

Mission: "To achieve excellence in the application of innovative spatial analysis in support of research, education and community outreach."

Sun Fire V480 Server



The latest edition to SPAN's research capabilities is a Sun Fire V480 Server. The V480 server is named 'Newton' and it will act as a data repository for researchers and a spatial data server through ARC SDE. The V480 is positioned at the high-end of Sun's line of rack-optimised, entry level servers featuring four 900Mhz UltraSPARC® III processors, 16 GB of memory, and two FC-AL disks, giving exceptional performance.



SPAN

Hardware

HP Designjet 5500

A new large format printer is now available for researchers. This Hewlett Packard Designjet 5500 is able to print up to 100cm wide and can therefore print wider than A0, which is useful for contemporary conference needs. Printing with ultra violet light stabilised inks ensures your poster will not fade quickly. Turn around time will be quicker as the printer offers impressive print speed, faster data transmission, shorter processing time and operation. To print your poster on this printer, fill out the form found at:

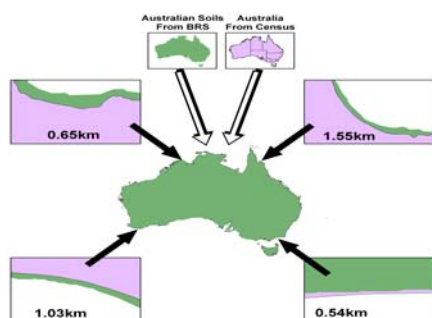
http://www.csu.edu.au/research/span/resources/printing/printing_request.htm

Please allow one week for printing.



SPAN

Software



ESRI ArcGIS

ESRI's ArcGIS, currently Version 8.3, now offers FULL topological support, a Route Event Geoprocessing Wizard to overlay, dissolve, concatenate, and transform events, improved annotation tools, plan entry tools: traverse, fillet, inverse, and proportion, and enhancements in overall performance, quality and documentation. We also have limited licenses for the new extension Arc Schematics. If you would like to use this powerful research tool, please call your local SPAN representative.

ENVI

The latest version of ENVI has arrived. ENVI provides the easiest-to-use and most advanced remote sensing image analysis and GIS data integration available today. ENVI 4.0 delivers support for new image types, new and enhanced information extraction tools, new correction tools, improved mosaicking, new orthorectification capability and convenient new options for raster and vector displays.

ENVI is ideal for extracting information from radar, panchromatic, multispectral, hyperspectral, and thermal digital image data.



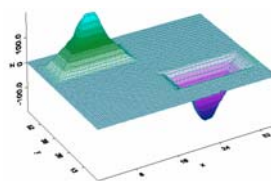
S-PLUS



SPAN

Software

The latest version of S-Plus has also arrived. S-Plus 6.1 now offers: Java connectivity; globalisation; user-defined help files; usability in the Commands and Script windows; the Missing Data library; the Robust library; survival analysis; other contributed libraries; new binary operators and new error functions erf and erfc. Contact your local SPAN representative to discuss your statistics requirements. Need a hand with S-Plus coding? Call Simon from SPAN Albury/Thurgoona ph. 19922.



SPAN

Data



Natmap

SPAN has new data available for researchers. This data is called 'Natmap', which stands for national mapping. Natmap is a full national set of georeferenced 1:250,000 scale scanned topographical maps. This represents one of the few fully national datasets we have and, although small scale, they will be useful for mapping locations outside of New South Wales where most of our currently held data is concentrated.

Waterfowl Movements

Waterfowl movements in agricultural and natural landscapes

Researcher: Dr David Roshier (Johnstone Centre)

SPAN staff: Craig Poynter and Gary McKenzie

Project:

David's study examines the dynamics of waterfowl populations at local, regional and broader scales.

Part of his project involves the analysis of movements of Grey Teal (*Anas gracilis*) fitted with satellite transmitters that are being deployed in rice-growing regions and central Australia. Data collected will be used to model risk of crop predation based on location and the response of Grey Teal to wetland distribution (including other rice bays) at local, regional and broader scales.

SPAN is assisting with the processing of MODIS satellite imagery for detecting water bodies and has produced an ARC/INFO application to process GPS satellite data to produce Grey Teal movement datasets.

Tools: Geographic Information Systems and Remote Sensing.



Providence Petrels

Researchers:

- Adam Bester – School of Environmental & Information Sciences

SPAN staff: Simon McDonald

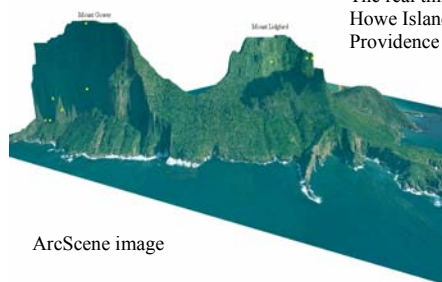
Project:

Adam has just recently finished his PhD on Providence Petrels. As part of his research he wanted to map where his satellite-tracked birds had flown and where their nests were on the rocky cliffs of Lord Howe Island. This is where SPAN was able to help. Pictured here is a 3D image (produced with ArcScene) that was created using the contours of Lord Howe Island and an air photo. Within ArcScene you can 'fly' around an area and view it from all angles. The yellow dots represent the nesting sites. The satellite tracking of the birds proved very interesting as well. One bird nicknamed Johnno, travelled 2179km non-stop!

