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Newsletter of the Ecological Consultants Association of NSW

ECA ECOLOGICAL CONSULTANTS ASSOCIATION of NSW Inc

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Diamond Firetail at Woodland Bird Workshop (**see page 40**).
Photo courtesy of Veronica Silver

INSIDE THIS ISSUE

Wind Turbines in the coastal heath landscape, Albany Wind Farm, Albany, WA. (**See page 33**)
Photo courtesy of Tony Proust.

Left: Kathryn Chestnut with swamp rat and **Below:** golden crowned snake at terrestrial fauna survey techniques workshop at Smiths Lake (**See Page 10**)..
Photos courtesy of Arthur White.

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Front Cover Photo: Red-eyed Tree Frog *Litoria chloris*. *Photo Courtesy and Copyright of Arthur White*

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Message from the President

Dr Stephen Ambrose

Welcome to 2009 and the very first edition of *Consulting Ecology*, the new name for the official magazine of the Ecological Consultants Association of NSW Inc.

I hope that all of you had a well-earned break over the Christmas/New Year period, spending quality time with family and/or friends. If your break was similar to mine, then you would have enjoyed an excess of traditional Australian fare such as seafood, Christmas pudding, fruit mince pies, beer and wine (not all at once!). This was punctuated with regular visits to the beach, the occasional bird-watching trip and lots of reading. I didn't think of work for two whole weeks!

The Year Ahead

Now that the festive season is over, we all need to plan for the year ahead of us. I think that 2009 could be a challenging year for ecological consultants as we begin to experience the flow-on effects of the slow-down in the global economy. The key to surviving this period of uncertainty is adapting with the times.

Here are some questions that may help you plan your way through 2009:

1. Is your company providing services mainly to clients who are at risk of not financially surviving the global economic downturn?
2. Are you specialising too heavily in industry sectors that are particularly vulnerable to economic downturns (e.g. property development applications, the construction industry or government projects)?
3. Do you tend to work on long-term (e.g. large infrastructure projects) or short-term (one-off) projects? If you work on long-term projects, do you have the staff and appropriate expertise, and if you work on short-term projects, do you think you will have enough projects for your company to operate profitably in 2009?

4. Are there new or additional services that your company can offer potential clients? If so, how are these services going to be marketed? If not, what additional training is planned for 2009 to broaden your skills base or keep abreast of the latest advances in research areas that you are already skilled in?
5. What is a realistic geographical footprint of work for your company? If your company plans to work on projects in your local government area, catchment area or bioregion, are you sure there will be enough project work in 2009? If you plan to work further afield (state-wide, interstate or internationally), do you have adequate resources and expertise?
6. You've been thinking of expanding the company – putting on extra staff, opening regional offices or even expanding interstate? Is 2009 the best time for achieving this, or is it best to wait for the global economy to recover?
7. Are you working in the most cost- and time-effective ways? If not, what are you going to do about it?
8. Consider your role as an ecological consultant. Are you a sole operator or are you one of several ecological employees in a company? If an employee, how secure do you think your position is, and what can you do to assist your employer to weather the economic downturn, and thus make your position more secure? If you're an employer, what strategies will you put into place to reduce the risk of retrenching staff? If a sole operator, will it be okay to operate your business in the usual way, do you need to make changes and, if the latter, what and when do these changes need to be made?

Cash-flow Crises

One challenge that my company faced towards the end of last year was surviving a cash-flow problem, brought on by long delays in clients settling invoices once the consultancy work had been completed satisfactorily. We've all experienced problem clients who pressure us to complete our project work in the shortest time possible (and at discount prices), but procrastinate when it is time to pay the consultant for his/her services. But to have so many procrastinators at once was unprecedented in the history of my company. This was no doubt brought on by the clients themselves experiencing their own cash-flow problems. I have since found out that many other ecological consultants have experienced the same problem in the latter half of 2008.

It was amazing some of the excuses I heard when chasing overdue payments last December. "*We never received your invoice*" (the usual excuse), "*… your invoice is in the system*" (the client couldn't explain what was meant by "the system" or where in "the system" the invoice would be, and would not tell me who in "the system" I needed to approach for more information), "*…our previous accountant resigned a couple of weeks ago and we are waiting on the appointment of a new one before we can pay any bills*", and the best of them all was "*we are waiting on the sale of some assets (land) to free up some capital. You should be paid next week"* (well, six weeks have past and I'm still waiting!). Several other clients avoided similar conversations by always being "in a meeting" and not returning phone calls.

So what do we do to reduce the risk of becoming victims of such excuses in the future? My father-in-law (a successful architect before his retirement) would always call into a client's office to personally pick up cheques if payment was overdue. He is a towering and often formidable man and he seldom left the office of a client without a cheque in his hand. Most of us would feel uncomfortable with this approach, it is not the best use of our salaried time and, besides, we need to go back a few steps to avoid overdue payments in the first place.

Always make sure the client signs a contract before the commencement of work, agreeing to the terms of the consultancy. The contract should state clearly the schedule of payments. Long-term and/or expensive projects may involve a payment once a particular stage of the consultancy has been completed satisfactorily, and you should not progress onto the next stage before due payment has been received. For smaller projects, the client should be sent a draft project report and only be sent a final report once payment has been received. The client should also agree to pay for the production of the final report, which must be paid within the agreed payment period. The contract should also stipulate that the client is responsible for the payment of debt recovery fees incurred by your company. Such measures don't guarantee that clients will pay on time, but do indicate clearly to the client your company's expectations for payment and, in the event of any legal pursuit of delayed payments, there is a relevant paper trail to provide to your debt collector or solicitor.

The Role of the ECA

Here are some of the ways in which the ECA can help members during the good and potentially bad times in 2009:

1. The ECA is recognised by all levels of government and the private sector as the peak industry group for ecological consultants in NSW. We influence Commonwealth and NSW environmental policies and business practices that directly affect ecological consultants.
2. Networking opportunities:

   (a) Business partnerships and friendships are readily established within the ECA Membership.

   (b) Would you like advice on a particular ecological or business issue, have you learnt something new that you'd like to share with others, or simply have an amusing story to tell? Members share important information through frequent ECA Information Emails (via the ECA Administration Officer admin@ecansw.com.au), the Discussion Forum on the ECA website www.ecansw.org.au and articles in *Consulting Ecology*.
3. Training opportunities: upgrade your skills or keep up-to-date with the latest developments in ecology by attending ECA workshops and our annual conference. Information about these events in 2009 is in this issue of *Consulting Ecology*.

PHOTO COMPETITION

Congratulations! to ***Arthur White*** for winning the last photo competition with his photograph of the Red-eyed Tree Frog *Litoria chloris*, featured on the front cover. This photo was taken at the ECA Terrestrial Fauna Techniques Workshop, at which Arthur was the very knowledgeable group leader for reptiles and amphibians.

Thank you to everyone who entered our photo competition. All entries have been included in the ECA Photo Gallery on the back cover.

Email your favourite flora or fauna photo to admin@ecansw.org.au to enter a competition and have your photo on the cover of the next ECA newsletter. Win your choice of one year free membership or free entry into the next ECA annual conference. The winner will be selected by the ECA council. Runners up will be printed in the photo gallery

4. As a member of the ECA your name, qualifications and contact details are on the ECA website. Prospective clients frequently access this list to establish initial contact with appropriately qualified and located consultants … free marketing!
5. Thinking of employing more people? Vacant positions can be advertised for a modest fee on the ECA website. Looking for employment or work experience as an ecological consultant? The ECA website can put you in touch with individuals and companies who can provide you with the right advice.

If you have any ideas on how the ECA Council can improve its delivery of services, then let us know. However, if you do have suggestions, be prepared to help putting them into place. The ECA Council is a completely voluntary executive body of people who, in their spare time, run their own consultancy businesses or are employed by others as ecological consultants.

On that note, I wish to thank everyone who served on the ECA Council in 2008. Liz Ashby and Jason Berrigan stood down from Council in September 2008 for a well-earned break from ECA executive duties. At the same time, Alison Hunt, Toby Lambert, Greg Elks and Tom Grant were elected as newcomers to Council and have already made significant contributions to ECA activities. Judith Rawling, Martin Denny, Michael Murray, Paul Burcher, Mark Couston, Deryk Engel, Stefan Rose, Ray Williams, Nick Skelton and Liz Norris are gluttons for punishment because they sought (or were coerced into seeking) re-election as Council members for 2008/09 after serving on Council in previous years. The ECA Council is more than ably assisted by Amy Rowles who seems to perform her admin duties efficiently and without complaint, despite competing pressures of looking after her family and orphaned joeys, and moving camp to the mid-north coast.

Name The ECA Newsletter COMPETITION

Congratulations! to ECA Member **Jenny Lewis** for her winning entry *`Consulting Ecology'*

We hope that you are all enjoying the new style newsletter of the ECA, now complete with a new name.

EUROKY

Euroky: **ability of an organism to adapt to changes in the environment**

Euroky was the second place choice for the name the newsletter competition and it was decided that a column titled `EUROKY' should feature in each edition of *Consulting Ecology*.

This column will replace the Anecdotal Ecological Observations, Hints and Information section and will cater for any short ecological comment or note.

If you have any interesting observations or useful hints and information that you would like to share in the euroky column, please forward them to the newsletter editor or administration assistant to be included in the next edition.

Cryptic Bird Species at Triangle Pond, Sydney Olympic Park

Five normally cryptic rail and crake species were observed in Triangle Pond in Bicentennial Park, part of Sydney Olympic Park at Homebush Bay, by many observers in January 2009. These species were the Lewins Rail (*Dryolimnas pectoralis*), Buff-banded Rail (*Gallirallus philippensis*), Australian Crake (*Porzana fluminea*), Spotless Crake (*Porzana tabuensis*) and Baillon's Crake (*Porzana pusilla*).

Keen birdwatcher and photographer, Jon Irvine, first reported the presence of the Lewin's Rail and Spotless Crake on Birdline NSW on 10 January 2009. The other species were observed at the pond subsequently by other observers. All species were still present at Triangle Pond at the time of writing this article (27 January).

Triangle Pond is on the eastern side of the closed section of Bennelong Road, about 400 metres north of the turnoff to the Field Studies Centre. It is located within the Badu Mangroves and is surrounded by a mesh fence. The Lewin's Rail and Spotless Crake, in particular, forage readily on the exposed mudflat at the northern end of the pond.

Although none of these species is rare in Sydney, they are often hard to observe because of their cryptic behaviours and the structure of their wetland habitats. However, it is remarkable that all five species occur in the same pond at the same time, and is even more remarkable that they occur together in a highly urbanized environment, about 14 km from the Sydney CBD. This is an excellent spot for learning how to identify these species from both their appearance and their calls.

The Badu Mangroves are part of the Homebush Bay Wetlands on the upper reaches of the Parramatta River. The Waterbird Refuge (WBR), at the northern end of the mangrove area is a regionally important roosting area for a number of bird species, especially Chestnut Teal (*Anas castanea*), Grey Teal (*Anas gracilis*), Black-winged Stilt (*Himantopus himantopus*), Red-necked Avocet (*Recurvirostra novaehollandiae*) and Bar-tailed Godwit (*Limosa lapponica*).

I have observed large flocks of migratory waders come into roost at many locations along the Australian coastline, but I never cease to be thrilled by this spectacle, and the WBR is no exception. Yesterday, as I sat in the bird hide at the northern end of the WBR, over 180 Bar-tailed Godwits landed on the exposed mud flats, just metres in front of the hide. About 115 of them arrived at about 2030 hrs (approximately 15 minutes after dusk), the remainder arriving in smaller flocks over the following 20 minutes. Nocturnal surveys co-ordinated by the Sydney Olympic Park Authority have recorded up to 234

Bar-tailed Godwits roosting at night on the WBR (13-19 February 2008).

It is vital that important wildlife habitats, such as the ones I have described, be protected from significant disturbances from the surrounding urban environment. As ecological consultants who often work at the coal face of development and other human activities, we should play an important role in helping to ensure that protection.

Stephen Ambrose *January 2009*

Urban dwelling bats

An ECA member Caragh Threlfall, made an appearance in the Sydney Morning Herald on the 19th July 2008. The article titled `Like tiny bats out of urban hell they'll be gone by morning' outlined that firstly micro-bats exist, and that they do occur in urban areas, using man-made structures to supplement natural habitat. The article also educated readers by providing a few ecological facts. Caragh is working on a PhD at NSW University, investigating aspects of the Ecology of urban insectivorous bats.

The entire article may be viewed at http://www.smh.com.au/articles/2008/07/18/1216163156818.html?feed=fairfaxdigitalxml.

Link provided by Paul Burcher and summarised by Amy Rowles .

Upcoming Events in 2009

ECA Events

- **2009 ECA Conference and AGM**

Title: Ecology at the rural / urban interface.
Date: Friday 4th September 2009.
Venue: Newcastle Area – exact location yet to be determined.

- **ECA WORKSHOPS 2009**
  - **Rainforest Plant ID Workshop**
  - **Preparation of Bushland Rehabilitation and Management Plans Workshop**
  - **Fauna Use of Tree Hollows Workshop**

The dates and venues for these workshops are yet to be determined. You may register your interest in any of these workshops by emailing admin@ecansw.org.au.

Non - ECA Events

- **Bird Calls of the Greater Sydney Region with Fred van Gessel.**

Date: 21-22nd February 2009.
Venue: Birds Australia Discovery Centre, Newington Armory, Building 133, 1 Jamieson St, Sydney Olympic Park and Mitchell Park, near Windsor.
Cost: $69 for Birds Australia members and $79 for non-members (inc GST).
Contact: basna@birdsaustralia.com.au
(02) 96471033

- **Anabat Techniques Training**

Date: Thursday 19th – Sunday 22nd March 2009.
Venue: Smiths Lake Research Station
Cost: $1375 (+GST) (food and accommodation included) – discount available for ECA members
Topics include: Understanding and efficient use of Anabat detectors. Identifying bat calls and use of Analook software.
Contact: kiml@titley.com.au

- **Green cities conference & expo**

Date: 8th-11th of March 2009.
Venue: Brisbane
Contact: www.gbca.org.au

Recent Literature and New Publications

Book Review

`Road Kill' by Len Zell

Road kill *is available from the Australian Museum book store or online, directly from the author himself* ***(http://www.roadkillaustralia.com/).*** *It retails for* ***$19.95****.*

When I was at university my lecturer encouraged us all to read R.M. Knutson's book *Flattened Fauna: A field guide to common animals of roads, streets and highways*. Whilst reading this book I thought, I should do an Australian equivalent (*Flattened Fauna* is US based). Well as the old saying goes, he who hesitates is lost and Len Zell has beaten me to it. *Roadkill* is an easy read, a book that can be knocked over in a couple of hours. In writing his book, Len hopes that, through either shock or information, it will help people to reduce their impact on our native fauna by driving differently (i.e. to the conditions we find ourselves in). Len believes that, as a species, we are intelligent, but by continuing to treat our wildlife as we do, we prove we are very stupid. Len comments that planning the prevention of road kills by road builders is a major budget and political consideration, interest in minimizing vehicle strikes being supported and investigated by government agencies, insurance companies, car manufactures, consultants and conservationists alike. The book includes a series of good quality photographs of vehicle struck animals, these covering all the main fauna groups (including one I never consider, the invertebrates). For those inclined, descriptions of characteristic features to assist with identifying a road kill at least down to Genus level are included. Also featured are recipes on how to prepare a tasty dish from a fresh road kill, road kill statistics, road kill websites, equipment to keep in the car to collect/examine and photograph your road kill, interesting road kill anecdotes, useful guidebooks and so on. The book is touted as being a hilarious account of this topic, though I didn't find this to be the case. I will say it was humorous in a tongue-in-cheek way and did achieve its aim at highlighting the impact(s) we are having on our wildlife as we are traversing their environments (including our oceans – propeller killed turtles and run over whales feature). It's a book you'd keep next to your toilet so your friends can read it and get a conversation going. I note the book doesn't deal with road kill plants, therefore unlikely to grab the interest of those botanists amongst us. I personally can account for at least four native trees that are now dead and numerous shrubs that no longer grace this planet…. A possible book in the making??????

