

## Outstanding contribution to petroleum exploration recognised

The Australian Petroleum Production and Exploration Association (APPEA) has recognised the sustained, high-level contributions to the evaluation of Australia's offshore petroleum potential by Dr Marita Bradshaw from Geoscience Australia, by awarding her the prestigious Lewis G. Weeks Gold Medal at the recent APPEA Annual Conference.

The medal commemorates the work of Dr Lewis G Weeks, the legendary geologist who played a central role in discovering the Bass Strait oil province. The medal is awarded annually to someone who has 'made an outstanding contribution to the art, science and practice of petroleum exploration which in turn has materially encouraged or stimulated the climate for exploring for and producing oil and gas in Australia.'

'Throughout her career, Dr Bradshaw has worked tirelessly to understand the petroleum potential of Australia and to convey that understanding to petroleum exploration companies around the world' observed Geoscience Australia's CEO, Dr Neil Williams. He also pointed out how Dr Bradshaw's enthusiasm and commitment have helped promote Australia's petroleum potential to a large national and international audience, and have especially helped in the search for new petroleum provinces in the offshore areas of Australia.

'With 25 years of government and petroleum experience, she has helped formulate strategies that have cemented Geoscience Australia



Figure 1. Dr Marita Bradshaw.

as a world-class geoscience organisation whilst for the petroleum industry, she has helped provide relevant, quality data and analysis in a timely manner, especially for the annual acreage releases. Dr Bradshaw is a shining example of how industry and government can work together for a superior result, and for the benefit of Australia' Dr Williams said.

## New seabed sediment map fills marine knowledge gap

Geoscience Australia in conjunction with the former Department of Environment and Heritage (now Department of Environment and Water Resources: DEWR) has completed a detailed spatial analysis of seabed geomorphology and sedimentology of the Southwest (SW) marine region. These results provide quantitative information

on the geomorphology and sedimentology of the seabed for more than 1000 new and 100 existing samples and fill the largest gap in our knowledge of Australia's marine jurisdiction.

Samples were procured from Geoscience Australia's existing marine sediment repository and from 10 external agencies located in Australia, North America and Europe. Many of the samples used in this study, previously unavailable, are now archived at Geoscience Australia where they can be accessed for future study.

This study represents the most up-to-date and

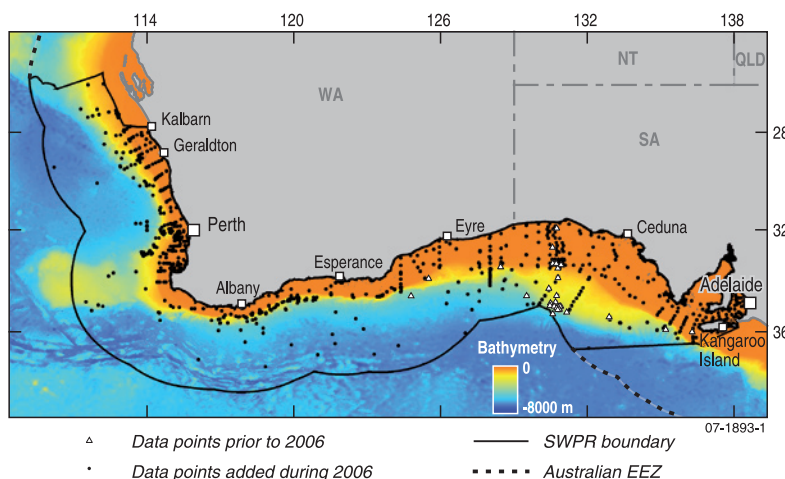


Figure 1. Sample localities, spatial analysis of sedimentology and geomorphology of the Southwest marine region.

**Table 1.** Dominant sediment characteristics for geomorphic features in the SW marine region.

Geomorphic Feature	Gravel (wt %)	Sand (wt %)	Mud (wt %)	Carbonate (wt %)
Bank/Shoal	0-45	40-100	<5	>60
Deep/Hole/Valley	0-35	>65	<5	>80
Canyon	0	5-45	>75	15-95
Plateau	0	15-65	35-90	85-92
Terrace	<5	10-97	0-90	>75
Tidal sandwave/sandbank	0-40	25-95	2-75	45-100

largest quantitative regional synthesis of the geomorphology and sedimentology ever completed for the SW marine region. The data and geological interpretations will support regional marine planning by DEWR by helping marine managers characterise the seabed, including the identification of unique features.

