

Offshore Canning Basin magnetic survey data

Geoscience Australia has acquired new high-resolution magnetic data across the 2007 Offshore Acreage Release areas (W07-12 to 15) in the offshore Canning Basin (figure 1). The survey, completed under a contract awarded to Fugro Airborne Surveys Pty Ltd, also covers adjacent State Water Acreage Release Areas (T07-1 to 3) and ties to and in-fills existing onshore and offshore magnetic data. Bids for the Commonwealth offshore release areas close on 17 April 2008.

The survey data improves our understanding of the geology and petroleum potential of the release areas by identifying structural and basement features, including the delineation of associated Devonian reef trends and Permian intrusive structures. No exploration activities have been undertaken in the offshore area since the 1980s, but several petroleum systems (Permo-Carboniferous, Devonian and Ordovician) in the adjacent onshore portion of the basin are proven to be prospective. Live oil shows have been recorded at multiple levels within the Permian-Devonian section intersected in the offshore Perindi-1 well (1983).

The Survey data covers an area of approximately 31 770 square kilometres and consists of a total of 56 504 line kilometres, comprising 44 633 line kilometres of new data (flying height of 60 metres above sea level) and 11 871 line kilometres of pre-existing data. Geoscience Australia has levelled and merged the new and older datasets to achieve a 750 metre line spacing and 3000 metre tie-line spacing grid across the release areas.

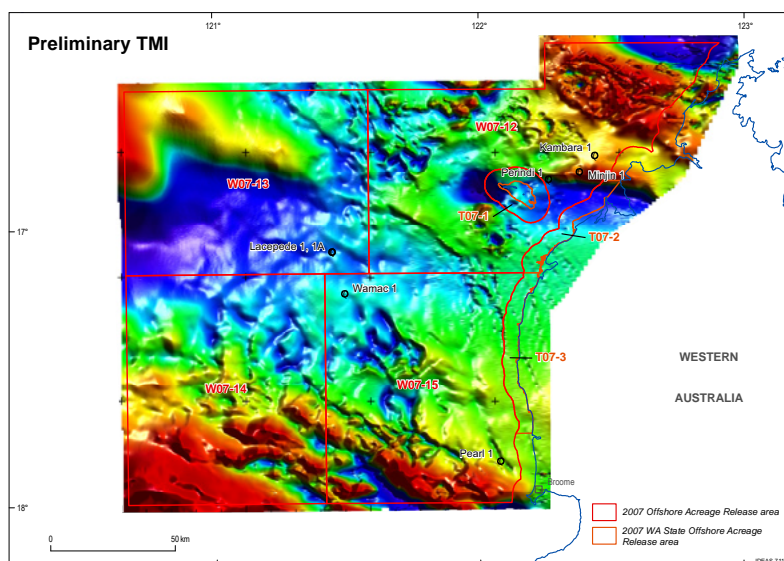


Figure 1. Preliminary total magnetic intensity map of newly acquired data in the Offshore Canning Basin, Western Australia, showing offshore acreage release areas.

Levelled and merged magnetic data were released on 30 October 2007 through Geoscience Australia's geophysical online data delivery system (GADDS).

Geoscience Australia has let a contract to Encom Technologies Pty Ltd to undertake an integrated geophysical and geological interpretation and hydrocarbon prospectivity assessment of the Offshore Canning Basin based on this newly available magnetic survey data. Results of this interpretation study will be released in February 2008.

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Related websites

Geophysical Archive Data Delivery System (GADDS)

www.geoscience.gov.au/gadds/

New geophysical datasets released

Datasets from five new geophysical surveys have been released since September 2007. They include four new airborne magnetic and radiometric surveys in the Onshore and Offshore Canning Basin as well as the Mount Isa region in Queensland. The new gravity data covers part of the Cooper Basin in southwest Queensland.

The Onshore Canning airborne survey and the Cooper Basin North gravity survey were conducted under Geoscience Australia's Onshore Energy Security Program (OESP). The Program provides

funding over five years for the application of the latest geophysical imaging and mapping technologies to attract investment in exploration for onshore petroleum, geothermal and energy mineral sources.

Table 1. Details of the gravity surveys.

