



# ontheoutcrop

ISSUE 6, MARCH 2009

**ontheoutcrop** is a Geological Survey of New South Wales (GSNSW) e-newsletter. For more information about newsletter items go to: <http://www.dpi.nsw.gov.au/minerals/geological>

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## UPCOMING EVENTS

### Macquarie Arc Conference 2009, 13–21 April, Orange, NSW

An updated program for the Macquarie Arc Conference is available at:

<http://www.hotelnetwork.com.au/macquariearcconference>

Contact: Dick Glen, Conference Convenor for scientific matters: [dick.glen@dpi.nsw.gov.au](mailto:dick.glen@dpi.nsw.gov.au)

### 'Exploration in the House', Parliament House Theatre, June Sydney

The date for the GSNSW seminar has been tentatively set for 18th June, 2009. Watch the GSNSW website for confirmation of dates and program.

Contact: Diane Kemp, Geologist, [diane.kemp@dpi.nsw.gov.au](mailto:diane.kemp@dpi.nsw.gov.au) 02 4931 6445

### Minerals and Investment 2009 Conference, 13–14 August, Sydney

This major biennial two-day conference will feature the latest information on exploration initiatives, project developments and investment opportunities.

Download a [registration form](#) or [register online](#). View the [events page](#) on the NSW DPI web site for details.

### BHEI 2009 Conference 29 September – 1 October

The [Broken Hill Exploration Initiative](#) (BHEI) 2009 conference will be held at the Broken Hill Entertainment Centre, 29 September–1 October, 2009. The conference will showcase new insights into exploration geoscience in the Broken Hill environs, Curnamona Province and adjacent areas.

This conference will bring together geoscientists from government, industry and academia. Details of the conference program and related excursions will be posted as they become available.

Contact [BHEI.info@dpi.nsw.gov.au](mailto:BHEI.info@dpi.nsw.gov.au) for information.



## Hunter Earth Sciences Discussion Group (HEDG)

The NSW DPI and GSA — Hunter Valley Branch will be presenting several HEDG nights in 2009. Presentations will be held at Customs House, Newcastle from 6pm with a 6.30pm start for the talks. The present program for 2009 is below. There may be additional talks on Tuesday 30 June and Tuesday 31 October (during Earth Science Week). Details are still to be confirmed and will be released closer to each event.

Contact: Phil Gilmore, Senior Geologist, [phil.gilmore@dpi.nsw.gov.au](mailto:phil.gilmore@dpi.nsw.gov.au), 02 4931 6533, to receive notices of the HEDG events

### Thursday 30 April

Presentation by John F. Dewey, F.R.S., Distinguished Emeritus Professor of Geology, University of California, (*title to be announced*). View John's enormous contribution to our understanding of plate tectonics and orogenic events at:

<http://www.pnas.org/content/102/43/15283.full>

### Tuesday 25 August

*'Mineral sequestration of CO<sub>2</sub>: the need to be viable'*. Dr Judy Bailey (University of Newcastle)

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## NEW PRODUCTS AND SERVICES

### New Advanced Mineral Projects & Exploration Highlights 2009 map

This map was released in February 2009 and both A4 and A3 versions can be downloaded from:

[http://www.dpi.nsw.gov.au/aboutus/resources/maps/minerals\\_maps/project-maps](http://www.dpi.nsw.gov.au/aboutus/resources/maps/minerals_maps/project-maps)

### Geological/geophysical interpretation maps

Geological/geophysical interpretations of Milparinka, Cobham Lake, Bourke, Hay and Balranald 1:250 000 sheets are available as provisional maps by emailing [geophysics.products@dpi.nsw.gov.au](mailto:geophysics.products@dpi.nsw.gov.au).

See OTO Issue 5 for information about the project.

