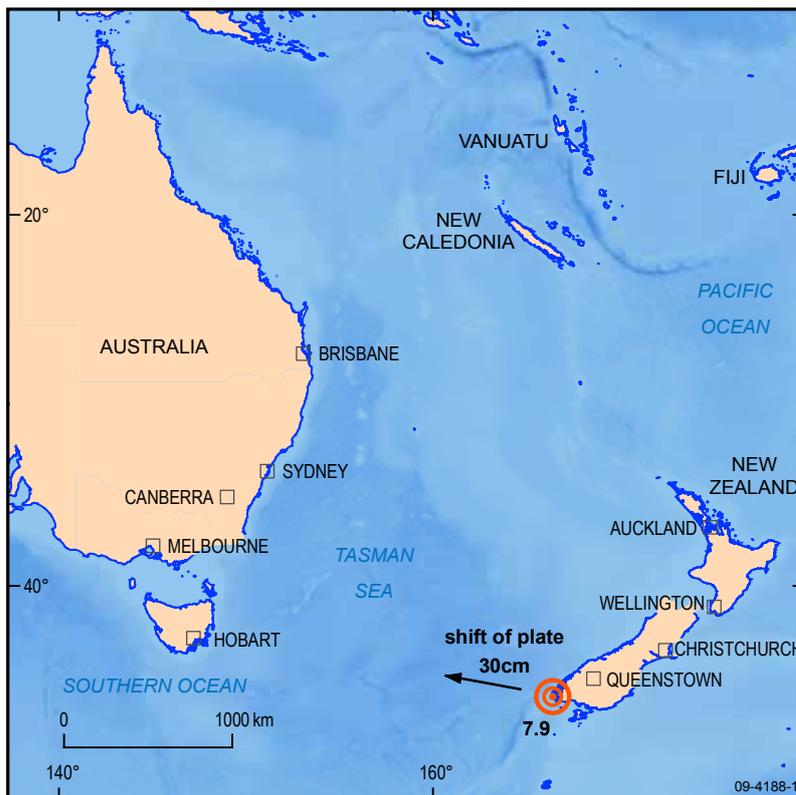


## Earthquake moves Australia and New Zealand closer

Australia's Tsunami Warning System issued a tsunami warning for sections of Australia's east coast, following a large undersea earthquake at approximately 7.30pm AEST on 15 July 2009. The threat came from the relatively unknown Puysegur subduction zone after a magnitude 7.9 earthquake occurred off the Fjordland region along the southwest coast of the South Island of New Zealand (figure 1). Although it was widely felt throughout the region no major damage was reported.



**Figure 1.** Location map showing the earthquake's proximity to Australia.

According to global positioning system (GPS) measurements made after the earthquake, the southwest tip of New Zealand shifted westwards towards Australia by about 30 centimetres during the earthquake, and southwards by about seven centimetres. There was also a shift of approximately two centimetres to the west at Dunedin, on the east coast of New Zealand, which is over 300 kilometres away from the earthquake epicentre.

The displacements associated with the earthquake were determined by the Australian Regional GPS Network (ARGN) and the South Pacific Sea Level Climate Monitoring Project (SPSLCMP) operated by Geoscience Australia and the GPS Active Control Network operated by Land Information New Zealand (LINZ).

The earthquake occurred along the plate boundary between the Australian and Pacific tectonic plates. The Australian plate is being

forced under the Pacific plate ('subducted') at a rate of about 40 millimetres a year, resulting in the uplift of the Southern Alps of New Zealand and causing the deep Puysegur trench which runs southwards from southwest New Zealand. The subduction of the Australian plate causes stresses to build up where the plates slide past each other. Periodically, the rocks give way under this stress causing earthquakes, and we observe the effects on land such as ground shaking and displacement of the ground surface.

'When a large, shallow earthquake occurs in the sea off the South Island, such as the event of 15 July 2009, it has the potential to create a tsunami, which propagates towards the eastern seaboard of Australia', according to Clive Collins, a senior seismologist at Geoscience Australia. 'When the upper Pacific plate 'thrusts' up over the downgoing Australian plate, as the boundary between the plates slips during the earthquake, all the water above the seafloor is pushed upwards and creates a tsunami wave'.

A small tsunami was generated during this earthquake and was recorded on tide gauges. A tide gauge at Jackson Bay in New Zealand measured the height of the tsunami wave at 50 centimetres. A tsunami warning was issued for the marine areas of New South Wales, Victoria, Norfolk Island and Tasmania, as well as a land inundation

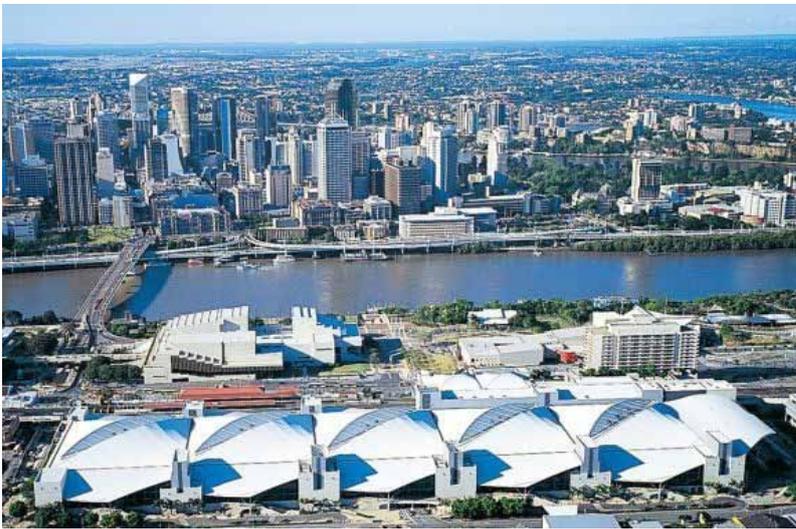
warning for Lord Howe Island. Although no visible effects were reported at any of these locations, tide gauges measured a 15 centimetre wave at Port Kembla in New South Wales and a 12 centimetre wave at Spring Bay in Tasmania.

