampled are

will help provide insights

In addition, Des helped collect leaf all members of the same species or sub-species. This

into the variability and resilence of the Coolibah population down the length of the Diamantina-Warburton system. Information from previous projects on regional river systems – the Neales River and Cooper Creek – will provide additional insights into the species across the Lake Eyre Basin region.

For Des, it was a great learning experience and not only about the fish and rocks and plants. "Talking with Aunty Jean out there, she told me a lot I didn't know before and showed me the camps, and flints and now I can tell my little boy about those things."

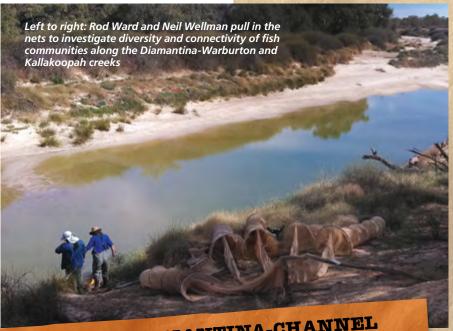
FURTHER INFORMATION

We wrote about the Diamantina-Channel Country project in the first edition of Connected to Country. Check it out www.naturalresources.sa.gov.au/aridlands



"I've never been on that country, my country, before and it opened up my eyes," Des said. "And I had a bit of experience with all of the scientists and I'd love to go again."





ABOUT THE DIAMANTINA-CHANNEL

COUNTRY Spread over a 158,000 square kilometre area to the east of the Simpson Desert in the Marree-Innamincka district, the Diamantina-Channel Country project is working in conjunction with land managers on four large cattle stations - Clifton Hills, Cowarie, Pandie Pandie, Alton Downs - and Kalamurina, a property managed for conservation by Australian Wildlife Conservancy.

The Diamantina River in South Australia runs 80 kilometres south to Goyder Lagoon, an extensive wetland area covering over 1300 square kilometres which drains to Kati Thanda-Lake Eyre via the Warburton Creek.

These waters reach Kati Thanda-Lake Eyre, on average, every two years and contribute the majority of water to the lake.

FURTHER INFORMATION

Contact Henry Mancini, Water Project Officer, Natural Resources SA Arid Lands, 8648 5300

JEAN BARR-CROMBIE REFLECTS ON A TRIP HOME

Jean Barr-Crombie, Wangkangurru-Yarluyandi Elder, based in Birdsville, is an artist who tells the stories of her life through her paintings. Her works reflect her love for her country and the deep connection she feels towards every part of it.

This work pictured (above) reflects the places where Jean's father worked and travelled across the country.

These works are signed "Aulpunda", Jean's traditional name, which speaks to the spirit in which they are painted, when Jean is deeply in touch with herself, her country, her family and her ancestors.

"Being so close to it, on country, it goes through my mind, this is what my Mum was talking about and every time I go home I am reminded."

Joining the field trips are an opportunity for Jean to be on country that she doesn't visit regularly and she said: "If the chance is there, you've got to go. You've got to know who you are, where you've come from and where you fit in."

Observing the scientists undertaking their work was of great interest to Jean and "something new to be a part of on country. Seeing how the scientists operate and having the chance to be there so they know too, what my knowledge is and how it can tell their work something."



UMOONA COUNCIL TAKES ON WEED CONTROL



From left to right: Jim Reynolds, Shaun Hayes, Chevahn Hoad, Joel Kowald, Andrew Dodd, James Saunders, Barney Lennon, Brett Butler and trainer Dave Georg at the Umoona Council workshed, Coober Pedy, 12-14 May, 2015

Camille Jenkinson, Aboriginal Partnerships Officer

A chemical accreditation and weed control training course was undertaken in Coober Pedy in mid-May, aiming to help participants to get a better understanding of how to safely undertake work, like weed spraying, involving the use of chemicals.

moona Council's new spray unit arrived in time for the trainees to test and trial equipment that could be used in "real life" situations.

The two and a half day course combined theoretical training with the practical demonstrations and concentrated on ensuring participants managed their personal safety through the correct handling, mixing and storing of chemicals as well as reading and understanding labels. The weed control component of the training allowed participants to

gain an understanding of the unique characteristics of several critical weeds in the Coober Pedy region and how best to manage them with chemicals.

These new certifications contribute to Umoona Council's vision of providing weed management services in and around Coober Pedy through the Umoona Council's emerging business unit, Solid Mulga Services.

