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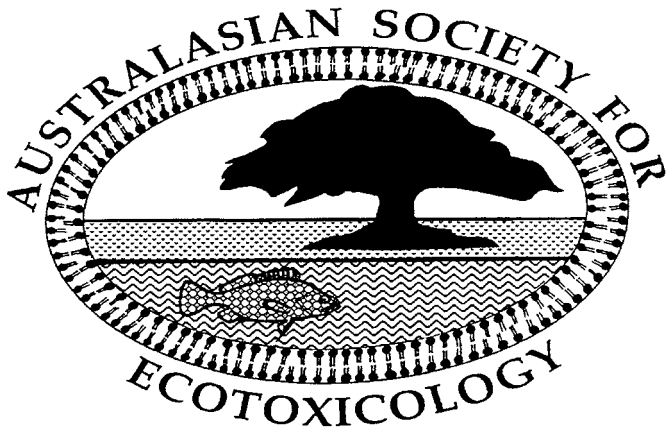
OF THE AUSTRALASIAN SOCIETY FOR ECOTOXICOLOGY

Volume 6, Number 1

September 1999

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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.

Check ASE's home page at

<http://www.science.uts.edu.au/ase/>



Deadlines

Welcome to the new look newsletter - now called ENDPOINT! We would love to hear about how you like it, and give some tips about what else you would like to see in it.

Deadline for the next issue is ?? November 1999 for the December/January issue. We will be looking for any material at all, especially any ideas for a major theme. If you want to send anything in, contact the newsletter editors or your state representative.

4 issues a year - March, June, September, December with the deadline falling on the Friday prior to the start of the month of issue.

Editor - Greg Rippon,

Assistant Editor - Gary Fan

(Contact details inside back cover and back cover.)

Change of Contact Details

Please note the change of contact details for the following people:

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Editorial

This first issue of Volume 6 of the newsletter brings a few changes to the newsletter – the most noticeable being the change of name to “ENDPOINT”.

While the name appeared to have an instant appeal to most, if not all, people (well done Munro), the ideas and concepts behind the name probably haven't been well fleshed out. So, here's my pound of flesh (I have plenty to spare). And for those of you who want to contribute, *Contaminated Sites* is always looking for more clean fill.

Endpoint as a name lends itself to a graph graphic – hence the new logo on the front page and featured prominently through the newsletter. While one might argue about hypothesis testing vs regression methods for determining an endpoint, ecotoxicity is reliant on establishing a dose-response in an appropriate, relevant, system – from sub-organismal responses to highly complex ecosystem responses, as well as the routine standardised laboratory single species test. Therefore, the graph graphic should not be seen as simply reflecting the classic dose-response curve, but may also represent some crazy line resulting from some ordination test. (Ross and Alex might want to use it in their next publication!)

Endpoint is also an aspiration – something to try and achieve. For the ASE, what is our endpoint? Well, this is reflected in our aims for the ASE. We may see each of these aims as part of our *endpoint* – something to aspire to, the final goal. The way we try to achieve these aims may vary from year to year, council to council, executive to executive, but they give the general direction or endpoint for the society. They do not exclude the ASE from

developing other aims, or our involvement in issues that affect the society. For instance, the last editorial (volume 5, issue 4) raised the idea that perhaps the society should look at joining FASTS. Do the members consider this worthwhile? It would allow the ASE to become more politically active, and perhaps achieve a greater exposure of science in general, and potentially even ecotoxicology specifically. Increasing the profile of science is important to ensure that science achieves adequate funding, with respect to research and development, teaching and associated infrastructure, and not to mention career opportunities (see also page 14).

Endpoint can also be personalised. For the student, what is your endpoint going to be? Will you be moving into a high powered research job in the private sector? Will you aim to be a world class academic at the cutting edge of science? Will you be able to balance the ethical and moral considerations that your research might lead you into? Will your education enable you to cope with a world in constant change, dealing effectively with scientific colleagues, administrative staff, politicians and the general public? For the more mature – is your endpoint now survival in the midst of an ever increasing burden of justification of your research, and application for grants? Will you change directions in your career and become a bureaucrat? Will you seek early retirement? Will you leave for overseas? Will you come back to Australia because you miss old Oz?

Endpoint from an editor's viewpoint is grand – as it also conveys that the newsletter is the place to be seen in print (except of course for the journal papers – see John's update on page 7). Endpoint also gives an editor the sense that they will have the last say!

