

Fellows contributing new thinking for policy*

'Policy does not occur in a vacuum.' 'Engage end-users up front.' 'Own the solution — keep conversing.' These are three of the six fresh-thinking parts of a 'Policy Wheel' that Fellows of the Peter Cullen Trust have devised.

The wheel differs from the traditionally more linear processes of forming policy, not only because it is a cycle, but also because it is designed to include diverse voices throughout the process.

The initiative arose during the Fellows' discussions within and since the Trust's 2011 leadership program. **Dr Carolina Casaril**, speaking for the group, presented their ideas at the 'Practical Responses to Climate Change' conference (hosted by Engineers Australia) in Canberra, in early May (see page 4). The author team comprises 10 of the 14 Fellows who graduated in 2011 (see photo at right).



The team has applied the Policy Wheel to the policy framework currently in use for coal seam gas (CSG) as it interacts with water issues and climate, to enable

policy to optimise the benefits of CSG to Australia, through better access to and use of relevant evidence.

Ideally, the team wants CSG policy to be based on 'better understanding of the social, economic, cultural and environmental considerations' relating to it, including groundwater aspects, and their paper offers recommendations aimed at 'enhancing clarity, building confidence and achieving consensus'.

Their recommendations relate to regional governance, understanding of impacts and benefits, and providing infrastructure.

Casaril C.J., Shelly K., Williams S., Madden S., Douglas M., Skinner D., Benyon R., Treadwell S., Westcott A. & Cavanagh K. (2012) 'Achieving clarity, confidence and consensus in the coal seam gas dilemma' will be published in the conference proceedings.

**The views expressed in the various works outlined in this issue of BRIDGING, and the intellectual property embodied in them, belong to the originators of those works. Even when those originators are Friends or Fellows of the Trust, their views are not necessarily those of the Peter Cullen Trust.*

'Communities of conversation' seen as vital for water governance*

In the face of the uncertainty that is likely to accompany climate change, it is essential to build capacity for people with different interests and perspectives to work together. This idea is behind the National Water Governance Research Initiative (WGRI). **Dr Philip Wallis**, a 2010 Fellow of the Peter Cullen Trust and one of the coordinators of the WGRI, outlined the Initiative at the 'Practical Responses to Climate Change' conference (hosted by Engineers Australia; see page 4).



Since 2009 this national Initiative has succeeded in generating a 'community

of conversation' about water, across a network of around 350 individuals normally engaged in a range of research disciplines or in water governance, government policy, industry, NGOs or other fields. A community of conversation is a collection of people who have ongoing and rich conversations (not discussions) about a matter of interest — who listen as well as speak, and are willing to have assumptions challenged and to look for other views of the world.

Philip explained how the Initiative, through activities such as workshops and jointly written papers, has helped the network members from disparate

backgrounds to explore ways in which to develop a range of conversations, based on a shared language relating to water governance.

These network participants have come to recognise that 'Water governance requires approaches that are integrative and responsive to complex interconnected socio-ecological needs in the context of our regions and cities'. Some new research collaborations have also emerged.

Wallis P.J., Godden L.C., Ison R.L. & Rubenstein N. (2012) 'Building a community of conversation about water governance in Australia' will be published in the conference proceedings.

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From the CEO

Consensus is an easy word to say but a very difficult goal to reach when disparate groups, with conflicting perspectives and interests, try to come to a workable agreement. Friends and Fellows of the Trust know this from their own experience. Their publications and activities and projects often reinforce the message that *communication matters*, and that listening to — and carefully thinking about — other points of view is vital for consensus and progress.

This third issue of *BRIDGING*, the newsletter of the Peter Cullen Trust, focuses on ways in which Trust people have helped to build understanding between groups with different interests, in recent times. It outlines work of some of the 29 Fellows who graduated in 2010 and 2011, and of some of the Trust's Friends throughout the water and environment sectors. The newsletter highlights several of these Friends' and Fellows' inputs to thinking and policy.

In 2012, the Peter Cullen Trust has at last 'come of age', being invited to a number of conferences, and to submit articles to several industry magazines.

Several Fellows and Friends represented the Trust at the 6th Australian Stream Management Conference, in Canberra in February. Ross Hardie, who was the Purves Environmental Fund Fellow of the Peter Cullen Trust in 2010, was one of that program's organisers.

I would like to thank Hon. Bob Carr for speaking about the Trust at that conference, in his capacity as a Friend.

The Trust was also represented at Eco Forum in March, where I chaired the 'Water in the Environment' session and also ran a forum on collaborative decision-making.

It was a pleasure to speak to the 56 NRM CEOs from across Australia at the 4th National Natural Resource Management Knowledge conference in Adelaide in April.

I was also invited to speak at 'Water and climate: policy implementation challenges', the 2nd 'Practical Responses to Climate Change' conference in early May. Several Friends and Fellows also spoke at that conference, for which another Fellow, Dr Katherine Daniell, was Chair of the committee arranging the scientific program (see pages 1, 4).

The Trust was represented at Ozwater2012 and the associated Water Leaders Forum in mid May, thanks to the invitation of the Australian Water Association.



Magazines featuring the Trust so far include *Sustainable Australia*; *Australian Environmental Management*; and *GovLink*.

