

ECA



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President's Message

The Japanese have an expression "we live in effervescent times". For ecological consultants 2004 has certainly been an effervescent year. Changes to the Threatened Species Conservation Act are now coming into place, conditions to Scientific Licences are being

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enforced and a reform process is being introduced that will change the way land is assessed.

Added to this ferment is the constant problem of survival in an increasingly competitive commercial world. There seems to be more people entering the ecological field than ever before. In a free-enterprise world this is considered a good thing, as more competition brings benefits to the consumer by driving prices down.

However, the result can be that the service is of increasingly poor quality, as corners are cut and the cheaper tenderers lack the skills and knowledge required to provide a satisfactory result. Such a situation has already occurred in other professions, notably building and electrical industries. Some of those entering the ecological consulting field are poorly trained and lack the experience needed to guide an assessment through the necessary regulatory steps or to fully understand the natural history of an area.

How do we, as responsible professional ecological consultants, counter this trend? The Association should not enter into the world of

'price-fixing' or fee structures. Rather, we should be able to show that the standard of service maintained by its members ensures the best possible result for the consumer. I'm sure that all of us have had the opportunity of fixing up messes brought about by inadequate consultants. If we maintain the highest standards then those requiring ecological assessments will be beating a path to our door.

The 2004 Conference demonstrated the skills available within the ECA, and emphasised the knowledge required to correctly undertake flora and fauna surveys. As I mentioned at the Conference, all planning decisions pertaining to the natural environment are ultimately based upon knowledge of that environment. Such knowledge comes from the results of flora and fauna surveys and ability of the surveyor to interpret that data. Each speaker showed how complex and important was the task of describing and assessing the natural environment.

Thanks are very much due to the organisers of the Conference, which has been

the most successful (in terms of attendance) so far. Thank you Danny, Karen and Margot for bringing together such an expert group of speakers. I should think that the resultant CD will be used as a reference tool for many years to come.

The attendance by several representatives from the DEC also helped in re-establishing a connection with this agency. We have been asked to provide two representatives from the ECA to be part of a working committee assisting in the development of the accreditation process for consultants undertaking both Species Impact Statements and Tests of Significance (i.e. the 8-part test), and the survey standards. It is hoped that we can have some influence on the process.

So, what do we need to look forward to in 2005?

We need to maintain our high standards and educate our clients that price is not all that matters.

We need to revisit the matter of accreditation and determine whether the ECA needs to go down this path.

We need to attract more members to ECA, so that it is possible to ensure that a high quality of professionalism is maintained.

We need to ensure that some of the new opportunities opening for ecological consultants (e.g. accredited consultants to be used in the biodiversity certification process; court appointed

consultants) are passed onto those maintaining the highest standards i.e. members of the ECA.

Finally, have a Merry Xmas or what ever and don't work too hard during the break.

Martin Denny

ECA Office Bearers 2005

President: Martin Denny
mtking@ozemail.com.au

1st Vice-President: Leong Lim
countryw@bigpond.net.au

2nd Vice-President: Stefan Rose
s.rose@hunterlink.net.au

Secretary: Elizabeth Ashby
keystone@idx.com.au

Treasurer: Paul Burcher
pburcher@ozemail.com.au

Membership Officer: Paul Burcher
pburcher@ozemail.com.au

Public Officer: Paul Burcher
pburcher@ozemail.com.au

Councillors:

Stephen Ambrose
Stephen@ambecol.com.au

Jason Berrigan
wolfen@kooee.com.au

Mark Couston
mail@footprintgreen.com.au

Elizabeth Denny
lizdenny@ozemail.com.au

Deryk Engel
DerykE@Lesryk.com.au

Keith Kendall
kendall@midcoast.com.au

Judith Rawling
jrawling@urbanbushland.com.au

Nick Skelton
ecology@ecology.net.au

Ray Williams
ray@ecotoneconsultants.com.au

Danny Wotherspoon
wilderness@mountains.net.au

Special appointments:

Web page: Stefan Rose
s.rose@hunterlink.net.au

Newsletter editor: Gerry Swan
gerryswan@bigpond.com

2004 ECA Conference

The 2004 ECA Conference was entitled "Survey Techniques towards industry standards for flora and fauna" and was held on Friday 19th November in the Hallstrom Theatre, Australian Museum, 6 College St, Sydney.

