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Youanmi deep seismic reflection survey: release of lines 10GA–YU1 and 10GA–YU3

ROYALTIES FOR REGIONS
EXPLORATION INCENTIVE SCHEME

The Youanmi deep seismic reflection survey across the northern Yilgarn Craton was acquired in May and June 2010. The survey was funded through the Exploration Incentive Scheme (EIS), with acquisition, processing, and interpretation managed by Geoscience Australia (GA). Terrex Seismic Pty Ltd, an Australian company based in Perth, carried out the seismic data acquisition.

The survey built on the existing network of deep-crustal seismic surveys that have imaged the Yilgarn Craton and its margins. Three individual seismic lines (10GA–YU1, 10GA–YU2, and 10GA–YU3), along with complementary magnetotelluric (MT) data, were acquired as part of the survey. A preliminary migrated image of 10GA–YU2 was released in June 2011, together with ArcMap shapefiles of the seismic shot points. The February 2012 release <www dmp.wa.gov.au/seismicsurveys> includes PDF images of the preliminary migrated seismic line cross sections. It also includes ArcMap GIS shapefiles of the seismic shot points and common depth points (CDP) shown on the cross section images for 10GA–YU1, 10GA–YU3, and 10GA–YU2.

The three lines cross from the Narryer Terrane in the northern part of the Yilgarn Craton over major bounding and internal structures of the Youanmi Terrane and into the Kalgoorlie Terrane of the Eastern Goldfields Superterrane. The northwestern end of 10GA–YU1 is east of the southern end of line 10GA–CP3 from the 2010 Capricorn deep seismic reflection survey <www.dmp.wa.gov.au/capricornseismic>. The two surveys are linked by the Southern Carnarvon Basin deep seismic reflection survey, acquired by GA in 2011. The eastern end of 10GA–YU2 crosses major structures on the western side of the Eastern Goldfields Superterrane which were also imaged by the 2001 GA deep seismic reflection line (01AGS–NY1), about 120 km to the southeast.

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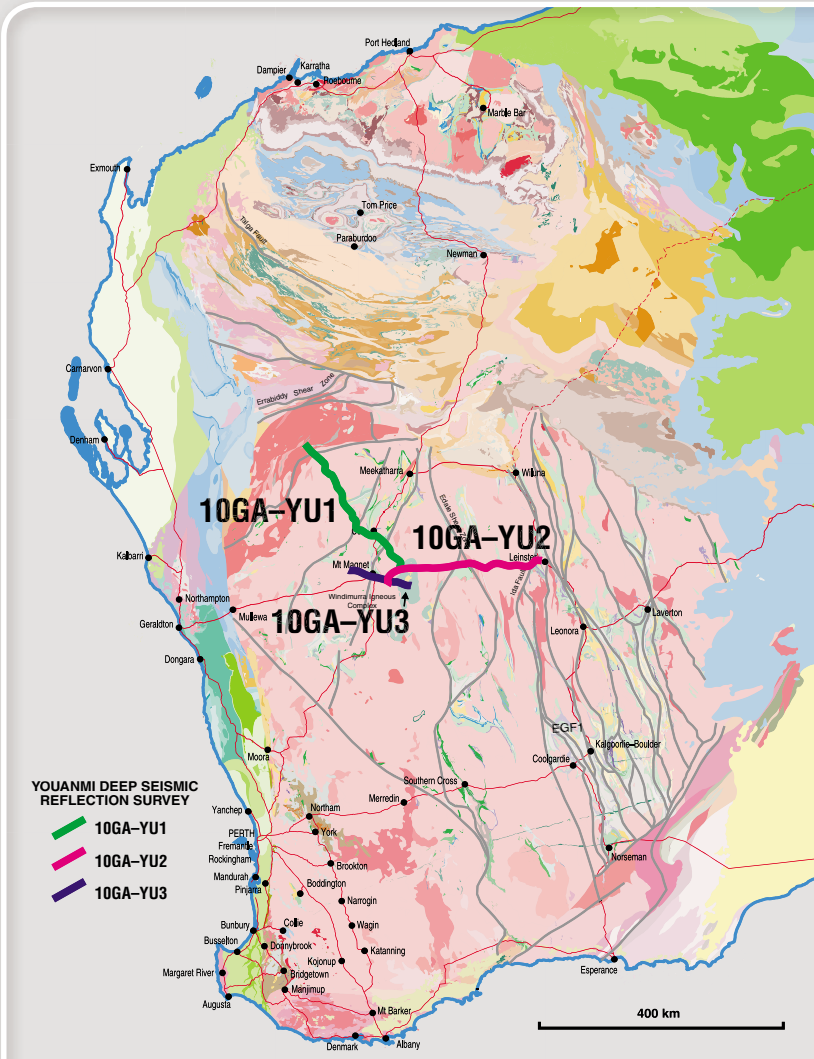
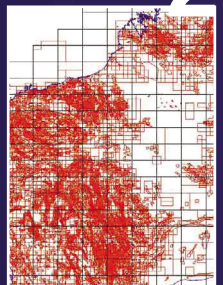
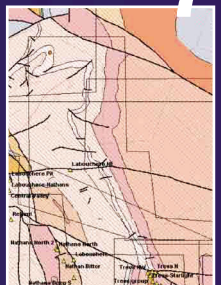
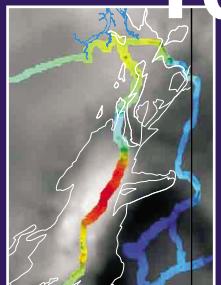


What's inside?







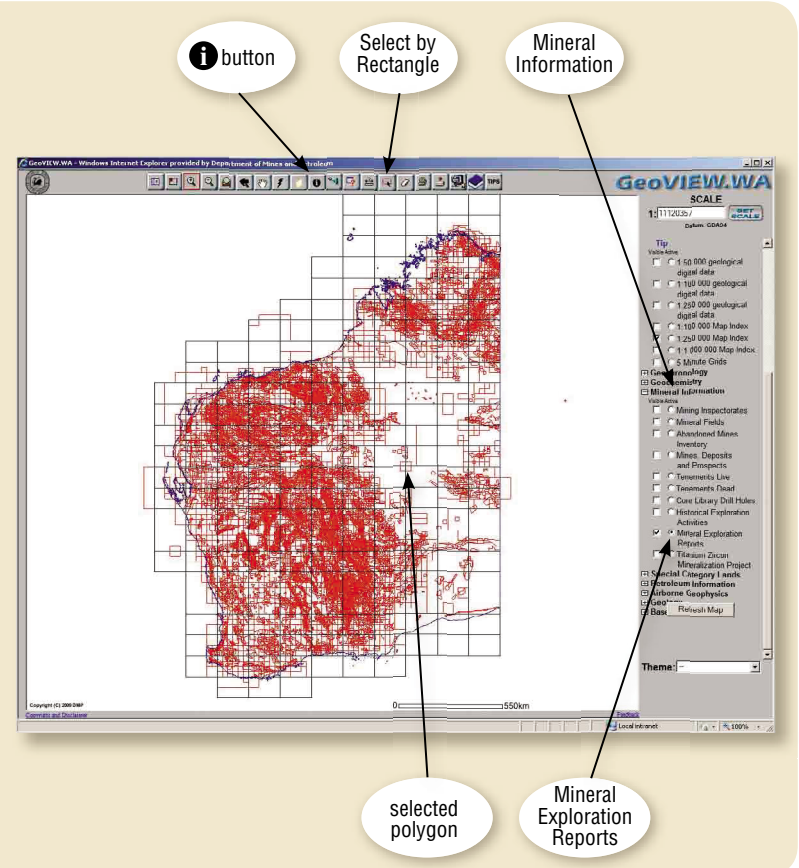
WAMEX searches now via GeoVIEW.WA

The Department of Mines and Petroleum's (DMP's) WAMEX database of open-file mineral exploration reports can now be searched spatially using the GeoVIEW.WA application.