SAAL NRM Board, Natural Resources SA Arid Lands, Australian Government



Andrew Dodd has a go using the new spraying equipment in the training session – with a sample weed in place and water in the sprayer!



SHARETH LOVE OF KAI

Chevahn Hoad, Executive Officer, Breakaways Co-management Board

During the consultation on the Kanku-Breakaways Conservation Park draft management plan, Ian Crombie, Chair of the Breakaways Co-management Board, visited the Coober Pedy Area School and had an enthusiastic discussion with the kids about the Park, the name Kanku and its meaning of "shelter".

Ian talked about how the Breakaways provide shelter for lots of different animals and then shared with the kids the Yankunvtiatiara names for some of the animals in the Park.

In turn, the kids told Ian about how special the park was to them and why they loved visiting.

This will be the first plan for the Breakaways Conservation Park and once adopted, the Board will work with stakeholders and the community to implement the plan. This will be done in a way that is consistent with the wishes of the Traditional Owners and the Coober Pedy community and the laws that apply

over this land including the Aboriginal Heritage Act 1988 and the Native Title Act 1993.

Coober Pedy Council, DEWNR

Ian Crombie visited the Coober Pedy Area School and spent time with Ms Costi's Reception/Year one class, sharing his knowledge and listening to the wisdom of enthusiastic kids



Thanks to all of the individuals and groups within the community that shared their comments with us on the draft Management Plan. We are now taking those comments into the finalisation of the Plan.

KANKU-BREAKAWAYS CONSERVATION PARK

The Kanku Breakaways Conservation Park forms part of the traditional country of the Antakirinja Matuntjara Yankunytjatjara people and is located 25 kilometres north of Coober Pedy.

The Kanku will be managed

to achieve the aspirations of the Traditional Owners, to conserve the cultural landscape and to involve people in its care and protection.

As a conservation park, it is provided with a high level of legal protection and is managed primarily for conservation.



Andamooka, Purple Downs and Roxby Downs Stations which they sub-leased in July 2015 from BHP Billiton as part of an historic Indigenous Land Use Agreement signed in September last year. Connected To Country's Mark Walsh spoke to Kokatha Chairman Andrew Starkey and Economic Development Manager Brenton McRae to find out more.

The latest venture for the Kokatha people started with a conversation between Andrew Starkey and Joylene Thomas (the named applicants for the Kokatha Native Title claim) around the kitchen table in 2002 where they were talking about their vision for Kokatha people.

"We talked about our long term aspirations for the Kokatha people," said Andrew. "We wanted a place where the older generation can pass on cultural knowledge to the younger generation while also providing a training ground for our people, greater economic security, and the opportunity to preserve our culturally important sites."

That conversation eventually led to the Kokatha applying for Australian Government funding to employ an Economic Development Manager who was tasked with attracting more funding to bring the vision to life.

Enter Brenton Mcrae.

"Our plan is to return the three properties to conventional pastoralism and run them as one entity with Roxby Downs Station the centre for our operations," said Brenton.

"Currently we have 480 cattle agisted from Arcoona Station and we have plans to bring in about 4000 sheep." "This will give us a chance to get the properties up to operational standards – to recruit staff and purchase equipment and materials – and within 3-5 years we expect to run our own herd."

PORT AUGUSTA

Other activities will include goat control, pest plant control (Mesquite and Athel Pine), kangaroo management and wild dog control, and the Kokatha are also interested in the opportunities available to them through the carbon economy.

"Mesquite in particular is a really difficult plant to get rid of as the seeds can lie dormant for decades and so you need to keep returning to control sites," said Andrew. According to Andrew there are a myriad of Aboriginal cultural stories and sites across the three properties and his own family have been connected to the country for millennia right up to recent times through their employment in the pastoral industry.

"We're keen to protect more of the culturally sensitive areas," he said. "We plan to mount an education campaign to restrict the environmental damage that is occurring on the properties, particularly from motorbikes and four-wheel drives." Lake Mary, for example – named after Andrew's great-great-grandmother and located 35 kilometres south of Roxby Downs on Andamooka Station – will be the subject of rehabilitation, while a cultural heritage management plan is also under development.

"Through funding from the Indigenous Land Corporation we're writing a plan for the three stations. GHD, a global consultancy company have been contracted to develop a scope of works and in the future, we want to set aside some of the culturally sensitive areas for protection and the continuation of cultural practises," said Brenton.