The subject matter of the conference was of particular interest to all concerned and this contributed to the huge success of the conference. It was aimed at informing and supporting ecological consultants, local council planning and environment staff and DEC staff. Presentations addressed the

problems we all encounter in ecological consulting work, viz. juggling best survey techniques with time and financial constraints.

We filled the 150-seat Hallstrom theatre, with 122 attendees apart from speakers and organizers, comprising 79 consultants, 21 Council staff, 19 agency, 1 community group, 1 student, 1 TAFE, and they traveled from all over NSW.

The aim was to achieve a basis on which ecological consultants can be confident that a reasonable attempt has been made to assess the impacts of a proposal, including techniques, effort and timing of the survey.

The following speakers put in a great deal of time and effort and presented interesting, practical and helpful papers:

Simon A Y Smith
(Keynote speaker)

Simon is the Deputy Director General of the Environment Protection and Regulation Division, of the Department of Environment and Conservation NSW (DEC). DEC is the State Government Department, which brings together the Environment Protection Authority, the National Parks and Wildlife Service, Resource NSW, and the Royal Botanic Gardens and Domain Trust, and also links with the work of the Sydney Catchment Authority. Simon leads the DEC's Environment Protection and Regulation Division responsible for:

conservation planning and programs, including reform of Threatened Species and Aboriginal Heritage protection; regulation of air, noise, and water emissions, and waste management; regulation of contaminated land, State forestry activities, and radiation safety; DEC participation in environmental planning and assessment.

Dr Cate McElroy (Mammals)

Cate McElroy has been working at Australian Museum Business Services for the past eight years, during which time she has been involved with, and has managed, a wide range of projects for both private clients and government agencies. In addition to consulting Cate has conducted two research projects that have investigated aspects of mammalian reproductive strategies, firstly on the Eastern Pygmy-possum and other small possum species for her Honours Degree from the University of Melbourne, and then on Euros in the semi-arid zone for her PhD from the University of NSW.

Cate presented a summary of a review that AMBS conducted for the Department of Environment and Heritage that forms the first stage of the process to draft Standard Survey Methods for detecting EPBC Act listed terrestrial, non-flying mammals.

Gerry Swan (Reptiles)

Gerry works as a consultant, and is probably best known

for the great pocket sized field guide on NSW reptiles. He has written several other books, including a revised guide with Glenn Shea and Ross Sadlier, called "A field guide to the reptiles of NSW". Gerry is a research associate of the Australian Museum and a former editor of the journal Herpetofauna.

Dr Karen Thumm (Frogs)

Karen's research has been mainly on threatened frogs and in particular how differences in the life history strategy of frogs should be influencing our decisions about how to manage them. Karen is now working as a consultant; she appears to still prefer to be up to her knees in a swamp than in the office.

Dr Stephen Ambrose (Birds)

Stephen is principal of the consulting company Ambecol, and is best known as a bird ecologist. He was Research and Conservation Director of 'Birds Australia' and lectures in ecology at the UTS in Sydney and at the Australian Catholic University.

Glenn Hoye (Bats)

Glenn has been surveying and researching bats throughout eastern Australia for over 25 years. Through his company Fly By Night Bat Surveys Pty Ltd he undertakes surveys and assessments of bats and provides advice on their conservation and management.

Michael Murphy (Terrestrial Invertebrates - Mitchell's Rainforest Snail)

Michael has worked in various positions in the NPWS (now DEC) for about 10 years, and has an excellent understanding of conservation planning, threatened fauna habitat requirements and associated survey and site assessments. His interests and expertise include, but are not limited to, surveying and documenting species occurrences (common and threatened), and undertaking applied research, including research on land snails.

Simon Nally (Terrestrial Invertebrates - Purple Copper Butterfly)

Simon says that he is an ecologist who is fascinated with the processes occurring within and between ecological assemblages. He is particularly interested in post-disturbance ecological trajectories, even though he is not sure what that means. He's co-authored several recovery plans, including that for the Purple Copper Butterfly, and has enjoyed engaging the community in activities to learn about the species and to assist in its conservation.

Roger Lembit (Vegetation)

Roger has been working as an Ecological Consultant for over 20 years. He was one of the botanists contracted to undertake the Cumberland Plain Vegetation Mapping Project. He prefers to spend time in the field, but

occasionally ventures into somewhat more alien habitats.

