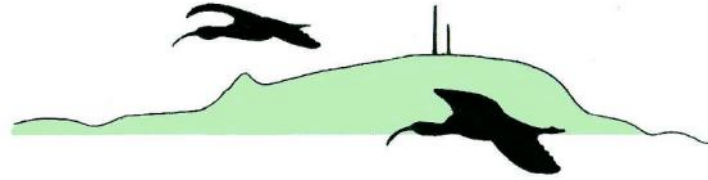


**ORANGE FIELD NATURALIST AND CONSERVATION SOCIETY Inc**



**NEWSLETTER AUGUST 2023**

**NEXT MEETING**

**Thursday 10<sup>th</sup> August, 7.30 pm**  
**A window on the lives of the CSU**  
**Peregrines. Speaker Dr Cilla Kinross.**

Face to face at Nguluway Ngurang Senior  
Citizens Centre North Room  
(Opposite side of carpark to Harris Farm)

**Committee Meeting**  
**Thursday 10<sup>th</sup> August, 6.30 pm**

**Excursion**  
**Sunday 13<sup>th</sup> August**  
**CSU Peregrines and bird survey sites at**  
**Cilla's property on Ophir Road.**

**Next Meeting – Thursday 10<sup>th</sup> August.**  
**A window on the lives of the CSU**  
**Peregrines. Speaker Dr Cilla Kinross.**



*Diamond's look of astonishment when X leaves with starling, 14 July 2023.*  
*CSU webcam image.*

In the middle of 2007, a pair of peregrine falcons were noticed using Charles Sturt University's Orange campus as a hunting ground. Ian Grange, an English PhD student, Cilla and Scott Banks, a member of the IT staff, decided to place a nest box high up in the water

tower. The falcons took to the box very quickly and no end of prey was brought in to consume.

IP cameras were located and mounted – two inside the box, one focused on the nesting scrape and the other overlooking the ledge and their flight approach. More recently an outdoor cam provides a view of the top of the tower where they often roost and mate. These indoor cams have provided brilliant close-up footage and the livestreams and videos are viewed by people around the world.

In the last two years Cilla has been analysing the images and data. She will discuss her analysis of breeding and other behaviour, as well as diet and touch on other aspects of her research. Those who regularly watch the webcams are encouraged to come and listen.

**Next Excursion – Sunday 13<sup>th</sup> August.**  
**CSU Peregrines and a visit to Cilla's bird**  
**survey sites in the bush on her property on**  
**Ophir Road.**

The excursion will start at the CSU carpark # 3 where we will view the water tower and hopefully see the peregrines and the Girinyalanha Wiradjuri cultural gardens (a work in progress).

We will then drive to Cilla's property just before Third Crossing on Ophir Road. Cilla will take us for a walk along Summer Hill Creek to revegetation and bush areas on her property where she conducts quarterly bird surveys.

Meet at the CSU carpark # 3 at 9 am. Wear sturdy shoes and long pants. Bring binoculars if you have them. Bring morning tea as the excursion should finish by 12.30 pm.

After the excursion you can continue along Ophir Road for a walk in the Mullion Ranges SCA or a picnic at Fourth Crossing, but this would not be part of the OFNCS excursion.

**Last Meeting – Thursday 13<sup>th</sup> July, 7.30 pm.**  
**The Nullarbor, so much more than just a treeless plain.**

*Speaker – Denis Marsh, speleologist.*

*Report by Rosemary Stapleton, photos supplied by Denis.*

Denis's enthusiasm for the citizen science project mapping karst features on the Nullarbor shone through in his talk. He outlined the project's history and objectives as well as the scientific methodology used to not only document all the karst features but to also gather information on the palaeontology, archaeology, and the living creatures they find.

There have been 23 expeditions since the project started in 1999 with Denis attending 15, the most recent one in May this year. The small group of speleologists from across Australia set up a self-sufficient base camp at a remote location on the saltbush and bluebush plain of the Nullarbor. Some years surveys have been in South Australia, but with scientific permits now hard to get in SA, the group has returned to Western Australia where the project commenced. Denis emphasised that this was not recreational caving but a serious scientific study to map and document caves and karst features. A key part of the project is the ongoing liaison with professional scientists from museums and universities, some of whom join the expeditions. Denis joined the group in 2007 and travels with another Orange speleologist for 4 days just to reach the Nullarbor.

