GA: update on geophysical survey progress from the Geological Surveys of Western Australia, South Australia, Northern Territory, Queensland, New South Wales, Victoria and Tasmania (information current on 15 March 2017)

Further information on these surveys is available from Murray Richardson at GA via email at Murray.Richardson@ga.gov.au or telephone on (02) 6249 9229.

Table 1. Airborne magnetic and radiometric surveys

Survey name	Client	Project management	Contractor	Start flying	Line km	Spacing AGL Dir	Area (km²)	End flying	Final data to GA	Locality diagram (*Preview*)	GADDS release
Murloocoppie	GSSA	GA	MAGSPEC Airborne Surveys	11 Feb 2017	109 560	200 m 60 m EW	19 540	TBA	Contract executed by GA 12 Jan 2017. The survey is 43% complete to 12 Mar 2017	183: Aug 2016 p. 34	TBA
Warrina	GSSA	GA	MAGSPEC Airborne Surveys	11 Feb 2017	135 628	200 m 60 m EW	24 140	TBA	Contract executed by GA 12 Jan 2017. The survey is 39% complete to 12 Mar 2017	183: Aug 2016 p. 34	TBA
Andamooka	GSSA	GA	Sander Geophysics	23 Feb 2017	81 396	200 m 60 m EW	14 560	TBA	Contract executed by GA 17 Jan 2017. The survey is 21% complete to 12 Mar 2017	183: Aug 2016 p. 34	TBA
Barton	GSSA	GA	Thomson Aviation	22 Jan 2017	111 758	200 m 60 m EW	20 560	TBA	Contract executed by GA 12 Jan 2017. The survey is 43% complete to 13 Mar 2017.	183: Aug 2016 p. 34	TBA
Fowler	GSSA	GA	Thomson Aviation	18 Feb 2017	95 009	200 m 60 m EW	17 360	TBA	Contract executed by GA 12 January 2017. The survey is 22.5% complete to 13 March 2017.	183: Aug 2016 p. 34	TBA
Torrens	GSSA	GA	Sander Geophysics	4 Mar 2017	79 990	200 m 60 m EW	14 800	TBA	Contract executed by GA 17 Jan 2017. The survey is 11% complete to 12 Mar 2017.	183: Aug 2016 p. 34	TBA
Coonabarabran	GSNSW	GA	UTS Geophysics	Estimated by mid-Apr 2017	50 827	250 m 60 m EW	11 000	TBA	TBA	184: Oct 2016 p. 23	The Contract was executed by GA on 16 Feb 2017. The survey is anticipated to start on 11 Apr 2017
Tasmanian Tiers	MRT	GA	TBA	TBA	Up to an estimated 66 000	200 m 60 m NS or EW	11 000	TBA	TBA	TBA	National Collaborative Framework Agreement between GA and MRT was expected to be executed in Apr 2017. The survey has been deferred to occur between Oct 2017 and Mar 2018
Isa Region	GSQ	GA	TBA	TBA	Estimated 120 000	100 m 50 m EW	11 000	TBA	TBA	TBA	National Collaborative Framework Agreement between GA and GSQ executed on 13 Dec 2016. A Quotation Request was being drafted by GA for release prior to 31 Mar 2017

TBA, to be advised.

