

SEGments

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Scientific Expedition Group Inc.

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Cover Photo: An osprey. Photo: Take 2 Photography

Rear Cover Photo: . Agile Wallaby *Macropus agilis* near Mt Borradaile, West Arnhem Land, NT. Photo: Alun Thomas

The Scientific Expedition Group is a not-for-profit organisation which began in 1984. SEG undertakes several expeditions each year to record scientific information on wildlife and the environment in many parts of South Australia.

A major expedition to conduct a biodiversity survey occurs each year over two weeks. Scientific experts lead volunteers in surveying mammals, reptiles, invertebrates, vegetation, birds and physical geography. The data collected on each survey are archived with the relevant State scientific institutions to ensure they are available to anyone interested in our State's environment.

In addition to the major expedition, a number of trips for the Vulkathunha-Gammon Ranges Scientific Project are organised annually. A long term study of rainfall on the ranges and of water flow in arid-zone creeks is undertaken. All data are supplied to the Department for Environment and Water and to the Bureau of Meteorology and are available for analysis.

SEG conducts four-day biodiversity surveys at eight different sites each autumn and spring in the Heritage Area of scrub on "Minnawarra" farm near Myponga. Data collected are entered into the Biological Data Base of SA. SEG also conducts mallee-fowl monitoring in the Murraylands.

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EDITORIAL

SEG is slowly getting back to full speed as we drag ourselves out from the ravages of COVID.

Most of our recurrent activities such as the Minnawarra Biodiversity Survey and the Vulkathunha Gammon Ranges Surveys have continued albeit with reduced team numbers. We have also continued with the mallee fowl nest surveys and the predator camera monitoring in Bakara Conservation Park. These have involved a core group of SEG members but it has been more difficult to provide activities for the majority of members.

A significant portion of our membership has come from attendees of our major expeditions usually held in September or October each year. Due to the vagaries of lockdowns and new virus variants it has not been reasonable for members to commit to the extensive planning necessary for such expeditions to proceed. Hence we have not had a major expedition for three years. It is hoped that things are improving and we expect to be able to run an expedition later this year. Notices will be sent out if we can get something organised.

One of the great advantages to me as a layman in the long term monitoring projects which SEG carries out is that something might happen at a survey site and over the next few years the effects of that occurrence can be observed. Several such of these have been seen on Vulkathunha Gammon Ranges survey.

When these surveys started over 30 years ago there had recently been a bushfire through the area and the vegetation photopoints on the sides of North Tusk were easy to place and find. As vegetation grew back over the next few years it became more difficult to find the photopoints and sometimes vegetation obscured the line of sight from the camera position to the site board position.

Michelle and Garry Trethewey have been carrying out the photopoint work on V-GRaSP for a number of years and Garry has been reporting that the area has been in severe drought. In mid 2021 Garry reported that :

"Drought seems to have broken, leaving lots of casualties, notably *Callitris glaucophylla*, and a fresh crop of ephemerals and shrubs, lots of grass uneaten, and almost no tree recruitment."

He also noted that many mallees on the plateau were dead or dying.

As was reported by Graham Blair in the March 2022 issue of SEGments there were record breaking rains in the Gammon Ranges in January this year which have, three months later, resulted in Garry reporting, after his and Michelle's most recent photopoint survey, that there is significant regrowth occurring. Most telling to me is the photograph on page 5 of this issue. The photo shows Michelle holding the site board amongst ground plants and has a caption which reads "Five years ago, 'The Clay Patch' on the Plateau was bare ground surrounded by leafy trees. Now reversed." The upper storey trees are shown completely dead from the drought but that the understorey is recovering.

I await with interest further reports to find out whether the under storey will shade the ground sufficiently for germination of seeds of the upper storey so that the trees can regrow.

Alun Thomas

RECOVERY OF THE ENDANGERED EASTERN OSPREY ACROSS YORKE

PENINSULA AND EYRE PENINSULA. PART 1

Ian Falkenberg



Background

The endangered Osprey population in South Australia is considered to be disjunct from the species main distribution in Australia and appears precariously balanced ecologically at the extreme south eastern edge of its breeding range.

Comprehensive surveys across South Australia in 2008-10 Bay remained occupied. recorded 58 pairs of Osprey state-wide; compared with results from a series of repeat surveys in 2015-17 when only 43 pairs were found; revealing a significant 26% decline in the breeding typically occur in South



Gleesons Landing Osprey platform being installed. Photo Lochy Cameron.

population to have occurred over the intervening period. In recent decades, all known Osprey breeding sites on the mainland of Yorke Peninsula have regularly failed or become abandoned due mainly to human disturbance factors. Only one nest close to the mainland, on an island in Pondalowie Bay remained occupied.

Few raptors, including Ospreys, will tolerate human encroachment and disturbance directly above their nest, as typically occur in South Australia's open coastal landscapes. In other states, more secure nest placement opportunities are available in tall trees in coastal forests which are absent from the SA coastline. The lack of suitable secure nesting sites may be an important limiting factor to Osprey breeding populations in SA.