Although the SW marine region covers 1 375 000 square kilometres or approximately 15 per cent of Australia's Exclusive Economic Zone, the previously available quantitative data for the sedimentology of the seabed came from less than 200 samples. This represented one assay for every 5000 square kilometres and consequently our knowledge of the physical nature of the seabed for this region was relatively poorly-known. Following this study, sample density in the region now averages one sample for every 500 square kilometres of the continental shelf (24 per cent of the total area) plus one sample for every 2000 square kilometres of the deeper water areas (the slope, rise and abyssal plain/deep ocean floor) which make up the remainder (figure 1).

Regional sediment trends are now apparent, particularly the frequency and extent of gravel-rich and non-carbonate sedimentary environments on the continental shelf as well as the absence of coarse and carbonate-rich sediments in the deep ocean.

Quantitative data are now at sufficient spatial resolution to permit the first comparison between known geomorphic features and the sedimentology of the region (table 1). These relationships are being used to guide future sample selection and to develop interpolation methodologies for similar work being undertaken by Geoscience Australia for the other marine regions.

All of the data are available from Australia's national marine samples database, MARS ([www.ga.gov.au/oracle/mars](http://www.ga.gov.au/oracle/mars)). A report assessing quantitative sedimentology and geomorphology of the SW marine region, including maps of interpreted regional sediment distribution, will be made available on the Geoscience Australia website later this year.

#### **For more information**

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#### **Related website**

Geoscience Australia's national marine samples database  
[www.ga.gov.au/oracle/mars](http://www.ga.gov.au/oracle/mars)

## Global digital geology map

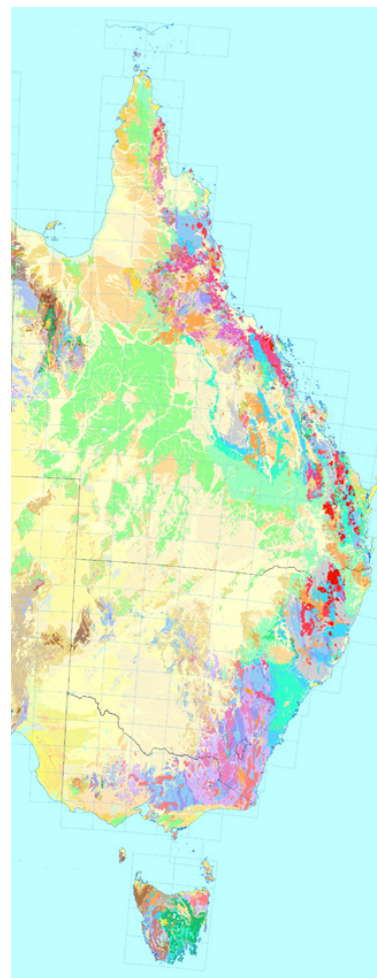
Geoscience Australia is collaborating with similar organisations from more than 40 countries to embark on one of the most ambitious geological mapping programs ever undertaken. The project, titled OneGeology, will provide internet access to the most up-to-date, worldwide geological map data at a scale of 1:1 million as part of the International Year of the Planet Earth program.

Australia was represented by Dr Lesley Wyborn from Geoscience Australia and Dr Simon Cox from CSIRO Exploration and Mining who joined representatives from 53 national and international organisations at a workshop in Brighton, UK, to investigate ways of creating dynamic digital geological map data covering the world.

Each country will make its geological map data available at or about 1:1 million scale using web service technologies for distribution through the OneGeology portal using Google Earth and other dynamic map browsers. The data will be available via a new geological exchange language known as GeoSciML which will allow standardised geological data to be shared and integrated across the Earth.

This project will contribute to the International Year of Planet Earth which was proclaimed for 2008 by the General Assembly of the United Nations. The aim of the Year is to bring together the international knowledge base of geoscience and demonstrate new and exciting ways in which earth sciences can help future generations to meet the challenges involved in ensuring a safer and more prosperous world.

Another benefit of the OneGeology project is that it will also transfer valuable information on web services to the developing world, accelerating the process of bringing people in less developed countries into the digital age.



### ***For more information***

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### ***Related websites***

The OneGeology project

[www.onegeology.org/](http://www.onegeology.org/)

2008 International Year of the Planet Earth

[www.ga.gov.au/about/event/index.jsp#IYPE](http://www.ga.gov.au/about/event/index.jsp#IYPE)

GeoSciML geological exchange language

[www.ga.gov.au/news/archive/2006/nov/index.jsp#see](http://www.ga.gov.au/news/archive/2006/nov/index.jsp#see)