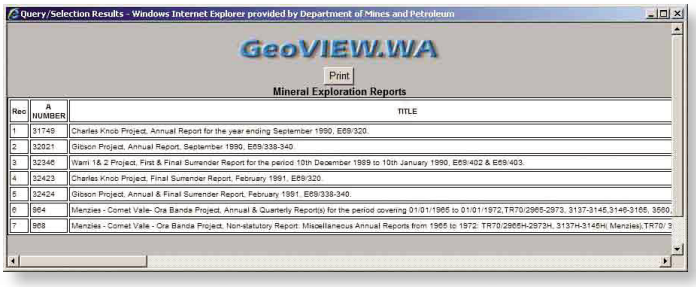
GeoVIEW.WA has recently been updated to include a searchable spatial WAMEX layer with most of the functions provided by WAMEX online.

Access GeoVIEW.WA from Online Systems on DMP's website at <www.dmp.wa.gov.au/geoview>.

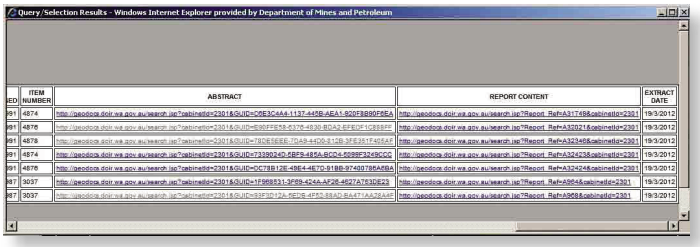
Click on the Information button (ⓘ in a circle icon on the toolbar). Under the Mineral Information heading, activate Mineral Exploration Reports by selecting the visible and active radio buttons. The 1:2.5M Geology layer may also be switched off if not required.



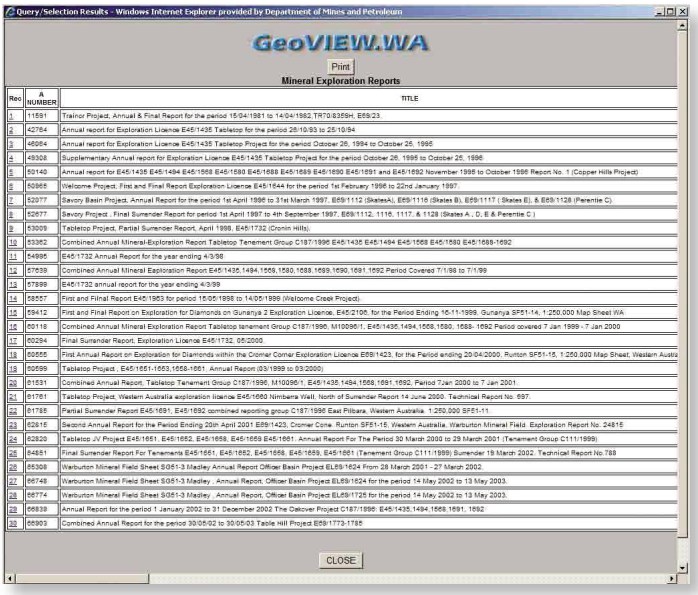
With the Information button ⓘ highlighted, click in a red polygon of interest to open links to all reports for the highlighted polygon.



To access links for downloading the Abstract and Contents of the reports, scroll to the far right of the window that opens.



Alternatively, using the Select by Rectangle button, draw a rectangle around an area of interest. This will bring up a list of reports that fall within the selected area. This list can then be printed.



By activating other GeoVIEW.WA layers, you can find reports against a backdrop of other 1:250 000 and 1:100 000 sheets, and reports related to particular geological formations, tectonic units, mines, and prospects. This facility enables wider search facilities than WAMEX online. Some search criteria are not available through the GeoVIEW.WA web page, for example, it is not possible to use keywords or a text string to refine searches.

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

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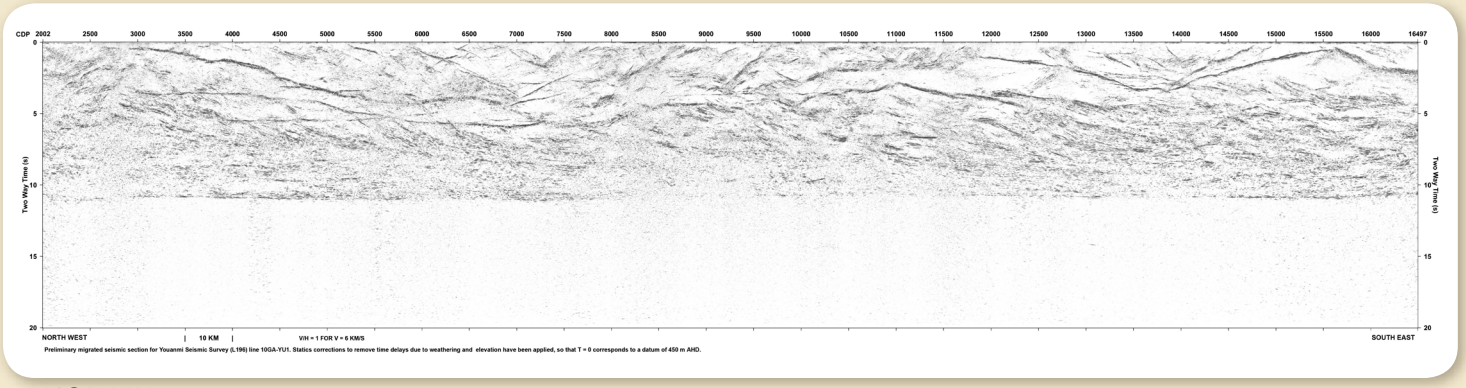
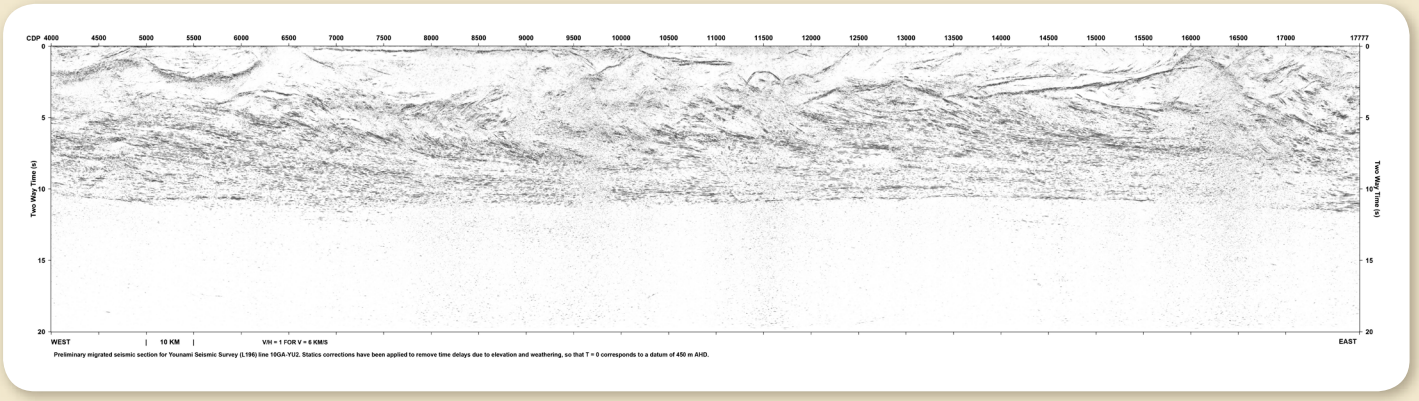
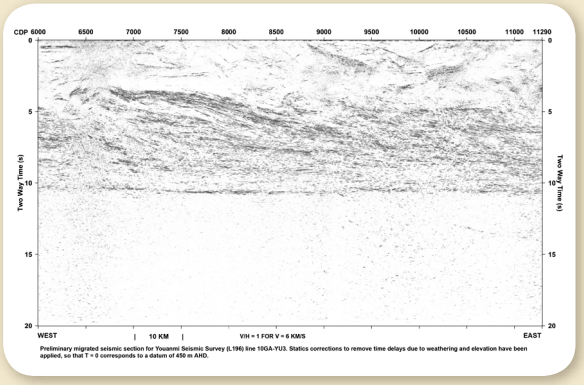


10GA–YU1



10GA–YU2



10GA–YU3

The main objectives of the Youanmi deep seismic reflection survey were to:

- image deep structure in the Narryer Terrane, the oldest component of the Yilgarn Craton, and the region that contains the oldest known crust in Australia
- image the contact between the Narryer Terrane and the adjacent, highly mineralized Murchison Domain of the Youanmi Terrane
- investigate the nature of granite–greenstone contacts and the overall shape, depth, and structure of greenstone belts
- compare the nature, orientation, and crustal penetration of mineralized and unmineralized structures
- develop a 3D image of the mafic–ultramafic Windimurra Igneous Complex
- image the Ida Fault, the boundary between the Youanmi Terrane and the Kalgoorlie Terrane in the Eastern Goldfields Superterrane, and compare the deep structure in the adjacent terranes
- link with previously acquired deep-crustal seismic traverses in the Eastern Goldfields Superterrane.

