

Understanding Volcano Hazards and Managing Volcano Risks: A Local Perspective

Mount Hood



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USGS 1980

Mount St Helens - Dome Building Eruption 2004-08

Lava Dome



Historic Ski Lodge &
Winter Resort Areas



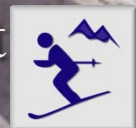
Major Regional Hwy

Mount Hood's Lave Dome

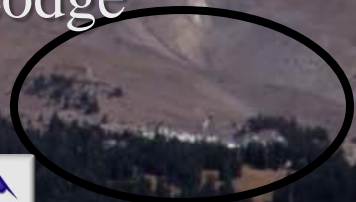
Crater Rock



Mt Hood Meadows
Ski resort



Timberline Lodge



Hwy 26 & Government Camp
Ski Bowl Resort

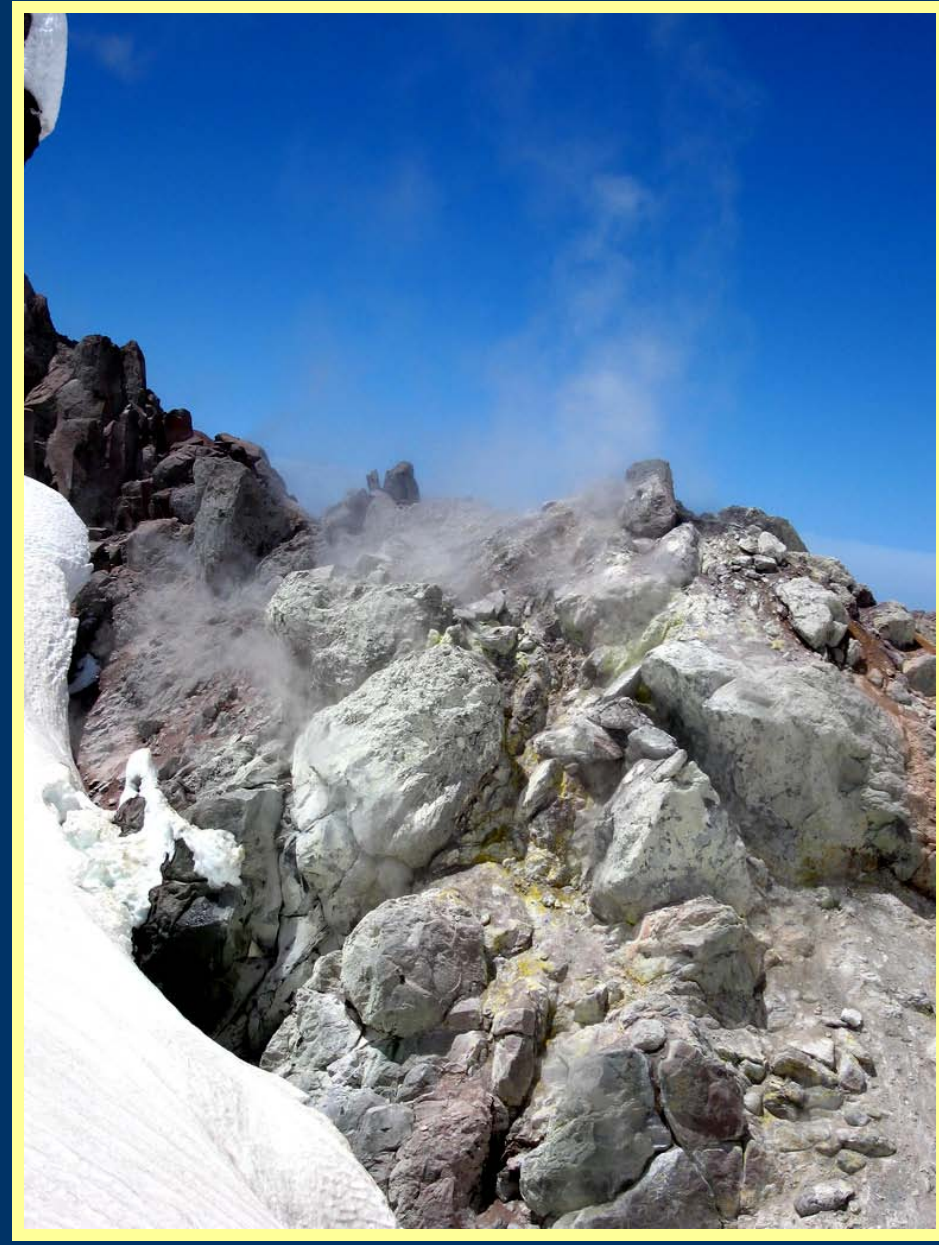


Crater Rock - The "Smoking Gun"

