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Endpoint

OF THE **AUSTRALASIAN SOCIETY FOR ECOTOXICOLOGY**

Volume 12, Number 1

August 2005

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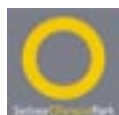
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ASE Sustaining Members

ASE gratefully acknowledges support from the following organisations in their sustaining membership:



Australian Government
Department of the Environment and Heritage



Aims of ASE

A scientific society for biologists, chemists, engineers and other environmental scientists concerned with environmental protection and management.

The specific aims of the ASE are:

- to advance the science of ecotoxicology as it relates to environmental protection and management
- to promote education, research and the application of knowledge in this field for the development of ecologically acceptable principles and the practice of environmental protection and management
- to provide for the transfer and dissemination of information on these issues via workshops, conferences, the production of a periodical and other publications
- to provide a forum for communication among professionals in this field in industry, government, research and teaching organisations, for environmental protection and the benefit of the community
- to collaborate with other societies with similar purposes on a national and international basis, to further these aims.

Deadlines

Endpoint is now distributed to ASE members in 3 issues each year - April, August (or October) and December (or January). **The deadline for contributions falls on the Friday prior to the start of the month of the issue.** All submissions for the next volume are due by **25 November 2005** please!

Editors - Catherine King,
(cath.king@aad.gov.au)
and Greg Rippon

For Membership Application Forms and other information on ASE, see the ASE home page: www.ecotox.org.au

Policy *Want to advertise a short course, conference or workshop?*

Well, what about Endpoint?

As at 1 September, the cost is: \$300 - full page, \$180 - half page, & \$150 - quarter page (prices include GST). Material can also be inserted into Endpoint with cost available on request.

Note though, we might decide to waive the fee if we think the material will greatly benefit the readership. Also, short courses and the like will still be recorded in "What's on" free of charge, as will those laboratories featured in the third issue of a volume.

Editorial policy relating to the publication of submitted material:

The editor will use his or her discretion on whether to publish submitted material, wholly or in part. The aim will always be to try to avoid heavy editing of material, but material likely to be offensive to members of ASE will be deleted without consultation with the author (unless it's so bloody bad as to not leave anything meaningful, then the material will, possibly, be returned to the author for revision).

The 2005 ASE conference, is almost upon us - 25th-28th September at Melbourne University. By

Apologies from Ed (GR) - due to workload (ie the one that brings the money) this issue is just a tad late

the time you read this, the early-bird registration will have closed and the preliminary schedule almost finalised. We received around 95 abstracts, which is very

encouraging, and together with a good range of Plenary and Keynote speakers this promises to be a good conference. Thanks to Carolyn Brumley and her team doing all the hard work planning this conference. The theme is **Toxicological Approaches to Predict and Assess Ecosystem Stress** and the website is at <http://www.conferences.unimelb.edu.au/ecotox/>. Carolyn managed to secure a good range of sponsors, setting a benchmark for ASE-only conferences – thank you to those within ASE who helped with this process. As Mike said in the last Endpoint, the friendliness of the ASE gatherings is certainly a positive aspect of attending the annual conferences. Hope to catch up with many of you at the Melbourne conference.

Planning for the 2006 conference is progressing well and thanks to Jill Woodworth and her ASE team in negotiating on behalf of ASE with three Divisions of RACI and the Clean Air Society of Australia & New Zealand, as well as Promaco, the conference organiser. Write the dates of 24th – 28th September 2006 in your diaries and plan ahead to combine it with a visit to WA's famous wildflowers or wineries (or whatever else you would like to do before or after the conference). The venue (for the conference, not the wineries) is Burswood International Resort Casino. So far the organisers have acceptance from four international speakers: James Huckins; Jerry Neff; Phil Rainbow; and Joe Tietge. This line-up will help them to obtain valuable sponsorship.

Maybe, when in a reflective mood, you have wondered about how science is holding up in tertiary education in Australia (at least the Aussie members). FASTS have recently surveyed science student load from 2001-04, to determine trends. In brief, between 2001 and 2004:

- total domestic load for bachelor degrees dropped for mathematics (5.4%), Physics

(2.44%), earth sciences (11.87%) and increased in biology (5.26%), chemistry (2.05%) and other natural and physical sciences (20.69%).

- Total domestic science bachelor degrees increased by 1.02% whereas total domestic bachelors across all disciplines increased 2.69%.
- Total domestic science load (postgraduate and undergraduate) increased by 2.68% compared to increase of 4.35% for total domestic load across all disciplines.
- Sciences' share of the total domestic student load fell from 13.19% in 2001 to 12.98% in 2004. This equates to a loss of 1031 students (EFTSU) if the share had been maintained.

With ecotoxicology being a multidisciplinary science, it is hard to say how this would affect us down the track but the overall trend is of some concern. Another issue of concern to FASTS (and ultimately to us) is Australia's continuing funding cuts to technology-driven R&D (a declining percentage of its relatively small GDP: to just under 0.6 per cent of GDP – down from 0.76 per cent 10 years ago), particularly maintaining its position as the Asian technology race gets going. Both India and China are capitalising on their intellectual property rights and “we are already seeing a dramatic increase in citations of [scientific] papers from China,” said Professor Snow Barlow of FASTS. The media release from Thomson ISI on 28th July also reflects this trend (see elsewhere in Endpoint), which has also been noticeable in the ecotoxicology journals. We can look forward to inviting ecotoxicology experts from mainland China as keynote speakers to future conferences, and also sharing our expertise in China.

Thanks to some innovative year 9 and 10 boys, Fred Leusch, Ross Hyne, Munro Mortimer and Narelle Richardson, there has been activity be-

hind the website to make it easier for you to pay membership subscriptions on-line. Ross' son's classmates from St Andrews Cathedral School, Sydney, took on this challenge as an IT project and presented it to several ASE Council members a few months ago. The presentation at the school was outstanding and has done most of the groundwork necessary to put into operation an on-line payment system for members. All that needs doing now is ironing out the links with B-Pay or PayPal (or both) and setting up the system (sounds easy for a website novice like me!).

Mike mentioned in the last Endpoint that ASE Council is re-examining the question (raised last at the Christchurch conference in 2003) of whether to upgrade AJE to a full scientific journal status, with more issues per year, professional marketing, and listing for science impact factor. We intend to bring a fully costed proposal to the ASE AGM (and circulate it out of session before the AGM) so that we can see what can be achieved within our means. I agree with Mike that it is important we keep ASE "friendly" both in terms of costs and feel.

ONLINE MEMBERSHIP RENEWAL

Next year ASE plans to introduce an online system to enable members to update their contact details and make membership renewal payments.

