



December 2015

Alice Springs Field Naturalists Club Newsletter



Themeda avenacea, Tall Oat Grass, as tall as Connie. Photo taken by Rosalie Breen on one of the early morning walks.

Meetings are held on the second Wednesday of each month (except December & January) at 7:00 PM at Higher Education Building at Charles Darwin University. Visitors are welcome.

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NEWSLETTER

The next newsletter will be February 2016.

The deadline for the next newsletter will be 23 January.

Please send your contributions to Pamela Keil pamelakeil@yahoo.com

Please **send photos and text separately** as combining them causes formatting issues.

MORE EARLY MORNING WALKS - *For all you retirees or those with flexible working hours, here is a feast of early morning walks to keep you fit throughout the long hot summer months.*

All walks are on bush tracks (some mountain bike tracks and some 4WD tracks) of 4-6 km in length and of 2 to 3 hours duration.

Thursday 3 Dec Mystery tour starting in Spencer Valley. Some cross country and hill climbing. Meet **6 am** Gosse Street playground. Organiser: Rosalie Breen 8952 3409 rosalie.breen@email.com

Thursday 10 Dec Walk in hills up from the Scout Hall. Meet **6am** at the Scout Hall off Larapinta Drive. Organiser: Connie Spencer 0429966592 constans@bigpond.net.au

Wednesday 10 Feb **Meeting** 7.00pm at Charles Darwin University Higher Education Building lecture theatre. Presentation by Lisa and Pete Nunn on the wildlife seen on their recent African adventure.

Sunday 14 Feb Bird Count at Alice Springs Sewage Ponds.

AUSTRALIAN PLANTS SOCIETY

Contact: APS Secretary jude.pringle@nt.gov.au

Wednesday 3 Feb Meeting at 7.30pm at OPBG. Speaker: Peter Jobson.

BIRDLIFE CENTRAL AUSTRALIA

Contact: birdlifeca@gmail.com

Alice Springs Field Naturalists Club Committee Members

President	Barbara Gilfedder	8955 5452	Public Officer	Rhondda Tomlinson	8953 1280
Vice-President	Lee Ryall	8953 6394	Property Officer	Rosalie Breen	8952 3409
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Treasurer	Neil Woolcock	8955 1021	Committee Member	Claire Meney	0448341795
Website and Newsletter	Pamela Keil	8955 0496.			

Farewell to Bev Dawson

Rhondda Tomlinson passed information on to me from Bev Dawson. She has now moved to Sippy Downs, North of Brisbane.

Bev said that she had been in the Field Naturalists for about 20 years and saw and did some wonderful things. She was so pleased that she was able to go on the Horseshoe Bend trip. She was grateful for being able to receive a hard copy of the newsletter. After much thought, she has decided not to renew her Membership.

Bev has been very homesick for Alice Springs but the time had come to leave. She didn't tell anyone that she was leaving, as she didn't think she'd have the courage to go, if she did. Bev has two daughters and families in Brisbane.

Bev asked Rhondda to pass on her apology for not saying Goodbye! Rhondda has her phone number and address and if anyone is going her way she would love them to call in. Contact Rhondda for her contact details.

We have enjoyed Bev's company on many trips and walks over the years. We all wish her all the best for a busy, happy life in Queensland.

Community Ecology of Birds in Acacia Shrubland in Central Australia

Bruce Pascoe's talk, November 11.

Report by Lee Ryall

At our November meeting, Bruce Pascoe of Charles Darwin University shared some early findings of his Ph.D. thesis with us. Work on bird populations in the arid zone has previously been based on short-term studies which were unable to document the effects of change over time.

There are two principal hypotheses relating to the arid region. One is that because resources are scarce, bird populations reflect changes in rainfall. The alternative theory is that there is an underlying stable population, especially in habitats such as mulga, with an overlay of nomads and birds that follow resources.

Bruce's work was based on four studies in the area from the Desert Park to Simpson's Gap. This includes the highly manipulated, irrigated area (the Desert Park) and the surrounding areas which are subject to more natural fluctuations related to climatic conditions.

One of the studies looked at foraging ecology in the study area - how the birds eat, where they eat and at what heights. For example Singing Honeyeaters were observed to eat 5% nectar, 20% berries and 75% insects and exudates. Other studies included mark recapture through mist netting and bird banding as well as census work undertaken in one case by Bruce only and in another by a volunteer group.

One study was a seven year study aimed at documenting change in the population across sites covering a variety of vegetation types including both irrigated and natural environments. In analysing his results, Bruce used a form of graph which was new to many of us, and which Rosalie Schultz has written about separately.