In remote locations Osprey are sensitive to human activity and will abandon a breeding attempt if disturbance is frequent or prolonged. This is in contrast to the species demonstrated adaptability and tolerance to human activity, including to establish nests on various structures in urban areas. Artificial nest platforms are a vital and proven form of threat mitigation in areas where limited natural nest sites exist and where food is plentiful, additional nest sites can substantially boost nesting densities. Conservation initiatives in Europe and North America have shown unequivocally that artificial nest structures can result in greater productivity and therefore are an important population augmentation strategy.

Severe weather conditions and strong winds are known to devastate some nests at exposed sites during the nesting phase and can cause heavy mortality amongst Osprey broods, while at the same time reducing the foraging success during breeding. Osprey young are also vulnerable to fox predation even on near off shore islands and Corvids, Pacific Gulls (*Larus pacificus*) and Silver Gulls (*Chroicocephalus novaehollandiae*) are known to predate on eggs of Osprey and other raptors when they are disturbed and distracted by human presence.

Much is still unknown about the South Australian Osprey population and research such as satellite tracking to determine habitat utilisation and foraging behaviours of Ospreys; determine dispersal and movements post fledging and causes of mortality of juvenile Osprey have provided an important insight into the life of Ospreys. Finally it will be important to monitor the success of artificial nesting platforms to determine breeding outcomes.

Conservation Status

In South Australia, the Osprey was formally up-listed to Endangered status in 2008 (*National Parks and Wildlife Act 1972*).

Osprey Artificial Nest Project

The Osprey Artificial Nest Project commenced in August 2020 and was initially focused on the recovery of the Osprey population across the Yorke Peninsula and St Vincent Gulf areas (See Figure 1). In 2022 the Artificial Nest Project has been extended to Eyre Peninsula.

The project is being delivered in partnership with Southern Yorke Peninsular Landcare Group, Birds SA, Birdlife



Community members from Price and Formby Bay Environmental Action Group members assist Chris Black release lifting slings from platform at Point Davenport Conservation Park Lagoon following the lifting of the platform into position by Aerotech Helicopters.



Figure 1. Priority locations for the establishment of Osprey artificial nest platforms on Yorke Peninsula

Australia, Northern & Yorke Landscape SA Board, Adelaide International Bird Sanctuary (AIBS) Partnership Group, Department for Environment & Water (DEW) and numerous other community organizations and volunteers. The Southern Yorke Peninsular Landcare Group has managed and coordinated on ground delivery of the project and more recently the Friends of Osprey Group has taken a more active role in conservation activities in other parts of SA with the establishment of an Osprey Fund and the development of an Action Plan to guide on ground conservation activities and provide consistent and appropriate governance.

Two platform designs were prepared by Triaxial Consulting to suit SA open coastal landscapes and site characteristics including soil/substrate type and site accessibility for installation.

To maximize opportunities and chances of Ospreys adopting the nesting platforms, it is important to install platforms in preferred Osprey nesting habitats. Site characteristics and choice play an important role in the selection of artificial nesting sites and tolerance of Osprey to human disturbance. These sites are often inaccessible to the boats, plant and equipment that could mechanically pile drive posts and or auger post holes into mud/sand substrates or reef and rock base.

Composite fibre (CF) tower nest platforms are the preferred design in SA as these meet site requirements for

installation, while also allowing community groups to be involved at some sites. They are light, cost effective, durable and long lasting.

There is no established process to guide the installation of the CF tower nest platforms. Our installation procedure involved the use of a template to guide PVC sleeves into the substrate, and then mud and sand ibeing forced out of the sleeves using a centrifugal pump and a 0.5 tonne concrete block carried to the site by a helicopter and positioned in the centre of the PVC sleeves. The CF tower platform is then carried to the site using a helicopter and carefully lowered into the sleeves and is then secured to the concrete block. This method has proved to be a very safe and effective and an efficient way of installing these platforms in difficult landscapes and remote sites.

Installation of the CF tower platforms was carried out by community volunteers, contractors and help and assistance from Yorke Peninsula Council staff. Two single steel pole nest platforms at the AIBS and Sheaoak Flat were built and installed by Maritime Construction.

Building and fabricating the CF tower platforms is undertaken by the Ardrossan Community Men's Shed and Progress Association (ACMSPA). These groups workmanship, dedication and enthusiasm has been outstanding.

To date a total of eight Osprey artificial nest platforms have been installed across SA. The ACMSPA have fabricated a total of 5 platforms which have been installed over the past 12 months at Wills Creek Conservation Park (Price), Gleesons Landing, Port Broughton, Point Davenport Conservation Park with help from the Corny Point Progress Association, Formby Bay Environmental Action Group and Port Broughton Progress Association and more recently one platform at Tumby Island Conservation Park on Eyre Peninsula.