In a collaborative effort with Years 8 and 10 Information Technology students from the St Andrews Cathedral School, the programming for the new system is currently being prepared. The new system will be accessed by the ASE webpage, which will contain a link (via a password) where an existing member can have restricted access into their individual records on the ASE database. This login will be controlled by our database (an ASE user/member database), which will contain information such as username, password, address, and whether the member has an up-to-date subscription or not. Each member will have the ability to update his or her personal details on the database.

If the member does not have a valid up-to-date subscription, but would like to renew their membership, then the member can pay by two choices: either pay online for the current subscription, or go back to the general site and print out a membership renewal form and post it to the ASE Membership Officer.

Subscription can be paid through a high security online service (PayPal), although it remains possible to pay via mail if the member prefers this way. Once entered into the PayPal system, members can pay their subscription by credit card (MasterCard or VisaCard). The payment is automatically accepted (subject to approval), and the money (less processing fee) will be transferred onto our ASE account at PayPal. A record of the transaction will be made to our ASE PayPal

account and the ASE Treasurer will be able to retrieve a log of these transactions.

Once they have paid, the member will receive a receipt/tax invoice by email. The member will then be transferred back to the ASE website where they can access the "restricted" website. Members can also pay by mail if they wish to, in which case we will keep a record of that transaction as it was done the old way, and the ASE Treasurer will manually change the ASE user database to show this user has indeed paid their subscription.

Features on the new online membership renewal and payment system will include a procedure to request a new password if the member has forgotten their previous password. A new temporary password will be generated and sent by email to the member who can then enter the "restricted" website and choose a new password to replace the one they forgot. Another feature will be the ability of members to change their contact information (for example their email address) online. If an email change is entered, a notification message will be sent to the old email address as well as an activation email to the member's newly specified email address. If the member does not respond to the activation email the changes will not take effect. This activation step is needed to prevent loss of contact a the member who accidentally enters an incomplete email address.

ASE Membership Committee (Ross Hyne, Fred Leusch)

ASE Database Manager (Narelle Richardson)

ASE Treasurer (Munro Mortimer)

Regional Reports

Department of the Environment & Heritage

Greg Rippon



Here is a very short update from the Nation's capital - I am looking for a new regional rep who will maintain contact with the many ASE members in the ACT. Anyone??



ECOTOXICOLOGY AND ENVIRONMENTAL CONTAMINANTS SECTION (EEC), DEPARTMENT OF ENVIRONMENT & CONSERVATION (DEC)

Ron Patra

This section had passed a busy winter with its testing, investigation and research works. Ross Hyne, Ron Patra, Melissa Aistrop and Scott Wilson (Australian Catholic University, ACU), worked on the amphibian metamorphosis assay exposing tadpoles to atrazine to determine the effect of atrazine on gonadal development metamorphosis. Gonads are being isolated and are being processed to study the histopathology of the gonadal tissues. The RIRDC funded study on the development of a solvent-containing passive sampler device for polar pesticides was completed in August and the final report is currently being completed for submission late August.

Tony Roach with Cheryl Tang from EEC and others from DEC's other Science sections have started a project in collaboration with CSIRO and the University of Canberra funded by the Environmental Trust to look at a range of things including bioaccumulation, biomarker and macrobenthic community (>500um) responses to sediment contamination. DEC are the project leaders for the benthic component and are looking to see if any patterns can be

identified in benthic assemblages common to areas with either severely, moderately and lightly contaminated sediments. Using data from previous EPA sediment contamination studies Tony and his team identified areas which would fulfill the criteria of contamination level and grain size and have sampled at replicate locations of severe, moderate and low level contamination along with external controls. Various approaches for evaluation will be considered for detecting community level impacts such as constrained and unconstrained ordination analyses and examine the repeatability of indicators such as taxa dominance, functional group dominance species indicators, taxa abundance etc across multiple contaminated sites.

Keith Osborne is working on the regulatory review of industrial pollution focussing on the emissions of air, water and other wastes from industries. He is also involved in bioremediation work, such as Orica's project for reductive dechlorination of chlorinated alkenes (ground water) and chlorinated benzenes ("car park wastes"), as well as on biotechnology issues. Paul Rendell has been progressing with his work on a protocol for the modelling and monitoring of salinity offset programs that are based around land use change.

Moreno Julli was involved in preparing affidavits for environmental court and reviewing various reports, including those on Orica. A big milestone for the laboratory recently was the re-establishment of NATA accreditation after it was voluntarily suspended with the laboratory move in mid-2003 (then delayed with the mini-budget of 2004). Fleur Pablo and Ron Patra were also involved in preparing affidavits for breached incidents. R. Sunderam has developed a search profile to retrieve relevant data on Ecotoxicology and related fields using diskette format. The staff of this section can obtain information on these fields on diskette, which offers instant,

electronic access to the current contents database via the ISI powerful search and retrieval software.

Yin Latt Phyu awarded PhD degree in the UTS's May 2005 graduation ceremony. Congratulations Yin. Title of her thesis is "Assessment of toxicity, bioavailability partitioning and hazard of the herbicides atrazine and molinate." Hemantha Dassanayake is progressing well with writing his PhD thesis and expected to finish by the end of this year. Anh Tran Thi Kieu, another PhD student is currently involved in developing the passive sampling devices of polar pesticides in water. At this stage she is working on the selection of receiving phases followed by limiting membranes. She is looking forward (at least we think so!) to some field work in the southern irrigation areas in this coming spraying season.

Paul Ching, an Honours Student from Australian Catholic University (ACU) is currently examining the effects of endosulfan and atrazine on amphibian metamorphosis exposing tadpoles to sublethal concentrations of pesticides for three weeks. Catherine Choung also from ACU studying the effects of derelict mine effluent on the macrobenthic community of Tonalli River (Yerranderrie Mine) for her Hons. Degree. She has completed the laboratory (river water) and in-situ acute toxicity tests using *Ceriodaphnia dubia* and is presently analysing benthic samples and writing up her thesis. Peter Marsman, a master's student from UTS is conducting some ecotoxicity tests to assess the water quality and toxicity of Wakehurst Golf Course and surrounds. It is based on finding out the water quality from streams entering and exiting the course, and comparing them to natural streams. The toxicity side of the project looks into a wide trophic level from *Daphnia*, *Paratya* and Rainbow Fish. An UTS honours student Adam McSorley is examining the ability of atrazine to affect male reproduction in *Daphnia carinata*. Tests are being carried out under different conditions designed to simulate different stages of the life cycle of *D. carinata* and to induce sexual reproduction.

CSIRO CENTRE FOR ENVIRONMENTAL CONTAMINANTS RESEARCH

Merrin Adams

The Centre has been busy over the last few months with PhD and honours students ploughing through their experimental work. Brad Angel has been investigating the sources of metal contamination in Port Curtis, Tina Micevska is developing whole sediment TIE procedures and David Strom is investigating robust sediment quality guidelines.

