

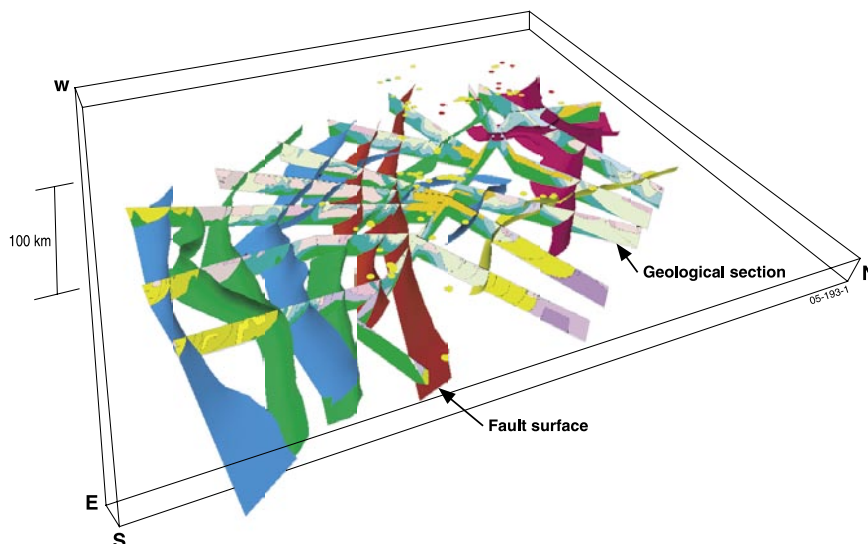
## Product News

# Latest edition Tanami 3D Geological Model

The third edition of the Tanami three-dimensional (3D) geological model has recently been released and is available through Geoscience Australia's website (<http://www.ga.gov.au/map/web3d/tanami/>). The Tanami region, one of the major Proterozoic gold provinces in the world, is situated along the border between the Northern Territory and Western Australia.

The 3D model, including 2D datasets (such as geophysical images, solid geology maps, geochronology data, mineral occurrence locations) is displayed in Virtual Reality Modelling Language (VRML), enabling 3D visualisation and manipulation via the web.

The purpose of the VRML model is to assist with visualisation of the three-dimensional distribution of the principal geological elements in the Tanami crust. There are two 3D models of the crust. One shows a series of fault surfaces, which are constructed from geological sections and tested by potential field modelling. The second shows gravity and magnetic inversion surfaces which are generated by inverting gridded gravity and magnetic data into a 3D distribution of density and magnetic susceptibilities (see *AusGeo News 78*).



▲ **Figure 1.** A 'snap shot' taken from the VRML of the Tanami 3D model, viewed from the southeast. The 2D geological sections are shown, with selected fault surfaces and locations of mineral occurrence. The faults are coloured according to the deformation event in which they were most active.

A major feature of this release is the depth to magnetic basement interpretation which consists of four layers. These layers are made up of point depths of magnetic sources within the Tanami basement and a 3D surface of the magnetic basement. This was generated by interpolating between the point depths and a 2D contour representation of the surface. The depth to basement surface simulates the location, in 3D space, and shows the highly prospective Tanami basement rock beneath younger cover sediments.

Other significant features of the third edition include the extension of the 3D modelled faults to the north and west and the inclusion of gravity and magnetic inversion surfaces. Also included is the additional depth to basement layers, the updated seismic acquisition proposal for the Tanami, a preliminary solid geology interpretation for the Western Australia part of the Tanami region and improved navigational features to the VRML web interface.

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#### Related websites/articles:

**Ausgeo News 78 article :** [www.ga.gov.au/ausgeonews/ausgeonews200506/3dinversion.jsp](http://www.ga.gov.au/ausgeonews/ausgeonews200506/3dinversion.jsp)

**Ausgeo News 77 article :** [www.ga.gov.au/ausgeonews/ausgeonews200509/tanami.jsp](http://www.ga.gov.au/ausgeonews/ausgeonews200509/tanami.jsp)

**New 3D model:** [www.ga.gov.au/map/web3d/tanami/](http://www.ga.gov.au/map/web3d/tanami/)

## Visual record of Australia from space

A unique visual record of satellite data, showing the progressive changes to landscape and vegetation in Australia over a 32 year period since 1972, is now available. This record which contains several epochs or time frames of satellite data can be obtained from Geoscience Australia ([www.ga.gov.au/acres/prod\\_ser/agosuite.jsp](http://www.ga.gov.au/acres/prod_ser/agosuite.jsp)) as well as distributors of Landsat satellite imagery.

The Australian Greenhouse Office (AGO) originally sourced Landsat satellite imagery data from Geoscience Australia for processing and use in their National Carbon Accounting System for monitoring land clearing and revegetation. Geoscience Australia's remote sensing unit (ACRES) is now distributing this processed data on behalf of the AGO.

The data can be viewed by a data viewer, image analysis software or geographic information system (GIS) software. Users will be able to analyse an area of the continent and compare satellite imagery for different years. The product suite will help land managers and businesses across Australia reduce

greenhouse gas emissions and assess factors such as: changes in tree cover and where tree planting has been most effective, which areas should be rehabilitated and the impact of drought or fire.