Some results were as one might expect. In 2010, a year of extremely high rainfall, some populations of birds were 'through the roof' compared to other years of the study. These included Zebra Finches, Budgerigars, Diamond Doves and Crested Pigeons. There was a notable difference in the amount of change in the irrigated and natural areas: abundant rainfall didn't affect the populations in the irrigated areas nearly as dramatically as in the natural sites. So in looking at bird abundance over time, it appears that the natural areas respond more to stimuli such as massive rainfall than do irrigated areas.

Bruce suggested two possible reasons for this difference. The irrigated areas are likely to be operating close to maximum carrying capacity all the time and therefore do not have as much potential for an increase in abundance. Also, the large, established communities of birds such as honeyeaters are more likely to fight off newcomers.

Because he was looking at ten sites with different vegetation, Bruce could compare populations between sites as well as over time. It became apparent that site differences, for example between eucalypt and mulga, are more significant than climatic/time based changes. There is a level of stability of bird species in mulga as there is in the eucalypt habitat. The mulga was generally dominated by Splendid Fairy-Wrens, with Thornbills also popping up, while White-plumed Honeyeaters were most common in the desert rivers environment, Spiny-Cheeked Honeyeaters in the sand country, and Crested Pigeons in the Woodlands.

While there are some reservations about aspects of the data from the Desert Park Survey (variable observer bias, bird movement across the area and frequency- once monthly), its strength lies in the length of time over which data was collected., including extremely wet and dry periods. Bruce's results suggest that the theory of populations responding to resources may not be as strong in the arid zone as has been suggested.



Acacia Country Censuses

A three year survey looked at 12 plots from Simpsons Gap picnic area to the Desert Park. This time three surveys were undertaken each year, but each occasion involved 4 censuses of the site. This was necessary to be confident of reasonable coverage of the populations concerned. The sites were all basically acacia vegetation, but detailed vegetation surveys were undertaken for each site in order to define habitat differences.

All sites proved to have similar bird communities. For example there was a consistent presence of Redthroats, Button Quails, Diamond Doves, Ringnecks, Splendid Fairy-Wrens and Gerygones. Habitat differences were still significant. For instance, one of the habitats was graced by Splendid Fairy-Wrens, Zebra Finches, Thornbills and Red-Capped Robins.

Individual Birds

Mist netting over ten years was carried out. Mist netting does not pick up all birds in an area as the nets are open at ground level and are limited in height. Birds caught are banded and then released. By checking the bands of caught birds, an indication is gained of whether the same birds are present year after year or whether different individuals are appearing. A selection of results suggests that individuals of some specific species are recaptured, suggesting a degree of individual site fidelity. Other highly mobile species such as budgies are rarely recaptured. The only bird to be recaptured in two different sites was the White-Browed Babbler

Bird	Number caught	Individuals recaptured
Diamond Dove	93	2
Budgerigars	30	0
Splendid Fairy-Wren	198	24
Thornbill	51	6
White-Plumed Honeyeater	21	4
Babbler	38	9
Yellow-Throated Miner	24	2
Zebra Finch	425	12
Willie Wagtail	26	1
Rufous Whistler	87	12



The second table shows the longest period of time between capture and recapture for a variety of species. Thus some species have been recaptured in the same place they were banded some years after initial banding. This again demonstrates some degree of site fidelity for these species.



BIRD	Days
Grey-Crowned Babbler	100
Splendid Fairy-Wren	2151
Thornbill	1521
Singing Honeyeater	1825
Spiny-Cheeked Honeyeater	1947
Zebra Finch	213
Red-Capped Robin	608
Western Bowerbird	547

Bruce's talk made for a fascinating evening for everyone, and especially for those field naturalists who had been involved in helping with the various surveys over the years.

Photos page 3 - Redthroat and Red-capped Robin - Mat and Cathy Gilfedder; Page 4 - Zebra Finches and Splendid Fairy-wren – Lee Ryall.

