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**BULLETIN**  
of the  
**ECOLOGICAL SOCIETY OF AUSTRALIA**  
**INCORPORATED**

39: 2 June 2009



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INCORPORATED**

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Published by the Ecological Society of Australia Inc., PO Box 8250 Alice Springs NT 0871

ISSN 1320-548X

The Bulletin is printed by Bluestar Print, Fyshwick, ACT

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Cover Picture: Smoky Mouse *Pseudomys fumeus*. Ian McKenzie

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## EDITORIAL

Sue Murray-Jones, Hon. Bulletin Editor

I am writing this on the deck of a ship out in the middle of Spencer Gulf, in the Sir Joseph Banks Group of Islands. Apart from the iffy weather, it's a fabulous spot, and really interesting, ecologically speaking. Alas, this is the last in this series of Offshore Islands Trips for South Australia for the foreseeable future. These interesting combinations of pure research and natural history have been funded by the SA Research and Development Organisation and my own Department for Environment and Heritage, under the auspices of the Royal Society of SA; however, times change, budget cuts loom, and applied research rules. I have been privileged to be both an organiser of and a participant in all four of the expeditions we have run over the last 10 years. I would like to take this space to express my gratitude for the opportunity, thank DEH and SARDI, and thank all the participants, particularly support crew.

What with the Rudd government delaying Australia's carbon reduction scheme, new books rubbishing the concept of human induced global warming, and a financial recession dominating the news, business continues as usual. No one seems prepared to step up and insist we all have to change our lifestyles and expectations. There are all sorts of schemes around, from the crackpot to the serious, to combat warming. Many of these are missing the point that, apart from everything else, increasing levels of CO<sub>2</sub> are dissolving in the oceans, rendering them less alkaline. Already corals are slowing in their rate of skeleton formation. Any quick fix for warming, such as spraying aerosols to scatter incoming solar radiation, or seeding clouds, will not address this issue. Given the proportion of the world's population that depends on the ocean as a primary protein source, CO<sub>2</sub> levels per se must be taken seriously.

### Copy Deadlines

Material for publication in the **September 2009 issue** of the *Bulletin*, including Regional Reports, should be sent to the Editor, Dr Sue Murray-Jones (Coastal Management Branch, Dept for Environment and Heritage, GPO Box 1047 Adelaide 5001; ph. (08) 8124 4895, email: [Bulletin@ecolsec.org.au](mailto:Bulletin@ecolsec.org.au)) by **Friday 14 August 2009**. Note that material for 'Ecology around Australia' should go directly to Regional Councillors, not the Editor. Contact details inside back cover.

### Instructions to authors

The preferred format is a minimally formatted text or RTF file submitted as an **attachment** to an email message. Please avoid sending copy as text within email messages. Attachment file names should include the author's family name and the issue for which copy is intended. Please do not use names such as 'abstract.doc' or 'bulletin.doc'.

Please observe the following conventions when preparing your contribution.

- single font (Times New Roman 12 point) throughout
- italicise all scientific names
- give the full wording of acronyms for organisations, agreements etc. on first mention

- keep formatting to a minimum
- no extra lines between paragraphs
- use single spacing

### Advertising

The *Bulletin* is an A5 size publication delivered to more than 1500 individuals and institutions. The rates for camera-ready copy printed in the *Bulletin* are: **One issue Four issues**

|           |       |       |
|-----------|-------|-------|
| 1/2 page  | \$100 | \$300 |
| Full page | \$150 | \$400 |

Loose inserts and pamphlets can be included in a mail-out; heavy items incur a higher rate to meet Australia Post charges. Inserts must not project beyond the covers of the *Bulletin*. Inserts requiring folding will attract an additional fee. Prices for inclusions on request.

*Loose advertising material will need to be delivered by Friday 14 August 2009. Details to be arranged with Executive Officer. Contact details inside front cover.*

General guidelines for *Bulletin* deadlines: Second Friday of February, May, August, and November.

# SOCIETY NEWS

## PRESIDENT'S REPORT

*Carla Catterall*

### **Oz ecology – no country for young men?**

It is not many years since ecology, like other sciences, was a thoroughly male-dominated field. In addition to a general institutional and social background of gender-based discrimination, field ecology in particular was often overlain with an aura of machismo; the province of burly bearded individuals who could ground a frisky kangaroo with a flying tackle, apply the skill of a bush mechanic to a stranded vehicle, and generally work in a range of situations not considered suitable for the fairer sex. Indeed, I recall as a young postgraduate being told (seriously) by an older colleague in CSIRO that women were not encouraged on field trips because of the risk that they may become involved in sexual liaisons, hereby distracting the (male) scientists from their work and disrupting their family life<sup>1</sup>.

Those days are well and gone (even though I would not rush to claim that structural discrimination against women has disappeared). Of the 19 ESA Councillors in 2009, 12 are women; although among our journals' associate editors the majority remains male (24 out of 39 at *Austral Ecology* and 20 out of 27 at *Ecological Management and Restoration*). And amongst the plenary presenters at the INTECOL conference, six out of nine are men, two of the women being in the 'rising star' category.

But could the bias of gender representation be shifting in the opposite direction? Some striking statistics have emerged from recent rounds of student applications for ESA's research grants: women comprised 12 out of 14 applicants for the 2009 Jill Landsberg Award, 9 of 10 for

The Nature Conservancy award, 12 of 17 in the October 2008 round of general student research grants, and 7 of 9 in the April 2009 round. The extent of bias in these ratios goes beyond that which would be expected under random variation from equity. Does this suggest an increasing feminisation of the field of ecology? Or is it simply that female students are better-organised or more eloquent when preparing grant proposals? Or perhaps they have fewer other sources of funding. Or are young men turning away from ecology, or away from scientific careers in general? At least a couple of Council members have the impression that women students are becoming more dominant in at least some research groups. And if this really is a trend rather than a strange transient anomaly, does it matter? Arguably, yes – if it means that ecology loses potential talent. We are in new territory when it comes to such trends, and need at least to keep a watching brief. Further comments on the issue from members who work with young ecologists would be welcome.

### **INTECOL and student awards**

INTECOL organisation is ramping up, with the full scientific program now scheduled. It is shaping up to be an excellent conference, with delegates from a wide variety of countries and regions and an exciting program of symposia, and other sessions. By the time you receive this Bulletin the earlybird deadline will be past, but registrations will remain open until the time of the conference (August 16-21, with workshops running on the weekends immediately before and afterwards—see notice on page 20).

The special round of student conference support grants, intended to provide a financial subsidy for all student members of ESA who are presenting papers (spoken or poster) at INTECOL (and who

<sup>1</sup> *I still have a letter from the Antarctic Division in the 1970s which I received in response to a job application. It said tersely and simply 'Sorry, we don't take women.'* Ed.

were sufficiently organised to apply) has resulted in support being available to over 40 student presenters (details on 2<sup>nd</sup> round on page 16). They will be doing a great job of showcasing the emerging talent in Australian ecology to our international visitors. Congratulations also to the winners of the 2009 Jill Landsberg Trust Fund and The Nature Conservancy awards (Amy Davidson and Vanessa Adams respectively, also on page 16). They will be presented with their award certificates in a session at INTECOL, during which the recipients of last year's awards will also be speaking. Ian Williamson and Gail Spina have played key roles in managing this year's student awards processes.

#### **New ESA event for December 2009**

Elsewhere in this Bulletin you will see the announcement of the special one-day Symposium to be held in Canberra on December 4<sup>th</sup> (see page 13). The symposium will focus on a timely issue: the worlds of ecology and environmental policy (never the two shall meet? - using bush fires as a case-study). The 2009 AGM will be held in the afternoon, after the symposium. Jason Cummings, the ESA's ACT Regional Councillor, has been working with Steve Dovers (who will convene the symposium) and others to get the organisation up and running.

#### **ESA conferences in 2010, 2011**

Canberra will be the focus of much ecological activity in the coming year, as our national capital will also be hosting ESA10, the ESA's 50<sup>th</sup> Anniversary Conference. Mark Lonsdale (CSIRO) and others are in the process of forming an organising committee. Watch this space and other parts of the Bulletin for further information as planning progresses. For ESA11, Tasmania is a likely prospect – under development by Kerry Bridle and colleagues, and we are hoping to be able to confirm this soon.

#### **What does our logo mean?**

The ESA's logo is prominent on our web page and for many years graced the Bulletin's front cover. I can now report on the outcome of a

search during the past year, to rediscover the logo's meaning. The symbol was chosen in 1971 (the year in which the Bulletin was launched), at which time the Society's organisation was centred in Canberra, with CSIRO scientists playing a strong role. In response to an email call sent out via ESA\_news, I received several suggestions, and opinions about the logo's meaning, the most frequent being 'ask Mike Austin'. The outcome of consulting Mike and others is that we have been unable to locate anyone who remembers for sure. However, there is a general consensus that our Logo's unending winding thread (somewhat reminiscent of a Moebius strip) symbolises the interconnectedness of everything on earth, and of ecosystems in particular.

There may be an early Bulletin article explaining this, but if so, we do not know the year or month, and there have been two different suggestions about who designed the logo. If you have any further information, please pass it on to either me or Gail Spina.

#### **Other recent highlights**

- The Global Restoration Network 'top 25' Australian sites can now be browsed on the web – see the announcement on page 17 of this Bulletin, or go direct to [www.globalrestorationnetwork.org/countries/australianew-zealand/](http://www.globalrestorationnetwork.org/countries/australianew-zealand/).
- Thanks to those who submitted nominations for the 2009 AERA (Australian Ecology Research Award): Glenda Wardle and the selection panel will decide on a winner, who will be scheduled to deliver the accompanying lecture in a plenary session at INTECOL.
- The ESA's public liaison working group, convened by Paula Peters, is working on a number of initiatives, including a process for encouraging submissions relating to policy issues (such as the draft National Biodiversity Strategy).

Carla Catterall  
8 May 2009

## EXECUTIVE OFFICER'S REPORT

*Gail Spina*

This year is hurtling by at great speed it seems and now we are already half way there! It has been a busy second quarter in the ESA office finalising our 2009 student grant programs in time for INTECOL10. The Jill Landsberg Scholarship and The Nature Conservancy Applied Conservation Award have been announced (see the Student News section of this bulletin). The standard of applications and scope of research is getting better and broader each year and making the selection process hard work for the assessment panels. It is inspiring to see the diversity of subjects and locations being researched by postgraduate students across the country.

INTECOL10 in August will be here before we know it. This year ESA is offering student travel grants to assist students who are presenting a paper or poster at INTECOL to cover their costs. Applications for these grants closed on March 30 but, now that confirmation of abstract acceptances have been released, we have decided to offer a second round of grants to students who may not have applied in round one but have since had their presentations confirmed and are now counting their pennies. This second round closes Tuesday June 30 so jump on the website and apply now. No excuses this time! See [www.ecolsoc.org.au/prizes.html](http://www.ecolsoc.org.au/prizes.html) for more information or turn to the Student News section of this edition on page 16.

On the subject of conferences, ESA is currently seeking expressions of interest for a professional conference organiser to deliver our annual conferences for 2010 – 2012. Some of our primary aims are to maintain

affordability for our membership, particularly students, and to minimise the environmental impact of the event itself. The expression of interest document is available on our website and members are encouraged to forward the details to any conference organiser they consider would work effectively within our philosophical guidelines.

Our many working groups put together at the last executive planning day are gathering speed. We are currently proposing to launch a web-based survey aimed at canvassing the opinion of our members on their needs and expectations from ESA membership. The survey will cover issues such as communication, website, and professional and research support, and provide opportunity for general comment and suggestions. I would urge all members to take the time to complete the survey so that we can get a good cross section of ideas to inform our strategic planning. Our philosophy in progressing our current range of initiatives (and in developing new directions) is to be guided by the requirements of our members so any feedback provided is really valuable.

I look forward to keeping you all up to date with progress on the many projects in tow and would really like to hear from members interested in being involved in a working group or with comments or suggestions on any matters relating to ESA activities – particularly membership and website ideas. Please contact me on 07 3162 0901 or [executiveofficer@ecolsoc.org.au](mailto:executiveofficer@ecolsoc.org.au).

Gail Spina (May 2009)

## ESA TURNS 50! HELP US THROW THE PARTY!

ESA will be celebrating its 50<sup>th</sup> anniversary in 2010 and plans to celebrate with a program of events and activities to mark what is a truly significant milestone for a non-profit professional society. ESA Council has put together a working group to coordinate the celebrations but we need ideas and, most importantly, volunteers from within our membership to help make the year a memorable and successful one. Proposals currently being considered include a photographic and memorabilia retrospective at ESA10 in Canberra, a 50 year history of the Society, and exploring the potential for regional events. If any member would like to get involved, from simply submitting an idea to actively coordinating or assisting with an event, we would love to hear from you. Regional Councillors might like to explore opportunities to organise local events.

We would particularly like to hear from members who might like to contribute in some way to a published reflection on our first 50 years – whether it be through direct involvement or nominating someone you know could offer a valuable perspective because of their experience and commitment to the Society and Australian ecology.

Contact [executiveofficer@ecolsoc.org.au](mailto:executiveofficer@ecolsoc.org.au) or phone 07 3162 0901 with any comments by July 30.

## SECRETARY'S REPORT

*Petina Pert*

### Ecological Society of Australia Council Meeting

Friday, February 13, 2009 (meeting 1 of 2009)

Agenda papers were circulated in advance to Council members and are available on request from Petina Pert, the Secretary. Actions identified in these papers and agreed to by Council are also included in these minutes.

#### 1. Welcome and apologies

Meeting opened at 11.00 EST. Carla welcomed Council members to the first council meeting of 2009. Confusion over dial in times. Correct time was on agenda and in email. 11.00 EST (allow for daylight savings).

Present: Mike Bull; Carla Catterall; Kerry Bridle; Andrew Hayes; Lyn McCormick; Paula Peeters; Christine Schlesinger; Debbie Saunders; Petina Pert; Gail Spina; Eddie Van Etten; Glenda Wardle; Jann Williams; Ian Williamson; Nigel Andrew; Nerissa Haby.

Apology: Jason Cummings; Peter Fairweather; Sue Murray-Jones; Sarah Bekessey; Liz Tasker.

#### 2. Minutes of previous Council and executive meeting

Motion: That the minutes of previous council meeting be accepted as a true and correct record. Proposed: Eddie Van Etten. 2<sup>nd</sup> Andrew Hayes. Motion carried.

#### 3. Items arising from the minutes

Items from previous Council meetings before November 2008.

4.5.6 LOC to put the list of volunteers, past and present, on web site. On-going – will be picked up during hand-over between Dee and Judy during the conference.

5.13.4 Carla to email RCs to remind them they need to be able to participate in the activities of the society (including attending at least four council meeting each year). In progress.

5.15.1 Jason to seek expression of interest from ACT members. In progress.

5.15.2 Obe and Jann to seek interest from Tas members for 2010 or 2011. In progress.

6.11.1 meaning of logo – need to get some words on the web site on what the ASA logo means. PF do draft some words or ask Mike Austin about meaning of logo and to communicate with Larelle. To educate membership and others about meaning. Liz – need a high-resolution PDF copy with a clear background that is independent of size and resolution. PF has given to CC. Liz suggests leaving copies on new server. Jann notes that there was a history of the ESA written in 1989, so there might be something about the logo in there. From The History: The Society's logo: prepared by Ninon Geier in 1971, but no information on what it means.

Items from December Council meeting

6.3.1 Carla will email membership seeking information on the meaning of the logo, or will email Peter Fullagar to ask him. Will report back April Council meeting.

6.4.1 Treasurer and FO will take audited conference accounts to the LOC responsible for checking and ratifying at each audit. March Executive.

6.4.2 Lyn to bring up issue of signing off expenses at next executive meeting January executive meeting. ASAP.

6.4.3 Lyn, Charles and Nigel to prepare a formal response to the auditor in response to constructive comments. Should be done very soon – Lyn has final draft ready to go.

6.4.4 Lyn: Take into account auditor's comments when discussing contracts with new PCO. ASAP.

6.6.1 Lyn to chase Tour Hosts to pay the ESA invoice for Larelle's expenses. ASAP.

6.6.2 Nigel and Lyn to revisit the financial aspects of the Business Plan in April or May each year and report to Executive. April Council.

6.6.3 Charles to circulate financial tables & projections to Council before end of his term as Treasurer. Complete – April council meeting, to be circulated.

6.6.4 Council to review Business Plan and investment strategy at 2009 Planning Day. 2009.

6.6.5 Lyn and Nigel to investigate the option of some higher interest-bearing accounts at some of the major banks, e.g. the conference accounts to be put into higher-

interest account. Nigel has been looking at various options e.g. NAB. Implications if we move to a business account and move between accounts. Will report back at next meeting. April Council.

6.6.6 Lyn to investigate business banking package to replace internet banking. Early 2009.

6.7.1 Use of server to commence during 2009. 2009.

6.8.1 Glenda requests all RCs send in nominations for AERA for 2009. By March 2009.

6.8.2 Glenda to bring AERA procedures manual to Council for ratification. 2009.

6.9.1 Jann will email Steve Morton about involvement in the 2010 conference. ASAP.

6.9.2 Nigel will talk with Mike Dunlop about involvement in the 2010 conference. ASAP.

6.9.3 Carla will talk to Charlie Zammit about involvement in conference. ASAP.

6.9.4 Paula will talk to Steve Sarre about involvement in conference. ASAP.

6.9.5 Gail will email conference package to Kerry. ASAP.

6.11.1 PCO Sub-committee to report to each Council and Executive meeting. From February 2009.

6.12.1 Gail and Lyn to think about new promotional material for INTECOL trade booth. February 2009.

6.12.2 Ian to give information on student prizes to Carla and Mike. Today's agenda.

6.13.1 Mike will ensure that electronic copies of the final contract are circulated to Council and a copy lodged on the ESA server. ASAP.

