

# Spatial Data Analysis Network



DECEMBER 2006

**SPAN's mission is to achieve excellence in the application of innovative spatial analysis in support of research, education and community outreach**

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### Manager's Message

Welcome to this final edition of SPAN's newsletter for 2006.

On 16<sup>th</sup> November the Riverina region's spatial community celebrated GIS Day with a one day conference held at the CSU Convention Centre. This highly successful event was attended by about 70 spatial information users from a variety of local and state government and private sector organisations. Discussions were also held regarding the formation of a new regional spatial users' group, which will meet four times per year.

CSU's spatial staff were well represented at the recent 13<sup>th</sup> Australasian Remote Sensing and Photogrammetry Conference in Canberra. Many interesting addresses, papers and posters were presented by International and Australian researchers over the five days, and some valuable networking contacts were made.

Progress on building the new multispectral imaging system continues, with the cameras and computer components having now arrived. Writing of software and constructing the hardware will now be undertaken.

Regretfully, Steven Gibbs has announced that he will be resigning from SPAN to commence study towards his PhD with CSU's RIPPLE in Bathurst. We wish him all the very best for the future.

Finally, I would like to thank SPAN staff for their dedication and hard work all year. I hope everyone has a very enjoyable and safe festive season and we look forward to continuing to support your research next year.

*Gail Fuller*

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SPAN is a research support unit within the Division of Research and Graduate Training at Charles Sturt University. It has offices at Thurgoona, Bathurst and Wagga Wagga campuses to provide postgraduate and staff research support in three main areas: remote sensing, Geographic Information Systems (GIS) and spatial statistics.

### Can SPAN help you?

SPAN might be able to assist your research in ways you do not anticipate. From simple data retrieval and map making to complex spatial and statistical data analysis, SPAN is available to enhance the quality of your research. If you are a researcher, academic or postgraduate student at Charles Sturt University and believe that some aspect of your research might be assisted by using our skills, do not hesitate to contact your local SPAN representative.

**Want to know more? Visit [www.csu.edu.au/research/span/](http://www.csu.edu.au/research/span/)**

# Environmental Projects

## Sugar Gliders

**Researcher:** Rebecca Durant, Honours student, School of Environmental & Information Sciences

SPAN has been assisting Rebecca Durant with her honours project on the environmental factors that lead to sugar gliders occupying nest boxes in the peri-urban community of Baranduda and Benalla in Victoria. Rebecca mapped the sites in a Geographical Information System and then proceeded to use binary logistic regression modelling with Akaike's Information Criterion as a decision tool for the best model. Topography and bark status seem to be significant predictors of where the sugar gliders like to live.



## Macrophyte Beds

**Researcher:** Christine Piko, Honours student, School of Environmental & Information Sciences

SPAN is assisting Christine Piko with her honours project about the distribution and physico-chemical conditions of the aquatic plant, *Vallisneria americana*. The study area was the Broken River, a lowland river in Victoria's north-east. Her project involved measuring a number of variables in and around the beds, mapping these variables to a common spatial unit (1m x 1m grid) and using binary logistic regression modelling to model these grids (as presence/absence of these macrophyte beds). Significant factors were found to be depth of water, velocity, depth of substrate, amount of dissolved oxygen, percent of sand in the substrate, turbidity and percent of snags.



# Conferences

## ABS Information Session Wednesday 22 November 2006

In August, the Australian Bureau of Statistics (ABS) undertook the 2006 Census. Over recent years, ABS has steadily reduced the time between collecting census data and the release of this data. The 2006 Census should have the shortest turnaround time ever, and the use of the Internet should make collating census data much easier than in previous years.

Having surveyed census users in 2005 about the range of products they would like to see available, the ABS organised a series of information sessions, whose main discussion points included:

- the overall census product suite;
- internet products (e.g. CDATA);
- the data release schedule; and
- training and support options.

SPAN's Steven Gibbs attended the Sydney information session on Wednesday 22 November. The session contained so much information that SPAN has written a short document on how the 2006 census affects CSU researchers. Select News and Research on our website for more information.