Interpretation of the seismic lines will be undertaken ahead of a public release workshop planned for October–November 2012. The deep seismic reflection data and the MT data will form part of a joint research project between GSWA and the Centre of Excellence for Core to Crust Fluid Systems based at Macquarie University. This research will develop an understanding of the 3D crustal structure and underlying mantle architecture of the northwest Yilgarn Craton, its development through time, and the link to large-scale mineralization.

For further information, contact
Stephen Wyche (stephen.wyche@dmp.wa.gov.au) or
Klaus Gessner (klaus.gessner@dmp.wa.gov.au).

Cooperative research highlighted at GSWA Open Day

ROYALTIES FOR REGIONS
EXPLORATION INCENTIVE SCHEME

Extended abstracts of talks presented at GSWA's 2012 Open Day are available as Record 2012/2. This Record and the poster displays are available for download from the Department of Mines and Petroleum's website at <www.dmp.wa.gov.au/GSWApublications>. A feature of the Open Day talks was GSWA's involvement with cooperative research projects that focus on improving exploration targeting. Dr Bruce Hobbs from the Centre for Exploration Targeting (CET) presented results from a GSWA-supported ARC Linkage project investigating lithospheric controls on mineralizing systems (Hobbs et al. 2012, GSWA Record 2012/2, p.33–37).

Multiscale dynamics of ore body formation

In his presentation (co-authored with Weronica Gorczyk, Alison Ord and Klaus Gessner) Dr Hobbs noted that, at the lithospheric scale, many large hydrothermal systems have their origins in intracratonic settings, most notably the Olympic Dam iron oxide–copper–gold (IOCG) deposit. It has been proposed that such systems may form in intracratonic orogens, coincident with zones of metasomatism in the subcontinental lithospheric mantle (SCLM), that are reactivated at the time of mineralization. Tectonic deformation can cause spontaneous delamination of the SCLM in these zones (a new kind of Rayleigh–Taylor instability that forms in solids). This can cause a concurrent and subsequent history of deformation, fluid infiltration from various depths within the SCLM, and melting and metamorphism accompanied by surface processes such as erosion and sedimentation that can last for 100 m.y. after relatively rapid delamination. All of these processes leave their marks in the geological record and can be read as indicative of an active mineralizing system. This can be seen in recent GSWA-produced tectono-thermal histories from the Albany–Fraser Orogen and the Musgrave Province.

The width of the underlying SCLM weak zone influences the patterns of deformation, melting and fluid release that result during delamination. After a critical width is exceeded, the pattern of deformation becomes localized with the formation of Y-shaped fault structures within the crust. The SCLM is advected into higher pressure-temperature regions resulting in localized melting and devolatilization. This localized deformation to one side of the delamination system is the focusing mechanism for large hydrothermal ore bodies. Hence the width of the delamination system is a prime criterion for failed versus successful systems. This asymmetry is reflected in the evolution of surface topography so there will be a direct record in the stratigraphic history.

The lithospheric scale modelling imposes time and volumetric flow rate constraints on the evolution of these hydrothermal systems. All successful systems have a common history involving an initial stage of exothermic alteration (hydrous minerals, carbonates and iron oxides) followed by endothermic precipitation of sulfides, metals and silicates. The switch from one mode of operation to another requires a new mechanism for maintaining permeability expressed as a stage (or several stages) of brecciation or vein formation. At this switch from one mode of operation to another, the most efficient systems must localize. This is expressed as zoned mineralization or late stage alteration, providing criteria that can be recognized in drillcore or exposures.

For more information,
contact Ian Tyler (ian.tyler@dmp.wa.gov.au).

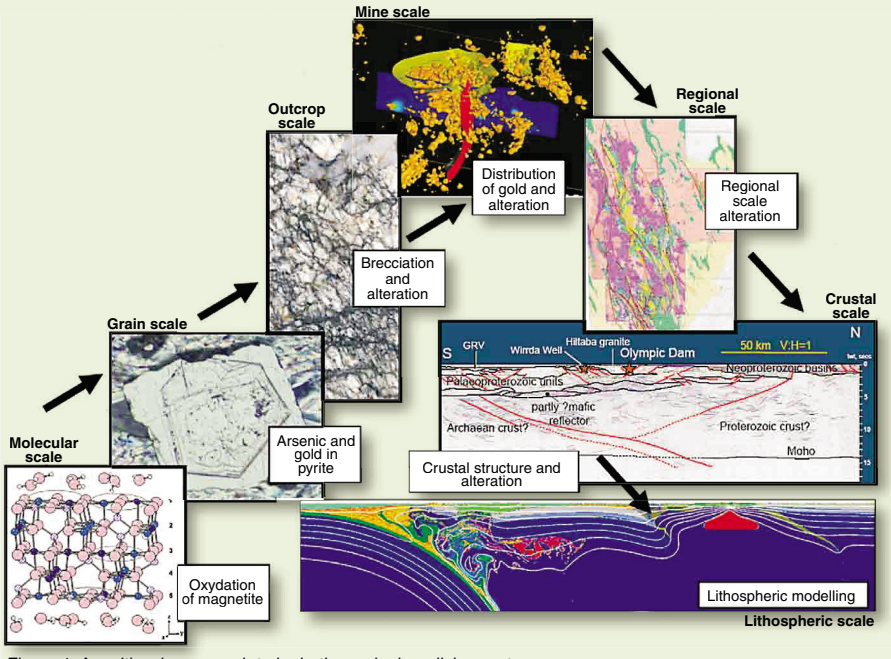


Figure 1: A multiscale approach to hydrothermal mineralizing systems

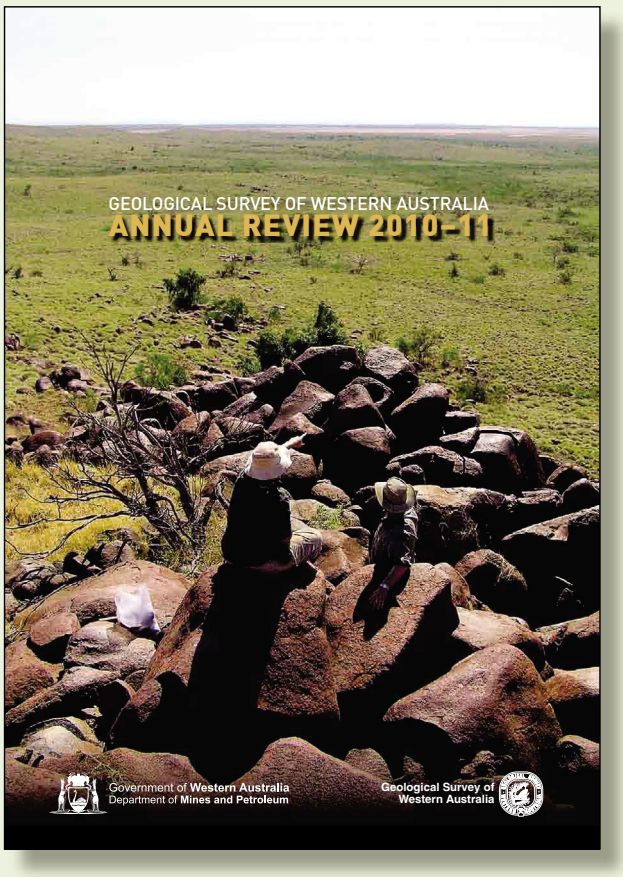
GSWA Annual Review 2010–11 released

The Geological Survey of Western Australia Annual Review 2010–11 has now been released and is available online at <www.dmp.wa.gov.au/annualreview>.