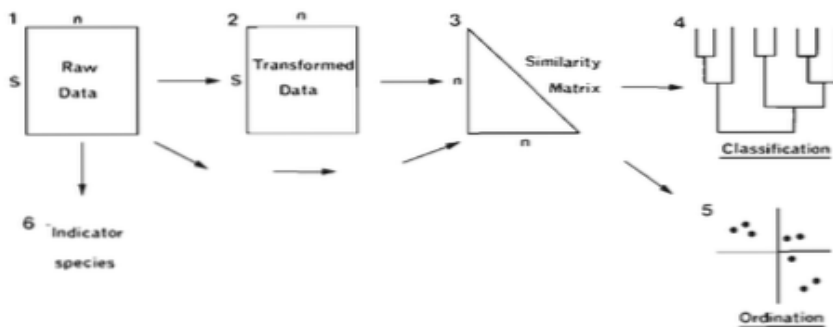
Understanding multi-dimensional non-parametric diagrams for the amateur nature lover:

Response to Bruce Pascoe’s presentation 11th November on “Community Ecology of birds in Acacia shrubland in Central Australia” by Rosalie Schultz

Ecosystems are immensely complex, and we can show only a few of their characteristics on a two dimensional diagram. However by using a diagram we allow ourselves to visualize many different types of data and this can help to comprehend patterns and relationships of ecosystems, and come up with possible interpretations.

Dimensions displayed on the 2 dimensional diagram may be biological variables such as species diversity; relationships between biological and environmental variables; or time, or other aspects that attract our interest.

‘Transformation’ may be used to enable complex ecosystem data to fit on a simple diagram. Examples of this include the logarithm. This enables different orders of magnitude difference (10, 100, 1000, 1 million) to be displayed on the single diagram (Field et al 1982).



Here’s a basic diagram showing how using logarithmic transformations can create order out of chaos in an example of the brain weight and body weight of some unidentified animal (Lane).

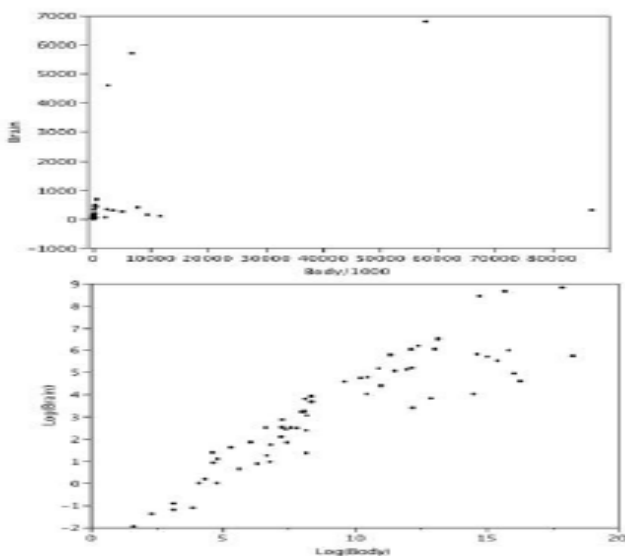


Figure 1. Scatter plots of brain weight as a function of body weight in terms of both raw data (upper panel) and log-transformed data (lower panel).

Multi-dimensional non-parametric diagrams were first used in the early 1980s to show effects of ocean pollution. They allow the viewer to visualize aspects of effects of the pollution, and ecological response over time.

In the diagram below, various transformations were used so there is no direct real world interpretation. However the quarterly sampling (A, B, C, D, E before the spill) showed significant effects for 8 quarters (F, G, H, I, J, K, L, M) before a return to similar cycling but in a different part of the diagram (N, O, P, Q etc). Note that there are no dimensions except time, but we see distinct changes in the species make up (Clarke 1993)

The actual distances between points mean nothing, it is the direction and relative distances that are displayed (“non-parametric”).

Finally here is a startling diagram of 39 world cities displayed by distance along a great-circle. There is no reference to the actual distance, only order of the distances. Sydney and Canberra are outliers, but relatively close to each other and to Darwin. Rome is only 4 times as far as Darwin, but is considerably further than Delhi and Baghdad – as in real life. (Clarke 1993)

Using this method in his presentation to the Field Naturalists in November Bruce has shown us interactions among variables related to birds, location and time. Showing these on paper – or screen as in the presentation - encourages us to visualize and interpret the data in different ways, and potentially make hypotheses. Different methods are needed to validate hypotheses and quantify the variables.

Clarke, K. (1993). "Non-parametric multivariate analyses of changes in community structure." *Australian Journal of Ecology* 18: 117-143.

Field J. G., Clarke K. R. & Warwick R. M. (1982) A practical strategy for analysing multispecies distribution patterns. *Mar. Ecol. Prog. Ser.* 8, 37-52.

