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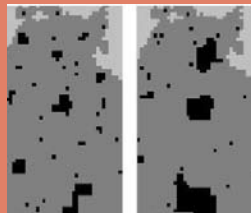
from the Deputy Director



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1. Do-it-yourself working groups

Do your science a favour, maybe you should plan a targeted AEDA working group.

What's the point in bringing together the best researchers, agency and NGO practitioners to discuss and work on a specific environmental decision-making issue? After all, everyone's busy just getting through their normal day. Why go out of your way to do something extra?

Well, if you think it through, the value in putting together such a working group is enormous from any number of perspectives. Targeted working groups are an excellent forum for discussing and developing ideas, and for identifying research priorities that are novel and relevant to the needs of conservation managers and practitioners. They're also excellent for planning and implementing the appropriate research, and building networks that can potentially support that research over time.

The format we have used for AEDA working groups so far allows for a level of engagement and information sharing that helps to identify areas of mutual interest (and avoid replication), while also providing for dedicated time to work on particular problems away from the usual distractions of your office. I think everyone who's been involved in a working group so far would acknowledge that the time spent on them has been well worth while (and enjoyable, too).

Working groups to date have served to introduce AEDA members and collaborators to the general themes of spatial prioritisation, optimal monitoring, and some other more specific issues (such as the value of landscape restoration). We're now ready to build on the introductory working groups with a series of targeted workshops dedicated to particular issues or problems, allowing more detailed or focused work to take place.

If you think that your research could potentially benefit from such a working group, and the proposed working group fits within the themes of AEDA, please feel free to contact Hugh in Brisbane, David Lindenmayer in Canberra or myself in Melbourne to discuss your idea.

Information about the workshops that have taken place, and AEDA CERF themes and research priorities can be found at our website: www.aeda.edu.au

I'd also like to emphasise that while the returns on the workshops are high relative to the effort required to organise them (especially a small targeted meeting). We have people and processes in place to make the process as painless as possible (thanks to the tireless work and professionalism of Karen Hurley, Dolla Butross, Jacqui Hansen, Sam Goudge and Kathy

For more information about AEDA, please visit our website at

www.aeda.edu.au/

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Ngondi). That's one of the reasons AEDA was set up. We'll do the leg work, cover the costs and organise the paper work. That means you can focus on developing your science and building the network that will add value to your research.

So, do your science a favour – consider running your own workshop while the opportunity is available.

Brendan Wintle
Deputy Director, AEDA
brendanw@unimelb.edu.au

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2. And what's a workshop without a workshop report?

Putting a bit of effort into the report can make a difference

One of the reasons people sometimes shy away from running their own workshops is because they know they'll have to write a workshop report afterwards – "I hate writing workshop reports!" is the common refrain.

Why is that? Maybe because the workshop itself is usually held in a place removed from the daily grind. You're closeted away with interesting people engaged in inspiring discussions and setting aspirational targets. Yes, it's work, but it's work that's worth making an effort for.

Then it's back to office and real life, and the thought of writing that follow-up workshop report is depressing, one more thing to bring you down. And maybe because that report is perceived as being just another piece of bureaucracy, required more to tick a box than to change the world, the notion of putting it together is simply too much to bear.

No-one's denying there's some truth in this. Resources



The Optimal Monitoring Workshop at Freycinet in August will have many legacies.

to run workshops (ie, money) comes with obligations, and one of those is to record what happened at the workshops. But the process is so much more than just ticking a box; or it can be it that's how you choose to make it.

AEDA's workshops and working groups are not make-work exercises to pull a bit of funding. Brendan gives a good list of reasons in his editorial as to why you should be involved, but the bottom line is simply this – workshops aim to add value to your research. And the workshop report is part of that process.

The real value of the report is to summarise what's been and what will follow. It's the touchstone for participants reminding them of their responsibilities and the statement of what was achieved for non-participants. They're the signpost telling people where to get more information and the symbol of a new relationship in the process of developing.