And now here's a thought

Former World Bank economist Herman Daly, now at the University of Maryland and John Cobb:

The economy is a subset of the ecosystem, so as the economy expands it places greater and greater strains on the parent system. In effect, the economy is like a parasite eating its host. The reason that traditional economic analysis fails to reflect the depreciation of natural capital is that nowhere do economists consider the carrying capacity of ecosystems despite the fact that all economic

activity ultimately depends upon healthy ecosystems. This is an oversight that makes economic analysis increasingly divorced from biological reality. Thus the economy grows, huge fortunes are amassed, yet biologically the world becomes increasingly impoverished.

excerpt from “Eco-Pioneers - Practical Visionaries Solving Today's Environmental Problems” by Steve Lerner, pps 13-14, copyright 19997, MIT press

ATTENTION ALL STUDENTS!!
Inaugural ASE Student Prize

Applications Close 30 September 1999

At the recent EnviroTox '99 conference in Geelong, it was announced that the ASE would be sponsoring an annual student prize for the best Honours thesis submitted to an Australasian University in the previous calendar year. The aim of the prize is to encourage the development of ecotoxicological studies within the university system. The prize consists of a medal, a cash prize of \$500 and an invitation to give an oral presentation at the next ASE conference.

The ASE is now calling for nominations for the inaugural prize to be awarded in 1999. If you are a member of ASE and have submitted an Honours thesis anytime in 1998, you may be eligible for the prize. Details of what is required are given below.

1. The prize is offered for the best Honours thesis submitted at an Australasian University in 1998.
2. The criteria will be excellence in the field of ecotoxicology.
3. Nominations may be by individuals, groups or self nomination.
4. The Nomination should include:
 - the thesis,
 - name and brief CV of the nominee,
 - official statement of Honours result and
 - a letter of support from the supervisor(s) and a statement that the thesis is in its originally submitted form.
5. The ASE Council will appoint a judging panel of three ASE members to make a recommendation for the award if nominations are of an appropriate standard.

Applications should be submitted by 30 September 1999 to:

Dr Michael Warne
 Centre for Ecotoxicology
 University of Technology Sydney,
 Westbourne St, Gore Hill NSW 2065

For further information contact

Jenny Stauber:
 (02) 9710 6808 or
jenny.stauber@det.csiro.au

**POST-DOCTORAL
 FELLOWSHIP
 IN
 ECOTOXICOLOGY**

CSIRO's Centre for Advanced Analytical Chemistry in Sydney, has an active research program directed towards the fate and ecotoxicology of contaminants in waters and sediments. We require a highly motivated recent PhD graduate with a good background in aquatic invertebrate ecotoxicology, and preferably

with some experience or awareness of associated environmental chemistry. This fellowship will enable extension of this expertise as part of a multidisciplinary team examining metal speciation, bioavailability and ecotoxicity in aquatic sediments.

Further details including selection criteria and duty statement can be obtained by emailing Dr Graeme Batley (Graeme.batley@det.csiro.au) or Dr Jenny Stauber (Jenny.stauber@det.csiro.au).

Animal Ethics and Ecotoxicology

When Greg asked me to write something for the ASE Newsletter, the first thing that came to mind was the topical issue of animal ethics. This issue is presently being specifically addressed by proposed legislation in NSW but has been around for a long time. It is a good reminder to us all that we should not take common sense and a rational view of life for granted. This is especially true for our politicians who as law-makers are subject to the whims and beliefs of many fringe groups in our society who often wield far greater political power than their actual numbers or logical arguments should justify.

With respect to the present debate regarding animal ethics and ecotoxicology, the level of argument is especially spurious and weak. No one wants to see a return to the "bad old days" of higher vertebrate cruelty in laboratories. However, there is a big difference between holding monkeys in inhumane environments or conducting experiments on vertebrates without appropriate anaesthetics being used, and ecotoxicological testing of larval fish and/or microscopic invertebrates. For one thing, the level of capacity to feel pain and to experience memory of such is orders of magnitude different. For another, the testing done on vertebrates is generally to benefit human health, not the animals being tested (not that I have a problem with this). This is in stark contrast to the ecotoxicological testing of aquatic organisms which is done to protect and aide in the management of ecosystems containing the same groups of organisms. The sacrifice these laboratory-reared animals make is to assist the survival and quality of life of their fellow organisms, not humans.

Finally the level of sentience and biological history of such animals is completely ignored. Larval fish or water fleas are less sentient than ants - ants as social insects have behaviours which provide hive intelligence- larval fish and aquatic crustacea do not. Should we require ethics approval to have a picnic? It is guaranteed that a number of ants will die as a consequence of laying out a blanket on the grass, sitting down on the grass, walking around during cooking, lighting up the BBQ, etc, not to mention direct action to protect our food. Then there is the 'problem' of allowing up to 10,000 fish eggs and larvae to die for every adult fish that is recruited into a wild population (this depends on the species - it could be only a few hundred). How could we be so cruel as to allow nature to kill so many organisms before maturity? Every worm, water flea and larval fish is sacred and must be protected (along with ants, wasps, mosquitoes, etc).