6.14.1 Jann to report to Council once costs of reviews are finalised. Today's agenda.

6.14.2 Jann to talk with Lyn about ESA on-line survey facility. Today's agenda.

6.14.3 Jann to advise of outcomes re GRN website. Today's agenda.

6.16.1 Jason will organize a venue for the Planning Day 2009 in Canberra. Today's agenda.

6.16.2 Eddie to prepare a roster for Regional Councillors to attend Executive meetings. ASAP.

Items from previous Executive meetings. Covered above and in other agenda items.

#### 4. Work Plan and subcommittees 2009

Carla: Confirmed that meeting times are 11.00 am EST. April council meeting brought forward to 3<sup>rd</sup> because of Easter. August 7 also brought forward because of INTECOL.

Convenors were identified for the following working groups:

Research chapters - Glenda

ESA10 initial planning - Jason

Student affairs - Ian

ESA website - Gail

Public liaison - Paula

PCO (replacement Professional Conference Organiser) - Glenda

50<sup>th</sup> anniversary - Carla

Financial governance - Nigel

EMR contract - Jann

TERN - Glenda?

AERA - Glenda.

Carla: Propose that each group write TOR, deadlines, key dates, convenor for each group and bring back to council.

#### ACTIONS

1.4.1 Gail to liaise with Glenda, add EMR, TERN, AERA and re-circulate subcommittee list. ASAP.

#### 5. VP (public liaison) update - Paula

Paula: We submitted funding application to GVEHO (Grants to Voluntary Environment and Heritage Organisations) scheme late last year. Commonwealth government recently informed us that they had double the amount of applicants and going through the process. Public liaison group will meet in mid-March. Carla: raised the issue of possible need to respond, or have policy input, to issues arising from the Victorian bushfires, especially with regard to ecological management practices – the role of ecological knowledge and research is in these issues.

Paula/Carla: Will discuss as a group. Whether as a society we will step into this or not?

Carla: Place on agenda to discuss within the Public Liaison working group.

#### ACTIONS

1.5.1 Paula to place Bushfires in Vic issue on agenda of Public Liaison working group. March 2009.

#### 6. VP (student affairs) update

Ian reported that the announcement has gone out regarding student grants for INTECOL (see motion below). Will get applications after abstract deadline. Carla: At the Planning Day it was agreed that up to \$40,000 would be available, as follows; \$9,500 – student ESA conference travel grants (not being used in 2009), \$20,000 previously reserved for INTECOL sponsorship money (but at least \$200,000 sponsorship now already committed to INTECOL - over target), ESA to add an additional \$10,000. Discussion: if we get too many applications, will reconsider in April meeting.

Ian reported on the results of the October student research grant round - 17 applicants, 11 applicants successful. Hence the total from 2008 comprised April \$2000, October \$8000. Lyn: 90% have bank account details.

Ian reported on the results of the student conference prizes from ESA08 – emailed student winners congratulating them, asked them for abstracts for promotional material for ESA website. Lyn: Cheques have been sent to prize winners. Carla: Need to email Petina student winners, for the record.

List of students who won ESA Student Research Grants in the October '08 round:

Katherine McClellan, Macquarie University  
Shannon Troy, University of Tasmania  
Peggy MacQueen, University of Queensland  
Carryn Manicom, James Cook University  
Sarah Goldin, Australian National University  
Benedikt Fest, Melbourne University  
Emma Wilkie, Macquarie University  
Tracey Hollings, University of Tasmania  
Philip Barton, Australian National University  
Karen Lee, Griffith University  
Jo McEvoy, University of Tasmania

Motion (passed by flying email minute prior to this meeting – all in favour)

Proposed by: Ian Williamson; seconded by: Carla Catterall.

1. That \$40,000 be allocated to support up to 200 ESA student members attending INTECOL in Brisbane in August 2009; to be available to all applicants who:

- i) are members of the society and;
- ii) are presenting a spoken paper or poster at INTECOL

2. That the level of grant provided to students be based on the region from which they have to travel, as follows:

| Origin                | Grant         |
|-----------------------|---------------|
| Brisbane region       | \$100         |
| Northern NSW          | \$150         |
| North Qld             | \$200         |
| Sydney                | \$175         |
| ACT and rest of NSW   | \$200         |
| Victoria              | \$200         |
| Tasmania              | \$250         |
| South Australia       | \$250         |
| Northern Territory    | \$275         |
| Western Australia     | \$350         |
| Other rural Australia | Discretionary |
| Overseas              | \$350         |

3. In the event that there are many more than, or fewer than, 200 applicants for these grants, that criteria for preferential funding (if too many), or a possible increase in subsidy per student (if too few) be developed by the Student Affairs subcommittee for consideration at the April 3 Council meeting.

#### ACTIONS

1.6.1 Ian to send Petina student winners to include in minutes. ASAP.

#### 7. VP (research) update - Glenda

Glenda: Research chapter options are being investigated; looking at models from other societies. Topics – for example, possibilities are fire and arid. Will need two people to take the lead in these areas.

AERA award – call for nominations – closing date 30<sup>th</sup> April. Make decision before April Council meeting. Two of our nominees more suited for gold medals – will send to Carla. Gail is working with Glenda on website.

ESA08 conference report - Welldone documents circulated – Attendees: 655 (profit \$35,000 approx), main feedback concerned the large amount of plastic in lunch boxes.

Glenda: Statistics by states interesting.

Carla: non-fixed costs per capita per student = registration cost. Carla: LOC were concerned they were going to make a loss at the start of last year, but ended up with both a profit and an excellent scientific meeting. Thanks to Glenda, Clare and LOC. Welldone also provided a list of outstanding payments. It is not clear who has responsibility for dealing with these.

#### ACTIONS

1.7.1 Glenda to send Carla two AERA nominees who are more suited for gold medals. ASAP.

1.7.2 Gail to follow up with WellDone what they will provide, delegate fees, sponsors being paid, attendees who didn't attend conference. ASAP.

#### 8. Finance reports

Carla: To satisfy auditor's requirements we need to look at income statements, balance sheet and cash movement from previous months. Need to receive these on the Monday or Tuesday before the Friday meeting. The following pdfs were circulated to council members on Thursday 12 February 2009.

Cash Movement – 13 January 2009; Income Statement – 12 December 2008; Balance Sheet – 12 December 2008; Cash Movement – 12 December 2008; Income Statement – 13 January 2009; Balance Sheet – 13 January 2009.

Nigel: Still have a fair amount of membership money to come in. Asked Lyn to confirm investment total on balance sheet? Lyn: Auditor has sent journal and she will fix up investment total on balance sheet. Membership has increased from Dec to Jan. Excludes conference accounts. Lyn: Quote of \$5000 for audit, have charged us an extra \$3000. Should reduce next year. Will pay auditor.

**ACTIONS**

1.8.1 Lyn to circulate statements on the Monday prior to all meetings. All year.

1.8.2 Lyn to follow up previous action items from previous meetings. ASAP.

**9. EMR Update**

Jann presented a written report on issues related to Ecological Management & Restoration: 10<sup>th</sup> Anniversary, EMR contract review and GRN network initiative.

EMR 10<sup>th</sup> Anniversary.

Jann noted insufficient exposure of EMR 10<sup>th</sup> anniversary at ESA08. Progresses with two initiatives to mark the anniversary are as follows (third initiative – virtual anniversary issue – is underway).

Online survey – Wiley-Blackwell will organise as they have access to authors. There are still some details to be sorted out about who will do what in terms of the survey, especially analyzing the responses, but the offer of Wiley-Blackwell to directly assist by hosting the survey is a good start. Once further discussions have been held with Wiley-Blackwell about the survey, a proposal will be circulated to Council for consideration. It is likely that this will be out of session.

Review articles - Council supported the proposed actions to move this issue forward:

- 1) Receive the detailed financial projects for EMR from Wiley-Blackwell so it is clear what costs are involved in adding extra pages to each issue for review articles.
- 2) Wait for the results from the EMR survey to see if there is scope to replace some of the current content with review articles, hence avoiding additional costs.
- 3) Approach sponsors if it turns out that adding pages is the best option, based on the survey results. This decision would be based on a paper written for ESA Council/Wiley-Blackwell that would outline the criteria for selecting sponsors and how the system would work.

EMR Contract review: Council agreed that there is a need to review the original contract that set up EMR – it is now 10 years since

this was done. Rose Williams from Wiley Blackwell has agreed that this is a good idea, but wanted to spend time re-jigging the contract before sending a draft to the ESA. This process could also allow a review of the editorial responsibilities for the journal and the arrangements for remuneration. Mike: existing contract – termination date? We should look at regular intervals to review. Jann also proposed to visit WB in Melbourne for face to face meeting. Mike thought it was essential for the Chair of the EMR management committee to visit publishers. Carla, Nigel agreed. Wiley-Blackwell currently covers costs of editor's visit. Council agreed to cover Chair's visit from ESA account (noting that if Wiley-Blackwell agreed to pay, it would simply come out of journal's profit). Council established a small working group for the contract review (including review of the editorial and honorarium arrangements) – Jann (coordinator), Carla, Mike, Lyn.

**Global Restoration Network (GRN)**

Jann presented a written report on issues related to the GRN initiative. The list of restoration projects identified for the Australasian page of the GRN website was provided. Originally the launch of this page was due in mid-February. This has been delayed a few weeks due to the projects taking longer to write up their work than anticipated. It is now expected that the launch will be in mid-March. A full report on the GRN process will be submitted to Council at the April meeting. Carla: Need some publicity – announcements, link though SERI conference.

**ACTIONS**

1.9.1 Jann to email Gail to email e-list ESA members advising of 10<sup>th</sup> Anniversary EMR – and special issue. ASAP.

1.9.2 Jann to follow up Rose Williams to get financial data on review articles. April Council meeting.

1.9.3 Jann to organise meeting of EMR contract review working group. April Council meeting.

1.9.4 Gail – check announcements, web links including SERI Conference. April council meeting.

## 10. TERN

Jann presented a written report on issues related to the TERN (Terrestrial Ecosystem Research Network) initiative. The background was provided at the Planning Day in December 2008. Council had endorsed Jann Williams as the ESA representative on the steering committee for the EcoInformatics component of TERN. The first meeting of this committee is being held in Adelaide on March 2<sup>nd</sup> – Jann unable to attend. Council suggested alternative nominees based in Adelaide (first choice Peter Fairweather).

Jann: Council agreed at the 2008 Planning day to establish the ESA LTER database Working Group of 4-5 people, drawn from the ESA membership, to interface with ESA's role in TERN (reporting to Council). The committee would aim to have a mix of skills and experience (e.g. database management, long-term research expertise) and represent different interests such as the University sector and state agencies. Council agreed to invite David Lindenmayer to be a member of the committee, given his interest. Other members could be selected based on a call for Expressions of Interest to the membership.

Discussion re membership: Gail: happy to organise. Glenda, Eddie are interested; Glenda could chair as VP (research). Paula: Would like to be kept in the loop and has database experience. Jann: will approach David Lindenmayer. Carla: Can all members of Council let Gail know – nominees from outside Council. Carla: discussion to be moved to next Executive meeting and decide on final composition of people for committee. Council noted revised draft terms of reference and supported the suggestion that they should be reviewed by the working group prior to final endorsement.

## ACTIONS

1.10.1 Jann to contact Peter Fairweather to attend 2<sup>nd</sup> March meeting. ASAP.

1.10.2 Jann to approach David Lindenmayer for committee. ASAP.

1.10.3 Gail to send out email and coordinate responses and send to Jann. April Council.

## 11. 2009 Workshop, Planning Day and AGM

Gail presented a written proposal, based on discussions with Jason and Debbie, to hold the 2009 ESA AGM in Canberra on December 4, 2009 in conjunction with a public symposium, and to hold the Planning Day in Canberra on December 5, 2009. The AGM could be held lunchtime during the symposium or after the close of the symposium combined with a brief social event. A topic of 'Ecology and Policy' has been proposed for the Symposium, but not finalised.

Carla: At previous executive meeting we considered various options, venues, dates. Consensus of executive meeting was not to go overnight for planning day. Debbie: Have already pre-booked ANU venue 4<sup>th</sup> and 5<sup>th</sup> December (Forestry Theatre capacity 100). After further discussion, these dates were supported by Council. Glenda: Raised the issue of the Fenner Conference – is the topic too similar to what we are proposing? Discussion then centred around targeting the more specific issues of bushfires and policy, since this will be an important policy issues following the recent Victorian events. Glenda: Could help generate 'fire' position statement. Advertise at Science Week; suggested topic: Ecological solutions for fire policy. Carla: organising group - Jason, Debbie, Paula, Liz and Gail. Carla: Contract with PCO Welldone has finished. May need a one-off PCO contract to help with the event. Debbie: Can leave it to the working group to decide on final venue.

Motion: That the 2009 ESA AGM be held in Canberra on December 4, 2009 in conjunction with a public symposium, and the Planning Day be held in Canberra on December 5, 2009. Proposed: Debbie Saunders 2<sup>nd</sup> – Ian. Motion carried – all in favour.

**ACTIONS**

1.11.1 Organising group of Jason, Debbie, Paula, Liz and Gail to progress the plans for the Symposium including title, venue, program, catering, potential speakers and associated preliminary logistics/costings. April Council.

1.11.2 Gail to check with Paula, Liz, Jason re forming committee and convenorship. March Executive.

**12. ESA10 conference (also incorporating Item 16 - 50<sup>th</sup> anniversary)**

Jann reported on the outcome of discussions with Steve Morton about the possible involvement of CSIRO in organising the ESA10 50<sup>th</sup> anniversary conference in Canberra in 2010. Steve has moved to a different part of the CSIRO Executive but consulted with Andrew Johnson (environmental and sustainability-related research at Executive level), Daniel Walker at CSE, Gungahlin and Mark Lonsdale at Entomology, Black Mountain. They all agree that CSIRO should be intimately involved. Mark Lonsdale will be picking up the responsibility for CSIRO involvement in the conference (and possibly other activities) to mark the 50<sup>th</sup> anniversary of the Society. Carla: CSIRO involvement is welcome, given their important role in establishing the ESA; will need further liaison to form a Local Organising Committee which also includes ecologists from Universities and other sectors. Gail: Can make sure that it gets coordinated.

**ACTIONS**

1.12.1 Jann to contact Mark and let him know that Jason and Glenda are the ESA contacts. ASAP.

1.12.2 Jason to liaise with Mark Lonsdale re ESA10. LOC formation and convenor. March Executive.

1.12.3 Eddie to roster Jason as the RC to attend the March Executive meeting. ASAP.

**13. INTECOL 2009 update**

Carla: reported that she has been sitting on INTECOL organising committee, and also organising the workshop program. Part budgeting of the workshop is taking place as a separate entity as it was not part of the

contract with the PCO (TourHosts). Location will be a university, as convention centre charges too much. TourHosts (PCO) will not be handling catering. Can ESA open an account which would handle/receive from TourHosts registrations from workshop and pay catering bills etc.? Lyn: Already have an INTECOL ABN and can track it through ESA accounts. Carla: seeking Council approval to run INTECOL workshop through ESA books. Will provide budget statement. Carla: We have a trade booth. But what do we want to do with it, who will populate and staff it? Need to canvass ideas. Default to Gail. Glenda: 50<sup>th</sup> anniversary a highlight.

**ACTIONS**

1.13.1 Gail to bring timeline to next executive meeting for trade booth. March executive.

**14. INTECOL 2013 – Letter from BES**

Carla presented a letter from Prof. Ian Fitter of the British Ecological Society, announcing that it will be hosting the INTECOL Congress in 2013 as part of the Society's centenary celebrations. The Congress will be called 'Ecology – Into the Next 100 Years' and will be held in London, 18 – 23 August 2013. BES is offering the ESA the status of academic sponsor of the meeting. Benefits are: promoted on the Congress website and in the programme; free insert in the delegate pack; free exhibition space at the Congress; free meeting space at the Congress for an event such as a meeting or reception for ESA members; and ESA would be invited to submit a proposal for a symposium session at the Congress. Becoming a sponsor involves no financial commitment; but ESA is requested to distribute INTECOL 2013 promotional material to members via website and electronic/print membership publications. Council agreed that ESA should respond positively to this invitation.

**ACTIONS**

1.14.1 Carla to respond positively to Prof Fitter. ASAP.

### 15. Childcare at ESA conferences

Gail referred to correspondence with Mick McCarthy, who raised the issue of childcare availability at ESA conferences. Mick suggested offering childcare support for concession members with young children, in a manner not dissimilar to that provided for student travel, and offered to scope out some options to present to the ESA.

Council noted the desirability of having childcare available, as well as various complexities and hurdles involved. Could possibly be part of new PCO contract discussions.

#### ACTIONS

1.15.1 Gail to take the childcare issue to the conference/PCO subcommittees, noting Mick's offer to help identify options. April Council.

### 17. Science meets Parliament

Gail provided a document concerning the 2009 Science Meets Parliament (SmP) event to be held March 17/18 in Canberra. ESA can send 2 or 3 members along to this event, with a preferred emphasis on early/mid-career scientists and students. ESA sent 4 members in 2007, and two members in 2008 at a cost of approx \$800 each. The ESA pays for registration, flights if required, accommodation and attendance at dinner. Two calls for expressions of interest were sent to the membership. Three applications were received from Dr Don Driscoll, ANU, Dr Debbie Saunders, ANU, and Tiffanie Nelson, PhD candidate, UNSW. Applications were provided to Council for review. The three together were costed at \$1,143 total. Council agreed to support attendance by the three applicants. Carla noted that reports were expected to be received from attendees in due course.

#### ACTIONS

1.17.1 Gail to follow up and obtain reports from SmP participants. April or June Council.

### 18. Other business

Update of ESA email addresses: Nigel: Charles still receiving emails as finance@esa. Petina: Tish still receiving emails as

secretary@esa. Carla: Lyn to update xls email address; if xls is incorrect please let Lyn know. Lyn will undertake tests of generic email addresses.

