

EWC III

Third International Conference on Early Warning

A Global Early Warning System; who is responsible and how can it be achieved?

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Chief Scientific Advisor to HM Government

27 March 2006

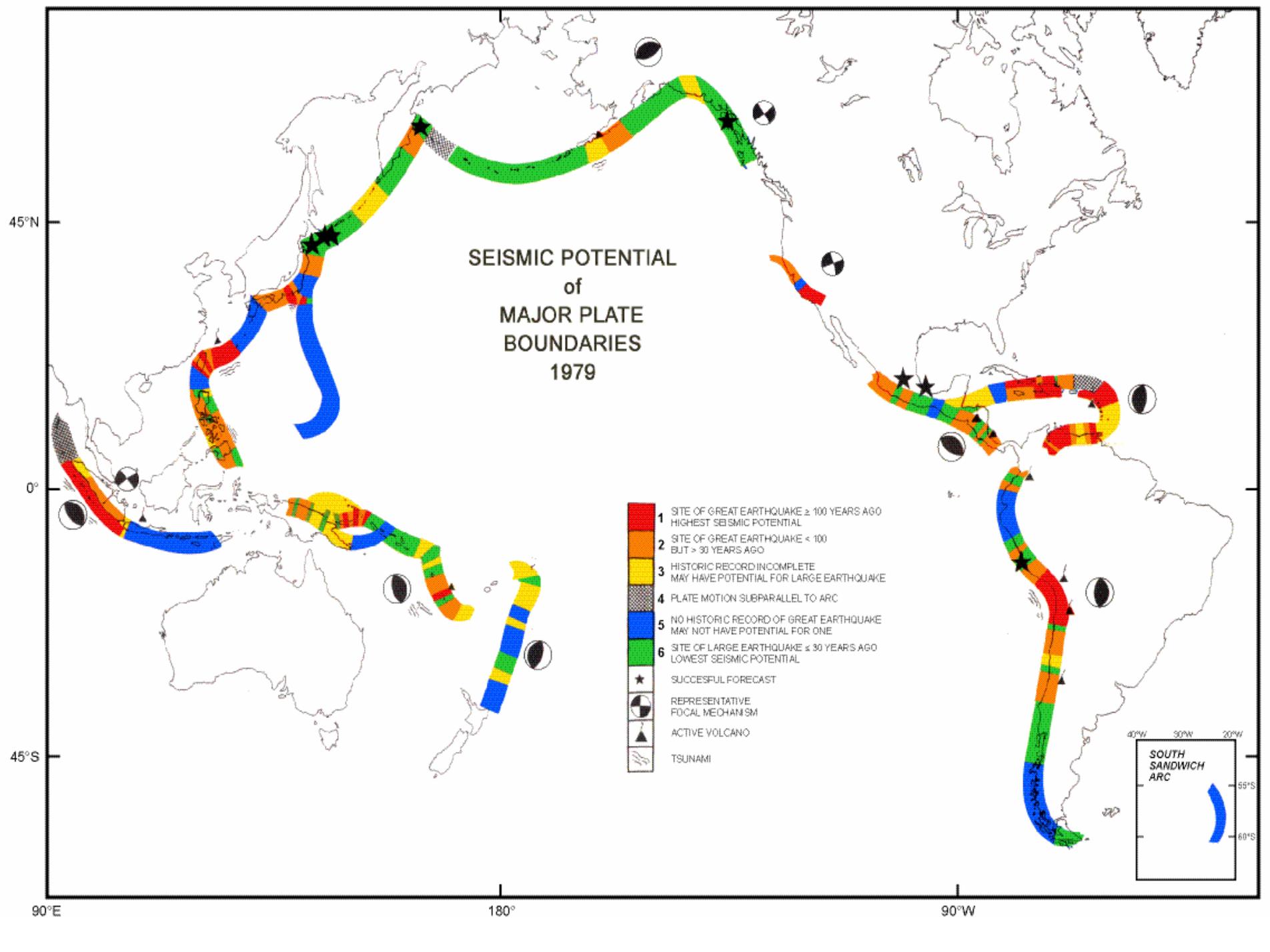
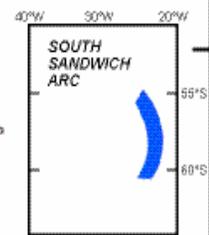
2004 Boxing Day tsunami

