

Fieldnotes



Government of **Western Australia**
Department of Mines and Petroleum

Geological Survey of
Western Australia



Visit our Home Page at <www.dmp.wa.gov.au/GSWA>

ISSN 1325-9377
ISSN 1834-2272

ISBN (PRINT) 978-1-74168-606-7
ISBN (PDF) 978-1-74168-605-0

Co-funded Exploration Drilling Program 2015

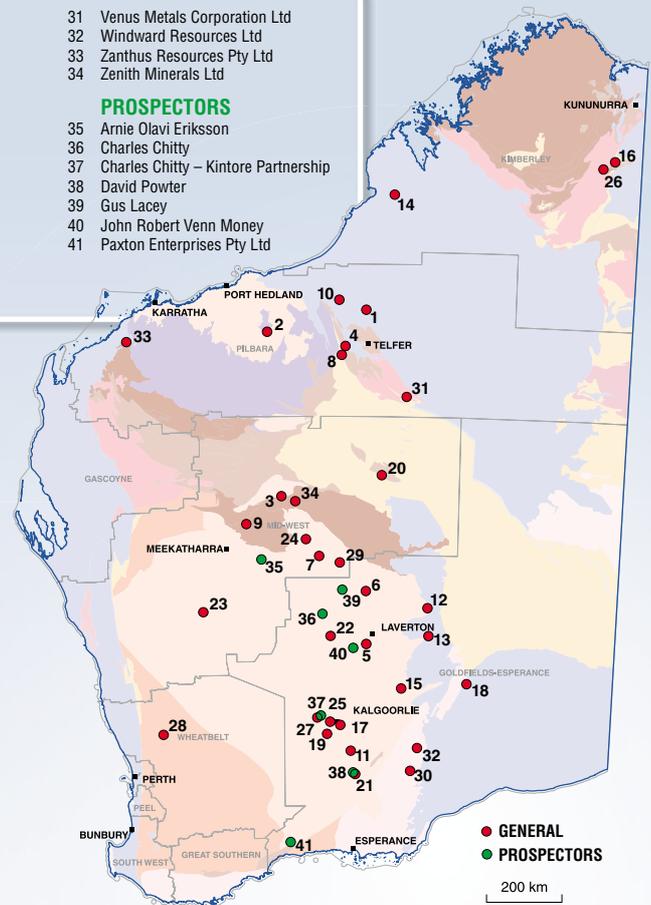


GENERAL

- | | | |
|--|--|---------------------------------|
| 1 Antipa Minerals | 16 IronRinger (Killarney) Pty Ltd | 31 Venus Metals Corporation Ltd |
| 2 Atlas Iron Ltd | 17 Kalgoorlie Consolidated Gold Mines Pty Ltd (KCGM) | 32 Windward Resources Ltd |
| 3 Australian Mines Ltd | 18 Kamax Resources Ltd | 33 Zanthus Resources Pty Ltd |
| 4 Biria Nifty Pty Ltd | 19 MacPhersons Resources Ltd | 34 Zenith Minerals Ltd |
| 5 Dacian Gold Ltd | 20 Magnolia Resources Ltd | |
| 6 Duketon Mining Ltd | 21 Matsa Resources | |
| 7 Echo Resources Ltd | 22 Metallum Ltd | |
| 8 Encounter Resources | 23 Mt Magnet Gold Pty Ltd | |
| 9 Enterprise Metals Ltd | 24 Northern Star Resources | |
| 10 Global Resources Corporation Ltd | 25 Northern Star Resources – Kalgoorlie Operations | |
| 11 Gold Fields Ltd – St Ives Gold Mine | 26 Panoramic Resources | |
| 12 Gold Road Resources Ltd | 27 Parmelia Resources Ltd | |
| 13 Gold Road Resources Ltd | 28 Quadrio Resources Pty Ltd | |
| 14 Iluka Resources Ltd | 29 Rox Resources Ltd | |
| 15 Impact Minerals Ltd | 30 Rumble Resources Ltd | |

PROSPECTORS

- 35 Arnie Olavi Eriksson
- 36 Charles Chitty
- 37 Charles Chitty – Kintore Partnership
- 38 David Powter
- 39 Gus Lacey
- 40 John Robert Venn Money
- 41 Paxton Enterprises Pty Ltd



The State Government continues to support the exploration of underexplored regional areas with the recent release of the list of successful applicants for Round 10 of the Exploration Incentive Scheme's (EIS) Co-funded Exploration Drilling Program.

This round, which will provide co-funding to projects to be drilled in 2015, attracted 74 applications requesting \$8.77 million in co-funding, and resulted in grants totalling \$4.69 million being offered to 41 projects, including seven prospector projects.

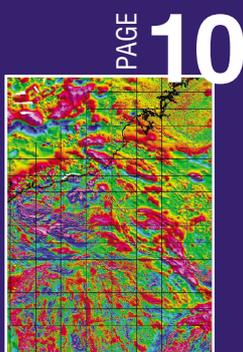
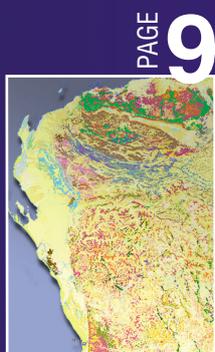
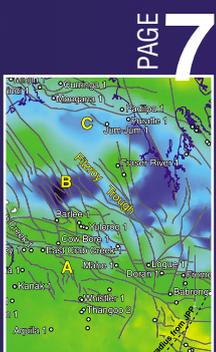
The EIS Co-funded Drilling Program provides incentives to drill in underexplored areas to ensure the continued economic prosperity of the State's resources industry, particularly in the continuing difficult financial environment being experienced by exploration companies.

This highly competitive drilling program offers two rounds of co-funding a year and has been supporting co-funded drilling projects since early 2009. It was originally funded from Royalties for Regions, but is now funded from Consolidated Revenue.

Projects drilled with the support of the Program are showing significant economic and scientific results, with new discoveries being made every year. Some discoveries, such as Sirius' 'Nova' discovery, are in the process of becoming mines and have encouraged further exploration in a previously underexplored region. Other drilling programs, such as at Border Exploration's 'Top Up Rise', have been part of the exploration in the West Arunta which is one of the least studied and least understood areas of the State.

The Geological Survey of Western Australia's (GSWA) precompetitive geophysics and geochemistry information, together with information being released as a result of collaborative research projects with Western Australian universities and CSIRO, are being used by explorers to identify exploration targets.

The Co-funded Drilling Program refunds up to 50 percent of direct drilling costs with caps of \$150 000 for a multihole project,
continued on page 3



What's inside?

CO-FUNDED EXPLORATION DRILLING PROGRAM	1, 3
INCREASED FUNCTIONALITY IN GeoMap.WA	2
KIMBERLEY GIS UPDATE	4
DISTRICT-SCALE TARGETING — GOLD	5
CANNING BASIN RESEARCH FOCUS	6, 7
GSWA OPEN DAY	8
GSWA AT SCITECH	9
STATE MAGNETIC COMPILATION MAP	10
GEOPHYSICAL SURVEYS	11
PRODUCT RELEASES	12

Increased functionality in GeoMap.WA

In the last edition of Fieldnotes (Number 72) there was a brief announcement of new functionality added to GeoMap.WA, the Geological Survey of Western Australia's (GSWA) free GIS viewing tool. GeoMap.WA provides improved access to a range of geological and other spatial information. For more details about GeoMap.WA, see Fieldnotes Number 57 (January 2011). The desktop application can be downloaded from our Data and Software Centre website (<www.dmp.wa.gov.au/datacentre>).

The recently released version now enables users to add geological and resource information using Web Map Services (WMS). This article provides more detail on the use of WMS.

A WMS is a defined standard for broadcasting map images from a geospatial database. This new service is especially useful for accessing large or rapidly changing datasets such as tenements. GSWA has five Web Map Services:

- WA Geoscience WMS
- WA Mineral WMS
- WA Petroleum WMS
- WA Airborne geophysics WMS
- WA Administration WMS

All of these services deliver real-time access to spatial information from GSWA's databases to your desktop (requires an internet connection).