Dr Robert Close (Koalas)

Robert started marsupial studies with a PhD project on why bandicoots lose a sex chromosome, then studied the taxonomy of bandicoots and rock wallabies. He then spent a year in the Galapagos Islands before returning to Australia where he studied reproduction of kowaris for a year before returning to Macquarie to study the taxonomy of rock wallabies and the genetics of hybrids. He came to Campbelltown in 1987 and has been studying local koalas and other fauna since 1990.

Catherine Price (NPWS requirements)

Catherine is a project officer within the Biodiversity Management Unit who has been involved in the preparation of the Accreditation Scheme for consultants and the Survey Guidelines.

Graham Wilson (NPWS requirements)

Graham is the Manager of the Biodiversity Management Unit within the Department of Environment and Conservation (formerly the National Parks and Wildlife Service). The Biodiversity Management Unit coordinates the implementation of the Threatened Species Conservation Act across NSW, developing and implementing legislative and operational policy and coordinating

statewide recovery programs. Most recently, the Biodiversity Management Unit has been involved in the reforms to the Threatened Species Conservation Act and their main task will now be implementing the new changes to the Act.

Amanda Paul (ACEC)

Amanda is a veterinarian, having graduated from Sydney University in 1979. Earlier this year she was awarded membership of the Australian College of Veterinary Scientists in Animal Welfare and has worked as part of DPI's Animal Welfare Unit since 1995. Apart from being Executive Officer of the Director-General's Animal Care and Ethics Committee, she is an inspector under the Animal Research Act and the Unit's contact for livestock welfare issues. She is also responsible for the Department's internal training in animal welfare.

We would like to thank all of these speakers for their excellent presentations and for their co-operation during the conference preparation and the compilation of the Proceedings CD. We are presently organising bulk production of CDs and the printing of a cover.

Danny Wotherspoon

The Ehrharta Fetish

Background

Ehrharta or Veldtgrass is a native of South Africa but the genus has a world-wide distribution. There are (4) species in Australia, which Harden (1993)¹ has described as 'naturalised' in all States except the Northern Territory. *Ehrharta calycina* is useful as a pasture grass on sandy dry soils, while *E. villosa* is commonly used as a binder on sand dunes. Two (2) species are known as 'weeds' in Sydney bushland - *E. longifolia* (an annual) and *E. erecta* (a perennial).

Recently, the NSW Scientific Committee has seen fit to include *E. erecta* (the perennial species) as one of a group of exotic perennial grasses nominated as a 'Key Threatening Process' under the NSW Threatened Species Conservation Act 1995. A 'Key Threatening Process' is defined in the Act as a process that "threatens, or could threaten, the survival or evolutionary development of species, populations or ecological communities".

Urban Bushland Management Consultants (UBMC) wrote to the Chairman of the Scientific Committee Assoc Prof Paul Adam asking why the Committee decided to identify *E. erecta* as a 'species of concern', and asking if there were any studies to support

such as listing. Professor Adam has answered that although there is no published literature, and no known studies on the competitive nature or threat to native plant communities posed by *E. erecta*, the Committee decided to include the species on the list 'as a precaution'.

While the use of the Precautionary Principle is certainly a valid approach in conservation assessment and applied ecology, UBMC questions the wisdom and the practicality of listing *E. erecta* alongside a range of aggressive exotic grasses which have been studied extensively, and whose impacts on agriculture and the environment are well known - species such as *Nassella neesiana* (Chilean Needlegrass), *Nassella trichotoma* (Serrated Tussock), *Hyparrhenia hirta* (Coolatai Grass) and *Cortaderia* spp (Pampas Grasses). Why do we say this?

Discussion of Issues

First - it seems that many people cannot distinguish between a perennial and an annual grass, nor are they capable of or willing to take the time to assess species-specific impacts on the bushland environment. This could result in Ehrharta species being immediately elevated to the position of 'Enemy Number 1' by some council's natural resources managers, without any further thought as to whether this is appropriate or not.

Second - by elevating all Ehrharta species to #1, what then happens about the real problem weeds in Sydney bushland: species like Privet, Ochna, Madeira vine, Balloon vine, Tradescantia and the Asparagus species? The answer is - they get demoted, and in many instances weed control programs are being curtailed or severely reduced so that the Ehrharta can be hand weeded - time after time after time, and again.

Third - think what you are up against and do you have any chance of winning? Ehrharta favours moist shaded sites (like Privet and Tradescantia) and it occurs in virtually all bushland reserves, in wastelands, along roadsides and firetrails, in parks, and in private gardens. It seeds prolifically for much of the year. The seed germinates on the soil surface, so if you pull Ehrharta out by hand, the seed in the soil comes to the surface.