Jacqui Levy will soon be jetting off to the UK to attend QUEST ES4, Quantifying and Understanding the Earth System, Earth Systems Science Summer School, at the University of Bristol. QUEST is a programme run by the UK's Natural Environment Research Council and the summer school is a series of seminars and workshops designed so that young environmental researchers can learn more about the interactions between the abiotic and biotic components of different environments. Its purpose is to allow postgraduates to have a better understanding of key environmental issues and to integrate their own specialised research interests into this wider context. Jacqui was one of three Australians chosen to attend the workshop, courtesy of an ARC Network Grant through Wollongong University. Jacqui will also get to showcase some of her work before returning to Australia just in time for the ASE conference where she will present her research investigating mechanisms behind different algal species sensitivities to metals.

It's that time of year again and our honours students, Hilary Johnson and Matt Misdale, are in the final stages of their experimental work. Hilary has been investigating the adaptation of marine and freshwater microalgae to metals, before and after being cultured in copper-enriched medium. Congratulations to Matt, working with Anthony Chariton, who won the 2005 Royal Australian Chemical Institute (RACI) Masson Memorial Scholarship - Medal plus \$500 for his work on "The effects on contaminated sediments on pigment expression of marine benthic algae".

We have had a change in guard in our laboratory with Sarah Stephenson, a third-year biology student from UTS, taking up our traineeship over the next year. Sarah replaces Janine Wech who has returned to uni for her final semester at UTS. We couldn't let Janine go too easily and are pleased to have Janine with us on a casual basis over the next few months. Margaux Park has had a whirl-wind introduction to ecotoxicology in Monique's absence and was recently offered a position with Hurstville City Council in their waste management department.

Merrin, Janine, Margaux and Sarah have been developing water quality guideline values for two volatile organic chemicals and testing effluents from various water authorities in NSW, Victoria and Queensland. David Spararo has been testing dredged sediments and investigating the effect of food and sediment type on survival of various age classes of amphipods.

Jenny has been busy travelling both interstate and in Europe, enjoying the 12th International Symposium on Toxicity Assessment on Skiathos Island, Greece. Jenny and Merrin were awarded the prize for best oral presentation at the conference, including a beautiful conch shell which she had to explain to Australian customs on the way home!

See you in Melbourne for the ASE conference!

UNIVERSITY OF TECHNOLOGY, SYDNEY

Grant Hose

Ecotox at UTS is going strong, with major research continuing across marine, freshwater and terrestrial ecosystems. Aably led by **Prof Tally Palmer** ecotox is certainly high on the UTS research agenda. A smattering of our exciting escapades will be on show at the upcoming conference.

Richard Lim and his group are continuing their assault on Endocrine Disruptors (EDCs) in waterways and wastewater. **Anne Colville** is testing for EDCs around sewage treatment plants (STPs) near Sydney using the Estrogen Receptor Binding Assay and the Yeast Estrogen

Screen, and **Heather Brown** is complementing this with tests on mosquito fish. **Chris Rawson** is forging ahead on his PhD looking for EDCs, including POPs, Dioxins & PAHs in waterbodies at Sydney Olympic Park. **Larissa Abbott** recently submitted an excellent honours thesis that documents her research on the activation and removal of EDCs through the different stages of treatment in an Advanced Tertiary Sewage Treatment Plant at Gerroa, NSW. **Yin Latt Phyu** is working on a postdoc on the Endocrine Disruptor effects of atrazine using the mosquitofish. Adam McSorley is doing an Honours project looking at the Endocrine Disruptor effects of atrazine on cladocerans.

In soil news, **Megan Muir** is working away on her honours project, supervised by **Meg Burchett** and **Isa Yunusa**, to study the toxicity of coal ash in soil to earthworms. In Wollongbar, **Phanchai Menchai** is continuing his PhD research on EDCs in soil with **Lukas van Zweiten** (NSW DPI). Phanchai is co-supervised by Grant Hose and Michael Warne.

Peter Marshman has all but finished his flea tests and continues to collect golf course runoff with plans for more tests with algae and fish before the big write up begins. **Grant Hose** continuing his work with groundwater bugs and comparing sensitivities of groundwater bugs with their surface dwelling relatives. He is also exploring more opportunities for meta-analysis in ecotoxicology. **Cate Macinnis-Ng** has recently returned to IWERM and will be tackling issues of salinity, water quality and photosynthetic things. On a teaching front, **Alex Pulkownik** is blending ecotox and CSI in her newly developed Environmental Forensics course.

Cliff Seery is days away from submitting his PhD thesis, and is preparing himself for the onset of post-thesis blues. Like Cliff, **Hemanthe Dassanayake** is writing up his PhD thesis and is also moonlighting as an ecotoxicologist at the NSW DEC Centre for Ecotoxicology.



HYDROBIOLOGY

Dustin Hobbs

The hectic start to the year has continued through to the middle part of the year and looks set to remain that way through the end part of the year. Ross Smith and Adrian Flynn continue to rack up the frequent flyer points with trips in the last few months to PNG, Suriname and Tanzania for collection of biological samples as part of mine monitoring programs. This theme is set to continue with Adrian heading to Laos in the very near future and return trips to Suriname and PNG to occur not long after. Ross has just completed an over 4 week stint on the Fly River in PNG where he was set the task of completing a biodiversity survey (a whole lot of fishing) in order to assess any impact of mining influences in the area, sounds like hard work, I know. He now has to face the mountain of work that has built up in his absence before escaping to go fishing in Suriname in a couple of months.

I have been holding down the fort back in Brisbane (the most important job I have been told) and have been continuing the work on SE Queensland's WWTP's, collecting effluent and sending samples out for toxicity testing, analysing field biomonitoring results, writing reports and proposals and still generally doing other things than finishing my thesis!! Ross and I in association with Rick Krassoi from Ecotox Services Australiasia and Scott Wilson from the Australian Catholic University, have embarked on a project to develop a TBT whole sediment test using the marine snail *Nassarius jonassii*. As this project is still in its infancy updates will be provided in future newsletters. I have learnt a lot about snail hunting so far in the project.

As was threatened in our last update a QLD group ASE meeting is well and truly overdue and something will be organised in the near future (which means it will be a Christmas function!!). Look forward to seeing you all in Melbourne.

