

Geoscientists Roles in Natural-Hazard Decisions: Before, During, and After

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Objectives

- **Determine needs/opportunities for natural-hazard decision support**
- **Identify context(s) for policy decisions**
- **Specify preparedness input from geoscientists**

Challenges

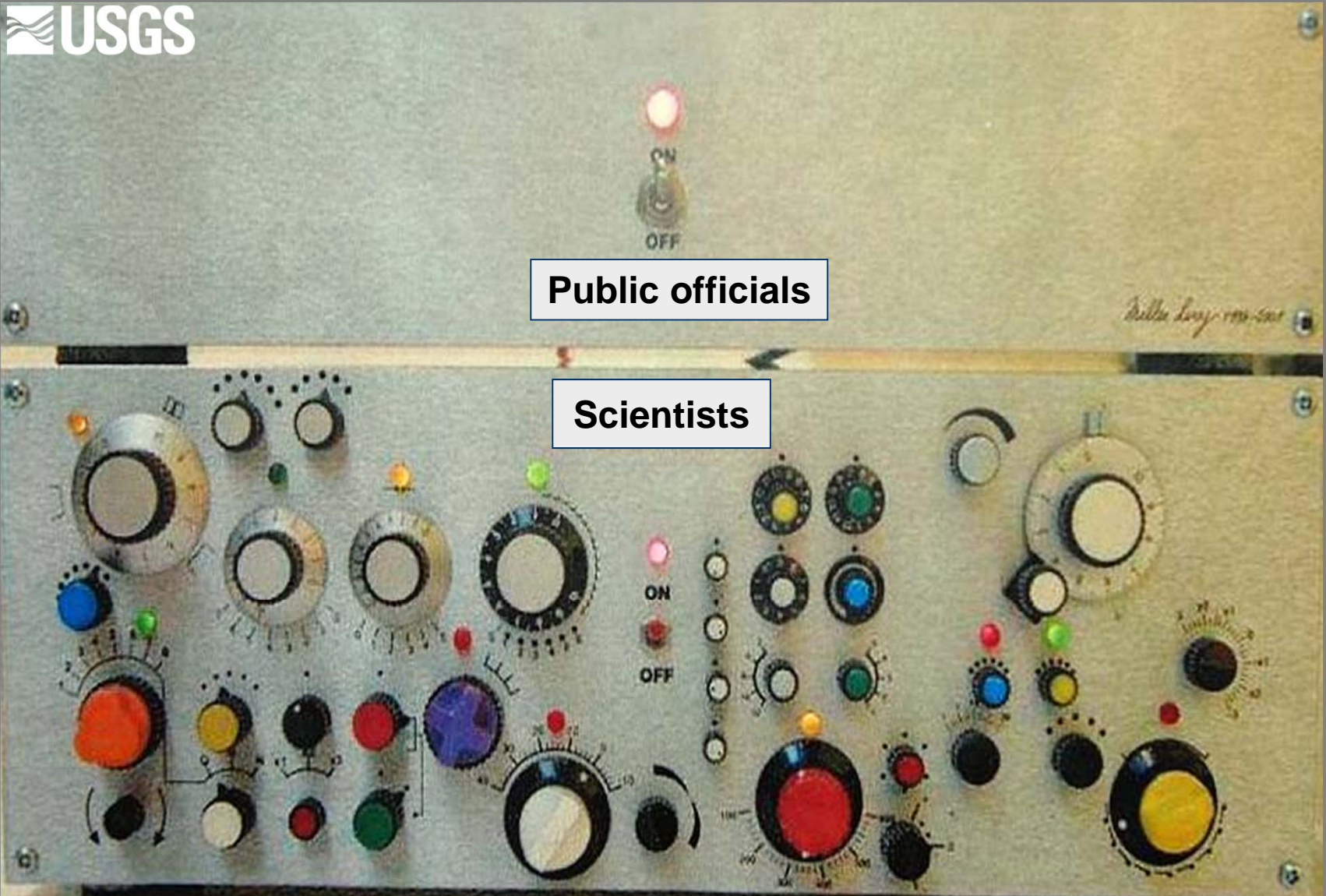
- **Generally low level of scientific/technical literacy**
 - **Poor appreciation of uncertainty and scientific method**
 - **Nuance may be lost**
- **Complex issues**
 - **Socioeconomic**
 - **Political**
 - **Ethical**

Reality

 USGS

Public officials

Scientists





Geoscience in natural hazards

- Mitigation
- Preparedness
- Response
- Recovery



Mitigation

- Hazard vulnerability analyses (HVA)
- Land-use planning
- Building codes
- Structure/site improvements



Preparedness

- **HVA applications**
 - Prioritize planning, training, equipment acquisition
 - Realistic training/exercise scenarios
- **Emergency Operations Plans (EOPs), other response plans**
 - Realistic planning assumptions
 - Hazard-specific components
- **Warning systems**



Assumptions

Mount Rainier National Park
November 2006 Flood Damage



The Emergency Operations Center at Longmire, after the flood



Assumptions



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Response

- **Warning**
 - Potential duration
 - Possible event paths
 - Uncertainty
 - Delineating hazard area(s)
- **Guidance for initial and long-term response considerations**
- **Potential obstacles to response and recovery**
 - Aftershocks



Recovery

- **Carpe diem!**
 - **Fleeting public awareness, political support**
- **Policy input:**
 - **Limit rebuilding in hazard-zones**
 - **Build to better standards**
 - **Develop more resilient infrastructure**
 - **Incorporate more realistic planning assumptions**



Being a credible source

- Respect your audience
 - Understand their perspective (NRC, 2010, *Informing an Effective Response to Climate Change*)
- Know your topic
 - “We can handle any BT event.”
 - Riparian anthrax?
 - Pacific NW building stock ready for $M_w 9.0$?
- Framing the message (CRED, 2011)
- Admit uncertainty
- Engage, engage, engage...



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