The 250,000 sq kms of the Nullarbor is the world's largest continuous karst landscape and by far the largest arid karst landscape. The limestone was laid down below the ocean 35-45 million years ago (Ma) before being uplifted around 14 Ma. The caves have a median age of 4.2 million years. As it is arid many of the features are stable with little recent cave development however the aridity has created an ideal environment for the preservation of any faunal remains in the caves. Denis described the Nullarbor as a Swiss cheese with possibly half the volume of the ground above the water table being air. There are thousands of caves, many huge, with some cave systems being 36kms long with large caverns. It is believed many thousands more exist but currently have no opening to the surface so are yet to be discovered. As there are no drainage lines any rainwater sinks into the ground and some caves have extensive underground lakes

and networks of underwater passages. The watery ones are not systems that Denis explores as he likes to breath air and keep his head above water!

In the first survey 10 new features were found by walking but this was time consuming and difficult in such a flat landscape. Fortunately, the next year one of the team brought their ultralight and they identified 480 potential new features. Transects are flown and the pilot GPSs the features he sees. The points are later used by the ground teams to locate, identify, and map the features. From 2000 this GPS technology has come to the forefront and allowed mapping of many smaller features that had been overlooked or ignored by early surveyors. Since 2010 motor bikes have made the surveys more efficient. The bikes, which have less impact on the ground surface, also allowed surveyors to go well beyond the few existing tracks which are often the old abandoned tracks of rabbiters from last century.



*A sink hole pinpointed from the ultralight.*

Denis explained the main karst features they find on the Nullarbor. They include:

- Caves – it is believed most of the caves under the Nullarbor currently have no opening to the surface so the ones that are found and mapped are only the ones where a collapse has created an entrance.
- Dolines – surface depressions, sometimes with openings, that generally capture surface drainage. They can indicate something is going on below the surface.
- Sink holes – large surface collapse features where a cave or chamber roof has collapsed.
- Blow holes – smaller holes that are the most common karst feature. Many breathe in and out due to changes in atmospheric pressure and temperature. This can cause a whistling sound at the very small holes. Denis (below) is an asset to the group as he is one of the smaller people and often gets

the job of exploring the smaller holes where others aren't able to fit.



- Rock holes (below) - can be up to a metre deep but are usually around 30cm deep. They often hold water and were important sites on the ancient travel routes of the original inhabitants and traditional owners, the Mirning people. Smaller ones were often capped with a large stone. They used to be cleaned out but as they haven't been used in many years, are silting up and being damaged by feral camels.



The size, depth, bearing and slope of caves are measured to create maps, photographed and any animal remains, fossils, cultural features and living things are documented. This data is collected on standard recording sheets before being computerised, usually in the back of a vehicle protected from the wind, dust and sometimes annoying bush flies. All features are cross checked with the Australian Speleological Federation's national database to verify they are not known and previously documented.

Denis went on to talk about some of their non karst finds, many well preserved because of the dry climate. In 2002 surveyors found a complete articulated skeleton of a marsupial lion which palaeontologists from the WA Museum later recovered. Skeletons of tree kangaroos and giant kangaroos have shown how the climate of the Nullarbor has changed from tropical rainforest to what it is today. The

South Australian Museum was interested in the Thylacine and Tasmanian Devil bones that have been found and dated to 3,500 years old.



*3,500 year old Thylacine skeleton.*

Over the years the surveyors have learnt to identify the different skeletons of extinct fauna and are able to distinguish them from the bones of recent introductions such as cats and foxes. Sadly, these introduced predators have had a devastating impact on native species such as Stick Nest Rats and Western Quoll.

The biodiversity in and around the karst features are also documented. This can include species such as the endemic Nullarbor Bearded Dragon, Barking Geckos, Interior Blind Snakes, Chocolate Wattled Bats and Nankeen Kestrels, sometimes with nests in the caves. There are large Mitchells Wandering Cockroaches, spiders, and cave crickets (below). The crickets and spiders are being studied to see if some species are unique and endemic to individual caves.