### Southern Gunnedah gravity data

Gravity data from approximately 5800 new gravity stations over the Southern Gunnedah Basin in eastern NSW are now available as located and gridded data with enhanced computer-generated images. Data and the interpretation are available on CD from [geophysics.products@dpi.nsw.gov.au](mailto:geophysics.products@dpi.nsw.gov.au) or online (data only) through [Geoscience Australia's Geophysical Archive Data Delivery System](#) (GADDS).

See OTO Issue 5 for information about the project.

### Rankins Springs and Yathong Trough seismic data

Seismic data along two lines over 220 km acquired in 2008 has been released on DVD. The package includes stack and migrated SEG-Y seismic reflection data, reports and images.

Contact: Dave Robson, Chief Geophysicist, [david.robson@dpi.nsw.gov.au](mailto:david.robson@dpi.nsw.gov.au), 02 4931 6717

### Hardcopy statewide geophysical images

Four statewide geophysical images of the magnetic, radioelement, gravity and elevation data are now available as folded or flat copies at \$11 each. Data from 41 surveys totalling 2.08M line-km and covering an area of 695 000 km<sup>2</sup> was used to compile these maps. Statewide grids are also available as a 4 DVD set for \$110.

Contact: [geophysics.products@dpi.nsw.gov.au](mailto:geophysics.products@dpi.nsw.gov.au)

### Complimentary NSW Explorers Directory 2009

The NSW Explorers Directory was updated in January, 2009. In addition to showcasing mineral exploration in NSW and providing details of 57 junior and mid-tier companies, the 2009 version contains current information on hot prospects, prospective ground, active mines and developments in NSW. It also contains updated digital

datasets covering the geology, mineral occurrences and geophysics of NSW as Google Earth KMZ files, ESRI shapefiles and Arc Reader PMF format.

Contact [geoscience.products@dpi.nsw.gov.au](mailto:geoscience.products@dpi.nsw.gov.au) for your complimentary copy

### **Quarterly Notes 129 — Deep structure beneath the Murray Basin from teleseismic tomography**

Results from Part 2 of the South East Australia Linkage teleseismic experiment are discussed in [Quarterly Notes 129](#). New data from teleseismic tomography, using recordings of distant earthquakes, were combined with existing data to build a high-resolution model of the upper mantle in southeastern Australia. The results have implications for the tectonic evolution of the Tasmanides and the location of the boundary between the Lachlan and Delamerian orogens.

Contact: Dave Robson, [david.robson@dpi.nsw.gov.au](mailto:david.robson@dpi.nsw.gov.au), 02 4931 6717

### **Quarterly Notes 130 — The Siluro-Devonian geological time scale: a critical review and interim revision**

This report examines the evidence for a significant revision of the Silurian stage boundary ages estimated by *A Geologic Time Scale 2004* (Gradstein et al. 2004) and recommends some Devonian units in the Lachlan Orogen for future isotopic dating.

Agreement between biostratigraphically constrained SHRIMP U–Pb zircon isotopic dates from the Lachlan Orogen and international time scales for the Silurian and Devonian has been poor. The mid-Silurian to early Devonian is a key period in the evolution of the Lachlan Orogen, but current international geological time scales for this period are constrained by very few data points and provide a poor framework for understanding the tectonic development of the Lachlan Orogen.

Contact: John Watkins, [john.watkins@dpi.nsw.gov.au](mailto:john.watkins@dpi.nsw.gov.au), 02 4931 6718

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## **PROJECT HIGHLIGHTS**

### **COGENT II — Geoscience Data Management Project**

Data is the currency of geoscience and the exploration and mining industry. The COGENT II (Common Geoscientific Environment) project aims to provide easy access to all validated, non-confidential, corporate, geoscientific data stored by the GSNSW and Coal and Petroleum branches. Our clients and staff will have access to the best available data from a single spatial-based interface. This will save our clients time and money in sourcing high quality geoscience data for NSW.

The COGENT II project commenced in late 2008 and will continue to June 2011. COGENT II is building on the original COGENT project implemented in 2000.

