Purpose of this Booklet
This booklet has been put together as an information source on the Honours year in the School of the Environment (SotE) for 2015. It details what Honours is all about, why you may be thinking about doing an Honours degree, what work you will do in Honours, a list of the potential research supervisors and their research activities you could become involved with if you go on to do Honours with us and a description of some of the Honours topics available. It is time to start talking to potential supervisors and to begin thinking about possible Honours research that you might be interested in. We will also hold an information session in September to answer any questions potential students may have.

In particular, the development of the new School of the Environment means that there are greater opportunities for Honours projects that cross discipline boundaries. Multidisciplinary approaches to research questions can result in a richer learning experience that will better support your professional development and improve your career opportunities. For example, projects may link areas such as Health and Environment with Geography and Geographical Information Systems, or Population Studies with Groundwater Studies.

Note also that although Honours has traditionally been a one year, full-time course of study, there are opportunities for mid-year entry and for part-time study over 2 years. These more flexible arrangements can result in better learning opportunities for some students, so we encourage you to consider further study.
Where to get more information

If you need any further information about the Honours year please contact Prof. Howard Fallowfield Honours Program Coordinator, School of the Environment and/or talk to the Honours Course Committee members who are drawn from representative discipline areas within the School.

Professor Howard Fallowfield, Honours Program Coordinator (Health and Environment)
E-mail: howard.fallowfield@flinders.edu.au
Phone: (internal) 18581 (external) 7221 8581
Health Sciences Building, Room 5.22

Assoc. Prof. Jochen Kaempf, Chair of the Research Higher Degree Committee
E-mail: jochen.kaempf@flinders.edu.au
Phone: (internal) 12214, (external) 8201 2214
Earth Sciences, Room 312

Dr Kirstin Ross (Health and Environment)
E-mail: kirstin.ross@flinders.edu.au
Phone: (internal) 18584 (external) 7221 8584
Health Sciences Building, Room 5.24

More information can be found on the following Flinders University Website:
http://www.flinders.edu.au/future-students/undergraduate/honours/honours_home.cfm

What is Honours all about?

After completing a three-year degree or the first three years of an Honours degree, many students go on to complete what we call an Honours Degree. The Honours Program in SotE at Flinders consists of advanced course-work and a research project supervised by a member of the academic staff or perhaps even an industry-based research project. The project makes up 27 units of the Honours program and the coursework is 9 units. Coursework is normally completed in the first semester of study.

The Honours year is a different and exciting experience for most students. As well as continuing to require and understand existing knowledge they are working at the coalface experiencing the joys and heartaches of discovering new scientific phenomena and exploring new theoretical explanations. They also gain experience in designing experiments to test existing theories or new hypotheses. The wider scope that this gives to a student's view of science and problem solving is invaluable. We believe that every student who has the capacity to benefit from the Honours year should experience it, even if they have no intention of pursuing a research-oriented career. For example, a school teacher is more likely to be able to interest students in science-based subjects if he or she has actually experienced the process by which scientific understanding is achieved and knowledge advanced.

For many students Honours is a challenging but very exciting year. It's usually the first time that you actually get to work closely on a research project with a supervisor within the school. Many projects
are funded by external bodies and work in collaboration with industry, other universities or with other government departments. Honours students become key players in many of the projects and quickly become part of new and innovative research project teams both within our School and with external collaborators. We would encourage you to speak to a few Honours students and see what they have to say about it too!
Here are just a few reasons why you may consider doing the Honours year:

- Working on a research project of your choice, with a specific, expert supervisor or even a project team in many cases;
- Gives students a better appreciation of what "real world" research is all about;
- Helps you to further develop independent problem solving skills within a project;
- Puts much of your undergraduate study in perspective by giving you an opportunity to make use of and apply your undergraduate training;
- Opens up a much wider range of career opportunities that would not be available to you with an ordinary Bachelor's degree (many employers are now looking for Honours graduates!). It is often the ticket to getting good jobs in industry and government;
- It is the necessary basis for going on to further research study such as an MSc or a PhD and leading to high-level research careers in the government or industry and jobs in academia. You need an Honours degree to be eligible for most scholarships that support you whilst doing a postgraduate degree.