Archaeological evidence of Aboriginal people's habitation is also found, such as many flint scatters, art sites and occasional rare stone arrangements. The Nullarbor provides a little disturbed record of First Nations people's culture and behaviour for 20,000 years from the Pleistocene. The flint scatters, mainly of chert artefacts, are often found near rock holes and cave entrances. A large granite grindstone perplexed the team as granite is only found hundreds of kilometres from the Nullarbor. The surveyors have also found that Aboriginal people built up cairns of rocks or used logs to

access some caves. Within the caves, art sites have been found in the twilight zones, fire sticks found well into the caves (below), and tools such as an incised boomerang and nulla nullas. Some sites are still visited occasionally by the traditional owners and their families to maintain their connection to country.



When asked Denis explained that many of the cave systems were remote and could not be visited by the public as they were in reserves, on private pastoral land or require a permit. For those who might be driving the Nullarbor he suggested asking at the Nullarbor Roadhouse for directions to some nearby caves. His presentation didn't show a lot of the caves and their features as Denis had felt that would have made for a very long night. However, everyone found his talk so interesting that we agreed Denis should come back next year to give another presentation on the caves they have been discovering.

While the Nullarbor is thought of as a treeless plain Denis showed us it is so much more. As only 21,000 sq kms of the 250,000 sq kms of the Nullarbor have been surveyed so far by the group Denis is looking forward to many more expeditions, exciting finds, and wonderful sunsets. Thanks, Denis, for a fascinating and informative talk.

**Last Excursion – Sunday 16<sup>th</sup> July.**  
**Borenore Karst Conservation Reserve.**

*Report by Jenny Pratten and Nigel Hobden.*

Denis Marsh led our trip sharing some of his knowledge of a favourite spot. He has been involved in documenting 130 Karst features in the Borenore Karst Conservation Area (KCA). Karst is a type of landscape where drainage has created sinkholes, underground streams and caves. To be called a cave a feature must be several metres deep, have a dark zone and fit a person into it.

This area was formed during the Silurian Period, around 400 million years ago. At this time there were coral reefs (limestone)

surrounding ancient island volcanoes which have since eroded away. Mt Canobolas formed as a more recent volcano around 12 million years ago. Those ancient coral reefs make the area rich in fossils. Since NPWS took over the care of the Borenore KCA in 1997 it is illegal to take any rocks/fossils from the area.



*Denis explaining a doline and other features of the karst landscape. Photo Dick Medd.*

A doline karst feature was pointed out by Denis which is where continuous drainage causes the landscape to collapse or become an enclosed depression – which can become a cave. He also showed us some solution sinkholes which are formed by rain continually running downwards causing erosion. Both these karst features were approx. 30m above the creek, level with the top of the Arch.



*Looking down the entrance hole in Cathedral Cave doline. Photo Jenny Pratten.*

Denis mentioned the Verandah and Tunnel Caves which are further downstream of the picnic area. Platypus have been sighted in the creek and Eastern Bentwing Bats hibernate in the Tunnel Cave during winter. These bats head to Wee Jasper and Bungonia caves to breed in summer. The Tunnel Cave is closed

from May to September to protect the hibernating bat microclimate.

Marble was quarried in the area from the late 1800s by the Rusconi's, stonemasons from Italy. Marble forms as the metamorphic limestone "marbelises" or recrystalises. It was pink in colour and known as Borenore Red. Blocks of this marble can be seen at Borenore Railway Station and Orange Botanic Gardens.

The Arch Cave is a significant Aboriginal site and is known as a maternity cave as Aboriginal women came there to give birth.

A bee's nest seen on the outside of the Arch was there in 1997 when NPWS took over care of the area. We also saw mud nests of Fairy Martins near the bee's nest. Dick Medd pointed out a critically endangered community of Yellow Box and Blakeley's Red Gum near the Arch.



*Bees nest at Borenore Caves. Photo Hai Wu.*

It was good to see that the recent weed spraying by NPWS had been very successful.

Following a pleasant lunch interlude after the exploration of Borenore Caves Denis suggested to those interested that there is a nice, exposed limestone rock formation within a Travelling Stock Route (TSR) on Mousehole Lane near the intersection with Bowen Park Road. A couple of those who had the afternoon

available followed Denis to the Mousehole TSR.