It is also very pleasing that there has been more demand for sponsored places in this year's Leadership Program than can be accommodated. This is a testament to the way the Fellows and their training are being seen in the sector. The Trust sincerely thanks our Friend, Leith Bouilly, and her colleagues for running these tremendously exciting and effective leadership programs we have collaboratively devised.

Finally, if you are a senior executive, you may find similar excitement — not quite in the league of Bear Grylls or 'Survivor' but still a rewarding challenge — in the Trust's Senior Executive Refresher Program (more information on page 3).

Dr Sandy Hinson, CEO

Peter Cullen Water & Environment Trust

Graduation dinner 2012

The 2012 Fellows will complete this year's Leadership Program at the Graduation dinner, in the evening of **15 November**, a Thursday. *Note the date in your diary now, to keep it free!*

The dinner is a chance to meet Fellows and Friends of the Trust, and to share an evening of informal wining and dining with colleagues concerned with inland waters and environments. You will also be able to bid for the amazing items donated for the fundraising auction!

Email office@petercullentrust.com.au (phone 02 6206 8606) so we can send you details.



At the dinner in 2010

Who are the Friends of the Peter Cullen Trust ?

Leaders and thinkers in water and environment are gradually, and in no particular order, being invited to become 'Friends of the Peter Cullen Trust'.

Friends have opportunities to support the Trust's work in many ways, including by sharing their expertise with others.

These people are currently the Friends of the Peter Cullen Trust.

Prof. Andrew Campbell
Prof. Angela Arthington
Anne Barker
Anthony McAlary
Prof. Arthur Georges
Asa Wahlquist
Prof. Barry Hart
Senator the Hon. Bob Carr
Brett Tucker
Brian Grogan OAM
Prof. Bruce Thom AM
Campbell Fitzpatrick
Caroline McFarlane OAM
Chloe Munro
Chris Chesterfield
Chris Davis
Prof. Chris Moran
Dr Conall O'Connell
Prof. Craig Pearson
Dr Daniel Connell
Darryl Day
David Harriss
David Heeps
Prof. David Karoly
Prof. David Pannell
David Trebeck
Hon. David Wotton
Dr Diana Day
Prof. Don Aitkin AO
Dr Don Blackmore AM
Prof. Gary Jones
Prof. Geoff Syme
Prof. Gerry Quinn
Prof. Glyn Davis AC
Dr Graeme Batley
Graeme Kelleher AO
Graham Dooley
Prof. Graham Harris
Greg Claydon
Greg Wilson
Prof. Hugh Possingham
Ian Kowalick AM
Ian Lawrence
Prof. Ian O'Connor
Dr Ian Prosser
Prof. Ian Rae
James Cameron
Dr Jane Doolan
Prof. Jane Hughes
Dr Jason Cummings

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*Friends of the
Peter Cullen Trust
(continued)*

Jim Donaldson
Jim McDonald
Hon. John Kerin AM
Prof. John Langford AM
John Riddiford
Prof. John Thwaites
Dr John Whittington
Dr John Williams
Prof. John Williams
Hon. Karlene Maywald
Prof. Kathleen Bowmer
Kathy Ridge
Prof. Keith Walker
Leith Bouilly
Lynne Griffiths
Lynton Bond
Mark Clarke
Mark Pascoe
Mark Wootton
Matthew Linnegar
Maj. Gen. Michael Jeffery AC, CVO, MC
Mike Logan
Mike Paine
Prof. Mike Young
Dr Neil Byron
Pat McCafferty
Prof. Paul Greenfield AO
Dr Paul Humphries
Peter Cosier
Peter Harris
Peter Hayes
Dr Peter Wallbrink
Prof. Quentin Grafton
Dr Ralph Ogden
Prof. Richard Norris (deceased)
Robert Purves AM
Rob Skinner
Dr Rob Vertessy
Robyn McLeod
Dr Rory Nathan
Prof. Sam Lake
Dr Sarah Ryan
Scott Ashby
Prof. Snow Barlow
Steve Costello
Maj. Gen. Steve Day DSC
Dr Steve Hatfield-Dodds
Dr Steve Morton
Dr Stuart Blanch
Prof. Stuart Bunn
Dr Sue Briggs AM
Ticky Fullerton
Tim Fisher
Prof. Tim Flannery
Tim Stubbs
Tom Mollenkopf
Prof. Tony Jakeman
Wayne Tennant
Dr Wendy Craik AM

Congratulations to Friends and Fellows

The Trust congratulates **Dr Michael Douglas** on being awarded a Fulbright Scholarship. Michael, who leads water and environment research teams in northern Australia, is a 2011 Fellow of the Peter Cullen Trust.

Congratulations to **Chloe Munro**, Friend of the Peter Cullen Trust, on being appointed Chair and Chief Executive Officer of the new Clean Energy Regulator. Chloe had been Chair of the National Water Commission since May 2011.

Congratulations also to **Professor Stuart Bunn**, Friend of the Peter Cullen Trust, Acting Chair of the National Water Commission since 2 April 2012.

The Trust also congratulates **Chris Chesterfield**, of Melbourne Water, on his appointment as CEO of the new Office of Living Victoria, set up to create a 'smart resilient water system for a liveable, sustainable and productive Melbourne', through reforms that coordinate water and urban planning.

