

USGS Natural Hazards Mission in the FY13 Budget

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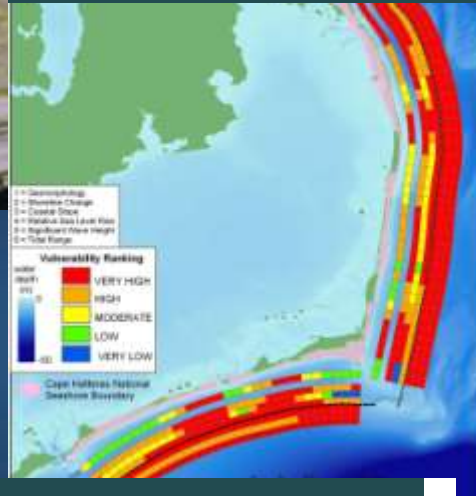
March 1, 2012

Natural Hazards Mission Area programs

Earthquake Hazards



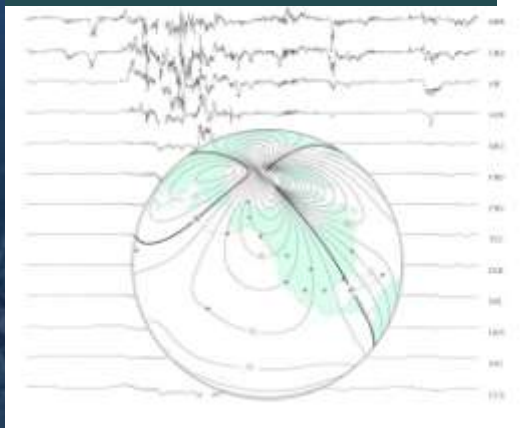
Coastal & Marine Geology



Volcano Hazards



Geomagnetism



Landslide Hazards



Global Seismographic Network



USGS hazard roles and responsibilities

- Delegated federal responsibility to provide notifications and warnings for **earthquakes**, **volcanic eruptions**, and **landslides**.
- Seismic networks support NOAA's **tsunami** warnings.
- Streamgages and storm surge monitors support NOAA's **flood** and **severe weather (including hurricane)** warnings.
- Geomagnetic observatories support NOAA and AFWA **geomagnetic storm** forecasts.
- USGS has key role in tracking **zoonotic diseases**.
- Geospatial information supports response operations for **wildfire** and many other disasters.



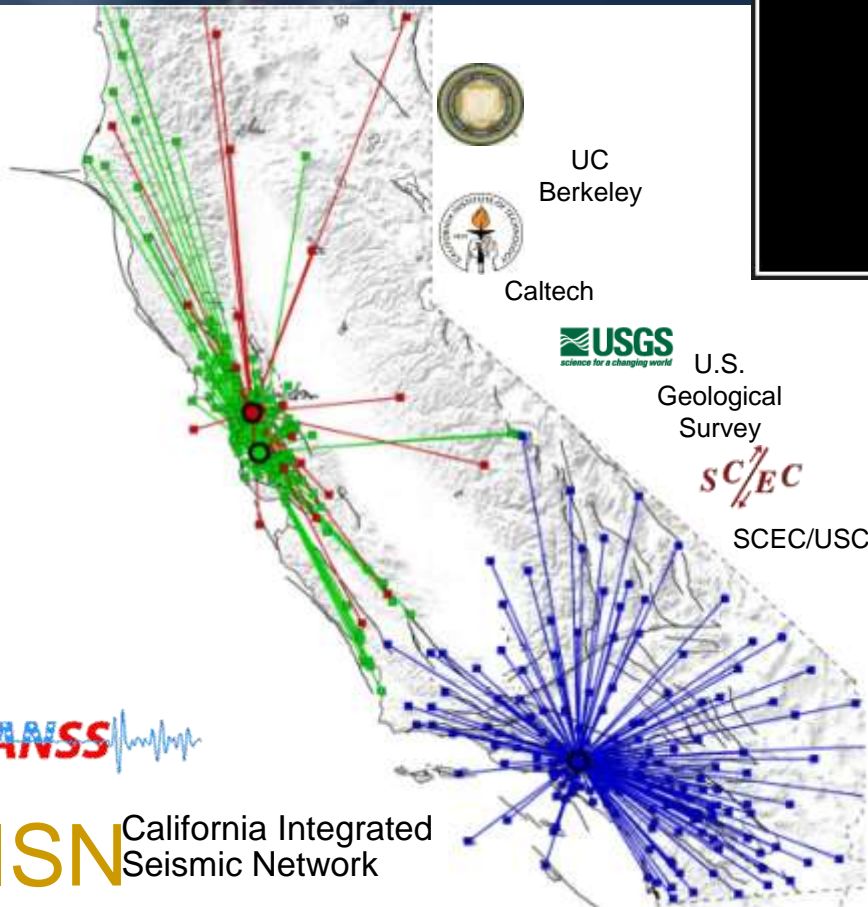
SAFRR: Science Application for Risk Reduction

