

Welcome to the ISWR Newsletter

31 May 2005

From Tim

MUSIC version 3 has been born into the world, and initial training has been provided to the industry (see story by André Taylor). Further training is planned for Sydney and Brisbane, as part of the CRC for Catchment Hydrology's Catchment Modelling School. The Sydney training will be conducted by Hugh Duncan, André Taylor and Tim Fletcher, whilst the Brisbane training will be run by Graham Jenkins (Griffith University), André Taylor (ISWR) and Tony Weber (WBM Oceanics).

It's been a busy run to the line for the CRC for Catchment Hydrology, and I'm sure many are looking forward to a celebration at the CRC Lovecamp in Marysville. For those who want to appreciate the fine topography of the area, the "Tour de Lovecamp" will provide the perfect opportunity! It's a leisurely ride from Melbourne up to Marysville, with the odd small hill in between. Those interested should contact Tim Fletcher or James Grove. The ride is about 120km, and should take around 5 or 6 hours (allowing for the hills and regular caffeine-replacement-therapy (CRT)).

New 4th Year IUWM Course

I am currently working (with help from Grace Mitchell and Ana Deletic) on development of a new Integrated Urban Water Management subject for 4th Year Civil Engineering.

The new unit is designed to give students a broad understanding of the integrated management of water resources within an urban context. This is a field of practice growing in importance in Australia and overseas, and will equip students well for careers in urban water management. The scope of the course will be multi-disciplinary, giving students an understanding of the range of perspectives required in IUWM. The learning will be delivered by four primary mechanisms; (a) lectures, (b) study of provided or referenced resource material, (b) practical application of modeling and decision-making tools for IUWM, and (c) assignments, based on knowledge gained during a,b and c.

For anyone interested, contact Tim Fletcher.

Congratulations Andre and Rachel Taylor!

I'm a proud father today. Rachel (my wife) and I have a new addition to the family. Philippa Rose Taylor (6 lb, 10 ounces) was born at 3:19 am on Saturday 28th May (our first). In the tradition of 'proud fathers', I've attached a photo of her and Rachel when she was only 7 hours old (Philippa that is...).



Philippa born on Saturday 28th May

Stormwater re-use and environmental flows

The Institute's project on "Integrated Stormwater Treatment and Re-use" has been looking at (amongst other things), the potential impacts of stormwater harvesting on environmental flows.

The initial results of the analysis, undertaken by undertaken by Alain Séven, provide confidence to urban water managers that stormwater harvesting can be applied in typical urban areas, without the risk of depriving waterways of the required flow regime. Future analysis will examine whether the same holds in catchments with much lower imperviousness (and thus smaller increases above natural in the flow regime).

Unfortunately, the initial results also suggest that in these typical urban catchments, stormwater harvesting alone may not be enough to address the flow-induced habitat degradation of urbanization. A combination of other flow management measures (such as flow detention, infiltration and enhancement of evapotranspiration) along with stormwater harvesting, may therefore be required if the objective is to achieve 'natural' flow regimes.

Further work will be undertaken, to examine the impact of higher/lower levels of imperviousness, and of different climate and harvesting scenarios.



Alain Séven

Gavin

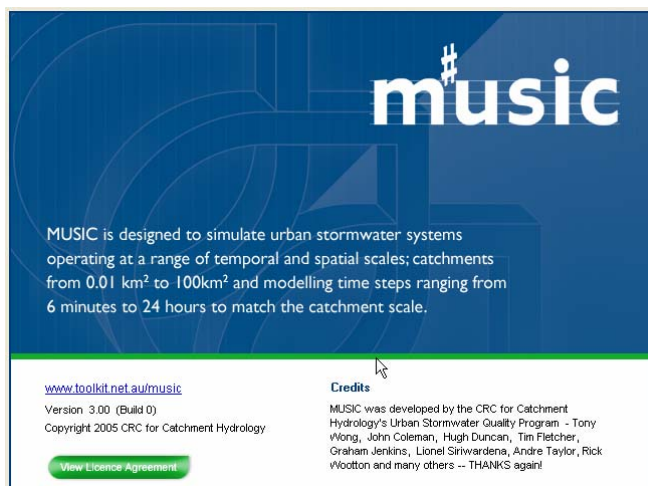
From Crusades and Engineering Waste Management

In mid-May Gavin attended the international conference on "Engineering for Waste Treatment" in none other than Albi, southern France. Albi was home to one of the darker periods of the Crusades, and is now a small regional city near Toulouse (home of Airbus). Gavin presented three papers, two on the beneficial uses of brown coal ash in engineered soil covers, as well as a paper on sustainable mining v mine wastes. There was a great mix of papers presented, from reclaimed wastewater ASR in Perth to re-use of coal ash in road subgrades, biosolids, pathogen issues, heavy metals, organics, environmental assessment testing methods, and lots more. If people would like a look at the CD of papers, just ask nicely! In general, the effort (and greenhouse guilt) was well worth it (ignoring legendary French croissants and Gaillac red wine of course ...)