For biologists, these sort of comments reek of absurdity and are generally met with a good laugh (aka Monty Python's "every sperm is sacred" humour). However, it is this very type of anti-nature belief and emotional response which is

directing politicians today to "protect" lower forms of animal life from "unethical" testing and use. How have we allowed the pendulum of animal liberation belief to swing so far away from rational, appropriate and important animal ethics? Can no one see the danger of losing many if not all of the important advances made in the area of animal ethics in the past 25 years by foolishly trying to implement laws based on illogical, ill-informed and anti-nature emotionalism? How can we assist as scientists in returning the debate to the important issues of civilised and humane behaviour towards our fellow creatures?

It is my view that we must try to continuously educate the general population whenever the opportunity arises. Ensure that you use every opportunity to discuss animal ethics with your undergraduate and graduate students. Explicitly include animal ethics material in your lectures and tutorials wherever it can be fitted in. Speak to your children's teachers at primary and secondary schools and offer lots of constructive ideas and thoughts to your children to get them thinking about the issues of ethics.

However, I also believe that society as a whole has to come to grips with its irrational fear and avoidance of the importance of death to life on earth. Part of the animal ethics movement is in my opinion simply reflecting the fear and denial of death as an integral part of life. Western society in particular has to understand that death is not evil but in fact an essential requirement of life. Thus it is not unethical to study death as part of a natural ecosystem or to assist in protecting ecosystems from experiencing unnatural levels of death. We must continue to instruct society that ecosystems will always experience natural death levels which will sometimes be extremely high.

This social phobia of Western society with death is also manifesting itself in the present debates about the ethics of eating meat, permitting voluntary euthanasia for terminally ill etc. I believe that the surrealistic emotionalism which characterises some children's productions involving animal life is being transposed onto real life with disturbing consequences. The natural world is a dynamic tapestry of birth, growth, reproduction and death as equal partners in a wondrous creation of balance and order. Remove cell death from nature's equation of life and you have cancer; reduce or remove death temporarily from natural populations and you have overpopulation, disease, adverse effects on many other organisms, and eventual catastrophic population collapse.

Denying the need to study death in nature is thus to deny the need to understand the most important qualities that make up life on Earth. Anthropomorphic animal ethics as have been proposed, if enacted in law, will be enforced at our peril.

And this is what the ASE has been thinking on the NSW Animal Research Legislation - reprinted here for those who missed Mick Warne's email.

Dear members of ASE,

Firstly, please forgive me for sending you all a form letter. However, it is a matter of urgency that I send this information to you.

Some of you may be aware that NSW has a piece of legislation, called the Animal Research Act, which controls the use of animals in research. This Act is currently under review. There are a large number of issues that have been raised by the review committee. Some of these are potentially very harmful to ecotoxicology.

Potentially the most harmful is the proposal to extend the definition of animals, which are governed by the Act and on which we can not conduct LC50 tests on, to include crustaceans.

I am sure you are all aware of the consequences that this would have.

However, other issues have been raised which may enable us to make the situation better for ecotoxicology.

I have attached a draft ASE submission to this review committee for you to read (see below - it includes the covering letter and the rationale of the positions taken by ASE).

Ms Neal,

Thank you for providing the Australasian Society for Ecotoxicology (ASE) with the opportunity to provide feedback to the review of the Animal Research Act, 1985. ASE is the scientific society for ecotoxicology in Australasia and has members from environmental regulatory agencies of all levels of government, industry, consultancies and academia. Ecotoxicology is the science of the transport, fate, and biological effects of pollutants in the environment, as such ASE and ecotoxicology are concerned solely with the non-human environment.

The Animal Research Act has without doubt has been of benefit to society in that it has ensured that researchers carefully consider; the wellbeing and health of the animals they use, the experimental designs, and whether the results are going to be of net benefit to society and to the environment. However, the Act also has some very serious negative impacts on ecotoxicology and as a result the management of the environment. The current concern is with the restrictions placed on the use of fish in LD50 tests. For reasons argued in our

submission the Society feels that LD50 tests conducted for the purposes of ecotoxicology should not require Ministerial approval or should be exempt from the Act.

If some of the issues raised in the Issues Paper were adopted then the impact could be far more serious. Our principle concern would be with the extension of the definition of 'animal' to include crustaceans. Such a decision would gravely affect the ability to conduct toxicity tests, derive guidelines to protect the environment and would prevent various regulatory authorities and branches of the NSW government from carrying some of their stated functions. For example, many functions of the Environment Protection Authority such as the water quality monitoring, auditing emission licenses, and prosecutions would be severely impeded. The continued involvement of NSW in such programs as the National River Health Initiative, the National Ocean Dumping Program, the ANZECC water, sediment and contaminated sites guidelines, and community programs such as streamwatch and bug-watch may well be compromised.