ESA Council member attendance at INTECOL10 2009: Gail raised the issue of possible subsidy for Council member's attendance at INTECOL. In normal years, ESA pays Council members' air travel to the annual conference, held in conjunction with the AGM. However, in 2009 the AGM is now planned to be held separately, in Canberra. Several Council members said that they did not plan to attend INTECOL; some have travel support from other sources. In other cases, support for attendance at a Canberra AGM was not needed, but they could not attend INTECOL without support. Carla: Although ESA would not routinely meet the travel costs of Councillors to INTECOL, this issue should be dealt with on a case by case basis. Council agreed that members with special cases should provide this information to Gail, for consideration by the Executive.

Regional issues: SA Postgraduate Days, Nerissa: Arranged to meet with people with other campuses in Adelaide. Will update more in April meeting. Christine: No success with mailing list of NT members. Discussion: it was agreed that each RC should be provided with an updated list of member contact information for their state.

#### ACTIONS

1.18.1 Lyn will test generic email addresses and make any necessary adjustments. ASAP.

1.18.2 Councillors with a special case for travel support to INTECOL contact Gail. ASAP.

1.18.3 Nerissa to develop proposal for SA regional initiative. April Council.

1.18.4 Lyn to send every RC a list of their members in their state. ASAP.

Meeting closed 1:12.

### 19 Next Meeting

Exec: 13 March 2009

Council: 3 April 2009

Phone hook-up.

## THE WORLDS OF ECOLOGY AND ENVIRONMENTAL POLICY: NEVER THE TWO SHALL MEET?

### Announcing a one-day ESA Symposium on December 4 2009

By using bush fires as a case-study, we will show how the Ecological Society of Australia, scientists and policy-makers can bring these worlds together.

Whilst the need for better integration of ecological science into policy making has been highlighted recently by various commentators, including scientists (e.g. Gibbons et al. 2008), the media (e.g. Dayton 2008) and policy makers (Banks 2009), it is not a new problem.

Gary Banks, Chair of the Productivity Commission recently quoted Florence Nightingale: 'Florence Nightingale admonished the English Parliament in the following terms: You change your laws so fast and without inquiring after results past or present that it is all experiment, seesaw, doctrinaire; a shuttlecock between battledores.'

The intersection of fire science, fire ecology, and landscape management and policy is also, again, receiving significant public attention. As the baby boomers look to enjoy other things in life, and government investment in research and extension capability continues to wane, we will need to get smarter and more efficient about the way we make the connections if we are to be effective.

The ESA is hosting a one-day symposium on the 4<sup>th</sup> December 2009 to explore the role the Society can play in fostering better connections.

The objectives of the day will be to:

1. Identify the different perspectives of ecologists and policy-makers/implementers, and give ESA members and other ecologists an insight into how government decisions are made;

2. Use fire as a thematic case-study for understanding successes and continuing gaps between the worlds of science and policy;
3. Provide an opportunity for ESA members and others to share and exchange knowledge in this field, and facilitate connections between science and managers; and
4. Outline some new initiatives of the ESA in promoting connections and building capacity, and engage members in coming up with more ideas for how the Society can do more.

The objective is not to explore different fire management prescriptions or policies *per se*, but rather to use 'fire' to explore the science-policy interface and the role the ESA can play in making the connections.

The symposium will be held in Canberra, open to ESA members and others, and include a combination of presentations and workshops.

Please reserve this date. There are a few spots left in the program, so if you have a useful case study or perspective that will contribute to the objectives, please contact the symposium organiser ([act@ecolsoc.org.au](mailto:act@ecolsoc.org.au)) and register your interest in presenting. We are particularly seeking a couple of presentations from research students, conducting research around fire and biodiversity, that is aimed at influencing policy. Sponsorship opportunities are also available.

Registration details will follow via the ESA email list. The symposium will be followed by the Society's Annual General Meeting and an informal BBQ.

Stephen Dovers (Convener) and Jason Cummings (ACT Regional Councillor).

NOTE: THE WORKSHOP WILL BE FOLLOWED BY THE ESA ANNUAL GENERAL MEETING (and for ESA Council, the Planning Day will be held on Dec 5<sup>th</sup>).

## OTHER ESA NEWS

### NEW MEMBERS

A very warm welcome to the following new members: C. Ellery Mayence; Larry Guo; Christina Zdenek; Jose Luis Mena; Moses Sam; Gesine Pufal; Alan Watterson; Nadine Constantinou; Peter Serov; Vicki Logan; Alison Jaggard; Chris Allen; Mark Fraser; Sophie Hall-Aspland; Lisa Schwanz; Shona Hocknull; Chloe Rich; Andrew Smith; Richard Unsworth; Eleanor Adamson; Kate Hoad; Susanne Schmidt; Norman Duke; Carissa Free; Simon Gleed; Lia Pardoe-Matthews; Simon Linke; Jessica Walsh; Michael Kleimeyer; Tim Stevens; Elizabeth Fisher; Morena Mills; Renee Rossini; J. Berton C. Harris; Sarah Reachill; Amanda McLean; Patrick OConnor; Denis Rodgers; Rodrigo Hamede; Laura Williams; Tracey REGAN; Heidi Zimmer; Susie Ho; Alaister Martin; Shannon LeBel; Ralf Schäfer; John Talbot; Andrew John Braid; and Tianhua He.

### SMP

ESA, as a member of FASTS, each year nominates representatives to attend the annual Science meets Parliament (SmP) event held in March at Parliament House in Canberra. This event provides opportunity for scientists to meet with politicians and potentially raise the profile of science, lobby for their projects or topics of passion, and gain some insight into the political process.

This year ESA sent three delegates Debbie Saunders, Don Driscoll, both from the Fenner School, ANU, Canberra, and PhD candidate Tiffanie Nelson from UNSW. Their reports are featured below.

Any members interested in attending future SmP events as a representative of ESA should contact the Executive Officer at [executiveofficer@ecolsoc.org.au](mailto:executiveofficer@ecolsoc.org.au) or watch for the call for expressions of interest generally circulated January each year. Reports from the delegates follow.

#### Debbie Saunders

I was lucky to be able to attend the recent FASTS SmP event at Parliament House on 17-18 March 2009 as a representative of the ESA. Although I wasn't exactly sure what I was going to get out of it, I have been finding myself dealing with increasingly political issues lately and thought it was about time I learnt more about how parliament works and how to better understand and engage with politicians. I had always felt quite daunted by the idea of approaching politicians about issues I was concerned about, however after attending this event I now feel like that barrier has been broken down enough that I can approach any parliamentarian I want. Whether or not I actually get to meet them may be another thing...but at least I now have an understanding of how to go about it. In fact, I have prepared a one page summary of some points that I am planning on using at a meeting with a parliamentarian soon.

The SmP event consisted of two days of meetings/presentations – the first being a workshop/presentation day to provide insight and ideas on how to interact with politicians and the types of constraints they are often working under. The second day had workshops, ministerial briefings and meetings with parliamentarians. There was also a SmP dinner where both politicians and delegates intermingled and Professor Penny Sackett, Chief Scientist for Australia, gave an inspiring but sobering presentation on climate change. Another interesting and inspiring part of the event was that the entire panel of experts in 'Strategic Leadership in Science' forum were women. I also got to meet and discuss a range of things with Prof. Sackett in person which I thoroughly enjoyed.

I found the presentation by Dr Richard Dennis (Director of the Australia Institute, former chief of staff for Natasha Stott Despoja and strategist for Senator Bob Brown) contained the most practical tips and insights for working closer with parliamentarians. Although I know the media can play a role in politics, media

representatives and political advisors highlighted just how much the media drives politics so this was also a valuable lesson.

All the delegates were incredibly friendly and open to meeting and talking with anyone - much more so than any scientific conference I have ever been to - I suspect this was in part due to the fact that we all felt like we were out of our depth to start with and were there to learn from the whole experience. Something that surprised me a bit was that there were a lot of older, more senior scientists there as well as young ones, so it felt good to be getting in early in my career rather than later. I also learnt a lot about completely different fields of science to my own from talking to a diverse range of delegates. Overall, I would recommend members of ESA attend this event, be open to learning about all sorts of things you never knew about and to break down the barrier between ecological research and politics so that we can get the ecological perspectives of issues brought to the attention of more parliamentarians.

#### **Don Driscoll**

Science meets Parliament came in the week after I had attended the Fenner Conference on the Environment. At the Fenner Conference I learnt from senior public servants exactly where science fits in the decision-making scheme. That is, alongside all of the other clamouring lobbyists. The bureaucrats also indicated that there was room for developing personal relationships with public servants as a way of having science influence policy. However these relationships, they said, were conditional on wearing the same gag that public servants legally sign up to. No comment.

So I was not as surprised as I might have otherwise been when I attended SmP. While it was previously clear that science doesn't have a strong influence on policy, it was refreshing to have this frankly stated in the training day prior to meeting parliamentarians. Although some of the panel discussions were a bit slow, generally the training day was valuable for putting us in our place and introducing us to the paradigm in which parliamentarians operate. It's a

paradigm based on winning the next election. Ten fossil fuel-based labour electorates = 5% emissions target. It is a parliamentary calculation.

I met two Liberal senators. My point (we were taught that you should only meet a parliamentarian if you have a point), was that climate change interacts with existing threats to biodiversity, so any reasonable response to climate change must involve addressing these existing threats. They appeared interested, asked questions and generally were very polite. Senator Ferguson agreed that climate change was definitely happening, but wasn't sure if it was human-caused. Apparently some other Liberal party members took this line as well. In my follow up to the meeting I sent him some quotes from the IPCC 2007 report. I guess the coal industry will send him the same quotes, emphasising that we are now only 90% sure that it is human induced; there's still a 10% chance that business as usual won't do us any harm, and in fact, some of us (them) could get quite rich.

SmP was great for smudging out my weakly held delusion that science is a weighty weapon in policy debate. You need to know the lay of the land if you are going to enter a fray. It also gave me confidence to role up to Parliament house and meet with politicians to explain about the state of our environment. The need is greater than I feared.

#### **Tiffanie Nelson**

To gain some experience in how science shapes policy, I went along to the SmP event 2009. I did my best to follow the formal dress code and attended the two day workshop in Canberra. I was one of very few students at the event. The crowd was a mix of scientists, mostly from senior positions in university and government eager to network and learn how to engage with parliamentarians and communicate their scientific research. The experience was an excellent opportunity.

Day one was focused on preparing yourself to not waste the opportunity when meeting with a politician. We were briefed on how to engage and convey what we wanted in a relevant context. On the evening of day one a formal dinner was held at Parliament House. Senators and politicians were dispersed

amongst the 300 scientists. Subtle flashing lights and ringing noises at several times throughout dinner caused each of the parliamentarians to jump mid-meal and speedily walk out of the hall. This was their three minute window to cast their vote: a normal occurrence when parliament is actually sitting.

Day two was reserved for meeting with politicians or their advisors. These meetings, we learned, can prove fruitless if you waste precious time explaining 'why' your science is important and not 'how' your science is important. Conveying the socio-economic impact and the implications of your research are requirements and an important lesson for engaging. The experience allowed me to learn about the required angle of communicating science to politicians and gave insight into the shortness of a politicians' time. The key is to have a complete encompassing sentence covering your area and your suggested solution that you can say to Rudd when you catch him in the corridor: it has to be punchy!

## ESA STUDENT NEWS

Announcing the 2009 Winners of ESA's two major student scholarships.

### Jill Landsberg Trust Fund Scholarship

The trustees of the Jill Landsberg Fund have great pleasure in awarding the 2009 Jill Landsberg Trust Fund Scholarship to Amy Davidson from Australian National University. The \$6000 scholarship will be used to assist with her project 'The role of phenotypic plasticity in plant invasions and its implications for biodiversity under climate change'.

Highly commended certificates were also awarded to two other applicants in recognition of the quality and strength of their applications: Jane Addison, University of South Australia for her project: 'The impact of land tenure on rangeland condition and herder livelihoods in the Gobi Desert'; and Victoria Bennet, ANU, for her project: 'Return of the Fauna: Brown Treecreeper reintroductions in Eucalypt woodland'.

Thanks to the assessment panel Dr Craig James, Professor Dave Gillieson and Dr Ian Williamson for their time and energy in reviewing the applications within a short deadline.

### The Nature Conservancy Applied Conservation Award

Now in its second year, The Nature Conservancy Award attracted applications from a broad range of ecological research. This year's winner is Vanessa Adams, James Cook University, for her innovative study 'Planning for multiple conservation actions to maximize conservation outcomes'.

A highly commended award was also awarded to Victoria Bennet, for her project 'Return of the Fauna: Brown Treecreeper reintroductions in Eucalypt woodland'.

Thanks to the assessment panel James Fitzsimmons from TNC, Dr Christine Schlesinger and Dr Ian Williamson for their commitment to the difficult task of choosing a winner from an impressive field of applicants.

Both Vanessa and Amy, as our annual award winners, will receive a \$6000 scholarship, and ESA will fund their travel and registration to INTECOL to accept their award, and their travel and registration to ESA10 in Canberra to present their research. Our 2008 award winners Caragh Threlfall (JLTF) and Helen Waudby (TNC) will be presenting their work at INTECOL in August.

### Second Chance!!! Student INTECOL travel grants Round 2 closes June 30

Don't miss out! Now that INTECOL abstract notices have been released, ESA is offering a second round of student travel grants to assist students who are presenting a paper or poster to cover their travel costs. Grants will be paid according to the table below:

| Origin             | Subsidy Available |
|--------------------|-------------------|
| Brisbane Region    | \$100             |
| Tasmania           | \$250             |
| Northern NSW       | \$150             |
| South Australia    | \$250             |
| North Qld          | \$200             |
| Northern Territory | \$275             |

|                   |               |
|-------------------|---------------|
| Sydney            | \$175         |
| Western Australia | \$350         |
| ACT & rest of NSW | \$200         |
| Other rural areas | discretionary |
| Victoria          | \$200         |
| Overseas          | \$350         |

Application forms are on the website at [www.ecolsoc.org.au/prizes.html](http://www.ecolsoc.org.au/prizes.html). Applications close June 30. Contact Gail Spina: email [executiveofficer@ecolsoc.org.au](mailto:executiveofficer@ecolsoc.org.au) or Ian Williamson: email [yp2@ecolsoc.org.au](mailto:yp2@ecolsoc.org.au), if you have questions. This will be your last chance to apply. No excuses this time!

Payment will be forwarded directly to successful recipients as long as confirmation of abstract acceptance has been received. Any student who applied for a grant in Round 1 and has not forwarded their abstract confirmation should do so as soon as possible!

Congratulations to all students who have had posters and papers accepted – we hope INTECOL is a rewarding professional experience and you enjoy yourselves!

## TOP EMR PROJECTS

*Top 25 Australasian Ecological Restoration Projects announced!*

A small working group set up by the ESA journal with support from the ESA Council and the Society for Ecological Restoration International (SER International), recently announced the results of its search for the 'Top 25' on-ground ecological restoration projects in Australasia. The Australian shortlist includes projects from areas as diverse as the Murray-Darling Catchment, the Great Barrier Reef, the Kimberly, South-west Western Australia, Atherton Tablelands, the Snowy Mountains and Tasmania. Ecosystems undergoing restoration at these sites include wetlands, sclerophyll systems, rainforests, grasslands, desert habitats - and rivers and marine ecosystems.

The 17 top category Australian projects (in alphabetical order) are:  
Alpine wetland restoration - NSW/ACT/VIC  
Arid Recovery, South Australia - SA  
Bounceback – Ecological Restoration in the Rangelands of South Australia - SA

Clarence Floodplain Project - NSW  
Gondwana Link Project - WA  
Grassy Groundcover Research Project - VIC  
Great Barrier Reef Restoration - QLD  
Greening Western Sydney - NSW  
Jarrah forest ecosystem restoration following bauxite mining - WA  
Kooragang Wetland Rehabilitation Project - NSW  
Lord Howe Island Ecological Restoration project - NSW  
Puckapunyal Military Area - VIC  
Sea to Lake Hume Fishways Project - NSW, VIC, SA  
Southern Atherton Tablelands Wildlife Corridors - QLD  
Sydney Bushcare - NSW  
Sydney Olympic Parklands: Ecological Restoration Elements - NSW  
Watering Wetlands on Murray Floodplain Private Properties - NSW

The group, made up of two ecology professors, two restoration specialists, a consulting ecologist and the EMR journal's editor found that, of the 50 projects nominated, 17 from Australia and 8 from New Zealand met the basic criteria of being an outstanding example of ecological restoration based on sound ecological principles and clearly stated goals, with sound monitoring and evaluation. Projects were also required to be of a significant scale (or having potential for wider influence), to have high quality on-ground implementation standards and to have demonstrated positive restoration outcomes over many years. Criteria also included whether the projects had sound social underpinnings and sufficient support from stakeholders to be sustained into the future.

Importantly, the working group guided the development of reports on these projects, consistent with a template prepared in collaboration with SERI. While preparation of the reports was often difficult for managers whose job descriptions do not include writing reports or articles for publication, the high quality reports produced have shown the effort was well worthwhile. The resulting web-based resources showcase the organisation's work to others, allow a sharing of lessons learned and can be used for virtual field trips by students and teachers of ecological restoration.

The working group hopes that the 'Top 25' project will encourage others to report on their own work and potentially nominate other projects for potential inclusion on the website in future years. The project was undertaken with the support of the Ecological Society of Australia and the Society for Ecological Restoration International.