Wonderful news that **Professor Kathleen Bowmer** and **Professor Tim Flannery** are each recognised as a Hero of Australian Science, in the new book *Environmental Science*. The book is part of the Macmillan Education Australia series 'Heroes of Australian Science', for upper primary-school children.



Science to Policy Leadership Program

Information for sponsors

Sponsors are already booking places for the Trust's 2013 Leadership Program. *If you would like to book a sponsored position for 2013, please contact Dr Sandy Hinson soon.*

Sponsorship for the 2012 Science to Policy Leadership Program is at three times the level of the 2011 program.

Update on the 2012 program

Shortlisted applicants for the 2012 Leadership Program will be interviewed soon. Read about the successful participants in the next issue of *BRIDGING*!

Senior Executive Refresher Program

The Trust invites leaders from across various sectors of water and environment management, policy and science to join our Senior Executive Refresher Program.

This program is an opportunity to invest in your own professional development, spending three intense days in the bush with a handful of other senior executives from across the water sector, sharing ideas, perspectives and experiences.

With this program, the Peter Cullen Trust Board aims to promote discussion and mutual support between senior executives from across Australia. The Trust wants to encourage collective evidence-based decision-making in relation to the management of water and the environment.

This new program has been devised in response to requests from senior executives. You have asked the Trust to provide a program, in locations away from urban environments, to enhance your:

- understanding of key issues of water and catchment management in Australia,
- ability to make informed water-related decisions that are grounded in good science,
- consideration of your organisation's roles in relation to the future for water.

After the program, participants can become part of the Peter Cullen Trust, with the option of receiving peer mentoring from Friends of the Peter Cullen Trust.

For further information please contact CEO Dr Sandy Hinson, phone 02 6206 8606, email sandy@petercullentrust.com.au.



'Practical responses to climate change' conference*

Numerous ideas were put forward at the 'Practical Responses to Climate Change' conference in early May, hosted by Engineers Australia.

Dr Katherine Daniell, a 2010 Fellow of the Peter Cullen Trust, was chair of the scientific program, which had the theme 'Water and climate: policy implementation challenges'. Friends and Fellows of the Trust were among the speakers. The Fellows' papers are outlined elsewhere in this newsletter.



Some of the take-home messages from the conference included these:

- We need to acknowledge interfaces between domains, and work across them to develop sustainable and resilient communities, as well as infrastructure and governance systems. Domains include: water, energy, environment, regional urban and coastal planning, agriculture, health, emergency management and national and international security.

- Perspectives and experiences must be shared across multiple levels of governance, sectors and scales of settlement.
- We need to continue to 'act now', to develop pathways to sustainable and resilient futures.
- We need to develop and maintain monitoring systems that allow us to act on new information effectively.
- We need to redevelop and enhance connections between people and nature.
- We need to learn to better bridge multiple knowledges and data systems.
- Scenario planning to imagine and prepare for the future is vital to build capacity and resilience.

Examples of practical responses

- Using 'disposable' or 'relocatable' infrastructure in coastal areas (for response when sea levels rise).
- Support for research on strategies for preparedness or pre-emptive options for typical and worst-case climate change (i.e. low-cost geo-engineering options; insurance; other future funding options like disaster funds).

- In disaster situations, bring in water purification plants first, to meet immediate and basic human needs and to create a place for engaging with and building trust with the local communities.
- Increasingly focus on effective and inclusive stakeholder engagement across levels of governance and sectors of interest, such as in scenario planning and building capacity to adapt to future global, water and climate challenges.

Friends of the Peter Cullen Trust presenting papers included Dr Wendy Craik AM, James Cameron, Hon. Karlene Maywald and Dr Rob Vertessy. Professor Gary Jones ran an interactive forum resembling Q&A, on ABC TV, on the third day. The Trust was a 'conference supporter'.

Blogs, since, comment on participants' interest in dealing with climate change impacts and uncertainties; on how refreshing it is to be among people who accept climate change as fact; and that 'Tea-break conversations were ... focused on the topics at hand — a good indicator of a conference of substance'.

The conference proceedings will be available soon from Engineers Australia and through the website: <http://www.informit.com.au/>



A formalised and repeatable way to evaluate ecological evidence*

'Eco Evidence' is a new method and software for use in evaluating the strength of published scientific evidence. It is particularly useful for deciding if there is evidence for a cause-effect relationship in an environmental issue.

Dr Dominic Skinner, a 2011 Fellow of the Peter Cullen Trust, presented the case for applying Eco Evidence to guide policy development. He was speaking at the 'Practical Responses to Climate Change' conference (hosted by Engineers Australia; see item above).



Dominic explained how the method can make a substantial contribution during the decision-making process in relation to environmental and other challenges. Using 'Eco Evidence', a user can assess

and apply appropriate weighting to all published papers and reports relevant to a situation, according to independent criteria and in response to an initially proposed hypothesis or conceptual model. The method collates the evidence in a formalised way with no steps hidden from view. The user can pull out key findings from collections of relevant scientific studies, and in doing so can show the likely outcome of each of a range of policy options.

The paper explains how Eco Evidence helps people understand the probable consequences of different actions or policy, and that it is impartial when applied to all the alternative policy options equally, as in scientific analysis in general.