So, what did the Freycinet-monitoring report do for you? There's been a couple of reports on this meeting so far. I gave a pre-report report in News #5 in an attempt to set the scene. Brendan gave a more formal discussion in News #6 (both issues are available at our website if you missed them first time around, see the News page). And now the final report is sitting on our events page at the AEDA website. In it you'll see that 13 sub working groups split off in the second half of the main workshop to develop 13 interesting ideas. You'll see who was involved in each group, what their discussions came to, what products will flow on from these meetings and who to contact if you want more information. There's a list of these sub groups following this article.

What you don't see in the report is the goodwill and feedback we received from several of the non-AEDA participants at the workshop. Here are some examples.

Dr Dorian Moro, an ecologist working with Chevron Australia who is devising monitoring protocols for Barrow Island (WA) told us that the "workshop was a breath of fresh air for my traditional line of thinking about ecological monitoring" and "it will change the way I think and apply environmental monitoring and think about issues of uncertainty in monitoring."

Dr Mark Antos, an ecologist with Parks Victoria charged with assessing the condition of the State's parks also found the workshop very valuable. He's looking forward to following through on it, too. "I'll be very keen to finish the paper on organisational learning we started with the other participants because the findings are of key importance to my organisation."

Dr Menna Jones, a research fellow at the University of Tasmania and a leading expert on Devil Facial Tumour Disease, says she "learnt a lot from exposure to mathematical rigour in problem solving", while Professor Ted Lefroy, Director of the Landscape Logic CERF Hub says the experience "introduced me to some new concepts for which I am grateful".

Dr Jan Carey, a research fellow at the University of Melbourne who is working with Parks Victoria on monitoring for invasive marine pests was also enthusiastic about the meeting and says some of the workshop outputs will be incorporated into a new project she's working on with Parks Vic.

And Dorian, Mark, Menna, Ted, Jan and several other (non-AEDA) participants expressed a desire to keep in touch with us through AEDA News so they're now part of our network. And the workshop report is part of that network-building effort.

So, we hear you – we all hate writing workshop reports. However, don't think they're not important. Next time you have this unenviable duty, attack it as if it matters.

David Salt
Knowledge Broker
Canberra Node, AEDA

The 13 subgroups of Freycinet

1. How much effort should be invested in monitoring NE Tasmanian devils to see if the species can persist with the disease or recover from the disease?

How long, and with what intensity should the DPIW monitor the declining NE Tasmania devil population?

2 Combining monitoring methods to identify marine pest outbreak.

There are many different ways to detect a new invader. We constructed a decision model to help the park manager choose the best combination of detection methods when many aspects of this problem are uncertain.



The European fanworm has invaded many Australian harbours. What's the best combination of detection methods to use for a pest where there's a high degree of uncertainty?

3. Maximising the efficiency of mitigation measures through optimal learning about their effectiveness: DFTD culling trials.

Rapid decline in the number of Tasmanian devils has required an urgent response. But such urgency leaves little time to learn the best thing to do in the face of this completely novel disease. We are building a framework to evaluate methods for disease suppression, taking into account both the need to protect the population in the short term, but also learn quickly so we can control the disease and conserve the species in the long term.

4. Efficient monitoring of the unknown unknowns

We build a model that allows us to explore allocation

of investment to background surveillance versus focussed monitoring of the environment given different frequencies and costs of unanticipated threats.

5. Locating a disease front with imperfect detectors.

Funds have been allocated to improve knowledge of the disease front position, but the decision of where to focus intensive checks for DFTD presence is complex.

6. How intensively should we monitor state-wide Tasmanian devil population trends to support our management planning?

Devil population trends have a significant effect on resource allocation and management choices in fighting DFTD. Choosing the wrong management option, such as reintroduction into an area where DFTD is still present, could be very costly. The cost of an appropriate level of monitoring to distinguish between these trends will be balanced by the benefit of avoiding such an error.

7. Optimal Quarantine and Surveillance

How much money should an organisation spend on stopping rats from invading Barrow Island? How much effort should we put into checking that DFTD has not entered one of our disease free populations? We have solved the general problem of how much to spend on quarantine and surveillance and we illustrate the solution using a case study.

7a) Which is the best strategy for establishing wild insurance populations given risks of disease invasion, costs of eradication, quarantine and surveillance?