These are just a few reasons and there are probably many more. It is the year that you can get more heavily involved in research and play an active role in the direction of a research project. Sure, it's challenging. But, if you speak to most Honours students you’ll find that most say the rewards are worth it. Many students who never thought they would do Honours ended up doing it and really enjoyed it. For most, it is the best year of the University programme. Many are now even doing postgraduate degrees at Flinders University and at other Universities nationally and overseas too!
**Honours Course Structure**

Students undertaking Honours in SotE do one of the following Honours Courses:

- Bachelor of Applied GIS Honours
- Bachelor of Environmental Management Honours
- Bachelor of Science Honours in Hydrology
- Bachelor of Science Honours in Environmental Science
- Bachelor of Science Honours in Oceanography and Meteorology
- Bachelor of Science Honours in Health and Environment
- Bachelor of Arts Honours in Geography
- Bachelor of Arts Honours in Environmental Studies

All Honours Courses which make up the SotE Honours Program share the same course structure, comprising:

**Major Project**

ENVS4700 Honours Research Project in the Environment (27 units)

**Coursework**

ENVS4720 Research Project Design and Conduct (4.5 units) - core

Plus one of:

- EASC4723 Modeling and Data Analysis in Natural Systems (4.5 units)
- EASC4733 Measurement Techniques in Natural Systems (4.5 units)
- ENVH4711 Environmental Health Concepts (4.5 units)
- ENVH4722 Food Safety (4.5 units)
- ENVH4731 Sustainable Development- Health Issues (4.5 units)
- ENVH4742 Microbiology and Communicable Diseases (4.5 units)
- ENVS7701 Coastal Management (4.5 units)
- GEOG4700 Population Issues of Developed and Developing Countries (4.5 units)
- GEOG7711 GIS for Environmental modelling (4.5 units)
- GEOG7750 Advanced Studies in Geography, Population and Environmental Management (4.5 units)

Or another topic appropriate to a study at Honours level, with approval of the SotE Honours Convener.

*Note: The year 3 undergraduate topic ENVH3700A Applying Research to Health and the Environment covers research design, scientific writing, data presentation and analysis- similar in scope and depth to ENVS4720 Research Project Design and Conduct. ENVH3700A will be anti-requisite for ENVS4720. Due to the common content of ENVH3700A and ENVS4720, students who have completed ENVH3700A Applying Research to Health and the Environment at undergraduate level will choose two electives to satisfy the Honours degree.*
Getting into Honours: What you need to know

Students who have completed or who expect to complete the requirements for an ordinary degree in a wide range of disciplines are eligible to apply to enter the Honours program. Admission will be decided on the basis of undergraduate performance, usually requiring approximately a credit average in the final 2 years of undergraduate study (GPA above 5), although individual cases will be considered on their merits. Applications will be considered at a School meeting in late December or early January.

A list of supervisors, brief descriptions of research interests and some course-work titles are attached. You are encouraged to consider all the options on offer even if they are outside the area of the degree you have just completed.

What do you need to do now?
If you are interested in hearing more:

- Attend the SotE Honours Information Session or meet with one of the Honours Coordinators.
- You should discuss research interests with potential supervisors before formally applying, and your Honours Coordinators can assist with this process.
- Complete the Honours Examination form obtainable from the Honours page on School website

Professor Howard Fallowfield

September 2014
I am Strategic Professor of Hydrogeology/Hydrology. I have extensive research expertise in shallow groundwater hydrology and modelling, recharge-discharge estimation and modelling, groundwater surface water interaction, urban hydrology and distributed GIS/remote sensing supported hydrological modelling, ecohydrology and impacts of land use and climate change on groundwater systems. Presently, I am coordinator of a large project on the groundwater resources of the Adelaide plains, funded by the Goyder Institute.