Use of this method supports group conversations about environmental

issues. Once stakeholders representing the sides of an issue have identified their concerns, the group can apply Eco Evidence to provide a robust, defensible and transparent assessment of the available scientific evidence and to highlight where any objective uncertainties remain. That is, it helps the group understand the consequences of different choices.

The late Professor Richard Norris led the team that originated Eco Evidence. The method has been developed based on causal criteria analysis as used successfully in human and environmental health studies.

Skinner D.S., Webb J.A., Nichols S.J. & Stewardson M.J. (2012) 'Eco Evidence for systematic causal inference and knowledge transfer between science and policy' will be published in the conference proceedings.

INFFER: helping policy allocate funds to environmental projects*

INFFER™ is a tool for developing and prioritising projects to address environmental issues such as reduced water quality, biodiversity, environmental pests and land degradation. It is designed to help environmental managers achieve the most valuable environmental outcomes with the available resources.

The origins of INFFER lie in David Pannell's work on salinity management in Western Australia in the early 2000s. He worked with the WA Government to develop the Salinity Investment Framework, which has eventually evolved into the much broader, user-friendly framework that is INFFER today.

The current tool was developed by an interdisciplinary team spanning university, government and on-ground delivery. Joining David in the team are Anna Roberts (DPI Victoria), Geoff Park (North Central Catchment Management Authority) and Jenny Alexander (DPI Victoria).

INFFER is designed to help with a number of difficult challenges, enabling environmental managers to set clear priorities and develop robust, compelling project proposals, and investors to assess project proposals based on effective, relevant criteria that simplify decision making. In doing this, it integrates technical, social, economic and policy-related information.

Everyone involved in protecting the environment wants to make the best use of the money that is available, but the issues are complex and it is difficult



David Pannell (centre) discussing INFFER with stakeholders at Reaburn Hill, Victoria

to tell what would be “best”. The development of INFFER was motivated by a belief that we could achieve a lot more with the available resources if they were allocated well and projects were well thought through and well designed.

INFFER assists decision makers to assess and rank environmental and natural resource projects, comparing aspects such as value for money, degrees of confidence in technical information and the likelihood of achieving stated goals.

INFFER aims to help people determine whether the environmental/natural resource projects they are investing in will deliver tangible results within budget; whether the tools and technical capacity needed to attain those results will be available to the project; and whether the people who need to come on board to make it happen will be there when the time comes for action.

Results from INFFER are being used by a growing number of organisations around Australia, including regional environmental bodies, state government agencies and the Australian Government. For example, based on a project that

was developed and assessed in INFFER, the North Central CMA was awarded one of the largest grants from the Australian Government's Caring for our Country program in 2011, to protect and enhance the Moolort Plains wetlands in central Victoria.

Internationally, INFFER has been used to assess environmental projects in Tuscany, Italy, is being tested on a range of projects in three Canadian provinces, and is being applied to wildfire management in New Zealand. The INFFER team recently visited China and delivered INFFER training to several groups.

The team aims to continue growing the user-base of INFFER, in order to improve the environmental outcomes that we as a community get from the limited public funds that are allocated to environmental programs.

Professor David Pannell

The University of Western Australia
Friend of the Peter Cullen Trust

INFFER website: www.inffer.org



A highlight for the team was winning the Australian Research Council Eureka Prize for Interdisciplinary Research in 2009.

Farms, Rivers and Markets: research into doing more with less water*

Adaptive approaches exist that landholders and waterholders can use so they can do more with less water. The Farms, Rivers and Markets (FRM) research project team has formulated and communicated such approaches. The FRM research team presented its findings at a workshop in Wodonga, Victoria, in April, to local stakeholders, including water managers, landholders and scientists.

This large interdisciplinary project was initiated by Trust Board Director and Friend, Professor John Langford AM, and Professor Snow Barlow, also a Friend of the Trust, and their colleagues. The project ended in December 2011.

As the title suggests, the FRM project has helped develop innovative farming systems, modern operating systems for rivers, and new markets in water products and services. It has explored how to balance the water needs of both farms and rivers, and the value of integrated research in developing new options for catchment management.

Two of the 2010 Fellows of the Peter Cullen Trust — Dr Margaret Ayre and Dr Geoff Vietz — were involved in the latter two research areas, and they presented their work at the workshop.

Margaret, with co-researchers, documented the lessons gained from



Geoff Vietz, Margaret Ayre and John Langford at the Farms, Rivers and Markets workshop

integrating the different disciplines in the project; and co-developing the science with communities of practice and communities of interest in FRM research, so that users and researchers shared knowledge throughout the project.

...continued on p. 6

There were many lessons. Partnering the research teams with the ultimate users of the research opened opportunities for social learning and change in established agricultural and water management practices. Within the interdisciplinary research teams, careful and iterative planning was imperative as workers in very different research fields learned to see other points of view. The success of both the integration of research and co-development with catchment communities was evident in the FRM project as new ideas emerged for doing more with less water.

Paying attention to knowledge-making processes within research projects maximised the potential for practice and policy change, through shared understandings and joint research outputs.

While Margaret's group's work was fundamental to the project's operation, each team in the project shed new light on how to do more with less water.

