

In Brief

Geoscience Australia contributes TO PHILIPPINES LANDSLIDE RESPONSE

A major landslide struck the village of Guinsaugon, Southern Leyte Province, Philippines on Friday 17 February. The Philippines National Disaster Coordinating Council (NDCC) reported on 28 February that there were 140 people dead with 973 missing, 19 injured and 415 survivors.

The NDCC estimated that the landslide caused approximately AUD\$2.5 million in damage to infrastructure and AUD\$0.6 million in damage to the area's agriculture. Between 350 and 400 hectares were buried by the landslide, with thicknesses of debris estimated to be 20 to 40 metres at the base of the mountain where the village was located (figure 1).

As part of the Australian Government's response an AusAID Landslide Assessment Team, which included Andrew McPherson, a natural hazard geoscientist from Geoscience Australia, was mobilised. The Assessment Team worked from 22 to 28 February and the aim of their mission was to:


- assist the Philippines authorities in assessing slope stability in the vicinity of the landslide site and the potential for further landslides in the province
- provide technical advice on water and sanitation to the Philippines National Red Cross (PNRC) and local government agencies supporting evacuees
- make recommendations for future Australian assistance—for both short and medium term relief and rehabilitation assistance for landslide survivors and evacuees, as well as longer-term disaster management assistance.

As a result of the mission the Landslide Assessment Team put forward a series of recommendations, including:

- Support for a United Nations Development Program proposal to provide both long and short term assistance in:
 - geohazard mapping for natural disaster assessment
 - development and implementation of community-based early warning systems
 - community and government disaster education initiatives
 - incorporation of disaster risk reduction into local development planning.
- Support for a Philippine National Red Cross community-based disaster preparedness programme focused on the establishment of village disaster action teams in four prioritised provinces, along with the implementation of small-scale disaster mitigation activities in the provinces.
- Potential provision of technical support to Philippine Government agencies responsible for geohazard mapping and risk assessment. This would be scoped through AusAID in consultation with Geoscience Australia and other key Australian agencies. If practicable the need for technical assistance would be gauged through visiting delegations from relevant Philippine agencies, which would identify specific skills and expertise required from Australia.



▲ **Figure 1.** View of the landslide from the nearby search and rescue base camp (photo: A McPherson).

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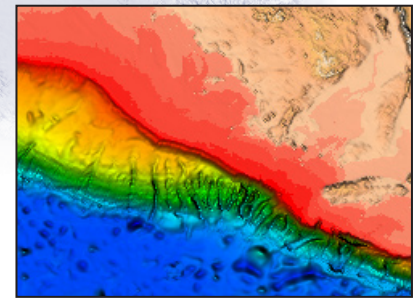
In Brief

NEW BATHYMETRIC DATA *from the continental slope*

New swath and sub-bottom profile data acquired during the transit of the French ship RV *Marion Dufresne* from Sydney to Albany is contributing to several Geoscience Australia projects. Data from the base of the continental slope across the Great Australian Bight is being used to help plan an upcoming Big New Oil marine survey while data collected along the south coast of New South Wales will assist in regional marine planning. The 'voyage of opportunity' was undertaken after completion of the AUSFAIR survey – a joint French-Australian geological sampling and geophysical acquisition survey which collected data from the Fairway and Capel basins.

The swath acquisition system onboard the RV *Marion Dufresne* is a Thomson-Marconi TSM 5265 multi-beam sonar, which produces high-resolution bathymetric and backscatter images of the seafloor across a swath 20 kilometres wide in deep water. In conjunction with this equipment, a digital sediment sounder (3.5 kHz) gives an acoustic record with a penetration through 100 metres of sediments. This system is capable of acquiring data in deeper water than the system onboard the Australian marine research facility, the RV *Southern Surveyor*.