Table 2. Gravity surveys

Survey name	Client	Project management	Contractor	Start survey	No. of stations	Station spacing (km)	Area (km²)	End survey	Final data to GA	Locality diagram (*Preview*)	GADDS release
Stavely	GSV	GA	Atlas Geophysics	3 Dec 2016	Approx. 3465	200 m station interval along 14 traverses	TBA	5 Jan 2017	23 Feb 2017	The proposed survey covers parts of the Horsham, Hamilton, Ballarat and Colac Standard 1:250 000 map sheets. The survey is to collect gravity stations spaced 200 m apart on 14 separate road traverses.	TBA
East Kimberley Airborne Gravity Survey	GSWA	GA	Sander Geophysics	8 Oct 2016	38 000 line km	2500 m line spacing	82 690	3 Dec 2016	14 Jan 2017	184: Oct 2016 p. 24	23 Feb 2017
Coompana – PACE area	GSSA	GA	Atlas Geophysics	30 Jan 2017	13 801	Regular grid of 2, 1 and 0.5 km	100 000	4 Mar 2017	TBA	183: Aug 2016 p. 34	TBA
Tanami-Kimberley	GSWA	GA	TBA	TBA	Up to 50 000	2500 m line spacing	110 000	TBA	TBA	This issue	Contract being drafted by GA with the preferred supplier
Kidson Sub-basin	GSWA	GA	TBA	TBA	Up to 70 000	2500 m line spacing	155 000	TBA	TBA	TBA	The proposed survey area covers the Anketell, Joanna Spring, Dummer, Paterson Range, Sahara, Percival, Helena, Rudall, Tabletop, Ural, Wilson, Runton, Morris and Ryan standard 1:250 k map sheet areas
South Nicholson	GA	GA	TBA	TBA	TBA	TBA	TBA	TBA	TBA	The proposed survey area covers parts of the Mount Drummond, Ranken and Avon Downs Standard 1:250 k map sheet areas	GA and NTGS are in discussion to refine the survey extents

TBA, to be advised.

Table 3. AEM surveys

Survey name	Client	Project management	Contractor	Start flying	Line km	Spacing AGL Dir	Area (km²)	End flying	Final data to GA	Locality diagram (*Preview*)	GADDS release
Musgraves – PACE Area	GSSA	GA	CGG Aviation	18 Aug 2016	8489	2 km; E–W lines	16 371	The survey completed flying on 17 Sep 2016	Expected on 24 Nov 2016	179: Dec 2015 p. 23	Preliminary final data were supplied to GA on 30 Dec 2017
Musgraves – CSIRO Area	GSSA	GA	SkyTEM Australia	15 Sep 2016	7182	2 km; E–W lines	14 320	The survey completed flying on 13 Oct 2016	Expected early Dec 2016	179: Dec 2015 p. 23	Preliminary final data were supplied to GA in Jan 2017
Isa Region	GSQ	GA	Geotech Airborne	8 Aug 2016	15 692	2 km; E–W	33 200	The survey completed flying on 4 Nov 2016	TBA	182: Jun 2016 p. 23	Preliminary final data were supplied to GA on 12 Jan 2017
AusAEM (Year 1)	GA	GA	TBA	TBA	<50 000	20 km with areas of infill	TBA	TBA	TBA	186: Feb 2017 p. 18	The responses to the EOI are under review by GA
Ord-Keep River	GA	GA	TBA	Apr 2017	6146	Variable	TBA	TBA	TBA	TBA	The contract was executed by GA on 25 November

TBA, to be advised.