Geoff Vietz (River Basin Management Society Fellow of the Peter Cullen Trust, 2010) investigated the change in slackwater habitat as flow varied in the Broken River (the project's study catchment). Slackwaters are very productive zones and can be critical habitat, yet they are reduced when rivers are run at high levels to meet irrigation needs: there is too much water!

Geoff has found for working rivers that, knowing details of a river's slackwater areas, river operators could modify flow volumes so they minimise adverse effects on these habitats, particularly when there are precise control systems in place in the river (as in the FRM project). This could be an opportunity to change management of storages to reduce impacts on habitat.

For factsheets and the in-depth report, see: www.frm.unimelb.edu.au



The Broken River near Mansfield, May 2012

'Basin Futures: Water reform in the Murray-Darling Basin' *

'Basin Futures', edited by Dr Daniel Connell and Professor Quentin Grafton, both of whom are Friends of the Peter Cullen Trust and based at the Australian National University, was e-published not long after the *Guide to the Draft Murray-Darling Basin Plan* release, in spring 2010.

Of the 27 chapters or papers, eight are written by Friends of the Peter Cullen Trust, and three are written by Fellows, alone or with coauthors. Below are some excerpts from the editors' Introduction, relating only to those 11 chapters, reproduced with permission.

"This book represents a remarkable collection of evidence, opinions, proposals and remedies for the troubles that ail the Murray-Darling Basin. ...The workshop participants and others who have been invited to contribute to this book were asked to respond in their own ways, and with their own expertise, to the questions: what led to where we are today? And what can we do about it? ...

"The chapters discussing community issues emphasise the importance of process and good communications to achieve positive change in the way natural resources are managed in the Murray-Darling Basin (MDB). Leith Bouly [pictured] and Karlene Maywald draw on their experience working in the MDB to comment that although over-allocation is widely acknowledged as a problem by irrigators, the fact that many people subsequently made major investment decisions based on those over-allocations creates a serious dilemma, which will need careful negotiation to resolve. They also stress the community dimension of the challenge. This means that programs to promote acceptance of reform need to go much wider than merely compensating individual irrigators who are willing to sell their entitlements. ...

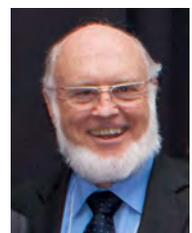
"The need to connect and consult better was a theme or sub-theme of many chapters. Part of the problem was the way in which the release of the draft Plan was treated by the media — a

result that was at least partly due to the approach of governments and the MDBA, according to Åsa Wahlquist, who adds her valuable thoughts about how it should have been done. ...

"The potential economic impacts of the Basin Plan are discussed in a number of chapters. ... Quentin Grafton argues that social, economic and environmental outcomes in the MDB could all be improved if the \$5.8 billion now allocated to infrastructure investment was divided between the buybacks fund and community-orientated investments in those regions that will be affected by the reduction in water for irrigation. ...

"[I]n the section discussing how science should inform policy is the chapter by Richard Norris [pictured], who argues that there has been a growing tendency in recent years to treat environmental benefits as an optional extra to be provided only to the degree that major interest groups find convenient and not too disruptive to their established activities. In opposition to that view, Norris restates the case that the environment is the source of a wide range of ecological services of high value, both monetary and non-monetary. He explains that continued access to such services depends on the maintenance of key ecological functions in the riverine system through the provision of adequate water and the maintenance of essential patterns of flow, and that this view accords with the stated aims of the Water Act.

"As John Williams [pictured] explains in his chapter, water policy is about managing the interaction between human aspirations, demands and impacts and the wider environment. Williams summarises the main elements at play in the context of the MDB and explains why management success will require more than just balancing off the competing claims of human stakeholders. The compromises



Programs by the Peter Cullen Trust

'Chatham House' meetings

Confidential and unofficial gatherings of senior decision-makers considering issues of concern (with the benefit of their experience, understanding, knowledge and skills), with the aim of better cooperating to achieve goals across Commonwealth / State or Territory / sector boundaries.

This program is starting in 2012. To enquire, contact office@petercullentrust.com.au

Fellows Mentoring Program

Unique to the Peter Cullen Trust, this program is an extension of the Science to Policy Leadership Program. Mentoring is arranged between Fellows and Friends of the Trust, so that Fellows continue to be supported in their ongoing professional development.

A continuous program, open to Fellows only. To enquire, contact office@petercullentrust.com.au

Mentoring Awards Program

For 'rising stars' who are not Fellows of the Peter Cullen Trust, this program may be of interest. It is available to individuals, and to organisations that wish to develop their high-performing staff in water and environment fields who would benefit from one-to-one mentoring with a participating Friend of the Trust.

Available continuously. To enquire, contact office@petercullentrust.com.au

Fellows' initiatives and gatherings

The Trust makes funding available to the Fellows for small projects where they work together to achieve a goal related to the aims of the Trust. Fellows meet at least annually as well as in regional groups, to maintain and expand their network.

