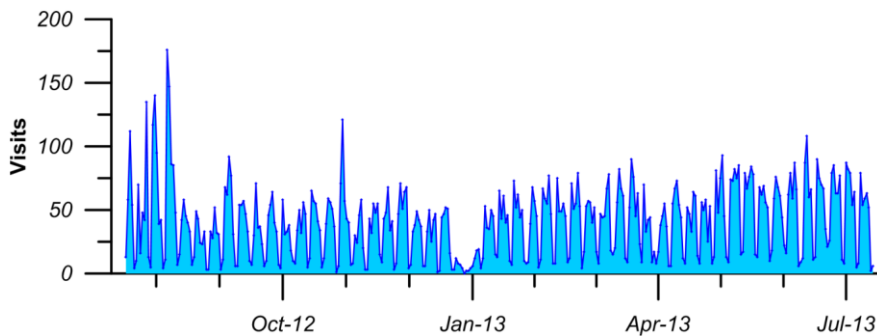


July 2013

Project Newsletter and Update

Welcome

Welcome to the third newsletter of the VVG project. It is 12 months since the VVG website was launched and the feedback has been very positive. Nearly 6,000 people have visited the site during this first year. Usage statistics remain strong, with around 30,000 pageviews recorded in 15,000 visits, 60% of whom are returning visitors. The average workday use has been rising at around 4% and currently averages 70 visits per day.



Thanks to our project partners and the roles they have had in making this such a success so far.

Previous VVG newsletters can be found at:

www.vvg.org.au/cb_pages/newsletters.php

Recent updates

Aquifer layers now online

The Department of Environment and Primary Industries (DEPI) Victorian Aquifer Framework (VAF) is now available online. The data can be viewed as surfaces showing the **Depth to, Top elevation, Thickness and Bottom elevation** using the Advanced aquifer tools link below the Layers menu. In addition, the VAF parameters can be accessed at any location by using the **DSE Statewide Aquifers** query mode and generating a report on all the surfaces at the selected location. The VAF surfaces will be updated from time to time as revisions are received from DEPI.