The following summarises the position of ASE.

1. That all ecotoxicology experiments, including lethality tests that use fish should be permitted under the Act. Or alternatively they should be made exempt. All research including consultancies using fish should still be submitted to animal care and ethics committees for approval. In order to be approved the work should have sufficient scientific merit and due consideration should be given to the care of the animals during the experiments.
2. That the definition of animal in the Act should not be extended to include crustaceans.
3. That the definition of animal should not be modified to include embryos, eggs and larval forms.
4. That the Act imposes restrictions on competition and therefore the Act should be brought in line with legislation concerning animals in other states and territories.
5. The Act is out of step with legislation in other countries. It should be modified so that ecotoxicology experiments are permitted under the Act.
6. That neither research organisations nor community animal welfare/liberation groups should be permitted to employ inspectors to enforce animal research legislation.
7. That the current system of enforced self-regulation, composition of ACECs is appropriate and should not be modified.

FYI

Here's a new section for your information (FYI) - this has occurred in the past without any particular fanfare - it will bring articles (mine or submitted) that provide a summary of recent national or international initiatives or research, that might be of interest to the ASE membership.

ENVIRONMENTAL DECISION-MAKING - JUST WHEN YOU WERE GETTING ON TOP OF THINGS...

You might recall from the editorial in Volume 5, Issue 3 of the newsletter (I'm sure you can), that we outlined the theme for the ASE conference, EnviroTox 2001. While we're still searching for a catchy subtitle to EnviroTox to reflect the conference theme, we are aiming to look at our representation of reality in our research and how it affects the way we regulate, and in turn, how regulation affects the way we reflect reality in our research (kind of chicken and egg).

This would appear to be timely, because by then, some-one in the USEPA might have worked out how they will implement the call for a new approach to environmental protection. The USEPA's SAB (a group of external scientists advising the EPA) has released their report on "*Integrated Environmental Decision-making in the Twenty-first Century: Summary Recommendations* on May 6. The recommendations (see box 1) include the development of report cards (ie monitoring of the agency's effectiveness with respect to protecting the environment and human health), comparative risk assessments (ie not all impacts are equal and use of cost-benefit analyses of risk reduction options), and the *aggressive* review of over-looked ecological hazards (eg habitat "conversion" - see Box 2).

Central to the report is the panel's *Integrated Environmental Decision-making (IED) Framework* (see Box 3). The framework has three major steps: problem formulation, analysis and decision making, and implementation and performance evaluation, with "report cards" providing feedback. The use of some form of monitoring is a crucial aspect one would think to any evaluation of significant environmental policy (ASE has written to the Minister for the Environment on this, you might recall) - the report cards might be something rather broad, like our State of the Environment reporting, or it might be much more specific.

The panel considered that continuing to resolve small, single, risks might be the best method for the protection of the environment overall. So, instead of pollutant by pollutant, they suggested the use of

Box 1: Recommendations of the EPA Science Advisory Board on Integrated Environmental Decision-making

1. EPA should accelerate the transition to integrated, outcomes-based environmental protection, and apply an integrated environmental decision-making framework in selected cases while maintaining the safeguards afforded by the current system.
2. Because science plays a critical role in protecting the environment, EPA should commit the resources necessary to expand the scientific foundation for integrated decision-making and outcomes-based environmental management.
3. EPA should apply and encourage the broader use of risk comparison methodologies that clearly identify how scientific information and judgement are incorporated into risk comparisons.
4. EPA should use a broader range of risk reduction options in combination to manage environmental risks.
5. When evaluating risk reduction options, EPA should weigh the full range of advantages and disadvantages, both for those measured in dollar as costs and benefits and those for which there may not be a comprehensive dollar measure, such as sustainability and equity.
6. EPA should make more full use of the scientific methods available to characterise public values and incorporate those values into goal-setting and decision-making.
7. EPA should identify, collect, and disseminate scientifically-based environmental metrics organised in new ways to support a more integrated approach to managing environmental risk.
8. EPA should develop a system of "report cards" to organise and disseminate information on the status of ecological and human health and the quality of life in order to assess the effectiveness of its environmental decisions and to guide future environmental management.
9. EPA should expand and develop new collaborative working relationships with other federal and non-federal agencies and others who also will be involved in integrated environmental decision-making.
10. EPA should aggressively explore options for reducing risks from significant stressors that currently are addressed inadequately by the nation's environmental institutions.



a “more dynamic and iterative approach to decision-making”. This would also mean looking at the aggregate of pollutants, and recognise the diversity of receptors (eg children and old folks) as well as the multi-faceted environment (eg ecosystem or community) and pollution source (eg “whole industry) to tackle the high-ranking ecological risks (see Box 2).