My research areas include, and possible honours projects could be developed in topics such as:

- Regional groundwater modelling
- Catchment hydrology and distributed hydrological modelling
- GIS and Remote sensing applications in hydrological modelling
- Groundwater dependent ecosystems
- Groundwater recharge and discharge estimation
- Groundwater/surface water interaction
- Ecohydrology

Connected to the Goyder Adelaide groundwater project several possibilities exist for research projects on e.g. saltwater intrusion estimation, spatially distributed estimation of urban recharge, advanced groundwater modelling with use of tracer data, groundwater flow modelling of flow across the faults along the Adelaide Hills, etc. Guidance on several of the above projects will be in collaboration with colleagues from SotE.

More information on my research, students and publications can be found at: http://www.flinders.edu.au/people/okke.batelaan

My principle research interests cover:

- Environmental weed invasion ecology
- Weed impact and weed management. Target species include asparagus weeds, olives, African boxthorn and broom.
- Seed dispersal ecology.

For more information, please visit: http://www.flinders.edu.au/people/david.bass
Scott Creek Experimental Catchment Projects:

Surface water-groundwater interactions are being investigated in the Scott Creek catchment, Mt Lofty Ranges with the aim of better understanding Adelaide Hills catchments. Surface water, groundwater and soil data are currently being collected and it is predicted that there will be several follow-up projects or spin-off projects for 2012.

Eyre Peninsula Groundwater Projects:

A number of groundwater-soil water hydrochemistry projects will probably be available for 2012 (depends on final project approval). This project is a group effort combining Flinders hydrology staff, DWLBC, SA Water and the Eyre Peninsula NRM Board. Speak to Erick, Adrian, Huade and Craig about potential projects.

Erosion Rates of a Quartzite Catchment in the Mt Lofty Ranges Determined from Cosmogenic Radionuclides (\(^{10}\)Be and \(^{26}\)Al):

Funding is anticipated through an AINSE grant (Australian Institute for Nuclear Science and Engineering) to quantify erosion rates in a Mt Lofty Range catchment through the detailed examination of \(^{10}\)Be and \(^{26}\)Al isotopes of quartzite bedrock and alluvial sediment in a small gauged stream basin. Cosmogenic radionuclides (\(^{10}\)Be and \(^{26}\)Al) of quartz-rich rocks and sediment are a powerful tool for deciphering landscape evolution and quantifying catchment-averaged erosion rates. In situ produced cosmogenic nuclide concentrations in bare bedrock have been used extensively to determine erosion rates and to date geomorphic surfaces over timescales of \(10^3\)-\(10^6\) years. In addition, cosmogenic radionuclide concentrations in alluvial sediment have been used to determine catchment- averaged erosion rates. Such studies have added greatly to our understanding of how hilly and mountainous landscapes respond to tectonic and climatic conditions.

For more information, please go to: http://www.flinders.edu.au/people/erick.bestland

Dr Beverley Clarke  beverley.clarke@flinders.edu.au

I have a diverse range of research interests. I am a social scientist and have expertise in policy and project evaluation, social survey design using both quantitative and qualitative methods and content analysis. Between 2010 and 2013 I was a principle investigator on a CSIRO Flagship Cluster exploring mechanisms to enhance the uptake of science into decision-making.
My research interests cover:

- Coastal Management
- Australian Coastal Policy Development
- Community participation in environmental management
- Development of performance indicators for participation
- Environmental Impact Assessment
- Natural Resource Management Policy
- Natural Resource Management Program evaluation.

Research ideas for honours students include:

- What has been the role of the Development Report (the lowest level of assessment) in Environmental Impact Assessment in South Australia?
- Do South Australia’s Environmental Impact Statements comply with international criteria of good quality?
- How successful is community participation in environmental impact assessment in South Australia?
- Improving perceptions of the low energy coast of Adelaide
- What have been the changes to community engagement in coastal management under the Caring for Our Country initiative?
- How has federal government funding shaped community engagement in coastal management in South Australia?
- Recreational fisheries: what role does this sector play in influencing governance of the South Australian marine environment?

