

# ARKAROOOLA WILDERNESS SANCTUARY



## From the ARK

NEWSLETTER NUMBER 1

WINTER 2005

At ARKAROOOLA WILDERNESS SANCTUARY we greatly value feedback from our guests. Recently, John Horner, a visitor from Adelaide, suggested that we produce an electronic newsletter. Thanks John for your great suggestion. We are delighted to now launch our newsletter *From the ARK*. Quarterly issues will be emailed out mid winter, spring, summer and autumn. Through our newsletter we will keep you informed about seasonal conditions, special events, new products, and research activities. *From the ARK* will also feature natural history, earth history and astronomy articles, material from our archives, and details of conservation works undertaken on the sanctuary.

To join our mailing list just email us at [admin@arkaroola.com.au](mailto:admin@arkaroola.com.au)  
For a print-friendly download visit our website at [www.arkaroola.com.au](http://www.arkaroola.com.au)

### A MESSAGE FROM DOUG



Hi. It's Doug. Although visitor numbers are down across the region I've got a lot of things to smile about here at Arkaroola. In April we submitted eight products for Advanced Eco-tourism accreditation, and were successful with all. The visitor centre is up and running again with regular talks in the evenings. New directional signage for the sanctuary is currently being produced. The village cacti are soon to go, and we will be doing a major weeds survey in August with PIRSA officers. We've had the best winter rains for more than a decade, a promising start for an excellent spring. I'm heading off to the US to promote our Observatory facilities and will catch a Star Party in California. We're planning on having a Star Party here at Arkaroola over the summer – more about that when I get back in a few weeks time.

Cheers *Doug*

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# ARKAROOOLA WILDERNESS SANCTUARY

## NEWS FROM THE ARK



### WELCOME RAINS

Arkaroola's climate is predictably unpredictable. Although mean annual rainfall is about 200 mm, 'average' years are rare. Since 1999 annual rainfall has been well below the elusive average, with only 103 mm falling in 2002 and 78 mm recorded in 2004 at Arkaroola Village. Severely defoliated river red gums along many creeklines throughout the Flinders Ranges tell us that conditions have been too dry for too long.

However over the past four weeks 68 mm has fallen at the village with 86 mm across the Ridge Top country. Three gently soaking rains during June/July did not raise creeks, making these the most beneficial winter rains in more than a decade. Already grasses and forbs are germinating bringing a softness to the mountains we have not seen for some years. Porcupine grass is greening up, lichens, mosses and liverworts are actively growing, fungi are bursting forth, and the eremophilas have freshened. Native land snails are out and about making the most of their brief reprieve from solitary confinement.

**With some plants already budding up, this could well be the spring not to miss!**



### FAUNA RESCUE

Native animal road kills are an unfortunate consequence of improved track conditions and increased traffic in outback areas. Kangaroos and emus have no 'road sense'. If a road or track crosses the route they are travelling, native animals will 'just go'. Wedge-tailed eagles often feed on fresh road kill. Occasionally they too become victims. After feeding, eagles take longer to get off the ground, because of a significant short-term increase in bodyweight. As a vehicle approaches, eagles may fail to reach a safe height above ground after leaving a carcass. It is important to reduce speed when approaching any roadside stock or wildlife.

Should an animal be knocked down by a vehicle, travellers are asked to stop and check on its condition. If the animal is injured but not dead, the incident should be reported to the nearest National Parks and Wildlife office so that the animal can be put down humanely. In the northern Flinders, rangers at the Vulkathuna Gammon Ranges National Park can be contacted on 8648 4829. Orphaned joeys and small animals with minor injuries should be gently wrapped in a jumper or blanket in cool to cold weather, or a towel or pillowcase in warmer weather. They should be kept in a dark, quiet place, with minimal handling. Kangaroos are very easily stressed. An animal with minor injuries may die from shock if not handled correctly. Injured animals should also be taken to a parks office or brought to Arkaroola Wilderness Sanctuary.

A wildlife carer with several years experience in fauna rescue, Arkaroola's Georgie Green can provide care for any native animals superficially injured and orphaned in the northern Flinders Ranges. Georgie can be contacted at Arkaroola on 8648 4848.