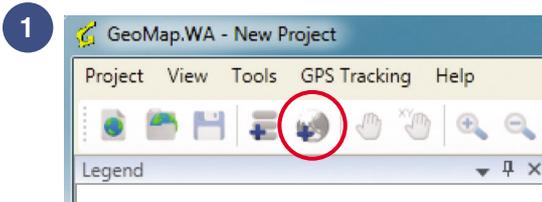
Adding layers from a Web Map Service

To add layers into the GeoMap.WA map panel from a WMS, open GeoMap.WA and do the following:

- 1 Use the *Add WMS Layer* button on the top bar to add a WMS layer; this will open a dialog screen that prompts for a Uniform Resource Location (URL).
- 2 Copy a URL text string to the Web server URL text box and activate it using the *Load Layers* button. To add one of the GSWA Web Map Services, go to the online DMP Data and Software Centre and download the document which contains the relevant URL.
- 3 After inserting the URL, select the (now active) *Load Layers* button; this will populate the dropdown menu with the available layers or Web Map Services that are available.
- 4 Select the layer and add it using the *Add Layer* button (lower right of the dialog screen shown in image Number 3). By default the layer will have a pre-set transparency value; the *Set Layer Transparent* check box can be unticked (see image Number 4). Also, this can be customized by right clicking the layer when it appears in the legend and using the Symbology tab of the Layer Properties dialog.

Free training sessions for GeoMap.WA and other GSWA databases and online systems are available throughout the year. The next sessions will be held in March in Perth and Kalgoorlie. Register for training on the DMP website: <www.dmp.wa.gov.au/training>.

URLs for Web Map Services are available at DMP's Data and Software Centre: <www.dmp.wa.gov.au/datacentre/>.



WEB MAP SERVICES

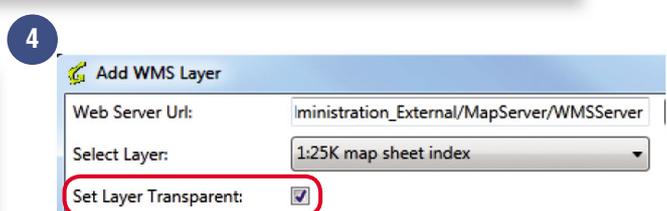
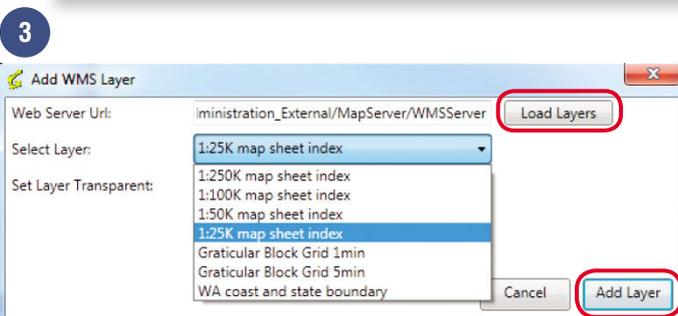
The following defines the URL's and data layers for each web map service provided by the Department of Mines and Petroleum.

WA DMP Administration Web Map Service

URL: http://GISSDI.DMP.WA.GOV.AU/GISexternal/services/External/Administration_External/MapServer/WMServer

Layers:

Graticular Block Grid 1min	Metadata	Data dictionary	License agreement
Graticular Block Grid 5min	Metadata	Data dictionary	License agreement
1:25K Map Sheet Index	Metadata	Data dictionary	License agreement
1:50K Map Sheet Index	Metadata	Data dictionary	License agreement
1:100K Map Sheet Index	Metadata	Data dictionary	License agreement
1:250K Map Sheet Index	Metadata	Data dictionary	License agreement
WA Coast and state boundary	Metadata		License agreement



For more information on GeoMap.WA, contact Joel D'Antoine (joel.d'antoine@dmp.wa.gov.au).

Co-funded Drilling Program 2015

continued from page 1

	Applicant name	Drilling Project title	Target commodities
1	Antipa Minerals	Citadel Project – Calibre Prospect	Au, Cu, W
2	Atlas Iron Ltd	Corunna Downs	Fe
3	Australian Mines Ltd	Baumgarten's GB structural gold targets	Au
4	Birla Nifty Pty Ltd	Nifty District Exploration	Cu
5	Dacian Gold Ltd	Callisto — an unexplained Wallaby style magnetic anomaly under cover	Au
6	Duketon Mining Ltd	Stonecutter Zinc Project	Zn, Cu, Pb, Au, Ag
7	Echo Resources Ltd	Septimus Targets	Au
8	Encounter Resources	Lookout Rocks Prospect	Cu, Pb, Zn
9	Enterprise Metals Ltd	Borg Geochemical Anomaly Project	Au, Cu, Zn
10	Global Resources Corporation Ltd	Great Sandy Desert Potash Project	Potash brines (SOP)
11	Gold Fields Ltd – St. Ives Gold Mine	Athena Intrusion Strain Shadow Deep Hole	Au
12	Gold Road Resources Ltd	Gruyere Deep Stratigraphic Diamond Hole	Au
13	Gold Road Resources Ltd	Minnie Hill Project	Au
14	Iluka Resources Ltd	Canning Basin	Mineral sands
15	Impact Minerals Ltd	Mulga Tank	Ni, Cu, PGE
16	IronRinger (Killarney) Pty Ltd	Killarney 3	Cu, Au, Ag, Pb, Zn
17	Kalgoorlie Consolidated Gold Mines Pty Ltd (KCGM)	Fimiston South	Au
18	Kamax Resources Ltd	Peninsula Project	Ni–Cu–PGE
19	MacPhersons Resources Ltd	Coolgardie NiS	Ni, Cu, Pt, Au
20	Magnolia Resources Ltd	Oldham Range Project	Cu, Ni, Zn
21	Matsa Resources	Killaloe	Ni
22	Metallum Ltd	Mustang VMS Prospect	Ag, Cu, Pb, Zn, Au
23	Mt Magnet Gold Pty Ltd	Boomer Deep Diamond Drilling Project	Au
24	Northern Star Resources	Jundee Deeps Drilling	Au
25	Northern Star Resources – Kalgoorlie Operations	Eastern Zuleika Shear Definition Programme	Au
26	Panoramic Resources	Deep Mafic–Ultramafic Intrusions of the East Kimberley	Ni, Cu, Co, Pt, Pd
27	Parmelia Resources Ltd	Jaurdi Hills Project	Nickel sulphide
28	Quadrio Resources Pty Ltd	Calingiri South West Yilgarn Cu–Mo–Ag Project	Cu, Mo, Ag
29	Rox Resources Ltd	Fisher East	Ni
30	Rumble Resources Ltd	Zanthus Project	Ni, Cu, Co
31	Venus Metals Corporation Ltd	Copper Hills	Cu, Au, Pt, Pd, graphite
32	Windward Resources Ltd	Buningonia North Nickel Prospect	Ni, Cu
33	Zanthus Resources Pty Ltd	Ashburton Trough Yarraloola Area, West Pilbara	Fe
34	Zenith Minerals Ltd	Earaheedy Managanese	Mn
35	Arnie Olavi Eriksson	Gum Creek East	Au
36	Charles Chitty	Spider Well Project	Au
37	Charles Chitty – Kintore Partnership	Kintore Project	Au
38	David Powter	Killaloe Ridge	Pt, Pd, Rh, Au, Ni, Ag, Cr, Co
39	Gus Lacey	Banjawarn	Au
40	John Robert Venn Money	Goose Well	Au, Ag
41	Paxton Enterprises Pty Ltd	Elverdton	Cu, Au, Ag

\$200 000 for a single deep hole, and \$30 000 for a prospector's project. The Program, which has significant industry support and is subject to probity audits to ensure a fair and transparent process, will be open for applications again between 27 February and 10 April 2015, for drilling projects to be undertaken in the 2015–16 financial year.

Funding for this highly successful scheme, which has seen an increase in Western Australia's ranking to be the world's top investment destination for explorers as measured by the world renowned Fraser Institute Survey, continues until the end of June 2017.

Information acquired by the companies is publically released on the Department of Mines and Petroleum (DMP) website. This adds to the geological knowledge of the State, and reduces the risk for subsequent explorers

A list of successful applicants and a map of project locations is available at <www.dmp.wa.gov.au/eisdrilling>.

For more information, contact Margaret Ellis (margaret.ellis@dmp.wa.gov.au).