Deryk Engel
Lesryk Environmental Consultants
ECA Council Member

See pages 8 & 42 for Deryk's very own road kill accounts.

Recent Journal Articles

Benson J (2008). Classifying ecological communities and synthesizing data for natural resource management: Some problems and potential solutions. *Ecological Management & Restoration* **9**(2): 86-87.

Kanowski J, Catterall C. and Neilan W. (2008). Potential value of weedy regrowth for rainforest restoration. *Ecological Management & Restoration* **9**(2): 88-99.

Claridge A. and Hunt R. (2008). Evaluating the role of the dingo as a trophic regulator: Additional practical suggestions. *Ecological Management & Restoration* **9**(2): 116-119.

Januchowski S. et al., (2008). Identifying multiscale habitat factors influencing koala (Phascolarctos cinereus) occurrence and management in Ballarat, Victoria, Australia. *Ecological Management & Restoration* **9**(2): 86-87.

Sanger J. et al., (2008). Restoration of forest structure in managed regrowth at Rocky Creek Dam, Australia. *Ecological Management & Restoration* **9**(2): 143-144.

Dunbabin T. (2008). Livestock grazing: A matter of ecology. *Ecological Management & Restoration* **9**(1): 17-25.

Davis J. and Brock M. (2008). Detecting unacceptable change in the ecological character of Ramsar wetlands. *Ecological Management & Restoration* **9**(1): 26-32.

Spooner P. and Briggs S. (2008). Woodlands on farms in southern New South Wales: A longer-term assessment of vegetation changes after fencing. *Ecological Management & Restoration* **9**(1): 33-41.

Cheal D. (2008). Repeatability of cover estimates? *Ecological Management & Restoration* **9**(1): 67.

Olsen P. (2008). The State of Australian Birds. *Wingspan* **18** (4): supplement.

Lunney D., Munn A. and Meikle W.(2008) **Too Close for Comfort**: Contentious issues in human-wildlife encounters. Royal Zoological Society of NSW, Mosman.

Goldingay R. and Osborne W. (2008) Ecology and Conservation of Australian Bell Frogs. *Australian Zoologist* **34** (3).

2009 Annual Subscription is **Now Due**

Subscriptions unpaid by the **1st of April** will be cancelled. Membership may be re-instated at anytime, provided yearly subscription is paid in full.

If you did not receive your subscription renewal in the post please contact administration admin@ecansw.org.au

ROAD KILL ACCOUNTS

Deryk Engel

Whilst on the topic of road kills, two incidents come to mind where I personally accounted for the death of two species of native fauna. The first was whilst driving during the early evening on a road just north of Bungonia, NSW. I had two passengers in the car, both of whom had dozed off. Out of the corner of my eye I caught sight of a wombat and, as my passengers had been discussing whether we'd see any wildlife or not, I slowed down, happily woke them and, with a flourish, asked if they were interested in seeing a wombat. Groggily but showing interest both agreed so I expertly threw the car in reverse, took off at speed backwards down the road and promptly ran over the animal. Once the wombat was extracted from under the car, embarrassedly we all looked at it, feigned scientific interest for several minutes and then agreed never to mention the matter again.

The second incident I remember was whilst driving east of Oberon. We were doing a road widening survey in an area of relatively cleared fields with scattered trees, very little else around. The road was straight and we were the only vehicle on it at the time. I was in the passenger seat, concentrating on looking skywards searching for birds, the driver, a botanist, also leaning forward over the steering wheel looking upwards and checking out the eucalypts and other isolated trees. We were seeing little, poking along at a steady speed and complaining to each other about the lack of "things" to record. At one stage we both found ourselves looking skywards, discussing the coloration of a raptor that had come into view. Intent on finally identifying something of interest, we were both startled by a thud that emanated from under the car. With questioning looks at each other we pulled over and cautiously looked behind us. There in the middle of this long, "desolate" straight road was a very dead, very recently killed Blue-tongued Lizard. Not known for their speed, this reptile was probably lying on the road for ages as we approached it, a combined look of fear and perplexity on its face, neither of the ecologists (who between us have something like 30 years field experience) noticing it. After reversing, examining the road kill, nervously giggling and complimenting ourselves on our first reptile record (even if it probably heralded the local extinction of this species in the wasteland that surrounded us) we both rapidly jumped back in the car and headed for the nearest café in search of a soothing cappuccino.

Continued on Page 42

2008- 2009 ECA Membership Report

Amy Rowles

We have 12 new members since the last edition of the newsletter. In total we have 119 members and two new applicants currently being processed. Of these 95 are practising members, 13 are associate members, 9 are non-practising and 2 are students. The new members are introduced below:

Name: Katie Whiting
Membership Status: Associate
Qualifications: B. Sc., MWldMgt (Habitat)
Company: SMEC Australia Pty Ltd
Position: Ecologist
Location: North Sydney

Name: John Whyte
Membership Status: Practising
Qualifications: B. Bio. Sc. (Botany & Zoology)
Company: RPS Harper Somers O'Sullivan
Position: Ecologist / Botanist
Location: Narara

Name: Kathryn Chestnut
Membership Status: Associate
Qualifications: B. Env. Sc. (Hons)
Company: URS Australia Pty Ltd
Position: Ecologist
Location: North Sydney

Name: Adam Blundell
Membership Status: Practising
Qualifications: B. Env. Sc. (Hons)
Company: Ecobiological
Position: Senior Environmental Scientist / Managing Director
Location: Gateshead

Name: Edward Cannella
Membership Status: Practising
Qualifications: B.Sc. Hons(Zool),Grad Dip Env Sc
Company: SMEC Australia Pty Ltd
Position: Principal Ecologist
Location: North Sydney

Name: Nathan Cooper
Membership Status: Associate
Qualifications: B. Env. Sc.
Company: Parsons Brinckerhoff
Location: Merewether

Name: Eduardo Gallo cajiao
Membership Status: Non-practising
Location: Wolli Creek

Name: Alicia Lyon
Membership Status: Practising
Qualifications: B. Sc. (Ecology and Biogeography)
Company: Eco Logical Australia Pty Ltd
Position: Ecologist
Location: Coffs Harbour

Name: Huw Rabone
Membership Status: Associate
Qualifications: B Sc. (Ecology)
Company: GIS Environmental Consultants
Position: Ecologist
Location: North Curl Curl

Name: Narawan Williams
Membership Status: Practising
Qualifications: Cons. Land Mgt Cert. II
Company: Ecotone Ecological Consultants
Position: Field Ecologist
Location: Waratah

Name: Dr Arthur White
Membership Status: Practising
Qualifications: B. Sc. (Hons). Ph. D.
Company: Biosphere Environmental Consultants
Location: Rockdale

Name: Kim Caswell
Membership Status: Practising
Qualifications: B. Sc. (ENV)
Company: GIS Environmental Consultants
Location: North Narrabeen

Outcomes of the Terrestrial Vertebrate Surveying Workshop: Fri 24th - Sun 26th October 2008

Ray Williams
Ecotone Ecological Consultants

Workshop Leaders
Arthur White – Reptiles and Amphibians
Stephen Ambrose - Birds
Ray and Narawan Williams – Mammals

The University of NSW Smiths Lake Field Station was an ideal place to hold a survey technique workshop. It is located on the shores of Smiths Lake and is surrounded by Myall Lakes National Park. It provides excellent facilities with bunk style accommodation, covered outdoor area, laboratory, well appointed kitchen and showers and toilets. In addition, DECC has converted the adjoining fisherman's cottage into a lecture facility which we were given permission to use. We were also given permission to survey within the National Park.

Golden Crowned Snake *Cacophis squamulosus. Photo courtesy of Arthur White.*

A total of 40 participants (approximately half being ECA members the others consisting of non-member consultants, staff from Port Stephens and Pittwater Councils and a lone DECC person) attended this three day workshop. The workshop was due to start at approximately 2 pm and there were some worried faces when a large proportion of the expected registrants had not arrived by 2.30. Surely such a number wouldn't fail to show up! Arthur White decided to investigate and found the Seal Rocks Road busier than usual. A number of people failed their navigation test although, to be fair, the blame should be placed on Google Maps for supplying the wrong road name (Uni Road) and the Great Lakes Council for actually putting up the correct road sign (Horse Point Road). That's my excuse anyway.

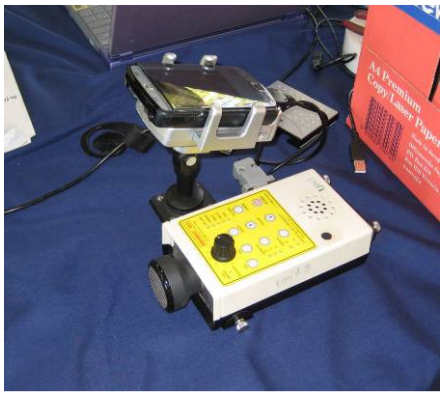
With time ticking away and the organisers getting restless, the troops were gathered into three groups for the setting of the traps although not before afternoon tea had been consumed. Three lines of traps were set consisting of 25 A type Elliotts, 3 B type Elliotts and 3 cage traps. Habitats sampled were:

1. Paperbark swamp forest on the edge of Smiths Lake;
2. Swamp heath; and
3. Forest red gum woodland/forest

Narawan Williams discussing Elliot trapping techniques. *Photo Courtesy of Nick Skelton.*

Tree trapping using B type Elliotts on platforms and pitfall trapping was demonstrated at the forest red gum site. Harp traps were set at known capture locations on Horse Point Road and the paperbark swamp and demonstration mist nets were set near some large paperbarks at the field station. Bat detectors were also set at a variety of locations over the two nights. With all the traps set it was time to relax with a sumptuous meal provided by the caterer, Vicki Johnston.

After dinner it was off doing night work with Arthur White taking a group frogging at his favourite spot in the former Wallingat State Forest (now Myall Lakes NP), Stephen Ambrose and Narawan Williams taking groups spotlighting and demonstrating call playback techniques while I stayed in camp with a small group of battos tending the mist nets and harp traps.



SD1 Anabat Detector with PDA screen attached. *Photo courtesy of Amy Rowles.*

Apart from Arthur's group recording the customary large number of frogs at Wallingat there was not much to report from the other groups. Despite much bat activity recorded in the area by the Anabat detectors no bats were caught.

Saturday morning and the troops had arisen by 6 am, somewhat bleary-eyed, and at 6.30 Stephen took a group bird watching while the rest of the party checked the traps. All trap lines were successful with brown antechinus *Antechinus stuartii*, swamp rats *Rattus lutreolus* and northern brown bandicoot *Isoodon macrourus* caught in the paperbark forest; swamp rat and bush rat *Rattus fuscipes* in the heath swamp and brown antechinus and long-nosed bandicoot *Perameles nasuta* in the forest red gum community.

Kathryn Chestnut inspecting a Swamp Rat. *Photo courtesy of Arthur White*

Stephen was happy with his haul of bird species, although he was heard to mutter that they would have done better if they had started an hour earlier.

Stephen Ambrose with his bird watching group. *Photo Courtesy of Amy Rowles.*

The rest of the day was shared between discussions of the survey results so far, reptile searches, bat call analysis, lectures on bird surveys, frog and reptile surveys and bat identification and surveys – and of course eating.

Left: Arthur White leading the diurnal herp search. **Above**: Red-backed toadlet *Pseudophryne coriacea*. *Photo's courtesy of Amy Rowles.*

A new survey site was investigated in Smooth-barked Apple/Blackbutt sand forest accessed from a closed road off Seal Rocks Road. Ideal harp trap sites were extremely limited therefore two traps were placed side by side on a fire trail under an overhanging branch and detectors were placed nearby for comparison. That evening spotlighting and call playback was concentrated in the sand forest with much improved results than the night before. A masked owl *Tyto novaehollandiae* responded to the call playback and a sugar glider *Petaurus breviceps*, feathertail glider *Acrobates pygmaeus* and common brushtail possum *Trichosurus vulpecula* were sighted during spotlighting.

Huw Rabone giving the harp trap setup in the sand forest a thumbs up. *Photo courtesy of Amy Rowles.*

Much to my relief, the harp traps were also successful with 27 bats caught on Horse Point Road (22 little forest bats *Vespadelus vulturnus*, one eastern forest bat *Vespadelus pumilus*, three little bent-wing bats *Miniopterus australis* and one Gould's wattled bat *Chalinolobus gouldii*. The little forest bat (5) and little bent-wing bat (4) were also caught at the sand forest traps. In addition to these species, a further six species were recorded by the detectors, including the threatened east-coast freetail bat *Mormopterus norfolkensis* and greater broad-nosed bat *Scoteanax rueppellii*.

Above: Gould's wattled bat. *Photo courtesy of Veronica Silver.* **Right:** Ray Williams demonstrating bat handling with the above individual. *Photo Courtesy of Arthur White.*

The whole process was repeated again on Sunday morning and the traps were gathered in. After morning tea, by popular demand, Steven gave a re-run of his bird lecture for those who were busy with other activities the day before and the workshop ended with a discussion on survey techniques and the results of our endeavours and of course, lunch.