Box 2

High-ranking ecological risks

(assuming compliance with existing regulations and on a national scale)

- Hydrologic alterations**
- Harvesting living marine organisms**
- Habitat conversion**
- Climate change**
- Introduction of exotic species**

While this sounds a daunting task, the panel considered that soon the USEPA would have access to the appropriate tools – this would probably be through the abstraction of reality in the form of more modeling by the sounds of it. One wonders how the natural ecosystem stressors will be accounted for, like seasonal variation and extreme conditions (eg drought, flood, etc), not too mention how, with the cost-benefit analysis, political trade-offs will be dealt with in the “science” of the approach in a methodical way, given the broad scope of the analysis – just imagine how many stake-holders you could upset!



Box 3: Types of integration in the IED framework

The Integrated Environmental-decision Making Framework requires that information and viewpoints be integrated at multiple points in the decision-making process in order to select management options that most effectively, efficiently, and demonstrably reduce total risk. Six critical types of risk are involved:

Integrated Risk Assessment:

Developing scientific data and analytical methods for determining risks from multiple exposures, and multiple outcomes in order to more accurately represent real world situations.

Risk comparisons:

Considering a wide range of environmental risks simultaneously so that the seriousness of risks can be characterised to one another.

Integrated analysis of management options:

Investigations of options to reduce subsets of ranked risks, rather than considering single risks in isolation, to achieve greater aggregate risk reduction.

Integrated analysis of economic consequences:

Identifying the full range of benefits and costs, both monetised and non-monetised, associated with reduction of multiple risks.

Integration of performance information:

Using performance evaluation measures to devise course-corrections.

Integrating multiple disciplines and points of view:

Understanding and utilising information from all concerned parties in the IED process.

References:

Sara Thurin Rollin (1999) *SAB panel calls for new approach to environmental protection in draft report, Chemical Regulation Reporter*, **23**(6), 231-232.

Matanoski GM (1999) *Integrated Decisionmaking Recommendations by EPA Science Advisory Board – Peer Review Draft May 6, 1999. In Chemical Regulation Reporter*, **23**(6), 242-260.



ACROSS MY DESK

Aggregate risks

It would seem that the earthworms have already had some experience in aggregate risk (see FYI, pp 20). Various combinations of acetochlor, atrazine, chlorpyrifos, dimethenamid and metalochlor, all used in the US Midwest for the production of coarse grains and soybeans, gave LC₅₀'s four to five times lower than when the compounds were tested individually. The report claims that the USEPA does not, at present, require earthworm tests but uses surrogate data. The surrogate data is collected using *Daphnia magna*. Now, it seems to me, that they may have some way to go before they even think about aggregate risk if this really is the case. From Janet Byron (1999) *Environmental Science & Technology*, June 1, p 229A.

Aggregate risk management

This could be some competition for AQUARisk (see pp 16). A new software tool will soon (or has been) completed by the USEPA for risk management. Known as the Risk-Screening Environmental Indicators model, it mimics risk assessment by calculating the size of populations exposed to Toxic Release Chemicals, the exposure dose, and its toxicity. But it should only be used for screening purposes and comparison of releases. And good news for all those who love Microsoft Windows – this will be the preferred platform. It appears, however, to be solely for the use of human populations and release to air – it looks like AQUARisk may still have a place after all, with risk management not all that aggregated yet. From Kellyn Betts (1999) *Environmental Science & Technology*, June 1, p 230-231A.

Disaggregated water quality standards

The US Geological Survey also seems to be getting in on the aggregate risk act, as well. They have concluded that Existing water quality standards do not always adequately reflect actual conditions (see their April report synthesising the results of their ongoing National Water Quality Assessment Program – The quality of our nation's waters: nutrients and pesticides). With the segregation of legislation according to rather arbitrary environmental compartments or issues (air, water, drinking water, etc), there is a certain lack of integration of relevant environmental policies. And

again, the synergistic nature of mixtures raises its head again, not only of the primary chemical pollutants, but also their degradation products (not to mention that degradation products themselves as a separate entity are sometimes ignored).

The question that should be asked is, however, just how close to *reality* do we need to get in a risk management approach? If degradation products are a concern, then we might assume they are at least as toxic as the parent – how often would this not be a valid assumption? And with the potential interaction of chemicals, what chemicals are likely to be present at the same time (eg considering seasonal pulses), at what *realistic* levels, and what type of interactions would be occurring (ie additive, synergistic and antagonistic?). Is the change in toxicity greater than an order of magnitude, and what type of environment will it affect (eg agricultural vs national park catchments)? This sounds like the stuff for a conference! Remember, 10-14 February 2001 (see What's On, pp 24-25). From Kris Kristen (1999) *Environmental Science & Technology*, June 1, p 230A.

