in brief

Graduate project strengthens community ties

Each year Geoscience Australia's new graduate recruits are challenged to independently develop, undertake and report on a group project that has clear links to Geoscience Australia's key priorities. The 2007 graduate project was designed to assist the assessment of tsunami risk in Western Australia, and to further strengthen ties with local emergency services and the community.

The project was developed in conjunction with Geoscience Australia's Natural Hazard Impacts Project (NHIP), which is developing modelling techniques that enable the estimation of coastal inundation and impact during tsunami events. Collaborative research by Geoscience Australia and the Fire and Emergency Services Authority (FESA) of Western Australia has led to a higher tsunami risk being assessed for the northwest of Western Australia and, as a result, the development of inundation models for several coastal communities in this region, including Onslow and Exmouth.

GPS surveying was undertaken in Onslow and Exmouth to ascertain the quality of the Digital Elevation Models (DEM) used in the inundation models. The survey data was used to assess the validity of the DEM, and integration of the revised data into the original inundation models resulted in improved accuracy in estimating impacts. In addition, vital on-the-ground visual inspection of those areas predicted for inundation was conducted to assess the accuracy of the modelled scenarios, including the identification of areas that appear vulnerable to inundation.

Community awareness of tsunami risk was raised through a community-specific tsunami awareness brochure produced by the graduates and distributed to key community and emergency personnel in Onslow. The graduate recruits represented Geoscience Australia at several community meetings in Onslow, where inundation models, produced by Geoscience Australia, were presented. These meetings provided an insight into specific community concerns in the event of a tsunami, and provided an opportunity to observe how research conducted at Geoscience Australia can be utilised in the public domain.

The interaction between community members and the graduates during the field work and at community meetings fortuitously led to new anecdotal evidence of past tsunami events in Onslow. A particular highlight was the discovery of a letter written in 1883 that describes the impact of a tsunami – probably triggered by the Krakatau volcanic eruption in Indonesia – on a farming community in Western Australia.

Figure 1. Sunset in Onslow, Western Australia.

References

Burbidge D & Cummins P. 2007. Assessing the threat to Western Australia from tsunami generated by earthquakes along the Sunda Arc. In: Natural Hazards, 43:319–331.

Related websites/articles

Fire and Emergency Services Authority of Western Australia, Tsunami webpage
www.fesa.wa.gov.au/internet/default.aspx?MenuID=372

Natural Hazards Online, tsunami
www.ga.gov.au/hazards/tsunami/

AusGeo News 83: Modelling answers tsunami questions
www.ga.gov.au/ausgeonews/ausgeonews200609/modelling.jsp

Geoscience Australia's graduate program
www.ga.gov.au/jobs/graduate/?skip_jobs_list_filter_on=1

in brief

Spatial Excellence Award for tsunami modelling

Geoscience Australia and the Fire and Emergency Services Authority of Western Australia (FESA) have received a joint Asia-Pacific Spatial Excellence Award (APSEA) for their work on Tsunami Risk Modelling for Emergency Management. The award, in the Spatially Enabled Government category, recognises projects that use spatial information and technology to improve government productivity, efficiency, service delivery, and help agencies integrate 'customer-centric' service delivery models.

Prior to the Indian Ocean tsunami of 26 December 2004, tsunami were rarely considered an emergency management issue for Australian coastal communities and as a result there was limited understanding of tsunami risk. However, the 2004 event clearly demonstrated the catastrophic nature of tsunami and the numerous impacts along the Western Australia coast highlighted the threat tsunami pose. Consequently, Geoscience Australia and FESA formed a collaborative research partnership to address the issue.

The two key components of this partnership were, firstly, the development and application of state-of-the-art science in order to model the tsunami risk, and effective communication of this science to inform and underpin emergency management plans. The engagement and response from stakeholders was a significant contributing factor to the project's success. The project was conducted within the risk management methodology adopted by the emergency management community, and, for the first time in Australia, has led to best practice spatially-enabled tsunami science underpinning emergency management plans.

The project used and developed a range of spatial products to deliver maps as well as geospatial datasets to the Western Australian emergency managers. These improve the capacity of FESA to integrate the results with other state-level datasets to further improve their service delivery. In addition to the quality of the spatial outputs, the methodology adopted in this project forms a basis for other jurisdictions to understand their tsunami risk.

'This collaboration demonstrated the effectiveness of the Australian and state governments in harnessing and sharing the resources and information available to enable and improve efficiency' observed Dr Chris Pigram, Deputy CEO of Geoscience Australia, when accepting the award. He also pointed out how the integration of science and emergency management has been pivotal in the success of the project as the scientific outputs had been tailored and targeted to address the needs of the communities at risk.

Dr Chris Pigram, Deputy CEO of Geoscience Australia, accepting the Spatial Excellence Award during an APSEA ceremony held at Luna Park, Sydney, on Thursday 22 November.