### ARKAROOOLA'S VISITOR CENTRE UP AND RUNNING AGAIN

After an absence of fifteen years I have returned to Arkaroola to work. With my colleague Georgie Green, I am getting the Visitor Centre up and running again. We provide bushwalking, touring and 4WD driving advice, present regular evening talks, and lead guided walks. And we try to answer the many questions that visitors have. During the spring school holidays we will be running a kids activities program. Inspired by Arkaroola's founder Reg Sprigg, we continue to support research activities and to promote education.

Arkaroola's conservation activities will be managed through the Visitor Centre. Georgie is a qualified conservation and wildlife manager. And six years spent with the South Australian National Parks and Wildlife Service has given me new skills in applied conservation.

During the past twelve months we successfully lodged two Commonwealth Envirofund project submissions. The removal of all cacti from the village, treatment of a local Devil's rope cactus infestation and the engagement of weed specialists to undertake an early intervention weeds mapping survey of all public access tracks across the sanctuary are fully funded. Arkaroola is also collaborating with the Department for Environment and Heritage on feral animal control, threatened species management and other regional conservation projects.

Whether you are a birdwatcher, belong to a camera club, are keen on rocks, love bushwalking, are looking for some serious 4WD driving, or just want some space of your own in one of Australia's most spectacular landscapes, Georgie and I will make sure that you get the most out of your next visit to Arkaroola. Come and see us soon!

*Lorraine*

*An evening fireside talk in the Visitor Centre*



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# ARKAROOLA WILDERNESS SANCTUARY

## PLANT PROFILE



### THE IGA TREE

The Wild Orange or Iga tree is a signature species of the Northern Flinders Ranges. Like several other plant species found on Arkaroola Wilderness Sanctuary, the Iga tree (*Capparis mitchellii*) is a relict species or carry-over plant from earlier wetter times. The Wild Orange is a small distinctive looking tree, with a dense canopy of dark green shining foliage. Spectacular cream-coloured flowers appear soon after rain, especially during the summer months. As they ripen the large orange-like fruits produce a heavy scent that carries on the air in the evening. Despite its name, the Wild Orange is not a member of the citrus family.

The leaves of the Wild Orange are very palatable and are eaten by stock and wild goats. Arkaroola has not carried stock for over thirty years and is home to many healthy Wild Orange trees, with plants in all age classes. The Wild Orange is the preferred larval food plant of the Caper White butterfly *Belonis java*. Small white butterflies are often seen flitting through the canopy.

The Iga tree has great cultural significance for the Adnyamathanha people of the Flinders Ranges. The northern Flinders cultural tourism business, Iga Warta, takes its name directly from the Wild Orange tree.



## FROM THE ARKHIVES

### RIDDLE OF THE ROUND HOUSE

Most visitors to the Bolla Bollana smelter site are puzzled by what they find. So to are geologists, miners and metallurgists.

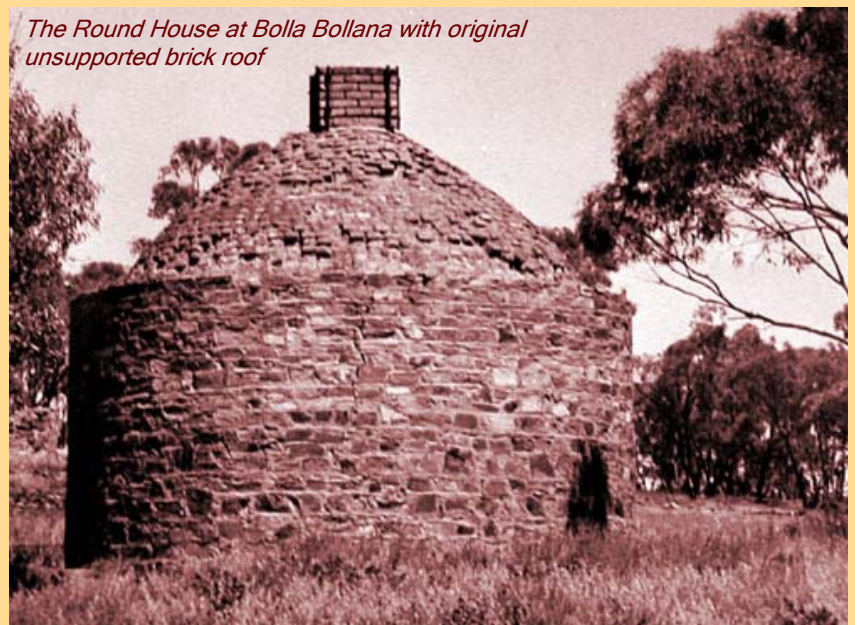
In the 1870's a central smelting facility was developed at Bolla Bollana to service a group of small but locally rich copper mines in the northern Flinders Ranges. The site was chosen because of its proximity to permanent springs at Bolla Bollana, less than a mile away. A small village was established, comprising a manager's residence, store, post office and workers quarters. Little remains of the earth and slate buildings, that were roofed with native pine posts and brush.