**For more information**

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## Planning update on AUSTRALIA 2012—34th International Geological Congress

The 34<sup>th</sup> International Geological Congress (IGC) was awarded to the Oceania region at the 32<sup>nd</sup> IGC held in Florence in 2004. It will be held in Brisbane, Queensland, between 2 and 10 August 2012 and known as AUSTRALIA 2012. The venue will be the state-of-the-art Brisbane Convention and Exhibition Centre (BCEC) which can hold more than 7 000 delegates (figure 1).



**Figure 1.** The Brisbane Exhibition and Convention Centre is the venue for AUSTRALIA 2012—34th International Geological Congress.

The IGC, which is usually held every four years, is one of the most prestigious international scientific events, with a tradition dating back to 1878. The event will be of considerable interest to everyone involved in geoscience, whether in industry, government or research, as well as the general public. The scientific sponsor of the IGC is the International Union of Geological Sciences (IUGS).

The AUSTRALIA 2012 Organising Committee is endeavouring to maximise delegate participation by integrating meetings of the major Australian and regional geoscientific societies into the Congress program. Consequently, some Australian geoscience societies have decided not to have their normal scientific business meeting in 2012, but to focus their efforts on the Congress. Other bodies are considering conducting their normal meetings during the IGC to enhance the opportunities for international participation. It is hoped to attract a range of international groups to hold meetings during, or dovetailing with, the Congress.



### Organisation of the Congress

By agreement with the IUGS, the Australian Geoscience Council, the peak representative body of eight geoscience-related societies in Australia, is coordinating AUSTRALIA 2012. As the national geoscience and geospatial information agency, Geoscience Australia has made a strong commitment to the Congress. The President and Secretary General of the AUSTRALIA 2012 Organising Committee—Dr Neil Williams and Dr Ian Lambert respectively—are from Geoscience Australia. The agency is also contributing to national and international promotion of the Congress and supporting several of the major activities.

The state and Northern Territory geological surveys and GNS New Zealand are also contributing, particularly in



*in brief*

organising many of the field trips. Together with Geoscience Australia, they are also contributing financially to the Congress.

Queensland Events Corporation, an agency of the Queensland Government, is providing financial support. An experienced Brisbane-based Professional Conference Organiser, Carillon Conference Management, has been appointed to work with the Organising Committee.

There are opportunities for experienced people to assist on the Committee developing the Congress Scientific Program, to either work under this committee as convenors of Symposia, or provide ideas on potential symposia topics. Suggestions are also invited for possible field trips, particularly if leaders are identified.

### **Scientific Program**

The Congress theme will be 'Unearthing our Past and Future', encompassing the crucial contributions of geoscience in meeting societal needs and sustaining planet Earth. A wide-ranging scientific program is being planned by the Scientific Committee, under the leadership of Dr Lynton Jaques.

Each day will comprise a plenary 'theme-of-the-day' session, followed by up to 30 concurrent symposia on a wide range of geoscientific topics. A list of possible topics has been compiled by the Scientific Committee, reflecting the interests of all groups affiliated with the IUGS. It is planned that each symposia will have a local convenor working with an international co-convenor.

Australia's experience in developing a strong and sustainable mineral and energy resources sector will underpin a strong program emphasising future mineral and energy supplies. Other major themes, which reflect major challenges for countries in the Oceania region, will be climate change and its impacts on natural resource management and communities, and understanding and mitigating geohazards. There will also be broad-ranging sessions on geoscience information and standards.

There will be a limit of one oral presentation per delegate, although an individual may co-author several oral presentations. Poster sessions will also be given a high profile in the program. Expert workshops and short courses will reflect Australian and New Zealand international assistance objectives where feasible with the objective of attracting funding to support attendance by delegates from developing countries.

Public lectures, student events and media engagement opportunities will also be organised to ensure the main messages from the Congress reach the general public. A Communications

and Outreach Strategy for AUSTRALIA 2012 is available through the IGC website.

### **Field trips**

The 34<sup>th</sup> ICG is planning approximately 30 pre- and post-Congress field trips which will offer diverse opportunities to experience the fascinating geology of the Oceania region. These field visits will include all Australian states and the Northern Territory and field trips to New Zealand, Malaysia and New Caledonia/Vanuatu are being planned. There will also be a range of one-day tours available during the conference.

### **Exhibition**

A large GeoExpo (trade show) which will occupy two of the exhibition halls is planned. The international exhibitors will include geological surveys, professional/learned societies, scientific publishers, consultants and technical service/product providers. In addition, a major petroleum and minerals industry exhibition is planned in one of the halls during the Congress, to coincide with the high profile minerals and petroleum symposia.

### **For more information**

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