The acquisition track along the foot of the Ceduna and Eyre terraces in the Great Australian Bight was at water depths between 2000 and 5000 metres. It was designed to complement existing bathymetric datasets and acquire data beyond the limits of the RV *Southern Surveyor*. The updated bathymetry grid is now being used to help identify potential geological sampling sites in the Bight Basin. Although few rocks older than Maastrichtian (latest Cretaceous) have been recovered from the distal, deeper water parts of the Bight Basin, geological studies undertaken by Geoscience Australia identified this area of the basin as the region most likely to contain potential source rocks. A geological sampling survey targeting rocks of Albian-Santonian (Early-Late Cretaceous) age, which are exposed at places along the continental slope, is currently being planned. The new bathymetric data will also assist in the accurate siting of dredge localities.



The bathymetric data acquired from the New South Wales continental slope will be used to study the seabed character of the deeper part of the margin. There have been very few systematic surveys of the New South Wales margin over the last 50 years, so the new data should considerably assist in natural resource management of the area.

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Enhancing the protection of AUSTRALIA'S CRITICAL INFRASTRUCTURE

The launch of the Critical Infrastructure Protection Modelling and Analysis (CIPMA) Program, at Geoscience Australia in February, marked the formal beginning of a national initiative that will put Australia at the forefront of critical infrastructure assessment.

CIPMA is a collaborative project between Geoscience Australia, the Attorney-General's Department and CSIRO. It will examine the inter relationships and dependencies between critical infrastructure systems, and will demonstrate how a failure in one sector can greatly affect the operations of other sectors.

Using detailed data and knowledge provided by industry, CIPMA will help business and government better understand critical infrastructure complexities. It will enable contributors to identify the most important and vulnerable components of their critical infrastructure networks, and assess the flow-on effects if they are compromised.

The CIPMA program is a logical extension of Geoscience Australia's Risk Research Group's work program. CIPMA's strategic approach to critical infrastructure assessment applies the Group's expertise in all hazard research, geospatial mapping and hazard assessment, and draws on existing relationships with key stakeholders.

The Program will initially focus on the communications, energy, and banking and finance sectors. It will support critical infrastructure protection, counter terrorism and emergency management prevention, preparedness, planning, and recovery.

CIPMA has already gained strong support from the owners and operators of critical infrastructure, state and territory governments, and Australian Government agencies. The CIPMA development team will continue to engage stakeholders across sectors to ensure access to critical data and industry knowledge for the ongoing development of the capability.

Ultimately, CIPMA will provide the detailed analysis needed to make informed decisions. It will help government develop more targeted and cost effective national security and CIP policies to better protect assets vital to Australia's security and prosperity.



▲ **Figure 1.** Attorney-General Phillip Ruddock launching the CIPMA Program with Infrastructure Assurance Advisory Group Chairs, Keith Orchison (Energy), Bill Davey (Communication) and John Geurts (Banking and Finance).

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Related article
 AusGeo News 79,
 Protecting the nation: www.ga.gov.au/ausgeonews/ausgeonews200509/cip.jsp.

Geoscience Australia contributes TO SENTINEL ASIA



Geoscience Australia's Sentinel bushfire monitoring system, through its Web Mapping Service (WMS) and Web Feature Service (WFS), will become a data node of *Sentinel Asia* providing access to Australian hotspot information. *Sentinel Asia* will initially disseminate information about forest fires and then will expand its services in the future to provide data on other natural disasters such as floods, earthquakes and landslides.

Sentinel Asia is an initiative of the Japan Aerospace eXploration Agency (JAXA) and the Asia-Pacific Regional Space Agency Forum to provide a disaster management support system in the Asia-Pacific region. A meeting held in Hanoi in February to discuss disaster management in the Asia-Pacific region was attended by 70 participants, representing 34 different organisations across 18 countries. Australia was represented by Shanti Reddy of Geoscience Australia, Alex Held of CSIRO and Agnes Apostolou of the Bureau of Meteorology.

Sentinel Asia is modelled on the Australian Sentinel hotspot system and is a network of distributed web mapping systems consisting of three types of nodes:

- Data provider nodes—agencies that collect and distribute satellite data
- User nodes or local service providers—government departments and Non-Government Organisations
- Research and Training nodes—universities and research and development institutes.

As well as Geoscience Australia, other nodes will include the Singapore Centre for Remote Sensing and Tokyo University, which are also ready to commence

operations.