VVG Update

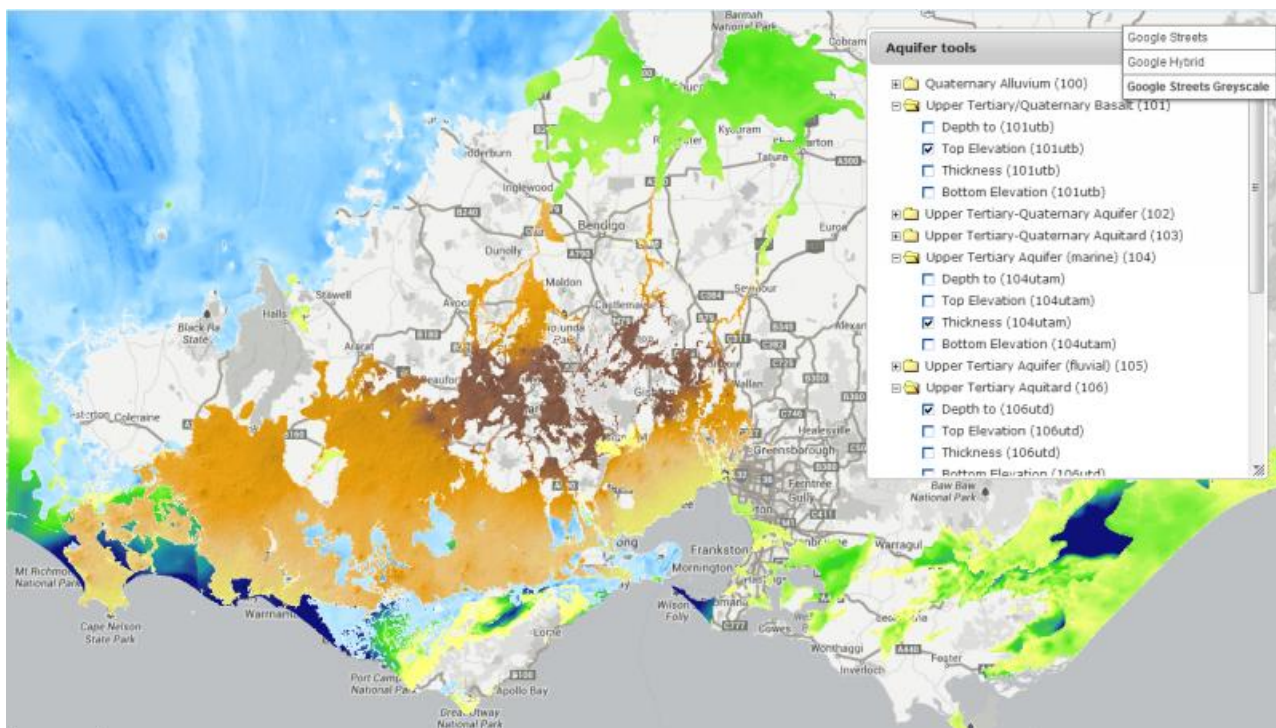
VVG wins an iAward

VVG in the media

Current Developments

Research





Boring records now included

The State Library of Victoria (SLV) has completed the digitising of the boring records and these have now been linked to the government bore data. The boring records include all of the logs for the government bores from 1879 to 1965 held in numerous historical documents which can be viewed at: www.vvg.org.au/cb_pages/digitisation_of_historical_records.php

The boring records are hosted by the SLV and form part of their digital collection. Our thanks go to the staff at the SLV for their cooperation and goodwill in collaborating in this component of the project. It has certainly added depth to the State's bore data.

Bore details view with links to original records including cross sections hosted at SLV

Mineral Springs data online

The mineral springs data has recently been added to the VVG mapping portal courtesy of Dr Andrew Shugg and the Victorian Mineral Water Committee. Mineral water is an important and valuable resource in Victoria which is often overlooked in hydrological investigations and we are very pleased to include it in the portal. At present only the mineral spring identification and basic location data are available. With Andy's collaboration we intend to add substantial depth to the data in the next few months.

More flexibility in querying

Changes have been made to the map tools to include the option of changing the query (search) radius from the default 500 metres. The **Tools** menu now includes a settings section where the bore search radius can be customised from 100 metres to 2 kilometres. More options including filtering by bore type, construction date and depth will be added shortly. We encourage users to suggest other querying enhancements.

VVG wins an iAward

The exciting initiatives of VVG in using interoperable technologies were recently recognised with a Victorian iAward in the Regional Category. The iAwards are the premier technology awards platform in Australia and recognise achievements and innovation in ICT across all facets of the economy.

CeCC Director Dr Helen Thompson was on-hand to receive the award at an event in Melbourne on June 5. The Hon. Gordon Rich-Phillips, MLC, Assistant Treasurer, Minister for Technology and Minister for the Aviation Industry Victorian State Government (pictured below) bestowed the award in front of an audience attended by over 200 people.

In response to receiving this award, Dr Thompson reinforced the value of this project to the community: *"This award demonstrates the strength of associated partnerships and the University's progress in digital futures, knowledge management and eResearch"*. Dr Thompson recognised the significant contribution of VVG staff and extended her congratulations to the lead researcher from the Centre for eCommerce and Communications, Dr Peter Dahlhaus, and Andrew Macleod for the technology lead.

With the state iAward now safely stowed in CeCC's 'trophy cabinet', VVG has become a national finalist for the 2013 National iAwards. VVG will compete against all State and Territory project winners in the national regional category of the awards. Winners will be announced at a gala dinner on August 8.