Teaching Water / Groundwater

As the semester comes to a busy climax, it is worth noting that some fourth year research projects focused on groundwater this semester. The first project is a detailed review of groundwater-dependent ecosystems and their status in Melbourne. A second project was looking at estimating groundwater recharge rates on the small island of Gili Trawangin in Lombok, Indonesia. Another project. Other projects include the effects of first flush on water quality in Kakadu, the potential long-term impacts of Ok Tedi on the Great Barrier Reef and the legacy of alluvial gold dredge mining in north-east Victoria. If people are interested, just ask nicely!

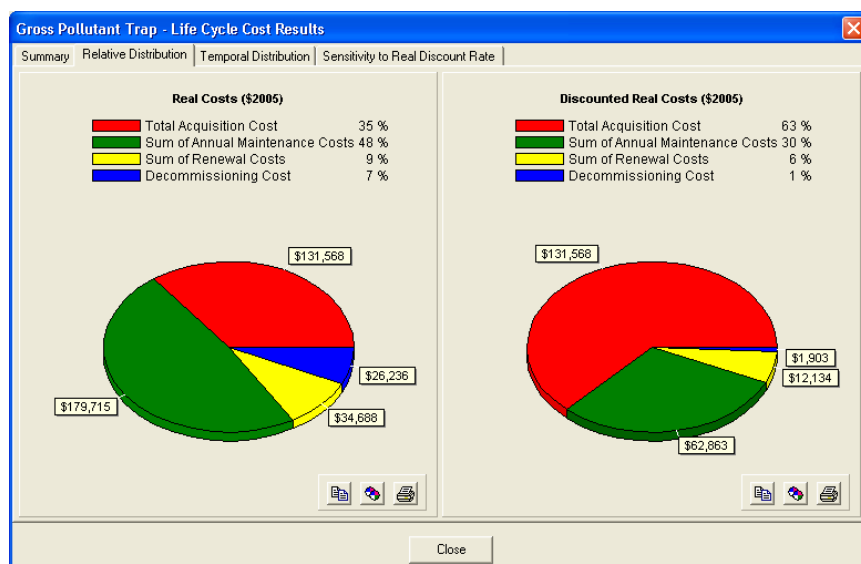
MUSIC 3 and CRC for Catchment Hydrology



On 9 May 2005 in Melbourne, the MUSIC Development Team ran a one day training course for approximately 25 MUSIC modellers on the new features of Version 3 of MUSIC. Tim Fletcher and André Taylor were the trainers for the day. Most of the content related to the new life cycle costing module in MUSIC, as this was a significant new addition to the popular software. While the life cycle costing module is easy to start using, the MUSIC Development Team felt that it was important to carefully communicate the theory behind the module's design, and use a series of worked examples to highlight 'traps' for new users.

Feedback from the trainees was very positive and enabled the Team to make some last minute adjustments to Version 3 of MUSIC before it was released the following day, and to refine the approach to training that will be used during the upcoming Catchment Modelling School in Brisbane and Melbourne.

It was also a good opportunity for the MUSIC Development Team to take a breath after some very busy weeks before the release of Version 3, and reflect on what had been done to once again improve the software.



UDM and WSUD conference organization



As you may already know we are organizing the joint **7th International Conference on Urban Drainage Modelling and 4th International Conference on Water Sensitive Urban Design, in Melbourne, April 2006.** The submission of the abstracts closed last week. **We have received 272 abstracts of which almost 1/2 is from overseas!** This is a great outcome, since we can fit maximum 132 presentations in the planned 3 day programme. We have also received lots of communication from Europeans that they are to come with their large teams. It looks that our conference will be the biggest international gathering in our field in 2006!