The data are available for each epoch in 1:1 million scale tiles or as individual continental mosaics of the Australian landmass.

**For more information visit [www.ga.gov.au/acres/prod\\_ser/agosuite.jsp](http://www.ga.gov.au/acres/prod_ser/agosuite.jsp)**

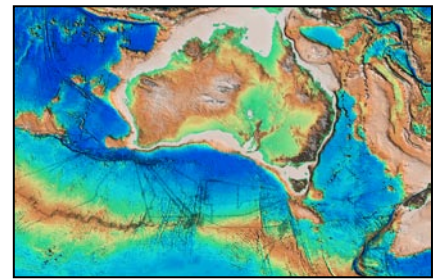
# High resolution view of *Australia's seabed*

Geoscience Australia has recently released a new national high-quality 250m bathymetric data grid of those areas of the Australian water column jurisdiction bounded by 92° E to 172° E and 8° S to 60° S. The data grid has been upgraded with more detailed survey values and national coverage at this resolution (250 metre horizontal cell size) has not been publicly available until now. It was developed by Geoscience Australia in collaboration with the National Oceans Office of the Department of the Environment and Heritage

The dataset consists of data that Geoscience Australia has been collecting routinely from seismic and sampling surveys around the Australian offshore margin since 1963. More recently Geoscience Australia has taken on the role of national custodian for all bathymetry data holdings within the Australian Maritime Jurisdiction. These holdings consist of ship-track bathymetry, swath bathymetry, digitised soundings from hydrographic charts, laser airborne depth sounder (LADS) data and other associated ship-track geophysical measurements. Approximately 10 per cent of the survey data were acquired by Geoscience Australia with the remainder provided by other scientific institutions, oil exploration companies, international data centres and academic organisations.

The latest grid covers an area of approximately 41 million square kilometres and comprises a synthesis of approximately 1.7 billion observed data points. These datasets are crucial to proper management and maintenance of Australia's marine jurisdiction and are used by a variety of government agencies and stakeholders, such as the fishing industry, to make informed decisions about its future.

The dataset comes in a variety of formats for all levels of users and includes a comprehensive report detailing the process used to develop the grid.



**For more information phone Mark Webster on +61 2 6249 9599 (email [mark.webster@ga.gov.au](mailto:mark.webster@ga.gov.au)). To order the DVDs phone Freecall 1800 800 173 (in Australia) or +61 2 6249 9966 (email [sales@ga.gov.au](mailto:sales@ga.gov.au))**

#### Related Information

[www.ga.gov.au/products/servlet/controller?event=GEOCAT\\_DETAILS&catno=63539](http://www.ga.gov.au/products/servlet/controller?event=GEOCAT_DETAILS&catno=63539)

# Major boost for emergency managers in south-east Queensland

Emergency services in south-east Queensland have received a major boost to their emergency management capabilities through the recent revision of 1:25 000 scale (25K) topographic maps for the region. Most of the original maps at this scale are more than 20 years old.

The topographic maps are now available to all Queensland Fire and Rescue Services field staff as hardcopy map books (Atlases) and accompanying DVDs. These are vital tools to help them respond to and manage emergency incidents during the current fire season and beyond.

South-east Queensland is one of Australia's fastest growing areas, and the urban and peri-urban sprawl means critical infrastructure and residents are now closer to high risk zones of bushfire, flooding and storm damage. Impediments such as out-of-date maps have a direct impact on emergency managers' ability to prepare and respond to emergency situations. The risks of using maps that are over 20 years old include possible loss of lives and important infrastructure.

This major mapping initiative would not have been possible without the close collaboration between Geoscience Australia and the Queensland Departments of Emergency Services (DESQ), and Natural Resources and Mines (NRM). Through its pilot program of mapping for emergency management, Geoscience Australia has contributed to the revision of three map books which cover three 1:100,000 scale map equivalent areas. They include the Beenleigh, Murwillumbah and Mt Lindesay areas. Geoscience Australia also played a significant role in the coordination and purchase of the satellite imagery required for the map revision.

Federal and state collaboration is paramount when updating maps for use by emergency services in critical areas such as south-east Queensland. Geoscience Australia's topographic mapping focus over the last 12 months has been developing these collaborative arrangements and pilot projects across Australia—in New South Wales, Victoria and Western Australia. In October this year a new map of the Karijini National Park (Western Australia) was released to the public, to assist emergency service workers manage and respond to emergencies such as flash flooding, and remedy the previously limited mapping of the gorges in the area.



Geoscience Australia's 25K pilot mapping program, including its contribution to the south-east Queensland Atlases, has been a significant catalyst for change in the way federal and state mapping agencies are now approaching their respective mapping programs. There is better and more collaborative decision-making in the areas identified for revision, and the aim is to capture data at the most appropriate scale so it can also be used in smaller scale mapping. More coordinated purchasing of high-cost revision sources, such as satellite imagery, will reduce overall costs to an individual agencies.

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