The highest priority response to the possible extinction risk for wild Tasmanian devils is to establish "insurance populations" in places that can be isolated from the disease. What is the optimal allocation of effort for different types of wild insurance populations?

8. Eradication of invasive species to protect island biodiversity

In this project we will develop a prioritization system which explicitly considers socio-political constraints, in addition to direct economic costs and biodiversity benefits of eradications, for finding the greatest biodiversity return on financial investments in conservation.

9. Using species lists to detecting changes in abundance

Simple lists of species are probably the most abundant form of biodiversity information available. We are exploring the potential for the wider use of approaches using species lists to monitor long-term trends of species.

10. Are 'learning organisations' the missing ingredient for successful long-term, environmental monitoring?

In this subgroup we define a learning organisation in the context of monitoring, describe the development of a coherent vision for active adaptive management and outline the key characteristics of an organisation that will be able to support such a vision. We explore the applicability of this model to the 54 natural resource management regional bodies that have recently been established across Australia with the task of establishing monitoring and evaluation strategies.

AEDA News

The 13 Subgroups of Freycinet *continued*

11. Endangered species recovery: when to manage and when to monitor

Here we formulate a problem that clarifies when to act and when to monitor with the goal of minimizing the net expected cost.

12. Monitoring and reporting on the performance on investments in vegetation restoration

This project aims to utilize decision theory to identify a coherent approach to measuring vegetation restoration success and to assist investors evaluate the relative performance of their investments.

13. Robust replication of biological surveys

Decisions about the level of survey effort required for biological surveys require decisions on the number of sites and the number of replicates per site. For a given budget of resources and time, allocating more replicates to each site reduces the number of sites that can be surveyed. We examine how to design surveys that are robust to uncertainty in the parameter values.

For more details on each of these working subgroups, please visit the AEDA Events page and click on past events and then Optimal and Robust Monitoring.

<http://www.aeda.edu.au/events>

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3. Up and coming workshops

Marxan, Bayesian analysis and communication

After expending so much thought on running your own workshops (and dealing with those pesky follow up reports), now it's time to put your feet up and consider three AEDA-supported workshops aimed at self improvement (in terms of adding value to your conservation science). There's one systematic conservation planning, one on Bayesian methods for your ecology, and one on communicating to influence science policy.

Introducing MARXAN

A two day course on the application of MARXAN to Systematic Conservation Planning. The course is being run in November and repeated in December.

21-22 November 2007
5-6 December 2007

MARXAN is a software program used to support the design of marine and terrestrial reserves worldwide. Using MARXAN, conservation planners can identify an efficient system of conservation sites that include a suite of biodiversity targets at a minimal cost. MARXAN provides a unique method for designing reserves that is systematic and repeatable.

It is the most utilized conservation planning tool worldwide; over 60 countries, 1100 users, and 600 organizations use MARXAN to support the design of

terrestrial and marine reserves. For example, it has been used to help zone the Great Barrier Marine Park, design marine reserves in the Channel Islands National Marine Sanctuary, and set spatial priorities in the Romanian Carpathians to protect large carnivores.

Enrolments for Introducing MARXAN are now being taken. The course will be run in Brisbane in November and December this year. Registration fees are \$600 per person for the whole course (special rates apply to students and NGOs). This includes lunch, morning and afternoon tea.

This hands-on course will provide participants with the basic knowledge and skills necessary to use MARXAN in a conservation planning exercise. During the 2-day course, we will cover:

- Key concepts in systematic conservation planning
- Creation of planning units
- Creating the essential MARXAN input files
- Parameter setting in MARXAN
- Understanding and using MARXAN results

The course time will be split between lecture (~30%) and hands-on exercises (~70%). Each participant will have access to a computer equipped with MARXAN and ArcGIS.

Numbers must be strictly limited to 30 people per course, so please let us know if you're interested as soon as possible.

The full course details are at <http://www.uq.edu.au/ecology/?page=61726&s=40c362e80d199350a882c573da5f7c22>

Here a few comments from past participants:

"good intro for a new Marxan user – useful for managers to understand inputs/outputs and limitations"

"very good presenters and the copies of how to use Marxan are very well explained"

"Presenters were great, very knowledgeable and always had an answer to the often tough questions – thanks!"