**Reports on all the 25 projects – as well as reports on the 18 highly commended projects are accessible through SER International's Global Restoration Network website: <http://www.globalrestorationnetwork.org/countries/australianew-zealand/>**

Enquiries: EMR Editor, Tein McDonald:  
[teinm@ozemail.com.au](mailto:teinm@ozemail.com.au)

## STUDENT GRANT REPORTS

**Jean Drayton, Botany and Zoology, School of Biology, The Australian National University.**

*Project Report: The effect of inbreeding on male sexual attractiveness: a test with the black field cricket *Teleogryllus commodus*.*

Inbreeding (i.e. the mating of relatives) has been long known to reduce offspring fitness. Such reductions in fitness (i.e. inbreeding depression) have been widely documented across numerous taxa for many life history (e.g. hatching success) and morphological (e.g. body length) traits. Very few studies, however, have examined inbreeding depression in male traits that are involved in mate acquisition, such as sexual ornamentation and courtship, hereafter referred to as sexually selected traits. This gap in the data has implications for the management of small, isolated populations that are at risk of inbreeding. For example, inbreeding depression in sexually selected traits could compromise the survival of small populations if inbred males fail to properly court and mate with females, thereby reducing the effective population size. Furthermore, by studying inbreeding depression in sexually selected traits, we can test the reliability of male sexual signals as indicators of genetic quality and elucidate what forces drive female

mate choice, thereby advancing sexual selection theory.

Using large scale breeding experiments, I have examined the effect of inbreeding (brother-sister matings) on sexually selected traits in the black field cricket *Teleogryllus commodus*. Males produce a long-distance advertisement call to attract sexually receptive females, and females use this advertisement call to choose a mate. I have already shown that inbreeding alters the fine scale structure of the advertisement call. The next step was to determine if these structural changes in the advertisement call caused by inbreeding affect a male's reproductive success by reducing his attractiveness to females. To investigate this, we measured the number of wild females that were attracted to the advertisement calls of inbred and outbred males using field playbacks. The calls of inbred and outbred males had been recorded prior to the field study.

Playbacks were conducted at the University of New South Wales' Smith's Lake Field Station, near Forster, New South Wales, between 24 February and 18 March, 2009, on an area of level, maintained lawn. As *T. commodus* are largely nocturnal, playbacks were done at night. Eight playback units were evenly spaced around the circumference of a circular arena (20 m diameter) (Fig. 1). A playback unit consisted of a pair of speakers, a digital audio player and a small tent (for rain protection) covering the unit. The speakers were powered by power cables that ran around the circumference of the arena. The speakers were placed on a 60x60 cm piece of black Coreflute that was secured to the ground using tent pegs and coated with Tangle-Trap sticky insect trap coating to capture approaching females (Fig. 2). A playback unit continuously played the call of one male each night. Call playback intensity was calibrated daily using a sound level meter. To ensure that there were females in the area during the trials, at least 50 wild caught females that were collected from nearby (5 km) sites were released in the centre of the arena, under cardboard egg cartons, immediately before each trial. The playbacks were started

between 9:20pm and 9:50pm and always ended at 5:30am. The number of trapped females around each unit was counted the following morning when the trial ended. The number of females caught on the sticky trap surrounding the speakers of a playback unit provided a measure of attractiveness of the call played by that unit.

The study was done in two parts. First, males were tested in pairs, with each male pair consisting of an inbred male and an outbred male who were paired by family of origin. Each night, we tested the calls of four male pairs (= four inbred and four outbred males). Second, we tested the advertisement calls of inbred and outbred males who were unable to be paired by family of origin because we were unable to record the calls of both males in a pair (for example, because a pair member died). For this second experiment, males were randomly assigned into groups of four inbred and four outbred males irrespective of family of origin (therefore one group = eight individuals). Each night, we played the calls of one group. For both experiments, the calls of inbred and outbred males were arranged in an alternating pattern around the circumference of the arena. This design was slightly different to the original design, however due to rainy nights and time constraints we had to adapt the methods to ensure that sufficient sample sizes were obtained.

In total, we tested the attractiveness of the advertisement calls of 37 inbred and 37 outbred males. Preliminary analyses show no difference in the number of females attracted to the calls of inbred and outbred males. This however does not mean that inbreeding does not affect male reproductive success. In the field study, we ensured that each call was played continuously; therefore, every male was calling for the same amount of time throughout the night (i.e. had the same calling effort). This was so we could isolate the effect of any structural changes in the advertisement call on the number of females attracted. A male's attractiveness however, doesn't just depend on the structure of his call, but also on how much he calls (i.e. calling effort). Previous field studies with *T. commodus* have shown that females prefer males who have a

higher nightly calling effort. Importantly, using a custom-built monitoring device, we have shown that the same inbred males used in this field study actually call for less time during the night than outbred males. Consequently, despite the field playbacks showing that when an inbred male calls he is no less attractive than an outbred male, we know that inbred males call less than outbred males and therefore will probably attract and mate with fewer females.

Many thanks to the Ecological Society of Australia, the Australian Geographic Society and the Linnean Society of New South Wales for much appreciated financial support. A big thank you is also due to my wonderful field assistant, Kate Jones.



Fig. 1. The playback arena with eight playback units around the circumference.



Fig. 2. A close up of a playback unit, showing the speakers, tent and coreflute. The digital audio player and connection to the power was housed in the white plastic container.

## The 10th International Congress of Ecology



The 10th International  
Congress of Ecology  
Brisbane, Australia 16 - 21 August 2009

### **INTECOL 10 in 2009**

*Brisbane 16-21 August 2009*

We warmly invite you to attend the 10<sup>th</sup> International Congress of Ecology 2009. The Congress, bringing together the knowledge and resources of the Ecological Society of Australia, New Zealand Ecological Society and INTECOL, will be held at the Brisbane Convention and Exhibition Centre, Australia from 16 to 21 August 2009. Register online via [www.intecol10.org](http://www.intecol10.org)

#### **INTECOL Workshop: Sunday, August 16**

##### **The use of modelling tools for management of invasive plants**

In this workshop we will present a range of modelling techniques which enable the exploration of suitable management strategies for invasive plants. Participants will be introduced to both commonly-used tools and some new models for dealing with demography, landscape heterogeneity, human behaviour, economics and spread. Participants will be provided with model code and we will work through practical examples of the use of selected models and case-studies. We will also discuss general findings from modelling studies which can be applied in the absence of detailed information. Participants are encouraged to bring their own laptops but a small number of additional computers may be provided so it is not essential to bring your own. Participants will take away a CD containing model code, workshop case-studies and relevant papers.

Topics to be covered include:

- Demography: deterministic & stochastic matrix models, use of elasticities and simulations to inform management.
- Dispersal: integration of matrix models and dispersal kernels to assess management to contain spread.
- Landscape context: GIS based and neutral landscape models, habitat heterogeneity, integration with dispersal & demographic models to inform surveillance & management
- Stochastic Dynamic Programs: disturbance & the role of weed management as a disturbance

The workshop will run on Sunday 16 August, for a full day (9:00 -1700), with lunch & tea breaks.

Register now through the INTECOL website: [www.intecol10.org](http://www.intecol10.org).

Key contact person: Dr. Yvonne Buckley, [y.buckley@uq.edu.au](mailto:y.buckley@uq.edu.au), 07 32142643.

Workshop Conveners: Dr. Yvonne Buckley (Biological Sciences, UQ); Dr. Satu Ramula (Biological Sciences, UQ); Dongwook Ko (Biological Sciences, UQ); Dr. Hiroyuki Yokomizo (National Institute for Environmental Studies, Tsukuba Ibaraki, Japan 306-8506), Dr. Dave Westcott (CSIRO Sustainable Ecosystems, Atherton, Qld), Dr. Cameron Fletcher (CSIRO Sustainable Ecosystems), Jennifer Finn (CSIRO Sustainable Ecosystems, St. Lucia), and Shaun Coutts (Biological Sciences, UQ).

## MISCELLANEOUS

### **Carbon Pollution Reduction Scheme to be delayed**

The Federal Government has delayed the start date of its proposed emissions trading scheme by a year to win Senate support for its Carbon Pollution Reduction Scheme. Prime Minister Kevin Rudd has announced a series of compromise measures in an attempt to win Green support for the scheme. The package includes a very low fixed price on carbon for the first year of the scheme's operation and extra assistance for each of the two categories of trade exposed industries for the duration of the recession. It also includes the concession that the government will consider a tougher emissions reduction target of 25% of 2000 levels by 2020 in the event of a global agreement designed to limit the concentration of greenhouse gases in the atmosphere at 450 parts per million. If there is no such agreement, the target range of 5-15% reduction will apply. The government will also establish an Australian Carbon Trust to allow households to invest directly in reducing Australia's emissions and to drive energy efficiency in buildings.

<http://news.envirocentre.com.au/eb/article.php?issue=481&key=442&id=11934>

### **Low cost portable water quality testing sensor developed**

Researchers have developed a low-cost, portable way to test water quality and help authorities deal with pollution or pesticide contamination. Researchers at RMIT University collaborated with the Victorian Department of Primary Industries (DPI) at Knoxfield and Werribee to develop a proof-of-concept, portable sensor for testing on-site water quality. The initial target of this research was a fungicide used in areas of intensive horticultural production close to catchments. The RMIT prototype sensor uses selectively adsorbing polymers designed to quantitatively detect specific water-borne contaminants. The device provides a rapid, inexpensive method of measuring chemical

residues on-site. As a first indication, the instrumentation will cost less than \$2,500. By employing reusable sensing chips, costs per test appear less than a dollar. The sensor uses advanced functional polymer technology that can be tailored to detect specific water contaminants including a wide range of herbicides, pesticides and fungicides.

<http://news.envirocentre.com.au/eb/article.php?issue=481&key=442&id=11943>

### **Drop in coral growth on GBR since 1990**

The biggest and most robust corals on the Great Barrier Reef (GBR) have slowed their growth by more than 14% since the 'tipping point' year of 1990. Evidence is strong that the decline has been caused by a synergistic combination of rising sea surface temperatures and ocean acidification. A paper published in *Science*, written by AIMS scientists Dr Glenn De'ath, Dr Janice Lough and Dr Katharina Fabricius, is the most comprehensive study to date on calcification rates of GBR corals. See:

<http://www.aims.gov.au/docs/publications/wa/ypoint/012/headlines-03.html>

### **Why fertilization results in loss of plant biodiversity**

When grasslands are fertilized their productivity is increased, but their plant diversity is diminished. In the last 50 years, levels of plant-available nitrogen and phosphorous have doubled worldwide. This additional supply of plant nutrients is predicted to be one of the three most important causes of biodiversity loss this century. The research, led by Professor Andy Hector from the University of Zurich, shows for the first time the exact mechanisms that lead to the loss of biodiversity from grasslands following fertilization.

Different plant species profit from nutrient addition to different degrees with some species growing much faster than before. Consequently, some understorey species are overgrown by their faster growing

neighbours, shaded and without access to sufficient sunlight eventually die out. Researchers established an ingenious experiment where they added artificial light to the understorey of fertilized grasslands. This additional light countered the negative effects of fertilization and prevented the loss of plant diversity. Counter to earlier beliefs, competition for soil nutrients had no influence on changes in grassland diversity.

Competition for light following eutrophication is one of the main causes of the loss of plant diversity. The results of the work from Hector's research group have implications for sustainable management of grasslands and for the development of conservation policy. 'Our research shows that it is necessary to control nutrient enrichment if plant diversity is to be conserved in the long term' concludes Andy Hector.

<http://www.sciencedaily.com/releases/2009/04/090430144532.htm>

### **Fire influence on global warming**

Fire's potent and pervasive effects on ecosystems and on many Earth processes, including climate change, have been underestimated, according to a new report. 'We've estimated that deforestation due to burning by humans is contributing about one-fifth of the human-caused greenhouse effect - and that percentage could become larger,' said co-author Thomas W. Swetnam of The University of Arizona in Tucson.

'It's very clear that fire is a primary catalyst of global climate change,' said Swetnam, director of UA's Laboratory of Tree-Ring Research. All fires combined release an amount of carbon dioxide into the atmosphere equal to 50% of that coming from the combustion of fossil fuels.

'Fires are obviously one of the major responses to climate change, but fires are not only a response - they feed back to warming, which feeds more fires,' Swetnam said. When vegetation burns, the resulting release of stored carbon increases global warming. The more fires, the more carbon dioxide released, the more warming - and the more warming, the more fires. The very fine soot, known as black carbon, that is released into the

atmosphere by fires also contributes to warming.

The report's 22 authors call for the Intergovernmental Panel on Climate Change, or IPCC, to recognize the overarching role of fire in global climate change and to incorporate fire better into future models and reports about climate change.

<http://www.sciencedaily.com/releases/2009/04/090423142332.htm>

### **Caring for our Country funding**

More than 1300 funding applications have been made to the Federal Government under the 2009-2010 round of the Caring for our Country program. About \$450 million funding is available for projects under the current funding round, but applications submitted total more than \$3.4 billion. Applications will be assessed by a range of panels including community members and scientific experts, with announcements of projects to be funded under the program to be made in about the next two months.

<http://news.envirocentre.com.au/lawn/newsletter.php?issue=466&key=216>

### **Climate change makes migrations longer for birds**

A team of scientists, led by Durham University, have published findings that show that the marathon flights undertaken by birds to spring breeding grounds in Europe, are going to turn into even more epic journeys; the length of some migrations could increase by as much as 250 miles. The research team looked at the current migration patterns of European Sylvia warblers, a group of birds that are common residents and visitors to Europe, like the Blackcap. Published in the Journal of Biogeography, the scientists demonstrate evidence of potential breeding ranges shifting northwards in the future, while the wintering ranges remain stationary for many species. The team used simulation models to see how climate change might affect warblers and found that climate change will have significant impacts, particularly on the projected migration distances for some of the long distance fliers.

<http://www.sciencedaily.com/releases/2009/04/090415074856.htm>

### Climate change may wake up 'sleeper' weeds

Weeds cost Australia more than A\$4 billion a year either in control or lost production and cause serious damage to the environment. In an address given April 15 in Perth to the Greenhouse 09 conference on climate change, CSIRO researcher, Dr John Scott, said, however, that those cost estimates were only based on the damage caused by weeds known to be active in Australia.

'Out there, throughout the nation, are many weed species lying low but with the potential to take off and add to the economic and social burden of weed control,' Dr Scott said.

A recent CSIRO report for the Australian Government's Land and Water Australia looked at what effects climate changes anticipated for 2030 and 2070 might have on the distribution of 41 weeds that pose a threat to agriculture ('sleeper' species) and the natural environment ('alert' species).

'We found that climate change will cause most of these weeds to shift south, with wet tropical species making the greatest move – over 1000km,' Dr Scott said. The regions most at threat from alert and sleeper weeds, both under the current climate and under climate change, are south east Australia, followed by the south west.

<http://www.sciencedaily.com/releases/2009/04/090415102123.htm>

### Flame retardants in coastal ecosystem

Polybrominated Diphenyl Ethers (PBDEs), chemicals commonly used in commercial goods as flame retardants since the 1970s, are found in all United States coastal waters and the Great Lakes, with elevated levels near urban and industrial centres. The new findings are in contrast to analyses of samples as far back as 1996 that identified PBDEs in only a limited number of sites around the nation. Based on data from NOAA's Mussel Watch Program, which has been monitoring coastal water contaminants for 24 years, the survey found that PBDEs were widespread both in sediments and shellfish.

PBDEs are man-made toxic chemicals used as flame retardants in a wide array of consumer products, including building

materials, electronics, furnishings, motor vehicles, plastics, polyurethane foams and textiles since the 1970s. A growing body of research points to evidence that exposure to PBDEs may produce detrimental health effects in animals, including humans. Toxicological studies indicate that liver, thyroid and neurobehavioral development may be impaired by exposure to PBDEs. They are known to pass from mother to infant in breast milk. Similar in chemical structure to polychlorinated biphenyls, or PCBs, they have raised concerns among scientists and regulators that their impacts on human health will prove comparable. PBDE production has been banned in a number of European and Asian countries. In the U.S., production of most PBDE mixtures has been voluntarily discontinued.

<http://www.sciencedaily.com/releases/2009/04/090401112450.htm>

### Murray inflows lowest in over a century

Murray inflows between January and March were the lowest in 117 years and the outlook for the next three months is also looking bleak, according to the latest Drought Update by the Murray-Darling Basin Authority. Storage levels are low and the rainfall outlook for the next three months over the southern Basin is for drier than average conditions. Total inflows for the first three months of this year were 140 GL, slightly lower than the previous historic minimum of 150 GL in January-March 2007. Inflows for the 2008-09 water year are currently tracking as the sixth driest on record.

The MDBA's total active (useable water) storage is currently only 950 GL or 11% of capacity, well below the March long term average of 4,400 GL. Total storage across the whole Basin remains low. <http://news.envirocentre.com.au/lawn/>

### **Head of carbon capture and storage advisory panel named**

Former President of the World Bank, James Wolfensohn, has been appointed as the Chair of the advisory panel of a body that will guide the development of carbon capture and storage technology. The Global Carbon Capture and Storage Institute is being established by the Federal Government to accelerate the deployment of carbon capture and storage technology information sharing on a global basis. The International Advisory Panel, headed by Mr Wolfensohn, will provide broad strategic guidance to the institute and work globally to enhance its international reputation and networks. The inaugural meeting of foundation members of the institute is due to be held in Canberra later this month.

<http://news.envirocentre.com.au/lawn/>

### **Internet can warn of ecological changes**

Despite improved ecosystem monitoring, early warnings of ecological crises are still limited by insufficient data and gaps in official monitoring systems. Researchers from the University of East Anglia and Stockholm University explore the possibilities of using information posted on the Internet to detect ecosystems on the brink of change.

‘Information and communications technology is revolutionizing the generation of and access to information. Systematic ‘data mining’ of such information through the Internet can provide important early warnings about pending losses of ecosystem services,’ said lead author Dr Galaz.

For example, in 1997-98, unusually warm seas caused unprecedented levels of mass ‘coral bleaching’. Field observations of the global phenomenon were shared instantly through an email network, demonstrating how communication technologies can allow rapid assessment of emerging threats from informal sources. In their article *Can Web Crawlers Revolutionize Ecological Monitoring?*, published online this week, the authors explore the untapped potential of web crawlers - software programs that browse the World Wide Web in a methodical, automated manner - to mine informal web-based sources such as email lists, blogs and news articles, as

well as online reports and databases, for ecosystem monitoring.