The smelter complex comprised two shaft furnaces connected to a long flue and chimney stack. The flue was enclosed with fire-bricks supported by iron arches. The large internal dimensions of the flue suggest that furnace draft and subsequent temperature regulation, may have been an issue. No photographs exist, and perhaps were never taken, of the original infrastructure.

The beautifully constructed heritage-listed Round House is the only intact building to survive at the site. Its unsupported brick roof, a brilliant example of brick-laying craft, was plastered over in 1982, by the National Parks and Wildlife Service, on whose land the site is located. It is thought that the Round House was used as a brick-making kiln. Most of the bricks used to line the furnaces and flue, were made on site from local fire-clays and crushed tremolite marble.

What is most puzzling is that both the Round House and the twin furnaces appear to have had little or no use. The furnaces have probably not been fired, and the Round House bears no evidence of the high temperatures required for fire-brick manufacture. Hundreds of locally-made bricks lay scattered either side of the flue and furnaces. Several tonnes of slag remain at the site, clear evidence of past smelting activity. Perhaps the furnaces are not the originals but replaced older furnaces that failed to produce sufficiently high temperatures for efficient smelting, as indicated by the quality of the slag.

Many questions remain unanswered at the Bolla Bollana smelter site. Why not consider some archaeological sleuthing on your next visit to Arkaroola?



# ARKARoola WILDERNESS SANCTUARY

## CREATURE FEATURE

### ARKARoola'S BATS

Unique among mammals in their power to appeal to our sense of mystique and myth, bats have featured in folklore for centuries. Bats typically take the form of an evil or quite terrifying character. Its not surprising that bats have retained this label as very little research has been conducted on many bat species, even though bats makeup around 25% of Australia's terrestrial mammal population.

Bats are highly adapted to their environments and have existed in their current forms for at least 55 million years. Their main adaptation is that of flight and this has controlled every aspect of their bodies from their light bone structure to the formation of the wing. This wing has evolved from a forelimb, similar to what can be seen on many of today's mammals and is made up of greatly elongated fingers covered in an elastic skin, which is perfectly designed for flight.

Arkarooola has a diverse array of bat species. Of the twenty species of bats found in South Australia nine have been recorded on the property. All of Arkarooola's bats are classified as microchiroptera or insectivorous bats. These species are known for their ability to navigate using a series of high-pitched sounds called echolocation. Echolocation works by the animal omitting sounds and then waiting for the echo to rebound off of a specific target, for example a food item. The time the echo takes to get back to the bat allows it to calculate it's exact distance from the intended target.

This season Arkarooola is giving visitors the chance to hear these incredible sounds as part of our new **BATS and BOOBOOKS** dusk tour. Using a bat detector tour guides will track the sounds of feeding bats as they fly over the beautiful Bolla Bollana Spring. *(Just one more reason to make that return journey you've been thinking about!).*

*Georgie*



Photo by Ryan McMillan

## GEONOTE



Ediacaran Fauna

Dickinsonia costata

### GOLDEN SPIKE FOR THE FLINDERS

Great discoveries are usually a combination of serendipity, excellent observation and hard work. All of the above contributed to Reg Sprigg's discovery of a field of fossils of unknown origin above the eastern shore of Lake Torrens in 1946. The fossils were later identified as the oldest complex animals ever found on earth. Reg's discovery challenged conventional wisdom, pushing back the dawn of multi-cellular life some 70 million years earlier.

In his book **GEOLOGY IS FUN** Reg Sprigg wrote "*The fossil group certainly now justifies its own completely new age – 'the Ediacarian Era' or 'Age of Worms and Jellyfishes'.*"

In April 2005, the international Geological Time Scale was amended. A site in the Flinders Ranges National Park was selected by the International Palaeontological Congress, as the world reference locality or 'Golden Spike', for the new Ediacaran Period. Always the visionary, Reg would be smiling today after struggling for more than two years as a young government geologist, to interest the scientific community in his 1946 fossil finds at Ediacara.