The reviewing process is to begin (more than 90 reviewers have been contacted). We have lots of papers to choose from, and therefore we hope to have very strong presentation sessions as well as large poster sessions. **Any suggestions how to make poster sessions interesting and well attended are more than welcomed** (send them to Ana Deletic or Maryann please)!

It was also decided that the conference will be held in Grand Hyatt in the CBD (that will be fully renovated this year), while the main conference dinner will be in the National Gallery Victoria (in the hall with stained glass ceiling).

Australasian Facility for Stormwater Biofiltration Technologies – STI Grant

The letter of offer from DIIRD for \$1.46 million has arrived and Ana wrote back to say that we are happy to take the money! However, before we see any of it (as well as additional \$0.9 million from industry and the University), we have **to sign 9 agreements:** an UJV agreement with Ecological Engineering (our main partner), 7 collaboration agreements with our industrial affiliates, and a project agreement with DIIRD! The process of getting the agreements signed has begun and a few drafts were exchanged between Monash and Ecological Engineering) over the past few weeks.

The first week of June is a busy one for the STI initiative since the following is to happen

- The meeting with DIIRD to discuss the first draft of the project agreement
- We hope to send the draft of the collaboration agreement to all affiliates
- We are to have 1st research workshop (to agree on milestones and deliverables, as well as to start scoping the research plan)

Workshop on Stormwater re-use in SE Queensland and Australia, Brisbane 25 May 2005

Grace and Ana were invited to present at a 1/2 day workshop on Stormwater Reuse in SE Queensland and Australia that was held in Brisbane on Wednesday 25 May 2005. There were over 60 people (some say almost 100) which indicates the interest for stormwater reuse in Queensland. The presentation was on outcomes of our ongoing research on stormwater reuse that is funded by BCC, Qld EPA and Monash Research Fund for New Areas. It all went well and we also learned a lot about the industry needs in this area.

Anke Wendelborn

Yes finally, I have been out in the field as well. Who would have thought that?! My groundwater sampling of the area around the potential ASR site in SE Melbourne for a survey of current groundwater quality included the state observation bores (SOB) and some private bores, that I could get hold of.

Monday, 23rd May started out with a gorgeous sunny day for Gavin and I, but a less fortunate search for the first SOB bore. (I still think there was a car parked on top of the cover). Anyway after looking around for a while, we decided to leave it and move on to the next SOB bore. We let down the bladder pump and started pumping. Well, we turned the equipment on, but it didn't really pump. Emergency calls to geoscience people were made and figured we might have burst the bladder. Hmmm. Well, we got the bailer out then. We fiddled around with the pH-meter and titration kits. Lots of fun!! The next bore was a bit easier, as the golf course had the pump on the whole day before we arrived and we just grabbed a bucket full. Too easy, but not much use for TSS or PSD really. And then the day was already over. Bummer.

The next day greeted us with less fortunate weather conditions, but Gavin (fig.1) and I are no wimps! So no mercy. We headed to the church in the morning, to leave some prayers that today would be better than yesterday... just kidding...they really have a bore there. Then another stop at a private bore, all prefiltered, but what can one do. The private bore opposite the road was of not much use, as there was a broken pump on top (not that I asked about such small details beforehand...). The next SOB was blocked after about 6m, so no use (this fact is unknown to SKM, as they only monitor the water level (even though it is supposedly there for an old landfill!!)). Well ... \$#@%\$#^&* ... The next two SOBs were next to each other and there seemed to have been a mix up of the numbers, but that is all as well. We tried the bladder pump again (we changed the bladder the night before), but not much more luck. Not enough head apparently. So we tried the foot valve. No really, not worth the effort, I'd say. But next time we are clever enough to take the other pump from geoscience for the shallow bores. The last SOB for the day was extremely turbid and we managed to bail it empty!!! Good job, Gavin! Not very fast recharge, hey?

I had to make another trip this time with Peter – a very skilled bailer, as well. And we quickly bailed another private bore (Fig. 2). Sampled the refilled last bore from yesterday (way cleaner water too) and actually found the first bore this time. Yeah.

So all in all I got 9 samples and hope for more in the next sampling round, when I hopefully manage to get in contact with more landowners. They are analysed for EC, pH, DO, alkalinity, TSS, PSD, TN, TP, FRP, NOx, NH3, TOC, DOC, major ions and heavy metals in three fractions.

Thanks a lot guys for your help.