- The mission of SAFRR is to innovate the application of hazard science for the safety, security, and economic well-being of the nation.
 - Integrating physical and social science research with the needs of external partners to create truly useful information products and tools that improve communication and decisionmaking.
- Like the multi-hazards demonstration project, the focus is on partnerships and stakeholder-driven products but now the scope is national (but implementation is local)

Natural Hazards: Earthquake • Volcanic Eruption • Landslide • Flood • Geomagnetic Storm • Wildfire • Tsunami • Coastal Erosion



FY 13 Increase: Earthquake early warning (+\$850K - Earthquake Hazards Program)



- Leverages private foundation R&D investment in university partners.
- Builds on ARRA upgrades to seismic and GPS networks in California, Oregon and Washington
- Enable earthquake detection and evaluation within seconds through hardware, software, and telecom improvements.

FY 13 Increase: Improving rapid response to eruptions of volcanic ash (+\$1.0M – Volcano Hazards Program)

The eruption of Iceland's Eyjafjallajökull was a reminder that there's no such thing as a remote volcano



Photo by Marco Fulle, Stromboli Online

FY 13 Increase: Expanded USGS/NWS debris-flow warning system

(+\$0.5M – Landslide Hazards Program)

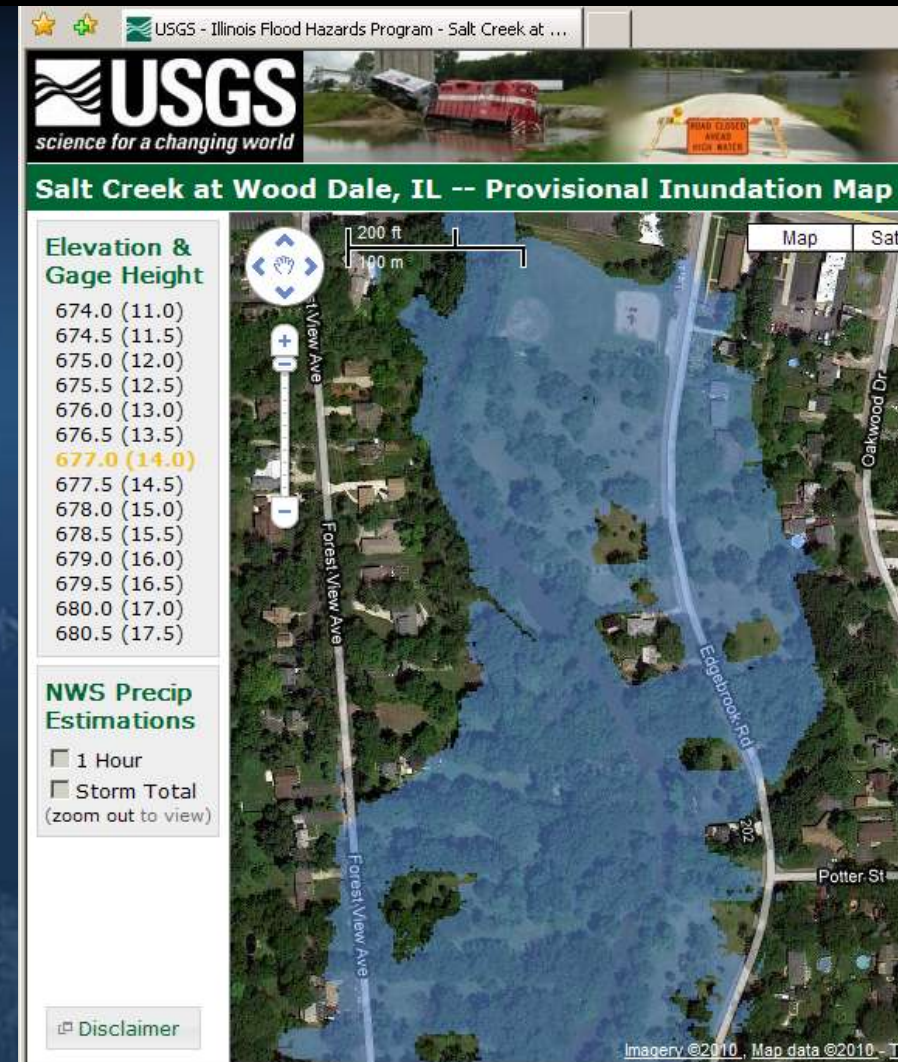
- USGS determines rainfall threshold for triggering debris flows from geology, topography and burn severity
- NWS issues warnings when rainfall reaches those levels