- Part of the devastation of Banda Aceh on the island of Sumatra as a result of the tsunami caused by the 2004 Indian Ocean earthquake



SEISMIC POTENTIAL of MAJOR PLATE BOUNDARIES 1979

- 1 SITE OF GREAT EARTHQUAKE \geq 100 YEARS AGO
HIGHEST SEISMIC POTENTIAL
- 2 SITE OF GREAT EARTHQUAKE < 100
BUT > 30 YEARS AGO
- 3 HISTORIC RECORD INCOMPLETE
MAY HAVE POTENTIAL FOR LARGE EARTHQUAKE
- 4 PLATE MOTION SUBPARALLEL TO ARC
- 5 NO HISTORIC RECORD OF GREAT EARTHQUAKE
MAY NOT HAVE POTENTIAL FOR ONE
- 6 SITE OF LARGE EARTHQUAKE \leq 30 YEARS AGO
LOWEST SEISMIC POTENTIAL
- ★ SUCCESSFUL FORECAST
- ⊗ REPRESENTATIVE FOCAL MECHANISM
- ▲ ACTIVE VOLCANO
- ⊃ TSUNAMI



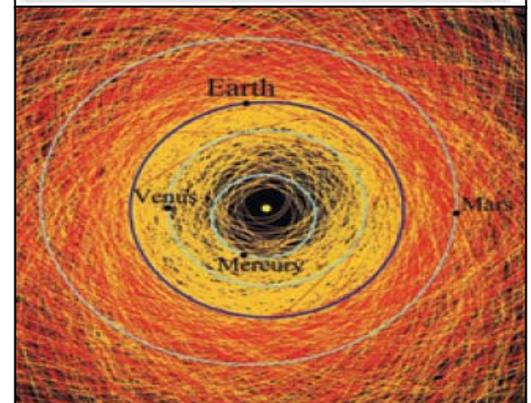
Hurricane Katrina --New Orleans disaster

- Most expensive disaster in U.S. history: recovery costs estimated at \$200 billion US (and rising)
- 1300 fatalities
- Record U.S. storm surge (> 9 m)

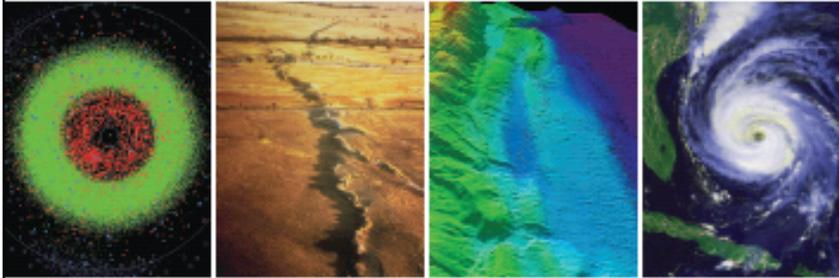


Natural Hazards

- Earthquakes
- Tsunamis
- Volcanoes
- Near earth objects
 - Both short and long range forecasting needed
 - As is a way of communicating to wider community



By mining into the remarkable understanding of the earth system developed by geophysical scientists around the world, we need to move towards an effective global system of surveillance and response to minimise the risks to populations from these terrestrial catastrophes which are beyond our control



The Role of Science in Physical Natural Hazard Assessment

Report to the UK Government by the Natural Hazard Working Group
June 2005

Report's recommendations

1. Establish an International Science Panel for Natural Hazard Assessment
2. Explore the possibility of extending the World Meteorological Organisation (WMO) early warning system to cover other natural hazards
3. Increase commitment at national and international level to national capacity building for natural hazard assessment

Summary

- Scientific coordination and advice
 - Different disciplines
 - International authoritative view on major hazards
- International capability
 - Scientific knowledge and operational capability
 - Consolidate and build upon existing national links with international capability
 - Build capacity at all levels and in all sectors
- Multi-hazard global warning system
 - Building upon best scientific knowledge
 - Build upon existing operational systems – WMO
 - Different sectors and organisations to work together to improve multi-hazard approach - UNESCO/IOC, ISDR, WHO, WMO