Single source of spatial datasets for the Kimberley region

The Kimberley Geological Information Series 2014 update expands on previous releases, and now includes all published 1:250 000 geological maps to give coverage of the entire Kimberley region (Fig. 1). New maps and data in this release include a second edition CHARNLEY 1:250 000 geological series map sheet, as well as interpreted bedrock geology for the PRINCE REGENT – CAMDEN SOUND 1:250 000 sheets. Regional-scale regolith geochemical data for the Balangarra area in the north Kimberley are also included (nominal 5 x 5 km grid), collected as part of the State Government's Kimberley Science and Conservation Strategy. Recently processed Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) images form part of the suite of remote sensing imagery. The source data were reprocessed to reduce the effect of green vegetation on derivative compositional maps.

The Kimberley GIS package provides a single source of essential spatial datasets for use in mineral exploration, geological research and land use management (Fig. 2). The package contains a broad range of datasets, including:

- 1:100 000 geology and interpreted regolith–landform maps
- Diagrammatic cross-sections
- 1:250 000 surface geology
- 1:500 000 interpreted bedrock geology and tectonic units
- 1:1 000 000 and 1:2 500 000 geology
- GSWA field observation sites and information (WAROX)
- Geochemistry, geochronology and petrology information
- Gravity, geophysics and remote sensing imagery
- Magnetotelluric (MT) stations and profiles
- Mineral exploration activities (EXACT and WAMEX); mining tenements (TENGRAPH); mines and mineral deposits (MINEDEX)
- Minerals and petroleum exploration drillholes (WAPIMS)

For more information, contact David Maidment (david.maidment@dmp.wa.gov.au).

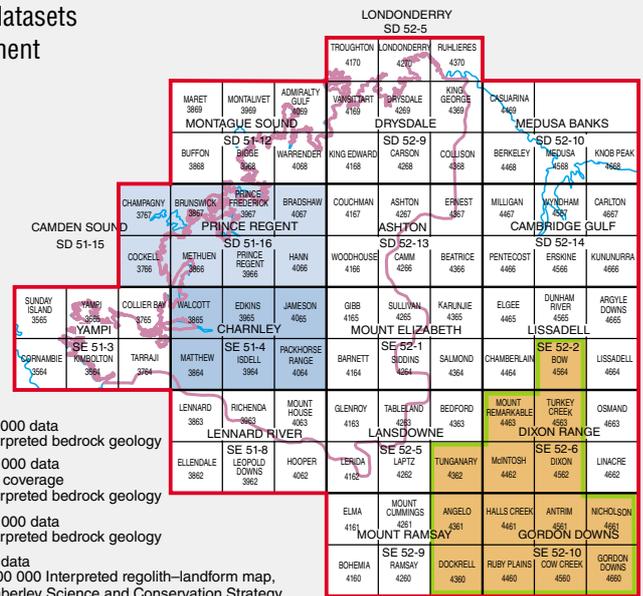
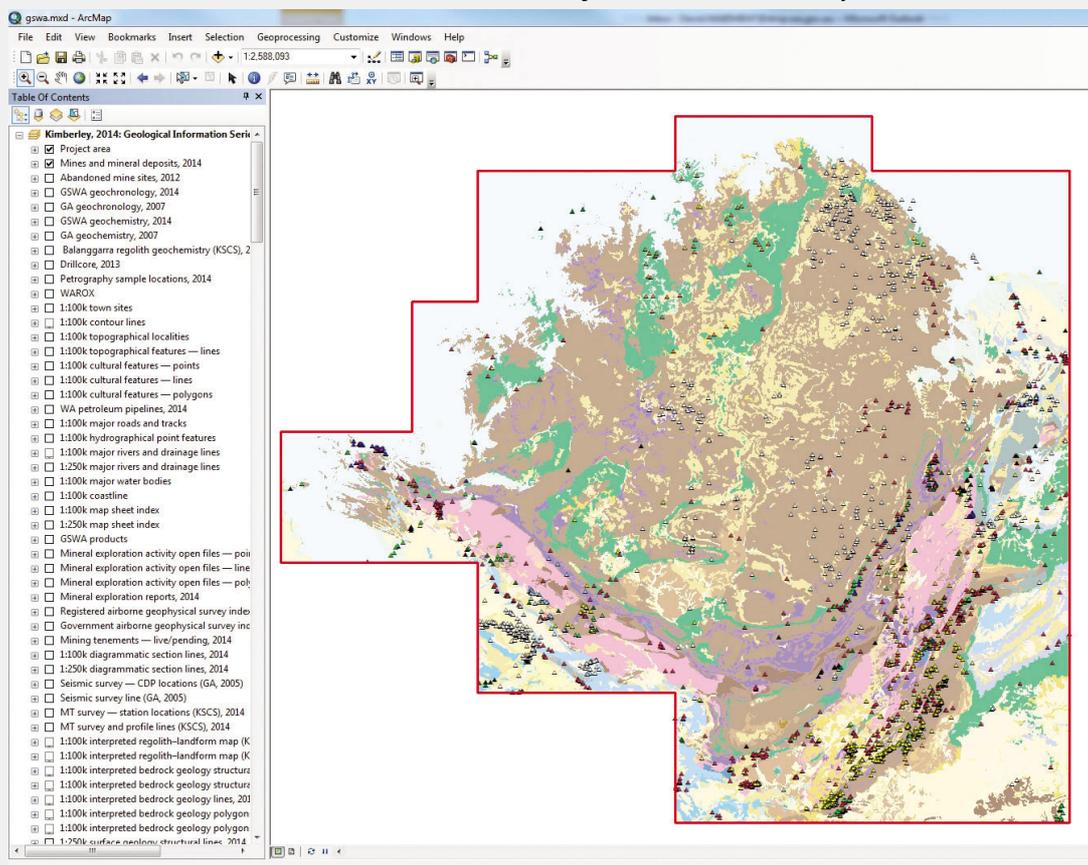


Figure 1. Maps included in the Kimberley, 2014 GIS

Figure 2. Screen shot of Kimberley dataset interface



Strong support for the association of gold with the ‘Mafic Group’ intrusions

The second part of the three-part Yilgarn Gold Exploration Targeting Atlas (YETA) is scheduled for release in February 2015, as GSWA Report 132. The Report investigates 22 targeting criteria for gold exploration, applicable at the district scale. The results are presented as quantitative spatial analyses and as qualitative interpretations, depending on the nature of the data.