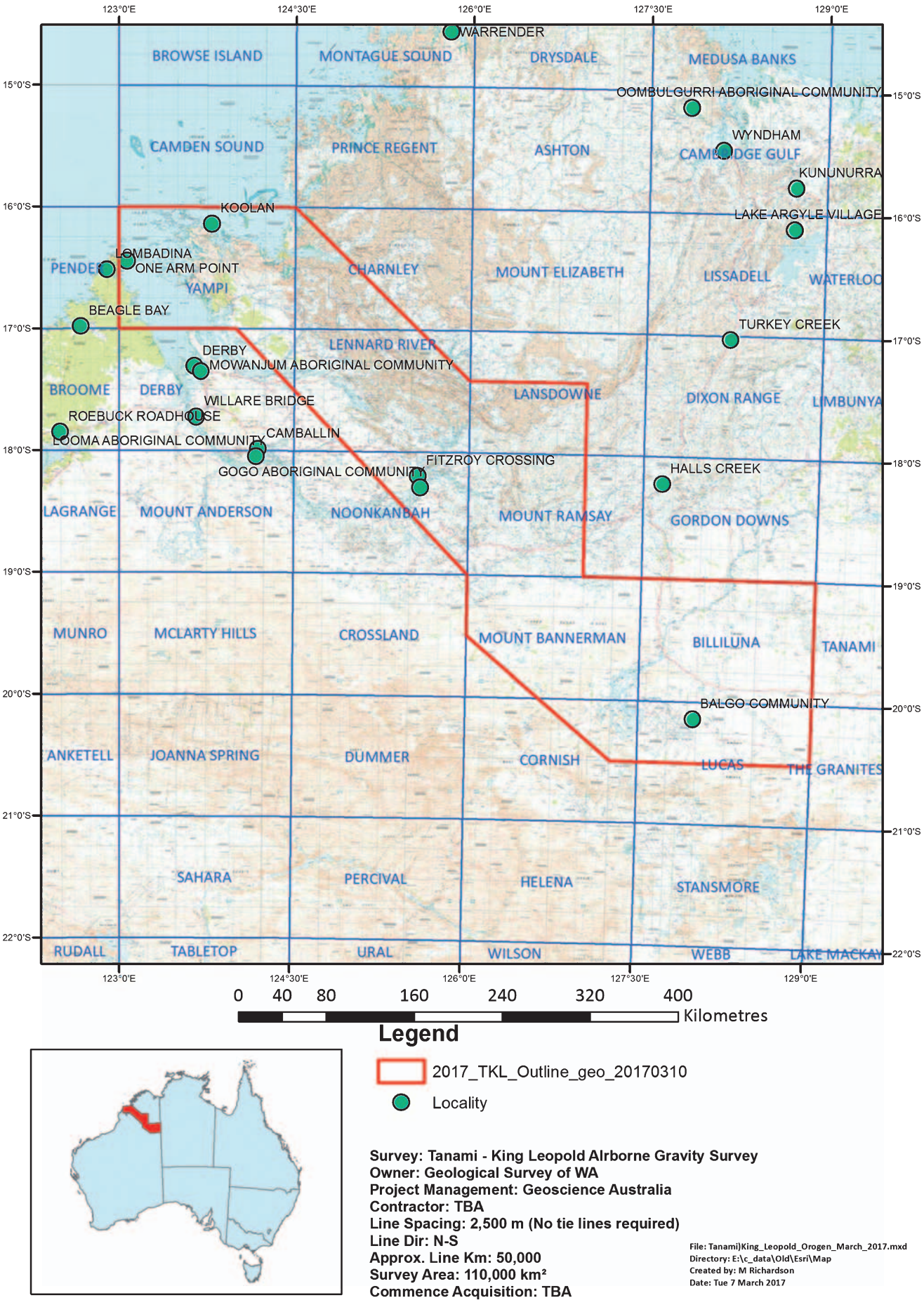

Figure 1. *Location of the Tanami – King Leopold Orogen airborne gravity survey.*

Geological Survey of New South Wales: Coonabarabran airborne magnetic and radiometric survey

The Geological Survey of New South Wales has a large repository of geophysical data, much of which is available to the public. The data originates from private and government surveys. The NSW government has been acquiring regional geophysical surveys as funding becomes available. We now have 85% of the state covered with airborne magnetic and radioelement data with a line spacing of 400 m or closer (Figure 1).

As part of ongoing airborne geophysical acquisition we are filling a gap in our magnetic and radioelement coverage around Coonabarabran. The Coonabarabran airborne survey is being managed by the Geological Survey of New South Wales (NSW Department of Industry) in conjunction with Geoscience Australia, the Commonwealth Government geological agency.

The survey is due to start at the end of March 2017. The aircraft will be flying about 60 m (200 feet) above the ground. It will fly in a grid pattern along east–west lines spaced 250 m apart with ties lines 2500 m apart. The survey area is shown in Figure 2. Data from the survey are expected to be released in the second half of 2017.

For further information about the survey please contact:

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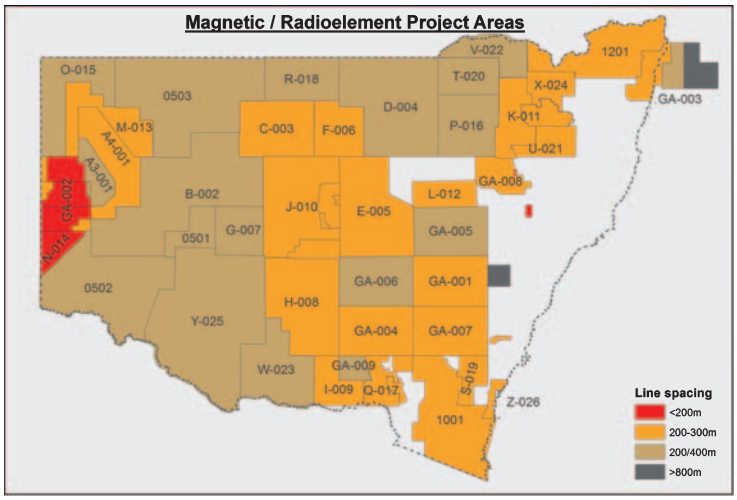