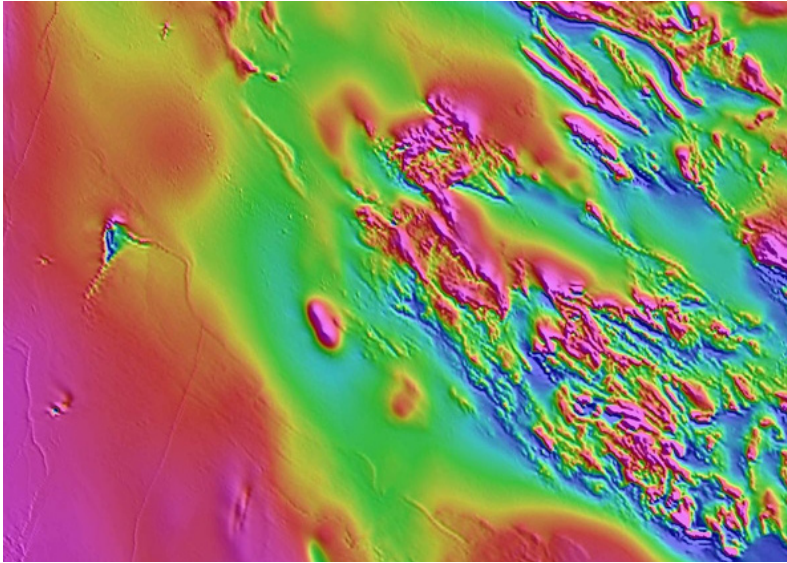
Survey	Survey Type	Date of Acquisition	1:250 000 Map Sheets	Station Spacing/ orientation	Stations	Contractor
Cooper Basin North (Qld)	Gravity	May – June 2007	Maneroo, Longreach, Connemara, Jundah, Blackall	4.0 x 4.0 km east – west	3 537	Daishsat Geodetic Surveyors

Table 2. Details of the airborne surveys.

Survey	Survey Type	Date	1:250 000 Map Sheets	Line Spacing/ terrain clearance/ orientation	Line km	Contractor
Onshore Canning Basin (WA)	Magnetic, Radiometric, Elevation	April – July 2007	Anketell, Joanna Spring, Dummer, Paterson Range, Sahara, Percival, Tabletop, Rudall	800 m 80 m north – south	102 656	Fugro Airborne Surveys
Offshore Canning Basin (WA)	Magnetic	June – August 2007	SE51-01, Pender, SE51-05, Broome	750 m 60 m north – south	46 733	Fugro Airborne Surveys
East Isa North (Qld)	Magnetic, Radiometric, Elevation	April – July 2007	Richmond, Hughenden, McKinlay, Manuka, Tangorin	400 m 80 m east – west	113 195	UTS Geophysics
East Isa South (Qld)	Magnetic, Radiometric, Elevation	Nov 2006 – July 2007	McKinlay, Manuka, Mackunda, Winton, Brighton Downs, Maneroo	400 m 80 m east – west	146 900	Fugro Airborne Surveys

The Offshore Canning Basin Survey data will assist explorers assess the resource potential of four areas in the Canning Basin which were included in the 2007 Offshore Acreage Release of offshore petroleum exploration areas. Bids for these areas are open until 17 April 2008.

For all surveys the data were acquired in surveys conducted in 2007 which were managed by Geoscience Australia. The East Isa North and East Isa South airborne magnetic and radiometric surveys were managed by Geoscience Australia on behalf of the Geological Survey of Queensland.



The data have been incorporated into the national geophysical databases. The point-located and gridded data for the five surveys can be obtained free online using the GADDS download facility.

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Related websites

Geological Survey of Queensland
www.nrw.qld.gov.au/science/geoscience/

Geoscience Australia's Onshore
Energy Security Program
[www.ga.gov.au/minerals/research/oesp/
index.jsp](http://www.ga.gov.au/minerals/research/oesp/index.jsp)

Geoscience Australia's Acreage
Release
www.ga.gov.au/oceans/ss_Acreage.jsp

New maps of the Great Barrier Reef seabed

A new physical dataset of the Great Barrier Reef (GBR) seabed, which can be used by marine managers and planners, researchers and students, to better understand the nature and layout of seabed habitats, both at a regional scale and within the planning zones, has recently been released by Geoscience Australia.

The report, *Inter-reefal seabed sediments and geomorphology of the Great Barrier Reef (GBR), a spatial analysis* includes quantitative sedimentary and geomorphic information as well as maps showing modern surface sediment patterns and geomorphic features within the GBR Marine Park (MP) and its planning zones. The sediment maps show local and regional trends in surface sediments, refining the existing facies model for the mixed carbonate-siliciclastic GBR margin. The report and maps are the first overview of the regional sedimentary characteristics of inter-reefal areas in the GBR since the pioneering research carried out in the 1970s and early 80s.

Many new sediment samples were collected as part of the CSIRO Seabed Biodiversity Project, which filled gaps in the existing sample

coverage. Together with samples from previous work stored in Geoscience Australia's National Marine Samples Database (MARS), this dataset has substantially improved the coverage of surface sediment data in inter-reefal areas. This regional dataset contains over 3 000 sediment samples, many of which are available from MARS.