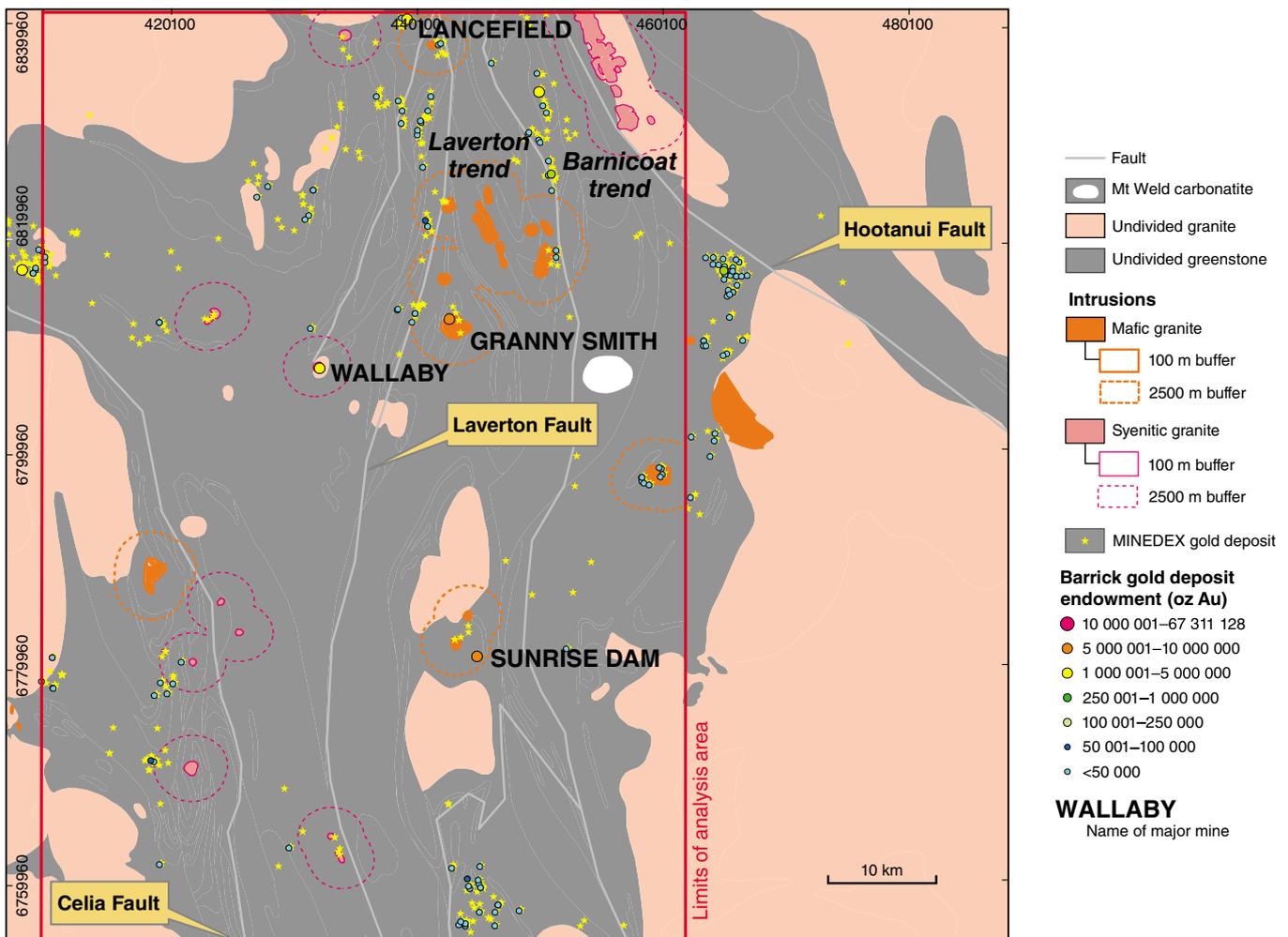
As with Part 1 (regional scale) of the Atlas, robust spatial statistics provide strong support for many conventional structural targeting criteria at the district scale (e.g. proximity to district-scale faults, fault jogs and fault bends, fault density and fault intersection density). Quantitative analyses also strongly support the association of gold with the ‘Mafic Group’ intrusions of Cassidy and Champion (2002; MERIWA Report 222) at the district scale.

Drillhole databases provided by Barrick Ltd and Norton Goldfields Ltd (Laverton and Kalgoorlie – Ora Banda districts) and St Barbara (Southern Cross district) have been used to demonstrate qualitative associations of felsic to intermediate (including ‘Mafic Group’) intrusions with long wavelength (phengitic) white mica and elevated Mo+Bi+W. A similar relationship exists between high-strain (fault, shear) zones

and short wavelength white mica and elevated As+Sb. These contrasting spectral and trace element signatures are commonly interpreted as indicating oxidized (alkaline) and reduced (acid) signatures, respectively. Some major gold deposits occur on the boundaries between these oxidized and reduced hydrothermal cells, an observation that has been interpreted by some as indicating a fluid mixing origin for the gold. However, this study shows that other deposits lie within oxidized or reduced hydrothermal domains. Those that are on redox boundaries can alternatively be interpreted to reflect strain partitioning around intrusions. Other useful gold targeting criteria to emerge from these district-scale analyses are spectrally determined white mica abundance and the presence of Fe-rich chlorite, summing the oxidized and reduced pathfinder elements (Mo+Bi+W+As+Sb), and the rare alkali index $[(Rb+Cs)/Th]_n$ of Heath and Campbell (2004; Economic Geology, v. 99, p. 313–324).

The results published in Part 2 of the YETA project will be of interest to the many geologists engaged in district-scale exploration for orogenic and intrusion-related gold.

For more information, contact Wally Witt (wally.witt@dmp.wa.gov.au).



Laverton district, Eastern Goldfields Superterrane; mafic granite and syenitic granite intrusions

The Canning Basin — a research focus

The tectonic evolution and geosequestration potential of the Canning Basin were evaluated by two recent studies funded by GSWA under the Exploration Incentive Scheme (EIS). The work was carried out by the Centre for Petroleum and CO₂ Sequestration at the University of Western Australia, and CSIRO Petroleum.

Report 140 Regional Structural and Stratigraphic Study of the Canning Basin, Western Australia assesses the style and timing of tectonic events across the Canning Basin, and reviews the geological history and stratigraphic framework of the basin, with detailed interpretation of the Fitzroy Trough (Fig. 1). The Report presents a digital geological model integrating seismic reflection and potential field data with geological data from wells and other geophysics. The model provides a series of basin-scale transects and maps of major stratigraphic surfaces and structures in the Fitzroy Trough. The outcome is a regional tectonostratigraphic

framework that will be useful for explorers with an interest in petroleum, minerals, groundwater, geothermal energy, and carbon sequestration potential. Digital data related to this Report, including 2D seismic and well data (Kingdom Suite Project) and a digital model of the Fitzroy Trough (GoCAD) are available.

Report 139 Geosequestration potential of the Carboniferous–Permian Grant Group and Permian Poole Sandstone, northwest Canning Basin, Western Australia is to be released soon. It assesses the CO₂ storage potential of Carboniferous–Permian reservoirs within 200 km of James Price Point (Fig. 2). Three potential fault-block geosequestration sites are identified.

In the study area, the Poole Sandstone consists of interbedded sand and mud of fluvial and shallow-marine origin. Cored intervals are sparse but suggest that coarse-grained sandy facies

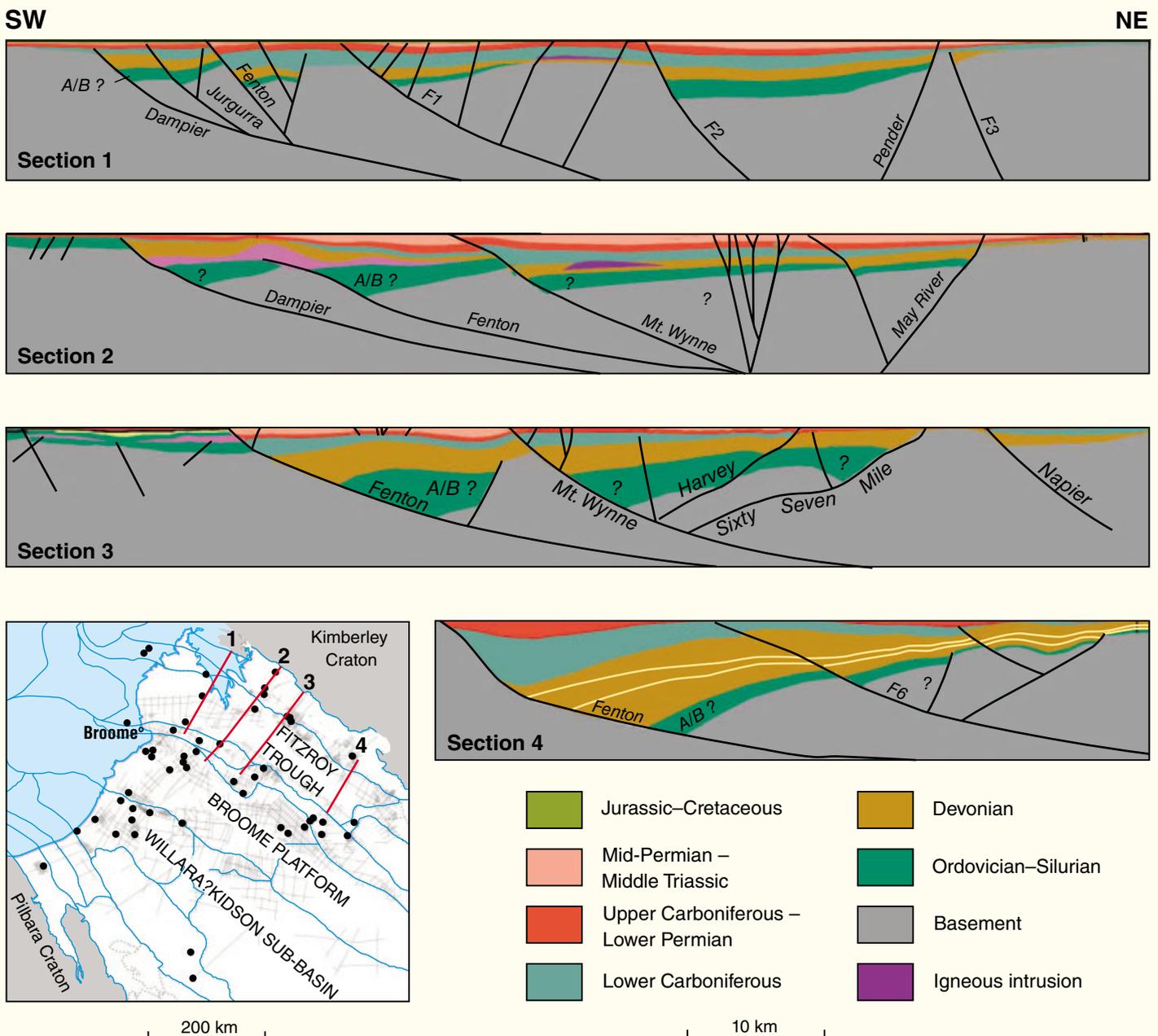
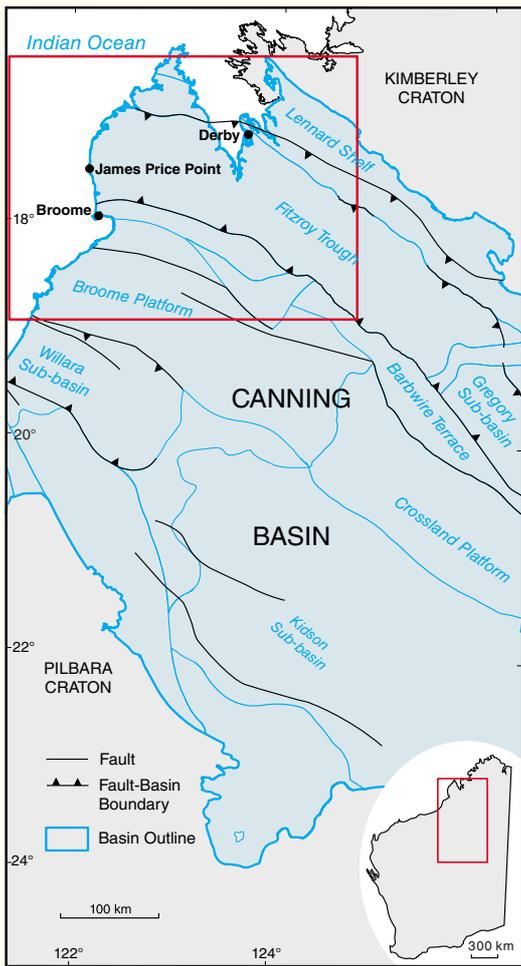