USGS debris-flow hazard maps in use at NWS Warning Center in Oxnard CA



FY 13 Increase: Using innovative streamgaging and hydrologic modeling to reduce flood damages (+\$5.5M - Water Mission Area)

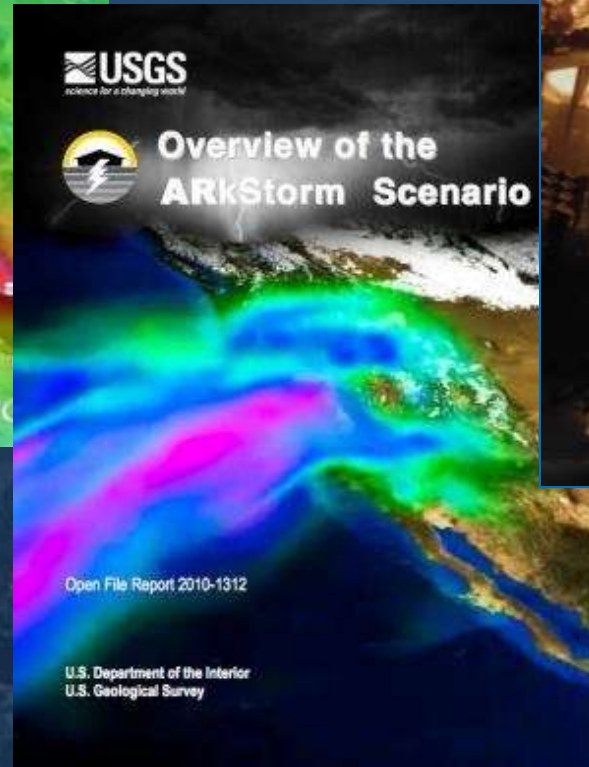
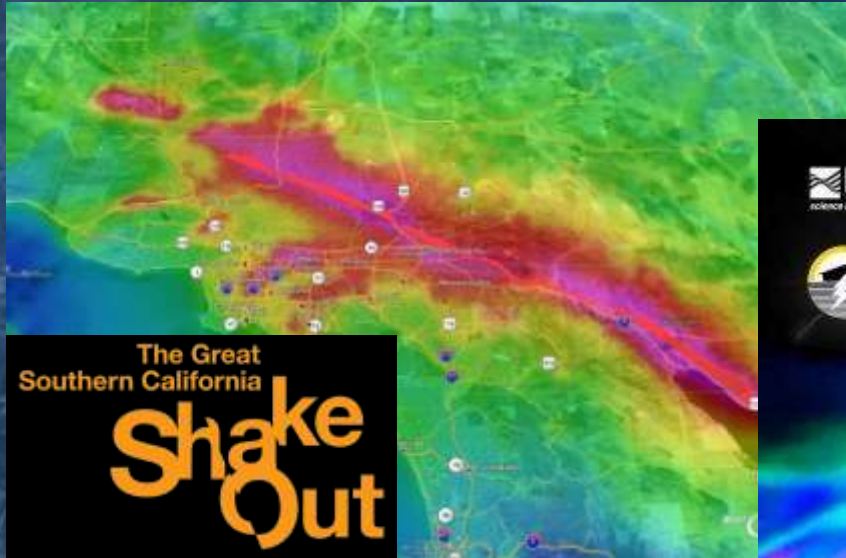
- Rapidly deployable streamgages can meet urgent need to provide real-time situational awareness of flood levels to threatened communities that lack a permanent streamgage.
- Support for real-time flood inundation mapping pilot with FEMA, NOAA/NWS and US Army Corps of Engineers