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# ARKAROOLA WILDERNESS SANCTUARY

## CONSERVATION & RESEARCH

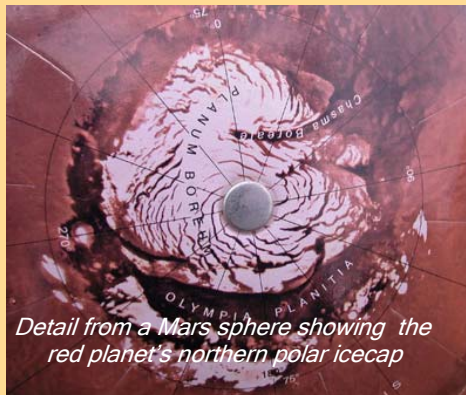
### ALOE GOODBYE

When they planted cacti at Arkaroola Village in the 1970's Reg and Griselda Sprigg had different motivations. For Griselda, cacti were the perfect garden plants, spectacular in appearance, requiring little water and able to withstand the browsing habits of euros.

For Reg, everything had a story to tell. A diverse collection of cacti and other succulents were planted as museum items with a difference. Cacti are amongst the most highly developed plants on earth. The 'young' cacti represent the pinnacle of plant evolution and were to contrast dramatically with the 'ancient' ferns and cycads in the Mesozoic Garden that Reg established in 1986.



Several cacti species have become environmental weeds in the central Flinders Ranges, all of them garden escapees. At Arkaroola we have decided to remove all of the cacti, agaves and aloes, and replant beds with species native to the area. We are also treating a small infestation of Devil's rope cactus which is currently found across a three square kilometre area surrounding the village. Ironically Devil's rope was never chosen for amenity plantings at Arkaroola. Using funding provided through the Commonwealth's ENVIROFUND program, Arkaroola will engage contractors to remove the cacti and other succulents during the winter months. Watch out for a feature in our *From the ARK* Spring newsletter.



*Detail from a Mars Sphere showing the red planet's northern polar icecap*

### VIRTUAL MARS

The Sprigg family has a long history of supporting scientific research. When the Mars Society of Australia (MSA) began searching for an analogue area in the Australian outback, Arkaroola was keen to be involved. Of six candidate regions considered, Arkaroola was selected because it was best able to satisfy essential criteria. Look to Arkaroola and you will find ancient landscapes that record changing climatic conditions over time, past and present geothermal systems, the occurrence of radiation resistant 'extremophiles' - micro-organisms that live in the radioactive waters of Paralana Hot Springs, and dusty saline land surfaces that bear some visual similarity to Martian landscapes. At Arkaroola Wilderness Sanctuary large scale studies of geological and biological systems similar to what is likely to be encountered on Mars, can be undertaken.

The Mars analogue area is situated on the eastern plains of Arkaroola. It is one of a number of global sites. Other Mars analogue areas can be found in Utah, Iceland and Devon Island in Arctic Canada.

In early July Jonathan Clarke, vice-president of the MSA, visited Arkaroola to provide an update on the project. A contract for the construction of a 'Habitable' or Mars laboratory / living module has just been sent to tender. When investment funding can be found to test the Habitable in the field, the MSA will return to Arkaroola. In the future long range surface reconnaissance missions may be undertaken on Arkaroola and neighbouring Woollana station to test both human and technological resources.

**For further information visit the MSA website at [www.marssociety.org.au](http://www.marssociety.org.au)**

## GALACTIC GOSSIP

### STAR PARTY IN THE SCOPE

Punch in 'Star Party' and Google will bring up 21 million results! So what is a Star Party?

Since the 1920's, amateur astronomers and telescope-makers have been gathering to share their enjoyment and wonder of the night sky. However over the past 15 years interest in Star Parties has exploded.

Star Parties are usually run as non-profit events, to promote interest in astronomy. At Star Parties the general public can meet with experienced observers and learn to navigate the night sky. Novices are also introduced to the language of deep space : red-shift galaxy clusters, 'cosmic butterflies', globular clusters and more. Some of the bigger events are supported by state and national Astronomical Societies. And some have sponsors, usually telescope, binocular and optical instrument makers and Astro magazines.

Star Party programs include guest speakers, astrophotography exhibitions and competitions, swap meets, product releases, and novelty activities such as binocular observing challenges. Strict protocols are observed at Star Parties such as white light curfews.