Web crawlers can collect information on the drivers of ecosystem change, rather than the resultant ecological response. For example, if rapidly emerging markets for high value species lead to overexploitation and collapse of a fishery, web crawlers can be designed to collect information on rapid changes in prices of key species, landings or investments in particular regions. Future early warning systems may make use of the recent insight that shows that ecosystems sometimes ‘signal’ a pending collapse. The variability of fish populations has, for example, been shown to increase in response to over-exploitation. Web crawlers may also find information that describes ecological changes at small scales, which may warn of similar shifts in other locations. This includes early warnings of invasive species, as well reduced resilience of ecosystems at larger scales due to the small-scale loss of interconnected populations or ecosystems.

To collect further ideas on the usage of eco-monitoring web crawler the researchers have themselves created a blog: <http://resilienceinnovation.blogspot.com/>. <http://www.sciencedaily.com/releases/2009/03/090319104033.htm>

### **Research shows impact of fires on water catchments**

Research into the impact of the 2003 Alpine bushfires on water quality in catchment areas has indicated that fires can have lingering impacts on water yields and quality. The findings could provide a springboard for further research projects, and could be used to help predict the impacts of the devastating Black Saturday fires on affected catchments. The research of the impacts of the fires on two catchments burnt during the 2003 Alpine fires has been undertaken by Patrick Lane, Gary Sheridan and a team of researchers with funding from research and development corporation Land & Water Australia and the Victorian Department of Sustainability and Environment. The fires can affect water quality and yield in a number of ways. If a severe fire is followed by substantial rainfall, the sediment and nutrient run-off can pollute

water supplies. Nutrients attach to the sediment particles, so when the sediment settles in reservoirs, the nutrients do too. This can lead to algal blooms. Also, the amount of rainfall ending up in streams increased in research catchments by 70% after fires. The main reason for this is the loss of vegetation, which means there is much less interception of rainfall by the leaves, and much less transpiration by trees. With sizeable rainfall, flooding can result.

After the initial increase in run-off, which peaks in the first 1-3 years and then steadily declines, the vigorous regrowth forest absorbs more rainfall than the old one, especially in forests of ash like those around Kinglake and Marysville, meaning less water for catchments in the long-term. The final report is available at:

<http://products.lwa.gov.au/products/pn22320>.

### **New guidelines on how councils can prepare for climate change**

A new resource has been released to assist local governments to assess and manage the risks and opportunities associated with the predicted impacts of climate change. The 'Local Government Climate Change Adaptation Toolkit' has been developed by ICLEI Oceania with funding from the Federal Government. The toolkit includes a range of practical tools and exercises that form part of a process that local governments can use to prepare for and build their individual capacities to respond to scientific projections of the effects of climate change. According to the toolkit, councils are able to respond to climate change issues through areas of municipal responsibility such as: resource management, land-use planning, infrastructure and transport planning, local economic development, environmental management, community issues and emergency services. To view the Local Government Climate Change Adaptation Toolkit, visit:

<http://www.iclei.org/index.php?id=adaptation-toolkit>.

### **SA to mount constitutional challenge against water trading cap**

The South Australian Government is mounting a constitutional challenge to upstream states in the Murray-Darling Basin in a bid to protect South Australia's water rights. In making the announcement to the State Parliament, South Australian Premier, Mike Rann, singled out Victoria's 4% cap on trading water licences out of Victorian districts as a barrier to South Australia obtaining its water rights. Victorian Premier, John Brumby, says he is 'surprised' by the SA Government's announcement that it is preparing a High Court challenge to the cap on water trading. The Victorian Government will consider raising the 4% cap at the end of 2009 on the proviso that a number of conditions are met by the Commonwealth.

<http://news.envirocentre.com.au/lawn/>

### **Light or fight? How plants make tough survival choices**

Ever since insects developed a taste for vegetation, plants have faced the same dilemma: use limited resources to out-compete their neighbours for light to grow, or invest directly in defence against hungry insects. Now, an international team of scientists at the Salk Institute for Biological Studies and the Instituto de Investigaciones Fisiológicas y Ecológicas Vinculadas a la Agronomía (IFEVA) has discovered how plants weigh the tradeoffs and redirect their energies accordingly. The same light sensor that detects other plants crowding in and gives the signal to switch on the synthesis of the plant growth hormone auxin reduces the plant's responsiveness to the hormone jasmonic acid, which orchestrates the synthesis of a whole array of defensive chemicals.

Plants dial down their investment in defence when they perceive an increased risk of competition for light. Plants sense the presence of other plants in their neighbourhood by the relative increase in incoming far-red light resulting from absorption of red light by canopy leaves and reflection of far-red light from neighboring plants. When the major photoreceptor for shade avoidance detects neighbours, plants

start producing the growth hormone auxin and transport it to their stems, where it helps plants grow taller. But plants also react to chemical cues in the oral secretions of herbivores and mechanical damage caused by insects. They increase the production of defence-related hormones, particularly jasmonic acid, which ramps up the concentration of chemicals that make plants unpalatable or at least less nutritious for herbivores.

Fall armyworms—caterpillars that prefer to chomp on corn, sorghum and other members of the grass family but won't say no to beans, potatoes, peanuts, cotton and other crops—grew twice as fast on *Arabidopsis thaliana* seedlings grown under crowded conditions or exposed to far-red radiation, the light signal plants use to detect the proximity of neighbours. Like many commercially grown crops, *Arabidopsis*—the lab rat of plant biologists—doesn't tolerate shade well. But it was more than a matter of limited resources. Mutated *Arabidopsis* seedlings that no longer responded to far-red radiation but had normal levels of the far-red photoreceptor, still let their defences down. At closer inspection, the researchers found that far-red radiation decreased the plants' sensitivity to jasmonates. By ignoring jasmonate signals, the plants save resources because they no longer invest in defense and, at the same time, avoid the growth-inhibitory effects of jasmonates.

<http://www.sciencedaily.com/releases/2009/02/090227161823.htm>

### **Research points to Indian Ocean as cause of drought**

The main cause of Australia's droughts and floods has been traced to the waters of the Indian Ocean, according to a new report from the University of NSW. The study shows that the cycle of El Niño and La Nina events, which have long been thought to play a major role in south-east Australia's weather patterns, are in fact less important than the Indian Ocean, a finding that will have major implications for predicting rainfall in areas such as the Murray-Darling Basin. The report found that a phenomenon known as the Indian Ocean dipole plays a dominant role in

determining temperature and rainfall in south-east Australia.

It examined data on changes in the distribution of warm and cool water and found a direct correlation between dipole events and the current drought as well as historical droughts. There are some indications that positive Indian Ocean dipole events are becoming more frequent and negative events are becoming less frequent.

<http://news.envirocentre.com.au/eb/article.php?issue=418&key=180&id=11053>

### **New NOAA head**

USA President Barack Obama has appointed Oregon State University Professor Jane Lubchenco, one of the USA's most prominent marine biologists, to head the National Oceanic and Atmospheric Administration (NOAA). Professor Lubchenco, a conservationist who has devoted much of her career to encouraging scientists to become more engaged in public policy debates, is also a vocal proponent of curbing Greenhouse Gases linked to global warming. The appointment marks a shift for NOAA, which oversees marine issues as well as much of the USA government's climate work. Professor Lubchenco has criticized NOAA in the past for not doing enough to curb overfishing. Professor Lubchenco is a world-class scientist, a member of the National Academy of the USA and a Fellow of the Royal Society (FRS) – and, of course, a keynote speaker at the 2008 ESA Conference in Sydney. Her appointment to head NOAA is seen by many as a positive move by President Obama to ensure the highest level of scientific expertise in the advice he receives on marine and atmospheric issues.

### **FASTS news**

( See [www.fast.org](http://www.fast.org) for more)

### **Setting direction for \$38b marine industry**

A Marine Nation: National Framework for Marine Research and Innovation sets the direction for research in this critical area through the only nationally co-ordinated initiative of Australia's marine science, technology and innovation effort. This

document has been produced less than a year after the United Nations announced a huge extension of Australia's continental shelf – making our 13.5 million square kilometre marine jurisdiction the third largest in the world. The strategy identifies the research, development and innovation needed from government, industry and the community to develop Australia's marine industries. Australia's marine industries embrace tourism, fishing, offshore oil and gas and other diverse ocean-based enterprises. Copies of the strategy are available from [www.opsag.org](http://www.opsag.org).

### **Intellectual Property reforms**

Kim Carr has commenced a consultation process on IP Rights reforms. The reforms aim to reduce barriers in the innovation landscape for researchers and inventors; improve certainty about the validity of granted patents; and allow patent claims to be resolved faster. To drive the consultation process, IP Australia have prepared a series of papers: 'Getting the Balance Right' aims to improve scope and stringency of examinations to overcome gaps between grounds used by the commissioner for patent examination and those used by the courts for revocation of patents. 'Exemptions to Patent Infringement' provides a proposal for a statutory exemption to cover experimental activities including R&D. As some of you will be well aware, there has been concern raised that the lack of an experimental use provision in the Patents Act 1990 may inhibit research and innovation (although no case has been fought on those grounds in Australia).

The Australian Law Reform Commission (ALRC) has looked at this in its comprehensive 2004 study of gene patenting for example. In 2006, IP Australia conducted an inquiry (which FASTS made a submission to) recommending that the Act incorporate specific experimental use provisions – a recommendation that the previous Government accepted but did not get around to introducing legislation prior to the 2007 election.

[http://www.ipaustralia.gov.au/resources/news\\_new.shtml#21](http://www.ipaustralia.gov.au/resources/news_new.shtml#21)

### **Dr Greg Ayres new head of Bureau of Meteorology**

Dr Ayers joined CSIRO in 1975 and has held roles including Chief of Atmospheric Research and since 2005 has been the CSIRO's Chief of CSIRO Marine and Atmospheric Research. In 1995, Dr Ayers was awarded the Australian Meteorological and Oceanographic Society's Priestley Medal.

### **FEAST**

Findings from a report from the Forum of European Australian Science and Technology are that the productivity of research is higher for papers authored by scientists from more than one country. More pertinently, papers co-authored by Australian, USA and Europeans had significantly higher citation rates than bilateral or Australian only publications. For example, median citation rates for general science papers from 1991 – 2005 were: Australian authored papers 0.81; Australian and European authored 1.55; Australian and USA 1.81: and Australian, European and USA 2.97.

The paper provides data by broad disciplines including mathematics, physical, chemical, biological, agricultural, ICT and medical sciences. While relative citation rates vary quite markedly between disciplines, all demonstrate the same pattern of increased productivity/academic impact for bi and multi-lateral authorship.

None of this is surprising. However, it is useful information to encourage the Government to ramp up its preparedness to improve international engagement and mobility. Since the new Government came in they have made some useful decisions to improve international linkages including reducing restraints on international students accessing APA(I)s, relaxing constraints on collaborators travel to Australia in ARC grants, and more open fellowships (although there is still quite a way to go on a whole range of issues with international collaboration).

### **Historic budget for science, higher education and innovation**

FASTS has warmly welcomed the new science, research and higher education

funding and policy initiatives delivered by the Government in the Federal budget. The President of FASTS, Professor Ken Baldwin said this is an exceptional budget for science and innovation, well above expectations. The 2009/10 expenditure will be \$8.6B, a 25% increase on expenditure over 2008/9, the highest annual increase since records began.

New funding for higher education, science and innovation is worth an additional \$5.7B over four years and recognises the critical importance of universities, science and research for long-term growth and prosperity'.

The Government has grasped the opportunity to fundamentally reform research funding, indexation, taxation breaks for R&D and student income support. The more realistic funding of the indirect costs of research, contingent on transparent cost analysis and progressively introduced over four years, is particularly welcome.

FASTS also welcomes the overhaul of tax incentives for R&D. The new tax credit provides a 45% refundable credit for firms with turnover of less than \$20 million; and a 40% non-refundable credit for firms with

turnover of more than \$20 million and companies with foreign-owned companies.

Science infrastructure is a big winner (\$901m) and the Government has set appropriate priority areas, notably in marine and climate science, space science and astronomy, and frontier industries including nano- and bio-technologies. We are particularly pleased that key public sector research agencies - CSIRO, ANSTO, Australian Institute of Marine Science and the Bureau of Meteorology - have all received significant infrastructure investment.

#### Science and innovation budget tables

Each year the Government releases science and innovation budget tables, which detail estimated expenditure for all programs supporting science and innovation across all Government departments for the next financial year and retrospective data going back about nine years. Report available at <http://www.innovation.gov.au/General/Corporate/Pages/Budget200910.aspx> (page down to the bottom of the page).

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# ECOLOGY AROUND AUSTRALIA

## NORTHERN TERRITORY

*Christine Schlesinger, Regional Councillor*

Since taking on the role of NT councillor this year I have found my northern Australian compatriots strangely reluctant to share news of their ecological activities. On further thought I have realised that this must be out of fear that if we say too much about the exciting ecology happening here we might soon get invaded by a flood of 'southerners'. Despite the risk, I thought I would share some news from the small, but growing, number of ecologists at CDU's arid zone campus here in Alice Springs.

Megan Ford is flat out writing up her honours project on the endangered skink, *Egernia slateri* after numerous hours spent observing the foraging behaviour of the lizards at their mound burrows under challenging field conditions (extreme heat, freezing drizzly mornings, only the lizards for company). Meanwhile Bruce Pascoe is conducting censuses and banding as many mulga woodland birds as possible for his Masters which explores longer term dynamics and site fidelity in arid zone birds. To balance out any vertebrate bias that might be in danger of happening, Di Bell has just started her honours on the dynamics of beetle communities in relation to season and rainfall.

Jane Walker is working on the final chapters of her PhD thesis which is concerned with cultural understandings of Indigenous Protected Areas (IPAs). Jane's research in the northern Tanami IPA contrasts the land management objectives of Warlpiri people (on the ground) with those of staff from government agencies, and explores how the inclusion of Aboriginal values, objectives and processes are crucial to achieving enhanced conservation outcomes for protected areas. We have banished Jane to Lajamanu for thesis writing (well actually, it's because she

has taken up the position of IPA manager for the Northern Tanami region, and from all accounts is doing a fantastic job!).

Meanwhile I have been working with Shane Muldoon (Alice Springs Desert Park) and the Simpsons Gap Rangers, removing buffel grass (*Cenchrus ciliaris*) from experimental plots and monitoring the effect on fauna. Buffel grass is an invasive introduced pasture grass which has spread widely through central Australia in recent decades, with especially thick stands occurring in riparian areas. It competes with native grasses and forbs and has resulted in altered fire regimes, potentially resulting in substantial changes to vegetation and faunal communities. The big surprise was our last round of trapping in January, which by chance coincided with a long awaited (and most welcome) rainy period. We caught hundreds of Spencer's burrowing frogs, a species not seen except during episodic rainy spells, when they emerge in their thousands. We found considerably fewer of the frogs in dense buffel grass sites, compared to areas where buffel grass is being eliminated. We will now have to wait a few years (?) for the next big rain to be able to explore this further!

### **CSIRO Tropical Ecosystems Research Centre, Darwin NT**

*Barbie McKaige, local contact*

Healthy soils and perennial grass communities in extensively grazed systems in northern Australia: Little is known about the mechanisms by which grazing affects soil health and the implications for management in Australia's tropical savannas. We have a basic understanding of the role of soil macroinvertebrates such as termites in vital soil processes such as infiltration and nutrient cycling, but there is still a lot that remains unknown. This includes the role perennial grasses play in soil health, both in terms of mediating soil structure and function and as a food resource for soil macroinvertebrates.

Grazing may affect soil health directly through processes such as trampling and reducing ground cover, but also by reducing the food resource of termites. CSIRO's Leigh Hunt and Tracy Dawes have started work on a new project looking at developing a better understanding of the processes associated with the maintenance of soil health, as a basis for improved management of soil and plant communities in extensively grazed systems.

The aims of the project are:

- To identify the relative importance of various potential grazing effects on soil macroinvertebrates and plants in altering soil health.
- To develop early-warning indicators for use by land managers in making decisions about stocking practices to avoid adverse effects on soil health and pasture productivity.
- To develop grazing management guidelines for promoting healthy soils and productive pastures.
- To assess the effectiveness of providing different food resources for soil macroinvertebrates in restoring soil health and pasture productivity in degraded patches.

The experimental work is occurring on Tipperary Station, about two hours south of Darwin in the NT, and involves various combinations of treatments that include the manipulation of termite abundance, plant biomass (termite food resource) and ground cover. Soil properties (e.g. macroporosity, water infiltration and storage, soil strength, temperature, soil C, N and P), invertebrate activity, understorey plant biomass and species composition, and perennial grass basal area are to be monitored several times a year. The study site was established in December 2008. So far, initial baseline measurements have been made and experimental manipulation treatments have been applied to relevant plots. The first field measurements of soil and plant variables following the wet season will be made soon. Further information: [Leigh.Hunt@csiro.au](mailto:Leigh.Hunt@csiro.au) & [Tracy.Dawes@csiro.au](mailto:Tracy.Dawes@csiro.au).

### **Protecting the Gouldian Finch**

CSIRO's Adam Liedloff has recently completed a project which developed a decision support tool for the sustainable

management of the Gouldian finch. The Gouldian finch is an iconic species of the tropical savannas, and one of many granivorous birds and small mammals experiencing dramatic population declines. Creating a model of probably the most studied endangered species in the tropical savannas would appear a relatively easy task. However, understanding Gouldian finch ecology and habitat suitability required a complete understanding, and the ability to model, the phenology of the tropical grasses, spatial and temporal timing of the wet season onset and storm bursts, nesting requirements and the influence of fire and other disturbances (grazing and feral pigs) on plants, seed banks and nesting trees. The importance of landscape heterogeneity and natural variability in the spatial and temporal onset of seeds was also critical. Recognising that there are a range of modelling approaches with their own strengths and weaknesses, Adam used three - Bayesian Belief Networks (BBNs), process-based simulation modelling and GIS - to develop the decision support tool.