"We're also involved in delivering cultural awareness training to local mining companies, the Department of Defence and defence contractors."

The Kokatha are also working with the Department of Defence to ensure environmental damage is minimised and rehabilitation works can begin, and they are presently discussing the development of a native nursery at Woomera.

Importantly the new venture is expected to provide jobs for Kokatha people.

Kokatha Pastoral Company also has a joint venture with the holding company that has the lease on Arcoona Station to the south of the three properties.

"The holding company has dairy operations, trucking operations, a horse stud and cropping operations in other parts of South Australia," said Andrew.

"This will provide a multitude of opportunities for the station hands being employed on Roxby, Purple Downs and Andamooka Stations and will provide a basis for them, and others, to pursue other employment opportunities."

The three stations will also support some of Kokatha peoples' other business ventures.

"This year we won a contract with BHP Billiton to supply labour to Olympic Dam mine and we're planning to use the properties to train staff to be work-ready for mining operations," said Brenton.

"And we've been working with the Andamooka Gun Club, Roxby Downs Scouts and Roxby Downs Model Aeroplane Club to use the Stations for their activities."

The venture is supported by PIRSA, BHP Billiton and the Indigenous Land Corporation

FURTHER INFORMATION

Please visit www.kokatha.com.au or contact Jeanette Noble, General Manager on 8642 2068



Andrew Starkey (Chair, Kokatha Aboriginal Association) and Darryl Cuzzabo (former BHP Billiton Asset President - Olympic Dam) at the Kokatha Native Title Consent Determination Court Hearing and Community Celebration, September 2014

RETURN OF THE VIRLDA

Seventy-nine Virlda (Brush-tailed Possums) - 40 females and 39 males - were welcomed back to the Flinders Ranges National Park in late June after an absence of some 80 years.

efore their release into the wild, the Danimals were blessed and welcomed back to country by representatives of the Adnyamathanha as part of a smoking ceremony led by Terrence Coulthard. After the release Terrence said "it was great that my grandson, Kyrahn Coulthard, was a part of the Virlda release."

The Adnyamathanha have maintained a deep and intricate connection with all life in their country, and no one part of it is more important than another. This relationship is called Yura (Aboriginal people) Muda (creation stories, ceremonies and law) where all people, animals and plants work together to survive.

The return of the Virlda is very significant and may prove to reconnect other parts of the landscape as explained by Terrence:



(Native Orange). For some reason the Iga is not regenerating in the wild naturally. It could be a natural part of the life cycle, similar to that of the Mulga. However, it could be that the Virlda have vanished from the area. whom at one time ate the fruit and spread the seeds. The reintroduction of the Virlda to the area may see the regeneration of the Iga trees. The fruits we collect in the wild are from the plants that our grandparents collected fruits from."

Nearly 30 of the female Virlda had pouch young at the time of release and at the time of writing the radio-tracked Virlda were faring very well with no mortalities reported.

The Virlda join a further 37 Idnya (Western QuoII) which were reintroduced to the Flinders Ranges National Park in May.

Foundation for Australia's Most Endangered Species (FAME), DEWNR



YOU CAN HELP...

Donations to the Idnya (Western Quoll) and Virlda (Brush-tailed Possum) project can be made by visiting www.fame.org.au/projects/western-quoll or contact fame@fame.org.au for more information

FUTHER INFORMATION

Subscribe to Idnya e-News for a more detailed email update on the Idnya and Virlda's progress. Send an email with the subject "Idnya/Virlda update" to SAAridlands.sa.gov.au





Mark Walsh, Aboriginal Partnerships Co-ordinator, Natural Resources SA Arid Lands

Have you ever heard of such a thing? The guys at Nantawarrina have, and so too have lots of regional land managers thanks to recent training by Col Stanton, soil conservation expert.

) oads and tracks on pastoral Lproperties often attract erosion because they collect water running off the landscape as well as rain falling on road surfaces. Managing this run-off helps the water continue its natural flow direction down the landscape and helps to minimise erosion and track damage.

Whoa-boys are one of several techniques to manage water flow and their construction was described and demonstrated during a two-day training workshop on Nantawarrina Indigenous Protected Area (IPA) and Angepena Station in late August.