The key aspects of the project are to:

- consolidate our data holdings to ensure up to date, consistent, quality-assured records
- design work flows to ensure these data holdings are maintained at a high standard in the future
- redesign our data systems to improve relationships between databases and minimise the number of redundant datasets, and
- provide our clients with an easily accessible platform for sophisticated data queries and downloads

COGENT II will incorporate data from the MetIndEx (mineral occurrence) and Sites (geological field observations) databases, as well as drilling, seismic, geophysical (grids and images), geochemical and isotopic data. Statewide geology datasets will be revamped and will include datasets for significant basement, basin and other geological layers. On completion of the project, clients will have access to this data from a web-based spatial viewer (e.g. MinView) or from web map/feature services for GIS users.

Contact: Phil Gilmore, Senior Geoscientist: Regional Mapping [phil.gilmore@dpi.nsw.gov.au](mailto:phil.gilmore@dpi.nsw.gov.au) 02 4931 6533

### **National Virtual Core Library (NVCL) — alteration scanning technology for NSW**

GSNSW and the CSIRO are participants in the [AuScope National Virtual Core Library](#) project which uses the CSIRO-developed Hylogger™ spectroscopic core scanning technology to generate digital information on

rock, ore and alteration minerals in drill core. The system is specifically designed to rapidly scan drill core and drill chips. GSNSW has begun a trial period and will shortly move onto systematically logging the cores from prioritised drill holes in NSW.

The Hylogger™ measures spectral reflectance from the visible near-infrared through to shortwave infrared. It identifies clays, phyllosilicates, amphiboles, carbonates, sulphates and iron oxides associated with metamorphism, hydrothermal alteration and regolith processes. The next generation HyLogger™ (mid-2010) will identify silicates. Digital assay data, high resolution hyperspectral data and corresponding photo-logs of drill holes will be accessible via the web.

**Academic and industry requests will form an integral part of the prioritisation process. We strongly encourage industry and researchers to consider the integration of the HyLogger™ and drill core spectral analysis into existing and future projects.**

Contact: Bill Reid, Senior Geologist, [william.reid@dpi.nsw.gov.au](mailto:william.reid@dpi.nsw.gov.au), 02 4931 6731

Sites of drill core held by NSW DPI can be located using [MinView](#).



Meagan Clissold, geologist — National Virtual Core Library, makes the inaugural 'button push' for the NSW node of the NVCL project at Londonderry.

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## TAKE NOTE!

### Web pages update

Some major changes have been made to the GSNSW web pages. “Mineral deposit mapping” has become “[Minerals geoscience](#)” and leads to a reorganised page on Mineral deposits of NSW and the Mineral Systems of NSW Project. This page contains several important links. In particular, one of the links leads to the Advanced Mineral Projects & Exploration Highlights in NSW 2009 map and another leads to a download of sections from *Bulletin 33: Industrial Mineral Opportunities in New South Wales*.

The [Geological mapping page](#) has a new project graphic which is hot linked to the individual geological mapping project web pages. Most of these projects have been updated with new results, detailed geology and descriptions of ongoing work.

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## RECENT EVENTS

### 20<sup>th</sup> Australian Society of Exploration Geophysicists conference and exhibition, Adelaide, 22–25 February 2009

GSNSW geoscientists gave four presentations and two poster displays at the ASEG 09 conference. Great interest was expressed in the Thomson Orogen projects, and Astrid Carlton's talk on interpreted lamproites in the area of the Stawell zone extension in NSW, attracted much discussion. Carlos Cevallos' poster on "*Defining a hypothetical boundary between two phases of the Braidwood Granodiorite*" received an ASEG commendation.