On the top of each platform a nest structure is placed. The nests which are placed on each tower platform may be an old or disused Osprey nest that may be found near the location of nest sites, however, these are few and far between. In a number of cases artificial nests are constructed from materials found along the coast. Osprey nests much like other raptor nests are not simply a pile of sticks. Ospreys pick up sticks from the ground close to the nest and then carry them in their talons to the nest. On close examination of an Osprey nest, the sticks and driftwood collected near shorelines are of different sizes (thickness and length) and are meticulously placed in a circular fashion around the nest with the thickest near the outer edge and the thinner sticks near the inner circle. The inner circle of the nest is packed with seaweed and other softer plant material. In a naturally constructed nest, the male and female bring sticks to strengthen the structure and also grass-like material such as seaweed, grass, plant stalks and samphire to form a soft cup in the centre of the



CF tower nest platform installation completed just in time to beat the rising tide. Concrete support block and Osprey nest fixed to platform also completed. (L to R – Chris Black (Aerotech Helicopters), Joel Griffith, Adrian Jacobs and Ian Hodson (community)



Community members guiding the Osprey platform into position at Point Davenport Conservation Park Lagoon while an Aerotech helicopter carefully lowers the platform into the sleeves.



Artificial Osprey nest being attached to weld mesh base in preparation for sling lifting onto the tower platform by helicopter (L to R – Adrian Jacobs, Malcolm Walker, (Community) & Ian Hodson (Community)

nest where the eggs will be laid. Both sexes bring materials to the nest, but the female does most of the placement. A typical nest will range from 1.2 to 1.8 meters in diameter and about 0.6 to 1.2 meters high. The nest cavity, where the eggs are laid, will be about 30 to 40 centimetres in diameter and about 10 centimetres deep. The nest structure and materials are as close as possible to a naturally built nest. Once there is a foundation nest on the tower platform it is left to the Osprey pair to constantly upgrade and rearrange according to available components and materials. Normally the nest grows larger and heavier during the nesting season and as the years pass.

Examples of Platform Successes

Five days after the installation of the artificial nest platform at Price in July 2021 Ospreys were observed undertaking nest refurbishment on the new nest site and in December, two healthy young fledged from the nest.

Following the installation of the Gleesons Landing artificial nest platform in April 2022, Ospreys were observed on the new nest the next day. The Wills Creek Conservation Park CF tower platform was installed on the 6th July 2021. Five days following, both adult Ospreys were observed undertaking nest refurbishment on the new nest platform and in December two young successfully fledged from the nest.

Community Collaboration

The success of these projects is an example of the importance of community involvement in local actions.

Community participation and involvement is paramount to the recovery and conservation of the Osprey population in SA. The focus for the Friends of Osprey Group is one that features partnerships and collaboration between management agencies, local communities, resource users, non government organisations (NGOs) and the private sector.

In **Part 2** of this article the satellite tracking of Ospreys bred on the artificial nesting platforms will be discussed.



Single steel pole nest platform installed by Maritime Construction in the Adelaide International Bird Sanctuary National Park near Dublin.

Ian Falkenberg hawknest2@bigpond.com



Osprey nest platform complete with nesting material in the Adelaide International Bird Sanctuary National Park.

EXPRESSIONS OF INTEREST

Witchelina Expedition 2022

It is most likely that SEG will be carrying out a biological survey on Nature Foundation's Witchelina Reserve in late September or early October this year. Witchelina received a record 176 mm of rain in January this year and while this did significant damage to infrastructure on the property it has resulted in a strong flush of vegetation growth which is expected to have also resulted in a growth in animal numbers.

Details are still being finalised but it is most likely that we will be accommodated in the shearers' quarters near the homestead. Those of us who participated in the 2016 expedition will recall that this is very good accommodation with good showers, toilets etc. Costs have not yet been determined.

It is likely that numbers will be restricted so at this stage SEG is asking for members and would be members to give nonbinding expressions of interest.

If you are interested please send an email with your details to the SEG email scientificexpeditiongroup@gmail.com



GROUND TRUTHING AT DANGGALI Alun Thomas

A dozen SEG members recently assisted with a ground truthing of mallee fowl mounds in Danggali Conservation Park. A number of possible mallee fowl mound sites had been located by aeroplane mounted LIDAR and we walked to each site to determine if indeed they were mounds.

We expect to have a full article on the expedition in the September issue of SEGments.



GAMMONS GREENING AGAIN

Garry Trethewey

Michelle and I have spent mid-April in the Gammons on the V-Grasp Project doing vegetation photopoints and making opportune observations.

This trip, for us, was part of a couple of weeks kicking around the north-east Flinders Ranges. We'd repeated our 2009 and 2011 Arkaroola photopoints and spent some time with other SEG members on a 'Friends of Vulkathunha-Gammon Ranges' trip based at Balcanoona.

After the terrible drought of 2018-19, and slow recovery, Arkaroola's rain records show 127mm in January, 13 in Feb, 15 in March, none yet in April. It seems that the 127 in Jan, over half their yearly average, has done the trick. Lots of young, or regenerating plants are filling out and taking shape. There are still almost no large mammals, but lots of grass, and lots of seed eating birds. No seedling Callitris pines but quite a few very young mulgas, 10cm high. And while less than in the eastern Gammon Ranges, quite a few big orb weaver spiders.