Firstly, Denis showed a lichen growing on the exposed limestone, which we referred to as a 'halo' lichen. The photograph below shows the distinctive circular appearance with a halo.



*Limestone covered in lichen showing 'halo' appearance. Photo Denis Marsh.*

Wandering across the TSR on our way to a doline, Nigel spotted the leaves of the ubiquitous Onion Orchid *Microtis unifolia* or Lawn Orchid as Nigel likes to call it as he has several hundred plants growing in his front lawn. We then wandered down to Bourimbla Creek to a nice pool, all of us thinking that it might be a nice spot for a little platypus watching. Immediately upstream of the pool the creek was incised through the limestone creating an attractive and quiet riparian zone different to that typically found across the landscape of the Central Tablelands.



*Riparian zone along Bourimbla Creek. Photo Nigel Hobden.*

As we meandered back to the TSR entrance we observed several scars on trees, perhaps Wiradjuri scars. Photographs have been sent to Uncle Doug and Greg Ingram for review.



*Nigel exiting a small phreatic cave just off the track which leads around to the back of the Arch Cave, Borenore KCA. Photo H Croke.*

### **OFNCS Committee News**

The report on the arboreal mammal surveys has been completed by Dick Medd and will be available once feedback from ecologists Peter and Judy Smith has been received. A few more searches for velvet worms have been held, some with surveyors having to battle through the blackberries in Canobolas State Forest.

Concern over the increasing damage being done by feral pigs and other feral animals resulted in letters being written to the NSW Environment and Heritage Minister, the Agriculture and Regional NSW Minister and NPWS management. Members have seen feral pigs and their damage in national parks and reserves from Lithgow to Goobang NP.

### **September Talk and Excursion**

**Thursday 14<sup>th</sup> September – The NSW Biodiversity Conservation Trust (BCT) & its role in private land conservation in NSW.** Speaker - Tiffany Mason, BCT Senior Ecologist. OFNCS members can just turn up or you can book at the link in the list of Orange Biodiversity month activities.

**Sunday 17<sup>th</sup> September – Excursion to a BCT private property at Baldry.**

### **Gaanha bula Mt Canobolas Update**

During July Wiradjuri Elders Uncle Neil Ingram and Aunty Alice Williams joined with NPWS staff to acknowledge the gazettal of the dual naming of Gaanha bula Mt Canobolas. Media stories noted the significance of this to the Elders.

Touches of spring that can be seen elsewhere have not yet arrived on the mountain. Evidence of frost and freeze and thaw can be seen in some bare shaded areas and the summit is occasionally blanketed in cloud. On bright sunny days recovering patches of moss gleam with beads of dew and soon the purple of Hardenbergia will be seen along the roads. Despite the weather it is still worth a visit to the mountain to experience its changing moods.

### **Dates for your Diary**

**Saturday 5th August 3.30pm.** ECCO has organised a screening of 'The Giants' at Orange Odeon Cinema. Tickets are still available.

### **September – Orange Biodiversity Month.**

Central Tablelands Local Land Services have organised a range of events in September that focus on threatened species and biodiversity. Details and bookings at <https://www.ils.nsw.gov.au/regions/central-tablelands/events/ct-events/the-message-of-the-lyrebird-screening-orange>

- Biodiversity and art pop up - Friday 1 September
- The Message of the Lyrebird – Monday 4 September
- ORM Talks: Dr Ross Crates - the regent honeyeater - Friday 8 September
- Walk, talk and plant: Ploughmans Wetlands Care group tree planting and wetland tour - Sunday 10 September
- Understanding the impact of feral cats and pest animals on rural properties - Tuesday 12 September
- Understanding private land conservation - Thursday 14 September (the OFNCS talk)
- Waratah Wetlands school holiday environmental workshop - Monday 25 September
- Creatures of the night: Spotlighting at Gosling Creek - Friday 29 September

Local organisations involved are the NSW Biodiversity Trust, Central Tablelands Landcare, Orange Field Naturalist and Conservation Society, Orange Regional Museum, The Australian Museum, and Ploughmans Wetlands Care Group.