Stop the Press: VVG nominated as a finalist for an ANZIA Award

Just today, exciting news has been received confirming VVG as a finalist in the innovation category for the Australia and New Zealand Internet Awards (ANZIAS). These annual awards celebrate the achievements of organisations, businesses and individuals that have made significant contributions to the development and use of the Internet in Australia and New Zealand. The judging panel are now assessing all entries with results to be announced at a gala event in Wellington, New Zealand in mid-September. For more information:

www.internetawards.org.au

VVG in the media

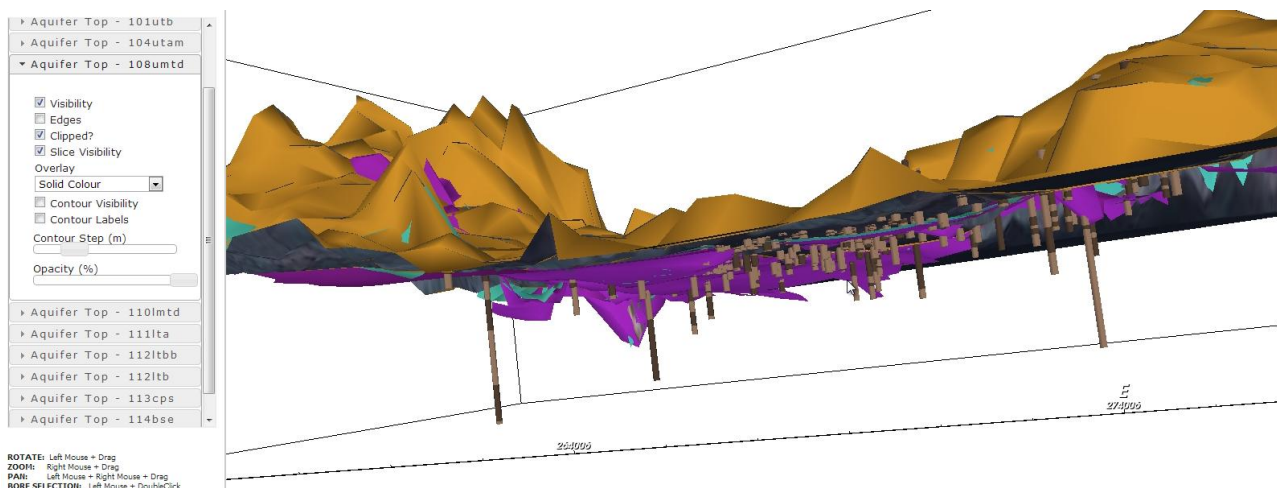
Public interest in the VVG project continues to grow during 2013, and has drawn significant national and international interest. Recently there has been a spike in interest in the VVG project from different media sources including special interest magazines. Invitations to share the VVG story with industry representatives and academics at state and national conferences and forums also continue to grow.

Two Australian publications have recently featured articles on VVG in their magazines. **Position**, the Australasian magazine of surveying, mapping and geo-information featured VVG in an article in the February/March issue titled *Visualising Water Resources*.

Landmark, the flagship publication and official 'voice' for Victoria's spatial information community also featured a story on the expansion of Universities into the spatial realm, entitled *Regional Universities span the spatial research bridge* in the April 2013 edition (pages 16 - 18). The article showcases the University of Ballarat's growing expertise with spatial projects and featuring the VVG project.

Current developments

3D Visualisation: Substantial progress has been made in the ability to display the VVG data in pseudo 3D. Progress was demonstrated during a workshop hosted by Queensland University of Technology on July 10. Major functionality is now in place including the Victorian Aquifer Framework and 'live' loading of bore details from VVG. Users will be able to interact with the 3D models on any PC or handheld device with a modern web browser. Focus will now turn to integration with the VVG portal, interface enhancements and performance testing.



An interactive 3D scene displayed within a web-browser

Historical maps online: Historical maps often contain valuable hydrogeological information, but are usually very difficult to access. Early survey plans and geological maps commonly show groundwater discharge features such as springs, seeps or swamps, and may include wells or bores. The early boring records commonly include location maps of the bores. Where we have access to digital copies these maps, we are georectifying them for display on the VVG portal.



Mobile application: Work continues on the VVG mobile site. We are developing the site in HTML5 using the Sencha Touch library www.sencha.com/products/touch. Anyone interested in beta testing can make contact with Andrew Macleod (a.macleod@ballarat.edu.au).