TERRESTRIAL ECOTOXICOLOGY AT CSIRO L&W

Michael Warne



The terrestrial ecotoxicology group has been kept busy with the National Biosolids Research Program (NBRP) and a similar South-East Asian project funded by ACIAR. The NSW, Qld components of the NBRP will be finishing this year. We have been successful in obtaining further funding (approx \$200 000) from the NSW Environmental Trust to continue the NSW component for another three years, thus allowing us to assess the impacts over six years and to examine the effects of biosolids, cadmium, copper and zinc on rhizobia, pasture yield and pasture species composition. Qld is also seeking an extension of their funding, however only for one year. We have yet to hear if they have been successful or not. The South Australian, Victorian and Western Australian components are continuing. Next week, which will be before you receive this newsletter, we are holding a public workshop on the land application of biosolids in Perth. Prof. Gary Pierzynski from USA is the invited keynote speaker.

The team has also been busy undertaking phase 1 of a three part consultancy for the Federal Department of Agriculture, Forestry and Fisheries. This project is to develop a list of chemicals that should be banned from fertilizers and guidelines for chemicals that can be found in fertilizers. This project is to permit the Federal and State governments to manage the issue of waste from various sources being used as components of, or as fertilizers. You may remember there was a large kaffuffle in the media about this in 2002. The report that resulted from this project is currently available on the Centre for Environmental Contaminants website.

In November, 2004 our ACIAR project had its final review. This involved team members presenting the results of the project over two days to two independent reviewers. The review was very favourable and we have subsequently been given a one year extension to undertake some additional microbial analysis work on the Vietnamese sites.

Michael has co-ordinated a CSIRO wide Input into the review of the National Environment Protection (Assessment of Contaminated Sites) Measure. Kris has been doing some very interesting research into the effect of metals on bacterial diversity and enzymatic functionality. He has some very exciting results and further work is happening. Kris also attended the SETAC Europe Conference in Lille, France along with a number of others from our Directorate. Michael has just delivered a keynote presentation at a UNESCO conference on Organic Waste Re-use in Agriculture, based on the results of the NBRP.

NEW ZEALAND

Louis Tremblay

Veronica McLoed took a one-year contract with the Landcare Research ecotox. Veronica is no stranger to the team as she did part of her Master's degree with CENTOX. She will be working mainly with Kathy O'Halloran and Lynn Booth on soil toxicology projects.



Jamie Ataria is leading an ecotox project funded by the Maori Centre of Research Excellence at the Ahuriri Estuary located in Napier on the East Coast of the North Island. The project is highly collaborative and involves Scion (formerly Forest Research), HortResearch, the local Maori tribe and various local government authorities. The issues addressed include the characterisation of storm water on flounders and cockles. Another novelty of this project is the involvement of a local high school and one student in particular. Mike van den Heuvel, Cara Lowe, Louis Tremblay, Maurice Black, Jenny Mauger, and Jamie had an intensive week of fish and cockles sampling at the Ahuriri and Porangahau Estuaries (reference site) last month. Tissues are now being analysed and various parameters will be measured to evaluate the health of the estuary.

UTS PhD student Chris Rawson visited CENTOX for 2 weeks to familiarise himself with 2 bioassays that will be part of his project. Chris is supervised by Richard Lim and is

working on an ARC-Linkage project in partnership with SOPA, CSIRO and CENTOX.

CENTOX Katherine Trought was successful in gaining QEII funding to support two visits in overseas laboratories. Kat will spend one week in Cardiff to work with scientists from Molecular Light Technology on novel methods to evaluate mRNA induction. Then Kat will travel to the University of Guelph in Canada to work with Professor Glen Van Der Kraak on a project on the endocrinological effects of municipal effluent extracts in the zebrafish using molecular techniques.

THAILAND

Chuleemas Boonthai Iwai

Sawasdee everyone. Greetings from Thailand. Here is an update from Thailand! Ecotoxicology work is now becoming more popular and interesting among our colleagues and students. Our Masters' students are continuing working on their theses. Yupin Prasad is working on ecotoxicology of heavy metals on native soil biota and Yupadee Rattanapun is interested in ecotoxicology of pesticides on native soil biota. Benjawan Sawettavong is still working on the ecotoxicology of arsenic and mercury on native aquatic organisms. Assaravadee Sompan is now starting her research proposal on ecotoxicology work with native phytoplankton and zooplankton. Also, we will have two more PhD students coming to our lab next semester.

Last month, we welcomed Prof. Barry Noller from Entox, University of Queensland. He kindly gave a lecture to our staff and students and taught our students methods on sampling pesticide residues in waters and techniques in pesticide residues analysis. He also discussed our Dean the possibility of co-operative research between our universities.

As for myself, apart from the teaching work and supervision of students on their research projects, I have several ecotoxicology projects going on with the Thailand National Research Centre for Hazardous Waste Management. For the coming year, we have funding for conducting an ecological risk assessment of termiticides in the Thai environment.

Between December 2005 and January 2006, two international conferences will be held in Thailand.

**3RD ASIAN PACIFIC INTERNATIONAL
CONFERENCE ON POLLUTANTS
ANALYSIS AND CONTROL**

12-15 DECEMBER, 2005, BANGKOK

The first conference I would like to invite you to is the **3rd Asian Pacific International Conference on Pollutants Analysis and Control** (3rd APICPAC), which will take place in Bangkok, the fascinating capital of Thailand, from 12-15 December, 2005. The 3rd APICPAC is a four-day scientific meeting covering all areas of the detection and control of pollutants from the Asian Pacific point of view. The 3rd APICPAC is organized by IAEAC and the Faculty of Science, Kasetsart University, Thailand. The conference will be held at the Centre of the Rama Garden Hotel which is situated 5 km south of the Bangkok International Airport.

For the last ten years IAEAC has provided an excellent framework for the presentation of new concepts, instruments, methods, system, and applications in the area of modern chemical analysis. Researchers and scientists from universities, research institutions, state organization, and the industry come together during the meeting to present and experience the current state of the art on the detection and control of pollutants. The 3rd APICPAC is organized in such a way, so as to provide the scientific and social environment for participation of scientists from all over the world. It is expected that the 3rd APICPAC will give the opportunity for the scientists from this region to discuss new developments in the field to share their techniques, results and point of view with colleagues from the Asian Pacific region, Europe and North America.

Important Deadlines for 3rd APICPAC

Abstract submission: August 31, 2005

Acceptance's notification: September 30, 2005

Registration with reduced fees and inclusion in the final program and abstract book: October 31, 2005

Cancellation of the registration with refund 50%: November 15, 2005

Hotel reservation: Details will be available In the next announcement

The topics to be covered by the 3rd APICPAC 2005

- Atmospheric pollutants in Big Cities: analysis and modelling
- Pollution by POPs, Heavy metals and other pollutants sources and environmental behaviour and effect on Asian Pacific ecosystems.
- New pollutants in the environment: MTBE, Pharmaceutical residuals and cosmetic drugs, endocrine disrupting environmental pollutants.
- Recent advances in environmental analytical techniques
- Mekong delta river pollution
- Others related to the title.