We arrived at Bob's Camp about 1100, and walked up the creek. The stream gauge pool was 3/4 full, as was the next pool, setting the scene for other waterholes. Hopes of seeing fish were raised, but in that we were disappointed. The Seeps,

normally a few salty cupfulls between rocks, was flowing, and even had a young bullrush *Typha sp* growing.

Anywhere near water - fifteen or up to fifty meters - we walked through tiny little frogs (*Litoria rubella*?) jumping out of our way, on dry rock or sand, on a sunny midday.

'The Short Cut', previously easy walking away from the uneven creek bed, is now blocked by fallen rotten sheoaks *Allocasuarina sp*. Further up again, easy travel on established tracks is becoming blocked by new growth, fallen dead trees, the odd pool, and a propensity to get lost because of the altered 'look & feel'.

Wild Ass waterhole was within 10cm of overflow, and perfectly drinkable. Lush growth is starting to hide the carnage of dead sticks after the drought.

Approaching Vandenberg Camp we found our progress impeded by a jungle of shrubs and thick, thigh high grass that grabbed our feet and hid holes, fallen sticks and water-traps.

We camped near Grandfield waterhole, delighted that bronzewing pigeons, diamond doves, zebra finches, some budgies and a butcherbird didn't seem to mind us.

Next day, after finding SAMBOT waterhole near full, we made our way up toward Plateau Pluvio. At the '*Melaleuca*



Five years ago, 'The Clay Patch' on the Plateau was bare ground surrounded by leafy trees. Now reversed. Photo Garry Trethewey

uncinata' photopoint, bushy regrowth was emerging from the base of dead shrubs. 'The Burnt Area' (well, the latest one) is growing back similarly.

We found half dozen mainly juvenile *Ctenophorus modestus* within a kilometre of North Tusk, and photographed all but the quickest.

A Codonocarpus pyramidalis festival.

Those who were at Arkaroola for the 2009 survey might remember that we looked for Slender Bell-fruit trees (*Codonocarpus pyramidalis*) (hereafter CP's) and found only a few battered senile ones, but no young ones. The 2011 survey, after rain, showed the same result. Two years later, 2013, as I passed below Mt Gee, I suddenly saw about 100 babies within a hectare. My interest was piqued, and I've photographed and documented many ever since.

Michelle and I have walked up Arcoona Creek at least twice a year since 2007, with various side trips. There is a wellbounded hectare of CP's 1km north of Bob's camp, but other than that, we have never seen any on our travels up Arcoona Creek or on the plateau. So we were very excited to see a four meter high CP only a minute's walk from our Vandenberg camp. And then, only two meters from where I stood for a photopoint six months ago, another one, this time a meter

high. And in the next 250 meters, 9 more. Up and down the creek we've photographed, documented and described 28, and only stopped for lack of water and time. Observations so far are:

- none have been eaten by vertebrates, despite a euro having camped under one many times.
- all are on alluvial creek flats, none on any bedrock.
- generally in dead Callitris woodland.
- only one has any flowers or fruit. On that tree, in contrast to the usual pattern of flowering only at the top, the whole tree is covered.
- young healthy CP's are almost unrecognisable compared to the battered older ones, which tend to resemble a fox tail on a flag pole as a branch struggles to survive.

These observations above are in contrast to other literature and 'common knowledge'. See Significant Flora Fact sheet: Slender Bellfruit *Codonocarpus pyramidalis*. SA Government

https://cdn.environment.sa.gov.au/landscape/docs/saal/ codonocarpus-pyramadis-fact.pdf

Almost our last photo was the icing on the cake, if you don't mind mixing metaphors. Fresh ripe cherry tomatoes,



A bright green baby *Codonocarpus pyramidalis* towers to Michelle's left. Note also drought damage and recovery. Photo Garry Trethewey

feral, courtesy of someone who eschews normal de-hyd packet meals, and brings fresh food along, and next day heads off for a private moment to produce a healthy seed bed.

It is amazing what a significant rain only three months ago will do. We can only hope that there are follow up rains in the next few months to enable the vegetation gains to be maintained.

garrytre@bigpond.com



Cherry tomatoes growing in the Gammons courtesy of a passing traveller. Photo Garry Trethewey



SCIENTIFIC EXPEDITION GROUP NEEDS A NEW TREASURER

Since the SEG Treasurer will be retiring from his role as Treasurer in June this year, SEG is looking for a new Treasurer. Would you consider taking on this role, or do you know someone who might be interested?

The SEG accounts are recorded in a version of 'MYOB Accounts Right'. Some knowledge of the MYOB software would be handy, but is not essential. The current Treasurer will assist the new Treasurer during an initial period. It would be ideal if the applicant was available to sit with the Treasurer to gain knowledge of the requirements of the role. Included within the role is the management of the SEG bank accounts.

The applicant would be required to attend monthly committee meetings of approximately 2 hours in Norwood and to present a monthly financial report to the committee.

An annual Revenue & Expenses Statement is prepared and provided to the SEG Auditor

Please notify the Secretary of your interest by email to scientificexpeditiongroup@gmail.com or contact the Treasurer, Graeme Oats on gdoats@bigpond.net.au .

SEG is very grateful to our corporate sponsor Microchips Australia for its support to the Minnawarra Project.