Doug Sprigg will be attending the Shingletown Star Party in California in July. 7949 miles is a long way to go to a party! A keen amateur astronomer, Doug will be promoting Arkaroola's astronomical facilities whilst in America.

When Doug returns Arkaroola will start planning for its first Star Party which we anticipate will be held in mid summer of 2006. Further information about this event will appear in the Spring newsletter.

*If you are interested in astronomy or photography check out the following website <http://antwrp.gsfc.nasa.gov/apod/archivepix.html> where you will find NASA's Astronomy Picture of the Day Archive.*

# ARKAROOLA WILDERNESS SANCTUARY

## PRODUCT INFORMATION

### NEW PRODUCTS IN 2005

#### **Weetbix & Wallabies**

*An early morning breakfast tour to Arkaroola Waterhole to observe the rare Yellow-footed rock wallaby and learn about what is being done to ensure its survival..*

#### **Bats & Boobooks**

*An early evening tour to Bolla Bollana Springs to listen for bats. Using special Bat detector boxes guides track the ultrasonic sound signatures made by different bat species.*

#### **Written In The Rocks**

*A half day tour to Barraranna Gorge, stopping to explore Arkaroola's complex earth history along the Paralana Fault Line.*

#### **The Village Walk**

*A short walk around the village area, with introductions to the cultural and natural history of Arkaroola and the northern Flinders Ranges.*

All new products have Advanced Ecotourism accreditation.

### ADVANCED ECOTOURISM ACCREDITATION

Arkaroola Wilderness Sanctuary is leading the way in setting a benchmark for ecotourism in the Flinders Ranges.



Twelve of Arkaroola's products now have Advanced Ecotourism accreditation. These include:

#### **VEHICLE-BASED TOURS**

*Ridge Top Tour 4WD  
Waterholes Tour 2WD  
Echo Camp Backtrack 4WD Self-Drive*

#### **GUIDED DRIVE/WALKS**

*Weetbix & Wallabies Tour  
Bats & Boobooks Tour  
Written In The Rocks Tour*

#### **OTHER**

*Observatory Tours (2)*

#### **GUIDED WALKS**

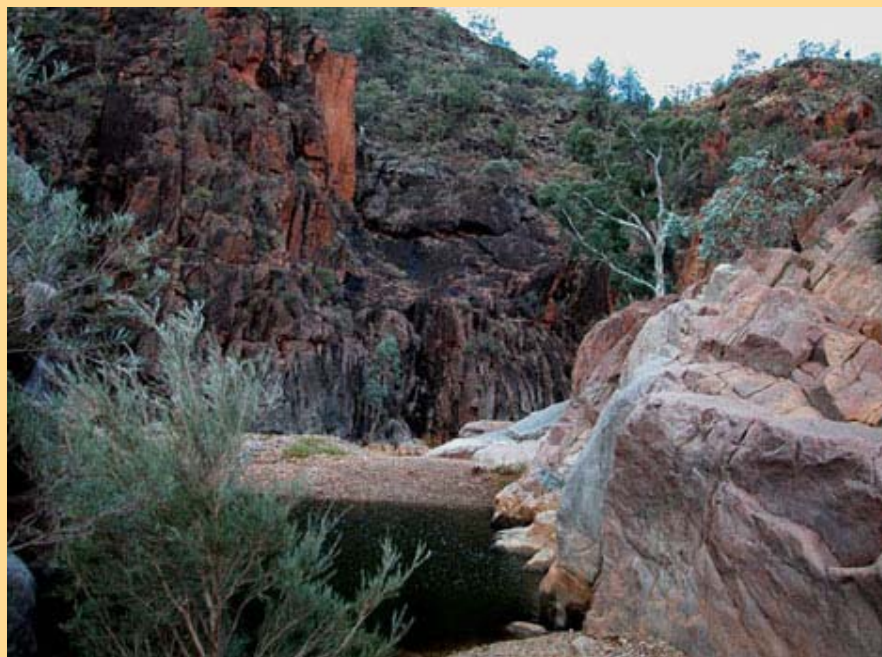
*Village Walk*

#### **SCENIC FLIGHTS**

*Local Scenic  
Lake Frome  
Local & Lake Frome*

For additional information about any of our accredited tours check our website at [www.arkaroola.com.au](http://www.arkaroola.com.au)

## FROM THE ARK POSTCARD



*Nooldoonooldoona Waterhole*

*June 2005*

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