JAXA is keen to demonstrate the capabilities of the Advanced Land Observing Satellite (ALOS) to mitigate damage in disaster-affected areas. The ALOS Rapid Response System developed for the Asian Disaster Reduction Centre (ADRC) of Japan will become part of *Sentinel Asia*. Plans are underway within JAXA to create a new specialist group to oversee disaster management applications and promote international use of its data. JAXA will also fund a few nodes each year to set up the necessary infrastructure in the developing countries in Asia.

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Supporting Indigenous policy WITH SPATIAL INFORMATION

Geoscience Australia's Spatial Information Industry Advice and Facilitation (SIIAF) Branch is responsible for providing advice to Government on geospatial industry matters and facilitating the uptake of spatial information and technology by government agencies.

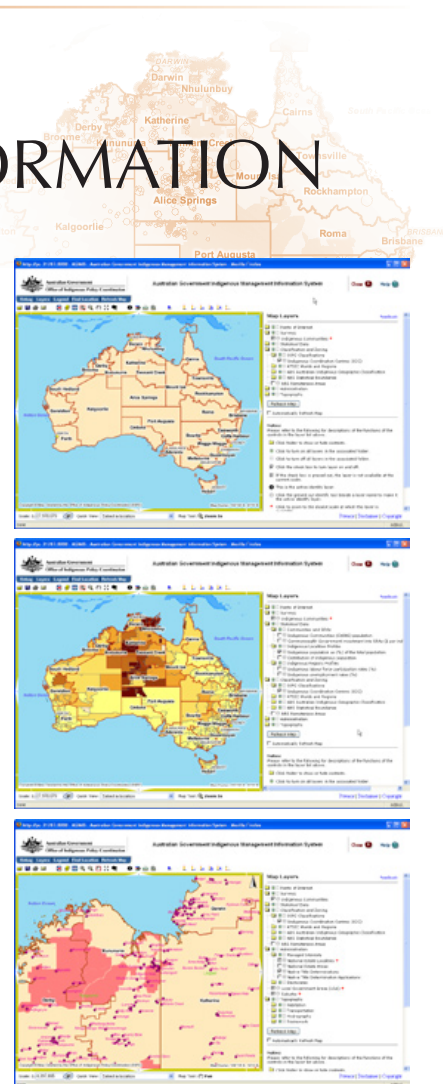
SIIAF recently concluded a successful pilot project for the Office of Indigenous Policy Coordination (OIPC). The OIPC is an agency within the Department of Families, Community Services and Indigenous Affairs (FaCSIA) which coordinates a whole-of-government approach to programs and services for Indigenous Australians across Australian Government agencies.

The aim of the pilot project was to demonstrate potential uses of geospatial technologies and spatial data that can be used by a policy maker in the OIPC main office to assist coordinators in the field in the Indigenous Coordination Centres (ICCs).

In the first stage, a database of publicly available spatial datasets relevant to OIPC's business was compiled. At stage two, a web mapping application was developed using a blend of open source and proprietary technologies. The map interface enables users to browse and query a large amount of contextual information. At stage three, a level of integration was achieved with existing agency databases which hold Australian Bureau of Statistics (ABS) Census data so that reports containing tables and figures can be generated by clicking on a geographic area of interest. In addition to these reports, a select portion of otherwise tabular census material can be portrayed spatially.

The pilot project was well-received and has contributed to generating a momentum for examining a broader uptake of spatial information and technology by the OIPC. Geoscience Australia is continuing to provide specialist advice to the OIPC in drafting the spatial capability strategy and will continue to be involved during implementation of the strategy.

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SPATIALLY ENABLING GOVERNMENT

During the 30 March launch of “Responsive Government – A New Service Agenda” the 2006 e-Government Strategy by the Special Minister of State, The Hon. Gary Nairn MP, special mention was made of the importance of spatially enabling the Australian Government. But what exactly does spatially enabling mean and why is it important?

The business of government agencies lies principally in policy development and program implementation. These activities depend upon quality information, analysis and decision-making. Spatial (or geographic) information is one of the many types of information used in analysis and decision-making. It helps answer the *where* question in government policy development and program implementation.