In September, the Birds of Australia Storybox is coming to the Orange Regional Museum. This is a new outdoor installation showcasing the world of Australian birds through the artwork from John and Elizabeth

Gould's 8 volume *The Birds of Australia*, which was published between 1840 and 1848.

**2023 Cowra Woodland Bird Survey dates** are October 14/15, and February 17/18 2024. Contact Sue Proust for more information or to register for surveying at [sueproust@bigpond.com](mailto:sueproust@bigpond.com).

**November 24th - 27th - Great Southern BioBlitz** for 2023. This is an opportunity for all Southern Hemisphere countries to record organisms during Spring and showcase our beautiful biodiversity to the world. The event is run by a grassroots network of keen citizen scientists from across the globe. All you have to do is upload observations of wildlife to the [iNaturalist platform](https://www.inaturalist.org). You can get involved by registering [here](#) to be kept informed and to qualify for a certificate.

### Sightings around Orange

If you see anything interesting, please email [orangefieldnats@gmail.com](mailto:orangefieldnats@gmail.com) or post it on Facebook.

### Fauna

**Greater Gliders** – John and Jake Hansen have seen the results of breeding when they saw 2 adult and 4 juvenile Greater Gliders feeding high in the canopy of eucalypt trees in the forests near the SCA. It is good to know this population is persisting.



*Greater Glider. Photo John Hansen.*

### Things with Wings

**Spotless Crake** – a furtive pair spotted below the dam wall at Lake Canobolas by Bernie Huxtable on July 23.

**Golden-headed Cisticola** on Mousehole Lane in roadside Phalaris on July 27. Lots of Noisy

Friarbirds calling from flowering box trees along the lane.

**Hobby Falcon** (below) seen by Ian and James Roth at Borrodell Drive on July 5.



**Finches and Firetails** – seen by photographers John Hansen and Nigel Sethack in the middle of July. John saw Red-Browed Finch at Gosling Creek and Double-barred Finch at Charlou Wines, Emu Swamp Rd; while Nigel saw Diamond Firetails at Lower Lewis Pond Track. However, my pick of the photos is the Double-barred Finches that Nigel saw (below) at Spring Creek Reservoir last weekend.



**Bird sightings from the Cowra surveys on 15/16 July.** A WhatsApp group has recently been set up for the Cowra surveyors to use on survey weekends. There were some amazing sightings on the winter surveys. These included 30 Flame Robins (WOW) + Diamond Firetails at a site on a property well south of Cowra and Red-capped Robin and Diamond Firetails at a reveg site nearby. Gilberts Whistlers were at a public site on the Grenfell Rd near Bumbaldry and a good range of honeyeaters including Black-chinned, Fuscous and Yellow-plumed Honeyeaters at other sites. And even a group of 4 Ground Cuckooshrike. Who says winter is a dull time for birding?

**Mating time for some birds.** Cilla reports that the **Peregrines** are mating on the top of the water tower. If you are lucky, you might catch

them on the tower webcam, but you must be quick as it only last 10 seconds although they do mate several times in a day. **Red-rumped Parrots** may also be breeding as Nigel Sethack saw a group of 10 birds only 2 of which were females. Red-rumps are usually in pairs, except in the breeding season when the females are in nests.

**Leucistic Common Blackbird** that Hai photographed in his backyard. The Pizzey and Knight bird app mentions that this occurs, mostly in urban populations.



### Plants

*Grevillea floribunda* shrubs were flowering in the Bumberry Section of Goobang National Park on July 30. When looking closely at the racemes Rosemary and Catherine noticed shiny clear drops in the centre of each flower (below). We wondered if it was nectar. The *Melichrus erubescens* was also in flower and we had learnt from Dick that they have drops of nectar on them. Many species of Acacia were out on the roadside or in the national park.