Timberline

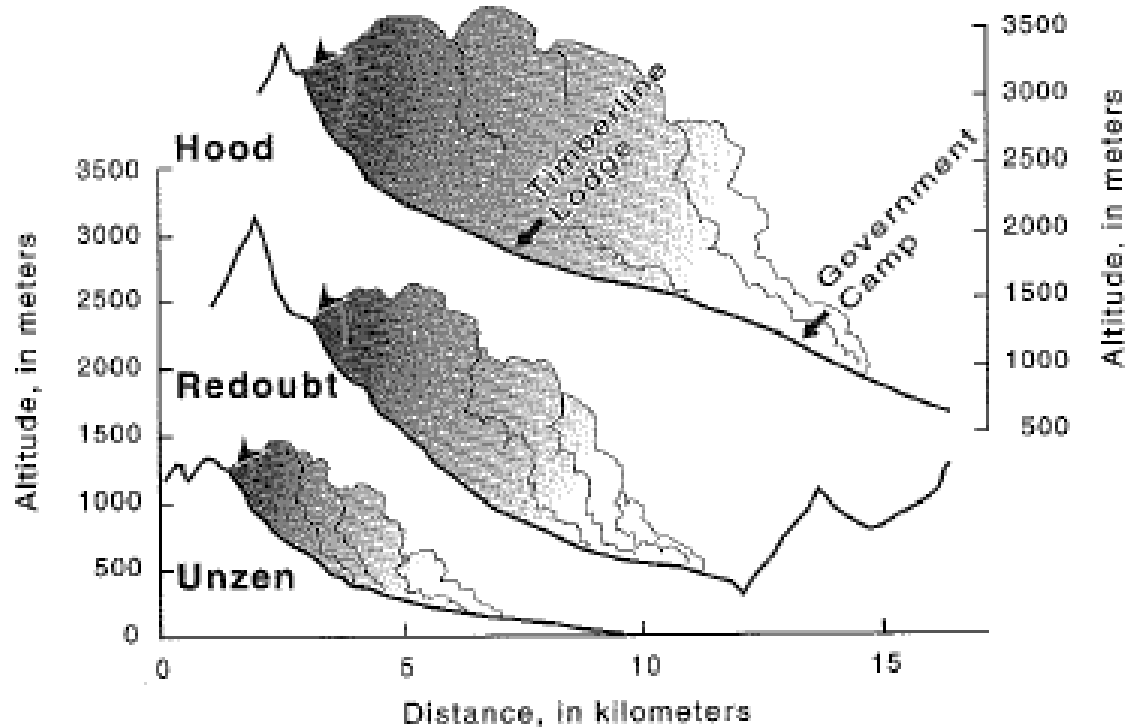


Mt Hood's Active Fumaroles



Volcanic Hazard

Dome Collapse – Pyroclastic flow



Brantley and Scott, 1993



Pyroclastic flow
Mount St Helens, 1980



Understanding Our Vulnerability





Recreation

- Timberline Ski Area offers the longest ski season in North America on the Palmer Snowfield.
- Mt. Hood Skibowl is the largest night-skiing area in North America.
- With 10,000 summit attempts per year, Mt. Hood is the second most-climbed mountain in the world, surpassed only by Japan's Mt. Fuji.



Recreational development built in close proximity to hazardous elements of volcanic mountain. These structures, systems, and the people using them will be threatened or displaced when the next volcanic event occurs.