In addition to these main categories, the scientific committee will accept contributions of papers that are relevant to the field of Pollutants Analysis and Control in general, describing important new concepts, or provide insights of analytical processes and methods, as well as novel applications in the area.

Contributions from commercial enterprises are appreciated, including detailed descriptions of new instrumentation, specific applications, and assessment of future commercial trends and opportunities.

For further information please visit the conference official website:

<http://www.sci.ku.ac.th/News&Pr/new/website%20of%20the%203rd%20APICPAC%20conference/index.html>

The second conference is the **International Conference on Hazardous Waste Management for a Sustainable Future**, which will be held on January 10-12, 2006.

The National Research Centre for Environmental and Hazardous Waste Management, a consortium of five leading

STOP PRESS!

**INTERNATIONAL CONFERENCE ON
HAZARDOUS WASTE MANAGEMENT
FOR A SUSTAINABLE FUTURE
JANUARY 10-12, 2006**

universities in Thailand, will organize this conference in collaboration with their foreign partners to address the management of hazardous substances, with special attention to the following research priorities:

- Industrial Ecology / Waste Utilization
- Sustainable Consumption and Production
- Hazardous Waste Treatment
- Remediation of Contaminated Sites
- Ecological Impact and Risk Assessment
- Chemical and Hazardous Waste Management Policy

Papers on other cross cutting themes are welcome for consideration by the scientific committee.

For more information, please visit the conference website:

<http://www.nrc-ehwm.chula.ac.th/conference/>

Looking forward to seeing you in Thailand

“ECOTOXICOLOGIST (RESEARCH SCIENTIST)” IN THE “IMPACT OF HUMAN ACTIVITIES IN ANTARCTICA” PROGRAM AT THE AUSTRALIAN ANTARCTIC DIVISION.

Catherine King will start work very soon at the Australian Antarctic Division, Australian Government Department of the Environment and Heritage. Her work will involve research on the toxicological responses of Antarctic species to anthropogenic contaminants to contribute to the development of theory in the field of ecotoxicology as applied to Polar Regions and to allow quantitative comparisons with responses of organisms from other regions of the world. Information derived from this work will contribute to the development of environmental risk assessment methods for determining the ecological significance of anthropogenic contaminants in Antarctica and to the establishment of environmental management systems including priorities for the remediation of existing impacted sites. Results of this research will also be used to develop environmental standards and guidelines for contaminants that are appropriate to the Antarctic, including trigger values and targets for management and remediation.



Students' Say

In the future, I hope to... (with a lot of emphasis on hope) be following a long and ever enjoyable research career in field of

environmental science, and not to mention an abundance of international travel. When I'm not traveling, living in a mud brick (self sufficient) home overlooking the coast.

If I wasn't an ecotoxicologist, I would be... I would like to think a free spirited 70's inspired rock star, but my honest answer, not a clue.

STUDENT PROFILE

Name: Tina Micevska

Institution: University of Canberra, Australia

Degree: Doctor of Philosophy in Applied Science

Estimated time of Completion: 2008

Thesis title: Quantifying causes of toxicity in sediments containing mixtures of toxicants

Brief outline of results so far:

The objective of this project is to attain a weight-of evidence approach that combines knowledge of the sensitivity of test species to individual and a mixture of contaminants, use of multiple species with differing contaminant exposure pathways, factors that affect the bioavailability of the contaminants for each exposure pathway using the water and sediment phases of naturally and artificially contaminated sediments.

Current work has been targeted at developing defensible phase 1 (contaminant identification) procedures. We have investigated the affinity of chelating ligands EDTA and Na S O for Cu and their use in amphipod bioassays. Of the two chelating ligands EDTA has a higher affinity for Cu and did not effect amphipod survival in water only tests however, we have not yet achieved success in sediment tests.

We have also explored novel methods using aluminosilicate resins, such as Chelex 100 and SIR 300 in Cu contaminated sediments. Both resins were effective at sequestering Cu from the sediment and ameliorating toxicity to the amphipod *Melita plumulosa*. Experiments have also shown that the amphipod is not sensitive to such manipulations.

Due to the relatively large scale of TIEs, we have also considered the use of a scaled down replica of the acute *Melita plumulosa* toxicity test. We have successfully been able to scale down the test to a quarter of its original volume without altering the organisms sensitivity.

STUDENT PROFILE

Name: Lisa Hack

New Zealand ASE student representative

Institution:

National Centre for Advanced Bio-Protection Technologies, Lincoln University, NZ
Hackl@landcareresearch.co.nz

I am currently a Ph.D. student enrolled through Lincoln University, Canterbury, New Zealand but am based at Boffa Miskell (an environmental consulting company) and Landcare Research (Crown Research Institute) in Auckland. I graduated from Auckland University with a Bachelor of Science, with a Forestry Intermediate year (Canterbury University). I then embarked on my Masters in Marine and Environmental Science also at Auckland University, which lead me into the field of ecotoxicology. My Masters investigated the effects of physical disturbance on the demography and life history of a meiofauna community. The completion of my Masters provided good background for me to develop species of copepod as bioindicators of environmental contamination.

My Ph.D. involves the development and validation of methods to assess the effects of pollution, using marine copepods as bioindicators. Developed protocols will provide much needed tools for monitoring pollution effects in New Zealand estuarine environments. Shellfish species have previously been used to assess the health of estuaries, but their use in environmental assessment programmes has many limitations, including a long generation

time, large size, and the difficulty of their being cultured in the laboratory. In recent years, the development of biomonitoring protocols using more appropriate 'meiofauna' (crustacea, worms etc. between 63 and 500µm in length) has provided great advantages in evaluating the effects of pollution. Recent research in the USA has shown the enormous potential of using this group or organisms as bioindicators of health and similar methods will be adapted to New Zealand species. These guilds of invertebrates have not been used for this purpose in New Zealand to date. The development of a suite of biomonitoring methods using short-generation and culturable meiofauna will enable end-users, such as regional councils and environmental consultancy firms new services on pollution characterisation at contaminated and estuarine sites currently needed by a variety of clients.

The effects of chemical pollutants on terrestrial organisms have been studied, but less information is available on the effects of terrestrial pollution on marine organisms. Appropriate biological methods are needed to properly assess and provide 'early-warning' signals of potential biological effects resulting from chemical pollutants in estuarine environments.

End-users have raised concerns over the limitations of methodologies currently available to monitor pollution in estuarine environments in particular and the power of these methods to estimate long-term effects on exposed populations. By using native species, the protocols will be designed for, and relevant to, New Zealand but will also provide potential commercial applications in Australia. As meiofauna have a relatively short generation time, they will provide useful information to predict long-term population effects, underpinned by concepts validated in an American model originally.