Coordinators: Dr Philip Wallis, Dr Sarina Loo, via office@petercullentrust.com.au

6th Australian Stream Management Conference: Managing for Extremes

The 6th ASM conference was held in February in Canberra. Ross Hardie (pictured), who was the Purves Environmental Fund Fellow of the Peter Cullen Trust in 2010, chaired the organising committee. Guest speakers included Professor Stuart Bunn and Trust Board Director Dr John Williams, both Friends of the Trust. Among the many speakers giving papers at the two-day event were four Fellows of the Peter Cullen Trust: Dr Sarina Loo (who is also on the Board), Dr Geoff Vietz, Dr Simon Treadwell and Ross Hardie.



The Proceedings will be available soon.

*'Basin Futures: Water reform in the Murray-Darling Basin' ** *continued*

that are negotiated also have to be within the long-term limits of what the environment can provide. This is a key issue to be considered when discussing how great should be the shift of water away from production back to the environment. At the very least it should be sufficient to halt the ongoing environmental decline that characterised the past century. In discussions about water policy in the MDB, there is a tendency to concentrate on surface water, but the NWI requires that it be managed in coordination with groundwater where systems are linked. How best to do this is discussed in the chapter by Stuart Richardson¹ [pictured], Ray Evans and Glenn Harrington, who draw on a number of recent examples to show how both science and stakeholders can be effectively involved.



"The book contains a wide range of chapters discussing water governance in the MDB. Neil Byron is highly critical of the underlying design of the Water Act

and calls for a fundamental reassessment of the sort of institutional arrangements that are needed to best manage the MDB. The call to go back to basics is also supported by Ray Ison and Philip Wallis¹, who discuss approaches that could be used to re-conceptualise the task and encourage institutional innovation. ...

"Other chapters accept the Water Act as a given and discuss how it could be made to work to produce the best possible outcomes under current circumstances. Daniel Connell writes about the Commonwealth Environmental Water Holder — an organisation that could be used to implement large-scale rehabilitation even if the Basin Plan is indefinitely delayed by political conflict and litigation. Also working within the Water Act is Mike Young, who proposes that the process for producing the Basin Plan should be redesigned to allow for more effective engagement with affected communities. He recommends that regions should play a greater role to allow for increased innovation and more flexibility to adapt to local circumstances. Drawing on her research into water reform in Europe, Katherine Daniell¹ also discusses this theme. She argues that 'the

centralised technocratic approach' used to develop the Basin Plan was always likely to alienate people in the MDB. Instead, governments should draw on the large body of experience now available for the promotion of community participation. ...

"The book tells a clear story that business as usual is not working in the Basin. Contrary to what some people think, these problems have most certainly not been resolved by the floods of 2010–11, just as they were not created simply by the Millennium Drought. Decisions must be made, and made soon, and these cannot be half-measures or we risk irreparably damaging the future of all those who live, work and care about our basin, our home."

*Dr Daniel Connell and
Professor R. Quentin Grafton*

The Australian National University
Friends of the Peter Cullen Trust

Basin Futures is available from:
<http://epress.anu.edu.au?p=115431>

¹ Fellow of the Peter Cullen Trust, from the 2010 leadership program.

*Books, recent, new and forthcoming, by Friends and Fellows
continued*

**‘Water Resource Protection
in Australia:
Water quality and quantity as a
feature of agricultural land
management systems’ ***

This new monograph by Professor Kathleen Bowmer, Friend of the Peter Cullen Trust, was published in April 2012 via the website of the EH Graham Centre for Agricultural Innovation, at Charles Sturt University.

The work investigates the physical and economic aspects of stubble farming as it contributes to ecosystem services, and its potential costs. The study compares stubble farming and alternative land-management methods in relation to water quality, water quantity and hydrological change downstream.

In stubble farming, crop residues are left in place after harvest, to reduce erosion of the soil surface and promote water retention in the root-zone.

This thoroughly referenced monograph makes recommendations in relation to priority-setting and decision-making; knowledge gaps; and planning and governance. Overall, it calls for greater integration of types and areas of knowledge and management expertise: for instance, biophysical with socio-economic; cultural with economic and environmental; rural with urban; and for studies and policies focusing on multiple, rather than single, issues. It looks at planning; land-use capability; water in relation to land-use; and recommends more autonomy for the regional bodies across Australia in safeguarding the condition of water and environment; and more involvement of communities and stakeholders in planning and governance.

In making its recommendations, the monograph acknowledges existing integrated work and thinking.

The study concludes that greater application of stubble-farming practices could yield considerable off-farm benefits, and that investment and research into techniques for improved stubble management would be valuable.

It is available for free download at:
<http://www.csu.edu.au/research/grahamcentre/research/publications/water-monograph.htm>

**‘Co-engineering and
Participatory Water
Management:
Organisational challenges for
water governance’ ***

This new book written by Dr Katherine Daniell, a 2010 Fellow of the Peter Cullen Trust who is based at the Australian National University, has just been published at the end of May. It is part of Cambridge University Press’s and UNESCO’s International Hydrology Series.

Quoting from the CUP website:

“Effective participatory water management requires effective co-engineering — the collective process whereby organisational decisions are made on how to bring stakeholders together.

“This trans-disciplinary book highlights the challenges involved in the collective initiation, design, implementation and evaluation of water planning and management processes. It demonstrates how successful management requires the effective handling of two participatory processes: the stakeholder water management process and the co-engineering process required to organise this.

“The book provides practical methods for supporting improved participatory processes, including the application of theory and models to aid decision-making. International case studies of these applications from Australia, Europe and all over the world including Africa, are used to examine negotiations and leadership approaches, and their effects on the participatory stakeholder processes.