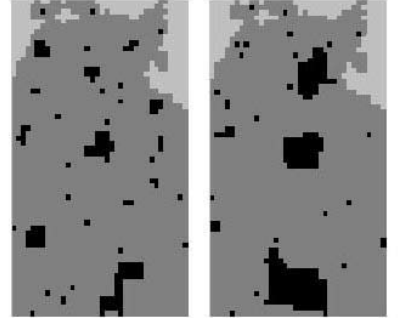
More info: Karen Hurley <k.hurley@uq.edu.au>

Science Policy Communication Workshop

16 / 19 / 20 November 2007

November 16: Postdoctoral researchers
November 19: Post-graduate students
November 20: Non-academic agencies (government and non-government)

This science communication workshop will help scientists and practitioners learn and practice the skills needed to engage and communicate with a variety of audiences, including other scientists, the public, policymakers and journalists. Participants will gain an understanding of the characteristics of



effective communication. The workshop will focus on communicating key messages about the participants' work.

The instructor will help participants identify and develop appropriate and specific messages that they want to clearly communicate. Interactive exercises will help participants learn and practice communication skills in a supportive environment. Through role-playing activities, participants will practice talking about their research to other scientists, the public, policymakers and journalists. Participants will gain positive and constructive feedback from instructor and peers.

The workshop will be facilitated by Dr Satie Airamé, Policy Coordinator for PISCO (Partnership for Interdisciplinary Studies of Coastal Oceans, see www.piscoweb.org), based at the University of California, Santa Barbara. She will also share her stories and insights about communicating science to a variety of audiences.

Participants will be expected to complete preparatory work and participate in all group activities, including practice talks and role-playing. Participants will be asked to speak in front of a small group of approximately 10 students at least 2 times during the workshop, both with and without advance preparation. The instructor will create and maintain a supportive environment so that students can learn and practice new skills.

Registration fees are currently being determined, however special rates will apply to students and NGOs and will include lunch, morning and afternoon tea. Numbers are strictly limited for each day, so if you would like to express your interest in attending, please contact Karen Hurley.

More info: Karen Hurley <k.hurley@uq.edu.au>

Bayesian Methods for Ecology - the Workshop

4/5 October 2007

Mick McCarthy and Brendan Wintle at the University of Melbourne run regular workshops on Bayesian Methods for Ecology. The next workshop will be co-hosted by AEDA and the Ecological Society of Australia, and will be held at the School of Botany, the University of Melbourne on 4th and 5th October 2007.



Mick McCarthy

There are a small number of places available for AEDA collaborators and members of the Ecological Society of Australia (which doesn't cost much to join if you are not already a member). Contact Mick if you're interested in attending.

The course introduces ecologists to the basics



Satie Airame

of Bayesian analyses, providing hands-on experience with conducting these analyses. You'll acquire some important skills relevant to applied environmental decision analysis. Bayesian methods combine prior information and the probabilities of obtaining the data under alternative hypotheses to obtain updated estimates of the evidence in favor of the hypotheses.

Course outline: <http://arcue.botany.unimelb.edu.au/workshopoutline.html>

PDF of slides from previous workshop: <http://arcue.botany.unimelb.edu.au/BayesWorkshopStAndrews.pdf>

Paper on using prior information in ecology: <http://arcue.botany.unimelb.edu.au/PriorInformation.pdf>

More info: Mick McCarthy <mamcca@unimelb.edu.au>

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3. Dilemma Corner

Damned if you do, damned if you don't - which way do you turn?

Saving a ghost woodpecker

Last month the US Fish and Wildlife Service issued a plan to find and save the ivory-billed woodpecker. Many critics, however, fear that the \$US 27 million plan will mean less money for conserving other endangered species.

Ivorybills (*Campephilus principalis*) were on the original
Continued next page



The ivory-billed woodpecker once ranged from east Texas to North Carolina. It was the largest woodpecker in North America, being slightly larger than the American Crow. Distinguishing characteristics of the Ivory-bill include its size, the all black crest of the female, and large patches of white seen as a shield of white on the lower back of perched birds. Another easy way of distinguishing Ivory-billed Woodpeckers is by their vocalizations. The Ivory-billed gives single or repeated "toots" that sound like a child's toy horn.