SOME OBSERVATIONS ON THE BIRDS OF LENGER NATIONAL TRUST RESERVE

Robert (Bob) Sharrad

Over the last 20 years or so I have enjoyed regular birdwatching trips to a secluded spot near Mannum, Lenger Reserve. My visits have been made mostly to coincide with volunteer work days though I try to get there early before my colleagues arrive. On these days 4 hours of observations are made as I walk the same route through the various habitat patches. In all 102 bird species have been recorded in 90 visits.

The Reserve

Lenger Reserve is a roughly triangular 95ha block of land on Saunders Creek 5km or so west of the River Murray and about 12km NNW of Mannum. It was gifted to the National Trust of South Australia in 1978 as a bird sanctuary by Rudolph Augustus Lenger. Botanists soon identified 208 indigenous plant species but the Zoologists were a bit slower to act. During 1998, 1999, and 2000 five short biological surveys of animals were carried out in Lenger Reserve to list the mammal, bird, reptile, frog and fish species. Later I began the day visits and to keep a tally of the birds (and other animals) seen.

Saunders Creek has cut a deep valley which runs diagonally across the property and is fed, when it rains, by smaller tributaries each with its own deep, narrow valley cut into the underlying calcareous marine deposits. The upland portion of the Reserve is mostly between 60m to 80m above sea level whereas the creek valley is cut down to about 30m. The creek bed contains several permanent "springs" or waterholes. Some of the Reserves' 95ha are largely cleared of their original vegetation and are infested with introduced plants; other areas retain their mallee, Southern Cypress-pine (*Callitris preissii*) or River Red Gum (*Eucalyptus camaldulensis*) overstorey but usually have a sparsely vegetated, though reasonably diverse, understorey. The creek bed itself is an exception as it is densely covered with grasses and reeds, particularly near the permanent water holes. The land has been grazed by domestic stock in the past though the extent



to which that has influenced the nature of the present vegetation isn't clear. There is no sign of recent wildfires in the area and many of the mallees have well-grown trunks with hollows. It isn't clear whether the sparse nature of the understorey in the mallee is a result of grazing, the time since burning or some other factors.

The following vegetation communities can be identified in Lenger (based on preliminary vegetation mapping by Carlsa Carter and Caroline Crawford of the National Trust):

• Mallee woodland (icluding *Eucalyptus dumosa*, *E. gracilis*, *E. leptophylla*, *E. porosa* and *E. socialis*) with sparse understorey;

• **Open shrubland** with various shrub species (*Acacia* spp., *Dodonea viscosa*, *Geijera linearifolia*, *Senna artemesiodes*, *Westringia rigida*, etc) often with a grassy understorey;

• **Grassland** with several introduced species plus native spear-grasses (*Stipa* spp.) and bristly Wallaby-grass (*Danthonia setacea*);

• Callitris woodland (*Callitris preissii*) with a variety of shrubs and various grass species; and,

• **Riparian vegetation** with areas of sedges and rushes including Bulrush (*Typha domingensis*) and Common Reeds (*Phragmites australis*) under scattered River Red Gums (*E. camaldulensis*).

The Birds and Birdwatching

Before I give my list I must make some comments on the business of listing species that use a patch of habitat.

- Some bird species are noisy, large and easy to see and identify – Galahs for example have been recorded on every visit – while others are secretive, small and more difficult to record – Thornbills fall into this category. As a result, an inaccurate impression can be gained of the occurrence and abundance of species.
 - Decisions have to be made about what is to be counted. Do you record an eagle flying very high overhead? What of the Emu that stood outside the reserve but had its head over the fence taking seeds off one of Lenger's shrubs?
- What should one do with reports from others or other lists? On the Birds SA website, for example, the Superb Fairywren was recorded for the reserve but in my many visits and in the original surveys I have only ever seen Variegated Fairywrens!
- It must also be admitted that the observer who repeatedly visits a reserve becomes more and more familiar with the birds and is quicker to make a positive identification. Perhaps this is offset in my case by the effects of ageing!

Willie Wagtail on nest. Photo: Bob Sharrad



 The visits since the original surveys have been made during daylight hours so nocturnal animals are probably underrepresented.

Which species should I list? I can give a list of the 102 species I have identified but if you visit Lenger there are some on the list you almost certainly won't see. The Diamond Firetail, for example, was commonly seen during the surveys and for a few years after they finished but in all the visits in the last 15 years there has been no sign of them.

Some species have only been seen once or twice: Gilbert's Whistler or the Maned Duck for example. Actually, there are many species that have been rarely seen. Indeed, ecologists find that this phenomenon is quite normal: rarity is quite common in nature. I have illustrated this in the graph above of the number of occasions species were encountered. You will see that 12 bird species have only been seen on one occasion while only a few are seen nearly every time. Accordingly, I have indicated on the list those which have been seen on several days in the last 15 years.