Overall the surveys techniques used recorded 103 species comprising 16 frogs, 8 reptiles, 20 mammals and 59 birds. Five threatened species were recorded, the masked owl, little bent-wing bat, east-coast freetail bat, greater broad-nosed bat

and the wallum froglet *Crinia tinnula* which continuously called from the nearby swamps. Although this is a very respectable tally there are several threatened species known to occur in the areas sampled that were not recorded. Past surveys for student camps have recorded the eastern chestnut mouse *Pseudomys gracilicaudatus* in the paperbark swamp, powerful owl *Ninox strenua*, koala *Phascolarctos cinereus* usually, squirrel glider *Petaurus norfolcensis* and yellow-bellied glider *Petaurus australis* all in the forest red gum forest and adjoining swamp forest. The grey-headed flying-fox *Pteropus poliocephalus* is also a known visitor when suitable eucalypts are flowering abundantly. Since the workshop, a spotted-tailed quoll *Dasyurus maculata* has been caught near the forest red gum line (see ECA forum update for more information). This clearly demonstrates the need for multiple surveys if a detailed inventory of species is required. Unfortunately time and budget often prevents multiple surveys from being carried out however the moral is: do not discount a species just because it was not recorded during the standard four night survey.

The lecture room. *Photo courtesy of Amy Rowles.*

An interesting experiment was carried out during the bat detector survey with regards to the fitting of PVC pipe to the protective box in order to prevent rain damaging the transducer. Alicia Lyon has fitted a PVC elbow to her boxes (I thought that it would act as a rain gauge until I was informed that the box was to be strapped to a tree with the detector facing downwards). In order to test whether this would affect the recorded calls, a detector without the tube was set up along side. Initial analysis of the calls indicated that the calls were cleaner with the tube, probably as it is more directional and cuts out some of the surrounding noise. However the detector without the tube recorded more sequences and the quality was still acceptable. Therefore the jury is still out as to which method is the best as when bat activity is low some species may be missed when using the tube. I think that Alicia is still investigating.

In summary, I consider that the workshop was a great success, although from my point of view, the mammal part was a bit hectic as a result of the many facets of mammal surveys. This resulted in some topics of interest, such as the use of hair tubes, nest boxes and record keeping, being glossed over.

I take this opportunity to thank all participants in the workshop for making the weekend an informative and friendly event with the more senior members sharing their experiences gained from many years of working in the field. I would also like to especially thank the caterers Vicki Johnston and family for the fantastic menu and they even did the washing up. This was great as we could then concentrate totally on the workshop. Also thanks to the local DECC staff, especially Stephen Smith who granted permission to trap within the National Park and the use of the lecture room, which was invaluable to the success of the workshop.

Ray, Stephen and Arthur, using the amphibian hygiene gear to illustrate good dental hygiene when in the field. *Photo Courtesy of Amy Rowles*

The ECA Forum

Compiled by Jason Berrigan

The ECA Forum on the ECA's website is one of the many privileges of membership, and is intended:

- *To encourage discourse within the membership.*
- *To enable a forum for members to raise issues that affect members, the industry and the ecologist.*
- *To provide a venue for depositing information eg anecdotal sightings, interpretation of legislation, etc.*
- *To inform members of changes to legislation, upcoming events, draft reports, etc on public exhibition.*
- *To reduce some of the email generated by in-house chat within the membership.*
- *To provide a means of archiving information shared within the membership for future reference.*

The Forum features a range of issues from legal to anecdotal, comments and questions by some members seeking some clarity on some issues or assistance in a work-related matter or some hotly debated issues.

If you haven't had time to log on and catch up, here's a summary of some of the recent and most commented on topics up to the 22nd January 2009:

1. <u>Buying and Using Night Vision Equipment:</u>

Seeded by: Stephen Ambrose (24/7/08)

Stephen asked if anyone had used infrared spotlights, or spotlights with infrared filters, to detect nocturnal animals, and if these spotlights produce eye-shine in animals as much as normal spotlights. He also asked if surrounding vegetation (e.g. foliage) reflects the infrared light to the extent that it is difficult to detect nocturnal animals, even if there is eye-shine, and do animals react to infrared spotlights in the same way as normal spotlights (e.g. avoidance of bright lights or adopting the frozen stance).

Stephen added that he was in the process of planning a project that will require both diurnal and nocturnal observations of wader behaviour, and asked if anyone had tried using night vision goggles or other night vision optics (binoculars or monoculars) to observe nocturnal animal behaviour, and if so, would they recommend them and what would you recommend. Stephen requested comment on the advantages and disadvantages of using night vision optics. Finally, he stated that he understood that night vision optics come with an infrared light source, and asked if required supplementing with a more powerful infrared spotlight if looking for animals over longer distances (e.g. large expanses of exposed mudflats).

Responses:

Deryk Engel:

Deryk advised that he was aware of Arthur White using night vision to monitor the Green and Golden Bell Frog, and suggested Stephen contact him for more information.

Stephen Ambrose:

Stephen returned to the forum to add that he had purchased a *Xenonics SuperVision* monocular during the week from *Night Vision Australia*. He hadn't had the opportunity to field test the device, but home-testing results were quite impressive. The image in a windowless darkened room was far better than Gen 2 night-vision optics and just as good, if not better, than some Gen 3 optics that he'd tested at the same time. This device has a 2X

- 8X zoom lens and is lightweight (570 g). It can be used during the day, as well as at night, unlike other night vision optics on the market. Stephen remarked that the downside is that it has a hand strap (camcorder style) rather than a neck strap; the rechargeable 3.7 V Li-ion battery only lasts up to 2 hrs and spares are hard to locate. Like most (if not all) night vision instruments, Stephen considered that it looked fragile, and probably wouldn't tolerate being dropped on the ground or bumped about during transportation. The cost of the SuperVision monocular was about $1400. Under dark room conditions, Stephen considered the sharpness of the image in the dark better than other night vision optics in the $575 to $2,700 price range, but not as good as a Gen 3 night vision instrument that was valued at $5,700.

Phil Burrell:

Phil advised that he has used night vision equipment for about 10 years, and that using infra-red mode, animal eyes will produce eye-shine, but not as pronounced as spotlighting. The "nightscope" he used was clear enough to distinguish between Yellow-bellied Gliders and Greater Gliders at about 9m focusing distance and he was able to avoid disturbing these animals with spotlights, as they were in adjacent trees about 20ms apart. He also found the scope very useful in following smaller nocturnals, both aboreals and ground species as well,

Phil added that the infra-red mode does not usually make vegetation reflect infra-red unless there is a waxing moon and then its a little more difficult to distinguish nocturnal animals. He also said that it is also possible to "stalk" species for closer viewing and observing. Animals did not react to infrared mode by "freezing" and he once observed sugar gliders for some 35 minutes as they chased each other in low branches, about 4 meters away (3 animals)

He advised that one would probably need an additional infra-red spotlight if observing on exposed areas such as mudflats. There are both monocular and binocular versions of night vision gear and the latter probably have greater focus range adjustment than the monocular versions. For prolonged viewing, Phil found he needed to carry extra batteries, especially if using infra-red mode for extended time, and this is one disadvantage with night vision equipment.

2. <u>What is an EEC?:</u>

Seeded by: Liz Ashby (24/7/08)

This has been a long running and hot topic in the ECA Forum, with a number of past and present sub-topics.

Discussion continues as follows:

Responses:

Judy Rawling:

The article "When a single tree can constitute an endangered ecological community" that featured in the Volume 21 of the ECA Newsletter, was also posted on Judy's behalf on the forum. Judy cuts to the heart of the highly variable practice and application of EECs in Sydney:

David Paull:

David advised that as we now we have Vulnerable Ecological Communities, the collective term is now TECs (Threatened Ecological Communities). He then added an account of a recent experience in interpretation for the *Coastal Saltmarsh* EEC near Tuggerah Lake. The site had some scattered *Sarcocornia quinquinerva* plants located in the upper part of a stormwater drain. The drains are artificially created as is the whole shoreline in this section of the Tuggerah Lake, and the saltmarsh here has established

itself. David reported that DECC and the local Council considered this vegetation qualified as an EEC (though he considered the area in question non conducive for saltmarsh due to wrong slope, too much shade, and high densities of *Phragmites* reed). He was advised that due to climate change, the Saltmarsh distribution is likely to change (ie move upshore) hence planning needs to consider this outcome (ie the Precautionary Principle). He remarked that perhaps consultants should consider potential habitat for Saltmarsh well above its current distribution, if this was the consent authorities interpretation.

3. <u>Glossy Black Cockatoo Forage Trees:</u>

Seeded by: Jenny Lewis

Jenny reported observing Glossy Black Cockatoos feeding on Swamp Oaks, and queried the importance of the species as a food source given the literature cites *Allocasuarina torulosa* and *A. littoralis* as the preferred food trees. She added that Ray Williams has also observed Glossy Black Cockatoos feeding on pine cones. She wondered if Swamp Oaks represent a secondary food resource in meager times or make up a larger part of the bird's diet in some areas.

Responses:

Stephen Ambrose:

Stephen reported that Higgins (1999) provides a more comprehensive list of alternative food plant sources, i.e. seeds of *Callitris* (Cupressaceae), *Pinus endlecheri* and *P. radiata* (Pinaceae), *Helianthus annuus* (Asteraceae), *Casuarina cristata* and *C. glauca* (Casuarinaceae), *Acacia* spp. (Mimosaceae), *Angophora* and *Eucalyptus* spp. (Mimosaceae), and *Hakea* spp. (Proteaceae).

Reference:

Higgins, P.J. (ed) (1999). Handbook of Australian, New Zealand and Antarctic Birds. Vol 4: Parrots to Dollarbird (Oxford University Press).

Paul Burcher:

Paul considered the fruit of Swamp Oak (and River Oak) to be too small for Glossy Blacks to extract seeds. He added that Swamp Oak often grows on poor saline soils so one would expect that the seeds are not very nutritious, which is what the bird selects for. He reiterated a personal sighting of the species feeding on Coastal Banksia at Shoal Bay.

Jason Berrigan:

Jason cited the article below which Paul alluded to. Clout (1989) argues that due to the size of their talons/feet, as well as nutritional yield, that small cones are not likely to be a preferred food source for the species. Furthermore, selection between cones was related to easy extraction of the seeds (and hence energy efficiency). Based on this article and personal observations (not having seen the bird feeding in Swamp Oak ever), he never considered Swamp Oak as a food source for this bird when assessing impacts.

Clout, M.N. (1989). <u>Foraging behaviour of Glossy Black Cockatoos</u>. *Aust. Wildl. Res*. **16**: 467-73.

Greg Elks and *Stephen Ambrose*:

Greg and Stephen both added interesting observations of Glossy Black Cockatoos and Yellow-Tailed Cockatoos feeding in different trees but in close proximity eg Glossy Blacks in Forest Oak, and Yellow-Tails in Forest Red Gums and Banksias. These and other observations were on the mid north coast of NSW, leading to speculation of this behaviour being a regional phenomenon.

4. Spotted-Tail Quoll in an Elliot A Trap:

Seeded by: Amy Rowles

Amy reported how a 550g Spotted-Tailed Quoll was captured in an Elliot A during a training school at Smith Lakes, at which animal magnet, Narawan Williams was assisting.

Responses:

Jason Berrigan:

Jason commented he hadn't accomplished this feat, though had had his share of bandicoots and possums, and even a Red-Bellied Black Snake (which was a challenge to release). Given he'd had Bush Rats chew their way out of traps, he was surprised the Quoll hadn't similarly exited.

5. Buffers - How wide?:

Seeded by: Toby Lambert

Toby inquired about useful research and/or information on buffer widths, an ambiguous and often contentious issue all consultants come across on a regular basis, yet there appears to be a lack of definitive research on buffers, particularly in Australian conditions. Toby highlighted that buffer widths vary in relation to a plethora of issues including vegetation type, widths, slope, hydrology, type of adjoining development and what one is trying to protect, and what is actually permitted in a 'buffer'. Toby noted that due to this lack of research and site specific issues influencing requirements, there appear to be no set standards and it is all very subjective. He called for comments on this issue.

Responses:

Michael Murray:

Michael informed members that Wyong Shire Council recently won an environmental award due to their buffer policy. The Urban Interface Area Model is contained in DCP 2005, Chapter 66 – *Subdivision*, Section 3.9.3.

6. Australian Supplier of Tadpole Traps:

Seeded by: Stephen Ambrose

Stephen inquired if anyone knew of an Australian supplier of tadpole traps. Following a request for explanation from Liz Ashby on what exactly is a tadpole trap, Stephen explained that they are open-ended conical-shaped traps made of fine mesh (e.g. flywire or plastic mesh) and are usually marketed as minnow traps. The entrances taper into a narrow funnel internally at each end of the trap, so that tadpoles that swim into the trap have difficulty getting back out again. Baits that are commonly used to attract tadpoles include bright glow sticks, dry fish food or yabbie food. Each trap is detachable in the centre for easy retrieval of trapped tadpoles. Stephen has found them to be quite successful in trapping tadpoles, if placed in appropriate locations in wetlands. He had purchased some minnow traps from the Nylon Net Co. in the U.S. earlier this year and advised that one can view several designs on their website if one is handy enough to make their own. He added that the freight charges to Australia were just as much as the cost of the traps, hence the inquiry for Australian suppliers.

Responses:

Jason Berrigan:

Jason commented that the plastic live bait traps he uses for catching juvenile mullet may possibly work and would test his in his dam and nearby creek. He also suggested the fine mesh yabby traps which if they didn't' catch tadpoles, they may catch lunch. Both traps are readily available from tackle stores and major department stores with fishing sections. He also advised that as these are fish traps, a fishing license is required

and the traps must meet the legal specifications, and that macroinvertebrate bycatch may require a scientific license from the Dept of Primary Industries (Fisheries).

7. <u>Use of Arboreal Termite Nests and Epiphytic Ferns by Hollow-Obligate Fauna:</u>

Seeded by: Jason Berrigan

Jason mentioned how there was a lack of detail in the literature about whether fauna such as Squirrel Gliders, Microchiropteran bats and Stephens Banded Snakes for instance, utilise the hollows excavated in arboreal termite nests. He reported observations of Forest Kingfishers and Eastern Rosellas ducking out of holes, and inspection of felled termintaria, but had no hard evidence to date of threatened species specifically using this potential habitat component. He also commented on observations of a range of ducks and Kookaburras nesting in hollows within and on top of big clumps of epiphytic ferns such as Staghorn and Elkhorn. Scats of rodents and Brushtail Possums, and even some frogs had been observed in cavities within the epiphytes. He called for reports from other consultants to assist in advising clients in regards to the significance of these habitat components to threatened species.

Responses:

Michael Murray:

Michael advised he had recorded the following fauna using arboreal termintaria: Kookaburra's (nesting and raised 2 young), Sacred Kingfisher (nesting), Brown Treecreeper (nesting), Lace Monitor (nesting), Diamond Python, Squirrel Glider, Sugar Glider, Common Ringtail Possum and Peron's Tree Frog. He also noted the lack of published research, and suggested (based on anecdotal observations) that this resource is probably more intensively utilised in areas with low density of natural hollows. He commented that he often includes arboreal termite mounds when doing habitat tree surveys as they do provide a sheltering/nesting resource for tree hollow dependent fauna.