AEDA News

Saving a ghost woodpecker *continued*

federal list of endangered species in 1967. But here's the stinger, the last confirmed sighting of the large woodpeckers was in Louisiana in 1944!

In 2005, a group of ornithologists announced that it had evidence that at least one male was alive and flapping in Arkansas, a stunning claim that has attracted vigorous skepticism. Right after the announcement, the Fish and Wildlife Service convened experts to figure out how to help the species bounce back.

The 182-page plan offers a detailed list of activities that will cost \$27 million over 5 years. The main task is to expand the search for the birds, now done mainly by a few academics, volunteers, and state wildlife agencies. Another high priority is characterising the Ivorybills habitat and developing computer models to project a healthy population size.

While the decision has come under considerable fire, the Fish and Wildlife Service says that the evidence was strong enough to compel the agency to act.

Which poses the question, what type of evidence would you need to back this response?

See the full story in Science magazine at <http://www.sciencemag.org/cgi/content/full/317/5842/1158b?etoc>

Editor's note: This story was passed around on the UQ Spatial Ecology email list. It looked like a good catalyst for AEDA-type discussions so I've included it in AEDA News. If you have your own interesting tale to share in the dilemma corner (maybe one with more Australian relevance), or a response to this story, please send me an email.

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5. New publications by AEDA members

Lindenmayer DB, (2007) *On borrowed time: Australia's environmental crisis and what we must do about it*. Penguin, Australia.

On borrowed time has hit the streets

David Lindenmayer's latest book, *On borrowed time: Australia's Environmental Crisis and What We Must Do About It*, has just hit the streets – and this time it's personal.

"This is my 'grumpy old man's' book," he says, and it's his most impassioned plea to date. It's a call to arms to his fellow Australians that the time to act on the declining state of Australia's natural heritage is now. The opportunity to turn things around is rapidly disappearing.

He divides the book up along the lines of a Clint Eastwood western with sections on the good (Australia is a special and important place), the bad (we are squandering our natural heritage) and the ugly (failing to act will result in some terrible and irreversible consequences).

"It's a tragic and inescapable reality that our beautiful, unique country is rapidly unravelling before our eyes," David says in the introduction of the book. "If nothing

is done, within just a few decades Australia's natural heritage will be severely depleted. The effects will be catastrophic, affecting agriculture, tourism and our overall economy."

However, David argues that Australia does have the knowledge and resources to tackle our environmental problems. In the second part of the book he outlines a range of innovative solutions (including environmental levies and lotteries) that we can all be a part of. He doesn't shy away from the big issues and there are lengthy discussions on the issues of our growing population and levels of consumption and adapting to climate change.

More info: <http://www.penguin.com.au/lookinside/spotlight.cfm?SBN=9780143006961>

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6. Acknowledging the Smart Women of UQ

Smart Women use maths to fight weeds

Congratulations to Jennifer Finn, Nikki Sims, Megan Ward and Alice Yeates from the Ecology Centre at the University of Queensland, for being awarded the

Smart Women – Smart State Award for Postgraduate Students at a ceremony held on August 29 at the State Library of Queensland. The award acknowledges their work investigating the mechanisms behind costly and environmentally destructive weeds. Their nomination detailed the use of empirical research in conjunction with mathematical modelling, and their strong commitment to battling weed invasion using innovative research methods. Their research is supported by

The Smart Women – Smart State Awards shine the spotlight on women who are leading the way in science, engineering and information and communication technology.

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Funny end bit

'... the reason students have problems understanding hypothesis tests is that they may be trying to think.'

Deming (1975)

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That ends issue 8 of AEDA News. If you have news or views relating to AEDA or of interest to AEDA members, please send it to the editor, David Salt, dsalt@cres.anu.edu.au



(From left) UQ PhD students Alice Yeates, Megan Ward and Nikki Sims (Jennifer Finn is visiting Canada).