Wenda



Fig. 1: Gavin measuring the water level



Fig. 2: Peter bailing away

CERES Biofilter Update

If you haven't had a chance to visit CERES lately and see how the biofilter is doing after the last renovation rescue day here are some photo's, including the interpretative signage that has been placed in front of it. The sign is mounted on a neat sculpted wooden structure which is a bit like a wave. The photo only shows a bit of it.

Cheers, Grace



eWater Update

by Grace Mitchell

Well, the start date for eWater is getting closer! All the negotiations over the Participants Agreement, Commonwealth Agreement and Company Constitution are meant to be complete in the next few weeks, ready for all partners to sign off on them. There are still a few points to sort out so there are a few stressed people in eWater HQ! But, this should resolve itself successfully, in time for us to launch into eWater on 1 July.

Apart from the admin and legal type stuff which is going on, there have been a few announcements on the research front which are worth commenting on.

Program and Product Leaders

The table below lists the research program and product leadership team and the new roles of deputy director research and deputy director product development. So, we at Monash ended up with two Program Leaders which is probably better than we expected. Now that this has been finalised, I think we have a better understanding of the structure of eWater, can start forming teams and developing up the plans for the research projects and industry products.

The full list of Research and Product Leadership Team

	R & D Programs/Themes	Leader		Deputy	
1	Landscape processes & restoration	Nick Bond	Monash Univ.	Ian Rutherford	Melbourne Univ.
2	Hydro-ecological prediction	Mike Stewardson	Melbourne Univ.	Angela Arthington	Griffith Univ
3	Impacts of hydro-climatic variability	Francis Chiew	Melbourne Univ.	Fran Sheldon	Griffith Univ
4	Catchment water and contaminant dynamics	Tim McVicar	CSIRO L&W	Darren Baldwin	MDFRC/CSIRO
5	Urban systems & design	Grace Mitchell	Monash Univ.	Matthew Inman	CSIRO MIT
6	Reach scale ecosystem processes	Heather Hunter	QNRM	Ben Gawne	MDFRC/CSIRO
7	Socio-economic evaluation	Stefan Hajkowicz	CSIRO SE	John Tisdell	Griffith Univ
8	Risk, uncertainty and optimisation	George Kuczera	Newcastle Univ.	Jane Blackmore	CSIRO MIT
9	Catchment modelling & model integration	Geoff Podger	tbc	Craig Beverly	DPI Victoria
10	Software engineering & design	Joel Rahman	CSIRO L&W	Jean-Michel Perraud	CSIRO L&W
11	Measurement & monitoring technologies	Peter Fitch	CSIRO L&W	Jeff Walker	Melbourne Univ.
12	Education, training & e-learning systems	Richard Norris	Canberra Univ.	Peter Oliver	QNRM

Deputy Director - Research

Stuart Bunn

Griffith Univ

Deputy Director - Product Development

Rob Argent

Melbourne Univ.

Product Programs

Industry Product Leaders

1	River Operations & Management Toolkit	tbc	
2	Urban Water Systems Toolkit	Tony McAlister	WBM
3	Water and Contaminant Simulation Toolkit	Rory Nathan	SKM
4	River and Catchment Restoration Toolkit	Jim Barratt	SA DWLBC
5	Integrated Monitoring and Assessment Systems	Nick Marsh	QEPA

Program and Product Descriptions

The program and product descriptions have been circulated by the eWater executives. It is too long to include in the newsletter so let me know if you would like more info on this and I'll email you the relevant documents. It is fair to say the R&D described in these documents is general and really just defines the broad scope of each program and the inter-linkages. The planning phase of July to Dec this year will be the period in which the meat is put on the bones of these descriptions (sorry if you are a vegetarian) which will then translate into the research projects that we will ultimately be working on.

Call for Initial Projects

This call of Eol's for initial projects is for work to be done during the gap between the start of eWater and the finalisation of the research projects. So, they need to be short sharp tasks that can be completed by the end of the year. If you have some ideas about projects, it might be worth chatting about them to myself and Tim and a few of the guys in CRCFE, as our priorities should be:

- ✓ Completing research from CH and FE
- ✓ Writing up journal articles
- ✓ Capitalising on CH and FE work in a new way which leads into eWater research program and product objects.

These projects can involve multiple parties of eWater but the ultimate responsibility for specific deliverables will be assigned to each individual during this Initial Projects phase. That is, eWater is intending to have an agreement with Monash that has something like a checklist of deliverables against people's names to be used to confirm we have done what has been agreed upon in this first six months. It is messy but that's the way they would like to handle this start up period.