Figure 1. *Government airborne magnetic and radiometric coverage of NSW. White areas over the eastern seaboard are covered by 1600 m-spaced BMR surveys.*

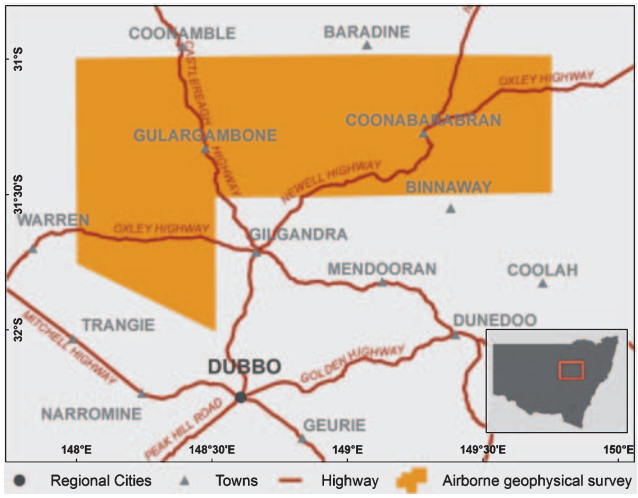

Figure 2. *Boundary for the Coonabarabran airborne magnetic and radiometric survey.*

Geological Survey of South Australia: SARIG update

A new version of SARIG has gone live. This version of SARIG displays a modern platform with a focus on improving the user experience when accessing online information (Figure 1).

Key points:

- The SARIG Url has changed from sarig.pir.sa.gov.au/Map_to map.sarig.sa.gov.au_– please change your bookmark
- The expansion of the SARIG acronym has also changed from South Australian Resources Information Geoserver to South Australian Resources Information Gateway
- The old SARIG has now retired and is no longer accessible

Some new features to check out:

- Modern interface including new menus layout responsive design (touch screen)
- Introduction of map layers themes and search and filter in the new map layer catalogue
- Raster datasets utilising Web Map Tile Services (WMTS) for display, each raster has a custom transparency slider
- Mineral and Petroleum Industry Indicators dashboard – view and download resources industry statistics
- Commodity Dashboard – interactive production and resource graphs from a state level down to project level, with corresponding maps to visualise commodities in South Australia
- Expanded spatial search and links to related data downloads
- Improved save map capabilities and map share options
- New release section, new coordinate tools, additional base maps and location service…and more…

Tips: SARIG logo = Home button, and we recommend using Chrome internet browser

Geophysical information is still available however it is accessed differently. From the main page, click on Spatial Search, select your datasource (Geophysical data) from the dropdown menu, and click on

Draw Area. Draw a rectangle around your area of interest and available surveys will be listed. Click on the Advanced Search button to select specific geophysical data to download, and then follow the prompts.

Enjoy!

Christie Gerrard and Philip Heath
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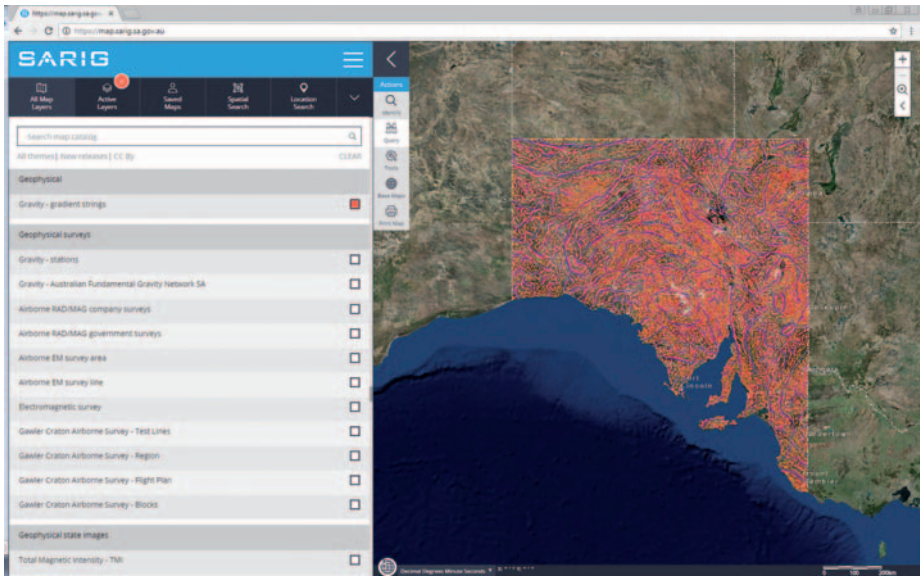

