DEPARTMENT OF
PRIMARY INDUSTRIES

Victorian Climate Change Adaptation Program

Research Theme

Visualising Climate Change Futures

Scientific communication can be enhanced by visualisation. Visualisation enables the outcomes of social, economic and environmental analysis to be brought together using visual media to convey meaning to land managers, communities, industry, regional planners and policy-makers.

Visualisation provides a powerful front-end for sophisticated and complex models and land use change scenarios. Through three-dimensional (3D) geographical visualisation, we can move beyond the use of traditional flat maps and create virtual landscapes where users can collaboratively explore past, present and future climate change scenarios.

The value of visualisation is that it:

- Allows us to present future farming systems in realistic or near realistic ways
- Supports a collaborative decision-making approach to climate change adaptation
- Brings large data sets and complex models to life.

Achievements

A number of visual interfaces have been develop representing land use data and modelling depicting climate change scenarios up until 2050 for DPI VCCAP's research pilot region south-west Victoria.

- Development of a number of visualisation products, which represent downscaled climate change models, future farming systems, and likely coastal sea-level rises
- Collaboration with leading experts in visualisation both nationally and internationally (University of Melbourne, CRC-Spatial Information, and University of British Columbia)
- 3D visualisation toolbox and object library accessible to DPI VCCAP team and partners
- Google Earth and Google Map products for making accessible land suitability and productivity models
- Online interactive visualisation products for communicating future farming systems.

Envisioning a Future Farming Grazing System (created using the SIEVE game engine)

Victoria
The Place To Be

part of the Victorian climate change adaptation program

Envisioning a Future Farming System comprising a biofuel plant (created as a Quicktime Panorama)

Next Steps

A number of prototype visualisation products have been developed representing both current and future landscapes under various IPCC climate change scenarios for south-west Victoria. The next steps are to evaluate and refine these visualisation products to support climate change research and decision-making processes.

- Develop an evaluation methodology for visualisation products
- Obtain feedback on prototype visualisation products for stakeholders in south-west Victoria
- Build next generation visualisation products based on computer game technology
- Apply visualisation tools for enhanced communication of climate change adaptation research.

Visualising downscaled Global Climate Models (GCM) (created using Google Earth)

Futher Information

DPI VCCAP website: www.dpi.vic.gov.au/vro/vccap

Dr Chris Pettit, DPI Parkville
Statewide Leader, Spatial Sciences
Email: Christopher.Pettit@dpi.vi.gov.au
Phone: (61) 3 8341 2400

Dr Jean-Philippe Aurambout
Senior Scientist, Spatial Sciences,
Jeanphilippe.Aurambout@dpi.vic.gov.au
Phone: (61) 3 8341 2400

If you would like to receive this information/publication in an accessible format (such as large print or audio) please call the Customer Service Centre on 136 186; TTY: 1800122 969, or email customer.service@dpi.vic.gov.au.

Published by: Department of Primary Industries
1 Spring Street, Melbourne, Victoria, Australia. July 2008

ISBN 978-1-74217-073-2 (print)
ISBN 978-1-74217-074-9 (PDF)

Authorised by: Victorian Government 1 Spring Street,
Melbourne, Victoria 3000 Australia

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