Data cleaning: Since implementing the VVG a year ago it has been apparent that there are limitations in the quality of the data. The inadequacies of the bore data are partly a legacy of assembling the initial data repositories at a time when 8-bit mainframe computers and manual digitising limited the data fields and spatial accuracy. To address these limitations our philosophy has been to link to the source data where possible so that the user has the ability to cross-check the veracity of the data. Hopefully this will also encourage the data custodians to correct their data. In addition, the VVG has the capability for users to make corrections and submit these to the data custodians. By harnessing Citizen Science to crowdsource data cleaning, the veracity of the data will continue to improve and that's good for everyone.

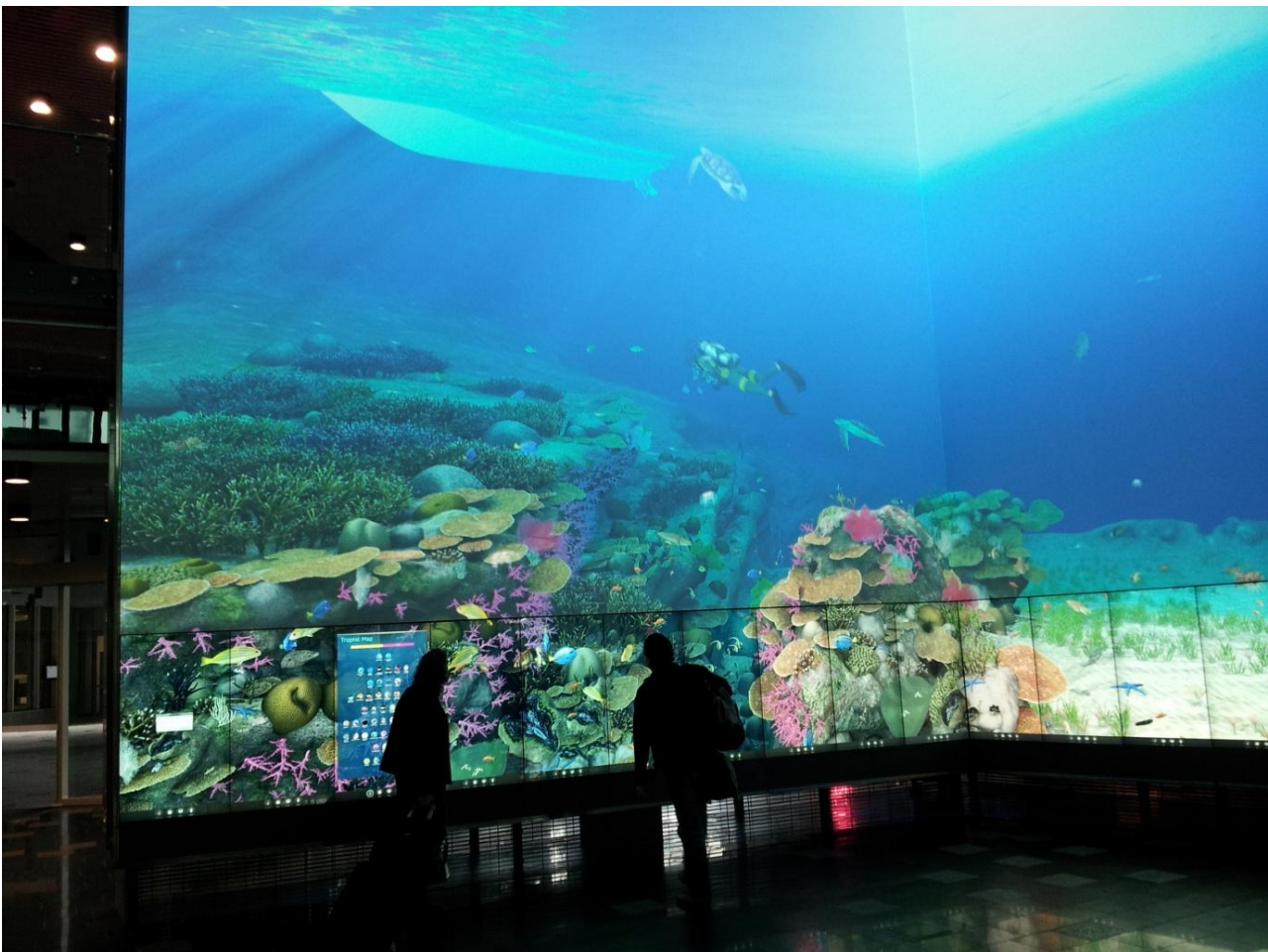
Adding more data and depth: As the usage of the VVG website increases, there have been requests to add more datasets to the portal. In collaboration with some of our project partners, we are exploring options to include as much groundwater data as we can find. As an example, with help from the Australian Contaminated Land Consultants Association (ACLCA) we are currently exploring the potential to add data from the EPA Audit site reports (on-line at the EPA website). Similarly, we are keen to add depth to the existing data, sourced from