The time span from seed to seeding adult is a matter of weeks. If the team visits a site monthly, it is entirely possible that they will be hand weeding a new generation each time they visit. Is this a sensible use of resources? And - like all grass seeds, Ehrharta seeds are spread by wind, water, on animal feathers or fur, on vehicles and on your socks! Seeds are viable for years and years, so the seed will always be in the soil, waiting for the chance to reach the light. Realistically, the best you can do is try to

¹ Flora of New South Wales, Vol 4, pp 652-653.

suppress seed germination by mulching or over-sowing with another more aggressive ground cover to smother new seedlings – but, when the soil is bared or disturbed, up it will come once again.

Fourth – the suppression factor. Because Ehrharta is bright green, clearly visible and looks ‘messy’ with its many floppy seed heads, many regenerators think that it must be a really serious weed and that it simply must suppress all other (native) plant growth. Have you ever really looked into a dense patch of Ehrharta? What do you see – nothing but Ehrharta or are there seedlings growing out of the Ehrharta patch? Realistically, it’s probably the latter – a mixture of weed and native seedlings.

So, does Ehrharta really suppress plant growth to the extent that current thinking seems to indicate? Should you be removing Ehrharta, woody weeds or vines to give you ‘more bang for your buck’?

Fifth – personal preference or just gut reaction. Everyone has their own pet ‘worst weed’: mine are Madeira vine and Ground Asparagus. But, can you give a sound reason for your dislike? If you are honest, is it just because it looks messy, or because the darned thing is always there, messing up your neatly regenerated patch of bush? In the examples I have chosen, the factors I considered were i) the ability of the species to invade undisturbed bushland ii) ability to survive long-term

when the bushland structure is restored, and iii) ability to change or modify the ecosystem and make it unsuitable for other species. Does Ehrharta do any or all of these things? Even if the answer is ‘yes’ to any of the above, can you realistically do anything about it?

It is worth knowing that as soon as a Key Threatening Process has been declared under the NSW Threatened Species Conservation Act, it must be taken into account when undertaking an assessment of significance under the Environmental Planning & Assessment Act 1979 (commonly referred to as the Eight-part Test) for development applications. Also, once a Key Threatening Process has been listed, the NPWS unit of the DEC must prepare a Threat Abatement Plan. These Plans outline the management activities required to minimise the threat, delegate responsibilities to appropriate public authorities, and outline the timetable for implementation of the Plan. These Threat Abatement Plans are generally required to be developed within 3 years of the declaration of a Key Threatening Process. Once finalised, the developed strategies must be implemented by the authorities which have been delegated responsibility.

At present, no Threat Abatement Plan has been developed for the invasion of native plant communities by

exotic perennial grasses. Therefore, until such a Threat Abatement Plan has been implemented, there are no requirements under the Threatened Species Conservation Act to preferentially remove this species.

Conclusions:

The trend in some council areas to focus on control of all Ehrharta species to the exclusion of other keystone weeds (or ecosystem modifiers) is of serious concern. Not only are resources wasted dealing with the same weed in the same place session after session, but other more serious weed problems are being side-lined for lack of resources.

In order to get some hard data which can be used to prioritise weeding tasks in bushland reserves, UBMC has decided to set up some trials to assess the competitive nature of Ehrharta.

We are currently designing an experimental methodology, which we hope to keep simple and easily repeatable. In this way, perhaps other bush regenerators and other companies can set up their own series of trials so that the industry can assemble some quantitative data rather than just continuing to rely on hearsay and someone’s personal preference.

Once the experimental design is completed, we will publish it in the Newsletter.

Judie Rawling

Life in the Trenches

The alarm shrilled in my ear, 4.30am! It was May 12 in Northern Queensland and day one on the gas pipeline. Only two days earlier I had been e-mailed the flight details to Mackay, from where I was driven for several hours in a westerly direction and deposited in a camp of several hundred people. It was here I joined Steve Wilson to carry out the duties of fauna officer.