Reading the landscape and understanding the natural water flow pathways is central to maintaining station roads and tracks. So too, is "spreading the load on the road" - maintaining the tracks by driving over different parts of it, not always in the wheel tracks made by other vehicles.

Whoa-boys and "spreading the load" were identified by workshop participants, Cameron Johnson, Alan Smith and Thomas Wilton from Nantawarrina IPA as being some of the most practical and useful things they learned at the workshop.

SA Arid Lands, Australian Government

"We liked how Col explained that the whoa boy would mean we didn't have to keep repairing the same patch every time it rained! And I've told everyone that we must spread the load on our roads to save ourselves time and money maintaining them."

[Cameron Johnson, Nantawarrina Ranger and workshop participant]

FIND OUT MORE

Natural Resources SA Arid Lands filmed Col Stanton's workshop training and are preparing an instructional video. Call Mark Walsh on 8648 5300 to order your copy!





VEGETATION BACK ON THE VULKATHUNHA-GAMMON RANGES

Sian Johnson is an Adnyamathanha woman and Park Ranger in the Vulkathunha-Gammon Ranges National Park in the North Flinders Ranges. Here, Sian shares with us the changes she has noticed in the vegetation in the Park throughout her lifetime.

Tgrew up in Nepabunna with my \perp family and I have always loved being out in nature. It was my Grandma who told me what plants we can and can't eat and how we can use them for other things. I have had experiences on pastoral properties too but in the last four years I have been employed as an Adnyamathanha Ranger at Vulkathunha. Seasonal conditions, particularly drought has a big impact on the vegetation, but so do goats. I remember as a child seeing lots of goats and everything being really dry. We can't do much about the drought, but the work that's been done on the goats in the Park has made a big difference.



The *Bounceback* program operates in the Vulkathunha-Gammon Ranges National Park and includes the removal of feral goats and the aerial and ground fox baiting program.

I have noticed the regeneration of plants, trees and grasses that had died or been eaten out by goats and rabbits. Seeing the plants come back is really great.

Some of the plants that have come back include the Mulga trees, *Iga* tree (Wild Orange), *Vada* (Dead-Finish), *Widilda* (Acacia), *Ngrie* (Cassia) and the *Minara* tree (Bullock Bush) which the goats love to eat. Seeing more of the *Ayaya* (Balcanoona Wattle), the Slender Bell-Fruit tree and *Vinba* (Native Pine) is also encouraging because it tells me that there are less goats around.

Vati Waka (Sandalwood trees) have also regenerated around the Park. I remember Grandma burning the bark of the Vati Waka grinding up the ash with fresh Emu fat for antiseptic paste. It's really important not only to preserve these plants in the Park, but to see them thrive.

VULKATHUNHA-GAMMON RANGES NATIONAL PARK

Vulkathunha-Gammon Ranges National Park was the first National Park in South Australia to undertake the Co-management model for park management in 2005. Under a shared arrangement with the Adnyamathanha Traditional Lands Association (ATLA) and the State Government, a Co-management Board oversees the management of the park through the combination of traditional knowledge and contemporary science. The Comanagement Board supports the continuation of the conservation and pest management program conducted through the Bounceback program.

When I drive or walk around I see more of the salt bush family, bluebush, and other small shrubs and grasses that have not been seen for some time. And seeing regrowth of gums, Native Hibiscus and Tea Trees.

Around Grindell's Hut we have an enclosure where the Darling Pea grows. Over the last few years it has flowered more and started growing in other areas.

Regrowth of the vegetation is providing food and shelter for the native animals such as the Yellow-footed Rock-wallaby, Echidna and other small reptiles as well as birds such as the Bustard and Wild Turkey. The plants and the animals and the people all need each other to survive.

When I see all the plants coming back I feel that we have done a great job of controlling the goats on park and the good season of rain we have had.



LIKE TO SHARE A STORY? DISCUSS A NEW NRM PROJECT?

The Natural Resources SA Arid Lands Aboriginal Partnership Team would love to talk to you about your Connected to Country story or NRM project ideas. Contact Mark Walsh on 8648 5300, email SAAridlands@sa.gov.au or drop into the Railway Station at Port Augusta.

TO JOIN OUR MAILING LIST...

Contact Natural Resources SA Arid Lands (08) 8648 5300 or email SAAridlands@sa.gov.au

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Content due by
COB Friday 15 January 2016

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