Night skiing - Ski Bowl at Government Camp

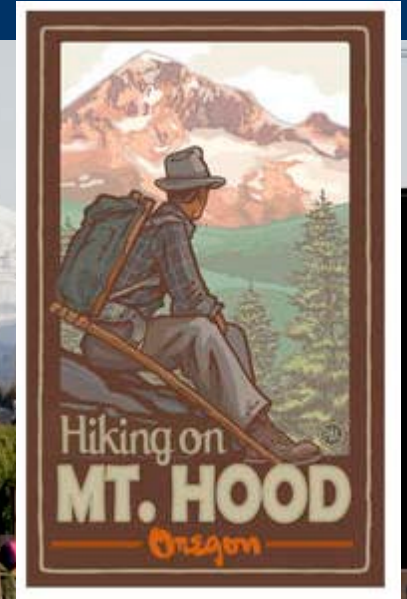


View of Mt Jefferson from Mt Hood Ski lift

Winter Scenario Evacuation Challenges



Living with our Volcano

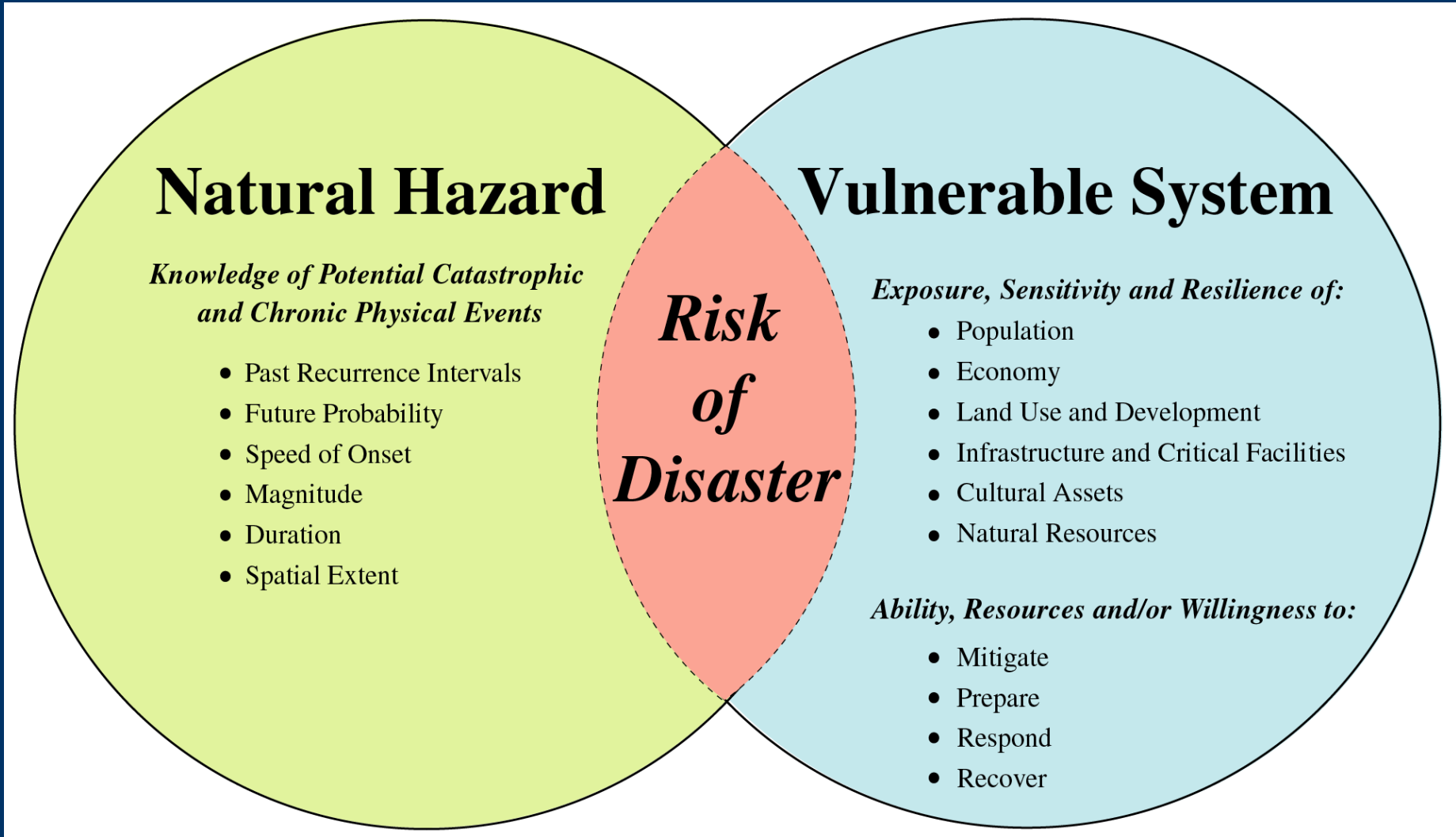




Volcano Hazards Research Essential to Understand Risk

Proximal Hazard Zones (lava flow, pyroclastic flow, debris avalanche, lahar)		Distal Hazard Zones (lahar)	
 More likely	 Less likely	 More likely	 Less likely
 Less likely		 Potential bank erosion	