It offers an extensive overview of mineral exploration in Western Australia, along with a review of programs, and the range of products and services that GSWA offers. The Annual Review also covers major developments and mineral exploration highlights by commodity, drilling and mining tenement activity, and the successful Exploration Incentive Scheme (EIS).

The 2010–11 edition shows that the Western Australian economy, with its reliance on the mineral and petroleum sectors, continued to improve. In 2010–11, the value of mineral production in the State increased by a remarkable 45%, to a new record of $77.9 billion (excluding petroleum). Iron ore, gold, and nickel, which collectively form the backbone of the Western Australian mineral sector, accounted for 90%, or $70 billion, of the value of minerals produced during the year.

Across Australia, mineral exploration expenditure in 2010–11 increased significantly to an all-time record of $2951.3 million (an increase of 28% in 2010–11 dollar terms). Exploration expenditure for many commodities, including uranium, base metals, nickel, gold, and iron ore, recovered from the negative effects of the global financial crisis in 2008–09. In Western Australia, the trend was similar, with mineral exploration expenditure rising during 2010–11 to an all-time record of $1590.1 million.



Over the year, GSWA staff produced 53 reports, records and other geoscience manuscripts, 12 series maps (1:100 000 and 1:250 000), eight other maps, and 17 digital data packages. There are now over 60 000 open-file mineral exploration reports online.

For more information contact Rick Rogerson (rick.rogerson@dmp.wa.gov.au), Don Flint (don.flint@dmp.wa.gov.au), or Ian Tyler (ian.tyler@dmp.wa.gov.au)

AusGeo News

AusGeo News is Geoscience Australia's (GA's) quarterly news magazine. Each issue comprises geoscience-related features, brief articles about GA's research and initiatives, news about geoscience products and spatial data, and a calendar of coming seminars and conferences.

Issue March 2012 No 105 is now available at <http://www.ga.gov.au/ausgeonews/>.

In this issue…

Understanding Australia's Southwest Margin
Basement architecture as a framework for predictive basin analysis

Seabed environments of the Joseph Bonaparte Gulf and Timor Sea
Seabed mapping reveals significant habitats and potential hazards

Reducing exploration risk in the offshore northern Perth Basin
Trap integrity study addresses a key exploration risk

United Nations Global Ocean Assessment
First global assessment of the state of the oceans

Gascoyne regolith — new dimensions

ROYALTIES FOR REGIONS
EXPLORATION INCENTIVE SCHEME

GSWA Record 2011/22 (New insights into the regolith of parts of the Gascoyne region by Carmen Krapf) extends the usual two-dimensional approach of looking at regolith to the third dimension. It does this by providing detailed information on regolith (and therefore landscape evolution) based on combined mapping, and logging of well-exposed regolith successions. This work is based on regolith–landform coverage for several 1:100 000-scale map sheets, centred on the Mount Phillips 1:250 000 sheet (SG50-2), generated as a complement to regional mapping of bedrock. From the initial interpretive maps, it became apparent that the Gascoyne region not only preserved a variety of regolith types, but also contained several outcrops and drainage sections where regolith stratigraphy was well preserved. Field checking of the regolith–landform map included logging and sampling of key regolith sections, confirming the development of a complex regolith stratigraphy. Record 2011/22 discusses aspects of this regolith stratigraphy, with a major emphasis on the identification of in situ (residual) versus relict (transported) regolith units, which has resulted in the identification of older, now dissected, and in some areas, inverted landforms.

Mapping and logging of well-exposed regolith sections has revealed repeated episodes of weathering, induration and cementation of a variety of compositionally diverse regolith units. Two iron-rich duricrust units have been identified, one related to in situ weathering of bedrock, and the other representing alluvial sediments deposited in drainages, which were subsequently ferruginized, uplifted, and dissected (Fig. 1a,b). Subsequent erosion of both units led to the development of an ancestral drainage system (Fig. 1c). The associated alluvial sediments were then ferruginized, followed by the development of calcrete due to carbonate cementation (Fig. 1d). Calcrete has been partly replaced by opaline silica, following a widespread phase of silicification (Fig. 1e). Further erosion resulted in an inverted topography, where indurated units in drainage depressions are now preserved as silcrete-capped mesas outlining inverted paleochannels, many of which are unrelated to the present-day drainage system (Fig. 1f).

This detailed examination of regolith evolution has relevance to mineral exploration in an area prospective for uranium mineralization, the main focus in regolith-dominated areas. In particular, drainage divides and areas of calcareous duricrust have been of interest. Over 45 uranium occurrences have been reported on Mount Phillips in the last 40 years.

For more information, contact
Carmen Krapf (Carmen.Krapf@sa.gov.au)
or Paul Morris (paul.morris@dmp.wa.gov.au).

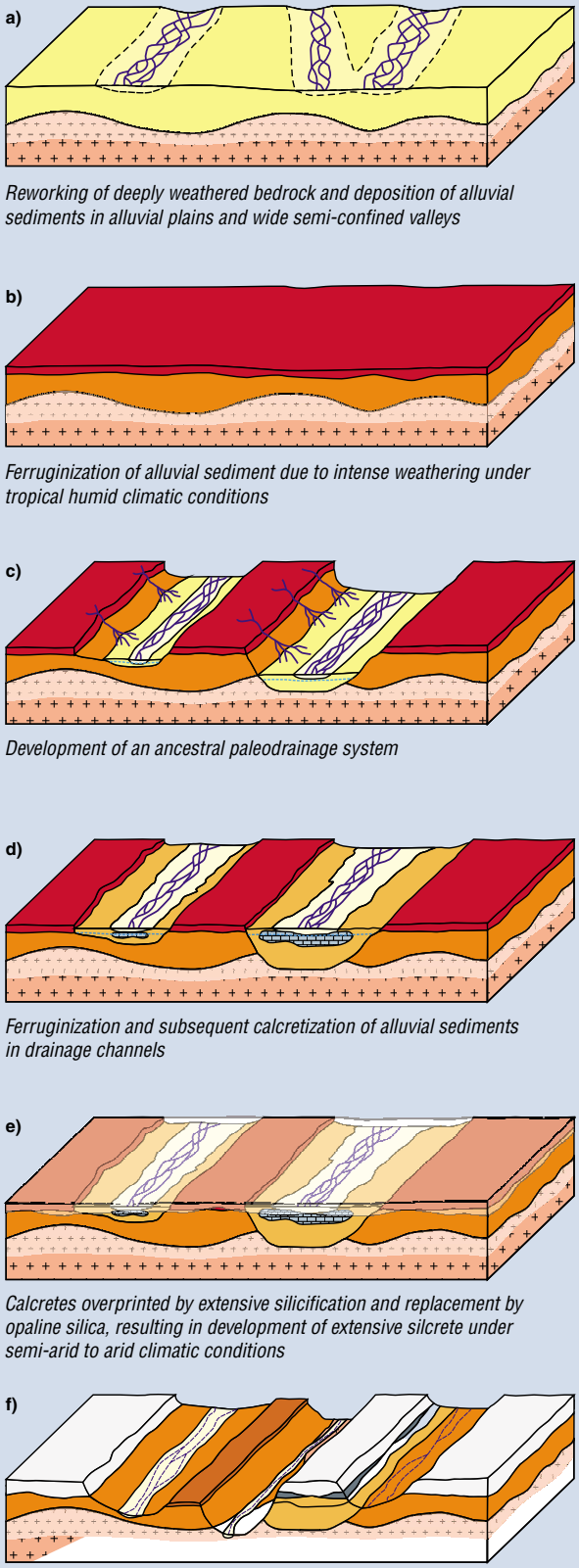


Figure 1. Model for the landscape evolution on the Mount Phillips 1:250 000 map sheet (Krapf, 2011, fig. 40)

New maps and editions on updated Western Capricorn Orogen release

ROYALTIES FOR REGIONS
EXPLORATION INCENTIVE SCHEME

The 2011 Western Capricorn Orogen 1:100 000 Geological Information Series digital package is a comprehensive geoscience dataset covering twenty-eight 1:100 000 map sheets in the Capricorn Orogen (Fig. 1). Eight new map sheets (Calyie, Daurie Creek, Lockier, Mount Egerton, Mulgul, Pink Hills, Tangadee, and Teano) and four new editions (Candolle, Glenburgh, Landor, and Milgun) have been added since the previous 2009 Western Capricorn Orogen data release. These data can now be viewed and queried with GSWA's latest GeoMap.WA software.