My Ph.D. project is funded through the Technology in Industry Fellowship Programme – Foundation for Research Science and Technology. The industry partner is Boffa Miskell Ltd, a planning, design, and environmental consulting company. Landcare Research

As the New Zealand student representative, I hope to increase society membership in New Zealand as well as to increase the awareness of New Zealand's environmental problems.

ASE is now calling for nominations for the annual student prize for the best Honours thesis submitted at an Australasian University

Attention All Students!!
ASE Student Prize
Applications Close March 31 2006

in 2005. If you are a member of ASE and have submitted an Honours thesis anytime in 2005, you are eligible for the prize, which consists of a trophy, a cash prize of \$500 and a travel grant of \$500 to give an oral presentation at the INTERACT conference in Perth in September, 2006.

Details of what is required are given below.

1. The prize is offered for the best Honours thesis submitted at an Australasian University in 2005.
2. The criteria will be excellence in the field of ecotoxicology
3. The Nomination should include:
 - three copies of the thesis
 - name and brief CV of the nominee (no more than 2 pages)
 - official statement of Honours result
 - a letter of support from the supervisor(s) and a statement that the thesis is in its originally submitted form
1. The ASE Council will appoint a judging panel of ASE members to make a recommendation for the award if nominations are of an appropriate standard.
2. Applications should be submitted to:

Dr Jenny Stauber
CSIRO Energy Technology
PMB7, Bangor NSW 2234

By March 31, 2006.

For further information contact Jenny Stauber (02) 9710 6808 or jenny.stauber@csiro.au

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FUNDING OPPORTUNITIES

FUNDING OPPORTUNITIES

Australian Government Funding Guide

A new guide to the Australian Government's Funding Programmes for Environment and Heritage has been produced. The guide provides an overview of the grants available through the Department of Environment and Heritage. The guide is available from: <http://www.deh.gov.au/programs/publications/guide/index.html>

October:

- **Australian Research Council (ARC), Linkage International Awards**

www.arc.gov.au/apply_grants/linkage_projects.htm

Closing date: **14 October 2005**. (OR 25 November 2005???)

Award: \$A20,000-500,000 p.a. (1-5 years)

For Australian-based researchers to participate in joint research projects with overseas researchers, to conduct research of significant national economic, environmental and social benefit.

- **Australian Research Council (ARC) Federation Fellowships**

www.arc.gov.au/apply_grants/discovery_federation.htm

Closing date: **14 October 2005**.

Award: Approx \$A235,201 pa (2003 dollars) plus 26% on-costs (5 years). Up to 25 awarded.

For outstanding individuals with exceptional, internationally renowned research careers in any discipline. Fellowships available for tenure at Australian higher education institutions and Australian research organisations and provide opportunities for outstanding Australian researchers to return to, or remain in key positions in Australia. Outstanding international researchers may also be attracted to undertake research which is demonstrated to be of national benefit to Australia. A clear preference will be given to early- to mid-career researchers who will play a leadership role in building Australia's internationally-competitive research capacity.

- **Land & Water Australia; Travelling and Visiting Fellowships and Postgraduate Scholarships**
<http://www.lwa.gov.au/funding.asp>

Closing date: **11 October 2005**.

TFs to help aspiring and prominent researchers to travel and study overseas for up to one year; VFs to facilitate the visits of leading researchers to Australia to ensure the transfer of knowledge, skills and techniques.

Periodic & on-going grants for continuous assessment:

- **DEH Commonwealth Environment Research Facilities (CERF)**

<http://www.deh.gov.au/programs/cerf/>

Award: \$100million total over 4 and 5 years

No closing date published – see website

The fund will support research on the significant environmental challenges Australia faces, drawing on multiple disciplines, collaboration and existing research strengths. The CERF is aimed at creating national research hubs and building critical mass in areas of Australia's environmental strengths and national research priorities.

- **Australian Geographic sponsorship:**
www.australiangeographic.com/index.cfm?fuseaction=sponsorship

- **ARC, Linkage - International Awards**

www.arc.gov.au/apply_grants/linkage_international.htm

Award: \$5000+ up to 3 years

Awards are to build links between research centres of excellence in Australia and overseas by funding extended collaborations. To build strong ongoing collaborations between research groupings or centres of excellence in Australia and overseas, involving the exchange of researchers at both senior and junior levels; strengthen international research experience for junior researchers at both postdoctoral and postgraduate levels; and enhance existing, and develop new, collaborations among senior researchers; i.e. for Australian-based researchers towards the direct costs of the collaboration (travel, subsistence and consumables).

- **Boehringer Ingelheim Fonds: Travel Allowances to PhD students and post-doctoral scientists**

www.bifonds.de/travel/inhaltr.htm

- **The Institutional Grants Scheme (IGS), Department of Education, Science & Training (DEST)**

www.dest.gov.au

Available to higher education institutions only. Supports the higher education institutions research and research training activities, and allows them to fund their activities in accordance with their own strategic judgements.

- **German Research Council (DFG)**

www.dfg.de/en/index.html

Cooperative Research Grants for short-term research visits, workshops, post-doctoral fellowships

- **International Science Linkages; Strategic Policy and International Science and Technology Networks**

<https://sciencegrants.dest.gov.au/isl/Pages/Home.aspx>

- **Natural Sciences and Engineering Research Council of Canada; Visiting Fellowships in Canadian Government Laboratories**

www.nserc.ca/sf_e.asp?nav=vfnav&lbi=3d

- **Humboldt (Alexander von) Foundation: Humboldt Research Fellowships for Foreign Post-Docs**

www.avh.de

Award: EUR 2,100 -3,000, 6-12 months (up to 600 fellowships per annum)

Enables highly qualified foreign scholars holding PhD under 40 years of age from all nations and all disciplines to carry out research projects of their own choice in Germany. Research awards are offered on a worldwide competitive basis

- **Australian Centre for International Agricultural Research (ACIAR)**

www.aciar.gov.au

Award: \$50,000 to over 1m

R&D Development Projects: Supports bilateral research and development in a broad range of agricultural areas, including crop production and protection, animal health and animal production, fisheries, forestry, land and water resources management and postharvest technology and also economic and policy issues concerned with the management of agricultural systems and natural resources

WHAT'S ON

23-27 October 2005. *The first International Marine Protected Areas Conference.*

Geelong, Australia

www.impacongress.org

November 2005. *SETAC Asia/Pacific*

Soegijapranata Catholic University (UNIKA), Semarang, Central Java, Indonesia

Theme: Training course on risk assessment

Contact Prof. Dr. Budi Widianarko (widianarka@unika.ac.id)

13 - 17 November 2005. *SETAC North America 26th Annual Meeting.*

Baltimore, Maryland, USA.

www.setac.org/meet.html

12 - 15 December, 2005. *3rd Asian Pacific International Conference on Pollutants Analysis and Control (APICPAC)*

Bangkok, Thailand

See the regional report written by our Thailand representative *Chuleemas Boonthai Iwai* in this newsletter for details on the topics covered at this conference.