Tools: Geographic Information Systems.



The real thing (Lord Howe Island) with a Providence Petrel



ArcScene image

Spatial Data Agents

Researchers:

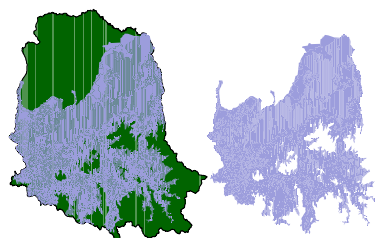
- Joanne Lawrence– School of Environmental & Information Sciences

SPAN staff: Simon McDonald

Project:

SPAN is assisting Joanne in her PhD research into automated ways of fixing spatial inaccuracies in data. Quite frequently, spatial data from two different sources do not match up (as is shown here, the right hand blue figure should fit over the top of the green figure as illustrated on the left). Joanne is writing an application that will automatically compare spatial boundaries using pattern matching techniques, which will then lead to fixing the spatial data. This will be a well-used tool by everyone in the spatial data industry.

Tools: Geographic Information Systems.



Grassland Grazing

Researchers:

- Nicky Bruce - School of Environmental & Information Science.

SPAN staff: Simon McDonald

Project:

SPAN is assisting Nicky Bruce in her PhD on the study of grassland grazing in Terrick Terrick National Park. Contrary to what many believe, it may be that moderate grazing can actually be useful in increasing biodiversity. Terrick Terrick National Park is unique in that it does allow some grazing and Nicky is going to use remote sensing and historical satellite imagery to see if this is indeed true. She is also going to produce grazing management strategies and comment.

Tools: Remote Sensing and Geographic Information systems.





Tree-Soil Interactions

Researchers:

- Mark Fraser - School of Agriculture

SPAN staff: Simon McDonald and Craig Poynter

Project:

Mark Fraser is doing his PhD on how trees alter the pH of the soil around them. After taking data readings from transect core samples of the soil around some specific trees, they were analysed statistically in S-Plus. Indeed there was a significant trend in how acid the soil was as you moved out from the tree.

Tools: S-Plus statistics and Geographic Information System

Diabetes Study

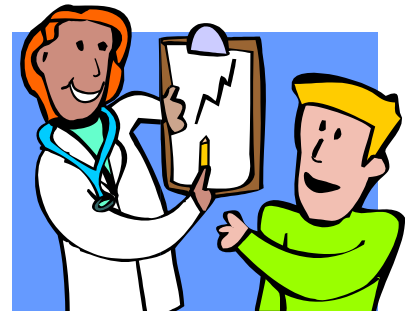
Researchers:

- Alison Flynn - School of Community Health
- Herbert Jelinek - School of Community Health
- Megan Smith - School of Community Health
- Simon McDonald – SPAN (co-author)

Project:

This project involved statistical analysis of the results of detrended fluctuation analysis (DFA) of heart rate variability (HRV) obtained through ECG measurements. It was found that early diagnosis and effective management of cardiac complications associated with diabetes are important in improving the health related quality of life of people with diabetes. Greater emphasis on ambulatory care in the community has the potential to prevent or delay diabetes and its complications.

Tools: S-Plus statistics.



Living Murray

Researchers:

- Project organised by Robyn Watts - School of Science and Technology
- The Murrumbidgee Team of the Living Murray Initiative
- Arthur Read – SPAN

Project:

In this project SPAN is providing technical support to the Murrumbidgee team of the Living Murray initiative. The team will be reporting an assessment of the environmental outcomes from different flow scenarios to the scientific reference panel of the Living Murray initiative.

Tools: Flow modelling and GIS.

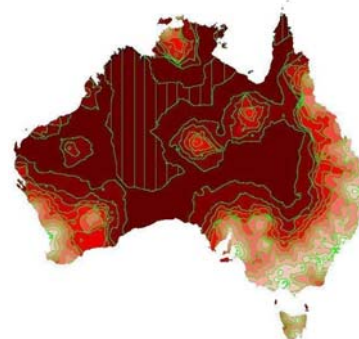


Researchers:

- Professor Bill Green - School of Teacher Education
- The Group - R(T)EP

Project:

SPAN is assisting in this project by looking at the spatial context of rural and remote education in New South Wales. This involves exploring relationships between educational outcomes and social and community indicators. Central to this study is the concept of rural and remote.



CSU's regional location makes the definition of what is regional, rural and remote central to much of our research. SPAN can assist you in defining these concepts in your research.

Tools: Geographic information systems.

SPAN**Invitation**

Spatial Data Analysis Network

Got a Smaller Project?

SPAN works on small projects all the time, so if you have something you want us to work on but it is tiny compared to the research above don't hesitate to contact us. Smaller things we have worked on lately include:

- Finding data for PhD students;
- Poster printing for conferences;
- Making a simple map to indicate the location of a study site;
- Assistance with medical image analysis;
- Automating time consuming tasks in Excel;
- S-Plus (statistics) scripting.....

SPAN Contact Details**Albury Campus**

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Position currently vacant – please forward enquiries to staff at Wagga Wagga.

Wagga Wagga Campus

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