Birds of Lenger National Trust Reserve

С

The birds listed have been seen on Lenger between 1998 and December 2021 during regular visits by Bob Sharrad C = Birds most likely to be seen/heard (i.e. seen on several occasions in the last 10 years)

Stubble Quail Australian Shelduck Maned Duck Pacific Black Duck Spotted Turtle-Dove Common Bronzewing

С **Crested Pigeon** С Peaceful Dove **Tawny Frogmouth** Spotted Nightjar Australian Owlet-nightjar Little Pied Cormorant White-faced Heron Nankeen Night-Heron Straw-necked Ibis Black-shouldered Kite Whistling Kite Black Kite С С Brown Goshawk С Wedge-tailed Eagle Little Eagle С С Nankeen Kestrel Swamp Harrier **Spotted Harrier** С **Brown Falcon** Australian Hobby Sulphur-crested Cockatoo С Galah Little Corella С Cockatiel Purple-crowned Lorikeet С Adelaide Rosella С Australian Ringneck С **Red-rumped Parrot** С Mulga Parrot Budgerigar **Elegant Parrot** Horsfield's Bronze-Cuckoo Fan-tailed Cuckoo

Pallid Cuckoo	
Southern Boobook	
Pacific Barn Owl	
Laughing Kookaburra	С
Sacred Kingfisher	
Rainbow Bee-eater	C (Spring/Summer)
Brown Treecreeper	С
Variegated Fairy-wren	С
Spotted Pardalote	С
Striated Pardalote	С
Weebill	С
Yellow Thornbill	
Yellow-rumped Thornbill	С
Chestnut-rumped Thornbill	C
Inland Thornbill	-
Southern Whiteface	C
Singing Honeyeater	C
Yellow-plumed Honeyeater	0
White-plumed Honeyeater	C
White-fronted Honeyeater	
Vellow-throated Miner	
Noisy Minor	
Noisy Miller	6
Spiny-cheeked Honeyeater	
Striped Honeyeater	
White-fronted Chat	
New Holland Honeyeater	
Brown-headed Honeyeater	C
White-browed Babbler	С
Varied Sittella	
Black-faced Cuckoo-shrike	С
White-winged Triller	
Gilbert's Whistler	0.13
Golden Whistler	
Rufous Whistler	C
Grey Shrike-thrush	C
Masked Woodswallow	
White-browed Woodswallow	
Black-faced Woodswallow	676
Dusky Woodswallow	
Grey Butcherbird	С
Australian Magpie	с
Grey Currawong	С
Grey Fantail	
Willie Wagtail	с
Australian Raven	14
Little Raven	с
Restless Flycatcher	с
Magpie-lark	Av
White-winged Chough	С
Jacky Winter	
Red-capped Robin	
Hooded Robin	С
Rufous Songlark	

SilvereyeC (Winter)Welcome SwallowCTree MartinCCommon BlackbirdCCommon Starling-Mistletoe bird-Diamond Firetail-House Sparrow-Australasian Pipit (Richard's Pipit)

As you can see the list is moderately substantial and I recommend the reserve to you as well worth a visit in the cooler months. Remember to take your binoculars and let me know if you see a bird that isn't on the list.

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A well disguised nest in Lenger National Trust Reserve. You can just see the head of a Varied Sitella sitting on the nest. Photo: Bob Sharrad

A BEE IN MY BONNET, OR RATHER, SOMETIMES, "UNDER THE BONNET!"

Nicholas Birks

As a child at school, my favourite lesson was Nature Study.

The natural history teacher was the prep school headmaster "Cricketer" Clayton. Mr. Clayton had two secret weapons. One was the study of microscopic pond life conducted in a collection of glass jars dotted around the school room on window sills. Each jar had different quality water: bore, Adelaide tap, distilled, River Torrens and puddles etc. Some leaf litter or hay was floated in some jars. After a few weeks we would come to the exciting part. We would discover all sorts of microscopic creatures. I remember watching amoeba, tiny single-celled animals, as they used asexual reproduction. One could see the nucleus divide during mitosis.

The other secret was the study of honey bees. Mr. Clayton had a small apiary of two or three hives in his garden. He would choose a small group of interested students and supply us with veils for protection and charge up a couple of smoke machines to pacify the bees. We could see the difference in size and shape between the queen bee, a drone and a worker. We witnessed the destruction of surplus queen cells to prevent unnecessary swarming. The most amazing thing we witnessed was the collection of a fresh swarm of bees and the knowledge required to establish a new hive. Generally a swarm of bees does not travel far from the parent hive and usually settles in a low tree or shrub in quite a compact bundle.

In capturing a swarm the trick is to place a large cardboard box directly beneath the branch the swarm is suspended on. One good thump of a fist on the branch will dislodge the bees, who fall into the box. The swarm is carried to the location of a new hive and tipped on to a canvas sheet spread on the ground at the entrance to the hive. Many bees take flight at this moment but the vast majority stay on the ground and move up to and through the entrance into their new premises "on foot". The queen is usually among the bees on the ground and after 30 minutes the rest of the swarm have settled.

I enjoyed many lessons in bee keeping from the 'master' and then decided to build a hive during woodwork lessons in year 10. By year 11 I had nine hives, all on the school grounds. And they became a "problem"! Members of staff were stung when they mowed the grass in the isolated spot behind the boarding house where I chose to place them. The Head Master, Colin Gordon said, "They have to go!" The school truck piloted by the Head Groundsman was co-opted' at my parent's expense to transport the hives to the district of Sturt where they were "given" to a retired policeman who had promised to give them "a good home at no cost to him."!