Lane D. Online Statistics Education: An Interactive Multimedia Course of Study <http://onlinestatbook.com/2/transformations/log.html>

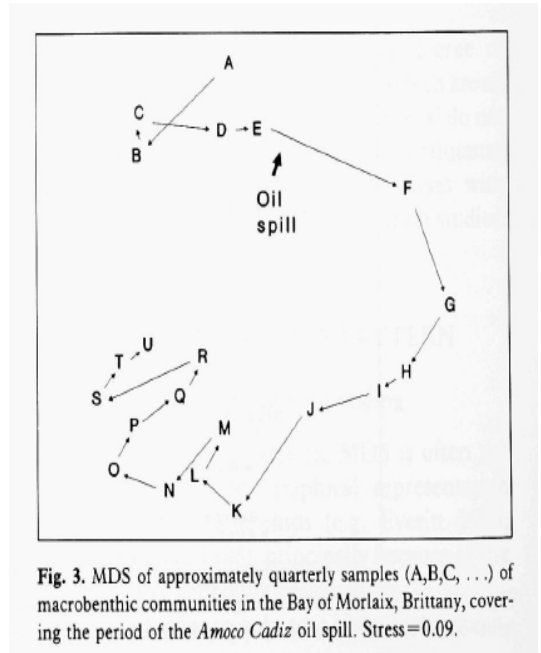


Fig. 3. MDS of approximately quarterly samples (A,B,C, . . .) of macrobenthic communities in the Bay of Morlaix, Brittany, covering the period of the *Amoco Cadiz* oil spill. Stress=0.09.



Hooded Robin - Mat and Cathy Giffedder

A RARE SIGHTING IN CENTRAL AUSTRALIA

Jenny Purdie
Photos by Pat Weeks

On Sunday 8th November Steve and I visited our good friends Pat and Allan Weeks in the Golf Course area. While sitting around talking we noticed a largish raptor sitting on the pool fence.

I noticed it had a crest on its head and having lived in Darwin years ago immediately thought of the Pacific Baza but not having any confidence in my ability to ID birds I dismissed it as I knew it was a Top End bird.

During the next couple of hours the bird moved around the garden often being dive-bombed by smaller birds who obviously resented its presence. Every time it landed it was side on so that I didn't see its striped breast but Steve did note its yellow eyes. Pat took a few photos of the bird through the window so as not to disturb it.

On returning home I looked in my bird book but could not identify it amongst the raptors occurring in central Australia.



I did check on the distribution of the Pacific Baza, which confirmed that it occurs in the Top End, coastal Kimberleys and along the coast of Queensland.

A couple of days later I mentioned it to Barb Gilfedder who asked if I could get Pat's photos which I did and she confirmed that it was indeed a Pacific Baza. Pat saw the bird on and off several times for the next 3 days and then it disappeared.

(Pat's photos duly appeared on Facebook and the local twitchers became quite excited. It was seen again on November 21 in Gap Area. Barb)



Gavan's translation of the Arrernte engraving on Strehlow's grave

I went with the Field Naturalists on a trip to Horseshoe Bend (station on the Finke) in whenever it was. (Aug 2014, Ed.) One of the highlights was a visit to the grave of the early Lutheran missionary Carl Strehlow, who died there while his family and others were trying to get him to hospital in Adelaide.

The grave has a headstone, engraved in English, with an engraving in Western Arrernte on the back. People wanted me to translate this inscription for them, and I found it an embarrassment that I couldn't. I could translate most of the individual words, but I couldn't make sense of the thing as a whole.

I passed the problem on to others, and it was David Moore who had the Bible knowledge to recognise the inscription as based on the Book of Revelation, also called Apocalypse. Chapter 7, verses 13-14. He notes that it is probably based on the same verses of the New Testament as appear on Gamaliel's grave at Henbury which was erected in 1959:

Etna Mantara etnaka ilknigkala alkaralkarikakala tuta Lamaka aluala. 'they have washed their robes and made them white in the blood of the Lamb'

The gravestone at Horseshoe Bend may have been translated from the German Luther Bible as usually the early translations were e.g. wurla 'Gemeinde' for 'church'.

The upper line on the gravestone is: *nguna rella lena nama etnaka mantara tjulkura indamanga?* This appears to be a direct quote from Revelation 7:13, [Then one of the elders turned to me and asked] "Who are these, robed in white?"

The lower part begins: *Lenatoa etna nama Jesuka kankakala.* 'That's the ones who are happy with Jesus' or better perhaps: 'they are the ones who love Jesus'.

Etna itjalila laka rella kunnirberanga. The problem here is the meaning (and for us linguists the derivation) of *itjalila*. David hasn't been able to find this word in the old wordlists. *Itja* means 'no, nothing, none' and perhaps the *lila* ending means 'through'. David thinks that this is part of verse 14, *etna itjalila laka* perhaps meaning: 'they are ones who have passed through the great ordeal', or the great 'tribulation' in some translations, or in another 'the great trial'.