More real?

Some monitoring of course, doesn't go astray, and Clark *et al* (1999) have looked at seasonal and annual loads of herbicides from the Mississippi River Basin to the Gulf of Mexico. Several years worth of data are presented, giving loads as a percentage of that applied. From Clark *et al* (1999) *Environmental Science & Technology*, **33**(7), 981.

Water on the Web

The USEPA pesticides in groundwater database will be expanded to include surface waters, as well as identifying whether point or non-point sources were involved. Stakeholder groups, however, suggested that the database be validated, particularly for some of the older data. From Karen L Werner (1999) *Chemical Regulation Reporter* **23**(14), 559.

More USEPA initiatives

They must be pretty well funded to keep on coming up with these ideas – The EPA ecological strategy on the use of probabilistic methods is due (in fact, I think it is out now). So now a range of exposures to chemicals and the probability of adverse effects can be considered, and specifically aim at being more precise (this, of course, depends on how much data you have, or can afford to generate, and what *outliers* you might exclude). From Karen L Werner (1999) *Chemical Regulation Reporter* **23**(15), 594.

Anyone for Italian tonight?

I had to mention this one – or rather two: The Lasagna Technology for *in situ* soil remediation. Ho *et al* have two papers in *Environmental Science & Technology*

(1999, **33**,1086 & 1092) which tests the methodology – one test was a large field test conducted at a site contaminated with trichloroethylene. It sounds a bit shocking but has something to do with iron filings in the treatment zone and electrodes.

Ten years on – a red and black herring?

A decade after the EXXON oil spill and the headline is “slow recovery”. Apparently only two species have fully recovered, according to a report released by the Exxon Valdez Oil Spill Trustee Council, a federal/state government panel. This is apparently in contrast to what Exxon corporation is saying, according to Kris Kristen (1999). Exxon’s perception is that of a healthy and robust environment (on the whole and also in relation to the species damaged by the spill).

The Trustee Council report apparently indicates that the oil is not dissipating as quickly as was expected, and that it is still very toxic, with oil still leaching from a number of beaches when storms move rocks. And it appears that the early life stages are particularly vulnerable, like juvenile sea otters and herring. So the thinking that the oil would dissipate must be a red and black herring I guess? What is the Sydney Harbour equivalent – The Tarbooy Scallop? From Kris Kristen (1999) *Environmental Science & Technology*, April 1, p 148-149A (Also in this issue, p 149, was an article on heavy oil spills and technology gaps).

Bt or not to Bt, that is the question for Monarchs

From the IPMnet NEWS, August 1999, Issue no. 68, there is a nice article on some of the misconceptions in the recent pronouncement of effects of corn/maize pollen containing Bt. You might recall that the pollen was hand dusted on milkweed, and reflected a density of that found on milkweeds within a corn/maize field. From various sources, IPMnet NEWS point to some serious flaws in the logic of the experiment. For instance, pollen on milk-weed plants adjacent to or several metres from corn fields varied and was likely to be much less. Also, monarchs tend to fly in open areas – it is unlikely that they would select milkweeds in the middle of a corn or maize field with plants tall and mature enough to disperse pollen. Not to mention that farmers tend not to tolerate milkweed plants in their fields. While an interesting experiment, is pollen likely to be a major source of Bt toxin in reality?

And the heat is on still for GMOs

The recent talks in Cartagena, Columbia, on trying to set up a global treaty to regulate trade in GMOs stalled, as a coalition (Australia included) balked at its implications on international trade. The biosafety protocol tried to set legally binding international conditions to govern the transfer, handling and use of live GMOs, essential requiring Prior Inform

Consent of the importing country (ie PIC applied to GMOs, or take your pick of the bunch). From Rebecca Renner (1999) *Environmental Science & Technology*, April 1, p 148-149A

Or is it off?

An article in the Chemical Regulation Reporter would appear to indicate that GMOs are living up to their claim of increasing yield and decreasing the use of pesticides – this claim was according to a report produced by the national Center for Food and Agricultural Policy and the Biotechnology Industry Organisation. Apparently 2 million fewer acres of corn, and 5 million acres of cotton, were treated with pesticide (no mention was made of total plantings from one year to the next). Bt corn was claimed to have kept 47 million bushels from being eaten by pests in one year. And so the claims will go on...and the risks still largely uncharacterised. From Karen L Werner (1999) *Chemical Regulation Reporter* **23**(16), 630-631

And let’s not forget the endocrine scene

The USEPA Scientific Advisory Board (SAB) has endorsed the proposed chemical testing and screening programme to detect substances that may disrupt hormone systems. They did apparently note, however, that the process had gotten just a little ahead of the science... From Anon (1999) *Chemical Regulation Reporter* **23**(15), 583

With more on the UK water front

Lye *et al* (1999) looked at estrogenic alkylphenols in fish tissues, sediments and waters from the Tyne and Tees Estuaries. Again the link was made between estrogenic effects and sewerage treatment works. From Lye *et al* (1999) *Environmental Science & Technology*, **33**(7), 1009.