## ACSPRI Social Science Methodology Conference 10-13 December 2006

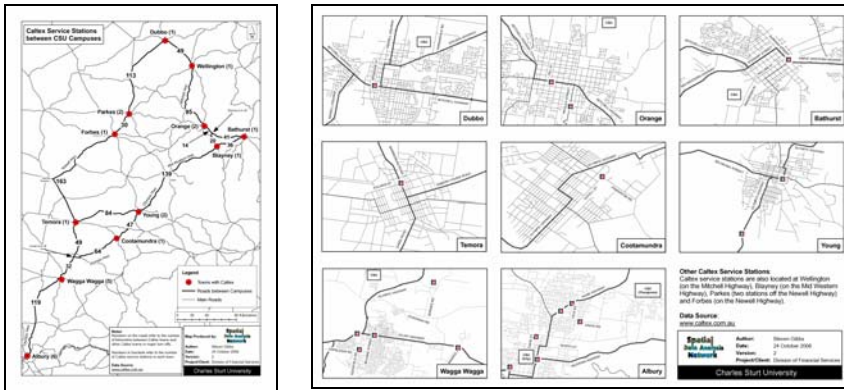
The Australian Consortium for Social and Political Research, Inc. (ACSPRI) is hosting this conference to provide a national forum focusing on current issues in social science methodology. SPAN's Simon McDonald and Steven Gibbs will be attending this conference to discover the latest on techniques, methods, datasets and methodological issues.

# Internal Projects

## Caltex Service Stations

**Client:** Division of Financial Services, Charles Sturt University

The Transport section of CSU's Division of Financial Services has recently switched from a Shell Fuel Card to a Caltex Fuel Card for all CSU Transport vehicles. To assist CSU staff locate Caltex Service Stations on the major routes between campuses, SPAN created a map showing all Caltex Stations between Dubbo and Albury and inset maps showing the exact location of Caltex Service Stations in eight of the major centres between Dubbo and Albury. These maps have been laminated and can be found in all CSU Bathurst vehicles. An extra advantage of these maps is that they show the exact location of CSU's Dubbo, Orange, Bathurst, Wagga Wagga and Albury campuses. For the location of other Caltex Service Stations throughout Australia, visit [www.caltex.com.au](http://www.caltex.com.au).



## Dubbo Cleaning Services Survey

**Client:** Dubbo Cleaning Services, Charles Sturt University

Dubbo Cleaning Services, which is part of the Division of Facilities Management, asked the Centre for Rural Social Research (CRSR) to undertake a survey of Dubbo staff attitudes and opinions towards the internal and external cleaning services provided by Dubbo Cleaning Services. The survey was undertaken in September.

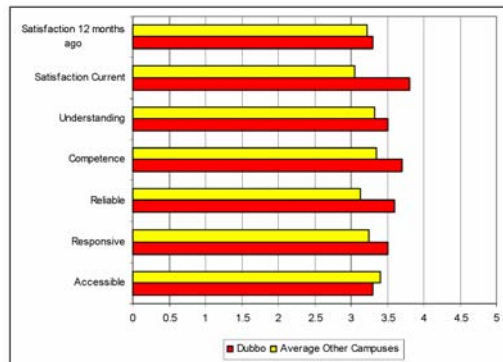


Figure 2.2: TEFMA Scores, Dubbo vs Average Other Campuses, Cleaning Services (Internal)

SPAN assisted CRSR by analysing the survey responses and providing a detailed report to Dubbo Cleaning Services. The figure above shows that Dubbo Cleaning Services rates very well on most criteria for internal cleaning services when compared to other campuses.

# Conferences in July

## ABS Census Analysis 18-19 July 2006

SPAN's Gail Fuller and Steven Gibbs attended the first Australian Bureau of Statistics (ABS) Census Analysis Conference in July this year. The ABS had invited any researchers who use census data to describe their research and the way census data are used to enhance research.

Speakers at the conference included leading demographers, geographers and economists, as well key ABS personnel and government policy-makers. Issues covered included how population estimates are derived from census counts, counting the homeless on census night, calculating long-term population projections, using census data in allocating funds to non-government schools and linking census data with natural resource management. The full program can be downloaded from the ABS website: [www.abs.gov.au](http://www.abs.gov.au).