For more information please visit: [http://www.flinders.edu.au/people/beverley.clarke](http://www.flinders.edu.au/people/beverley.clarke)

**PROFESSOR PETER COOK** peter.cook@flinders.edu.au

Scientists in Program 3 of the National Centre for Groundwater Research and Training (NCGRT) are developing field techniques, theoretical criteria and modelling tools to assess the complex interactions between groundwater and surface water. Closing fundamental knowledge gaps involving the inter-connection of groundwater with rivers, lakes and wetlands will help address issues such as water resource management, water quality and the protection of delicate groundwater dependent ecosystems.

Four sub-programs of research are currently being undertaken:

- Groundwater recharge from losing streams
- Groundwater discharge to gaining streams
- Hyporheic exchange
• Groundwater interaction with estuarine rivers, lakes and wetlands.

For more information, please visit: http://www.flinders.edu.au/people/peter.cook

MRS CECILE CUTLER cecile.cutler@flinders.edu.au

My research areas cover:

• Migration and settlement patterns particularly in Australia but also overseas.
• The changing political and economic situation in Asia, especially Vietnam, Cambodia, Laos and Indonesia.
• Improving and developing innovative University teaching strategies particularly the successful application of flexible delivery techniques.
• Regional development policies in Australia, UK and USA.

PROFESSOR HOWARD FALLOWFIELD howard.fallowfield@flinders.edu.au

Our research focus is health aspects of water quality, which has been conducted across a range of aquatic environments including drinking water, wastewater and recreational waters.

Current research projects in which projects will be considered include:

• The design and operation of integrated aerobic – algal systems for the treatment of piggery waste (High Integrity Australia Pork CRC).
• The evaluation of the performance of high rate algal ponds for the treatment of wastewater from rural communities in South Australia using our research demonstration facility at Kingston on Murray.
• Mechanisms of pathogen removal from wastewaters treated in high rate algal ponds using culture and molecular technologies.
• Composition of biomass produced in high rate algal ponds treating wastewater from rural SA communities, for fuel, feed and fertilizer.
• Evaluation of the performance of a pilot scale biological filter for the treatment of drinking water with a focus on the microbial ecology of the biological filters and its effect upon the performance of these systems.

For more information, please go to: http://www.flinders.edu.au/people/howard.fallowfield
My research areas cover:

- GIS; remote sensing and digital image analysis
- Sparse vegetation community mapping using imaging spectrometry
- Environmental condition assessment of semi-arid rangelands using remote sensing
- Estimating evapotranspiration and groundwater recharge using remote sensing
- Knowledge-based expert systems and the integration of remotely sensed and GIS data
- Land-cover classification and change detection analysis
- Biodiversity and conservation.

For more information, please go to: [http://www.flinders.edu.au/people/stephen.fildes](http://www.flinders.edu.au/people/stephen.fildes)

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My research interest lies in the fields of ecohydrology, hydrometeorology and hydrology, with research subjects including

- Terrestrial ecohydrology, particularly on plant water use, environmental stress, drought tolerance, and water use efficiency.
- Spatial and temporal analysis of climate variables, in the context of climate variability and changes, topographic influence, and land use changes
- Environmental tracers, including chloride, water and carbon isotopes in the soil (groundwater)-vegetation-atmosphere continuum.
- Groundwater recharge estimation, particularly in mountainous areas
- Urban climate, summer heat mitigation, and energy consumption

Currently we have two funded projects (listed below) with data being collected and welcome contribution from Honours students. Desktop study based on publically available data in my research interest areas is also possible.

1. **Topography-facilitated hydrometeorological and ecohydrological experiments in a native vegetation catchment (THE-NaVe)** have been undertaken in the Willunga Basin since 2012 through a research project funded by National Centre for Groundwater Research and Training (NCGRT). Hydrological and hydroclimatological conditions vary in the 15-hectare catchment due to different slope orientations and soil characteristics. These various conditions within a short distance provide a good opportunity to investigate ecohydrological processes, controlling factors, and their responses to climate changes. It is also useful to
examine environmental stress on plant physiological activities.