the public domain such as Geological Survey of Victoria's bore completion reports, Rural Water Commission reports, etc.

Research

UB-QUT agreement signed

The University of Ballarat and the Queensland University of Technology (QUT) have recently signed a formal agreement to collaborate on research into groundwater spatial data management and visualisation. The VVG team visited QUT's new **Institute for Future Environments** in their new home, which includes some world-class science facilities www.qut.edu.au/institute-for-future-environments/facilities. A highlight was seeing The Cube, one of the world's largest digital laboratories and learning spaces.



Helen and Andrew exploring the virtual Great Barrier Reef in The Cube.

IAH2013 congress

The VVG team are attending the *2013 International Association of Hydrogeologists Congress* in Perth in September. They will be presenting three papers on aspects of the VVG research to date:

Dahlhaus P., Macleod A. & Thompson H. 2013. Addressing the limitations of federated groundwater bore data. *Solving the Groundwater Challenges of the 21st Century*. Abstracts, 40th IAH Congress, 15-20 September 2013, Perth, Australia.

Macleod A., Dahlhaus P., Thompson H., James A. & Cox M. 2013. Web-based visualisation of 3d groundwater models. *Solving the Groundwater Challenges of the 21st Century. Abstracts, 40th IAH Congress, 15-20 September 2013, Perth, Australia.*

Corcoran J., Dahlhaus P. & Thompson H. 2013. It's all about the data – a 21st Century value proposition. *Solving the Groundwater Challenges of the 21st Century. Abstracts, 40th IAH Congress, 15-20 September 2013, Perth, Australia.*

Digital Rural Futures

The *Digital Rural Futures: Smart Farms - Smart Regions* conference was held at the University of New England (UNE) on 26-28th June 2013. It was an eye-opener to see the range of technologies that were being used and developed in the agricultural sector. **UNE's Smart Farm** was a highlight as a demonstration of a variety of monitoring sensors.

Two papers were delivered on the VVG project:

Macleod A., Dahlhaus P. & Thompson H. 2013. Federating groundwater data for Victoria - the challenge of interoperability. *Digital Rural Futures. Smart Farms - Smart Regions. Conference abstracts, 26-28 June 2013, University of New England, Armidale, N.S.W. Australia.*

Dahlhaus P., Thompson H. & Macleod A. 2013. Interoperable data - a researcher's dream? *Digital Rural Futures. Smart Farms - Smart Regions. Conference abstracts, 26-28 June 2013, University of New England, Armidale, N.S.W. Australia.*

GW2IE - Creating the standard for groundwater data exchange

The Groundwater Interoperability experiment continues with regular lengthy teleconferences attended by the European, North American, Australian and New Zealand participants into the wee hours of the morning to settle the complexities of groundwater data model ontology. For those who may be interested, progress can be reviewed at the Wiki site:

http://external.opengis.org/twiki_public/HydrologyDWG/GroundwaterInteroperabilityExperiment2

We will be hosting visits from Boyan Brodaric (Geological Survey of Canada) and Alex Kmoch (GNS & Auckland University of Technology, New Zealand) in September when they are here to attend the IAH congress.

Meeting of project partners

Next meeting of project partners will be on Friday 2nd August 2013. This time there is a change of venue to Room F200 (Building F, ground floor) on the University campus at Mt Helen. The schedule commences at 10am (morning tea) for a 10:30am start and should finish at 2:30pm allowing for a 3pm departure. An agenda will be sent out shortly.