Some years later, after four years of employment on three sheep stations in the N-E of S Australia I got a job as overseer at Didicoolum Station at Willalooka in South East South Australia. When I arrived and settled in to the new job, shearing was about to start and the first problem I had to tackle was twelve bee hives in the walls of the shearers quarters. I was instructed by the manager to use sheep dip, injected through small holes drilled from inside the walls. Honey bees were in every building on the property. They were in grain augers, farm machinery, the glove box of a truck, under the bonnet of a tractor, in rabbit warrens and in almost every hollow tree out in the paddocks.

At this time, in 1963, Didicoolum was still clearing scrub and the first step was to drag a very heavy anchor chain between two tractors around the scrub. We had constant hold ups due to angry defensive bees when the trees, particularly pink gums, containing hives were smashed down. The tractors did not have a cabin so there was little protection for the driver. One just had to "run for it".



In 1964 my wife and I purchased 6500 acres, including 4800 acres of scrub. We named the property 'Napier'. We set about the development of scrub to make a viable operation. We built a homestead, shearing shed, hay shed, workshop, sheep yards and cattle yards in the center of the property and laneways linking every paddock. There were existing windmills with shallow bores. We replaced a complicated system with a small centrifugal pump and pipelines. Within 20 years we had a viable property which carried 900 cows.

Areas of bush were left undisturbed and fenced under a heritage agreement. Every hollow pink gum tree was left standing for use by wildlife within the pastured paddocks. An apiarist had set up hives on neighboring properties and in the Gum Lagoon National Park next door.

In the first spring at Napier bees were swarming everywhere. 140 old hollow trees were invaded by bees. Pyrethrum was used to destroy the bees. I witnessed swarms invading existing bird nests including those of ducks, owls, cockatoos, parrots, kestrels and owlet nightjars also those of bats and reptiles.

A very effective control measure is the use of "catching boxes" which consist of a small hive containing only a few frames of foundation wax. These were borrowed from a bee keeper and placed in blocks of scrub in the spring to capture wild swarms. A satisfactory result all round.

For 35 years I fumigated bee invasions in hollow trees. In warm weather I would regularly clean livestock water troughs and watch out for bees drinking water. I would take a compass reading on their direction as they returned to their hives. Invariably this led to an active hive that could be destroyed. The hollow trees with beehives were recorded with GPS.

On survey trips with SEG and the Waterhouse Club and bird watching and spider collection trips throughout much of Australia I have noticed European Honey Bees drinking at isolated waterholes, even in desert regions. It is almost 200 years since the European honey bee was introduced in to Australia. Apiarists have roamed far and wide across Australia, leaving a trail of bee hives due to uncontrolled swarming. The provision of water wells on the Canning Stock route has allowed honey bees to survive and spread there in very hot conditions. Durba Spring is a place of great beauty but you will need to share the water supply with millions of bees. The same applies to inland rivers like the Hugh and Finke. Most of the Murray-Darling River System is plagued with Honey bees. Kangaroo Island has thousands of wild hives in coastal cliffs and hollow trees. The Glossy-black Cockatoo Recovery program is affected by them. I spent a week in the Lathami National Park cleaning out bees from purpose built

nest boxes. All the usual hollow nesting animals and birds are affected to some degree on the island.

Feral Honey bees have continued to increase in numbers and sadly many of the hives in the carefully protected pink gums on "Napier" have been re-invaded. Honey bees compete directly for food supplies with the many species of native bees. The one third of Napier set aside as Heritage areas and linked by corridors of bush protected from grazing animals provides enough habitat for millions of native bees to pollinate pasture plants.

There have been a lot of reports about Honey bees in decline due to disease and insect attack.

This has led to alarm bells ringing and moves to, "save the Honey bees". As a result we may have an overreaction which could lead to more suburban households keeping a bee hive in their garden. This could make life tougher for native bees.

birks@wildflight.com.au All photographs Nicolas Birks





A beehive in a hollow tree branch



A bee hive in the engine compartment of a caterpillar tractor

MINNAWARRA BIODIVERSITY SURVEY AUTUMN 2022

Janet Furler

The Autumn Minnawarra Biodiversity Survey was carried out from Thursday April 21th to Monday April 25th.

The weather was lovely, with temperatures ranging from $9 - 12^{\circ}$ minima to $16 - 22^{\circ}$ maxima. There was part cloud on some days, no rain recorded but some expected after we finished on ANZAC Day.

Generations

This is our 22nd year of surveying and many people have been involved in that time. Jill Tugwell is one of these, and introduced her daughter Elisa early on. They were both regulars until Elisa grew up and moved away, (Jill is still a valued attendee). Fortunately for us Elisa and family (husband and four boys) have moved back to the Fleurieu, well within the reach of the survey! She showed she had not lost her skills, even managing to scruff animals while the 1yo was strapped to her front. Her 8yo, Timothy, while less keen on the animals, was right into the scribing. It bodes well for the future.