2. Optimal balance between cooling energy use and green infrastructure irrigation in dry-summer Adelaide. This is a collaborative research between Flinders University, UniSA, and SA Water. The project has been funded by DEWNR and SA Water. The idea is to optimize the balance between the cost of water used for parkland irrigation and the saving from a reduction of cooling energy consumption, so as to achieve other environmental benefits such as reducing nutrient load to Gulf St Vincent, increasing carbon sequestration and biodiversity in parklands. Resulting from previous Adelaide urban heat island projects, we have accumulated over four-year urban climate and other data, laying down a solid foundation for this study.

More information of my research can be found at http://www.flinders.edu.au/people/huade.guan.

A/PROFESSOR JORG HACKER jorg.hacker@flinders.edu.au

My research covers:

- Planetary boundary layer
- Aircraft instrumentation
- Airborne laser scanning
- Airborne hyper-spectral scanning
- Evapo(transpi)ration from vegetated surfaces measured by airborne and ground based techniques
- Structure of the convection in the PBL
- Sea breeze circulations
- Inhomogeneous planetary boundary layer
- Airborne air quality monitoring
- Flight testing

For more information, please visit: http://www.flinders.edu.au/people/jorg.hacker

PROFESSOR IAIN HAY iain.hay@flinders.edu.au

I am Matthew Flinders Distinguished Professor of Human Geography and a recipient of the Prime Minister’s Award for Australian University Teacher of the Year. I have a wide range of research experience across the areas listed against dot points below:
• Economic, cultural and social geography
• Geographies of domination and oppression
• Geographies of the super-rich
• Geographical education

Over and above these areas, I am very willing and able to supervise work in human-environment relations or in areas that focus on tourism research. My particular expertise is in qualitative research methods, but I am also happy to supervise work of a more quantitative nature.

My practice is to work with Honours students to help them develop research topics that truly capture and reflect their own imagination and interests. But if you are out of ideas, I’m happy to suggest some!

For more information, please go to: http://www.flinders.edu.au/people/iain.hay

PROFESSOR PATRICK HESP patrick.hesp@flinders.edu.au

I am Strategic Professor of Coastal Studies. I have extensive research experience in coastal geomorphology and have worked on beaches, coastal and desert dunes in places such as China, Spain, Holland, France, South Africa, Asia, the US, Canada and South America.

My research interest focuses on the following aspects of coastal geomorphology:

• Aeolian geomorphology
• Coastal dune initiation
• Dynamics
• Geomorphology
• Ecology and management
• Desert dune geomorphology and dynamics
• Surfzone-beach-dune interactions
• Coastal dune archaeology

For more information, please go to http://www.flinders.edu.au/people/patrick.hesp

A/PROFESSOR JOCHEM KAEMPF jochen.kaempf@flinders.edu.au

I am a physical oceanographer with research interests in estuarine and coastal processes. My research interests include, but are not limited to:

• Coastal upwelling
Transport timescale analysis (e.g. flushing time)
Interactions of flows with submarine canyons
Suspended sediment transport
Dynamics of fluid mud.

Further information on my current and previous research, including student projects, publications and other activities can be found at this website: [http://www.flinders.edu.au/people/jochen.kaempf](http://www.flinders.edu.au/people/jochen.kaempf)

**DR MARK LETHBRIDGE** mark.lethbridge@flinders.edu.au

My principle research interests are in the following:

- New methods of measuring herbivore pest impacts on native vegetation, particularly goats, rabbits and feral pigs.
- Optimising cattle management for improved pasture and carbon farming.
- Optimal landscape planning for native rehabilitation.
- Modelling the costs and benefits - more optimal removal strategies for pests.
- Population Viability Analysis (PVA).
- Modelling movement in pests and native animals (wallabies, goats, camels, wombats).
- Spatial stochastic simulation modelling - applied in crime analysis and animals.
- Habitat modelling.
- Using advanced Kriging analysis techniques for population and distribution prediction
- Carbon methodologies for pest animal removal.
- Whisker identification as a way to collect mark-recapture data (population parameters) of animals using movement-triggered cameras (tests have commenced on wallabies and pigmy possums).
- Research applications using precision mapping drone technology.
- Radio collars with on-board geofences for improving stock management.
- Possum research for a possible release program in the Flinders Ranges.

More information, can be found here: [http://www.flinders.edu.au/people/mark.lethbridge](http://www.flinders.edu.au/people/mark.lethbridge)

**PROFESSOR ANDREW MILLINGTON** andrew.millington@flinders.edu.au

I am interested in students who want to work in the following areas:

- Food security
- Foreign ownership of agricultural land and natural assets in Australia
• Land use and land use change – and its application to water resources, agricultural production, food security
• Urban expansion, urban sprawl

I have a long list of specific projects where datasets are already available for analysis, and I am also interested in your ideas in the four broad areas outlined above.

DR GRAZIELA MIOT da SILVA gratziela.miotdasilva@flinders.edu.au

I am a geological oceanographer with research interests in coastal geomorphology, including particularly:

• Beach and nearshore morphodynamics
• Sedimentology of coastal environments
• Wind and wave driven sediment transport and coastal evolution
• Marine geoarchaeology
• Impacts of climate change on coastal environments.

For more information, please visit http://www.flinders.edu.au/people/graziela.miotdasilva

DR VINCENT POST vincent.post@flinders.edu.au

My research focuses mainly on groundwater hydrology in coastal areas and the development of reactive transport codes, and employs a range of methods, including fieldwork, laboratory experimentation and computer simulations.

My research interests include:

• Hydrogeology of coastal aquifer systems
• Freshwater lens development under islands
• Geochemical processes and groundwater flow
• Solute transport processes at long (geological) timescales

In 2014 I have opportunities for students to participate in ongoing research projects in South Australia (Willunga area, Adelaide Urban Groundwater project).

For more information, please go to: http://www.flinders.edu.au/people/vincent.post
In our lab we are interested in parasites and pathogens in the environment that effect human health. We are looking at the relationship between dogs and lizards and the parasite Strongyloides and the human pathogen Campylobacter, with the overall goal being to control these pathogens by altering the environment they exist in. We do this by collecting samples of (primarily) soil and faeces, to see where the pathogens can be found, and by looking at the environmental variables that impact on their survival. The Honours projects would involve a mix of field and laboratory research. I am also interested in evaluating the success of novel online teaching methods.

Possible projects include:

- Detecting *Campylobacter* in dog faeces
- Using fungi to remediate soils contaminated with pesticides
- Developing resources for online teaching (particularly teaching microbiology) (includes video editing/quiz development/teaching evaluation)

For more information, please visit: [http://www.flinders.edu.au/people/kirstin.ross](http://www.flinders.edu.au/people/kirstin.ross)

My research involves issues related to sustainable development and to understand the complexities of population change and their implications. It identifies the crucial linkages between population and other variables with respect to human development and sustainable development. My recent research work focuses on Asia Pacific island countries like Timor-Leste, Papua New Guinea.

Some potential projects available

- Human wellbeing and sustainable development
- Demographic dynamics in Asia and the Pacific region
- Population growth and sustainable development
- Climate change and environmental refugees
- Measuring multidimensional poverty

For further information please see [http://www.flinders.edu.au/people/udoy.saikia](http://www.flinders.edu.au/people/udoy.saikia)
DR HARPINDER SANDHU harpinder.sandhu@flinders.edu.au

My research involves integration of environmental economics and ecology for understanding of the complex socio-ecological and economic dimensions of ecosystem services with their implications for equitable and sustainable development. I am also interested in land use and land cover change and its impact on biodiversity and ecosystem services.