The effectiveness of funnel traps to conduct reptile surveys in the chenopod shrublands of western New South Wales

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Introduction

Environmental consultants and ecological researchers rely on a range of methodologies when conducting terrestrial fauna surveys to maximise the detection of species. For reptile fauna, PVC buckets or tubes connected by a drift fence are commonly employed as one such method (DEC 2004). However, it has been demonstrated that pitfall buckets may have a trapping bias (Thompson *et al.* 2005) and that using a variety of methods may be more appropriate for maximising the detection of reptile fauna (Swan and Foster 2005; Thompson and Thompson 2007).
This short note provides additional information on the effectiveness of using funnel traps to survey reptile fauna in the chenopod shrublands of western New South Wales.

Methods

Reptile surveys were conducted in a chenopod shrubland near Broken Hill, NSW during September 2007. Two trapping methods were employed: PVC tubes and funnel traps. One trap line of each was located in a homogenous chenopod shrubland. The distance of each trap line was around 100 metres from one another to

remove any small scale dependence effects as typical movements of small lizards are usually less than 20 metres (James 1991; Turner *et al.* 1969).

The PVC tube line consisted of four PVC Tubes of 200mm diameter x 600mm deep connected by a 25 metre x 250mm high PVC drift fence to divert terrestrial fauna into the tubes. The funnel trap line comprised of four funnel traps, set up in pairs along side of the PVC drift fence of the same dimensions as used for the PVC tubes.
Each trapping line was activated simultaneously over 6 consecutive days with day time temperatures averaging 32 degrees Celsius. All traps were checked each morning by experienced herpetologists and animals released at the point of capture.

All trapping was conducted under an appropriate Scientific licence and Animal Care and Ethics Authority.

Results

Nine species of reptile were recorded from the chenopod shrubland with no commonality of species recorded between PVC tubes and funnel traps (Table 1). Six species were recorded from the funnel traps comprising of Gekkonidae (two species) and Scincidae (four species). The PVC tubes yielded only three species consisting of Gekkonidae (two species) and Agamidae (one species).

Table 1: A comparison of reptile species recorded from PVC tubes and funnel traps in a chenopod shrubland in western NSW.

Reptile Species	PVC Tubes	Funnel traps
Gekkonidae		
Diplodactylus byrnei	*	
Gehyra variegata		*
Heteronotia binoei		*
Rynchoedura ornata	*	
Scincidae		
Ctenotus olympicus		*
Ctenotus robustus		*
Morethia adelaidensis		*
Morethia boulengeri		*
Agamidae		
Tympanocryptis tetraporophora	*	

Discussion

The use of funnel traps for surveying reptile fauna in Australia is a relatively recent phenomenon. However, with many reptiles being cryptic in nature and occurring at very low densities making detection difficult (Dorrough and Ash 1999; Koehler 2004; Thompson and Withers 2003), environmental consultants and ecological researchers need to employ a range of methods to maximise detection of reptile fauna. The results of this survey reveal that funnel traps yielded a far greater number of reptile species than the PVC tubes. It is important to remember that no commonality of species occurred, providing further evidence that multiple survey techniques are required to gain a more accurate representation of reptile communities in arid and semi-arid landscapes. Denny (2005) found similar results with funnel traps capturing more than three times as many reptiles than pitfall buckets in a survey near Mudgee.

Previous surveys have suggested some families (Pygopidae and Typhlopidae) are less likely to be captured in funnel traps (Denny 2005; Thompson and Thompson 2007). While this survey did not record the presence of either, other surveys have (S. Sass, unpubl.data). *Pygopus lepidopodus*, *Delma*

australis, *Delma butleri* and *Ramphotyphlops bicolor* were all captured using funnel traps in a mallee community near Wentworth, NSW (S. Sass, unpubl.data).

Often the primary objective of fauna surveys is to gain an understanding of the community that is present at a particular site. Funnel traps used with drift fences provide environmental consultants and ecological researchers with an alternate method to traditional traps and contribute considerably to providing a more accurate representation of the reptile community present. It is recommended that further surveys be conducted across a larger scale study to provide more detailed data on the effectiveness of funnel traps in the semi-arid and arid landscapes of western NSW.

Acknowledgements

I would like to thank Gerry Swan (Cygnet Surveys and Consultancy) for assisting with this reptile survey. Brooke Marshall and Nick Graham-Higgs (**ngh**environmental) also provided valuable assistance in the field.

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BIOBANKING UPDATE

The BioBanking Assessor Accreditation Panel (BAAP) has been established by DECC. It comprises of three members: David Nicholson, Manager, Private Land Conservation and Stewardship, DECC; Associate Professor Carolyne Gross from University of New England and Martin Denny representing the ECA. It is anticipated that the panel will meet in late January to start processing nominations.

Can We Have an Accreditation System

Martin Denny *January 2009*
Biodiversity Monitoring Services
ECA Council Member

Ever since the Ecological Consultants Association of NSW was established the issue of accreditation of its members has been discussed and investigated. In 2000 a series of accreditation standards were developed within ECA that covered flora and fauna surveys, aerial photographic interpretation, habitat surveys, modelling with GIS etc. As a consequence of this inquiry the ECA developed a set of categories in which ecological consultants may seek accreditation (**Table 1**).

In addition, there were four levels of expertise – Student, Provisional, Professional and Leading Professional. Putting all this together it was realised that any accreditation scheme was becoming increasingly complex and when put to the members the following concerns and comments were received.

- There was a concern that any accreditation scheme may be used to obtain commercial advantage (Trade Practices Act)
- A scheme that concentrates on expertise in particular flora/fauna groups may exclude those capable of producing a SIS
- Several councils and at least one agency have an informal register of consultants that produce acceptable work i.e. an accreditation scheme already exists in the market place

The advice from the members was:

1. **Any accreditation scheme must not be too complex**
2. The general feeling is that an accreditation scheme should include, as a minimum:

Table 1. Categories in which ecological consultants may seek accreditation.

Category	Sub-category
Terrestrial Fauna	All
	All Vertebrates
	Threatened Species
	Birds
	Bats
	Non-flying Mammals
	Reptiles
	Amphibians
	Insects & Invertebrates
Aquatic Fauna	Freshwater Aquatic (Vertebrate & Invertebrate)
Marine Fauna	Marine (Vertebrate & Invertebrate)
Flora	All
	Threatened Species
	Rainforest (north east)
	Sclerophyll (coast, divide tablelands & slopes)
	Heath (Sydney region & granite floras)
	Grassland/Shrubland (including arid and far west)
	Swamp, aquatic & estuarine
Vegetation Mapping	Mapping, API & ground truthing
	GIS Spatial Analysis, Modelling & Mapping
Survey Design, & Statistical Analysis	Stratification and sampling design
	Statistical analysis and modelling
Impact Assessment & Mitigation	Threatened fauna
	Threatened flora
	Threatening Processes
	Bushfires
	Vegetation & Habitat Rehabilitation (inc bush regen)
	Population Viability

- A degree in relevant field (or equivalent)
- Have experience in application of expertise
- Be a member of a suitable scientific association
- Be a member of a suitable professional association

3. There is a desperate need for a 'hands on' course in flora and fauna survey techniques and impact assessment skills
4. A system of review of species impact statements may need to be re-established, to ensure adequate performance by consultants

It became apparent that the scheme proposed would be too cumbersome for the ECA to manage and at the time, it was known that the Environmental Institute of Australia and New Zealand would be developing their own accreditation scheme making our scheme redundant.

However, over time it is obvious that the EIANZ accreditation scheme is geared towards those environmental consultants involved in the areas of physics and chemistry and that the biologists were not being catered for. In addition, there has been concern expressed that there are no accredited ecologists who can 'sign off' on documents associated with development applications and other planning instruments.

Consequently, the issue of accreditation has returned.

In 2003 a working group was established by DECC to develop a scheme of accreditation for consultants undertaking ecological assessments. The group consisted of representatives from various government agencies (DECC, DIPNR, DPI) as well as from local government and the EIANZ and ECA. After going through numerous developmental stages and being placed on public exhibition a scheme arrived, a bit like an unwanted child, in 2006. Since that time there has been no move forward of this scheme and it is, at this stage, probably unlikely that the scheme will come to fruition in the immediate future.

So, what can the ECA do to provide some workable scheme for accreditation of ecological consultants?

It is proposed that the ECA develop an accreditation scheme that is based upon the results from the working group. Not an exact copy, but a scheme that uses those parts of the DECC proposal that would suit our needs. The following describes a scheme that may suffice as an accreditation scheme to be used by the ECA. It will require effort from all members to ensure that it is a scheme that satisfies our needs, the needs of our clients and that of the relevant government agencies.

ACCREDITATION SCHEME

The objectives of the Accreditation Scheme are:

- to establish a high standard of practicing ecological assessment in NSW;
- to facilitate professional recognition for those involved in ecological assessment, and
- to promote the development of a viable ecological survey and assessment industry.

There are three main categories of accreditation, with each of these having a number of related sub-categories:

- **Category 1 - Ecological Surveyor;**
- **Category 2 - Impact Assessment and Planning;** and
- **Category 3 - Ecological Specialist.**

Category 1 is for individuals who conduct surveys in one of three disciplines relevant to the preparation of ecological assessments (*i.e.* botany, zoology or aquatic ecology).

Category 2 accredits individuals to conduct threatened species and biodiversity impact assessment throughout NSW. This category is specifically for those individuals preparing Section 5A Assessments of Significance (Sub-category 2a), Species Impact Statements (Sub-category 2b) or undertaking work involved with Environmental Planning Instruments such as bushfire control planning.

Category 3 is for individuals with a narrow field of expertise or specialised expertise to become accredited. This covers someone who undertakes surveys for bats or orchids only and does not undertake broadscale surveys.
Within Category 1 it may be necessary to allocate surveyors to different parts of the State i.e. a surveyor competent in terrestrial coastal environments may not be as competent in identifying plants and animals in the arid zone.

The DECC scheme divided NSW into four terrestrial ecosystems – coastal, tablelands, western slopes and western plains. Those applying for accreditation in aquatic ecosystem surveys may need to specify freshwater, estuarine or marine. This needs to be discussed.

Category 3 not only covers accreditation for those specialising in a particular taxa, but also those specialising in a specific survey or identification technique (e.g. bat call analysis, lichens).

I will not go into the actual process to be used to accredit any applicant. However, it is evident that an accreditation panel would be required (how do we get an independent panel member?), that an application would need to be made and relevant documents presented (this is detailed below) and perhaps some form of interview plus referees. Should a fee be charged? Is there a need to have some process to discipline or revoke an accredited consultant?

The following accreditation criteria are suggested for each category. These criteria are taken from the scheme developed by DECC using input from the groups listed before i.e. including representatives from the ECA.

Category 1 – Ecological Surveyor Accreditation Criteria

1. A code of conduct signed by the applicant. The code of conduct was developed from that used by the ECA and EIANZ and is given at the end of this article. It is a good code that seems to cover our industry better than our own code.

2. A statement that identifies the general survey type(s) for which the applicant is seeking accreditation.

3. A statement that identifies the ecosystem for which the applicant is seeking accreditation.

4. (a) A list of any qualification(s) including degrees the applicant holds in natural sciences (or equivalent) and information that demonstrates a minimum of three years experience in the general survey type(s) for which accreditation is being sought, **or**

(b) information that demonstrates the applicant has a minimum of five years experience in the general survey type(s) for which accreditation is being sought (*e.g.* terrestrial vegetation and flora) if no formal degree/qualification is held.

5. Information that demonstrates that the applicant is competent to undertake each of the survey types where accreditation is being sought (*e.g.* aquatic survey), in each of the ecosystems for which accreditation is sought, with respect to **all** of the specific criteria listed below:

a). a summary of the survey work completed by the applicant (e.g. log of surveys undertaken with some details of what was surveyed and where); and

b) ability to competently identify species in your nominated survey type, with a demonstrated ability to identify species either in the field or in the laboratory (e.g. species list compiled by the applicant for a survey and use of referees); and

c) have, or have access to, the necessary field survey equipment to properly undertake survey work of the type(s) where accreditation is being sought; and

d) a sound understanding of ecological principles with regard to the survey types(s) where accreditation is being sought (e.g. a statement outlining understanding); and

e) hold any necessary survey licence(s) to conduct the survey work of the type(s) for which accreditation is being sought; and

f) knowledge, understanding, application and the uses of professional judgement in relation to any DECC endorsed guidelines pertaining to the survey types(s) where accreditation is being sought. Specifically, this relates to the draft terrestrial survey guidelines prepared by NPWS and the 'Aquatic Ecology in EIA' guidelines prepared for the Department of Planning

6. Information that demonstrates:

a) well-developed data collection, data analysis and data presentation processes; and

b) the ability to communicate outcomes effectively.

7. Names and contact details of two professional referees who can vouch for your skills, experience and professional conduct.

Category 2 – Ecological Impact Assessment

To obtain accreditation in Category 2, the applicant must satisfy the necessary accreditation criteria by supplying, as a minimum, the following:

1. A code of conduct signed by the applicant.

2. A statement that identifies the ecological impact assessment sub-category(ies) for which the applicant is seeking accreditation i.e. Assessments of Significance; SIS; Relevant Planning Instrument.

3. (a) A list of any qualification(s) including degree(s) the applicant holds in natural sciences (or equivalent) that are relevant to the nominated category and information that demonstrates a minimum of three years experience in the ecological impact assessment sub-category(ies) for which accreditation is being sought, **or**

(b) information that demonstrates the applicant has a minimum of five years experience in the ecological impact assessment sub-category(ies) for which accreditation is being sought (*e.g.* Section 5A Assessment of Significance) if no formal degree/qualification is held.

4. Information that demonstrates that the applicant is competent to undertake ecological impact assessment in the sub-category where accreditation is being sought (*e.g.* Species Impact Statement), with respect to **all** of the specific criteria listed below:

a) have ability to provide a comprehensive site description, including the overall environmental context of the site; and

b) have ability to accurately determine the scope and scale of proposed developments or activities; and

c) demonstrate a thorough understanding of the principles of, and methods, for conducting threatened species and biodiversity impact assessments, including survey methods, study design and data synthesis relevant to your nominated accreditation category (including experimental design, data analysis and background information collation); and

d) demonstrate competence in understanding, describing and interpreting direct and indirect impacts of proposed developments and activities, including an awareness of the consequences of physico-chemical impacts on flora and fauna relevant to your nominated accreditation category; and

e) demonstrate comprehensive knowledge and understanding of NSW environmental legislation and planning system, including knowledge of state and local government policies and guidelines, and environmental planning instruments; and

f) demonstrate ability to determine or predict the significance of ecological impacts, particularly in regard to threatened species. Ability to determine the appropriateness of proposed developments or activities in relation to threatened species and biodiversity, which includes amending proposals to minimise impacts as an integral part of project development; and

g) demonstrate ability to develop and incorporate practical and effective impact minimisation/mitigation/amelioration measures in relation to proposed developments or activities (including design of Environmental Management Plans); and

h) demonstrate ability to deliver ecologically sustainable development and improve ecological outcomes (*e.g.* improve long-term security of site, management of threatening processes, access funding *etc.*).