Figure 1. *The New SARIG – shown here displaying gravity gradient strings over South Australia – has been redeveloped with a modern platform.*

Geological Survey of Victoria: Geoscience investigations for gas

The Victorian Government has allocated $10 million in new funding to kick-start geoscience investigations into onshore conventional and offshore gas.

The investigations include a programme of scientific, technical and environmental studies on the risks, benefits and impacts of onshore conventional gas. The Victorian Government's Lead Scientist will oversee this work in consultation with a stakeholder advisory panel comprising farmers, industry, local government and community members with input from independent peer reviewers on the technical components.

Research will also be undertaken to examine prospectivity for near shore gas.

The Geological Survey of Victoria will build a state-of-the-art 3D geological model across the Otway Basin.

The proposed geoscience programme includes:

- Rock characterisation studies – analysis of geoscientific data and rock samples will be used to refine the geological model.
- Environmental studies – gathering new data on groundwater quantity, quality and soil conditions.
- Modelling and mapping – the potential for future gas resources will be assessed using the 3D geological model and rock property data, coupled with data from past conventional gas production in the Otway Basin.
- Geophysical surveys – low-impact geophysical surveying techniques to indicate potential new near shore gas resources.
- Gas prospectivity/resource estimates – all of the above components will be used to assess gas prospectivity and to estimate resource potential for the Otway Basin.

The results of the Programme can be used to inform any future consideration of the moratorium policy by the Victorian Government.

For more information please contact:
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Or visit http://onshoregas.vic.gov.au

Ralf Schroers (GSV) sampling trace groundwater chemistry in western Victoria.

Geological Survey of Western Australia: Status of regional aerogravity surveys in Western Australia

Data from the 38 000 line-km East Kimberley 2016 regional aerogravity survey were released on 23 February 2017. The survey area covers some 84 000 km^2 and encompasses much of the Halls Creek Orogen and parts of younger basins to the north and east (Figure 1).

The survey was funded by the Government of Western Australia as part of the Government's Exploration Incentive Scheme. It was the first airborne gravity survey to be contracted by the Geological Survey of Western Australia (GSWA) and Geoscience Australia (GA) as part of the Western Australia Reconnaissance Gravity Project. The data were acquired by Sander Geophysics Ltd over a period of eight weeks between 8 October and 4 December 2016.

Survey lines were flown east–west at 2.5 km line spacing (25 km tie-lines) at a nominal height of 160 m above ground level. With an along-line spatial wavelength resolution of 5 km, the survey configuration provides equivalent 2D spatial resolution with the 2.5 km grid of ground data that have been acquired from helicopter-assisted surveys in the southern and western parts of Western Australia since 2009. The precision (repeatability) of the Bouguer gravity data after filtering with a 100 second low-pass filter is 0.54 mGal – estimated from 18 separate passes along a 50 km test line.

A data package with located data and grids, and including georeferenced images and the operations report, is available from geodownloads.dmp.wa.gov.au/downloads/geophysics/71156.zip. Located data and grids can also be downloaded from the Australian Geophysical Archive Data Delivery System at www.ga.gov.au/gadds.

The located dataset at 2 Hz (c. 25 m samples) includes unfiltered and uncorrected raw gravity – gravimeter acceleration minus aircraft acceleration – so that you can apply your own corrections and filters.

The new data have also been incorporated into the WA State gravity 400m-cell compilation grid that is available from www.dmp.wa.gov.au/geophysics. Figure 2 shows the added resolution of the new airborne data in 'before-and-after' images.

