

# NEWSLETTER GEOBRASIL

## ([www.geobrasil.net](http://www.geobrasil.net))

?? USGS

### A RESOLUTION OF THE INTERNATIONAL UNION OF GEOLOGICAL SCIENCES (IUGS)

Whereas a magnitude 9 great earthquake that occurred on 26 December, 2004 of the west coast of northern Sumatra, Indonesia, triggered tsunamis that inundated the coastal zones of much of the Indian Ocean, causing tragic and historic loss of life and property, and Whereas this major natural disaster heightens awareness of the existence of geological hazards worldwide, The International Union of Geological Sciences (IUGS), recognizes:

1. That tsunami warning systems in the Pacific Ocean have proven to be effective over several decades, that no such comprehensive system exists for the Indian or Atlantic Oceans, that such systems employing traditional and new space-based technologies in these oceans could prevent loss of life if predictions were timely and warnings were heeded;
2. That tsunamis are triggered not only by earthquakes, but also by volcanic eruptions and landslides; and that these hazards, especially landslides, extend to all oceans and their margins;
3. That on-land landslides, earthquakes, floods, and volcanic eruptions constitute significant potential for natural disasters, and that terrestrial landslides are perhaps the most damaging of all;
4. That a substantial portion, if not most, of the global human population resides in areas characterized by significant risk of the occurrence of natural disasters;
5. That the tendency of the International Community to concentrate on reaction to natural hazards, rather than on preparation and their mitigation, operates to increase their cost to amounts much greater than that of preparation and mitigation;
6. That the lack of education in and awareness of Geological Sciences worldwide tends to decrease awareness of the possibility of natural disasters and thus exacerbate their human and economic toll when they inevitably occur;
7. That in the aftermath of a natural disaster, widespread knowledge of the geological sciences and of existing technology could assist rescue agencies and civil defense managers to obtain faster understanding of the extent of the damage from the event and how to cope with it;
8. That the reduction of the predictive uncertainty of a natural disaster is the most important issue in natural hazards reduction, but that reduction requires a thorough understanding of the nature of the geological processes giving rise to the disaster.

THE IUGS RECOMMENDS:

1. That systems and procedures be established for early warning, developing public awareness including Geological Science education, regional evacuation routes, and shelters with locations based on appropriate geological information, including maps of existing geological hazards;
2. That comprehensive education in the Geological Sciences, including knowledge of local geological hazards and their risk, become an integral part of education systems at all levels and in all countries;
3. That regional disaster management systems be organized where they do not now exist, and that existing disaster management systems be made more effective, and that these systems take steps effectively to monitor known indicators of all natural disasters;
4. That multidisciplinary and multinational research programs and research networks on Geological hazards and risks be developed to improve the professional and public

awareness of and understanding of the phenomena associated with such hazards, and that efforts be increased to develop forecasting capability of such hazards, and

THE IUGS RESOLVES:

1. To promote the development and application of scientific expertise and experience in understanding the geological forces at work in the development of all types of natural hazards and the processes involved in their mitigation of natural hazards;

2. To share this information as freely as possible with other members of the scientific community, government officials, policy makers and planners, the insurance industry, and the public as a whole.

[http://www.iugs.org/iugs/news/iugs\\_hazards\\_statement.htm](http://www.iugs.org/iugs/news/iugs_hazards_statement.htm)

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## ?? NATURE

Indian Ocean fault line poses threat of further earthquakes<sup>183</sup>  
Energy from 26 December quake could hasten the next rupture.  
doi:10.1038/433183°

Climatology: Will soil amplify climate change?<sup>204</sup>

DAVID POWLSON

It had been thought by some that rising atmospheric temperatures would have no effect on the rate at which carbon is released from the soil. A study that revisits the data behind this theory now finds otherwise.

doi:10.1038/433204a

Stable sea surface temperatures in the western Pacific warm pool over the past 1.75 million years<sup>294</sup>

THIBAUT DE GARIDEL-THORON, YAIR ROSENTHAL, FRANCK BASSINOT & LUC BEAUFORT

doi:10.1038/nature03189

Early Pliocene hominids from Gona, Ethiopia<sup>301</sup>

SILESHI SEMAW, *et al.*

Definitive fossil evidence for the extant avian radiation in the Cretaceous<sup>305</sup>

JULIA A. CLARKE, *et al.*

doi:10.1038/nature03150doi:10.1038/nature03177

## ?? SCIENCE

A Balmford, L Bennun, BT Brink, D Cooper, IM Cote, P Crane, A Dobson, N Dudley, I Dutton, RE Green, RD Gregory, J Harrison, ET Kennedy, C Kremen, N Leader-Williams, TE Lovejoy, G Mace, R May, P Mayaux, P Morling, J Phillips, K Redford, TH Ricketts, JP Rodriguez, M Sanjayan, PJ Schei, AS van Jaarsveld, and BA Walther

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E Stokstad

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Yaoming Hu, Jin Meng, Yuanqing Wang, and Chuankui Li

Large Mesozoic mammals fed on young dinosaurs.  
Nature 13 Jan 2005 433(7022): p. 149.  
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D Crow

Potential anthropogenic mobilisation of mercury and arsenic from soils on mineralised rocks, Northland, New Zealand.  
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Antoni Rafalski

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Rapid and Recent Divergence in the Barley Genome

Beatrice Scherrer, Edwige Isidore, Patricia Klein, Jeong-soon Kim,  
Arnaud Bellec, Boulos Chalhoub, Beat Keller, and Catherine Feuillet  
Plant Cell published 19 January 2005, 10.1105/tpc.104.028225

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P. Vesterbacka, I. Makelainen, and H. Arvela

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Carbon starvation in glacial trees recovered from the La Brea tar pits, southern California  
Joy K. Ward, John M. Harris, Thure E. Cerling, Alex Wiedenhoeft, Michael J. Lott, Maria-  
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