6. Information that demonstrates the following:

a) the ability to prepare clear and concise reports, including the provision of associated maps and figures; and

b) the ability to communicate outcomes effectively and efficiently; and

c) project management skills in situations where specialists are required.

7. Names and contact details of two professional referees who can vouch for your skills, experience and professional conduct.

There are a series of criteria described for those applying for the 7-part test or the SIS sub-category and it may be necessary to include these if we go down the path of specific sub-categories for this category, rather than having a single category.

Category 3 – Ecological Specialist Accreditation Criteria

To obtain accreditation in Category 3, the applicant must satisfy the necessary accreditation criteria by supplying, as a minimum, the following:

1. A code of conduct signed by the applicant.

2. A statement that specifically identifies the particular speciality for which accreditation is being sought.

3. An indication of the relevant degree(s)/qualification(s) and/or experience in relation to the accreditation being sought.

4. Information that demonstrates that the applicant is competent to undertake 4a) specialist surveys and/or 4b) impact assessment in the applicant's nominated speciality. Information that the applicant has a minimum of three years experience in the nominated speciality, in accordance with the competencies defined in Categories 1 and 2 that are relevant to the applicant's nominated speciality (*i.e.* for survey specialities refer to Category 1 competencies, for impact assessment specialities refer to Category 2 and the relevant sub-categories). Skills that need to be demonstrated are:

- Competency to undertake each of the survey types where accreditation is being sought in each of the ecosystems for which accreditation is sought.
- Competency to identify species in your nominated survey type, with a demonstrated ability to identify species either in the field or in the laboratory; and
- Have, or have access to, the necessary field survey equipment to properly undertake survey work of the type(s) where accreditation is being sought; and hold any necessary survey licence(s) to conduct the survey work of the type(s) for which accreditation is being sought; and
- Have knowledge, understanding, application and the uses of professional judgement in relation to any DECC endorsed guidelines pertaining to the survey types(s) where accreditation is being sought.

5. Names and contact details of two professional referees who can vouch for your skills, experience and professional conduct.

Proficiency in most of the criteria can be demonstrated by statements and/or copies of reports, with the use of two referees to support such statements.

The above is a brief description of a system that is possible for the ECA to manage. Some form of accreditation would definitely make a difference to value of a consultant, particularly those involved in the planning process. The Threatened Species Conservation Act states that some process for accrediting persons to prepare SIS and threatened species assessments and surveys should be available (s. 113 and s.126O). Although such a process should be developed by the Director-General of DECC, there seems to be a reluctance for this agency to proceed. This does not mean that the ECA cannot have some form of accreditation. We have a 'light' form at present, with the signing of our Code of Business Conduct. However, the scheme presented above is a stronger form that could provide a better profile for ecological consultants.

CODE OF CONDUCT AS SET OUT BY DECC

An individual accredited under the NSW Accreditation Scheme must be committed to the professional operating standards and ethics presented in the Code of Conduct[1].

[1] The Code of Conduct was largely drawn from similar codes prepared by the Planning Institute of Australia, the EIANZ, the ECA, the Institute of Engineers Australia and the Victorian EPA's auditor scheme.

PROFESSIONAL STANDARDS

- Must provide **independent, consistent and objective advice** using **sound scientific and ecologically sustainable principles**.
- Must provide their **truthful opinion** regarding any matter submitted to the individual for advice or opinion, must not give false or misleading information and must not conceal information.
- Must **express opinions, make statements or give evidence with fairness and honesty, and on the basis of adequate knowledge**.
- Must **actively discourage misrepresentation or misuse of work** the accredited individual (AI) has performed or that which was performed under the AI's direction.
- Must ensure the **incorporation of environmental protection considerations from the earliest stages of project design or policy development**.
- Must **not conduct** professional activities in a manner **involving dishonesty, fraud, deceit, misrepresentation or bias**.
- Must, if **committing to or tendering for work, have (or have access to) the resources and experience necessary to undertake the work**.

ETHICS

- Must **not advertise or conduct** themselves in a manner that will **bring disrepute** to the Accreditation Scheme or the ecological profession.
- Must **act** with **fairness, honesty and in good faith towards all** in the community, including clients, employers and colleagues.
- Must **carry out** professional **activities**, as far as is possible, in accordance with **emerging principles of sustainable development and the highest standards of environmental protection**.
- Must **place** the **integrity of the natural environment and** the health, safety and welfare of the **human community above any commitment to private interests**.
- Must be **personally accountable** for the validity of all **data** collected, **analyses** performed or **plans** developed by the AI and for the **scrutiny** of all data collected, analyses performed of plans **developed under** the AI's **direction**.
- Must **not act in** circumstances where there is a **potential conflict** between a private interest and the client's or public's interest.
- Must **apply** their skill and knowledge **in the interest their employer or client** for whom they shall **act** as a **faithful agent or advisor**, **without compromising the environment or the health, welfare and safety of the community**.
- Must **not falsely claim accreditation status** where accreditation status has not been awarded.
- Must **practice in a careful and diligent** manner, ensuring that their work satisfies all legal requirements.
- Must **not knowingly make a false statement** and shall take all necessary steps to **correct any false statement unknowingly made** by the AI.
- Must **continue to develop ecological knowledg**e, **skills and expertise** throughout their careers and actively assist **and encourage** those under their direction to do likewise.

Reminiscences of a Retired Consultant Ecologist

Phil Burrell

Phil Burrell is a former ecological consultant and ECA Councillor. In early 2008 Phil retired from consultancy and moved to Gippsland, Victoria. In this article, Phil recalls some of the more interesting times as an ecological consultant.

I suppose it is possible to recall many things concerning our past interests, or our various fields of endeavour, scientific, engineering, medical, or agricultural, but when it comes to ecology, this field is broad enough to encompass many disciplines.

One thing that seems to stand out is whether we felt our advice was used resourcefully or achieved long lasting benefits for the environment and the ecosystems that constituted that environment.

To illustrate this point, I remember establishing a field survey program for the then Dept of Land and Water Conservation (DLWC) in rehabilitated habitats at the Gunnedah Research Centre. Although some of the early field results were distorted by mouse plagues and drought conditions, the outcomes were nonetheless still encouraging. I was involved in this project from 1998-2004. Since that time the current management and staff have continued monitoring flora and fauna under their own scientific licensing.

Some of the tree plantings on site had been part of a soil conservation program, using local plant species that were suitable for growing in eroded areas. The plants also provided ground cover to exposed soil areas that were subject to erosion and whose soil profiles were typical of the Northwest slopes and plains in NSW. Other tree plantings were established as trial plots for agroforestry.

The site was vegetated by Eucalypt/Box Woodland prior to land clearance for agricultural purposes. The aim of the rehabilitation project was to re-establish this community on the site, complete with its associated shrubby understorey, to link up with the remnant to the north-east, which stretched 6 km to Gunnedah itself.

The idea of monitoring planted areas was raised in 1996, when I was on the management executive of the Liverpool Plains Land Management Committee. The Soil Conservation Farm Manager, asked me if I could assist in setting up survey/monitoring for the sites that had been planted over 10-12 years, at approximately 4-5 year intervals and ascertain what fauna species were returning to rehabilitated areas. The Black Jack State Forest on the West/Northwest boundary, which comprised some surprisingly intact woodland, acted as a reference for what fauna species may have originally occurred on the site prior to land clearance.
Some of the species that were recorded during surveys of the rehabilitation area were Eastern Chestnut Mouse (*Pseudomys gracilicaudatus*), Bush Rat (*Rattus fuscipes*) and Fat-tailed Dunnart (*Sminthopsis crassicaudata*). We also found very old, massive nests of sticks and branches, which suggested that, in the remote past, Greater Stick-nest Rats (*Leporillus conditor*) may have once occurred there.

Prior to rehabilitation, all these species, with the exception of the Greater Stick-nest Rat, had disappeared from the site because of significant habitat modification and the introduction of feral predators and/or competitors for habitat and food resources. However, we knew that they once occurred there as a result of finding and identifying old scat and hair samples. The collection of these samples involved some steep rock climbing and exploration of sandstone cave formations.

During the time I was involved in the project we euthanased 30 foxes (*Vulpes vulpes*), five cats (*Felis catus*) and about 50 hares (*Lepus europaeus*) on site.

Some of the cave explorations involved using my trusty old night scope and a small laser temperature sensor so as not to disturb any bat colonies. The temperature sensor worked very well and during variable weather, the temperature was only a few degrees cooler inside the caves than outside so bats did not exhibit torpor. One could pick them out in little rock cavities or indents, by the 2 or 3 degree difference in surrounding rock temperatures. Most of the colonies were Gould's Wattled-bat *(Chalinobus gouldii*).

Within five years of data collection, we were able to show that restoration of habitats, using locally provenanced seedstock of White Box (*E. albens),* Yellow Box (*E. melliodora*) to restore the canopy and Coral Heath (*Epacris microphylla)* for the understorey, helped native groundcover and grass species regenerate naturally from the seed set in the soil. The regeneration began to occur at the 3-4 yr mark. Among the first to appear were *Danthonia* and *Stipa* and *Eriochloa.* These were followed by two *Acacia* species and one local Tea Tree spp (*Leptospermum);* seed also spread from natural regrowth of stands of Cyprus Pine (*Callitris* sp.) from upper slope areas. Therefore, the seed set was viable even though the native vegetation had long been cleared 12-15 years ago for the establishment of oat and wheat open cropland. Therefore, planting "triggered" the natural regrowth of local grasses, and tree/shrub species. It is possible to say that natural regrowth would have occurred anyway and that the plantings just hurried things along. However, these species had not regrown in unrehabilitated parts of the site where soils had not been tilled or disturbed for over seven years.

More recent surveys conducted in the same location by other consultants show that once rare captures of Dunnarts (*Sminthopsis murina)* are now common, even in conditions that are still drier than usual, and the populations are healthy and thriving. The Dunnarts started to appear during the 3rd year of the surveys, and were encountered in traplines on the ridgetop and lower slopes. The increased variability of plant species, we believe, attracted more populations of insects and the increase in ground cover provided more shielding from aerial predators. The areas of cracking clay provided more shelter and good home range-based habitat for animals like Dunnarts. In addition, our surveillance and timely reduction in feral predator numbers assisted in the small ground mammals becoming accustomed to increasing their home ranges in new areas.

In addition, the re-establishment of wildlife corridors has seen the return of nesting Speckled Warblers (*Cthonicola sagittatus*) and Glossy Black Cockatoos (*Calyptorhynchus lathami*). The re-establishment of shrub species with low-to-ground branchlets and variable ground cover provides more foraging areas for Speckled Warblers, and the corridors are 40m wide and adjoin longitudinally to long, wide areas of ¾ of a kilometre to the ridge slopes. Additionally, they provide a buffer for an adjoining corridor of *Casuarina torulosa*, which are now visited by the Glossy Black Cockatoos for the fruit.

The ecological successes that have resulted, so far, from this rehabilitation project, have encouraged local landholders to establish wildlife corridors on their own properties. One property owner who had a surprisingly intact Grassy White Box woodland remnant, signed a Conservation Agreement quite willingly and has prohibited ungulate grazing and/or disturbance of this woodland to the present day.

So, it seems, conservation is not a dirty word to all landholders and over the years I have appreciated the efforts made by good land managers to conserve native wildlife through sound

management of resources, as well as trying to make a living in sometimes very trying conditions.

Having been part of a farming family, I would not readily criticise or praise landholders over their treatment of the natural environment unless your viewpoints are supported by strong evidence for or against their management practices.

Professional Indemnity: check your policy

Jason Berrigan *January 2009*

ECA members who attended the highly informative 2008 ECA conference at Manly may be well aware of potentially critical limitations of some Professional Indemnity policies. eg. exclusions relating to fines and penalties

The ECA Council is aware of a matter relating to an EIS where Core Koala Habitat that has been encroached upon. The authorities are taking action to the full extent of the law. Mr Anthony M Saunders of EnviroSure reported "*our insurance program for Ecological Consultants is providing protection in this instance*".

Many members of the ECA have taken advantage of the EnviroSure Professional Indemnity policy negotiated by Council with Mr Anthony Saunders, of EnviroSure, a division of Mackellar Insurance. Mr Saunders advised that as highlighted in a presentation at the ECA conference, members should carefully check their policies for exclusions pertaining to fines and penalties. Such exclusions may preclude the insured from representation or the costs of defence even if they have done nothing to contribute to the matter in question (sometimes it can be an independent contractor that causes the problem). Mr Saunders stated that the EnviroSure package contains no such exclusions.

Members are encouraged to contact their provider or seek independent advice if in doubt, to avoid ever finding themselves in such a situation.

Albinism

Paul Burcher *January 2009*
Aquila Ecological Surveys
ECA Council Member and Treasurer

Above is a photograph of an albino Bush Rat (*Rattus fuscipes*) I caught last April near Charbon in central-western NSW. When I released, it just sauntered over the rock outcrops near its capture point rather than bolting to the nearest crevice to avoid predation. It made me wonder about albinism and predation.

Albinism is caused by a deficiency in the production of melanin and the trait is carried on the recessive TYR gene. During my extensive research (i.e. a quick trawl of the net), I found that apart from protecting from sunlight, melanin also allows the passage of beneficial parts of the light spectrum and helps develop various parts of the eyes, including irises, retinas, eye muscles and optic nerves. Its absence results in disorganised visual development and leads to problems with focusing, depth, perception and tracking. (http://files.dnr.state.mn.us/publications/volunteer/young_naturalists/albino_animals/albino_animals.pdf). This would probably not be a great

problem for a bush rat, which is nocturnal and mostly uses smell as its primary sense or the albino *Mormopterus* featured in the last ECA newsletter, which would compensate for poor vision by relying more heavily on echolocation.
Some studies have indicated that albino mammals are not captured by predators at a higher rate, possibly as the predator recognises the shape of the animal rather than its colour. However, one would expect that a non-camouflaged animal would attract more attention than one with indistinct colouration. If not then why have camouflage colours such as the rat's usual grey-brown? Predators found in the vicinity of where the rat was captured include the Barn Owl (*Tyto alba*), Southern Boobook (*Ninox novaeseelandiae*) and Powerful Owl (*N.strenua*). Barn Owls primarily use sound to locate prey but the Southern Boobook and Powerful Owl use vision, so one would think that this rat would be more likely to capture their attention and be caught than a normal rat. I may find out when I return to do the annual monitoring at the site.