A gas pipeline was being installed from Moranbah to Townsville, a distance of approximately 460km. The pipe would be lowered into a trench 1.4m deep and 60cm wide. At any one time there would be 40-50km of open trench. Our job was to rescue any fauna that had found it's way into this trench and relocate it a safe distance (usually 100-200m) away. As it was not possible to physically walk 50km of trench each day, a system of water soaked, sawdust filled hessian bags was devised to provide a refuge for animals (particularly nocturnal species) that were in the trench. The sacks were placed in pairs at the bottom of the trench about 200m apart. Ramps were installed every 500m which allowed stock, kangaroos and medium sized animals to find their way out.

So what did we find? In total 3292 individuals comprising 91 species.
Snakes: 800 individuals from 21 species

Lizards: 825 individuals from 33 species
Frogs: 1530 individuals from 18 species
Mammals: 139 individuals from 14 species
Turtles: 6 individuals from 3 species
Birds: 2 individuals from 2 species.

The most numerous snake was the Freshwater Snake or Keelback (*Tropidonophis mairii*) of which we removed 266. Three species of python were found, the Black-headed Python (*Aspidites melanocephalus*) 12 animals; the Spotted Python (*Antaresia maculosa*) 63 animals; and the Carpet Python (*Morelia spilota*) 2 animals. Elapids were plentiful but mainly the smaller nocturnal species such as Curl Snakes (*Suta suta*) 102 animals; and Carpentaria Snakes (*Cryptophis boschmai*) 83 animals. One of the surprises was the finding of the vulnerable Ornamental Snake (*Denisonia maculata*). We removed 102 of these from the trench. Perhaps more a case of hard to find than threatened. Of the diurnal elapids the Black Whipsnake (*Demansia vestigiata*) and Eastern Brown Snake (*Pseudonaja textilis*) were the most frequently encountered.

Although we recorded 13 species of skink none were present in big numbers. Geckos were by far the most abundant lizard and individuals comprising 10 species were found, with the Box-patterned gecko (*Diplodactylus steindachneri*)

being the most numerous with 215 individuals. The most common dragon was the Tommy Round-head (*Diporiphora australis*) with 116 individuals.

Frogs were very numerous which was perhaps surprising given that we only had one good rain fall early in the project. The Green Tree Frog (*Litoria caerulea*) was the most numerous at 540 individuals; the Desert Tree Frog (*Litoria rubella*) at 383; the Ornate Burrowing Frog (*Limnodynastes ornatus*) at 168, and the Eastern Snapping Frog (*Cyclorana novaehollandiae*) at 143. Some interesting species were recorded such as the Northern Spadefoot Toad (*Notaden melanoscaphus*), Holy Cross Frog (*Notaden bennettii*) and Water-holding Frog (*Cyclorana platycephala*) but only in ones and twos. Cane Toads (*Bufo marinus*) were in plague proportions in some areas of the line with 40-50 under a sack. This was one species that did not get rescued and relocated.

Mammals were a mixed bag with 58 Striped-faced Dunnarts (*Sminthopsis macroura*) and 43 Long-tailed Planigale (*Planigale ingrami*) the most numerous. Six Echidnas (*Tachyglossus aculeatus*) were removed (very carefully) and five Rufous Bettongs (*Aepyprymnus rufescens*).

Turtles were a surprise especially three species. All were of the genus *Chelodina* or snake-necked turtles, which

do have a reputation for wandering around the countryside. This is obviously what these guys were doing when they blundered into the trench.

Some interesting invertebrates were found. The Giant Burrowing Cockroach (*Macropanesthia rhinoceros*) was common in just a few areas along the pipeline. These cockroaches, reputed to be the heaviest in the world, were about 8cm long, built like tanks and lived in deep burrows in the open forest. They were found in big numbers in the trench but only over a few days. The Freshwater Crab (*Holthuisana transversa*) was encountered on several occasions. A dry trench seemed an unlikely place to find a crab, but you have to expect the unexpected in this sort of job. The other bizarre creature we found was a Whistling Spider (*Selenocosmia* sp.). These were truly great spiders with legs like pipe cleaners and a body that covered my hand. They seemed very prone to dehydration and we went to a lot of trouble to rescue and relocate them. They just had a lot of character.

Three animals that we expected to find during the job were the Yellow-spotted Goanna (*Varanus panoptes*), the Mulga or King Brown Snake (*Pseudechis australis*) and the Taipan (*Oxyuranus scutellatus*). The Yellow-spotted Goanna and the Mulga Snake both include frogs in their diet. Given the number of Cane

Toads in the region it is possible that both species are locally extinct as we recorded neither of these. We caught one Taipan on a road but none were found in the trench. Too shy and retiring perhaps.