### Creature of the Month **Short-beaked Echidna,**

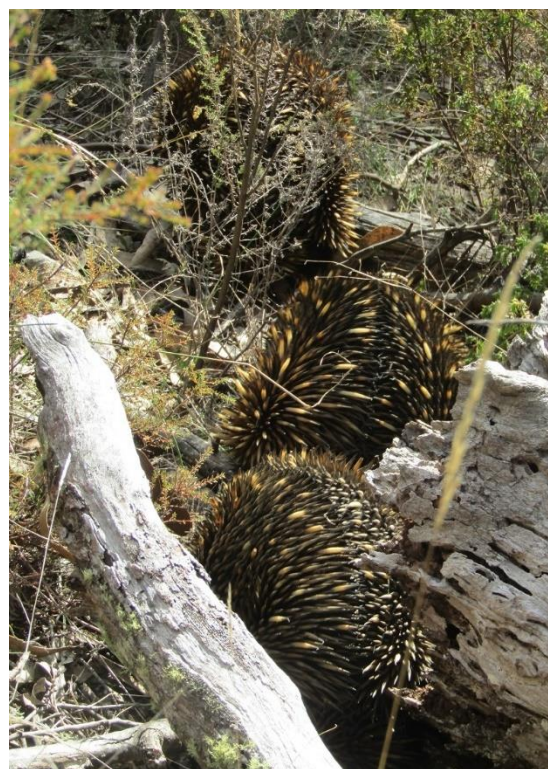
*Tachyglossus aculeatus.*  
Compiled by Rosemary Stapleton.

Echidnas, a monotreme, range in size from 30-55cm and weigh between 2 and 7 kg. Fur is

present between their long spines and in the Tasmanian form the fur can obscure the spines. It is a toothless and specialised feeder on ants and termites, which it digs up with its forepaws or snout. This food and some other insects adhere to its long tongue, covered in sticky saliva, and are drawn into its mouth to be eaten. Males have a spur on the ankle of their hind legs but unlike the Platypus it lacks a functional venom gland.

Echidnas are usually solitary but do have overlapping home ranges. They don't have fixed nest sites and seek shelter under thick bushes, in hollow logs, in piles of debris and sometimes burrows. You would know that when disturbed an Echidna will usually curl into a ball of spines, dig into the soil or litter or even wedge itself into a hollow log or rock crevice. The spines are an excellent defence but sadly are no match for a vehicle when they try to cross roads. They may also be killed by dogs, foxes and occasionally goannas, and cats may take the young.

Most Field Nats members would have seen an Echidna as they are found in most areas of Australia, but I wonder how many of us have seen an Echidna train. On the weekend Hai came across such a train of three (below) at The Falls in Mullion Range SCA.



In July and August mating occurs, during which time a female can be followed by up to six males who follow her scent. Most of the



time they follow her in an orderly line however Triggs notes ‘the males may compete with one another by digging trenches next to the female so they can lift her up and place their tails under hers in an attempt to mate’. Strahan states that ‘about 2 weeks after mating a single soft-shelled egg is laid, probably directly into the pouch on the belly of the female. It hatches about 10 days later and the young (a puggle) remains in the pouch for a further 3 months, suckling on milk exuded from the pores of her paired mammary glands. She spends most of this time in a burrow. By the time it leaves the pouch, the juvenile has a covering of short spines. They tend to be first seen from September to November when they are a year old and weigh 1-2 kg.’

Information obtained from:

- Strahan, R, ed. (1983), The Australian Museum Complete Book of Australian Mammals, London; Sydney: A&R.
- Triggs, B. (2003), Tracks, Scats and Other Traces. A Field Guide to Australian Mammals, Oxford University Press.
- <https://australian.museum/learn/animals/mammals/short-beaked-echidna/> Accessed 30/7/2023
- <https://www.australiangeographic.com.au/topics/wildlife/2021/08/echidna-trains-explained/> Accessed 30/7/2023

More photos from the Nullarbor talk follow.



*Cathedral Cave doline, Borenore KCA, and OFNCS members on the excursion. Photo N Hobden.*

To join please send your cheque or money order made out to "OFNCS" to the Hon. Treasurer, Dr Dick Medd, OFNCS, PO Box 369 Orange NSW 2800.

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*Orange Field Naturalist & Conservation Society acknowledges the traditional custodians of the land, including the people of the Wiradjuri Nation, and we pay our respects to Elders past, present and future.*

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*Above: Hanging in mid-air, Denis Marsh abseiling into a karst feature on the Nullarbor.*

*Below: Denis Marsh and Ian Curtis, members of Orange Speleological Society, recovering Thylacine bones found in one of the Nullarbor Caves.*