Some potential projects available

- Assessment of ecosystem services associated with wetlands in the Fleurieu Peninsula
- Economic consequences of pollinators changes in South Australia
- Valuation of ecosystem services in agriculture
- Ecological intensification of broadacre farming systems
- Mainstreaming natural capital into environmental planning

For further information please see http://www.flinders.edu.au/people/harpinder.sandhu

PROFESSOR CRAIG SIMMONS craig.simmons@flinders.edu.au

I am the Director of the National Centre for Groundwater Research and Training. This Centre was established at Flinders University in June 2009 and was funded by the Australian Research Council and the National Water Commission. I am a Program Leader for one the Centre’s five major research programs “Hydrodynamics and Modelling of Complex Groundwater Systems” which I run jointly with Dr Adrian Werner. This program undertakes exciting research with a large team of scientists, postdoctoral fellows, PhD and Honours students, and industry partners in research areas relating to groundwater flow modelling. These include uncertainty in groundwater flow estimation, flow and transport in fractured rock and highly heterogeneous groundwater systems, surface water – groundwater interaction in wetlands, lakes and rivers, and assessing how hydrogeologic predictions and uncertainty are affected by model simplicity-complexity. Honours scholarships, of up to $6,000 per student, are available in this research program and are offered on a competitive basis by the National Centre for Groundwater Research and Training.

My research utilises state of the art theoretical, field and laboratory approaches to understand a broad range of important groundwater and hydrological phenomena. I have undertaken and published research in a wide range of areas that will form the basis of new research work that will be undertaken in the National Centre for Groundwater Research and Training.

My research areas include, but are not limited to:
Variable density groundwater flow problems driven by thermal and solute variation in groundwater.
Groundwater/surface water interaction in rivers, lakes and wetlands.
Groundwater dependent ecosystems.
Groundwater discharge in coastal aquifers, seawater intrusion, coastal hydrogeology.
Aquifer storage and recovery.
Fractured rock hydrogeology.
Groundwater flow and solute transport modelling, benchmarking and testing groundwater models.
Laboratory scale flow tank and column experimentation of groundwater processes.
Field scale groundwater investigation and modelling.
History of groundwater hydrology.

Further information on my current and previous research, student projects, publications and other activities can be found at my website: http://www.flinders.edu.au/people/craig.simmons

A/PROFESSOR ADRIAN WERNER adrian.werner@flinders.edu.au

I am a Chief Investigator in the Flinders-led National Centre for Groundwater Research and Training and within this role I am leading numerous research projects within the theme Hydrodynamics and Modelling of Complex Groundwater Systems.

My research focuses on various aspects of groundwater hydrology, including:

- Catchment hydrology
- Surface water-groundwater interaction
- Coastal hydrogeology
- Water resources management.

My research projects employ a range of methods, including fieldwork, laboratory experimentation and computer-based approaches.

I have a number of industry-related groundwater hydrology projects available for Honours students in 2015. These projects are expected to involve multiple aspects of hydrological investigation, including field investigations, data assimilation and interpretation, analytical methods, and the application of computer models. Two examples of my research projects (amongst various other NCGRT projects) that are expected to provide opportunities for Honours student involvement include:

- Research into the hydrogeology of the Eyre Peninsula under a collaborative venture with SA Water, the Eyre Peninsula Natural Resources Management Board and the Department for Water Land and Biodiversity Conservation. Potential projects are themed around the...
investigation of the coastal aquifers of the Southern Eyre Peninsula and include analyses of seawater intrusion and groundwater recharge.

- Research into the nation-wide threat of climate-change impacts on Australian coastal groundwater systems, through a National Water Commission-funded collaboration with Geosciences Australia. The project will focus on both theoretical and practical analyses of Australia’s coastal groundwater systems, including the potential for future sea-level rise and changes to aquifer recharge under the threat of climate change.

For more information, please visit: http://www.flinders.edu.au/people/adrian.werner