### NSW DPI represented in Japanese and Canadian promotional venues

Lindsay Gilligan, Director GSNSW and John Watkins, Manager, Regional Mapping and Exploration Geoscience, represented NSW DPI in meetings at the invitation of JOGMEC (Japan Oil, Gas and Metals National Corporation) on 24–25 February 2009 in Tokyo, Japan. They met with representatives of the Mitsubishi Corporation to discuss mineral exploration opportunities in New South Wales. They then represented NSW DPI at the Prospectors and Developers Association of Canada (PDAC) Annual Convention 2009, in Toronto, Canada, 1–5 March and were part of the NSW team in the Australian pavilion organised by Team Australia. Lindsay and John joined the Team Australia delegation in meetings with major North American mining companies with a view to attracting further exploration investment in New South Wales.

### Science in the Suburbs – a recruitment exercise

'Techniques for Mineral Exploration' was the theme for the Open Day at the WB Clarke Geoscience Centre, Londonderry held on 5 March during Science in the Suburbs week. Over 70 senior high school students participated in the hands-on activities. They conducted a mini geophysical survey to find an ore body, used the petrological microscope, logged bore core and examined fossil 'crime' scenes to determine how the animals lived and died. The event aims to stimulate career interest in the geosciences.

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## STAFF MOVEMENTS

**Carlos Cevallos** has transferred from Orange to the Maitland office

**David Collins** has commenced as database developer in Geoscience Information

**Phil Gilmore** has accepted the position of senior geologist in Regional Mapping and Exploration Geoscience

**Nancy Vickery** has left her position as geologist with Minerals and Land Use at the Armidale office

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## PRODUCTS AND ENQUIRIES

### Internet product catalogue

The online [Geoscience Products Catalogue](#) includes over 240 hard copy maps and over 70 geoscience data packages (including geophysical data) on CD or DVD ROM. Information about ordering or downloading these products is supplied on each product page.

### Enquiries about purchasing products

Maps and data packages: [geoscience.products@dpi.nsw.gov.au](mailto:geoscience.products@dpi.nsw.gov.au): Tel: 02 4931 6503

Geophysical images and data: [geophysics.products@dpi.nsw.gov.au](mailto:geophysics.products@dpi.nsw.gov.au): Tel: 02 4931 6717

Counter sales: [mineralpublication.orders@dpi.nsw.gov.au](mailto:mineralpublication.orders@dpi.nsw.gov.au) Free call: 1300 736 122 Tel: 02 4931 6666

Online sales: <http://www.shop.nsw.gov.au/index.jsp>

### General enquiries about products and services

Contact: Michael Hallett, [michael.hallett@dpi.nsw.gov.au](mailto:michael.hallett@dpi.nsw.gov.au): Tel: 02 4931 6724

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## SUBSCRIPTIONS

**ontheoutcrop** is a newsletter from the Geological Survey of New South Wales.

Editor:

Team Leader

Knowledge Management

Geological Survey of NSW

NSW Department of Primary Industries

PO Box 344

Hunter Region Mail Centre NSW 2310

To subscribe to an email version of this newsletter email [outcrop.newsletter@dpi.nsw.gov.au](mailto:outcrop.newsletter@dpi.nsw.gov.au)

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Disclaimer: The information contained in this publication is based on knowledge and understanding at the time of writing (March 2009). However, because of advances in knowledge, users are reminded of the need to ensure that information upon which they rely is up to date and to check currency of the information with the appropriate officer of NSW Department of Primary Industries or the user's independent adviser.

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# NSW Mineral Exploration & Investment **2009 CONFERENCE**

## **NSW Mineral Exploration & Investment 2009 Conference**

**Thursday 13th and Friday 14th August - Four Seasons Hotel, Sydney**

### **First Announcement**

NSW is a major Australian producer of coal, gold, base metals and other minerals and other mineral products.

This major biennial two day conference will feature the latest information on:

- exploration initiatives;
- project development, and
- investment opportunities.

[Download a registration form here](#) or [register online here](#).

**[BOOK NOW TO SECURE YOUR PLACE!](#)**