And one just for Mick


Holographic QSAR! Or at least the promise of a tool for 3-D QSAR for the study of chlorophenols. See Briens *et al* (1999) in *Ecotoxicology & Environmental Safety* **43**, 241-251.


Perhaps even two?


A look at the various ways of calculating an effect (or no-effect) concentration. The authors give the guernsey to methods like that of Aldenberg & Slob for a large set of chronic data – Mick might take some comfort in this... See Roman *et al* (1999) in *Ecotoxicology & Environmental Safety* **43**, 117-125. While Klepper *et al* (1999) estimate the effect on soil organisms of exceeding the NOECs of persistent toxicants (I guess if the NOEC is exceeded then one might expect an effect?). In this paper, they calculate the potentially affected fraction (or PAF) which is that fraction of the organisms exposed above its NOEC (not a fraction of organism, but fraction of the population of the organism)...anyway, see Klepper (1999) *Ecotoxicology* **8**, 9-21.

What's on


21 September - 20 October 1999, *Enexpo '99 : '99 Hanam International Environment Exposition.* Hanam City, 88 Seoul Olympic Regatta Course Korea. Contact: ph: +82 347 796 2255; fax: +82 347 796 2260; email: enexpo99@soback.kornet.nm.kr. web site: http://www.enexpo.or.kr


 **28-29 September 1999, *ELISA workshop,*** Sydney, NSW. Prof IR Kennedy, i.kennedy@acss.usyd.edu.au, phone (02) 9351 3546 or F Sánchez-Bayo, p.sanchez@agec.usyd.edu.au, phone (02) 9351 2112, http://www.usyd.edu.au/su/agric/ACSS under "Conference news".

29 September - 1 October 1999, *Riverfestival in crisis - Offering real Management Solutions, Second International River Management Symposium.* University of Qld, Brisbane City, THIESS, AWWA. Brisbane Convention Centre. Contact: fax: (07) 3846 7660 

 **22-23 October 1999. *Water Down the Track.*** NSW/Victorian/ACT Branches of AWWA, Albury Convention and Performing Arts Centre. Contact: ph: 03 9509 2748 & 02 9413 1288; fax: 03 9509 8243 & 02 9413 1047

24-27 October 1999, *2nd Pan-Pacific conference on pesticide science,* Honolulu, Hawaii. Dianne Ruddy, Manager, Regional Meetings & Conference Management, American Chemical Society, 1155 16th Street, NW, Washington DC 20036-4899, USA. phone +1 202 872 6286, fax +1 202 872 6013, d_ruddy@acs.org.


 **22 November 1999, *ASE workshop on passive sampling devices.*** A workshop for researchers to share their experiences with these devices. Contact: Dr Munro Mortimer at: munro.mortimer@env.qld.gov.au, phone (07) 3225 1768, fax (07) 3225 2660.


10-11 November, *Waste Contamination,* Waste Management Association of Australia, RMIT University, Centre for Groundwater Studies, Melbourne. Contact: ph: 03 9593 3699 ; fax: 03 9593 3573 ; email: kenmore@mira.net 

14-18 November 1999, *Society of Environmental Toxicology and Chemistry 20th Annual Meeting - Sustaining Global Environmental Integrity,* Philadelphia, Pennsylvania, USA. SETAC, 1010 North 12th Ave, Pensacola FL, 32501-3370, setac@setac.org, phone 850-469-1500, fax 850-469-9778, www.setac.org.

15-18 November 1999, *Brighton Crop Protection Conference 1999 - Weeds,* Brighton, UK. Contact: The Event Organization, 8 Cotswold Mews, Battersea Square, London SW11 3RA, UK. eventorg@event-org.com, fax 44-171-924-1790, phone 44-171-228-8034, website www.BCPC.org.

28 November-2 December 1999, *Chemicals in the 21st century - The fourth Princess Chulabhorn international science congress,* Bangkok, Thailand. Contact: The Secretariat, Chulabhorn Research Institute, Office of Scientific Affairs, Vipavadee-Rangsit Highway, Bangkok 10210, Thailand, phone (66-2) 247-5757, 574-0615, fax (66-2) 247-1222, 574-0616, pc4@tubtim.cri.or.th.