A complete list of all animals removed with dates and coordinates was passed to the Qld Dept of Conservation for their database. Any animals found dead (ca 25) were preserved and donated to the Queensland Museum as voucher specimens. These pipeline trenches offer a unique opportunity to sample fauna in a transect through varying habitats and for hundreds of kilometers.

Gerry Swan

To Survey or not to Survey?

To survey or not to survey? Or to put it more plainly, what survey techniques should I employ to satisfactorily meet legislative requirements, client expectations, scientific credibility and cost effectiveness?

It's a question we all face with every job, from the preliminary stages of costing for a quote, to the actual flora and fauna assessment. At every level, we determine via a range of factors such as scientific, economic and "other" influences (eg political sensitivity of the project, nature of the client, and how

badly you need the work), what methods we will employ and what level of effort we will employ. Depending on what methods you choose to use, an assessment can vary from a few hundred dollars, to tens of thousands of dollars before you've even put fingers to a keyboard to prepare the report. Aside from the consequences of what you may or may not find could have for the viability of the proposal, the cost of your assessment is probably the next major concern to the client.

For our industry, which is currently subject to limited regulation and agreed set of standards for survey and assessment, this provides a market for consultants to propose surveys that may be more or less intensive or thorough than others. In some situations, this works fine eg a consultant with a high level of experience with limited effort can produce the same level of results that a person with limited experience can. In other situations, and sadly all too often however, it results in less than adequate/thorough surveys being undertaken, and underestimation of a site's ecological significance. One such survey method which causes much discussion in our industry is habitat evaluation which has its uses and abuses, and has been subject to recent discussion in the ECA forum.

In my view, habitat evaluation has its place, and is useful in situations where the habitat is minimal/highly modified; the

proposal will have minimal if any change to the present situation; and where there is minimal if any threatened species potential. This situation is inferred to in the NPWS Circular #2 which says that a generic 8 Part Test may be applied to a site in such a situation where no significant habitats or threatened species occur or will be affected.

However, habitat evaluation has its limitations as it depends on:

1. **Habitat Evaluation Survey techniques employed.**

Does the person employ repetitive quantitative or qualitative habitat evaluation techniques or simply a broad description.

2. **Personal experience and knowledge** of the person undertaking the assessment of the species within the region/locality that may occur in similar habitat.

3. **Exceptions to the rule.**

Threatened species will occur sometimes where you least expect them due to disturbance history, lack of preferred habitat components, or habitat not described in the literature as potential habitat.

Personal examples: A population of Phascogales in a patch of immature regrowth with no clearly discernible hollows, separated from the nearest extent of forest by about 1km of rural-residential subdivision (neighbours also reported a Stephens

Banded Snake and Quoll); *Melaleuca groveana* in a former banana plantation; Wallum Froglets on the side of a hill; Squirrel Gliders where there are no Banksias or Acacias; Eastern Chestnut Mouse and Common Planigale in a slashed paddock; and many, many more...

I find these factors, especially the latter a major limitation to the credibility of some assessments I've reviewed relying wholly on habitat evaluation.

Then of course, those of us performing more intense survey and assessments (which of course, cost more to produce) find ourselves being undercut by competitors undertaking less intensive assessments. Often such assessments are made by persons with no or inadequate qualifications and/or experience (eg arborists which seem to be bane of some members in Sydney) but also by some large established firms as well, who use habitat evaluation to produce very cheap (and hence competitive) assessments. This points to the urgent need for standardisation of surveys, survey techniques and survey effort, and accreditation of consultants.

Regardless of the chosen survey methodology, as pointed out in articles in the ECA Newsletter by our present and past ECA presidents, Dr Martin Denny and Dr Andrew Smith, the

survey and assessment must be based on proven and replicable scientific methods and scientific principles in order to provide sound impact assessment.

If you are doing proper qualitative and quantitative habitat evaluation, then your assessment should be relatively sound (depending of course, on your personal interpretations of data, references, consideration of the Principle of Uncertainty, etc, and the 3 factors listed above). If you are making nothing more than superficial descriptions and "guesstimates", you are taking a risk.

There are two critical reasons to undertake proper survey (whether habitat evaluation or other methods) and the subsequent assessment based on scientific methodology and principles.