The resultant model tracks the habitat suitability in the form of seed resources and how they change with rainfall, fire and disturbance as an indicator of population health and sustainability in the region. It doesn't simulate population size, breeding, survival and mortality of the birds. The food resource maps indicate areas that are important for part of the year, periods of the year with most restricted food resources and how particular fires affect seed resources. This model will next be validated for Mornington Station, WA and used by NT Parks staff to direct fire management at Yinberrie Hills in the NT. The NHT funded project was undertaken in collaboration with the NT Department of Natural Resources, Environment, the Arts and Sport over six months, a much shorter period than would be required to build an equivalent process-based simulation model requiring significant data.

For a copy of the final project report, contact [Adam.Liedloff@csiro.au](mailto:Adam.Liedloff@csiro.au).

# ACT

*Jason Cummings, Regional Councillor*

ESA 2010: 'Ecology in Australia - the next 50 years' - the next ESA Annual Conference will be in Canberra in December 2010!

The 50<sup>th</sup> anniversary of the founding of the Ecological Society of Australia provides a timely platform for both retrospective, and prospective, considerations of ecology in Australia. A series of themes will focus on the challenges that will be faced by Australian ecosystems over the next 50 years, and the way that our science will need to adapt to meet these challenges. By taking a long-term perspective of ecology in Australia, our intention is to engender a strong sense of urgency, and consider how ecologists can provide solutions to those problems with which we are now familiar, and those on the horizon ...

The Local Organising Committee is seeking interest from local members that would like to help organise the event. There are opportunities that meet all interest and experience levels, and it is a fantastic way to make connections, receive free registration for the following year's conference (attention students!), and contribute to the society.

We need local members that would like to contribute through:

- Sketching a logo – ASAP;
- Helping prepare communication material;
- Suggesting and organising symposia;
- Supporting the open scientific program development (e.g. reviewing abstracts);
- Designing and developing to the social and arts programs;
- Suggesting, organising and hosting local events that sit within and adjacent to the formal program (e.g. workshops, field trips);
- Providing general logistical and organisational support (e.g. liaising with conference venues and the 'professional organising company', compiling material for the website etc.); and
- No doubt, other tasks that we are yet to identify!

If you would like to get involved, please contact the Local Organising Committee (via [act@ecolsoc.org.au](mailto:act@ecolsoc.org.au)) and outline your area of interest.

## Other news:

A one-day ESA Symposium on December 4 2009 (The worlds of ecology and environmental policy: never the two shall meet?) will also be held in Canberra, this year. See page 13 for details.

The Federal Government's R&D Corporation, Land & Water Australia, is to be abolished from 30 June this year following the withdrawal of its \$13 million annual funding in this year's Budget.

Chair of Land and Water Australia, Bobby Brazil, said she was disappointed with the decision. She said that the organisation has leveraged an additional \$20 - \$30 million dollars annually for research in the areas of climate change, water management and agricultural sustainability.

Ms Brazil said it had been suggested that the new government program, Caring for Our Country, would fill the gap left by Land & Water Australia.

'However, Caring for Our Country focuses on remediation or work on the ground; it operates on the assumption that the research has been done, we know what to do, we just need incentives and grants to make it happen,' she said.

She said a recent Productivity Commission report identified Land & Water Australia's portfolio of public good research as an area where there are 'strong grounds for large public subsidies [to] remain, because that research is unlikely to take place in their absence.'

Abolition of Land & Water Australia will involve the cancellation of a large number of contracts with university-based and other researchers across Australia, closing down many partly completed research projects. LWA has been funding research through 11 current programs:

Climate Change Research Strategy for Primary Industries  
 Defeating the Weed Menace  
 Environmental Water Allocation

Innovation  
 Joint Venture Agroforestry Programme  
 Knowledge for Regional Natural Resource  
 Management  
 Managing Climate Variability  
 National Program for Sustainable Irrigation  
 Native Vegetation and Biodiversity  
 Social and Institutional Research  
 Tropical Rivers and Coastal Knowledge  
 (TRaCK) and Australia's Tropical Rivers.  
[http://news.envirocentre.com.au/lawn/article.  
 php?issue=479&key=294&id=12007](http://news.envirocentre.com.au/lawn/article.php?issue=479&key=294&id=12007)

## TASMANIA

*Kerry Bridle, Regional Councillor*

Hello. It's been fairly quiet here in terms of group activity. I hope that we can address this soon, with a mid-year ESA Tas event. Suggestions for topics or activities have been thin on the ground. However, recent conversations with Mark Hovenden may result in a July activity based around their research group's work.

We also have the option of running a pre-Intecol talk fest so that people are able to practice their presentations, if members would like. Some people have opted to do this via the lunchtime talk series which is around the theme of 'monitoring'. Details of speakers are given below. These informal talks are a good chance for ESAers to get together and discuss their research in a supportive environment.

Monthly talks take place once a month on Tuesdays from 1-2 pm in the School of Geography & Environmental Studies, UTAS, Sandy Bay. Contact Janet Smith ([Janet.Smith@dpiw.tas.gov.au](mailto:Janet.Smith@dpiw.tas.gov.au)) for more information or if you would like to offer a talk.

9<sup>th</sup> June - **Denis Rogers. Soil Carbon, Soil Ecosystems and Farming**

14<sup>th</sup> July - **Sarah Munks and Amy Koch, subject TBA**

11<sup>th</sup> August - **Gretta Pecl**

15<sup>th</sup> September - **Grant Dixon**

13<sup>th</sup> October - **Michael Askey-Doran, TRCI: Tasmanian River Condition Index**

10<sup>th</sup> November - **Janet Smith, Louise Mendel, Louise Gilfedder, subject TBA.**

Thanks to those of you who contributed to the Bull. It's a good way to learn about what is going on around the State.  
 Cheers, Kerry

### Student news

Congratulations to Steve Leonard who has had his PhD accepted. Steve is working in Geography & Environmental Studies this year as a lecturer and with Jamie K.

Cynthia Roberts has submitted her PhD (supervised by Jamie Kirkpatrick and Peter McQuillan) on '*Marsupial lawns in Tasmania: genesis, biota and the effects of climate change*'. Not being one to sit still for too long, Cynthia is off to a job (Biodiversity – flora) in the Department of Conservation, Waikato Conservancy, Hamilton, New Zealand. She says that she is excited about getting to know this very diverse region that extends from the west to east coast of North Island, particularly the Thames Estuary, the Coromandel Peninsula and its offshore islands. She is sad to be leaving Tasmania – birds, animals (particularly those marsupials) and her Tasmanian friends, but hopes trans-Tasman visits [and contributions from 'Across the Tasman'] will mean these friendships are sustained.

Congratulations also to Gretta Pecl, a Research Fellow at the Tasmanian Aquaculture & Fisheries Institute, University of Tasmania, who is one of two winners of a Fulbright Tasmania Scholarship in 2009. This scholarship is sponsored by the Tasmanian government and the University of Tasmania and is awarded to an applicant to undertake research in the United States on a topic or issue of importance to the state. Gretta will spend four months at the University of Alaska, Fairbanks undertaking research into how ecological modelling can be used to assess impacts of climate change on the productivity and sustainability of marine resources. She will use the Alaskan Red King Crab and Tasmanian Rock Lobster as case studies.

'Understanding connections between oceanographic processes & responses to

climate change by marine species are challenges facing fisheries scientists & resource managers the world over,' Gretta said. 'By comparing and contrasting different systems facing similar challenges useful generalities will emerge, assisting us to develop broadly applicable approaches toward sustainable management. Alaska and Tasmania are both 'hot-spots' for climate change with increases in ocean temperatures significantly above the global average. Additionally, these areas also support productive and valuable crustacean fisheries, and the University of Alaska Fairbanks and the University of Tasmania both host incredibly active crustacean research programs providing many opportunities to develop sustained collaborations of major benefit to both regions'.

Techniques developed during the project will initially be applied to assessing climate change impacts on the \$61M Tasmanian rock lobster fishery and will provide the basis for similar applications to Tasmania's other fisheries and aquaculture industries. Gretta is heading to Alaska in May 2010 with her husband and two young children who are all very excited about their Alaskan adventure!

#### **Tasmania to host the 2011 ESA conference?**

Responses to the email re hosting ESA 2011 in Tasmania have been many and positive (18 so far). I feel that we will have a LOC (local organising committee - get used to the acronyms people - ESA is full of them) that is diverse and very experienced.

#### **Perpetua Turner, ESA Book Review Editor**

After at least seven years (I believe) of editing book reviews, Assoc. Prof. Ian Lunt last year decided to hand over the reins to someone else. So ESA now has a new book review editor. I'd like to thank Ian for making the transition so simple. His superb organisation of books and people has made it very easy for me to take over the role.

A bit about me - I am a graduate with Hons from the School of Botany at Melb Uni and completed my PhD here at the University of Tasmania at the School of Geography and

Environmental Studies. My life currently evolves around wet eucalypt forest ecology (in particular wildfire ecology) and my family - my husband and our three children (three boys aged 4 years, 2 years and the newest addition who is 2 months old).

I'd like to encourage people to think about reviewing a book. It's a rewarding experience. You only have to write (at most) an 800 word review within approximately 8 weeks (more time is possible) of receiving the book. The texts are interesting and will add value to your library and your knowledge. Book topics vary with topics including ecosystem management, statistics, environmental issues, restoration, conservation ... there is a text to suit every ecological field. Anyone from a postgraduate to senior manager can review a book. And certainly don't think 'oh I am sure someone more qualified than me will review the book', because sometimes this doesn't happen and you might be underestimating your own expertise and abilities.

Email me and enquire - even suggest you can review it if no one else will! Read past reviews to get an idea of what is expected. If there is a book you are interested in, why not email me and ask if you can write a review for it? The only book reviews that are discouraged are taxonomic texts and field guides. If you peruse a book and decide not to review it, it's quite ok to send it back to me; I'll find someone else to review it.

Finally, did I mention on completion of a review you also receive a 20% discount voucher from Blackwell Publishing? Well, you do! My email is [Perpetua.Turner@utas.edu.au](mailto:Perpetua.Turner@utas.edu.au).

#### **News from around Tasmania**

##### **School of Plant Science, UTAS**

*Mark Hovenden, local contact*

##### *Current activities in the Global Change Impacts group*

We have recently started a large set of new programs in the TasFACE experiment, accompanying our new five-year ARC discovery project that commences this year. This new funding will take the TasFACE

experiment out to the end of 2013, which will be 12 full years of operation. This new funding, by guaranteeing five further years of support, also allows us to embark on some long-term projects concerning nutrient cycling and soil processes. We have been fortunate over the past several months to have Dr Elise Pendall from the University of Wyoming working in our group. Elise is spending nine full months with us here in Tasmania and we are benefiting greatly from her expertise in soil ecology, particularly soil carbon cycling. Jasmine Janes has also recently rejoined our group, after completing her PhD on the molecular ecology taxonomy of Tasmanian orchids. Jasmine will be replacing Amity Williams, who is moving to Western Australia later in the year. We will all miss Amity greatly.

We also have a great set of new students working in and around the TasFACE experiment. Yui Osanai has recently commenced her PhD in our group investigating the impacts of climate change on the interactions between soil carbon and soil nitrogen transformations. Yui is currently working up some of our preliminary assessments of interactions between the soil C and N cycles for publication. Together with Dr Mike Perring, a postdoc in our group with great expertise in modelling soil nutrient cycling, Anna Flittner is investigating the role of plant species dominance in experimental impacts on nitrogen cycling for her honours project. This work will directly feed into both the TasFACE program and Mike's NERC-funded research into the role of species compositional change in mediating climate change impacts on ecosystem function. Another honours student, Keziah Nunn, is investigating how seedling emergence time affects the likely impacts of climatic warming on seedling establishment success in our native grassland ecosystem. This study will feed into our long-term analysis of seedling success in the TasFACE system.

*And a word from Mike Perring*

Mark Hovenden and Mike Perring, (School of Plant Science, UTAS), will be attending a workshop at the Centre for Population Biology, Imperial College London, Silwood

Park, UK. This workshop has been jointly organised by Pete Manning (CPB and Grantham Institute for Climate Change) and Mike. It will address the theme of how community composition influences ecosystem function in a changing environment. Funded by the Natural Environmental Research Council (UK), it will bring together process-based modellers and scientists with community composition data from environmental change experiments. Over the course of five days in early June, they will be asking when, where and why is community composition important in influencing ecosystem function? Their goal is to provide a theoretical rationale, perhaps by extending trait-based frameworks, that detailed, process-based models, parameterized with experimental data, can be tested against. The outcome may be of direct relevance to the INTECOL workshop 'Plant Functional Traits, Types and Climate Change' being organized by Amy Zanne and Adrienne Nicotra for the 16<sup>th</sup> August. Scientists from North America, United Kingdom, and elsewhere in Europe, Taiwan and New Zealand will also be in attendance.

**Tasmanian Aquaculture & Fisheries Institute, UTAS**

*Gretta Pecl, local contact*

*Adaptation Research Network for Marine Biodiversity and Resources*

The Adaptation Research Network for Marine Biodiversity and Resources (ARN-MBR) is an interdisciplinary network that is building adaptive capacity and adaptive response strategies for the effective management of marine biodiversity and natural marine resources under climate change. The central aim of the network is to lead Australia's efforts in understanding and adapting to today's emerging climate change needs, while also providing the training ground for the development of tomorrow's interdisciplinary climate change researchers. The network is designed to foster collaborative and creative interdisciplinary research, data-sharing, communication and education, and to help advance and document climate change adaptation knowledge so that policy and

decision-makers can develop appropriate climate change adaptation strategies to build adaptive capacity. The network comprises of an holistic framework that cross-cuts climate change risk, marine biodiversity and resources, socioeconomics, policy and governance, and includes ecosystems and species from the tropics to Australian Antarctic waters. ARN-MBR has been developed around a framework of five interconnecting themes including (marine) biodiversity and resources, communities, markets, policy and integration that addresses and responds to cross-cutting issues and questions between the themes.

Network initiatives will include national workshops to synthesise existing and emerging research and identify knowledge gaps, a database repository for data-sharing, interactive tools (e.g. searchable on-line databases; case studies; links to research projects; toolkits for stakeholders to respond to climate change risks) and summer/winter schools for post-grads and ECRs in climate change adaptation. We invite you to be part of this completely inclusive network, open to all marine researchers, stakeholders and end-users. Registering with the ARN-MBR, by forwarding your contact details to [Wenneke.tenHout@utas.edu.au](mailto:Wenneke.tenHout@utas.edu.au), will allow you to be kept up to date with relevant funding opportunities and conferences, recent developments with the IPCC process, alert you to our upcoming website launch and much more – all via our quarterly Marine Adaptation Bulletin.

#### **Department of Primary Industries and Water**

*Louise Gilfedder, local contact*

#### *Climate Change Activities in Tasmania - a season of workshops!*

There are a number of climate change projects currently underway in Tasmania involving ESA members within the Tasmanian government, at the University of Tasmania, CSIRO and the Antarctic Division to name but a few.

Louise Gilfedder, Jennie Whinam and Oberon Carter are all active in the Department of Primary Industries and Water's

preliminary assessment of the vulnerability of Tasmania's terrestrial and marine systems that are likely to be at risk from various aspects of climate change. This will provide a starting point to consider priorities and management responses, and a report will be published later this year.

In addition Jennie Whinam is currently investigating monitoring priorities & methods for assessing potential impact of climate change on vegetation values, particularly in the Tasmanian Wilderness World Heritage Area, and developing cost-effective monitoring approaches. Dr Mick Brown has been appointed as the consultant for this project. A small expert workshop on climate change monitoring needs was convened by CSIRO, University of Tasmania, Department of Primary Industries & Water, and Forestry Tasmania in March 2009. The purpose of the workshop was to compile an inventory of relevant vegetation research programs and datasets useful for climate change monitoring covering vegetation communities, species or ecosystems.

#### *Impact of Climate Change on the National Reserve System*

The Department of Environment, Water, Heritage and Arts and the Department of Climate Change are supporting the production of phase 2 of the recent report: Dunlop M & Brown PR (2008) 'Implications of Climate Change for Australia's National Reserve System: A Preliminary Assessment' (Department of Climate Change: Canberra). Phase 2 aims to analyse the impacts of climate change on ecosystems in four priority biomes, and to provide an analysis of the implications of these impacts for conservation management and the National Reserve System (NRS). The four priority biomes are 1. temperate lowland grassy ecosystems. 2. South-eastern Australian Forests 3. Hummock Grasslands and 4. Northern Australian Savannas.

Tasmanians will participate in two workshops that are relevant to our climate change adaptation planning. Kerry Bridle, Louise Gilfedder and Oberon Carter attended the lowland temperate grasslands workshop on 28/29 May, and Louise Gilfedder & Fred

Duncan will attend the forest workshop on 6/7 May. Information will feed back into Tasmanian approaches to vulnerability assessment and adaptation approaches

*Society for Conservation Biology, Oceania Section Meeting*, University of Tasmania, Hobart, 30 November to 3 December 2009. We are inviting proposals for organised symposia on any topic within the overall theme *Managing Biodiversity in a Time of Global Change*.

The meeting will address this theme across a full range of Oceanian terrestrial, freshwater and marine ecosystems as well as Antarctic ecosystems. Visit the meeting website for more information and online submission:

[www.cdesign.com.au/scoceania2009](http://www.cdesign.com.au/scoceania2009).

Abstracts due Friday 31 July 2009

Registration opens April 2009

Early Bird Registration closes Friday 2 October 2009

## NEW SOUTH WALES

*Liz Tasker, Regional Councillor*

G'day everyone. I've been chasing up local contacts for some of the institutions and groups in NSW that have been under-represented in past NSW news round-ups, and am pleased to be able to include news this time from Newcastle Uni, the National Parks group in the Dept of Environment & Climate Change, and The Australian Museum. Many thanks also to folk from a number of other institutions who have volunteered to send in news for the next Bulletin.