Figure 1. Four depth sections across the Fitzroy Trough showing a series of Ordovician to Devonian grabens and half-grabens, separated by basement horsts; the map shows the locations of the sections



are not laterally extensive, so overall reservoir quality is likely to be low. The thickness and facies of the overlying Noonkanbah Formation suggest good seal potential, but this needs to be verified. Analysis of the sealing characteristics across bounding faults is based on limited seismic data and widely spaced wells, and also requires further investigation.

The Grant Group is a thick fluvial sandstone-dominated package which has retained good to very good porosity and permeability during burial, and represents the best prospective geosequestration target. A thick intra-Grant Group shale is present in the Fitzroy Trough but its sealing properties are poorly known and need further investigation.

Additionally, the seismic stress and geomechanical regime need to be understood, to assess the risk of reservoir breach from natural seismic events or induced by CO₂ injection. The study includes details on data limitation, risk assessment and recommendations for further work.

Both Reports will be available at www.dmp.wa.gov.au/gswapublications.

For more information, contact Ameer Ghori (ameed.ghori@dmp.wa.gov.au).

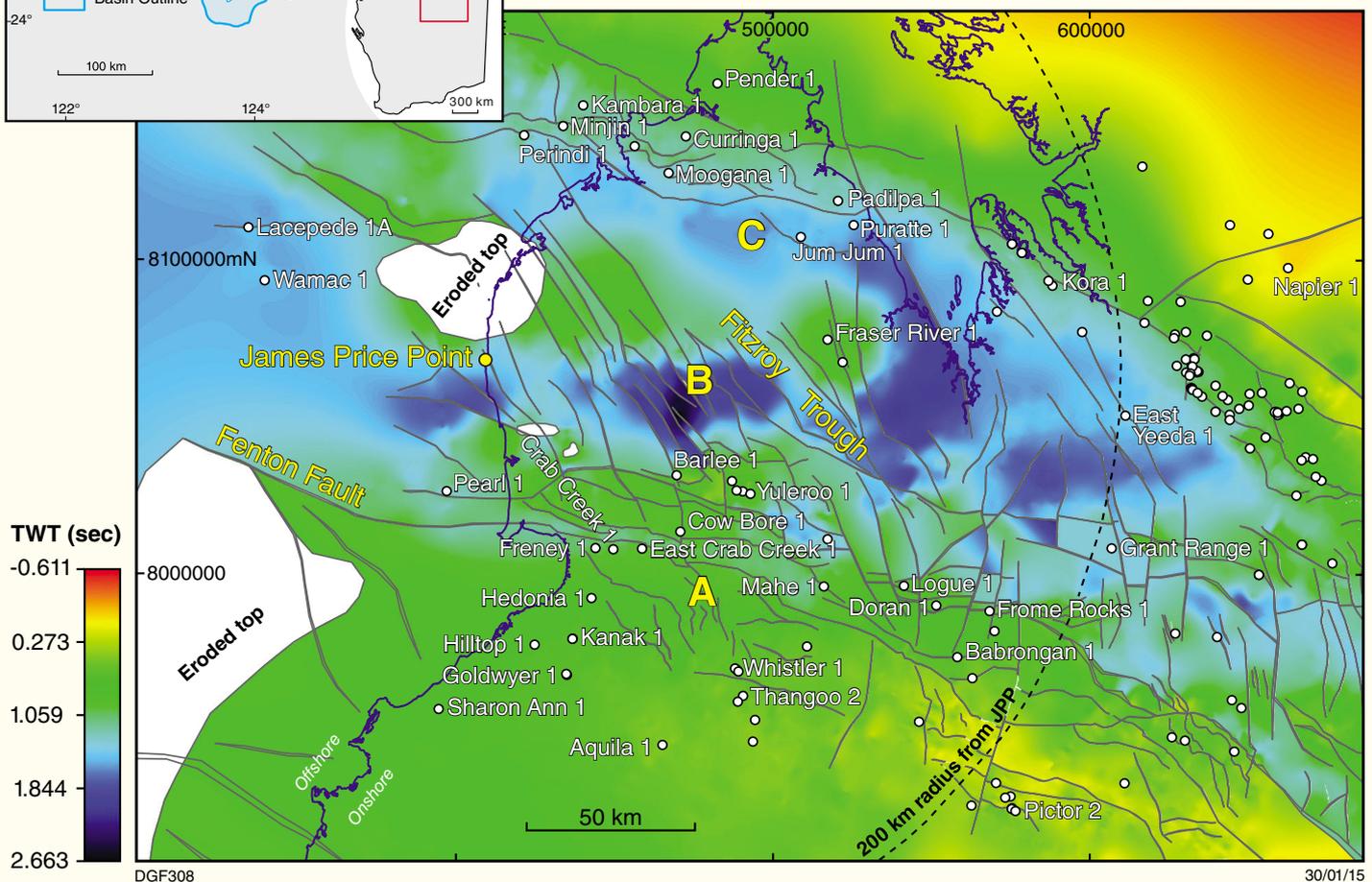


Figure 2. Time–structure map at the base of the Grant Group showing three potential geosequestration areas marked as A, B and C; the inset shows the general location and structural features of the Canning Basin



GSWA 2015

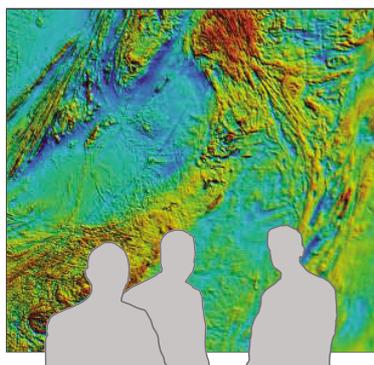


**EXPLORATION
INCENTIVE SCHEME**

Geological Survey Open Day

Friday 27 February 2015

**Esplanade Hotel, Fremantle
Cnr Marine Tce & Essex St**



Geological Survey Open Day

Friday 27 February 2015

This is a great opportunity to hear presentations on the latest results from GSWA's geoscience programs, including collaborative work with CSIRO and the Centre for Exploration Targeting (CET).