The first is for adequate and thorough **Impact Assessment**. Quite simply, the type of survey methods you choose to do are the key basis of your assessment, thus if these are flawed, then so is your impact assessment regardless of your other expertise and knowledge. You may not know what's actually there unless you have a good look. Points 2 and 3 above can have a significant bearing on your assessment (things can turn up where according to your pile of references, they shouldn't), which can have a major bearing on the other critical reason for proper scientific

assessment, that is the Principle of Uncertainty. While you may have a lot of experience and a library of scientific references, you can't always allow for the unexpected which you may pick up by physically surveying the site. Additionally, how do you get the experience and hence a broad knowledge base, unless you do the survey work in a variety of situations?

To make a valid *scientific* judgement, you need to have *scientific* data, not assumptions and guesses. It's also a fact that the references are not perfect, and ecology is an evolving science. What is accepted now may be thrown out tomorrow – you find this out when you undertake scientific assessment of a site via direct survey and find things you don't expect based on previous experience and literature review. You find yourself providing the *new* scientific information. For example, if you are still labouring under the impression that Phascogales are only found in open forest with sparse groundcover with females in exclusive home ranges 20-70ha (Strahan 2000), come to Kempsey and I'll show you Phascogales in wet sclerophyll and Melaleuca swamp forest, and packed like sardines into small remnants with virtually no hollows. Things occur in places you least expect them.

The second reason to undertake a proper survey is to provide the client (as

implied in the ECA Code of Ethics) with a **credible and defensible** report. If you haven't got the facts and figures to argue in court, you will be undone by someone who has them (based on my experience, usually someone with more experience/knowledge and who probably actually surveyed the site or one similar).

In this regard, in terms of service to the client, I would argue that choosing to survey a site to validate your habitat evaluation may be doing the client the favour – saving them tens of thousands in court costs, and perhaps millions in lost earnings if their development consent is refused. Having your report rejected on the basis of inadequate survey effort may be adverse to your Professional Indemnity premiums.

Overall though, to undertake proper impact assessment, one must maximise the certainty and reduce the uncertainty/unpredictable, as per the Principle of Uncertainty (otherwise you will produce either a very conservative assessment which may be unnecessarily restrictive or on the other hand, inadequate). This is not only out of duty to the client, but also in respect of the obligations under the Acts. Poor assessments can have significant impacts eg the loss of a viable population, the severance of a key link, and the fragmentation of a key

area of habitat. Sadly, this has happened in some instances with drastic long term results, and surely, we will see it again, and again, perhaps until some effective standardisation for survey and accreditation of consultants is implemented, and this leads to my next point.

If we are all using the same methods, in the same situations, and the same effort, shouldn't be we getting at least roughly the same results (in the sense of the phrase)? Isn't this one of the fundamental principles of the scientific method?

It's obvious we are not, hence we have the situation above: poor assessments, long term consequences; and this debate.

Just because a proposal may not require say, clearing of vegetation does not mean it may not have significant ecological impacts. It's easy to point out that the loss of tree hollows and draining of a wetland are likely to have a significant impact, and that the particular subject proposal may not do this, hence is not likely to have a significant impact, but one forgets to acknowledge that we are the one species that modifies our environment to suit us. What happens to the rest of the land after the house/subdivision is built? You have to allow not only for the establishment of that house say in that clearing on an otherwise forested block, but the long term secondary impacts associated with human presence. There

are the obvious ones of road kill risk, erosion impacts and pet predation, but also the subtle ones of non-regulated prescription burning (which would qualify as High Frequency Fire hence a Key Threatening Process), and anthropogenic impacts (such as artificial lighting, noise and activity, weed invasion, etc) which may not be readily quantifiable, yet in the long term (ie the evolutionary potential of the species, or at least the next 100yrs) have significant consequences on a species/population not considered to occur in say, the remnant of forest on the remainder of the land, such as the Green-thighed Frog. Hence, is adequate impact assessment being done?

Its interesting to refer back to Circular #2 and note that under 3.3.2 *Level of Assessment*, it states " *it is not expected that the 8 Part Test should produce detailed analysis and evaluation of the potential effects of a proposal on threatened species. This analysis and evaluation will need to be obtained if the decision is made to proceed to the next stage ie an SIS*". Hence it could be argued on this basis that any intensive survey at this stage is not required, however, in section 3.3.3 regarding adequacy of 8 Part Tests, it states that if the consent authority considered the factors are not assessed adequately, additional information may be requested.