Included in the latest package are whole rock geochemistry, and GSWA field observation, petrography and geochronology sites and information. There are also geophysical imagery, mineralization sites, and exploration information, together with Landsat TM satellite imagery, and digital elevation model imagery from the Shuttle Radar Topography Mission.

A major addition to the 2011 update has been the new format Explanatory Notes for the Gascoyne Province. The notes include a description of every lithostratigraphic unit mapped in the province, as well as an account of the tectonic events that have affected it. The notes are a forerunner of customer-driven queries that can be produced from GSWA's Geology Online database, being developed under the Exploration Incentive Scheme (EIS). GSWA publications covering the project area on the package include data and preliminary interpretations from the Capricorn Orogen deep seismic and magnetotelluric workshop, held in Perth in November 2011.

New data in the 2011 update provides background geological information for several gold mining centres, including Fortnum, Labouchere, Mount Egerton, Nathans, and Trevs, which are hosted by Paleoproterozoic rocks of the Bryah and Padbury Groups (Fig. 2). The area covered by the update includes the Abra polymetallic deposit and its associated base metal prospects, which occur in Late Paleoproterozoic to Early Mesoproterozoic rocks of the Edmund Group. Results of recent mapping demonstrate that the Abra deposit lies on the eastward extension of the Lyons River Fault, shown by the Capricorn deep seismic survey to be a major mantle-tapping structure that marks the Paleoproterozoic suture between the Pilbara Craton and the Glenburgh Terrane of the Gascoyne Province.

For more information, contact Alan Thorne (alan.thorne@dmp.wa.gov.au).

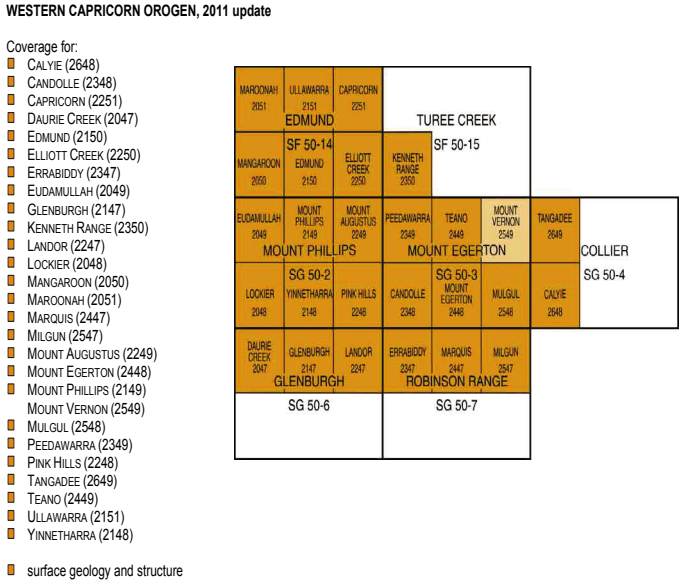


Figure 1: Index map showing 1:100 000 map sheets covered by the latest Western Capricorn Orogen Geological Information Series update.

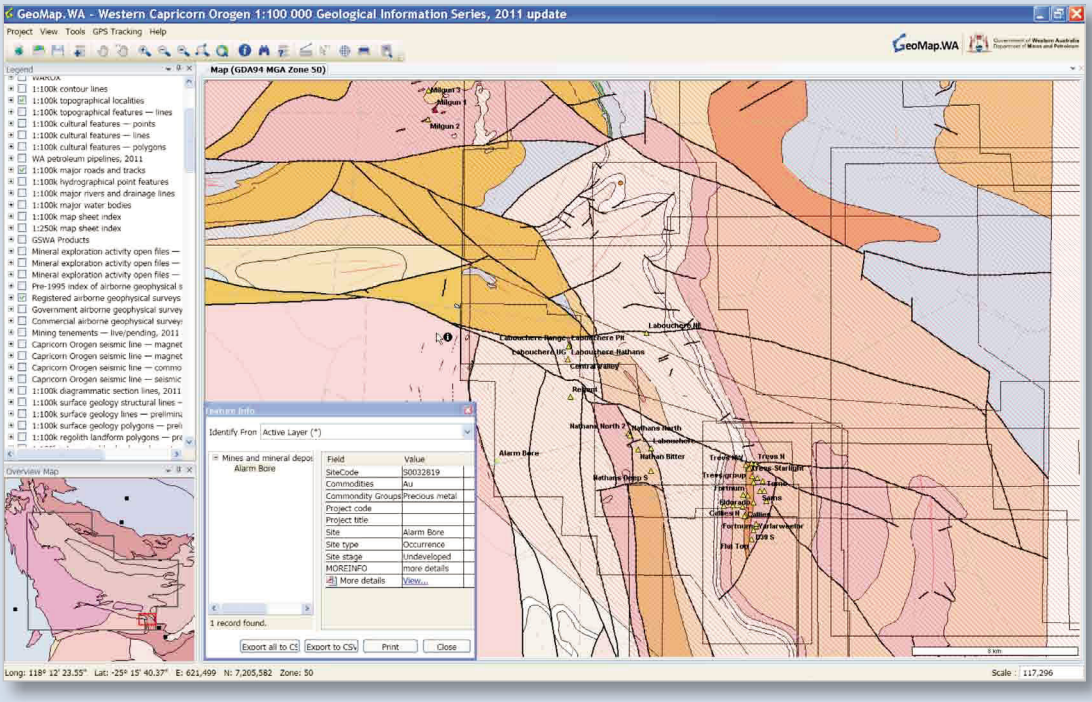


Figure 2: GeoMap.WA image showing 1:100 000 geology, mineral deposits, and aeromagnetic coverage for the Fortnum, Labouchere, Mount Egerton, Nathans, and Trevs mining centres.

Syntectonic deposition tracked through detrital zircon geochronology in the western Amadeus Basin

Detrital zircon geochronology is an important tool in basin analysis and regional mapping. It provides maximum depositional age constraints on otherwise poorly dated formations. It also provides information on sediment provenance. Knowledge of the sedimentary history can constrain the timing of deposition and regional correlations because provenance is commonly controlled by relatively short-lived tectonic events and associated uplift along or beyond the basin margin. The Amadeus Basin in central Australia is a good case in point. Previous detrital zircon dating in the better exposed and better age-constrained eastern Amadeus Basin in the Northern Territory (NT) reveals a story of changing provenance through time. Of particular note is a brief pulse of mineralogically immature sediment dominated by c. 1200 Ma zircons that spread across the basin during the latest Neoproterozoic to Early Cambrian. These rocks include the iconic sandstone and conglomerate outcrops at Uluru and Kata Tjuta, and more extensive deltaic sandstones further north. The depositional age, detrital zircon age spectra, and paleocurrent data link these rocks to the c. 570–530 Ma Petermann Orogeny that uplifted the Mesoproterozoic Musgrave Province to the south.