Activities and results of the Exploration Incentive Scheme will be outlined including the launch of Round 11 of the Government Co-funded Exploration Drilling program.

Throughout the day there will be geological presentations, an extensive poster display, and demonstrations of online systems.

**Promoting the prospectivity
of Western Australia**



**ESPLANADE
HOTEL
FREMANTLE
Cnr Marine Tce
& Essex St,
Fremantle
Friday
27 Feb. 2015**

REGISTER ONLINE

www.dmp.wa.gov.au/gswa2015

**For further information, please contact
Geological Survey of Western Australia**

Tel: (08) 9222 3168 Fax: (08) 9222 3633



GSWA 2015 — Geological Survey Open Day — 27 FEBRUARY 2015

ESPLANADE HOTEL, FREMANTLE

Cnr Marine Tce & Essex St, Fremantle



Ongoing demonstrations of new GSWA Business Systems including Geoview, WA

8.15 – 8.45 REGISTRATION

SESSION 1

8.45 – 9.00 Welcome and opening remarks

Hon. Bill Marmion MLA, Minister for Mines and Petroleum

9.00 – 9.35 Abracadabra — dating hydrothermal mineralization and fluid flow in a long-lived crustal structure (EIS)

Simon Johnson

9.35 – 10.00 The Glenburgh Au deposit, Gascoyne Province — evidence of metamorphosed gold?

Lisa Roche

Morning tea 10.00 – 11.00 In the display area

SESSION 2

11.00 – 11.25 UNCOVER Australia — the Capricorn Distal Footprints Project (a collaborative CSIRO–GSWA–Curtin–UWA Project) (EIS)

Robert Hough (CSIRO)

11.25 – 11.50 3D Geoscience at GSWA (EIS)

Klaus Gessner

11.50 – 12.15 VHMS mineralization in the Yilgarn Craton: greenstone prospectivity and new results from the Eastern Goldfields

Steven Hollis (CSIRO)

Lunch 12.15 – 1.35

SESSION 3

1.35 – 2.00 The Hart Large Igneous Province intrusive complex — implications for Speewah-style Fe–Ti–V mineralization in the Kimberley

Karin Orth (CODES, UTA)

2.00 – 2.25 Mineral systems analysis of the Halls Creek Orogen (EIS)

Sandra Occhipinti (CET, UWA)

2.25 – 2.50 Regolith geochemistry in the Kimberley Science and Conservation Strategy — links to bedrock

Paul Morris

Afternoon tea 2.50 – 3.15 In the display area

SESSION 4

3.15 – 3.40 The burning heart — the Musgrave Province

Heather Howard

3.40 – 4.05 Building the crust of the Albany–Fraser Orogen — constraints from granite geochemistry

Hugh Smithies

4.05 – 4.30 Tropicana translated — gold mineralization in the Albany–Fraser Orogen (EIS)

Ian Tyler

Sundowner 4.30 – 5.30



Government of Western Australia
Department of Mines and Petroleum



**EXPLORATION
INCENTIVE SCHEME**



GSWA mapping technology on show at Scitech

The Geological Survey of Western Australia (GSWA) was invited by Scitech to mount a display to showcase our expertise and technology used to produce geological maps. This initiative dovetailed neatly with the production and launch of the revised 2014 State 1:500 000 interpreted bedrock geology digital data layer.

GSWA staff assembled the display materials; staff at Scitech took the lead role in the design and production of the display.

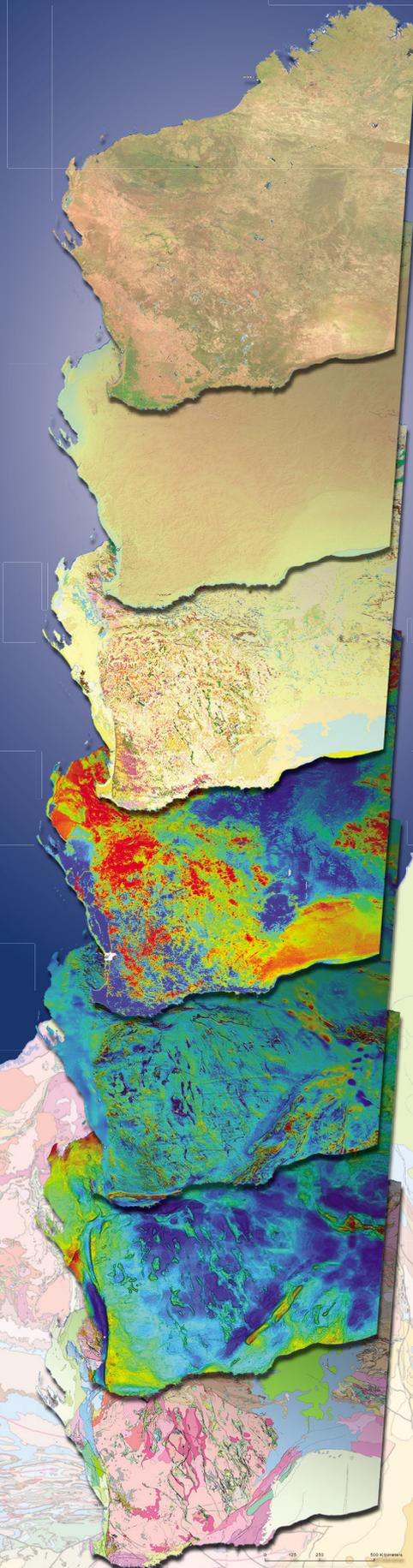
The display occupies Scitech's 'Think Tank' space and features examples of statewide remotely sensed and geophysical datasets set against the latest bedrock geology interpretations, a historical perspective on state geological mapping, and a short biographical précis of one of GSWA's mapping geologists.

One of the greatest challenges was to come up with content and a design that would capture the interest of children aged 10 through to late teens — and their parents — while not altering the science significantly. To this end, Scitech staff set up a 50" LCD monitor running a PowerPoint show that loops through a set of impressive whole-of-state images that peel back the geology from its surface expression shown on Landsat and digital elevation modelling, through radiometric, magnetic and gravity datasets, to fully interpreted bedrock geology. Images of state-of-the-art technology are complemented by a spectacular specimen of banded iron-formation and a collection of field gear.

The display includes a new State digital geology map launched in December 2014, and will feature a new release of the State 1:500 000-scale map of tectonic units, due to be completed in February 2015. This will be a suitable highlight for one of GSWA's most public outreach projects to date.

The display will be on show at Scitech, in City West (Sutherland Street in West Perth), from the middle of February for several months.

For more information, contact
Jean Johnston (jean.johnston@dmp.wa.gov.au) or
Stephen White (stephen.white@dmp.wa.gov.au).



Updated 40 m magnetic compilation map for Western Australia



In September 2014 the Geological Survey of Western Australia (GSWA) released an updated 40 m resolution magnetic anomaly grid for onshore Western Australia (Fig. 1a). The new grid is a compilation of more than 1100 individual survey grids made from aeromagnetic datasets registered in GSWA's MAGIX database and the national Geophysical Archive Data Delivery System (GADDS) hosted by Geoscience Australia (GA).

In 2009, as part of the state government's five-year Exploration Incentive Scheme (EIS), GSWA embarked on an accelerated program of airborne magnetic and radiometric surveys to acquire data at a line spacing of between 200 m and 400 m over the approximately 30% of the area of Western Australia that still had only 'first-generation' coverage with a survey line spacing of 1600 m. By 2013, with the support of GA, this phase of the project was completed with the acquisition of almost 3.5 million line kilometres of new magnetic and gamma-ray spectrometric data. An updated state compilation total magnetic intensity (TMI) grid was released with a cell size of approximately 80 m — optimal for the representation of data at a line spacing of 300–400 m.

However, Western Australia's very active mineral exploration sector means that GSWA also holds data from many detailed surveys submitted by exploration companies, in accordance with the requirements of the WA Mining Act. Data submitted under these conditions are released to the public after a specified period of confidentiality. With the combination of non-confidential higher resolution company and regional datasets, a significant area of Western Australia, particularly in the south-western half of the state, is now covered by aeromagnetic data at a line spacing of 300 m or less. To adequately represent these data densities, a grid of resolution better than 80 m is required. A grid cell size of 40 m represents an adequate compromise between data resolution and manageable file size.