GSWA and GA are planning two new aerogravity surveys also at 2.5 km line spacing for implementation in the 2017 flying season between May and October with data release anticipated for early 2018. The proposed survey areas are shown in Figure 1:

- The Tanami – King Leopold project area of about 110 000 km² (50 000 line-km) in the southern Kimberley, contiguous with the East Kimberley survey area and extending from the Billiluna region near the border with the Northern Territory to Derby in the west.
- The Kidson project area of about 155 000 km² (70 000 line-km) over the Kidson sub-basin in the central Canning and covering parts of the Gibson and Great Sandy Deserts.

Programme plan updates are published at www.dmp.wa.gov.au/geophysics or contact geophysics@dmp.wa.gov.au for further information.

This info-item also appears in GSWA Fieldnotes Issue #82, April 2017.

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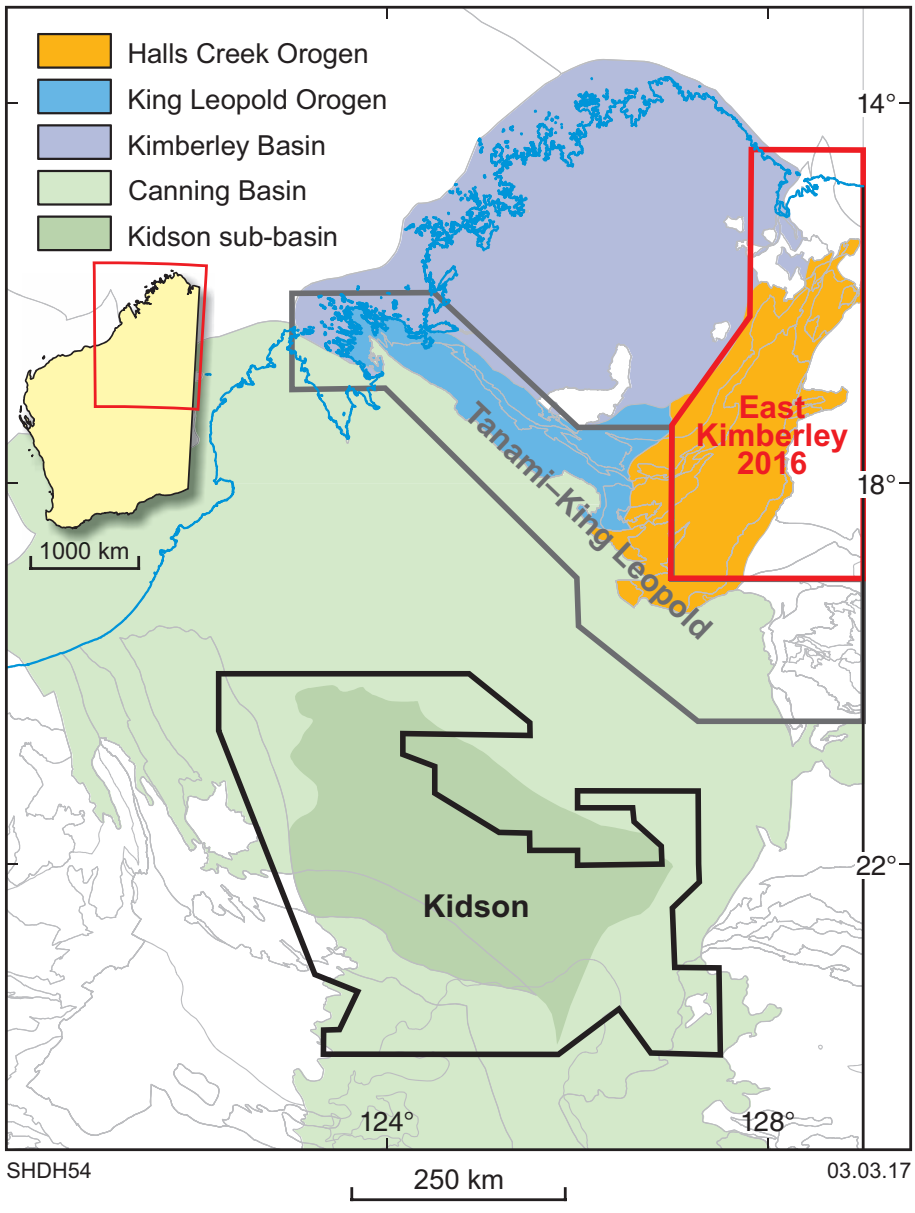