One of the albino Bush Rat's American counterparts, the albino Eastern Grey Squirrel (*Sciurus carolinensis*), is something of a celebrity. The University of Texas has an Albino Squirrel Preservation Society whose motto is "In the constant pursuit of albino squirrel rights." Albino squirrels are also protected in the Illinois town of Olney, where they have the right-of-way on all streets and dogs and cats are not allowed to roam free. Will our albino rodents ever be exalted to such heights?

Back It Up

Michael Murray
Forest Fauna Surveys
ECA Council Member and Secretary

Thursday 6 November was a typical late Spring day in Newcastle, which dawned fine and clear with predictions of afternoon storms. I was in the office all week typing away on the computer to get a report finalised. By mid afternoon the skies were getting darker and the BOM website indicated an approaching storm from the Upper Hunter towards Newcastle. Not being too concerned at this stage, I kept on working. At approximately 3:05pm, with darkening skies but no distant rumbling to indicate storm activity, an absolutely incredible bolt of lightning from the heavens struck the transformer on the power pole near our house. It completely shattered the transformer and hurled small and large ceramic particles over our house and neighbouring properties. Several pieces sliced through our neighbour's brand new trampoline netting!!!

I spontaneously catapulted out of my seat with fright and almost punched a hole in the roof with my head. Upon re-entering the atmosphere, my hair looked liked the people on the Nissan Patrol advertisement, all spikey and standing on its ends. My ears were ringing for almost 10 minutes by the most incredible noise from the lightning strike. I did a quick check of the office and noticed no power to the computer and the monitor was blank. I went outside to check the trip switch on the meter box and noticed the water main had burst due to the lightning travelling down the pole and earthing on the water main. Our neighbourhood lost all power and water for approximately 24 hours.

Once power was restored, I fired up the computer to check all was okay. There was no response, nothing. Not even a little green light showed. I took it to my local computer shop and yes, the motherboard, modem, network card and a few other things were cooked. I questioned how could this be, as I had circuit protection boards to circumvent such as incident, only to find out the electrical spike travelled up the phone line, which had no protection. Hence, the modem and subsequently, the motherboard, network card were well cooked. The one saving grace was that the data on the hard drives was intact and could be recovered.

I had a backup system in place, operating through a software program which came with an external hard drive linked to my computer. I never really got a good handle on how it was programmed, where the data was stored and what format it was in. Consequently, I only backed up my main computer every now and then (i.e. weekly or so). I had not backed up to a DVD disc for several months. Upon reviewing how close I had come to losing several months of valuable work, I immediately re-organised my computer system to prevent such an occurrence happening again.

At this stage I would like the readers of this article to reflect on two questions:

(1). How protected is your computer from lightning strikes and electrical surges?
(2). How effective is your backup process?

If you have answered "not very good" to either question, then you need to do something about it today. I have reproduced some information I gleaned whilst reviewing my own predicament.

Stability of Data. If you store your data on CD's / DVD's that you have burnt, did you know that two years is about the average life expectancy of a burned disc, and if you keep it in a dark, cool place it might last for five. Discs are one of those consumables that obey the law of capitalism: You get what you pay for. The el-cheapo discs won't last. The pricier brand-name discs do better but only by about five years. CD and DVD blanks with Gold film apparently promise a life of 100 years for the DVDs and 300 for the CDs. Their longevity is attributed to the use of gold in the reflective layer of the disc. Gold is supposed to be impervious to temperature and humidity and therefore resistant to oxidation. They are also not that expensive, but the downside CD and DVD readers on computers are likely to be redundant within 10 years or so.

Storage of Data. Storing your precious data on networked servers / second computers (desktop / laptop) / external hard drives are prone to hard drive failure, particularly if lightning / electrical surges are on the prowl. Connecting your server / desktop to UPS (uninterrupted power supplies) and surge protection boards may protect you with one strike, but don't they say lightning always strikes twice. This setup is also prone to system and file corruption due to viruses, worms and other malicious attacks if you don't have an effective virus protection / firewall / spyware.
You also need to store a copy of all your important files in a different location to your computer. A copy of all your files on your external hard drive plugged into your computer is not ideal. Theft, fire or flood will not always distinguish between your computer and your external drive. If possible, keep your copy in a different location to your office, be it home, or if you work in an office remote to your house, take it home each day or week. Ideally, your backup copy should be stored securely in an entirely different building. There are companies out there that can backup your data onto remote servers via File Transfer Protocol (FTP) over the Internet. However, this also has risks due to you relying on the third party to secure your data.
Whatever medium you store you precious data on, there should ideally be 2-3 different formats to prevent significant grief if something happens.

Backing Up Your Data. How often should you back up your data? Well, that question can only be answered by you. At the bare minimum, it should be daily, but if you generate a lot of files (i.e. GIS, or you can type out a report incredibly quickly), it should be hourly. If you are working on two or more computers, you also need to synchronise your machines so that there is no loss of current work.

As well as backing up your working data, you also need to back up specific files / programs so that you don't lose them also. For example, your

.pst file if you use Microsoft Outlook as your email program. Additionally, many programs have add-ons which you need to back up also. It is likely to take many hours just to restore your operating programs, let alone trying to track down all the add-ons which you may have forgotten to back up, or store in a safe location.

So, after learning an invaluable lesson, there is no guarantee that your precious data is completely secure. All you can do is ensure you have a variety of strategies in place to secure your data, and make sure it is updated regularly.

Marine Assessment in NSW

Alison Hunt
Alison Hunt & Associates Pty Ltd
ECA Council Member

Whilst the ECA's general chatter tends to focus on ecological assessments which are terrestrially based, there are a smaller but just as passionate bunch of ecologists that spend their time undertaking marine assessments. After all why wouldn't marine ecosystems require a similar level of impact assessment?

Persuading our clients that something they definitely can't see and sometimes have very little regard for is both important to biodiversity conservation and ecosystem balance can often be even more difficult than working with terrestrially based clients. It's all underwater right? Hidden from view? Unimportant? Those mangroves just attract mosquitoes surely. Of course removing just a tiny patch of seagrass won't have wider implications. Or will it?

These are the questions we face from most of our clients. Unfortunately for them, but fortunately for the marine environment, marine impact assessments need to be as thorough as those for terrestrial ecosystems and all of the same requirements in terms of the NSW *Environment Planning and Assessment Act 1979* apply, including the use of Assessments of Significance to assist in determining the level of impacts on species, populations and communities http://www.dpi.nsw.gov.au/__data/assets/pdf_file/0006/226536/Threatened-Species-Guidelines.pdf. After all, stakeholders either government, special interest groups or the general public, are as well informed and as passionate about their patch as the terrestrial bunch and rightly so.

In fact, there is quite an overlap in matters protected under the NSW *Threatened Species Conservation Action 1995* (TSC Act) and the NSW *Fisheries Management Act 1994* (FM Act). According to the Department of Primary Industries (NSW DPI) website DPI is responsible for all species of fish and marine vegetation. Fish include sharks and rays, aquatic invertebrate animals, such as worms, snails, mussels, corals, sponges, sea urchins, barnacles, crabs, crayfish, aquatic insects and prawns. Marine vegetation includes all seaweeds, seagrasses and marine algae. Other types of animals, including whales, dolphins, seals and waterbirds, and plants, including freshwater plants, are the responsibility of Department of Environment and Climate Change (DECC). The responsibility for threatened species and their management is shared between DPI and DECC. Of course all actions also need to be considered under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) which is very comprehensive in its coverage of marine species.

How should you move forward if you are requested to undertake, or even make comment, on things marine? Rule number one is generally to call around to find an experienced and suitably qualified ecologist to help you out. Use the ECA's list of contacts, email or do it the old fashioned way and get on the telephone. There are a number of really good groups of 'marine people' around NSW and beyond that can help you out, and that can ensure that you assist your client to meet all their legislative responsibilities.

Want to know more? Well our 'bible' for assisting with ensuring the efficacy of any marine study is *Aquatic Ecology in Environmental Impact Assessment* (Dr Marcus Lincoln Smith 2003 - http://www.planning.nsw.gov.au/rdaguidelines/documents/NSW%20Aquatic%20Ecology%20in%20EIA%20). This publication is a very comprehensive set of methods for marine ecology assessment although if you are terrestrial based you could also benefit from its in depth analyses of survey design, sufficient and appropriate level of investigation, statistical analyses, presentation of findings, prediction of impacts, mitigation and monitoring guidelines. Another useful reference is the *Handbook for Sediment Quality Assessment* (Simpson *et al*. 2005), for when you want to know a little more on undertaking benthic assessments. Another great read, some basic scientific methods explained and well worth an afternoon of lounging about reading.

At the next ECA get together I hope to see a greater representation by you marine types so that we can broaden our discussions and be more of a force in the ECA. See you there.

Wind Farms and Climate Change: a shift in focus

Toby Lambert *January 2009*
ECA Council Member

What are windfarms really about? Fundamentally the obvious push for this new type of infrastructure comes from the changing way of thinking, in relation to climate change becoming a front and centre issue with the general public (give or take an economic meltdown or two). The general public push towards wanting a cleaner, greener, and more sustainable world is an obvious driver for the development of the new space age windmill.

Humans have, in one way or another, generated energy from wind currents via the old fashioned windmills for hundreds of years. In fact the first windmill-type structures generally known to have existed were developed in around 500 A.D. by the Persians and these were used to grind grain! In the 18th century the development of 'tower windmills' in Europe occurred, those pretty Dutch ones we are used to seeing in postcards. So there is a long history of using the wind to make life easier for people.

This leads to the current day, where the push for sustainable and renewable energy has, despite lack of substantial government support in Australia, come to the fore. For ecological consultants, what does this mean? I have been involved in a number of ecological assessments for windfarms, as I am sure quite a few of you have by now. This has led to assessments in areas such as New Zealand, Western Australia, Queensland, South Australia and of course here in our own State.

In NSW wind farm development is mostly associated with areas of the Great Dividing Range and this is likely to be the case for the foreseeable future, given the rapid rate of development of the coastline and associated public scenic sensitivity. This issue in itself is quite ironic. In relation to windfarms most people will say they are all for them, just not if they happen to spoil their view when they are nearby! Similarly, rural landowners who adjoin those upon whose land the wind farm developer is using are often envious of the additional income that can be made from the placement of the turbines and obviously make submissions due to this fact. Everyone is entitled to their opinion of course and some people don't like change or think that turbines are ugly. The visual aspect is very subjective. I personally think that wind turbines look quite majestic and sculptural in the landscape.

As ecological consultants we are used to assessing developments mostly with a particular way of thinking. This way of thinking primarily relates to the question "what will be the impact of

clearing and / or associated indirect impacts upon this community or species"?

Wind turbines in a rural / heath landscape, Emu Downs Wind Farm, near Cervantes, WA. Photo Courtesy of Toby Lambert

The assessment of windfarm impacts requires a change in the way of thinking. It requires a shift in focus from the norm, to that of assessment of impacts upon mostly aerial fauna. Of course windfarm developments can have substantial impacts upon the ground surface, however in general most wind turbines are located in historically agricultural landscapes, meaning that the positioning of the turbines and associated roads, cabling and substations can primarily be accommodated within previously disturbed paddocks or pastures.

The shift in focus also requires more upfront work than many of us are used to, identification of constraints (such as significant vegetation or flyways) and the reflection of such constraints in the windfarm shaping process. In terms of impact assessment, this is obviously advantageous, as the aim is to avoid or mitigate as many impacts as possible before the design is finalised. This occurs not just for ecological reasons but for many others, such as archaeological, visual, noise, topographical and, geological.

In many ways, the shift in focus also provides a sense to the ecologist that these are not just 'another development' but are contributing to addressing the climate change issue. Whilst windfarms may result in some impacts at a local scale, they are contributing to the overall conservation of many species that would otherwise become extinct as a result of increasing temperatures. Such increasing temperatures are being shown to have many likely implications upon threatened species and communities. These could include loss of our small areas of alpine habitat, cooler climate habitats such as those at Barrington Tops, and of course loss of low-lying wetland and intertidal habitats in coastal areas. While someone may argue that habitats such as the low-lying wetland environments could migrate upslope, we all know that this is not true, given the barriers that we humans are placing in areas that these habitats could otherwise colonise.

This is not of course to say that we can discount impacts of windfarms upon local biodiversity, just the opposite is the case. Generally the clients, while obviously having the usual desire to make a profit, are sensitive to the environmental image of their company, given that this comes with the 'green package' when submitting a development application. My experience is that such clients are generally more amenable to reducing impacts of the windfarm design to achieve such a green package.

The basis upon which this avoidance and mitigation approach has originated from is a result of substantial and well publicised impacts upon bird populations overseas. The most quoted international examples of turbines killing large numbers of birds are from poorly situated wind farms at Altamont Pass (California, USA) and Tarifa (Spain). In both cases the wind farms were located along bird migration routes and in critical habitats for endangered species. The Altamont pass wind farm, containing 5,400 smaller turbines with high rotating speeds densely laid on a bird

migration route and staging area has killed over 22,000 birds in 20 years of operation. The highest profile case in Australia is probably that of the Bald Hills Wind Farm project in Victoria. This project was considered to potentially significantly impact upon the Orange-bellied Parrot. The project was very political, as is often found with windfarm projects!

As a result, numerous guidelines, including those prepared by the Commonwealth Department of the Environment, Heritage, Water and the Arts, NSW DoP and by AusWEA (or Auswind) have been prepared. For a relatively young industry the preparation of such guidelines demonstrates the level to which the issue of bird and bat strikes are required to be considered.

This leads to the focus of the ecological assessments for windfarms. Significant survey effort is shifted towards impacts upon birds and bats as a result of the operation of proposed windfarms.

For birds there are three main types of potential impacts and these include direct mortality from collisions with turbine blades; indirect impacts from avoidance, habitat disruption and displacement; and loss of, or damage to, habitat resulting from wind turbines and associated infrastructure. Turbulence created by the rotors (as a specific consideration) is also likely to affect species and result in a low level of mortality. This aspect of wind turbine impacts has been subject to little available research.

In relation to bats there is little information on the impact of wind turbines on bats, although recent information from the US has suggested that bats suffer collision fatality at some level, particularly during migratory periods. Bats fly at night, and like other migrating bird species, there is also some evidence that bats may be in fact subject to higher collision rates than many other birds. There is also some evidence that higher-flying species may be vulnerable to collisions. Research has shown that as opposed to bird mortality rates being constant with tower height / rotor swept area, bat mortality increases exponentially as turbine heights increase, with turbine towers 65m or taller having the highest fatality rates.