In 2013, GSWA produced the first state compilation with a cell size of 0.000416 degrees, approximately 40 m. The latest release of the 40 m grid in September 2014 is a new compilation that includes the recently completed GSWA Goldfields 100 m surveys as well as all available company data to date.

Compared to the 80 m grid compilation, the 40 m grid contains improved detail in areas of survey line spacing of 300 m or less — shown in the shaded areas in Figure 1b. In other areas there will be no difference in frequency content from that of the 80 m grid; however, image pixelation will be less apparent at larger viewing scales.

The latest 40 m grid in ER Mapper format is available for download from <www.dmp.wa.gov.au/geophysicalcompilations>, as is a georeferenced image in JP2 format. Images for individual 1:250 000 map sheets based on the same dataset can also be downloaded.

For more information, contact John Brett (john.brett@dmp.wa.gov.au).

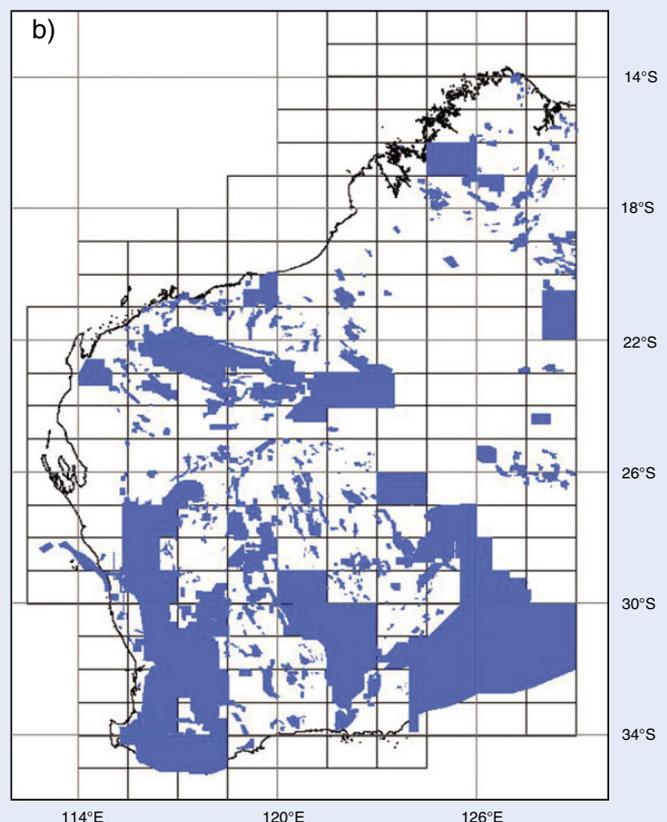
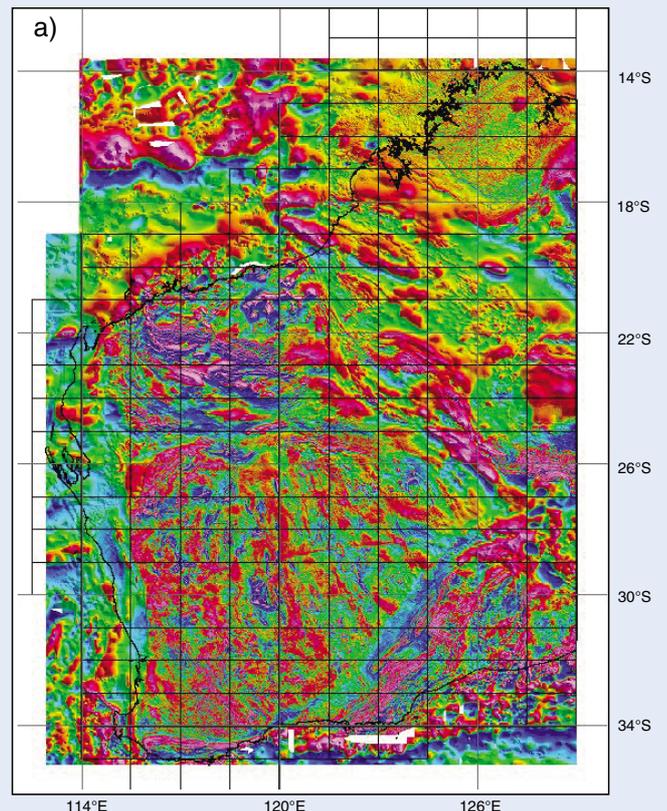


Figure 1. a) Image of 40 m compilation TMI grid of Western Australia; b) coverage of publicly available aeromagnetic surveys with line spacing of 300 metres or less



GSWA regional geophysics surveys: 9 February 2015 update

Data downloads

Final data releases from the Geophysical Archive Data Delivery System are at <www.ga.gov.au/gadds>.

Grids and images from the GSWA website are available from <www.dmp.wa.gov.au/geophysics>.

Subscribe to the GSWA eNewsletter for alerts of preliminary and final data release dates.

Survey outline shapefiles are available online at <www.dmp.wa.gov.au/geophysics>.

Airborne mag/spec surveys

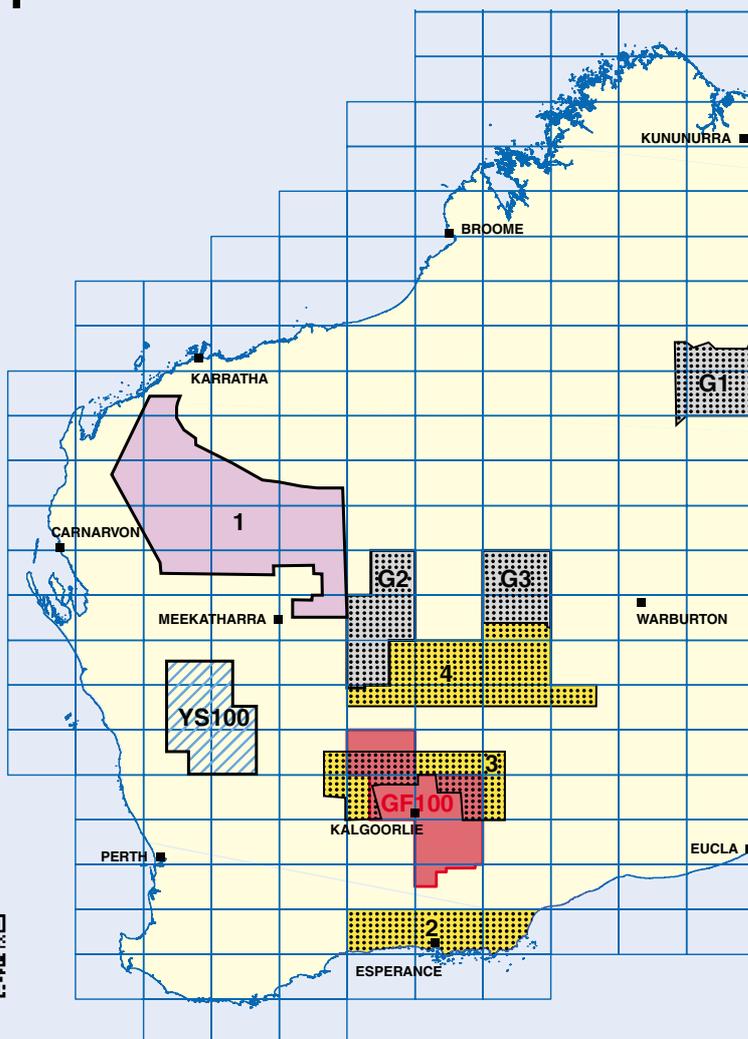
- Goldfields 100 m program (completed)
- Yalgoo–Singleton 100 m (proposed)

Airborne EM surveys

- Capricorn 2013 AEM (completed)

Ground gravity surveys

- Recently completed
- Under consideration



For more information, contact David Howard (david.howard@dmp.wa.gov.au).



