USGS Natural Hazards Mission in the FY13 Budget

David Applegate
Associate Director for Natural Hazards
March 1, 2012
Natural Hazards Mission Area programs

Earthquake Hazards

Coastal & Marine Geology

Volcano Hazards

Geomagnetism

Global Seismographic Network

Landslide Hazards
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.
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
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)

- 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
- **Volcano Hazards**: +$0.2M
- **Geomagnetism**: +$0.1M
- **Landslide Hazards**: +$0.6M

---

USGS
Any questions?

David Applegate
USGS Associate Director for Natural Hazards
applegate@usgs.gov