Surveys for birds focus upon establishing flight heights, behaviour, direction of flight and time spent at certain heights. This informs the constraints assessment in determining those species that are at most risk from the wind turbines. As far as is possible, migratory bird issues also need to be considered. This is obviously difficult with surveys occurring over a limited period, but local ornithologists can assist in this regard as can specifically timed seasonal surveys. This issue has recently started to be addressed by the installation (in NZ) at a particular wind farm site of a $450,000 avian radar system. The radar system will track migratory routes of birds to help determine where turbines can be sited!

Surveys for bats focus on establishing the species present, referring to those aspects of their flight behaviour that are known, and identifying the likely level of impact to these species. This can include identification of roost sites within the locality, to determine where bats such as Bent-wing bats are likely to be moving through a site.

Along with surveys for birds and bats, the cable routes, turbine bases and substations are also investigated in terms of significant flora and fauna that may be affected by the proposed wind farm design.

The lack of available research information is meaning that monitoring of constructed windfarms, and public reporting of results, is vital. This can involve surveillance such as carcass surveys beneath turbines and regular monitoring of actual behaviour of birds in the field at windfarm sites. A database of such monitoring in Australia, under Australian conditions, is vital for

our future assessments. This is because we do not have the night migrating song birds that North America and Europe have, which tend to be more susceptible to impacts. As more windfarms are constructed it is considered likely that this additional research will occur, as monitoring is usually a condition of consent. It is likely that consultants and academics will initiate more of this research as more windfarms are constructed.

Minor impacts to birds and bats are however usually expected due to turbine collisions. These are likely to be in line with stated AusWEA collision rates of several individuals per turbine per year. Some minor changes to the local distribution and abundance of locally occurring common species may also be expected as a consequence of the ongoing operation of the turbines. However, these impacts are generally not expected to be significant with few or no impacts on population(s) sizes or surrounding habitats.

Based on a review of 12 comprehensive bird-monitoring studies in the USA, fatality rates have averaged 2.3 individuals per turbine per year. The impact of wind turbine collisions has been estimated to be less than 0.02 percent of the staggering 200 – 500 million collision related deaths in the USA from other structures such as vehicles (60 – 80 million), buildings and windows (98 – 980 million), and communication towers (4 – 50 million).

Recent research in North America undertaken over 33 wind farm sites indicates that the average annual mortality rate for birds was 0.61 per turbine. This included a range of tower heights and rotor swept areas. Heights ranged from 24 to 94m, while diameter of rotor swept areas ranged from 15 to 80m. The study also indicated that differences in rotor swept area were not a significant factor in relation to impacts, with no evidence that taller turbines are associated with increased bird fatalities. In fact, the per turbine mortality rate for birds was constant with tower height. Barclay et al. (2007) indicated that factors influencing fatality rates may include differences in the number of species present within the area, their population sizes, the use of migration corridors, variation from site to site at which birds fly, and variation in numbers of migrants from year to year.

Wind Turbines in the coastal heath landscape, Albany Wind Farm, Albany, WA. Photo courtesy of Tony Proust.

In Australia, collision rates are generally thought to be around one to two birds per turbine per year (AusWEA). The most susceptible Australian birds are likely to include:

- birds of prey and owls, particularly soaring species such as eagles and kites;
- nocturnal migrating songbirds (of which there are few);
- locally-breeding high-flying songbirds such as Magpie-larks;
- waterbirds such as Straw-necked Ibis and Black Swans;
- ducks;
- shorebirds, including migratory waders; and
- *Neophema* Parrots

Within Australia most wind farm development has been along coastal areas in Western Australia, South Australia and Victoria. In Tasmania, the first two stages of the Woolnorth wind farm have been the subject of a bird and bat strike-monitoring programme. There has been some evidence for a slightly decreased usage of the site by birds post-construction (i.e. displacement) and several species have been reportedly hit by turbines including Wedge-tailed Eagles, seabirds such as Petrels, Common Skylark, Grey Fantail, Black Currawong and Banded Lapwing.

Studies conducted at Stanwell's Toora wind farm in South Gippsland found no evidence of significant levels of bird mortality with any impacts confirmed to localised indirect effects on common farmland birds. Species such as Wedge-tailed Eagles were regularly observed before and after operations began, but they avoided the turbines by flying around or between them.

As the Australian industry develops, more information is coming to light that the mortality rates at Australian wind farms are lower than in the northern hemisphere, which appears to be due primarily to the lack of large numbers of night-migrating songbirds in Australia.

Latest international research has pointed to issues such as bat deaths through exploding lungs from the air pressure resulting from blade turbulence. It has also identified that the distribution of farmland birds such as corvids and seed-eaters in Europe is not affected by distance from turbines and there was no evidence to suggest such birds avoided the turbines. New data is being released all the time, particularly from an international perspective.

The actual surveys themselves deal up many issues that are not as common in everyday assessments. These can include dealing with many landowners (some not so positive), ensuring trucks are washed down to avoid spread of weeds, dealing with cattle, and opening many gates!

All the assessments for projects can happen in the world, and approvals gained, however for renewable energy such as windfarms to be actually constructed relies on incentives provided by government. Up until this point, incentives via the State and Commonwealth Mandatory Renewable Energy Targets (MRET's) have only been relatively minor. These MRET's combined with the negotiations that windfarm developers have to undertake to gain Power Purchase Agreements (with organisations such as Energy Australia, AGL, Integral Energy etc) result in difficult conditions for windfarms to actually be financed, built and operate. Hopefully this will change with the identification of a national MRET of 20% by 2020 by the Rudd Government in combination with Carbon Taxes etc. This remains to be seen, particularly given the 5% carbon reduction 'commitment' recently outlined by the Rudd Government. Few of the currently constructed wind farms occur in NSW; many more can be found in Victoria, South Australia, Tasmania and Western Australia. Whether this is symptomatic of the lack of focus in NSW, I am not sure, although you would have to say that other states adopting their own proactive MRET's does not show NSW in a favourable light.

The shift in focus needs to be holistic. From the ecologists focusing on species more likely to be affected by turbines, to the consideration of threatened species issues in those areas to be affected by climate change, to the person in the street making decisions, windfarms in ecologically appropriate locations are only part of the solution. But they sure are fun and interesting to work on!

Family Holiday with Benefits

Jason Berrigan
Darkheart Eco-Consultancy
ECA Council Member and Newsletter Editor

When I plan a holiday, farmers celebrate: it means the drought-breaking rains are coming. For those that remember the washed out Anabat workshop at Coffs Harbour a few years ago, my apologies, we booked a villa in Annuka for a family weekend.

In November 2008, my family and I spent just over 3 weeks in southeast Queensland, our first real holiday in five years thanks to how busy the industry has been for so long. The plan was theme parks at the Gold Coast the first week, relaxing on the beach at a resort on Moreton Island the next week, and then a week up to Caloundra to visit Australia Zoo and a poke around, and finally a three day stopover at Byron Bay on the way home to see what the fuss is all about.

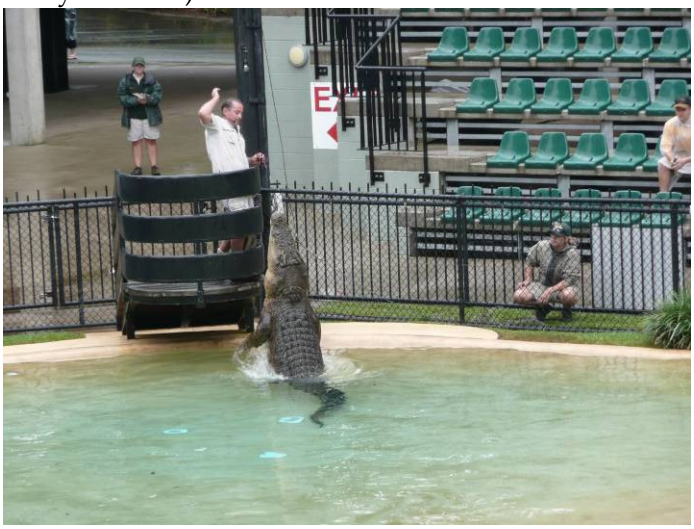
Unfortunately, this also coincided with a rather unprecedented intense and prolonged low pressure system trough pushing down and then holding over (you guessed it) southeast Queensland, for most of November. While the mid north coast of NSW (where I live), was enjoying balmy days and light winds, we endured non-stop rain with associated gales, or at least chilling drizzle for 21 of the 25 days away. Of course some of the locals got it worse – they had their houses destroyed by mini-cyclones and/or flooded by monsoon rain. My apologies to them. Next time we'll go to Alice Springs.

Fortunately, the trip did have its highlights (and the theme parks were pretty quiet!), apart from spending long overdue family time (often in a confined space, for long periods).

Firstly, I'd recommend Australia Zoo not just to those with kids (make sure you get your wife to foolhardily volunteer for the pigeon call gag by the way, and get the video camera ready for your winning Australia's Funniest Home Videos entry), but to birdo's. The Rainbow Lorikeets, Galahs and Cockatoos sweeping past your face as they circled the stadium was nice, but I was quite simply astounded to see a free-flying Jabiru (a.k.a. Black-Necked Stork) feature as part of the bird show in the Crocatorium. This adult bird flew I assume from its pen elsewhere in the park to the centre of the Crocatorium on cue, to be hand fed, and later flew out again. This impressed me more than the croc leaping up out of the water and nearly snatching the handler's arm (Croc's rule!). Now I know why they really wear khaki.

Photo 1: Wild/tame Jabiru

Photo 2: Close call (and he does this 3 times a day, 7 days a week).



Later on when exploring the wetlands section of the park with tired toddlers, I was again astounded to see not only a Jabiru and its mate wandering around an open top enclosure and coming right up to visitors, but a pair of Brolga. The ability to stand within touching distance of these beautiful large birds was lost on my tantrumic 3yr old (who nearly got chucked over the fence to the tigers by the crowd trying to listen to the show), but is a sight that impressed upon my memory for life. These birds did not appear to have clipped wings or any sort of injury which prevented them from leaving their designated pen, and I cannot explain why they don't simply fly away as nature compels them to normally do so (possibly a reflection of how well they are cared for).

The exotic bird enclosure you can walk through and just sit in (if the toddlers are asleep) is also very good, with Rose-Crowned Fruit-Doves, Wompoo Fruit-Doves and Regent Honeyeaters for your photo-snapping pleasure. Seeing a Koala in a Macadamia tree also brought a smile to my face (part of the park is an old plantation), especially when an American tourist wondered if they ate the nuts. Wish I could have kodaked the moment when I remarked how they'd probably find the nuts hard to chew with those massive canine teeth they have. Gave the sacrificial petting Koala a short break from molesting tourists.

The other ecological highlight was to be able to spend quite a bit of time (mostly from the shelter of the bar/café or the villa verandah from the pouring rain) observing the Moreton Island Bush-Stone Curlews. A colony of these birds has resided on the island for some years (I can recall seeing a story on them on *Totally Wild* in the early 90's). Foxes and more so feral cats apparently exist on the island (but are being controlled), and a staff member told me the numbers of birds had declined in recent years. About 6 of the birds appear to spend almost all day at the resort, using key habitat components such as picnic tables (see photos) and ornamental gardens for cover from curious children and the sun (the one sunny day we had was the day we left). On the way to breakfast, you may see them foraging along the beach and amongst the palm trees before the onslaught of day visitors, or standing in the sand pit amongst the jungle gym. By chance, our villa was next to a grassed berm where each night they would gather and call from just before dusk for up to 2-3 hours (fortunately, as otherwise they may have become more endangered), before stalking off individually in their erratic dart - stop and act like a stump - dart - stop, etc. The sad serenade was touching to listen to and a good accompaniment to the Sauvignon Blanc I'd smuggled to the resort, but not good for settling a 20 month old to sleep. They showed no concern for bollard lighting along footpaths (in fact, I often enjoyed a drink watching them calling near a light), and little wariness unless directly approached. I also noted them foraging under picnic tables for potato chips outside the bar/café in the later evening, taking over the graveyard shift from the Silver Gulls.

Photo 3: Spot the birdie.

Photo 4: There he is.

Another interesting observation at the resort on Moreton Island was of resident Squirrel Gliders foraging on flowering Coconut Palms, even where light spillage was high enough to watch animals quite clearly. The flowers are quite large (a lot like Cocos) and have a strong perfume, and while dry sclerophyll with abundant *Banksia* is extensive over the island (but tree hollows appear scant), a colony seems quite happy in the tropical-themed grounds of the resort. Nest boxes posted on a number of Forest Red Gums may be used by this colony. There is also a raptor nest (forgot the species – a Whistling Kite perhaps?) right near the café/bar, and the resident birds are hand fed each morning (watch your bait when fishing), with the pelicans and cormorants. An active Osprey nest also occurs within about 100m south of the resort.

The waters around Moreton Island are also full of turtles as I found out on the dugong tour, but the feature creature is a damn sight less reliable (never saw one). The resort also features dolphin feeding, which the kids loved of course (and you may need to donate a kidney to pay for the whole family for the privilege of dropping a dead fish in the water).

Finally, at our stay in Byron, I was disappointed to see the Indonesian Gecko is well entrenched, capturing 3 in our treehouse villa which was ensconced in sclerophyll forest (well before *Planning for Bushfire*) on the edge of town. I've also captured this invader in Port Macquarie.

All in all, it was a good break. Now I'm working on an Ark for my retirement.

Birds and Beer at Bundarra

Veronica Silver and Anna Lloyd
GeoLINK
ECA Practicing Members

Bundarra, better known for its birds and probably not its beer, recently hosted a Woodland Bird Workshop. We were thoroughly impressed with the variety of birds seen and the knowledge imparted by Dr Jim Shields and Dr Stephen Debus. Organised by Mr John Willoughby from Forests NSW (Department of Primary Industries), the three days were filled with trips to the Bundarra TSR (on the Gwydir River) and surrounds whereby an amazing array of threatened woodland birds were seen; some were engaged in nesting and rearing their young. Birds observed included the Regent Honey-eater, Diamond Fire-tail and Brown Tree-creeper. Luckily, a myriad of stuffed specimens was available for us to examine, including an old and somewhat lumpy Varied Triller. Specimens loaned from Walter Boles of the Australian Museum (Sydney) provided a rare opportunity to view approximately forty species of a sedate nature in the hand. This was a rare opportunity as so many specimens were observed without even having to unfurl one mist net! Some specimens were from the early 1900s and were preserved with arsenic (which made for a tasty lunch if you didn't wash your hands!).

Accommodation and theory sessions were held at the Commercial Hotel (an interesting place!) at Bundarra, approximately 70 km north of Uralla. Bundarra is a lovely, quiet town, nestled between

the central table lands and west slopes and plains. The Commercial Hotel has a great old country pub feel and was a great place to stay. The nearest espresso is a mere 47.3 km away at Inverell, so a word of advice: plan ahead, as the 38 minute journey could result in caffeine withdrawals, low blood pressure and migraines. After a medicinal cuppa, we headed over to Lake Inverell and viewed some spectacular waterbirds before being chased off by an equally spectacular electrical storm.