Peter Haines and Heidi-Jane Allen of GSWA's Basins and Energy group have been undertaking fieldwork in the more poorly exposed and little-known western portion of the Amadeus Basin in Western Australia. Most of this area has not been studied since reconnaissance mapping by the Bureau of Mineral Resources (BMR) in the early 1960s. The BMR regional correlations implied that syn-Petermann Orogeny deposits were not preserved west of the border. Interpretations from the new GSWA mapping paint a very different picture, with up to 6 km of syn-Petermann Orogeny clastic deposits preserved in the south (Carnegie Formation, Ellis Sandstone, Sir Frederick Conglomerate, and Maurice Formation), thinning towards more distal areas to the north (Angas Hills beds). Detrital zircon geochronology studies of this package are ongoing and will be followed by lutetium–hafnium isotope studies on selected samples. Initial results are very supportive of the new correlations, which were based initially on cross-border lithostratigraphic comparisons and stromatolite biostratigraphy of the pre-Petermann Orogeny succession. Most samples from the aforementioned clastic package display near-identical detrital zircon age spectra to those established by earlier studies of correlative deposits in the NT.

A further conclusion of the new cross-border correlations is that the Winnall beds of the southwestern NT Amadeus Basin were deposited during the early phase of the Petermann Orogeny (also supported by the NT detrital zircon data), not prior, as long thought. The unconformity at its base, now correlated with an unconformity at the base of the Carnegie Formation in Western Australia, was previously interpreted as evidence for a separate pre-Petermann Orogeny tectonic event ('Souths Range Movement'). This unconformity is now recognized to reflect the onset of the Petermann Orogeny.

For more information, contact
Peter Haines (peter.haines@dmp.wa.gov.au) or
Michael Wingate (michael.wingate@dmp.wa.gov.au).

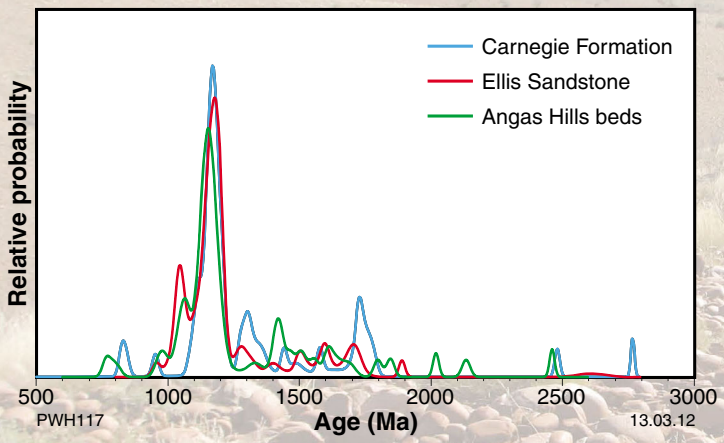


Figure 1. Probability density diagram for detrital zircon ages from sandstone samples of the Carnegie Formation, Ellis Sandstone, and Angas Hills beds, Western Australia

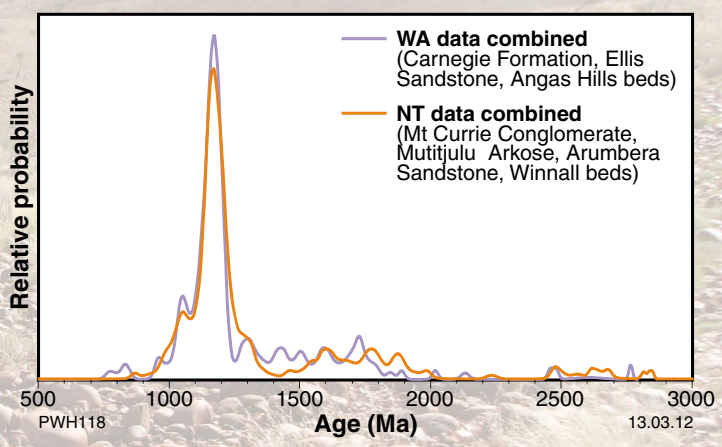


Figure 2. Probability density diagram comparing combined syn-Petermann Orogeny samples from Western Australia and the Northern Territory

GSWA involvement in the Kimberley Science and Conservation Strategy

The Kimberley Science and Conservation Strategy (KSCS) is a State Government initiative set up to improve understanding of the Kimberley region, which is renowned for its environment and cultural heritage. As part of this strategy, GSWA will undertake regional soil and rock sampling, and geophysical surveys that will provide the geological framework to complement land use and conservation programs in the Kimberley area.

The Kimberley has a long and complex geological history dating back at least 1910 m. y., with evidence that the formation of the Earth's crust underlying parts of the Kimberley Basin took place c. 2700 m. y. ago. Along the southern and eastern margins of the Kimberley Craton, the Lamboo Province forms a belt of Paleoproterozoic orogenic rocks. The Speewah and overlying Kimberley Basins formed in the latter stages, or shortly after, 1820 Ma orogenesis, and conceal most of the craton's basement. This younger succession comprises fluvial to shallow marine sedimentary and volcanic rocks deposited in the period 1835–1790 Ma, intruded by voluminous dolerite sills.

Gravity and magnetotelluric surveys undertaken as part of the KSCS will provide data on the nature and structure of the Kimberley and Speewah Basins and the underlying crust and mantle. The gravity data, described on the following page, are now publicly available. The new geophysical data will be combined with existing regional coverage to further the understanding of the geological evolution of the Kimberley, and its role in the assembly of the Australian continental plate.

local pyroclastic deposits. Sills of the 1790 Ma Hart Dolerite intrude the Kimberley and Speewah Basins and may represent deeper-level equivalents of the Carson Volcanics. A more detailed understanding of the facies architecture, timing of deposition and emplacement, and composition and isotopic character of this large igneous province will help constrain the nature of the mantle processes involved in the transition from convergent to extensional tectonic regimes in this region in the Paleoproterozoic.

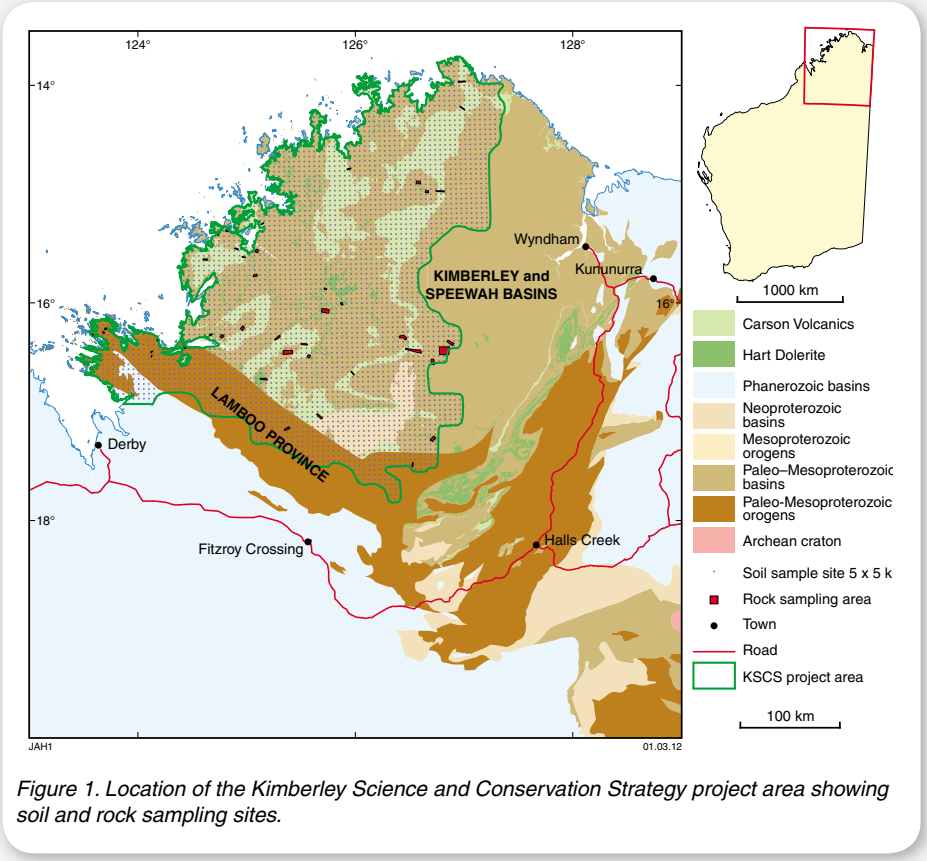


Figure 1. Location of the Kimberley Science and Conservation Strategy project area showing soil and rock sampling sites.