The next two words, *rella kunnirberanga* means 'from bad people' and, David suggests, answers the second question in verse 13: "And where have they come from?"

The last part: *Etna mantara ilknaka Jesuka aluala*, means 'They have washed their clothes in the blood of Jesus'

David describes this as a paraphrase of the second half of Revelation 7:14, 'they have washed their robes and made them white in the blood of the Lamb'.

The version of these two verses in the Catholic Mass of All Saints Day (November first) this year was:

One of the elders then spoke, and asked me, 'Do you know who these people are dressed in white robes, and where they have come from?' I answered him: 'You can tell me, my Lord.' Then he said: 'These are the people who have been through the great persecution, and they have washed their robes white again in the blood of the Lamb.'

Thanks to Rhonda Inkamala and David Roennfeldt, and especially to David Moore.





Standley Chasm – 14 November - Barb Gilfedder

While we waiting for everyone to get their entry cards organized at the Standley Chasm kiosk, there was a sudden drumming on the corrugated iron roof and we all chorused “Rain”. It didn’t last long, but set the happy tone for the walk into the Chasm.

Charlie Carter gave a good explanation of the geology and the formation of the Chasm. See Meg Mooney’s interpretation next page.



The cloud cover was welcome after so many hot days already. Two...or possibly more...Dusky Grasswrens were hopping around like mice on a scree slope. Little Woodswallows were swooping high above the cliffs. There was water as usual alongside the path, with Sticky Blue-rod, *Stemodia viscosa*, some grasses and ferns looking very lush and green. The path is being located slightly higher above the water, which is a good idea, as it will cause less damage to the sensitive, pretty area around the spring.

Connie and Cec took the high road, a steep stepped path up the hill while the rest of us stayed on the flat.

A refreshing wind blew through the Chasm itself, making photos of the still flowering Flannel Flowers *Actinotus schwartzii* and Cliffside Daisy *Cremnothamnus thomsonii*, not so still.

Jodie and Jacob scrambled up a rocky slope, pretending they were Rock Wallabies.

Back at the kiosk, we enjoyed coffees, snacks and mango icecream, listened to Green Tree Frogs calling, and Jacob sadly found a dead one. A Torresian Crow called in for a drink and talked to his reflection in the strategically placed mirror.

Always nice to walk into Standley Chasm. Jenny and Steve found our local Ozothamnus, *Ozothamnus kempei* flowering and took some photos (left). As Scott said, if you are heading out to the Western Macs you generally bypass Standley Chasm but it is always worth a visit.



Standley Chasm originally a Dolerite Dyke - Meg Mooney

Standley Chasm was formed by the erosion of a dolerite dyke. Dolerite is much 'softer' than the surrounding Chewings Range Quartzite.

A dyke forms when molten rock, or magma, intrudes into a vertical, or near vertical, crack in a rock near the earth's surface. A dyke is like a vertical vein.

Dolerite is formed from a mafic magma, that is molten rock that is iron-magnesium-rich and poor in silica. So dolerite has mafic minerals like amphibole and olivine and no quartz.

Dolerite usually consists of a dark groundmass of fine mafic minerals with larger, visible, laths of feldspar. This is because part of the magma solidified slowly at some depth. Feldspar crystallised out first and formed reasonably large crystals. As the magma was intruded near the earth's surface, the rest of it solidified quickly as very small crystals, the dark groundmass.

The dolerite that was eroded to form Standley Chasm is called the Stuart Pass Dolerite and is part of the Stuart Dyke Swarm. Not surprisingly then, Stuart Pass was formed by the erosion of another dolerite dyke, as was Spencer Gorge. These dykes trend north-south east of Mt Giles. In the Glen Helen area they are west-southwest and north-northwest.

Radioactive dating and magnetic pole position (grains of iron-rich minerals align to the magnetic pole direction at the time the minerals crystallised) indicate the Stuart Pass Dolerite is around 1080 million years old. The dykes are overlain by the Heavitree Quartzite, so are older than the Amadeus Basin sediments.

Apparently you can see a dolerite dyke along Larapinta Drive about 25 kms west of Alice Springs. Here it intrudes into gneiss, which is less resistant to weathering than the dolerite, so the dolerite forms a low ridge. These dykes are quite common around Alice Springs, and also visible, for example, at Wigley's Waterhole.

Photos: Ghost Gum and Dusky Grasswren- Jenny Purdie; Jacob and Jodie – Barb Gilfedder; Ozothamnus kempei – Steve Sinclair; The Chasm - Barb Gilfedder.



*The Alice Springs Field Naturalists Club Committee
wishes all Members and Friends
a Safe and Happy Festive Season.*