FY 13 Increase: Disaster scenarios for crisis response

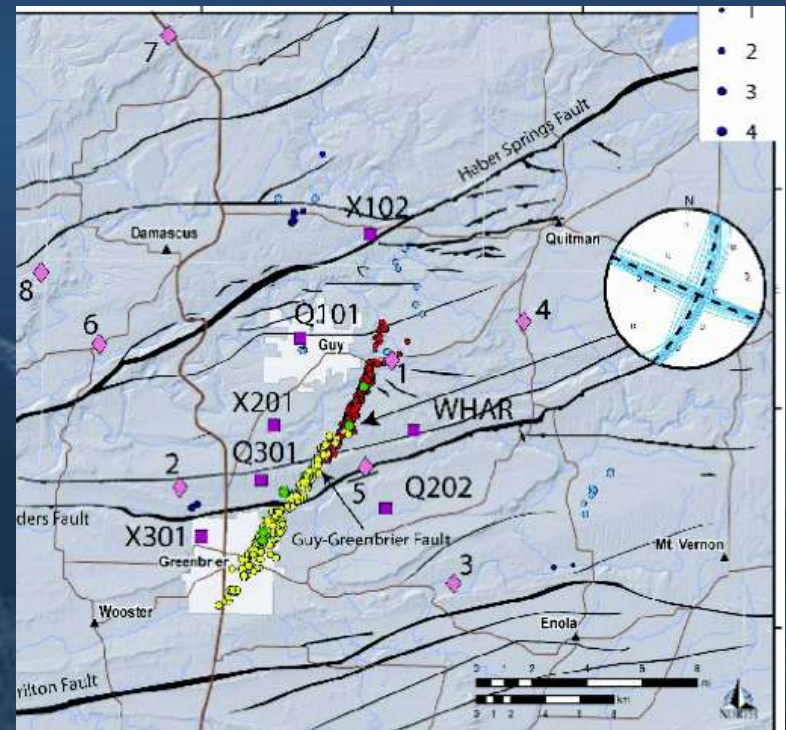
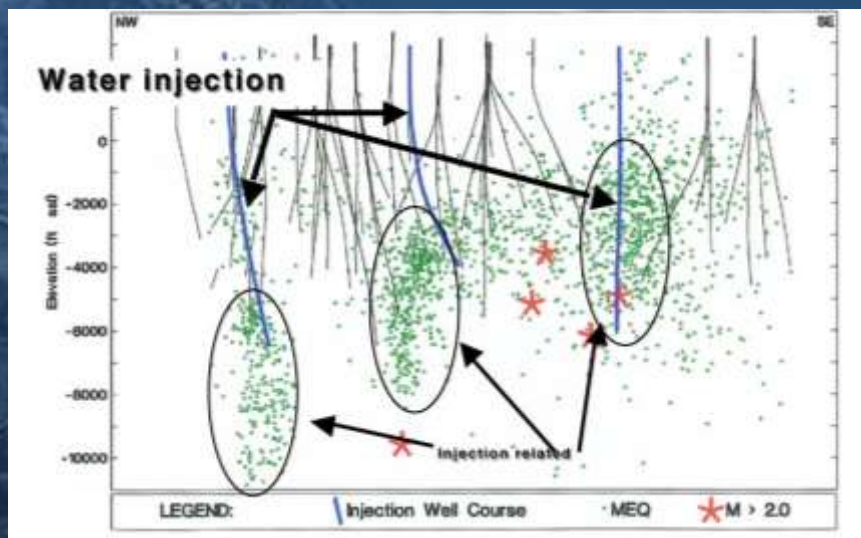
(+\$750K - Geographic Analysis and Monitoring)

- Top request of emergency managers
- Rallying point for communities



FY 13 Increase: Induced seismicity (+\$1.1M - Earthquake Hazards Program)

- Part of \$13M initiative on hydraulic fracturing.
- Support research to more fully understand the factors controlling induced seismicity
- Develop protocols for the siting of injection wells and for their operations that will reduce likelihood of inducing seismicity that raises public concern.