## DOTARS Growing Regions 25-27 July 2006

SPAN's Steven Gibbs attended the Growing Regions conference in Brisbane after receiving Department of Transport and Regional Services youth sponsorship. This international event showcased theoretical concepts and practical initiatives in promoting regional economic development. Speakers included prominent people in the United Nations, Organisation for Economic Co-operation and Development, US Reserve Bank and Statistics Canada, as well as Australian and international academics. More information on this conference can be obtained from the DOTARS website: [www.dotars.gov.au](http://www.dotars.gov.au).

# Other Projects

## Archaeological Survey in Tropical Micronesia

**Researchers:** Professor Dirk Spennemann and Gaye Sutherland, School of Environmental & Information Sciences

Historic preservation specialists from CSU have carried out an archaeological survey of the former Japanese agricultural research station at Pwunso, Kolonia, Pohnpei State, Federated States of Micronesia.



The aim of the survey conducted by Professor Dirk Spennemann and Gaye Sutherland was to identify remains of buildings and structures dating to the periods of the Japanese Mandate of the League of Nations (1919-1945) and the (US) Trust Territory of the Pacific Islands (1945-1986).

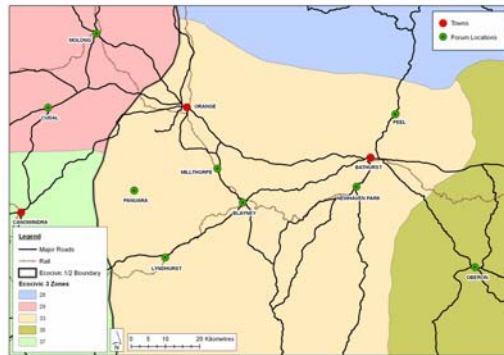
SPAN's Simon McDonald was involved in converting various AutoCAD files into layered maps to analyse building sequences and serve as base maps for plotting the archaeological sites found.

## Landcare Social Catchments

**Researcher:** Janine Friedrich, Masters Student, School of Rural Management

Previous research has identified 'social catchments' and deliberative forums as potential tools to achieve increased community consultation in ways that initiate and promote natural resource management (NRM) strategies and solutions.

Janine Friedrich's Masters project will investigate the extent to which community engagement within social catchments can impact upon the identification and implementation of effective NRM solutions through deliberative processes.



The geographical aspect of Janine's research involves obtaining spatial definitions of 'local community' from Landcare participants and comparing them to eco-civic regions calculated by the University of New England's Institute for Rural Futures. SPAN assisted Janine by mapping Landcare forum locations, nearby localities and eco-civic regions. The above map shows Janine's Landcare forum locations overlaid on the three-tier eco-civic regions.

# COSIT'07

**International Conference:  
Spatial Information Theory  
19-23 September 2007  
Mt Eliza, Melbourne, Australia**

The Eighth International Conference on Spatial Information Theory, COSIT'07, is concerned with theoretical aspects of space, time and spatial information. Of special interest are aspects of "large-scale" space, i.e. spaces too large to be apprehended at once without technological aid. These include spaces of geographic and environmental scales in which humans make decisions and carry out actions. Spatial information theory also deals with the formal and natural description of processes and events in spatial environments, thus providing a foundation for the design and construction of geographic information systems (GIS) and for spatial information systems (SIS) in general. Empirical investigations, formal models and the use of spatial information technologies reveal a large number of interesting research questions which require an interdisciplinary approach for their solution. The COSIT conference series brings together researchers from many disciplines and topics, in particular:

- Cognitive, Perceptual, and Environmental Psychology;
- Geography and Geoinformation Science;
- Computer Science, AI and Cognitive Science
- Engineering and Human Factors;
- Cognitive Anthropology and Linguistics;
- Ontology of the Geospatial Domain; and
- Architecture, Planning and Environmental Design.

Visit [www.cosit.info](http://www.cosit.info) for further information on this conference.