This made me aware of my own family 3 generations, with Richard Willing, me - Janet Furler, and my boys Alex and Sam Furler. The boys may have had less choice about joining in! Several times now my brother Steve has come from Tassie with his two kids Ben and Jay, now teens, as they also enjoy joining in. Extended family is also represented by my cousin Anthea Habel and her daughter Sarah, the most regular attendees.



Jill Tugwell's Crew on the survey



The Willing crew at the Survey

Add in the numerous (innumerable) sets of two generations, with parents or grandparents bringing naturecrazy youngsters, and you get a sense of the unique opportunity SEG provides the community for exposure to this kind of activity as eye- and mind-opening, and sometimes lifechanging.

Thank you

I would like to extend a large thank you to the people who offered their help to prepare and run this survey. Due to a variety of reasons I was behind in prep, and having volunteers to wash traps and clear sites was a great help. The presence of experienced people throughout the survey also made sorting teams much easier. Anthea Habel took on the mantle of part-time (most-time?) kitchen fairy, which was extremely helpful and appreciated.

Thank you also for the use of shiny, unchewed Elliott traps. Stuart, good luck with repairing the worst of our rat damaged traps.

Results

The most exciting capture was a young male Southern Brown Bandicoot (*Isoodon obesulus obesulus*) (670g) at Site 1, where they have been caught before. Our last capture was a male four years ago, autumn 2018. I hope this means we aren't good at catching the resident population, rather than that they disappeared for a while.

Overall there were 159 native mammals caught, consisting of 64 Antechinus flavipes, 65 Bush rats (Rattus fuscipes), 29 Swamp rats (Rattus lutreolus), and the one bandicoot. 11 of the Antechinus, 12 of the Bush rats and 6 of the Swamp rats were returnees from previous surveys. There were 6 feral rats (Rattus rattus) and 3 house mice (Mus musculus). There were 21 skinks, all but one were common garden skinks (*Lampropholis guichenoti*), one was a three toed earless skink (*Hemiergis decresiensis*) with a lovely orange belly. One common froglet (*Crinea signifera*) was the only amphibian. By the time we counted the repeat visits we handled 254 critters.

Antechinus were the most common mammal at three sites. *R fuscipes* were the most common mammal at three sites. *R lutreolus* were the most common mammal at one site. Antechinus and *R fuscipes* shared top spot at one site. Total mammal catches ranged from 5 to 41.

thefurlers@gmail.com



A young male Southern Brown Bandicoot (*Isoodon obesulus* obesulus) Trapped at Site 1.

SEG ANNUAL GENERAL MEETING

The Scientific Expedition Group Inc. Annual General Meeting and Talk will be held as follows:

Date: Friday 30th October 2022

Time: 7:30 pm

Place: Fullarton Centre,

Corner of Fullarton Road and Fisher Street, Fullarton

After a short business meeting our talk will be presented by Professor Rod Wells on:

Caves, Deserts and Playa Lakes

Professor Wells gave up a career in engineering to return to university in the 1960s to pursue an interest in exploration and natural history. His studies of the Southern Hairy-nosed Wombat led to the establishment of the Brookfield Conservation Park in the Murraylands in 1973 His discovery of the rich fossil deposits in the Naracoorte Caves in 1969 led ultimately to their World Heritage listing in 1994. Rod has spent the last fifty years researching the fossil history of the ancient lake and stream deposits of the Lake Eyre and Lake Frome Basins.

SCIENTIFIC EXPEDITION GROUP INC. APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL for 2021 — 22

Membership is open to any persons, family or organisation interested in the following aims:

* The promotion and running of expeditions of a scientific, cultural and adventurous nature.

* The furthering of knowledge, understanding and appreciation of the natural environment.

* Promotion of the values and philosophy of wilderness.

* Enabling people to learn the skills required for planning and running expeditions, and to develop sound field techniques

SUBSCRIPTION RATES

Adult member	\$35.00
Concession cards/ student	\$15.00
Family or Corporate membership	\$40.00

<u>HARD COPY SEGments</u>:- If you would like to receive a hard copy through Australia Post of our quarterly journal SEGments, please include in your payment an additional \$30.00 for a SEGments subscription. All members will receive an electronic copy by email.

Name	
Address	
Telephone (H)	(W)
E-mail	

Details of scientific, cultural, and adventuring or other relevant skill or interests you may be prepared to share with the group:

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ELECTRONIC PAYMENT

If you have access to the internet, payment can be made using SEG's bank account at Bank of South Australia, details as follows: Acc Name: Scientific Expedition Group Inc. BSB: 105-086 Acc No.: 330629440

Please use your last name if possible to identify your payment <u>AND</u> also advise us by email that you have made a payment to our bank account via email to – gdoats@bigpond.net.au

Or send a cheque payable to Scientific Expedition Group Inc. with a photocopy of this page to:

The Secretary Scientific Expedition Group Inc. 111 Franklin St, Adelaide, SA 5000.

PLEASE NOTIFY ANY CHANGE OF POSTAL OR ELECTRONIC ADDRESS