“This international review of participatory water governance forms an important resource for academic researchers in hydrology, environmental management and water policy, and also practitioners and policy-makers working in water management.”

The book is available for online purchase, both from Cambridge University Press, <http://tiny.cc/swj9ew>, and from The Book Depository, at <http://bit.ly/LXdYhV>.

**‘Environmental flows:
Saving rivers in the third
millennium’ ***

Angela Arthington (pictured below) Friend of the Peter Cullen Trust, Emeritus Professor in the School of Environment at Griffith University and researcher in the Australian Rivers Institute, is the author of this book which will be published in October 2012 by the University of California Press.



Quoting from the UCP website:

“‘Environmental Flows’ provides a synthesis of information on the quantity, timing and quality of water flows and regimes required to sustain freshwater and estuarine ecosystems and the human livelihoods and well-being that depend upon these ecosystems.

“How much water does each ecosystem type need? What happens when natural seasonal flow patterns or standing water regimes are radically altered by dams, hydropower generation or pumping to meet the needs of humans? Can damaged ecosystems be restored by the provision of environmental flows? How can human societies come to grips with the realities of climate change, less water for everyone, greater impacts on aquatic biodiversity and increasingly dysfunctional ecosystems?”

“This book addresses these questions, describing each environmental flow method from the simplest hydrological formulae to ecosystem frameworks that seek to inform water management at multiple spatial scales. Implementation and monitoring are discussed as well as legislation and policy contexts.

“Arthington ends with an appeal to address the freshwater biodiversity crisis, and turn the third millennium into an era of transformation and restoration of Earth’s natural resiliency and healing power for the benefit of ecosystems and people.”

University of California Press:
<http://tiny.cc/21k9ew>

More events and conferences in 2012 run by or involving Friends and Fellows of the Peter Cullen Trust

End of an era in water science during Source2012 conference

A dinner on 29 May, for the many people associated with the CRCs for Catchment Hydrology, Freshwater Ecology and their 'offspring' eWater, celebrated 20 years of achievement (1992–2012). In total, 32 years of CRC work (13 for CRCCH, 12 for CRCFE, 7 for eWater) come to an end on 30 June.

At least 12 Friends of the Peter Cullen Trust attended the dinner, and the late Professors Peter Cullen and Richard Norris were probably there too, in spirit! They were certainly acknowledged both by the speakers and by the guests.

Since the start of these CRCs, there has been huge progress in adding to understanding and prediction of water use, water quality and environment. Both the CRC for Freshwater Ecology, set up and led by Peter Cullen AO until 2002, and the CRC for Catchment Hydrology, which began a year earlier, extended understanding across eastern Australia, with the aim of improving the condition and flow of inland surface and groundwaters. Almost 30 of the Friends of the Peter Cullen Trust have been involved in that work in various ways.

Both Professor John Langford AM (photo below) and Dr Don Blackmore AM, both of whom are Friends of the Trust, spoke at the celebration. John Langford chaired



the boards of both the early CRCs for two rounds each (1992– ; 1993–), stepping down when they joined forces in 2005. Don Blackmore was influential

in both early CRCs as well, in his role then as Chief Executive of the Murray-Darling Basin Commission. They recalled important, as well as funny, incidents and occasions from the past. Similar anecdotes came from others of the many guests at the dinner, as Professor Gary Jones, the host, walked around with a microphone. Illuminating reminiscences at the end of an era.

A number of the dinner guests were in Canberra for a conference on water and environment management.



The conference explored methods and software that are a legacy of the 32 years of work by these water and environment-focused CRCs. Rivers, catchments, urban water situations and ecological needs can now be simulated at region- or basin-scale and smaller, using the integrated software platform ('Source') and other CRC outcomes that were discussed at the conference.

“‘Source’ helps achieve my driving objective, which has been to bring science together with public policy to use water wisely and look after the environment at the same time,” Gary Jones said. He was introducing an Australia-wide community of users of ‘Source’, which is expected to unify river and catchment management across jurisdictional borders and give Federal and state governments greater capacity for broad-scale planning, management and policy decisions.

At the conference, Don Blackmore (photo below) vividly outlined the international cross-border challenges in river management and policy that exist for the Nile, Euphrates, Ganges, Indus and Mekong river basins. Don is a consultant to international bodies concerned with water governance and management.



Several other Friends of the Peter Cullen Trust, viz. Emeritus Professor Angela Arthington, Dr Jane Doolan, Professor Gary Jones, Dr Peter Wallbrink and Dr Ralph Ogden, also spoke at this 'Source2012' conference.

More details: <http://ewater.com.au/products/ewater-source/>

4th National NRM Knowledge Management conference ²

The Peter Cullen Trust was represented at the 4th National NRM Knowledge Management conference subtitled 'There is a lot happening in our backyard', in Adelaide in April.

This practical conference about solutions in water and land management was also a useful opportunity for building networks among the 56 regional NRM bodies, government and NGOs. Matthew Linnegar, Chair of the National Farmers Federation and Friend of the Peter Cullen Trust, chaired a session on day 1.