Abstract submission: August 31, 2005

Acceptance's notification: September 30, 2005

Early Registration: October 31, 2005

For further information please visit the conference official website:

<http://www.sci.ku.ac.th/News&Pr/new/website%20of%20the%203rd%20APICPAC%20conference/index.html>

15 - 20 December 2005. *Pacificchem 2005*

Honolulu, Hawaii, USA

This symposium will focus on the behaviour in the environment of organic agrochemicals,

such as insecticides, herbicides and pharmaceuticals and the development of rational methods aimed at reducing their overall impacts on trade and human and environmental health, whilst promoting their efficacy. The symposium will involve three half-day sessions of oral presentations as well as two evening discussion and poster sessions

The overall aim of the symposium will be to help generate a set of rational principles that can be used to select the best agrochemicals to use in particular scenarios (soils, water, crops, potential ecotoxicology) and to encourage the registration of new chemicals with reduced risk of all kinds. Each session will begin with an invited keynote speaker and subsequent papers will develop the main theme, ranging from research chemistry, regulatory methods and the role of better methods in improving commerce and trade.

Keynote Speakers include Don Mackay (CA); Bruce Hammock (USA); Keith Solomon (CA)
Abstract submissions: online by 13th April, 2005

www.pacificchem.org

10 - 12 January 2006. *International Conference on Hazardous Waste Management for a Sustainable Future*

Bangkok Thailand

See the regional report written by our Thailand representative *Chuleemas Boonthai Iwai* in this newsletter for details on the topics covered at this conference.

For more information, please visit the conference website:

www.nrc-ehwm.chula.ac.th/conference/

18 -20 September 2006. *SETAC Asia Pacific.*

Peking University, China

Theme: To be decided with special focus on assessment and management of contaminants in the Asia/Pacific region

Contact chairperson: Shu Tao, Peking University, China (Taos@urban.pku.edu.cn)

24 - 26 September 2006. *INTERACT 2006. Incorporating Australasian Society of Ecotoxicology, Analytical Chemistry RACI Division, Environmental Chemistry RACI Division Electrochemistry RACI Division, Metrology, Clean Air Society of Australia and New Zealand.*

Perth, Western Australia.

Keynote speakers include: K Francesconi
Jerry Neff, Phil Rainbow, J Tietge

For further information, please contact Oana Chirila, Chair of the Organising Committee (oana.chirila@measurement.gov.au) Tel: (08) 9384 1511, Fax: (08) 9384 1132

August 2008. *5th SETAC World Congress.*

Sydney, Australia. Graeme Batley still making progress. Watch this space!!!!

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By Paul D. Thacker

ENVIRONMENTAL TOXINS PERMANENTLY ALTER GENETICS

Evidence that the genes of developing fetuses can be permanently changed by exposure to compounds that act like hormones and that this effect is then passed on to future generations is sending shock waves through the ecotoxicology community. A study reported this week in June at the annual Endocrine Society meeting in San Diego, Calif., found that if pregnant rats were dosed with the fungicide vinclozolin or the pesticide methoxychlor, their young later suffered fertility problems. Further, this defect was passed on to future offspring, evidence that the chemicals had permanently reprogrammed the animals' genetics.

Although current laws protect people from their parents' debt, recent studies find that we may still bear the burden of previous generations' exposure to toxic chemicals. "This is a really extraordinary find," says Frederick vom Saal, a professor of biology at the University of Missouri–Columbia. "It's the sort of effect that we've been looking for in endocrine disrupters, and it shows that we may be missing some subtle effects from some chemicals."

"Extraordinary claims require extraordinary evidence," says John Sumpter, a professor of biology and biochemistry at Brunel University (U.K.) and a leading authority in the field of endocrine disrupters. "I would like to see this study replicated."

In the study, scientists dosed pregnant rats with a pesticide as the fetuses' sexual organs were forming. At birth, the pups appeared normal, but at puberty 90% of the males had problems such as high rates of sperm death, decreased sperm count, and low sperm motility. These poor fertility traits were passed on for at least three more generations, even though these rats were never exposed to the pesticides.

"We don't think this [response] is happening only with the population that is exposed to

pesticides," says study author Michael Skinner, the director of the center for reproductive biology at Washington State University. "Reprogramming the germ line so that your grandkids have the same [trait] makes for a big impact from the biohazards of some of these compounds."

Skinner rules out a mere change in genetic sequence to explain the frequency of the poor fertility. "We couldn't explain this effect through a genetic mutation, because you would normally only have affected less than 1% of the population," he says. "Even in a hot-spot mutation site, the highest rate ever recorded is between 10 and 15%."

Instead, Skinner argues that the pesticides must have changed the methylation pattern of the rat pups' DNA. Most genes are methylated, and the more methyl groups a gene has, the more likely that gene is to remain silent.

About one week into normal male fetal development, as the testes are forming, methyl groups are stripped off DNA; these are later reattached. Skinner believes that vinclozolin and methoxychlor can disrupt the fetuses' hormone system. Since hormones influence the cellular program that reattaches the methyl groups, the methylation pattern is altered. So, even after the pesticide disappears and hormone levels normalize, the toxic effects are permanently captured by DNA in the cells. And if those cells produce sperm DNA, then the altered methylation pattern can be passed on to offspring.

Skinner has found two genes in affected males that show this altered methylation pattern and is investigating 25 other candidate genes. "We have unpublished data showing that other disease states are popping up in the older animals," he says, adding that about 10% of the males later become completely infertile, while others show signs of kidney disease and tumors.

Earl Gray, a research biologist with the U.S. EPA who studies endocrine disrupters, says that vinclozolin and methoxychlor are known to block the effects of male hormones. "There was a recent Federal Register notice that the [government] intended to cancel all use of

NATIVE FROGS AS BIOINDICATORS



Toxicological studies with frogs are limited, although necessary since

amphibians are at a particular risk of being exposed to different types of contaminants and because many populations of amphibians are in decline. At CSIRO Adelaide, investigations are being carried out to characterise effects of contaminants upon the native frog species such as *Limnodynastes tasmaniensis*, *Limnodynastes fletcheri* and *Crinia signifera*. The frog-embryo teratogenesis assay-*Xenopus* (FETAX) was originally developed with *Xenopus laevis* as an animal model. We have applied modified FETAX to assess the impact of commonly used pesticides on the native frog species. This method can be used as a short-term, reliable, sensitive bioassay for many environmental testing needs and can identify both embryotoxicity and potential teratogenic effects.