Of interest to NSW members, the ACT branch/group/bit of the ESA will be running a one-day workshop on Friday 4<sup>th</sup> December in Canberra on how the ESA and its members can improve the connections and flow of information between policy-makers and scientists. The day will use fire ecology as a case study, and while the details of the program are still under development, will include a presentation from the ESA on some new initiatives the society is proposing. We are keen to float these ideas with all members,

and to have your input and feedback on them. For more information on the day, please see the entry on page 13 or contact Jason Cummings (ACT Regional Councillor) for more information.

Cheers,  
Liz

### Newcastle University

*Anita Chalmers, local contact*

Masters student, Carmen Booyens, has just completed her field work investigating the effect of fire and slashing on the threatened species, *Darwinia glaucophylla*, and will now move to the lab for germination trials. Her study on the Central Coast is being co-supervised by Anita Chalmers and Doug Beckers (Biodiversity Officer, DECC, Gosford).

Wayne Erskine and Anita Chalmers have just published the results of their study on the role of *Casuarina cunninghamiana* in bench development on a sand-bed stream. Past catastrophic floods have caused the channel of Widden Brook (in the Upper Hunter) to widen and their study showed that the establishment of river oaks plays an important role in the process of channel contraction. They are now planning to get their feet wet in Wollembi Brook.

PhD student, Lynette Fletcher, is following on from her Honours project to look further at the ecology of platypus within the Wyong Shire on the Central Coast. The main aim of her project is to get a greater understanding of the feeding ecology and population dynamics of the platypus in a small coastal catchment. She has just started macro-invertebrate sampling to investigate the diversity and abundance of macroinvertebrates within Wyong River. The next step will be determining the cheek pouch contents of platypus. Lynette's supervisors are Michael Mahony and Bill Gladstone.

Our recent PhD graduate, Mary Greenwood, was awarded the degree for her thesis titled "Assessment of tidal restoration initiatives on dominant vegetation species of a coastal wetland, NSW, Australia". The results of her glasshouse study have just been published and suggest that in areas receiving

regular fresh-water inputs, which reduce salinity stress, the exotic *Juncus acutus* has the potential to displace the native *Juncus kraussii*. This work was supervised by Geoff MacFarlane and Geoff Winning.

Christopher McLean, Claudia Koller, John Rodger and Geoff MacFarlane have just published the findings of their research into the suitability of marsupial and eutherian mammalian hair as indicator tissue for metal exposure and accumulation within contaminated ecosystems. They found that sampling hair from introduced rodents may provide a suitable proxy for the assessment of Pb bioavailability for a range of small mammals within Australian urban remnants.

Karen O'Neill has recently submitted her Master's thesis titled "Environmental impacts on fauna of seagrass beds associated with the introduction of *Caulerpa taxifolia* into the estuaries of New South Wales, Australia". Her study (supervised by Maria Schreider) looked at the possible effects of salting (to control this noxious alga) on epifauna associated with the seagrass, *Zostera capricorni* and also whether *Caulerpa taxifolia* provided similar habitat for epifauna and infauna compared to *Zostera capricorni*.

David Tierney is currently working on a project that evaluates the potential for micro-evolutionary processes to act to mitigate the impact of human induced disturbance. A modeling approach will be developed to model genetic introgression in a framework that incorporates stochastic disturbance to a population. David will test this modeling approach in a model study system from the Sydney sandstone flora.

A new PhD student, Carlos Bohorques, has arrived from Columbia in September, 2008, to do a project on morphology and molecular ecology of native and invasive strands of a green alga, *Caulerpa taxifolia*. This work is being supervised by Maria Schreider.

Bill Gladstone and his research students are currently researching the habitat features underlying the selection of spawning aggregation sites by rocky reef fishes and the environmental controls on the seasonality of spawning, the value of habitat classes as biodiversity surrogates for marine

conservation planning, habitat dynamics in no-take marine reserves, population dynamics and habitat preferences of seahorses and the value of marine reserves for their conservation, the adequacy of social impact assessments in the establishment of NSW marine parks, the application of volunteer-collected data in the management of seagrasses, and the development of generalized individual based models of ecological systems.

### University of Sydney

#### Desert Ecology Group

Anke Franke, local contact

PhD student Anke Frank is in her final year investigating the effect of cattle grazing on small mammals and reptiles in the Simpson Desert, Queensland. Field work is nearly complete and emerging results have been reported at national and international conferences. Firstly, the early results from an experiment comparing diversity following the removal of cattle from a pastoral property showed that mammals appear to be more affected by cattle grazing than reptiles and that sustained levels of grazing intensity in the past are important when considering the effects of cattle removal (ESA, Perth 2007). Secondly, results on cattle behaviour and habitat use confirm that cattle prefer the shade and shelter providing gidgee (*Acacia georginae*) woodlands compared to the open spinifex (*Triodia basedowii*) for all of their major diurnal activities (grazing, walking, resting) (Australian Society for the Study of Animal Behaviour conference, Coffs Harbour, March 2008).

Anke present her updated research results at an international ecological conference in Germany (EURECO-GfÖ) and at the Australian Rangeland Society conference in Charters Towers, Queensland in September 2008. You may have seen the talk she gave at ESA08 in Sydney comparing the effects of cattle removal on kangaroos, camels and small mammals in the spinifex and gidgee woodland habitats in the Simpson Desert showing that native mammals (including kangaroos) were negatively affected by cattle grazing. In contrast, feral camel abundance remained high where cattle

still grazed as camels were removed as part of the management of the Bush Heritage Australia reserves. If you are interested, but missed all of these then perhaps you can see Anke present her final results in August on the effects of grazing on native mammals at the 10<sup>th</sup> International Mammalogical Congress in Mendoza, Argentina or the following week in her talk entitled, "Why we need to know where cattle go – planning wildlife refuges in Australia's rangelands", at the INTECOL conference in Brisbane.

#### **DECC**

#### **Vegetation Analysis Unit – Biodiversity Conservation Science - Scientific Services Division**

*Ross Peacock, local contact*

(Note: this unit is physically located at Macquarie University)

Over the last two months our group has installed a network of 140 grazing inclusion/exclusion cages in March at Werrikimbe NP. It was a big job considering each cage is 1 m<sup>3</sup> and all the steel was carried by hand. These permanent sampling points will study how rainforest recruitment patterns are being effected by macropods and ground birds, and should the browsing and foraging activity of these animals change in a warming climate, how the rainforest seedling recruitment processes will respond. Now the cages are installed we would welcome collaborative proposals to use them for other purposes, e.g. invertebrates, macrofungi, etc. Litter fall collecting points have also been installed and are being emptied monthly, providing a useful sample of stand primary productivity and its response to climatic variability. In May we will commence our sampling of large fallen *Nothofagus moorei* trees for tree ring analysis which we expect will provide a record of stand dynamics and growth for around 300 years. The tree ring analysis work is a collaboration with a large group of palaeo-climate modellers in eastern Australia and across the Tasman (National Institute of Water and Atmospheric Research Auckland) who are attempting to reconstruct the palaeo-circulation patterns of the Australian east coast low weather systems.

Our vegetation type spatial modelling work is close to being finalised for the catchment authorities. A team consisting of Andres Rolhauser, Jill Thonell, contractors and local staff in northern NSW are in the field undertaking validation sampling of the predicted types. The Generalised Dissimilarity Modelling approach adopted has been developed by Simon Ferrier (CSIRO) and Glenn Manion (DECC Armidale) and our research is one of the first applications of this technique to high resolution vegetation type modelling.

#### **Royal Area – Sydney South Region - Parks & Wildlife Group**

#### **Rusa Deer Management in Royal National Park, NSW – The Ongoing Challenges!**

*Michael Treanor*

As part of the ongoing management of the introduced Rusa Deer in Royal NP, NPWS and various researchers, including ESA members David Keith, Clare McArthur and Glenda Wardle are undertaking studies of both the ecological impacts and social/community perceptions of deer interactions and management methods. An interesting effect of nearly a decades worth of controlling the population within the park, is the recently observed increase in grass and *Lomandra* density in open, mainly coastal, environments within the park, as well as many pioneer rainforest species 'invading' from the transition zone.

This of course is seen by some park users as a new potential threat, one of an increased fire risk, the altering of the cultural landscape of the coastal cabins community, and as a hindrance to bushwalkers! However the greater risk, from a park manager's perspective, is the impact on the existing flora and ecological communities by deer browsing, especially the effect on seedling recruitment within the rainforest ecosystems.

This is one of the many challenges for protected area managers such as myself, and an important point to note is how much we value and need our links with professional ecologists and other experts within NPWS, universities and private consultancies, to help solve such conundrums. We would more than welcome new information, ideas and research

proposals that would assist in the management of this multi-faceted issue, so feel free to contact me at the 'Royal'. The park is ideally situated in its close location to several universities and various forms of assistance can be provided by NPWS.

Michael Treanor, Area Manager – Royal NP, Heathcote NP and Garawarra SCA (02) 9542 0632;

[Michael.Treanor@environment.nsw.gov.au](mailto:Michael.Treanor@environment.nsw.gov.au)

#### **The Australian Museum**

Dr Jeff Leis and a team of colleagues are using a device developed by Claire Paris (University of Miami) for studying orientation in larval fishes in the ocean. The drifting observational device, known as DISC (for Drifting In Situ Chamber), is fitted with a camera, and photographs are taken at regular intervals enabling the orientation of the larvae to be detected and quantified while naturally influenced by factors in the open ocean (such as salinity, temperature and current). The apparatus also makes it possible to study smaller and younger larvae than before. In recent months, the DISC has been gathering new data on the behaviour of Damselfish larvae at the Australian Museum's Lizard Island Research Station in the northern part of the Great Barrier Reef (you can read more about this work at the following site: <http://www.amonline.net.au/display.cfm?id=2936>).

Dr Jodi Rowley has been conducting research on amphibians in remote and often

previously unsurveyed forests in Vietnam, Cambodia and southern China. Knowledge of the region's amphibians is lacking and thus the objective of this work is to gain a better understanding of the diversity and conservation status of amphibians in South-East Asia. Just over 730 species of amphibian are known from the region, but new species are being described continuously (read more about this work at this site: <http://www.amonline.net.au/display.cfm?id=2932>).

Australian Museum scientists (Winston Ponder and Don Colgan) in conjunction with Andy Davis (University of Wollongong) will run one of the most comprehensive courses about molluscs and their biology you'll find anywhere. The twelve day intensive course will be based at the University of Wollongong, south of Sydney, NSW, Australia from Jan. 11 to 22 2010. It includes laboratory and field studies as well as lectures and seminars.

This 300 level (8 credit point) course is available to undergraduate students, but postgraduate (see website) and local and overseas non-award participants (e.g., amateur naturalists, environmental managers etc.) are also welcome. For details, see: <http://www.uow.edu.au/science/biol/UOW009845.html>.

# NEWS FROM OVERSEAS SOCIETIES

*Bernie Masters*

We are not alone. Although the Southern African Institute of Ecologists and Environmental Scientists has been inactive since 2005, the Ecological Society for Eastern Africa formed in 2007, thanks to a significant grant from the British Ecological Society. Covering ecologists based in Ethiopia, Uganda, Kenya and Tanzania, ESEA's annual conference is to be held in June at Makerere University in Kampala, Uganda – see [www.ecsea.org](http://www.ecsea.org).

A quick internet search also located the Ecological Institute of Japan, India's National Institute of Ecology, the Indian Institute of Ecology and Environment based in New Delhi and the Institute for Ecology and Biological Sciences based in Hanoi, Vietnam. Are ESA members aware of any others?

The April Bulletin of the Ecological Society of America includes a 25 page article on the history of the ecological sciences: studies of animal populations during the 1700s. Some of the lithographs reproduced in the article are superb and show the excellent powers of observation (as well as artistry) of the early naturalists/scientists.

A useful article titled 'Emerging Technologies' provides useful guidelines for effective data management. Suggested actions include:

- \* use a scripted program for analysis
- \*store data in non-proprietary software formats such as text files
- \*store data in non-proprietary hardware formats
- \*store an uncorrected data file with all its bumps and warts as an insurance against mistakes or corruption of files being worked on
- \*use descriptive names for your data files
- \*include a 'header' line that describes the variables as the first line in all tables
- \*use plain ASCII text for file names, variable names and data values

\*when adding data to a database, try not to add columns but design tables so that only rows are added

\*ensure all cells with columns contain only one type of information (text or numerical, not both)

\*record a single piece of data only once (i.e., make it a relational database)

\*record full information about taxonomic names

\*record full dates using standardized formats; and

\*always maintain effective metadata.

The Bulletin also contains a four page summary of the 2008 ESA Annual Meeting whose topic was New Approaches to the Evolution of Social Behaviour.

The March Bulletin of the British Ecological Society has an extensive series of articles on marine ecology. Topics covered include the search for life at extreme depths (down to 10,000 metres); islands in the deep sea (hydrothermal vents and cold seeps); CenSeam – a global census of marine life on seamounts; analysing change in Southern Ocean ecosystems; and using historical ecological information to assist with modern marine management. Two articles on the possible adverse consequences of geosequestered CO<sub>2</sub> and human-induced biodiversity loss rely less on science and more on emotion for their impact, but these are offset by a final article on plankton, dust and bugs encountered on board ship hundreds of kilometres offshore from West Africa.

Andrew Clarke from the British Antarctic Survey provides an interesting article on 'What makes a good ecology paper?', while Sheila Adams' article on studying ecology as a mature student is well worth reading.

Two recommended websites are Improbable Research at [improbable.com](http://improbable.com) and one of the world's most popular blogs affectionately known as Huffpo – see [www.huffingtonpost.com.todd-palmer-and-](http://www.huffingtonpost.com.todd-palmer-and-)

[rob-pringle](#). Written by an ecologist and a biologist, one of their articles – How to Find a Turd in the Woods – is included in the Bulletin and shows that nothing is sacred these days.

Books reviewed and recommended by BES members include:

Ecology. M L Cain *et al* (2008). Sinauer Associates, Sunderland, Massachusetts. About A\$100 hardback.

A Primer of Ecology (4<sup>th</sup> Edition). N J Gotelli (2008). Sinauer Associates, Sunderland, Massachusetts. About A\$70 paperback.

The Unnatural History of the Sea: The Past and Future of Humanity and Fishing. C Roberts (2007). Gaia Thinking, London. About A\$20 paperback.

Mountain Weather and Climate (3<sup>rd</sup> Edition). R G Barry (2008). Cambridge University Press, Cambridge. About A\$100 paperback.

The Biology of Alpine Habitats. L Nagy & G Grabherr (2009). Oxford University Press, Oxford. About A\$60 paperback.

The Biology of Polar Regions (2<sup>nd</sup> Edition). D N Thomas *et al* (2008). Oxford University Press, Oxford. About A\$70 paperback.

The Biology of Rocky Shores (2<sup>nd</sup> Edition). C Little *et al* (2009). Oxford University Press, Oxford. About A\$70 paperback.

The Encyclopedia of Animals: a Complete Visual Guide. F Cooke *et al* (2008). Weldon Owen, Sydney. About A\$60 hardback.

Behavioural Ecology: an Evolutionary Perspective on Behaviour. Edited by E Danchin *et al* (2008). Oxford University Press, Oxford. About A\$70 paperback.

Analysing Animal Societies: Quantitative Methods for Vertebrate Social Analysis. H Whitehead (2008). University of Chicago Press Chicago. About A\$40 paperback.

Urban Regions: Ecology and Planning Beyond the City. R T T Forman (2008). Cambridge University Press, Cambridge. About A\$70 paperback.

Frontiers in Ecological Economic Theory and Application. Edited by J D Erickson & J M Gowdy (2007). Edward Elgar, Camberley Surrey. About A\$200.

Ecological Restoration: Principles, Values and Structure of an Emerging Profession. A F Clewell & J Aronson (2008). Island Press, Washington, DC. About A\$50 paperback.

The Chemistry of Soils (2<sup>nd</sup> Edition). G Sposito (2008). Oxford University Press, Oxford. About A\$120 hardback.

Control of Pest and Weeds by natural Enemies: an Introduction to Biological Control. R Van Driesche *et al* (2008). Blackwell Publishing, Oxford. About A\$90 paperback.

The Ecology of Browsing and Grazing. Edited by I J Gordon & H H T Prins (2008). Springer, Berlin. About A\$250 hardback.

Bernie Masters  
[bmasters@inet.net.au](mailto:bmasters@inet.net.au)

## ABSTRACTS OF HIGHER DEGREE THESES

### Effect of fire regime on grass-layer plant dynamics in a tropical savanna

Ken Scott, Charles Darwin University, Darwin. PhD Thesis. Supervisors: Sam Setterfield (Charles Darwin University), Michael Douglas (Charles Darwin University) and Alan Andersen (CSIRO Sustainable Ecosystems).

Despite the regularity of fire in tropical savannas, the impact of different fire regimes on species abundance, and the role of fire in ecological processes, remains poorly documented. This thesis examines the vegetation dynamics of grass-layer plants in savanna, with particular focus on the effects of fire. It aimed to examine the relative importance of fire regime as a determinant of species composition, and the influence of fire on ecological processes, which are mechanisms of population change.

These aims were addressed by describing the distribution of plant species at the community-scale, and undertaking experiments in a replicated manipulative fire experiment, at the Territory Wildlife Park near Darwin, Northern Territory, Australia. Six fire regimes were allocated as treatments in a randomised complete block design, where regimes comprised burning at different yearly intervals in either the early or late dry season (June and October respectively), including an unburnt control treatment. Shade house and laboratory experiments complemented field observations and experimentation.

After three years, the species composition of grass-layer plants remained unchanged by the different fire regime treatments. Rather than fire regime, an increase in grass-layer plant density during the experiment coincided with an increase in rainfall, and grass species distribution was highly correlated with top soil moisture in the wet season, tree / shrub cover and the cover of tree leaf litter on the ground. These environmental factors drive species distribution patterns in part through their influence on seedling establishment. In a field sowing experiment, canopy and litter cover both significantly reduced the establishment

of the annual grass *Sorghum intrans* F.Muell. ex Benth. In a shade house experiment, litter cover significantly reduced seedling emergence in seven annual and perennial grass species, regardless of whether seeds were placed above or below a 5 cm litter layer. Consequently, areas of the site with lower canopy and litter cover, as well as higher top soil moisture during the wet season, supported more diverse and species rich grass-layer communities.