After the conference, Dr Sarah Ryan, Chair of the ACT NRM Council and Friend of the Peter Cullen Trust, represented the National NRM Regions' Working Group in signing a statement of common purpose with the National Landcare Network (NLN).

The agreement means these two national groups will together establish an enduring productive relationship between community Landcare and Regional Natural Resource Management organisations. The NLN is the national advocacy and representative body for Landcare. The National NRM Regions' Working Group represents the 56 regional NRM organisations and focuses on the development of regional landscape plans and investments.

The agreement means Landcare and regional NRM bodies will work together at all scales across Australia, including on shared input into policy formulation at national and state levels and stronger community input at regional and local levels.

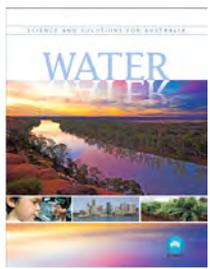
Sarah Ryan said: "This initiative aims to capitalise on the fact that we share the same mission but have complementary skills we can bring to landscape care. Even the process of working up our statement of common purpose has increased my understanding of the needs and strengths of people in Landcare, and I hope exposed more of our thinking to Landcare. Regional NRM bodies will be promoting more such discussions around the country as we implement the agreement," she said.

² Part of this news item appeared first at: www.landcareonline.com.au/?page_id=8644

Letter from a Friend *

Last year Mary Mulcahy and I led a team in CSIRO that produced the book *Water: Science and Solutions for Australia* (CSIRO Publishing). The book addresses the major water management challenges facing Australia, with an aim of communicating to the public and policy-makers some insights that come from research on water.

That sounds fairly straightforward, and for someone like Peter Cullen with skills and experience in such communication it probably would be, but for us it was surprisingly challenging.



One of the first things we discovered was that while our research was quite applied it did not always address an issue in the way that the public or policy-makers did. The questions we

address in journal papers are more specific and detailed than the issues of public concern. The research results had to be translated and broadened.

A disarmingly simple question could be quite hard to form a consensus view upon, across a range of scientists

and individual studies. For example: is recycled water safe to drink?

At first there was confidence that it is. It has been done for years in towns along major rivers. So why are we still researching whether it is safe? Why are there still public concerns? There are some legitimate concerns over emerging pollutants, and concerns over residual risks of how water treatment actually performs under long-term operating conditions as opposed to idealised conditions.

It took a while to decide upon the structure of the book. Scientists work in disciplinary topics and incrementally add knowledge to a platform of basic understanding, but the public and policy-makers don't address things that way. They have some particular questions to answer. We realised we would not engage them by lecturing them on the basic science of the water-cycle, and the ecology and chemistry of rivers, before we addressed their questions.

So to some extent we structured the book around public topics and introduced basic concepts only when they were required for understanding the issue. We managed to write a book on water without describing the global water-cycle! — although we drew upon its principles. I think people already engaged in the debates about water

resources remember their high school geography.

Of course the other challenge was language and communication. Here we took strong guidance from our managing editor, John Manger at CSIRO Publishing. If he didn't understand our drafts we were still not telling the story well. It took a while to get away from our usual style of "scientists talking to scientists" as John would say. We had to rise above all the facts, details, exceptions and uncertainties and focus instead on the guiding ideas and principles. Language had to be clearer. Rainfall does not have 'high temporal variability'; it just varies a lot from year to year!

I know we did not follow these principles perfectly, and I raise them in some trepidation that the book might now be reviewed more critically, but we learnt through the experience. We learnt not just about communication with a new audience, but how to think about the issues themselves more clearly — and that has helped shape our research.

Reflecting now, after the rush of deadlines and a thousand final tasks has passed, we see the experience had rewards that we never expected.

Dr Ian Prosser
CSIRO

Friend of the Peter Cullen Trust



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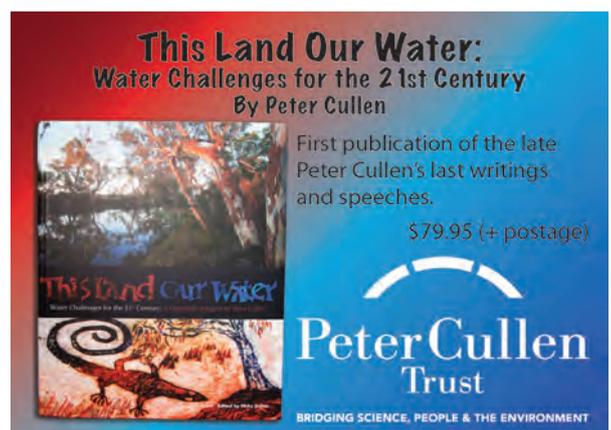
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This Land Our Water: Water Challenges for the 21st Century

This beautifully presented book contains the last, previously unpublished, writings of the late Professor Peter Cullen AO, as well as his important talks and seminal papers — and tributes and vignettes from friends and colleagues.

Copies of this useful reference and memento are available via office@petercullentrust.com.au or phone 02 6206 8606.

BRIDGING: Managing Editor — Dr Sandy Hinson. Writer/editor, design, layout — Ann Milligan. Photos on page 9 courtesy of A. Sikorski & eWater CRC. Other photos — Andrew Sikorski, Barbara Johnson, David Pannell, Liz Milligan, Ian Prosser, Ann Milligan.