Historically, the widespread use of spatial information (and its associated technologies and knowledge) in government has been impeded by restricted accessibility, complexity, unknown quality and high cost. That situation is now changing. Web-based solutions, using sophisticated analytical tools and accessing large volumes of data from remote sites, are now becoming readily available on standard desktop computer systems.

In simple terms spatially enabling government means optimising the accessibility and use of spatial information in government decision-making.

Why is it important?

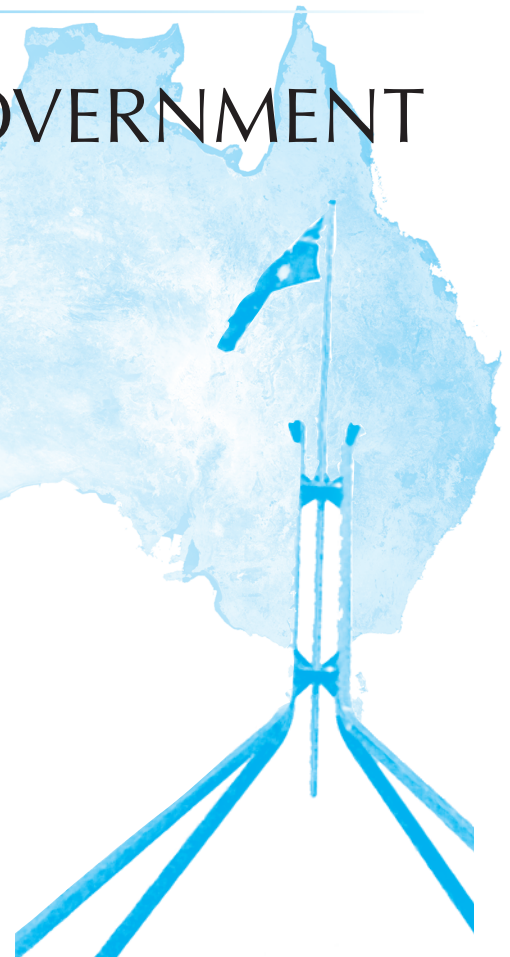
The potential benefits of spatially enabling government include:

- improved decision-making by better understanding of the geographic impact of policies and programs, and more reliable and accurate source information used in decisions
- Possible reduction in administrative costs by automation of low-level tasks such as validation of client data and completion of forms
- better whole-of-government outcomes through use of common and authoritative reference data, and commonly deployed IT&T infrastructure
- enhanced industry development opportunities through procurement of products and services from the private sector.

Current developments

Spatial enablement is occurring today in many government agencies, at both federal and state/territory level. Geoscience Australia, for example, is involved in a number of spatial enablement projects, including:

- Helping the Office of Indigenous Policy Coordination evaluate web-based desktop technology that will add a geographic dimension to its whole-of-government reporting through the Australian Government Indigenous Management Information System (see previous article)
- Working with the Department of Industry, Tourism and Resources to establish a GIS capability to better understand energy infrastructure, ownership and management
- Implementing the Australian Marine Spatial Information System to allow users to visualise vast amounts of information on the Australian marine jurisdiction from their desktop (AMSIS to be launched by The Hon. Bob Baldwin MP, Parliamentary Secretary to the Minister for Industry, Tourism and Resources)
- Educating potential users on relevant standards (e.g. metadata, web services and interoperability) and technologies (e.g. Spatial Smart Tag, Geocoded National Address File and Spatial Meshblocks) in conjunction with the Office of Spatial Data Management.



Geoscience Australia is able to assist agencies in spatial enablement by drawing upon its capabilities in delivering geoscience outputs to Government. These include knowledge of private sector spatial information service providers. Specific support includes:

- Provision of advice on the use of spatial information and applications in government business
- Facilitation of implementation of specific government business solutions
- Providing access to authoritative geospatial datasets and geospatial web services
- Maintenance of a community of interest in spatial enablement in Australian Government
- Advising on the use of appropriate geospatial standards across government.

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