This resilience of the grass-layer to fire regimes over the short term (three years) was attributed to the dominance of annuals, which avoid fire-related seed mortality in a dry season soil seed bank, and the fire tolerance (resistance) of the perennial species. An examination of soil seed bank dynamics revealed no significant change in the density or richness of germinable seeds in the seed bank immediately after fire, and so the seed bank remains a source of seedling regeneration in the subsequent wet season. Adult perennial grass tussocks were also highly resistant to fire. After three years, there were no significant differences in the survivorship of three common species (*Eriachne trisetata* Nees ex Steud., *Eriachne avenacea* R.Br. and *Chrysopogon latifolius* S.T.Blake) between different fire regime treatments.

In contrast to this resilience over the short term, differences in fire frequency over the longer term (14 years) appeared to considerably influence grass species composition. An examination of composition between areas of contrasting fire frequencies during the previous 14 years revealed the apparent loss of regionally dominant, taller grass species (*Sorghum intrans* and *Heteropogon triticeus* (R.Br.) Stapf) in areas of lower fire frequency.

The approach taken here of examining life cycle processes as causes of population change has application in the management of plant populations elsewhere, because it has a mechanistic basis rather than being purely phenomenological.

## NOTICEBOARD & ADVERTISEMENTS

Please help to keep the notice board current and informative. Items to be listed in detail as below, information should be sent to the *Bulletin* Editor *as electronic copy* (preferably email) and in a similar format as those below - see details for copy deadlines in the front of the *Bulletin*. **Please give details rather than just a web address**, it can take ages to access even basic information from some sites.

### FORTHCOMING MEETINGS

June 18-20, 2009. Int. Wildfire Management Conf. Sydney, NSW.

<http://www.wildfiremanagement09.com/default.asp>

June 18-20, 2009. 4<sup>th</sup> Workshop on Remote Sensing of the Coastal Zone. Chania, Greece.

<http://www.earsel.org/SIG-CZ/4th-workshop>

June 22-23, 2009. NSW Nature Conservation Council: Biodiversity Under Fire Conf. Sydney, NSW.

[http://nccnsw.org.au/index.php?option=com\\_content&task=view&id=2677&Itemid=1](http://nccnsw.org.au/index.php?option=com_content&task=view&id=2677&Itemid=1)

June 22-26, 2009. 3<sup>rd</sup> GLOBEC Open Science Meeting. Victoria, British Columbia, Canada.

<https://www.confmanager.com/main.cfm?cid=1345&nid=9839>

July 5-10, 2009. AMSA Ann. Conf. Adelaide, SA. [www.amsa.asn.au](http://www.amsa.asn.au)

July 6-10, 2009. 2<sup>nd</sup> Congress on Management of Ecosystems and Biodiversity/ 7<sup>th</sup> Int. Convention on Environment and Development. Havana, Cuba.

[www.cubambiente.com](http://www.cubambiente.com).

July 8-10, 2009. 7<sup>th</sup> Int. Conf. on Ecosystems and Sustainable Development. Chianciano Terme, Italy.

[http://www.wessex.ac.uk/images/stories/pdf/cfps/2009/ecosud\\_09.pdf](http://www.wessex.ac.uk/images/stories/pdf/cfps/2009/ecosud_09.pdf)

July 11-16, 2009. 23<sup>rd</sup> Ann. Meeting, Soc. for Conservation Biology. Beijing, China.

[www.conbio.org/2009](http://www.conbio.org/2009)

July 13-17, 2009. MODSIM09: 18<sup>th</sup> Biennial Congress on Modelling and Simulation. Cairns, Qld. <http://mssanz.org.au/modsim09/>

**Aug 16-21, 2009. INTECOL. 10<sup>th</sup> Int. Congress of Ecology. Brisbane, Qld.**

[www.intecol.net/](http://www.intecol.net/)

July 20-24, 2009. Galapagos Science Symp. Puerto Ayora, Santa Cruz, Galapagos, Ecuador. [Paulina.couenberg@fcdarwin.org.ec](mailto:Paulina.couenberg@fcdarwin.org.ec)

August 23-27, 2009. 19<sup>th</sup> Conf. Soc. for Ecological Restoration Int. Perth, WA.

<http://www.seri2009.com.au>

August 23-28, 2009. 2<sup>nd</sup> World Congress of Agroforestry. Nairobi, Kenya.

<http://www.worldagroforestry.org/wca2009/>

August 23-27, 2009. 10<sup>th</sup> Int. Conf. on the Ecology and Management of Alien Plant Invasions. Stellenbosch, South Africa.

<http://www.emapi2009.co.za/>

August 29-Sept, 2009. Estuarine Goods and Services. Dublin, Ireland.

<http://www.ecsa-news.org/>

Sept 1-3, 2009. Biotechnological exploitation of marine resources. European Soc. Marine Biotechnology. Concarneau, Brittany, France.

<http://www.mnhn.fr/mnhn/conc/index3.htm>

Sept 1-5, 2009. 2<sup>nd</sup> European Conf. of Conservation Biology (in conjunction with the Soc. for Conservation Biology). Prague, Czechoslovakia. [www.eccb2009.org](http://www.eccb2009.org)

Sept 3-5, 2009. CEST2009—11<sup>th</sup> Int. Conf. on Environmental Science and Technology. Chania, Crete. <http://www.gnest.org/cest>

Sept 7-9, 2009. 5<sup>th</sup> Int. Conf. on River Basin Management. Malta. <http://www2.wessex.ac.uk/09-conferences/river-basin-management-2009.html>

Sept 7-11, 2009. European Marine Biology Symposium 2009. Liverpool, UK. <http://www.liv.ac.uk/marinebiology/embs.html>

Sept 9-11, 2009. Water Resources Management 2009. Malta. <http://www.wessex.ac.uk/09-conferences/water-resources-management-2009.html>

Sept 14-16, 2009. 1<sup>st</sup> Int. Conf. on Physical Coastal Processes, Management and Engineering. Malta. <http://www2.wessex.ac.uk/09-conferences/coastal-processes-2009.html>

Sept 14-16, 2009. 3<sup>rd</sup> Int. Conf. Estuaries & Coasts. Sendai, Japan. <http://donko.civil.tohoku.ac.jp/icec2009/index.html>

Sept 21-25, 2009. Climate Impacts on Marine Fishes and Global Ocean Observing Systems. ICES Annual Science Conference. Berlin, Germany. <http://www.ices.dk/indexnofla.asp>

Sept 29-Oct 4, 2009. Raptor Research Foundation 2009 Ann. Conf. Pitlochry, Scotland. [www.rfconferencescotland2009.org](http://www.rfconferencescotland2009.org)

Nov 1-5, 2009. Coasts and Estuaries in a Changing World (CERF 2009). Portland, Oregon, USA. <http://www.erf.org/newsletter/Winter07-CERF09-ExecDir.html>

Nov 3-6, 2009 Int. Symp. Rebuilding depleted fish stocks: Biology, ecology, social science and management strategies. Warnemünde,

Germany.

<http://www.uncover.eu/index.php?id=180>

Nov 12-14, 2009. Digital Earth Summit on Geoinformatics. Postdam, Germany. [http://www.isde-summit-2008.org/front\\_content.php](http://www.isde-summit-2008.org/front_content.php)

Nov 25-27, 2009. Molluscs 2009. Brisbane, Qld. <http://www.malsocaus.org>

Nov 30-Dec 3, 2009. Soc. for Conservation Biology Oceania Regional Meeting. Hobart, Tasmania. <http://www.cdesign.com.au/scboceania2009/>

**Dec 4, 2009. ESA Symposium.** The worlds of ecology and environmental policy: never the two shall meet? Canberra, ACT (includes ESA AGM). Information from Jason Cummings at [act@ecolsoc.org.au](mailto:act@ecolsoc.org.au).

## 2010

2010 TBA Int. Symp. Ecosystems 2010: Global Progress on Ecosystem-based Fisheries Management. Anchorage, USA. [http://www.pices.int/meetings/All\\_events\\_default.aspx](http://www.pices.int/meetings/All_events_default.aspx)

2010 TBA Int. Symp. Carrying Capacity: What does it mean in a Changing Ocean? Lisbon, Portugal. [http://www.pices.int/meetings/All\\_events\\_default.aspx](http://www.pices.int/meetings/All_events_default.aspx)

Feb 22-26, 2010. ASLO Ocean Sciences Meeting. Portland, Oregon, USA. <http://www.aslo.org/meetings/aslomeetings.html>

March 26-28 2010. Butterfly Conservation's 6<sup>th</sup> Int. Symp.: The 2010 target and beyond for Lepidoptera. Reading, UK. [www.butterfly-conservation.org/symposium](http://www.butterfly-conservation.org/symposium)

April 11-16, 2010. Int. Healthy Parks Healthy People Congress. Melbourne, Vic. <http://www.healthyparkshealthypeoplecongress.org/>

April 26-29, 2010. Int. Symp. Forecasting Climate Change Impacts on Fish and

Shellfish ICES, PICES Sendai, Japan.  
[http://www.pices.int/meetings/All\\_events\\_default.aspx](http://www.pices.int/meetings/All_events_default.aspx)

June 6-11, 2010. Advancing the Science of Limnology and Oceanography. Santa Fe, New Mexico, USA.  
<http://www.aslo.org/meetings/aslomeetings.html>

July 12-14, 2010. Aust. Soc. Fish Biology. Melbourne, Vic. [www.asfb.org.au](http://www.asfb.org.au)

August 1-6, 2010. 19<sup>th</sup> World Congress of Soil Science: Soil Solutions for a Changing World. Brisbane, Qld.  
<http://www.ccm.com.au/soil/>

Sept 15-19, 2010. 14<sup>th</sup> Int. Biotechnology Sym. and Exhibition. Rimini, Italy.  
[www.ibs2010.org](http://www.ibs2010.org)

### 2011

Feb 13-18, 2011. Advancing the Science of Limnology and Oceanography. Aquatic Sciences Meeting. San Juan, Puerto Rico.  
<http://www.aslo.org/meetings/aslomeetings.html>

March 2011. 5<sup>th</sup> Int. Zooplankton Production Symp. Pucon, Chile.  
[http://www.pices.int/meetings/All\\_events\\_default.aspx](http://www.pices.int/meetings/All_events_default.aspx)

### 2013

August 18-23, 2013. INTECOL 11 Congress (Ecology—Into the Next 100 Years). London, UK.

## Interesting Websites

### Virtual library of medieval manuscripts

Google 'Edward the Confessor' and you'll get page after page of links to biographies of this 11<sup>th</sup> century English king. But a completely digitized manuscript of the oldest surviving Anglo-Norman history of the king does not turn up—at least on the first 20 search pages—even though Cambridge University painstakingly scanned the sumptuously illustrated manuscript in 2003.

That history, 'The Life of King Edward the Confessor,' probably written by a Benedictine monk named Matthew Paris sometime between 1250 and 1260, is not alone. Somewhere between 5,000 and 10,000 rare and precious medieval manuscripts have been scanned over the past decade into formats that could be studied over the Internet if only scholars knew they existed and knew where to find them.

'Searching for medieval manuscripts gets you millions of hits, most of which have nothing to do with manuscripts, and when they do, they usually feature only images of a single page rather than the entire book,' said Matthew Fisher, an assistant professor of English at UCLA. 'Since finding these great projects is so tough, they're functionally invisible.'

Fisher set out two years ago to remedy the situation. With the assistance of two graduate students in English, a computer developer from UCLA's Center for Digital Humanities, and Christopher Baswell, a former UCLA professor of English, Fisher decided to collect links to every manuscript from the eighth to the 15<sup>th</sup> century that had been fully digitized by any library, archive, institute or private owner anywhere in the world.

In December 2008, the group launched the initial results. The UCLA-based Catalogue of Digitized Medieval Manuscripts now links to nearly 1,000 manuscripts by 193 authors in 20 languages from 59 libraries around the world.

Highlights of the virtual holdings include:

- The largest surviving collection of the works of Christine de Pizan, one of the first women in Europe to earn a living as a writer. The manuscript was commissioned by Queen Isabeau of France in 1414 and is now held by the British Library.
- An Irish copy of the Gospel of John, bound in ivory and presented to Charlemagne sometime around 800, now in the library of the monastery of St. Gall in Switzerland.
- The Junius manuscript, one of only four major manuscripts preserving poetry in Old English. Dated to around 1000, the

book is now among the holdings of Oxford's Bodleian Library.

Employing a Web application designed by the Center for Digital Humanities, which promotes the use of computer technology in humanities research and instruction, the Catalogue of Digitized Medieval Manuscripts allows users to search for manuscripts according to their author, title, language and archiving institution.

In its first three weeks of operation, the site had almost 5,000 visitors from Australia, England, France, Italy, Germany, Spain, the Netherlands, Sweden, Switzerland, Austria, Canada and all over the United States.

Catalogue of Digitized Medieval Manuscripts:

<http://manuscripts.cmrs.ucla.edu/>

<http://www.sciencedaily.com/releases/2009/02/090210161916.htm>

### ESA Electronic list

All messages intended for the ESA e.mail list should be sent to: [esa\\_news@ecolsoc.org.au](mailto:esa_news@ecolsoc.org.au)

### Administrative commands for the esa\_news list

For help and a description of available commands, send a message to: [esa\\_news\\_help@ecolsoc.org.au](mailto:esa_news_help@ecolsoc.org.au)

To subscribe to the list, send a message to: [esa\\_news-subscribe@ecolsoc.org.au](mailto:esa_news-subscribe@ecolsoc.org.au)

To remove your address from the list, just send a message to the address in the 'List-Unsubscribe' header of any list message. If you haven't changed addresses since subscribing, you can also send a message to: [esa\\_news-unsubscribe@ecolsoc.org.au](mailto:esa_news-unsubscribe@ecolsoc.org.au)

For addition or removal of addresses, a confirmation message will be sent to that address. When you receive it, simply reply to it to complete the transaction.

### ESA Fora

To save overloading all our in-boxes, ESA have moved to a series of on-line fora for discussion. These are worth keeping in mind. Go to the website ([www.ecolsoc.org.au/](http://www.ecolsoc.org.au/)), log in to the member's area and follow the prompts.

The fora are:

- Ecology in Practice - the discussion site for all ecologists in the work force
- Ecology Views - share your opinions on a wide range of ecology issues
- Environment and Conservation discussion site
- Students and Post-graduates - discussion on student issues with your peers

The fora represent a good chance to circulate notification of publications, post docs, information and discussion, but they will only work if people get into the habit of logging on and adding to them.

ESA08 was planned on a fully carbon-neutral basis. This means that the Society attempted to offset all greenhouse gas emissions generated through activities associated with the conference. There are considerable uncertainties and many questions arising when ESA becomes involved in such a venture, and it is guaranteed to stimulate informed debate amongst members. We want your feedback and input into developing the Society's future strategies and contributions to global climate change issues.

You can get to the forum by logging into your account at [www.ecolsoc.org.au](http://www.ecolsoc.org.au).

Click the Forum link on the menu. Open the Environment and Conservation Discussion folder, click the Carbon Offset link—and leave your comment.



### MEMBERSHIP APPLICATION FORM

The Ecological Society of Australia is a professional organisation established to promote ecological research and communication. The Society's constitutional objectives are:

- to promote the scientific study of all organisms in relation to their environment
- to promote the application of ecological principles in the development, use and conservation of Australia's natural resources
- to advise governmental and other agencies in matters where the application of ecological principles may be of assistance
- to foster the preservation of natural areas for scientific and recreational purposes and seek to ensure that such areas are soundly managed

#### The Ecological Society provides the following membership benefits:

- Austral Ecology, a journal of international standing—8 issues per year
- the quarterly ESA Bulletin, a newsletter for members
- an electronic mail discussion list for rapid communications, exchange of views, and advertising jobs or grant application deadlines
- online membership database @ [www.ecolsoc.org.au](http://www.ecolsoc.org.au)
- annual symposia and open forums, workshops and meetings
- links with international ecological bodies, including INTECOL
- reduced subscription rate to Ecological Management and Restoration journal
- opportunities to apply for grants and scholarships

| Category   | Australian (incl. GST) | International<br>(excl GST plus \$10 post) |
|--|------------------------|--|
| Standard   | \$82.50                | \$85.00                                    |
| *Concession<br>(income under \$25 000 p.a)   | \$38.50                | \$45.00                                    |
| Family<br>(2 members at same address)  | \$110.00               | \$120.00                                   |
| <i>Bulletin</i> subscriber only<br>(no membership)                                       | \$27.50                | \$35.00                                    |
| <i>Ecological Management &amp; Restoration</i><br>journal (ESA Member subscription rate) | \$66.00                | \$64.00                                    |

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\*Please contact ESA if you feel that you are entitled to a reduced membership for reasons other than income

Membership is for the calendar year, and includes *Austral Ecology* (8 issues/yr), the *Bulletin* (4 issues/yr) and reduced Conference registrations. Membership applications must be supported by a Proposer and Seconder who are current members of the Society. Contact the Membership Manager if you need help identifying suitable nominators. Payments can be made for 1, 2, or 3 years in advance.

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*Applicant Signature:* \_\_\_\_\_ *Date:* \_\_\_\_\_

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|   | 3.1 Concession (low income)                    | \$38.50                | \$45.00  |
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| <i>EMR subscription is additional to ESA Membership. Please add this amount for your membership.</i>  |  |                        |  |
|   | <i>Ecological Management &amp; Restoration</i> | \$66.00                | \$64.00  |

*To apply for Sustaining Association or Bulletin subscription only, contact the ESA office.*

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**Ph: 08 8953 7544, Fax: 08 8953 7566, email: membership@ecolsoc.org.au**

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