The theory sessions provided insight into bird anatomy and ecology and general bird watching tips and techniques. It was great to spend time with such experienced and knowledgeable "birdos". The depth of knowledge one can draw when they are trapped and cornered for a whole three days is amazing. It was also great to swap stories with the other participants, who comprised a variety of people from consultants to government employees.

Highlights of the workshop were observing the Regent Honey-eater, mist netting a Diamond Firetail and a Brown Treecreeper. Some attendees excelled from minimal bird knowledge (cough cough) to successfully completing a TEST which involved identifying 20 specimens (many of which were of the small brown variety!).

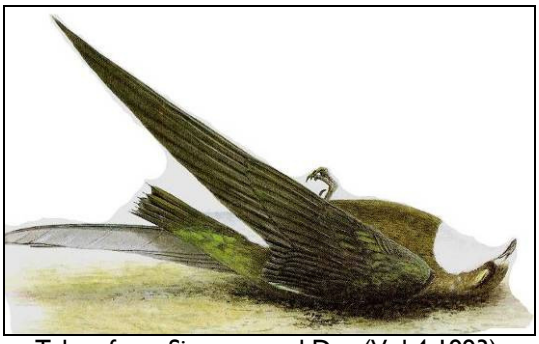
If you get the opportunity to attend such a workshop in the future, we highly recommend it, even if there was no Carlton Draught on tap!

Top: Brown Treecreeper **Centre:** Diamond Firetail **Above:** Fuscous Honeyeater **Below left and right**: inspecting specimens. Photos courtesy of Veronica Silver

ROAD KILL ACCOUNTS *Continued from page 8*

Deryk Engel

As an aside I remember driving along another open country road, somewhere west of the Great Divide, my companion at that time being Chris Chafer, a noted Illawarra birdo. We were casually chatting about field guides, comparing the pros and cons of several of the issues available at that time. In the course of the conversation, I asked Chris why he thought Simpson and Day (in Edition 4 of their publication, *Field guide to the birds of Australia*) chose to include the following illustration of a dead White-throated Needletail. My comment was that, as the bird is most commonly seen in flight, at heights that are in the order of 100 metres AHD, this choice of illustration seemed unnecessary if not totally impractical. I can't remember Chris' reply but, needless to say, in the course of that drive, we came across a dead White-throated Needletail in the exact posture as illustrated in the field guide. The bird was freshly killed, in perfect condition, looking exactly like the picture in the book. Scratching our heads and probably commenting on how insightful and useful the Simpson and Day illustration was, we drove off. In this instance I am glad to say that I was not responsible for the demise of this individual!!!!!



Taken from Simpson and Day (Vol 4 1993).

When living and working in Far Northern Queensland, we use to play a game we called "identify that road kill". The area we worked in had numerous long stretches of road, bushland occurring either side of these. As such, road kills were a regular feature of the landscape. To pass the time driving to and from our sites we use to keep an eye out, searching for road kills, and when one was seen on the horizon, the game was on. Calls of kangaroo, possum, bandicoot and so forth would fly around the car, these being refined, reclassified ("*Swamp Wallaby, not Grey Kangaroo*") and changed by the various occupants as the road kill got closer. Each ecologist would support their conclusion by noting a particular anatomical feature, this in their mind sealing the game in their favor. Egos and competition ran high, praise (reluctant??!! and most likely with a touch of professional jealousy) going to the "winner" who correctly identified the kill. I'm not sure if we formally kept score, but I know it was a very competitive game. On one occasion there were four ecologists in the car, three of whom hold PhD's. Two of these have even published mammal field guides and papers we ecologists would regularly refer to even to this day. A road kill was sighted and it was "game on". It was a reasonably small road kill, brown to fawn in colour. It didn't flap but leathery bits were evident and sticking up. It was on the edge of the road, within an area of eucalypt woodland. Cries of possum, rodent (no change that to rat kangaroo) and bandicoot were thrown about, as were brush turkey ("*it was here yesterday when I drove past*"), all common species seen in this area. The debate continued the closer and closer we got, species identifications being refined, quantified and questioned ("*you can't be serious, its too small/brown/leathery/doesn't have the right foot characteristics to be that*"). Finally the road kill was upon us and four very embarrassed ecologists looked at one another as the leather glove passed under the car.

Member Profiles

TOBY LAMBERT

1. **Name, qualifications, employer and ECA membership status**:

Toby Lambert
BEnvSc
RPS Harper Somers O'Sullivan, Newcastle
Practising Member

2. **Specialties, preferred field, interests, obsessions**:

- Environmental and ecological impact assessment reporting
- Flora, fauna and habitat survey methodology design and management
- Detailed understanding of threatened species legislation and issues
- Terrestrial fauna surveys
- Renewable energy assessment

I prefer working with furries and animals in general and need more patience with keying plants! Love working on larger infrastructure projects where you (mostly) get the time to actually have a good understanding of the site! Enjoy working on windfarms as the resultant outcomes will help to address the climate change issue.

3. Why did you decide to become an ecological consultant?

I grew up on a farm in the Myall Lakes and loved getting dirty in the mud and bush. Went to Uni in Newcastle to pursue my passion for the environment and after graduating got a few boring environmental jobs (like groundwater sampling etc) before landing a full time junior ecologist position on the Central Coast. Loved it and haven't looked back.

4. What would you be doing now (to pay the bills) if you weren't an ecological consultant?

Hmm probably in a rock band or an artist of some sort. I know I know, these wouldn't necessarily pay the bills, only if I had talent!

5. What would you *wish* you could be other than an ecological consultant?

This might sound funny, as I sometimes get frustrated with working with them, but an architect of some sort, or some other airy fairy job that can contribute to eco-design and harmonising the way we live in the natural environment. Would alternatively like to work in ecological research or otherwise keeping the bastards honest in some way!

6. What is the *best* part of being an ecological consultant?

Getting to experience our unique environment and trying (and sometimes achieving) to make a difference. Travelling around Australia (and luckily New Zealand etc) and experiencing natural diversity and the feeling of nature. Working with other like-minded people.

7. What is the *worst* part of being an ecological consultant?
Seeing areas that you prepare assessments for being cleared. Even if it's not threatened it has value! But that's progress...

8. What's the worst thing you've seen in a report from a consultant?

When they referred to Koalas furry white underparts as furry white underpants!

9. If Nathan Rees gave you absolute power for one day, what would you do/change?

There's a lot of things I would change. Make the 7 part test more effective. Ensure NPWS Survey Guidelines are realistic and achievable. Sort out the NV Act ridiculousness. Ensure all government department staff (particularly councils) are actually qualified to review reports and not waste our time. Fund 'The Dummies Guide to Biobanking"...I could go on...

10. What is the strangest, cutest, funniest or most embarrassing thing you've seen or done as a consultant?

Well there's the old cracker of accidentally saying a proposal would result in a significant impact accidentally in one part of a report, when clearly it would not and being queried by a council one time. And forgetting to load the Elliott traps into the car when going to a site to trap!

11. Which came first: the chicken or the egg?

Most definitely the chicken...or was that the egg? Now I'm confused!

Left: Toby Lambert 'on the job'

MICHAEL MURRAY

1. **Name, qualifications, employer and ECA membership status**:

Michael Murray BSc(Hons)
Forest Fauna Surveys Pty Ltd
Practicing Member
Secretary 2007 -

2. **Specialties, preferred field, interests, obsessions**:

I guess I like looking up at things rather than looking down for tiny little cryptic things like orchids. Obviously the more noise they make the easier to locate, although owls make it interesting. Wandering around at night sure saves on sun block, but the DEET will probably pickle my liver.

3. Why did you decide to become an ecological consultant?

Not quite sure, it sort of just fell into place after doing some small research projects for an early employer. I had a laugh about our profession when the bloke who sold me a chainsaw filled in the warranty card for me. In the section profession / field bit he wrote "Faunacator". So I tell everyone I am a faunacator!!!

4. What would you be doing now (to pay the bills) if you weren't an ecological consultant?

Not sure about that. I used to work in pathology labs in my past which was interesting, but I was always looking out the windows at the passing whales and pods of dolphins (7th floor at Royal Newcastle Hospital on Newcastle Beach had its benefits). So maybe if things were different I'd be back there.

5. What would you *wish* you could be other than an ecological consultant?

Option A. I reckon it would be good to have a business building camper trailers or taking people on cycling trips. You would always be out testing your products and people literally throwing money at you if the product is good. Option B. Cabinet maker. I occasionally visit the Mullumbimby Slab Factory and the timber furniture makes you drool. Making a product which people admire and use regularly is appealing rather than looked at once then filed away in a bookshelf.

6. What is the *best* part of being an ecological consultant?

Getting good jobs that make a contribution no matter how small. Travelling to interesting parts of the state and having the luxury of a few days or more to really have a look at the place.

7. What is the *worst* part of being an ecological consultant?

The burgeoning reporting requirements for QA, OHS, Licences, Insurance, BAS statement, etc. etc. I once was asked by a local Council to tender for a $5,000.00 job but the Tender Brief was 48 pages!!! I told them to shove it. Compare that to a builder doing a $250,000.00 extension on a house and the Fee Proposal can fit on one page!!! I reckon we should all charge minimum $250.00 an hour for the crap we have to put up with.

8. What's the worst thing you've seen in a report from a consultant?

An eight part test on every threatened species in the locality for a small subdivision. No really, an eight part test for 28 threatened species on a site that probably supported 2-5 threatened species.

9. If Morris Iemma gave you absolute power for one day, what would you do/change?

Sack the bastard and fix Frank Sartor's damage to the environmental and planning legislation. *(Michael filled this out when Iemma was still in).*

10. What is the strangest, cutest, funniest or most embarrassing thing you've seen or done as a consultant?

Being shot at was interesting.

11. Which came first: the chicken or the egg?

I saw a bumper sticker on a doof-doof car which said "Lay chicks not eggs". Sums it up.

Above: Michael Murray 'on the job'.

Mark Couston

1. **Name, qualifications, employer and ECA membership status**:
Mark Couston
Ass. Dip. Env. Ctrl. (CSU), Grad. Dip. Env. Mgmt. (CSU), Cert. Soil & Water Mgmt. (UWS)
Footprint Green Pty Ltd
Council Member

2. **Specialties, preferred field, interests, obsessions**:
Generalist, I don't really have a preferred field of interest just the usual flora & fauna stuff although, I still like learning new things.

3. Why did you decide to become an ecological consultant?
Like many of us, I guess an interest evolved into a profession over many years.

4. What would you be doing now (to pay the bills) if you weren't an ecological consultant?
Photographer, Painter; but it probably wouldn't pay the bills; maybe a designer of some sort.

5. What would you *wish* you could be other than an ecological consultant?
Retired and enjoying life, getting fit etc.

6. What is the *best* part of being an ecological consultant?
I like looking at new sites for the first time and almost being overwhelmed by the initial flora, fauna and habitat observations and figuring out where the site sits in the landscape; then after the second or third site visit and collection of field data, things all of a sudden fall into place. It's a bit like doing a puzzle.

7. What is the *worst* part of being an ecological consultant?
The worst part of the job is dealing with architects / developers / planners etc. who can't come to grips that ecological issues are real (probably more frequent 10 years ago). Then you have those who have learnt to appreciate that ecological issues are real, but don't really give them much credence (more frequent now).

Oh I forgot, I'm sick of writing 7 part tests, there must be a better way.

8. What's the worst thing you've seen in a report from a consultant?
I was involved in a site and read a report not so long ago, from a non ECA member, who didn't recognise Swamp Sclerophyll Forest community and didn't consider the Swift Parrot despite stands of Swamp Mahogany and large patches of Juncus sedgeland. They also got the Local Government area wrong.

9. If Nathan Rees gave you absolute power for one day, what would you do/change?
There is sooo much that needs changing. The token threatened species stuff in the middle of Sydney is frustrating. I guess I'd change the planning laws to apply them more appropriately.

10. What is the strangest, cutest, funniest or most embarrassing thing you've seen or done as a consultant?
I do embarrassing things all the time.

11. Which came first: the chicken or the egg?
"C" comes before "E"

Above: Mark Couston ' not on the job'

Contributions to the Newsletter, Volume 23

Contributions to the next newsletter should be forwarded to the editor, Jason Berrigan newsletter@ecansw.org.au or the administration assistant Amy Rowles admin@ecansw.org.au by the **1st of July 2009.**

- Articles may be emailed in WORD, with photos included or referenced in an attached file as a jpg.
- Please keep file size to a minimum, however there is NO limit on article size (within reason)
- Ensure all photos are owned by you, or you have permission from the owner
- Ensure that any data presented is yours and you have permission from your client to refer to a specific site (if not please generalize the location).
- All articles will be reviewed by the editorial committee, and we reserve the right to request amendments to submitted articles or not to publish.
- Please avoid inflammatory comments about specific persons or entity

The following contributions are welcome and encouraged:

Relevant articles
Anecdotal ecological observations
Hints and information
Upcoming events
Recent literature
New publications (including reviews)
Member profiles
Photographs

Advertising Opportunities with the ECA

Website:

1. **$200 for a banner**
2. **$300 for company name with some detail and a link**
3. **$500 for company name within box, logo, details and web link**

All website packages run for one financial year and include a small ad in any newsletter produced during the financial year.

Newsletter:

1. **$100 for a third of a page**
2. **$250 for a half page**
3. **$500 for a full page**
4. **$1 / insert / pamphlet**

Advertising is available to service providers of the Ecological Consulting industry. The ECA will not advertise a consultant or their consulting business.

If you wish to advertise, please contact the ECA administrative assistant on admin@ecansw.org.au.

ECA Photo Gallery

(Photo Competition Entries)

Red-crowned Toadlet
Pseudophryne australis.
Photo Courtesy of Rob Suesse

Two Squirrel Gliders *Petaurus norfolcensis*
in a nest box. Photo courtesy of Narawan Williams

Gould's Wattled Bat *Chalinolobus gouldii.*
Photo Courtesy of Veronica Silver

Eastern Pygmy-possum
Cercartetus nanus
Photo Courtesy of
Narawan Williams

ECA Photo Gallery

(Photo Competition Entries)

Runner up: Feathertail Glider *Acrobates pygmaeus*. Photo Courtesy of Narawan Williams

Photo Competition

Email your favourite flora or fauna photo to admin@ecansw.org.au to enter a competition to have your photo on the cover of the next newsletter and win your choice of one year free membership or free entry into the next ECA annual conference. The winner will be selected by the ECA council. Runners up will be printed in the photo gallery.