Figure 1. *Location of aerogravity surveys.*

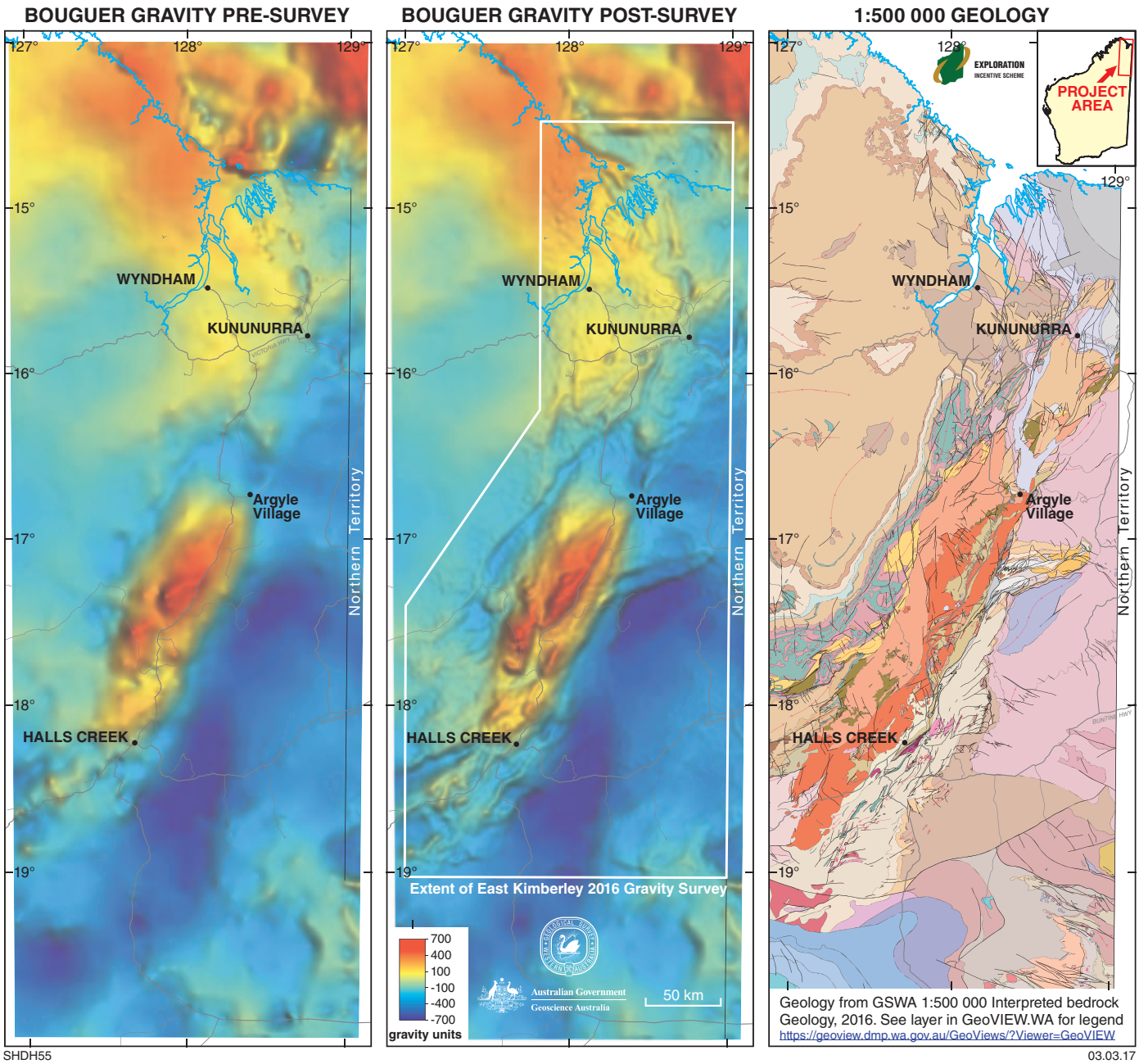

Figure 2. *East Kimberley aerogravity survey results.*