1-3 December 1999, *Environment Institute of Australia National Conference,* Hobart, Tasmania. Contact: ph : 03 6234 1424 fax: 03 6234 4464; email: conventions@mures.com.au 

9-13 April 2000, *Enviro 2000,* The Convention Centre, Sydney. Contact: fax: 02 9415 1599; email: quitz@dot.net.au 

22-25 May, 2000. *The second international conference on remediation of chlorinated and recalcitrant compounds,* Monterey, California. Contact The Conference Group, 1989 West Fifth Avenue Suite 5, Columbus, Ohio 43212-1912 USA, phone 614-424-5461, fax 614-488-5747, conferencegroup@compuserve.com.

5-9 June 2000, *R'2000: Recovery, Recycling, Reintegration,* Peak, Markham, York Region, CSR et al. Toronto Convention Centre, Ontario, Canada. Contact: email: barrage@peak.ch

12-16 August 2000, *American Phytopathological Society and Mycological Society of America Joint Meeting,* New Orleans, LA, USA. Contact: APS, 3340 Pilot Knob Road, St. Paul, MN 55121-2097, USA. E-mail: <aps@scisoc.org>. Fax: 1-612-454-0766. Website: www.scisoc.org



4-10 February 2001, 28th Association of Theoretical and Applied Limnology Conference.

(We have no official details at this stage, but I am sure, in the interim, some details can be obtained from Michael Barry: p +61 3 9365 2768, f +61 3 9365 2465, email michael.barry@vu.edu.au Ed)

11-14 February 2001, EnviroTox 2001.

Australasian Society for Ecotoxicology, Rydges Canberra Hotel, ACT. Contact: ph: 02 6250 7599 & 02 6250 0779; fax: 02 6250 0387; email greg.rippon@ea.gov.au



8-13 July 2001, Ninth International Congress of Toxicology (ICT-IX),

Brisbane Convention and Exhibition Centre. International Union of Toxicology (IUTOX). ICT-IX website at <http://www.uq.edu.au/ICT9> and Congress Secretariat (Intermedia Convention & Event Management) at ictix2001@im.com.au



25-29 August 2001, American Phytopathological Society Annual Meeting,

Salt Lake City, UT, USA. APS, 3340 Pilot Knob Road, St. Paul, MN 55121-2097, USA. aps@scisoc.org, fax 1-612-454-0766, website www.scisoc.org.



**NINTH INTERNATIONAL CONGRESS OF TOXICOLOGY (ICT-IX)
BRISBANE 8-13 JULY 2001**

The Organising Committee is pleased to invite ASE members to participate in the Ninth International Congress of Toxicology (ICT-IX) to be held at the Brisbane Convention and Exhibition Centre during 8-13 July 2001. This Congress is the triennial meeting of the International Union of Toxicology (IUTOX) which will celebrate its 21st birthday in 2001. It will also be the first ICT held in the southern hemisphere and is a very important showcase for all aspects of Australasian toxicology.

With the highly topical theme of *Toxicology and Sustainable Development - Meeting the Challenge*, the Congress will:

- build on the major advances in toxicology over the past few years
- highlight emerging trends
- identify those areas still in need of further development

The main theme of the Congress will be how to equip toxicologists to meet societal demands for managing chemical safety, without compromising the needs of sustainable development. To highlight the importance of environmental toxicology and ecotoxicology to this theme, the ICT-IX's logo features a platypus, a uniquely Australian animal that is sensitive to changes in the ecosystem, symbolising the delicate balance between the environment and development.

The ICT-IX Organising Committee, through its Scientific Programme Committee, will develop an outstanding programme featuring internationally recognised experts from the IUTOX member Societies. The scientific programme will feature pre-congress continuing education courses, the Deichman lecture, plenary lectures, symposia, workshops, debates and poster sessions and discussions. The meeting will cover a wide variety of topics which

will be of interest to scientists from academia, industry and government, including:

- Chemical sensitivities
- Chemicals/pollutants management
- in developing countries and countries in transition
- Clinical toxicity
- Complementary (herbal) medicines evaluation
- Ecotoxicology
- Endocrine disruptors
- Forensic toxicology
- Innovative analytical methods
- International harmonisation of chemicals management
- Molecular toxicology
- Naturally occurring toxicants
- Regulatory toxicity and toxicity testing
- Risk assessment methodologies
- Target organ toxicology

Please note these key dates in your calendar:

June 2000	Preliminary Programme and Call for Abstracts
31 January 2001	Deadline for Abstracts and Early Bird Registrations
8-13 July 2001	ICT-IX in Brisbane

Please visit the ICT-IX website at <http://www.uq.edu.au/ICT9> and register your interest. If you would like to contribute to the organisation of this important event, please e-mail the Congress Secretariat (Intermedia Convention & Event Management) at ictix2001@im.com.au.

We look forward to seeing all ASE members in Brisbane in July 2001.

**Paul F.A. Wright PhD
SECRETARY
ICT-IX ORGANISING COMMITTEE**