The maps show the spatial distribution of surface sediments and geomorphic features within the marine park area. Twenty four separate maps

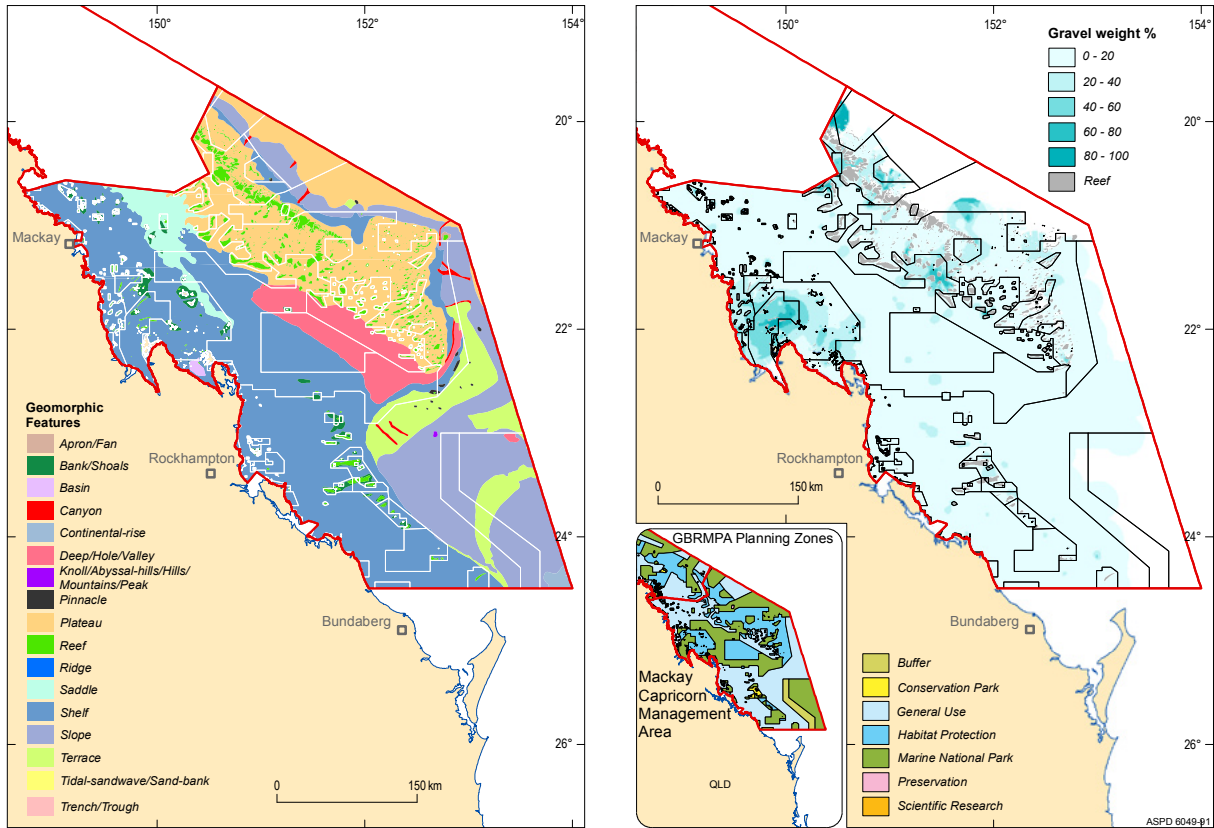


Figure 1. Maps of the seabed geomorphic features and percentage gravel sediments attribute in the Mackay-Capricorn Management Area.

show the spatial distribution, by percentage, of gravel, sand, mud, bulk carbonate, carbonate sand and carbonate mud attributes of surface sediments in the Management Areas that make up the Marine Park. Each of these sediment attributes are also represented in six poster size maps of the entire marine park. Another 24 maps show the relationship between geomorphology and surface sediments in characterising the seabed within each of the planning zone types (figure 1).

The new report and maps can be downloaded free in pdf format from the Geoscience Australia website.

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To order the Record

phone Geoscience Australia Sales Centre Freecall 1800 800 173
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email sales@ga.gov.au

Related websites/articles

GBR sedimentology (Geoscience Australia Record and maps)

www.ga.gov.au/image_cache/GA10248.pdf

Geomorphic Features (Geoscience Australia Record)

www.ga.gov.au/image_cache/GA7950.pdf

AusGeo News 84: Great Barrier Reef Marine Park sedimentology revealed

www.ga.gov.au/ausgeonews/ausgeonews200612/reef.jsp