FY 13 Increase: Eastern US earthquake hazard assessment

(+\$1.6M - Earthquake Hazards Program)

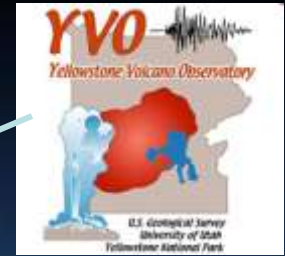
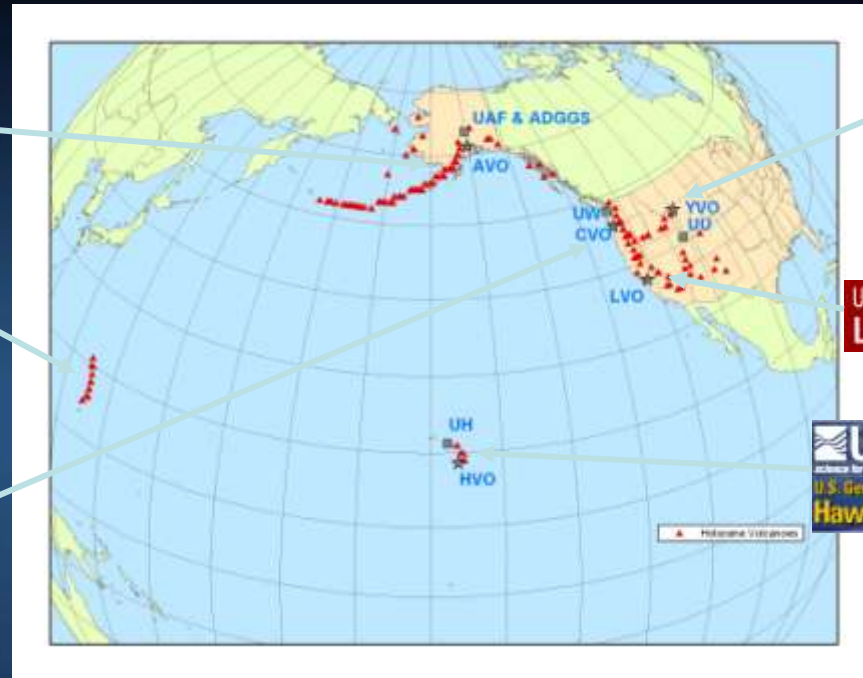
- The increased funding will allow the USGS to thoroughly investigate the recent Virginia earthquake and other areas of historical and recorded seismic activity in the East.
- The objective of the research is to improve assessments of the seismic hazard, and ultimately risk, in this region.



FY 13 Decreases: Volcano observatory operations and NVEWS implementation (-\$1.0M – Volcano Hazards Program)



Marianas



U.S. Geological Survey Volcano Hazards Program
Long Valley Observatory



- Reduced funding for geologic mapping and geophysical surveys that provide framework for hazard assessments
- Removes FY12 increase to NVEWS, delaying implementation

Natural Hazards Mission Area programs

Earthquake Hazards

+\$3.8M

Relative to FY12

Coastal & Marine Geology

+\$5.4M

+\$0.2M

Volcano Hazards

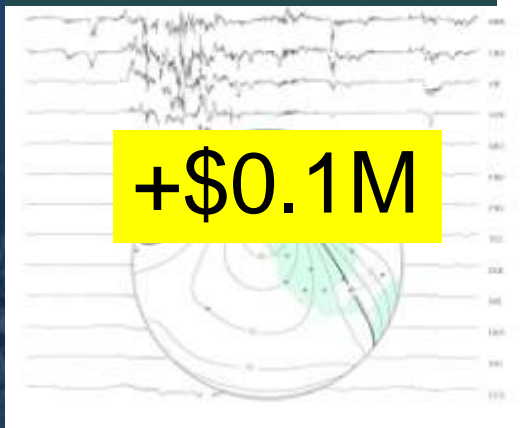
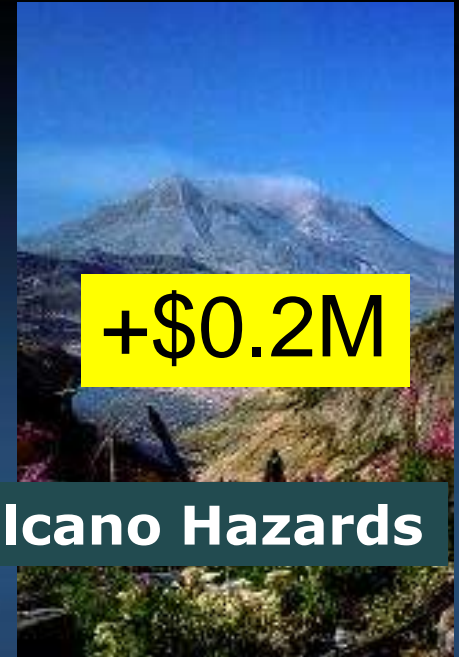
+\$0.1M

Geomagnetism

+\$0.1M

+\$0.6M

Landslide Hazards



Any questions?

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