Airborne magnetic and radiometric surveys

ID	Area/Name	Configuration	Line-km	Contractor	Acquisition Start	Acquisition End	Current Status	Release Date
GF100	Eastern Goldfields 100 m program	100 m E-W	720 000	Various	2012	2014	Released	Jun-13 – Jun-14
YS100	Yalgoo–Singleton 100 m program	100 m E-W	Area under consideration for surveys in 2015–16					

Airborne EM surveys

ID	Area/Name	Configuration	Line-km	Contractor	Acquisition Start	Acquisition End	Current Status	Release Date
1	CAPRICORN 2013 (TEMPEST)	5 000 m; N/S (E/W in part)	30 000	CGG	Oct-13	Jan-14	Released	19-Jun-14

Ground gravity surveys

ID	Area/Name	Configuration	Stations	Contractor	Acquisition Start	Acquisition End	Current Status	Release Date
2	ESPLANANCE 2013	2.5 km grid, 1 km roads	7 891	Atlas	Jul-13	Sep-13	Released	24-Oct-13
3	GOLDFIELDS 2013	2.5 km grid	8 115	Atlas	Nov-13	Dec-13	Released	20-Feb-14
4	SIR SAMUEL – THROSSSELL 2014	2.5 km grid	11 600	IMT	Jun-14	Sep-14	Released	17-Dec-14
Gx	Potential areas under consideration for ground gravity surveys in 2015–16							

Information current at: 9 February 2015

Colour legend



Final data released



Under consideration

■ REPORTS

Report 141 Assessing the potential for volcanic-associated massive sulfide mineralization at Weld Range, using Golden Grove for comparison
by Guilliamse, J

Report 144 Greenfields geochemical exploration in a regolith-dominated terrain: the Albany–Fraser Orogen/Yilgarn Craton margin
by González-Alvarez, I, Anand, R, Hough, R, Salama, W, Laukamp, C, Sweetapple, M, Ley-Cooper, Y, Sonntag, I, Lintern, M, Abdat, T, LeGras, M and Walshe, J

Includes a zip file containing appendices.

■ RECORDS

2014/12 GSWA Harvey 1 well completion and preliminary interpretation report, southern Perth Basin

by Millar, A and Reeve, JS

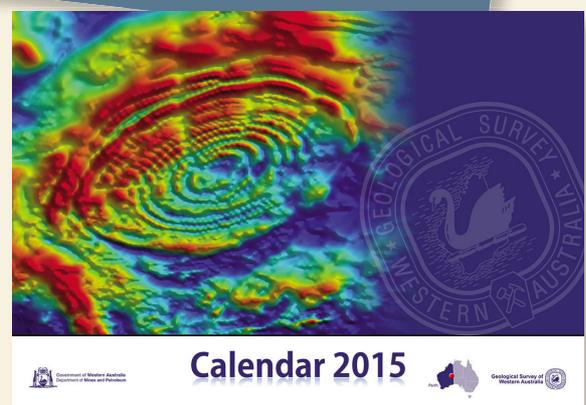
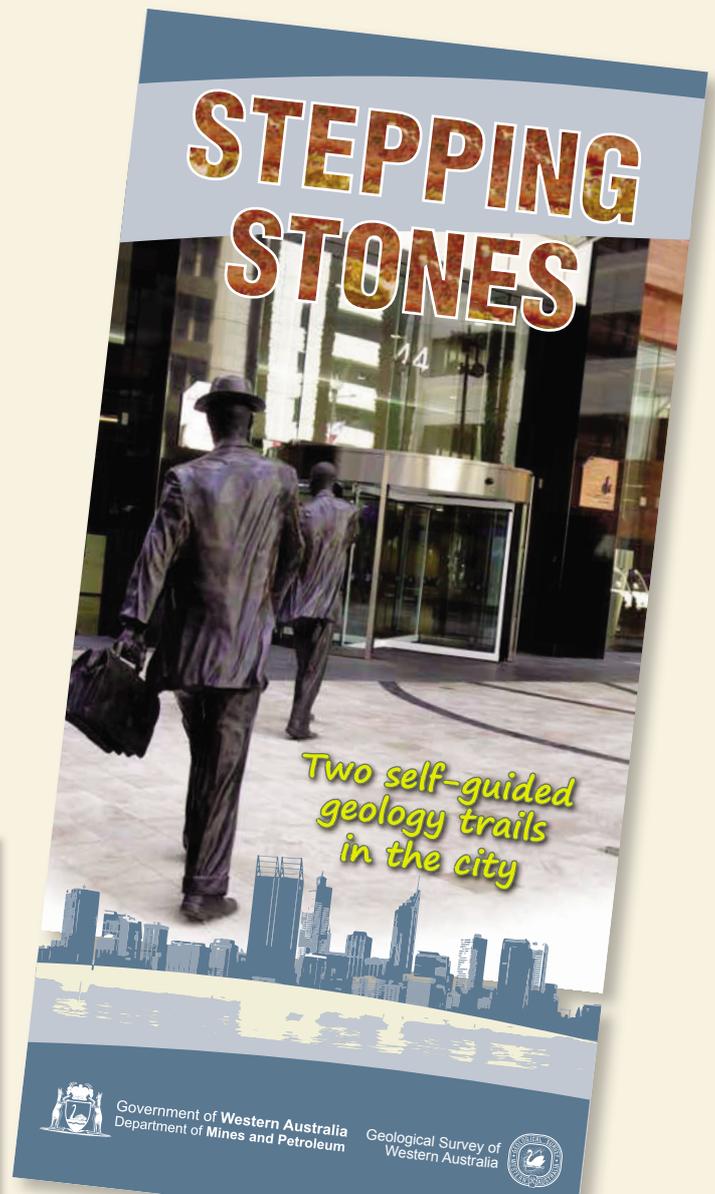
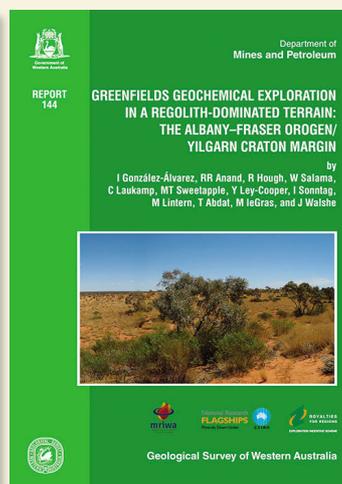
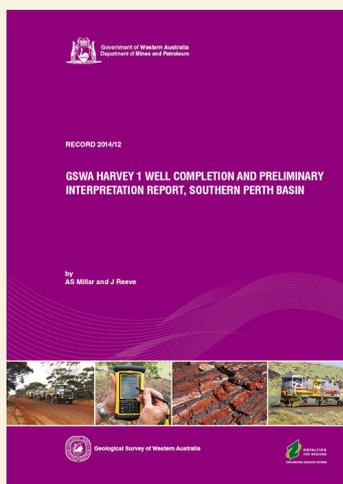
Includes a zip file containing plates and appendices.

2014/15 Structural evolution of the Pleiades Lakes region; Northeastern Albany–Fraser Orogen, Western Australia

by Stokes, MA

2014/16 Structural Evolution of the Yalgoo Dome, Yilgarn Craton, Western Australia: A Core Perspective

by Fenwick, MJ



■ NON-SERIES BOOKS

GSWA calendar 2015

Stepping stones — two self-guided geology trails in the city

by Johnston, J

■ NON-SERIES DIGITAL PRODUCTS

1:500 000 State interpreted bedrock geology of Western Australia, 2014

Find in Data and Software Centre at <www.dmp.wa.gov.au/datacentre>.

The Geological Survey of Western Australia (GSWA) has released almost 5000 geological products including books, maps and data packages. These can be found on our website at <www.dmp.wa.gov.au/GSWApublications>.

Maps, USB data packages, and selected premium publications are available to purchase as hard copies via the online cart on the eBookshop at <www.dmp.wa.gov.au/ebookshop>. Alternatively, these products can be purchased from the Information Centre, First Floor, Mineral House, 100 Plain Street, East Perth, WA 6004, Australia, Phone: +61 8 9222 3459; Fax: +61 8 9222 3444.

Records, Reports, Bulletins and non-series books cannot be purchased in hard copy but are all available as PDFs to view, and as a free download.

Products were produced using information from various sources. The Department of Mines and Petroleum (DMP) and the State cannot guarantee the accuracy, currency or completeness of the information. DMP and the State accept no responsibility and disclaim all liability for any loss, damage or costs incurred as a result of any use of or reliance whether wholly or in part upon the information provided in this publication or incorporated into it by reference.