The soil sampling program (Fig. 1) will be conducted over two field seasons in 2012 and 2013. It will involve collection of approximately 3500 samples on a 5 × 5 km grid. Each site will be visited by helicopter and samples of between 5 and 7 kg collected using a power auger, from holes approximately 90 cm deep. Geochemical analyses of the soil samples will provide information on the likely composition and distribution of parent bedrock types, as well as complementing work by the Department of Environment and Conservation (DEC) to better understand distribution of flora and fauna. Soil chemistry will also provide important information for the management of pastoral activities, as well as a better understanding of groundwater chemistry.

Rock sampling will focus on the Carson Volcanics and Hart Dolerite, which comprise a poorly understood large igneous province with an estimated total volume of 250 000 km^3 that formed during deposition of the Kimberley Basin. The basaltic Carson Volcanics include flows, pillow basalts, and

About 400 samples of the Carson Volcanics, Hart Dolerite and other key lithologies in the Kimberley and Speewah Basins will be collected from around 40 areas across a large region of the west Kimberley. Sites will be selected on the basis of field mapping and logging of key sections through the stratigraphy, and samples will be used in petrography, geochemistry, isotope geology, and geochronology studies. These data will be used to determine regional variations in the composition of both units, to assess any genetic relationships, assess likely crust–mantle processes important in their formation, and to allow integration with soil geochemistry. Key samples will also be used for Sm–Nd whole rock analysis and U–Pb zircon or baddelyite geochronology to determine the timing of deposition and emplacement, the likely age and nature of their sources, and possible relationships between the units.

For more information, contact
Julie Hollis (julie.hollis@dmp.wa.gov.au) or
Paul Morris (paul.morris@dmp.wa.gov.au).

Gravity traverse completed for Kimberley Science and Conservation Strategy

Regional gravity data in the Kimberley, collected mainly from continental-scale surveys undertaken by the Commonwealth as long as 50 years ago at a measurement spacing of 11 km, are sufficient only for very broad inferences of geology and structure. GSWA, as part of the Kimberley Science and Conservation Strategy (KSCS), has released a 400 m spaced gravity survey <www.dmp.wa.gov.au/geophysics> along 1100 km of public roads in the Kimberley (Fig. 1). The 6975 station survey was carried out by Daishsat Geodetic Surveyors between August and September 2011.

Gravity surveys provide information about changes in subsurface density by measuring the variation in the gravitational field of the earth. Gravity surveys at different scales are widely used to make inferences about the shape and structure of the earth; vertical and horizontal variations of rock type, structure and mineral concentrations; variations in the depth to bedrock; and to detect natural and man-made voids.

The new data can be combined with existing regional data to provide a 2.5D interpretation of the Paleoproterozoic Kimberley Basin, and of the rocks underlying it and at its margins. The data will be used in planned geological mapping and geochemical sampling programs in 2012 and 2013 to assist in determining the controlling structures and character of basement for the Kimberley Basin. It will be used to integrate surface geological information with subsurface data to test the validity of geological interpretations at depth. These studies are providing baseline geochemical and other geoscientific information for science and conservation studies by other agencies and groups, and providing an understanding of the geological framework that underpins the development of the iconic and unique landscapes of the Kimberley.

For more information, contact
Ian Tyler, (ian.tyler@dmp.wa.gov.au),
John Brett (john.brett@dmp.wa.gov.au),
or Julie Hollis (Julie.hollis@dmp.wa.gov.au).

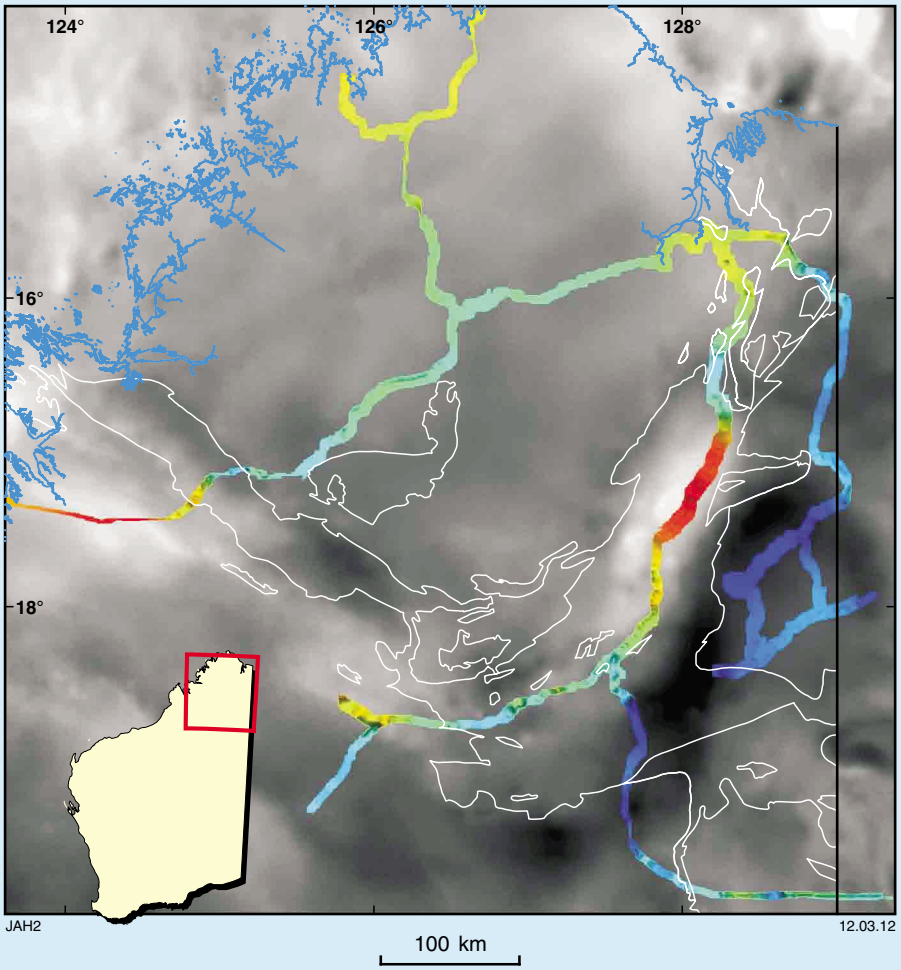


Figure 1. 400 m-spaced gravity traverse data for the Kimberley, overlain on regional Bouguer anomaly image

Western Australia regional geophysical surveys 2012: March update

ROYALTIES FOR REGIONS
EXPLORATION INCENTIVE SCHEME

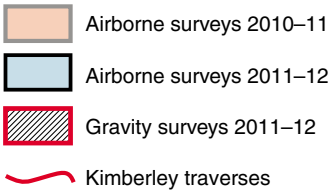
Data access

Download final data releases from the Geoscience Australia Data Delivery System at <www.ga.gov.au/gadds>.

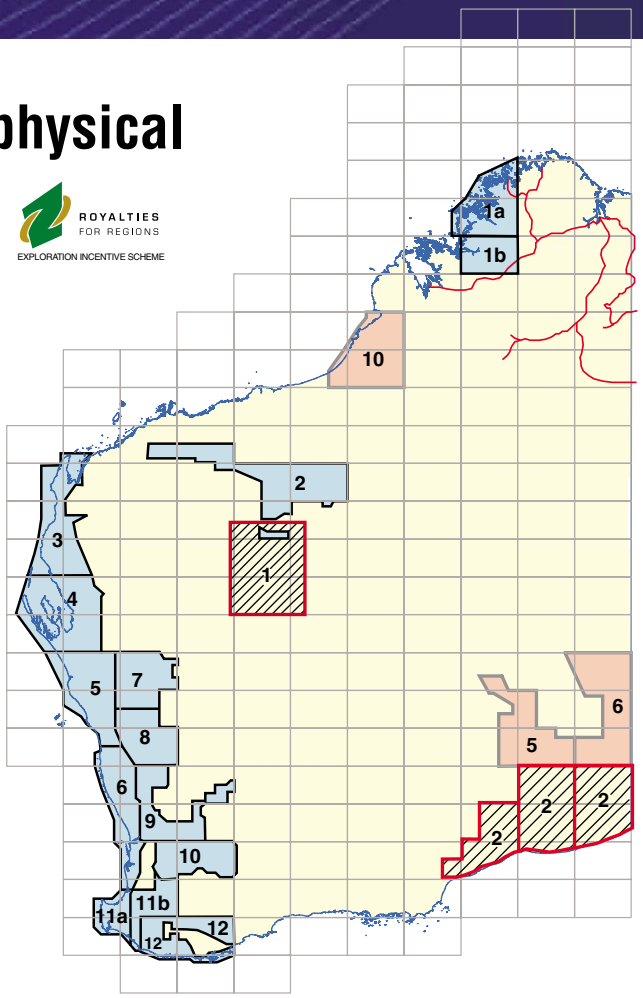
Download preliminary and final grids and images from the GSWA website at <www.dmp.wa.gov.au/geophysics>.