An *in situ* method has also been developed and successively utilised to assess the ecosystem health at the catchment level. This involves placing caged tadpoles at the rivers/creeks for short-term exposures to environmental contaminants. Biological assessment is carried out by assessing the health of translocated tadpoles by measuring endpoints such as survival, deformities, developmental stages and growth. Correlations are developed with analyses of organic and inorganic contaminants in the water and sediment samples.

methoxychlor,” Gray says. He adds that during the past 10 years, vinclozolin use has been restricted to controlling fungi on certain crops.

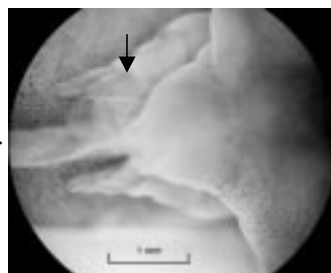
“Nobody has ever seen anything like this,” Gray comments on the study. “I think people are guardedly enthusiastic about the results. You want to see this sort of breakthrough replicated.”

Skinner says that these results build on previous studies that have shown a correlation between toxin exposure and generational effects. For instance, recent research discovered that women whose mothers smoked during pregnancy were more likely to have asthmatic children. Frank Gilliland, a professor of preventive medicine at the University of Southern California, says that this grandmaternal effect occurs even after environmental variables are controlled for, and he suggests that some environmental toxins may have consequences for multiple generations.

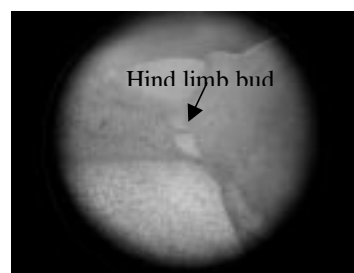
Skinner cautions that this study proves little about environmental risks of either chemical because the doses were very high. The importance, he says, is in uncovering a mechanism by which a pregnant female’s environment can alter gene expression in her progeny. He even speculates that this mechanism may drive evolution.

Evolutionary biologists find the results interesting but not necessarily indicative of a need to change current evolutionary theory. “This doesn’t surprise me at all,” writes Arthur Shapiro, professor of evolution and ecology at the University of California, Davis, in an email. He notes that methylation effects are well known and debated in evolutionary biology but that experts view these examples as “weird, special cases with no broader implications.”

However, Skinner says that this apparent anomaly does raise concerns for medicine. “If some disease states are due to transgenerational effects, we could have a disease such as prostate or breast cancer, and it could be due to what your grandmother was exposed to,” he says.



Highly developed hind limb of the caged tadpole from a reference site



Hind limb bud of the caged tadpole from an impacted site

A growing number of substances released into the environment disrupt normal endocrine mechanisms in a wide range of vertebrates. Little is known about the effects and identities of endocrine-disrupting chemicals (EDCs) that target thyroid hormone (TH) action. Frog tadpole metamorphosis depends completely on TH, which has led to the suggestion of a metamorphosis-based assay for screening potential EDCs. Currently we are validating the recent OECD protocol developed on *X. laevis* for the amphibian testing for EDCs. We are validating this method by conducting bioassays on the native frog

species. Developmental stages, total length, hind-limb length and thyroid histology are the end-points measured in tadpoles undergoing pro-metamorphosis process. Such work is under progress.

Anu Kumar, CECR, Adelaide

Workshop on Risk Assessment Tools for Off-site Migration of Agrochemicals in The Philippines

Off-site migration of pesticides from agricultural farms into water bodies is a real issue, especially in the developing world where, land use is intensive and pesticide information may not be easily accessible.



CECR (Centre for Environmental Contaminants Research) with the University of The Philippines Los Baños (UPLB) has been running a project funded by the Australian Centre for International Agricultural Research (ACIAR) for last three years to extend the risk based approach for minimizing off-site impact of pesticides in the Philippines. The project is focused on the agricultural catchments draining to the 2nd largest freshwater lake in the South East Asia (Laguna de Bay), supporting significant aquaculture.

On 23-25 May, CECR scientists Ray Correll, Anu Kumar and Danni Oliver, and ran a training, which was attended by representatives of key Philippines environmental agencies. As a part of the ACIAR project, the workshop was held at Tagaytay City (near Manila).

CECR scientists covered topics like environmental risk, pesticide chemistry and migration, and ecotoxicology. The workshop also included a demonstration of CSIRO's Pesticide Impact Risk Rating software (PIRI). More information on found PIRI and other products is available at <http://www.clw.csiro.au/products/>. This package, now available in the Philippines' language Tagalog, was accepted very well and feedback was provided for future enhancements. Delegates discussed issues like how to obtain local monitoring and ecotoxicology data and assess its reliability. Please contact Rai Kookana for further information on this project

Workshop on Ecotoxicological Tools for Assessing & Managing Sediment-bound Contaminants

Around 20 people attended the ecotoxicology post-conference workshop on 24 June 2005, immediately after the Contaminants of Environmental Concern Conference at Rydges Lakeside, Canberra (22-23 June). This was a joint effort between CECR and NSW DEC. I would like to acknowledge the contributions made by John Chapman, Ross Hyne, Stuart Simpson at this workshop.

To set the scene, John first talked about the pesticide use in Australia followed by a talk on "Sediment Quality Guidelines and Assessment Frameworks". Simon Parsons, Cranfield University, School of Water Science, UK talked about pesticide metabolites. He emphasised that the pesticide degradation products and many pesticide products and formulations containing compounds labelled as inerts by the USEPA may be of toxicological concern. Simon said that these inert ingredients, or adjuvants, can also contaminate water supplies and yet little guidance has been issued on pesticide degradates. He gave an example from UK where the Drinking Water Inspectorate (DWI) have stated that there is no evidence at the present time that any pesticide metabolites, degradation or reaction products represent a risk to health and therefore no additional monitoring is required. Simon discussed work that was undertaken to prioritise degradates formed from agricultural pesticides in the UK in terms of their potential to enter source drinking water. His presentation was an eye opener as we in Australia are still struggling to get handle over all the pesticides used and metabolites have always been on a radar but from research and as well as regulatory perspective we haven't addressed this area as yet.

Stuart gave a very comprehensive presentation on the contaminant chemistry and bioavailability. While describing bioavailability he said

"It's not chemical ... It's not biological ...

It's the link between them, and they should be considered equally!"

Ross Hyne provided an insight into the ecotoxicological approaches for assessing sediment-bound contaminants. Anu talked about integrated assessments and weight of evidence approaches. Case studies were presented during workshop that highlighted the novel and integrated approaches available for assessing and managing contaminants. The presentations led to in depth discussion and feedback between scientists, regulators and industry practitioners.

Anu Kumar, CECR, Adelaide