If you are getting your report sent back asking for more information, then it may be

due to the fact that inadequate survey has been undertaken. Sometimes these comments are unjustified and measure the reviewers experience – I well remember trapping a horse paddock with three trees some years ago due to a NPWS request. However, at other times when it seems that the consultant has done nothing more than take a lovely stroll one sunny afternoon over the site and typed up the report the same day, such requirements are justified.

Its almost ironic that the original interpretation of the intention of the 8 Part Test was to be a quick checklist overview, and then determine if an SIS was required. The level of assessment required by consent authorities is due to the fact we have been pressured into (thanks to L&E cases, SIS refusals and endless brawls between consent authorities and consultants) a situation where extensive study is usually done to provide enough information to justify statements made in the 8 Part Tests to avoid (to some it seems, at all costs) the requirement of an SIS, perhaps due to the concurrence consent role the NPWS/DEC have at this point and increased difficulty of DA approval.

So in a sense, the argument for and against the level of survey effort considered sufficient to undertake adequate impact assessment becomes circular. Should we use a conservative assessment methodology to

satisfy the Principle of Uncertainty (which most consent authorities especially Council are required to consider in their decisions) and assume the worst case scenario, and then do SIS's for most jobs with the level of effort we seem to be expected to do for an 8 Part Test; or do as we do now where we generally try to justify to the maximum extent the confidence in our 8 Part Tests that an SIS is/not required via intensive survey and comprehensive literature review? A perplexing question, yet in our experience, the market seems to drive the latter.

Back to the question of the test of a consultant's credibility, a CV is also no guarantee of professionalism or credibility. There are some big companies out there and consultants who have been around for 20yrs or more, and their work is not professional or credible (often due to the fact that they use inexperienced staff at the field level). It is the nature of the industry (as it is a commercial industry) that there are a spectrum of consultants with varying philosophies, as evidenced by the range of views and comments thrown into the ECA forum. Hence there is and probably always will be a supportive market for all types of consultants, as anyone can collect data, but its how you use it that counts.

The true judgement of a consultant in reality at the moment is best judged by the opinions of those who make

decisions based on our reports ie Council and State Govt department officials (with the exception of those who have this position and have no idea what they are reading and cause us much stress). Drop a name in front of them and you will see the acid test in action.

It's been and will continue to be a long and bumpy road to standardisation of survey techniques and effort in regards to ecological impact assessment, and accreditation of consultants. These are interrelated – that fact is proven in the acid test described above, and proven week in week out in the L&E Court. This is also appreciated by the DEC as they prepare their guidelines.

The argument over whether or not proper and adequate use of scientific methodology and principles have been implemented is also proven in the L&E Court as well. When it comes down to the “who's right” and “who's wrong”, this is the true test.

So overall, in my view, its hard to argue that surveying a site (if deemed required for a range of reasons in your personal judgement) will not lead to a more credible, proper and defensible impact assessment, than merely doing a superficial habitat evaluation as there are always limitations to knowledge (ie there are always exceptions), and the consequences of poor assessment have significant and unacceptable consequences. If the latter is

occurring, and its your doing, then you are not doing proper EIA. If you are using proper scientific method and principles, you are more likely to demonstrate your professionalism and credibility. If not, you run the risk of proving your incompetence.

These are the choices we all make, in the way we choose to practice in our fields, and run our businesses. Many of the things I've discussed above have come from trial and errors through my personal experience and observations of others whose reports I've read and reviewed.

To survey or not survey to assist the scientific credibility of your impact assessment?

Your choice, and your risk.

Jason Berrigan

Bring out your Dead

Road killed reptiles wanted.

Two PhD students need fresh roadkills for research. Danny Wotherspoon can use lizards, especially Bearded Dragons, and snakes to provide data for his research on vegetation habitat for reptiles, and parasite loads as that affects population viability. Danny will then pass the bodies to a second student for general reptile parasite research.

Put the body into a freezer bag, labelled with location, date, collector, and adjacent vegetation type if possible. Keep it in the freezer and let Danny know at wilderness@mountains.net.au We can arrange a collection somehow.

ECA Web Page

The ECA web page is at www.ecansw.org.au so go and have a look, then let others who might be interested know about it. The site contains some information on the history of the ECA and why it was formed, and a Mission Statement on what the ECA stands for. As well the Office Bearers are listed as well as the Committees and their members. There are details on how to join with the various categories of membership, and a list of current members with their contact details.