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

Subscribe to the GSWA mailing list to keep informed of preliminary and final data release dates.



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



Airborne magnetic and radiometric surveys

ID	Area/Name	Line spacing and direction	Line-km	Acquisition Start	Acquisition End	Current Status	Preliminary Release[1]	Final Release
	2010–11 Program							
5	Jubilee 2010	200 m; N/S	180 000	Jun-10	Jun-11	Processing	22 Dec 2011	Mar-12*
6	Waigen–Mason 2010	400 m; N/S	113 000	Jun-10	Jan-11	Processing	22 Dec 2011	Feb-12[1]
10	Lagrange–Munro 2010	400 m; N/S	103 000	Sep-10	Jun-11	Release	—	15 Dec 11
	2011–12 Program							
1a	Prince Regent – Montague Sound 2011[2]	800m; N/S	42 000	Jun-11	Dec-11	Processing	—	Apr-12*
1b	Charnley 2011	200m; N/S	102 000	Jun-11	Dec-11	Processing	9 Feb 12	Apr-12*
2	South Pilbara 2012	400 m; N/S	134 000	Apr-12*	May-12*	Contract	—	Jul-12*
3	Carnarvon Basin North 2011	400 m; E/W	106 000	Jul-11	Oct-11	Release	—	16 Feb 12
4	Carnarvon Basin South 2012	400 m; E/W	123 000	Mar-12*	May-12*	Contract	—	Jul-12*
5	Perth Basin North 2011	400 m; E/W	96 000	Jun-11	Jan-12*	Processing	22 Feb 12	Apr-12*
6	Perth Basin South 2011	400 m; E/W	84 000	Mar-11	Mar-12*	Reflights	22 Feb 12	May-12*
7	Murgoo 2011	200 m; E/W	134 000	Mar-11	Nov-11	Processing	9 Feb 12	May-12*
8	Perenjori 2011	200 m; E/W	121 000	Oct-11	Jan-12*	Processing	9 Feb 12	Mar-12*
9	Moora 2011	200 m; E/W	136 000	Jun-11	Jan-12*	Processing	22 Feb 12	Apr-12*
10	Corrigin 2011	200 m; E/W	114 000	Jan-12*	Mar-12*	Survey 75%	—	Jun-12*
11a	Cape Leeuwin 2011	400 m; E/W	52 000	Mar-11	Jan-12	Processing	22 Feb 12	Apr-12*
11b	Collie 2011	200 m; E/W	53 000	Mar-11	Jan-12	Processing	22 Feb 12	Apr-12*
12	Mt Barker[3]	200 m; N/S	123 000	Apr-11	May-12*	Survey[3] 22%	—	Jul-12*

Ground gravity surveys

ID	Area/Name	Line spacing and direction	Stations	Acquisition Start	Acquisition End	Current Status	Preliminary Release	Final Release
1	Peak Hill–Collier 2011	2.5 km grid	8 889	Aug-11	Dec-11	Release	—	22 Feb 12
2	Eucla Blocks 2011	2.5 km grid	14 700	Oct-11	Feb-12	Processing	22-Feb-12	Apr-12*
	Kimberley Road Traverses 2011	400 m	6 975	Aug-11	Sep-11	Release	—	22 Feb 12

Information current at: 1 Mar 2012

Notes
* Asterisk indicates an estimated date. Subscribe to the newsletter for release alerts.
1. Preliminary releases are made on a case-by-case basis and consist of ecw images and ERMapper grids of partially processed and unchecked data.
2. Prince Regent – Montague Sound 2011 flown at 800 m offset by 400 m from existing 800 m survey (P614). Data from both surveys will be integrated to produce a single 400 m dataset.
3. Mt Barker survey was suspended in May 2011 and resumed in Jan 2012.

Product releases

Any prices include GST

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ISSN 1834-2272 ISBN (PDF) 978-1-74168-434-6

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by P Haines

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Come along to our free interactive presentation which includes navigating the DMP website, searching for publications, finding mineral deposits using MINEDEX, finding digital datasets using the Data and Software Centre, searching open-file mineral exploration reports using WAMEX, and bringing it all together with the interactive map viewer (GeoVIEW.WA). GeoMap.WA, a new GIS viewer for Windows, will also be demonstrated.

The morning session will be a high-level fast demonstration of the use of all the programs. In the afternoon session, participants will be able to practise using the programs with their own examples and get some one-on-one advice about individual issues. You can attend one or both sessions.

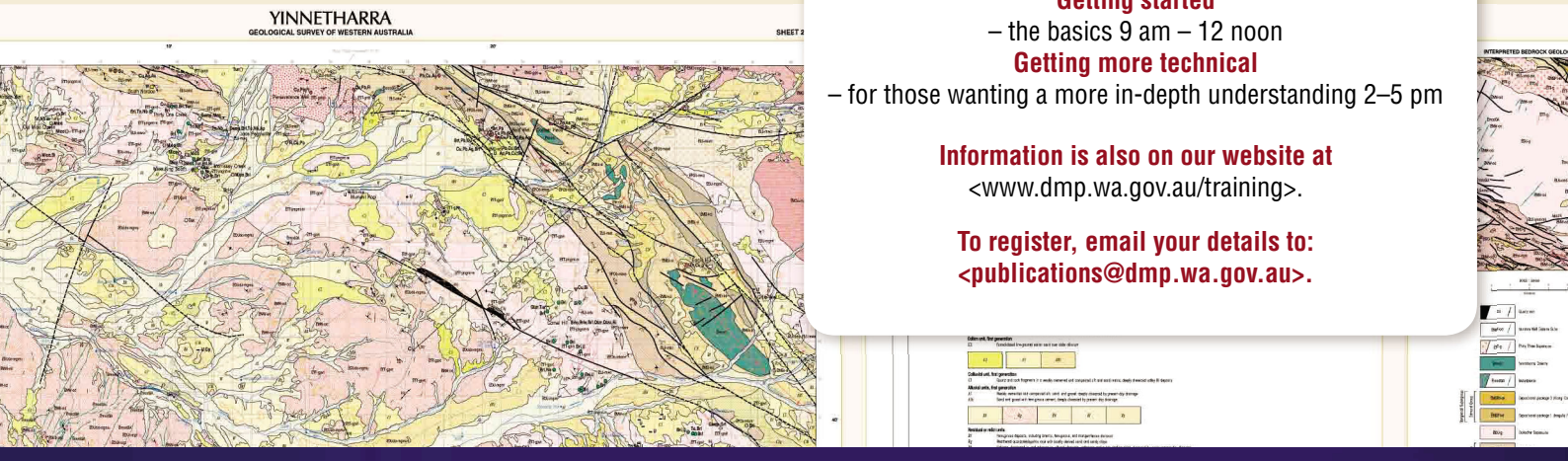
Wednesday 27 June

WA School of Mines, Mine Design Lab, Room 131,
Building 703, Odwyn Jones Building,
corner Cassidy and MacDonald Streets, central Kalgoorlie

Getting started
– the basics 9 am – 12 noon
Getting more technical
– for those wanting a more in-depth understanding 2–5 pm

Information is also on our website at
<www.dmp.wa.gov.au/training>.

To register, email your details to:
<publications@dmp.wa.gov.au>.



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