Risk is a function of natural hazards and vulnerable human systems



Populations at Risk

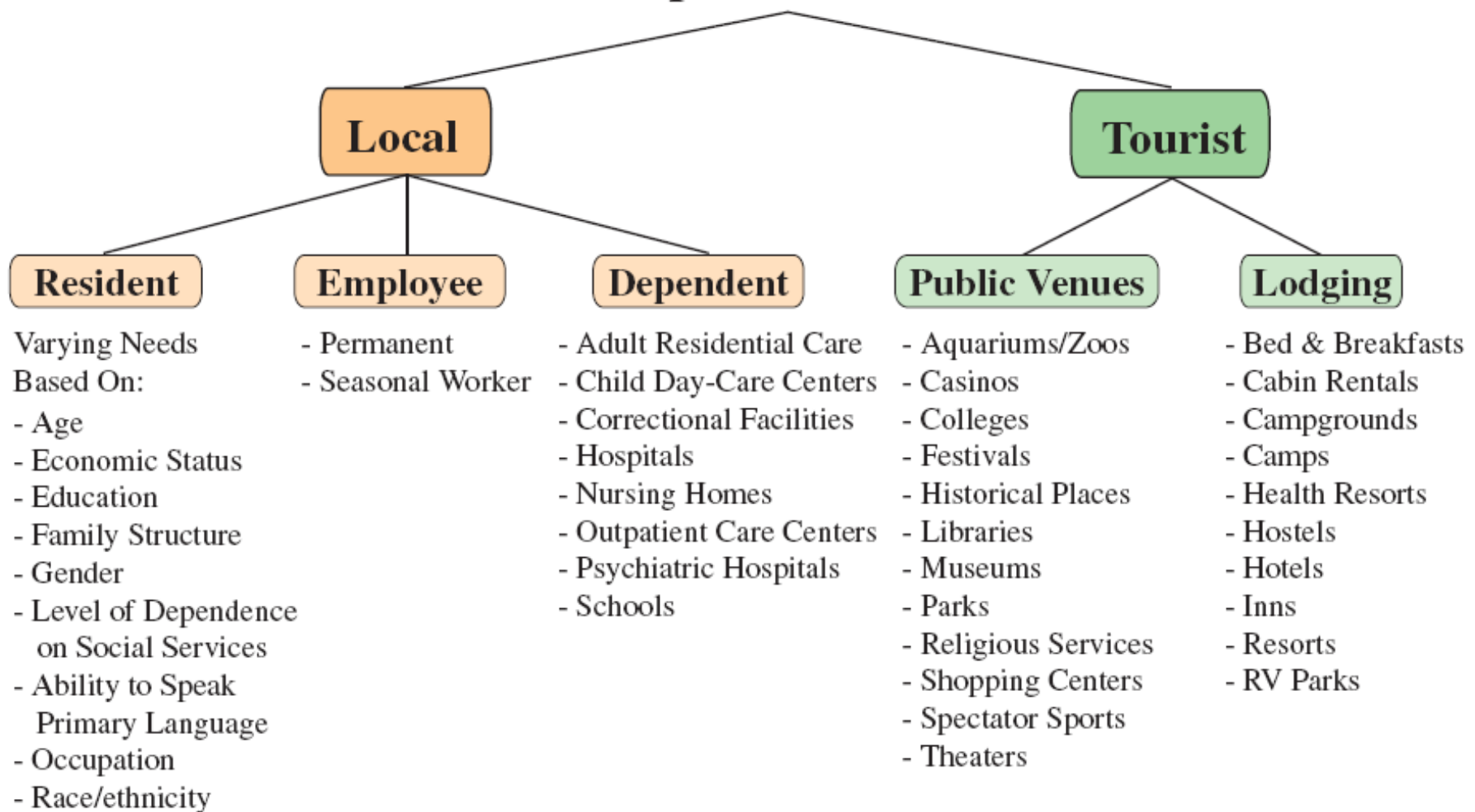
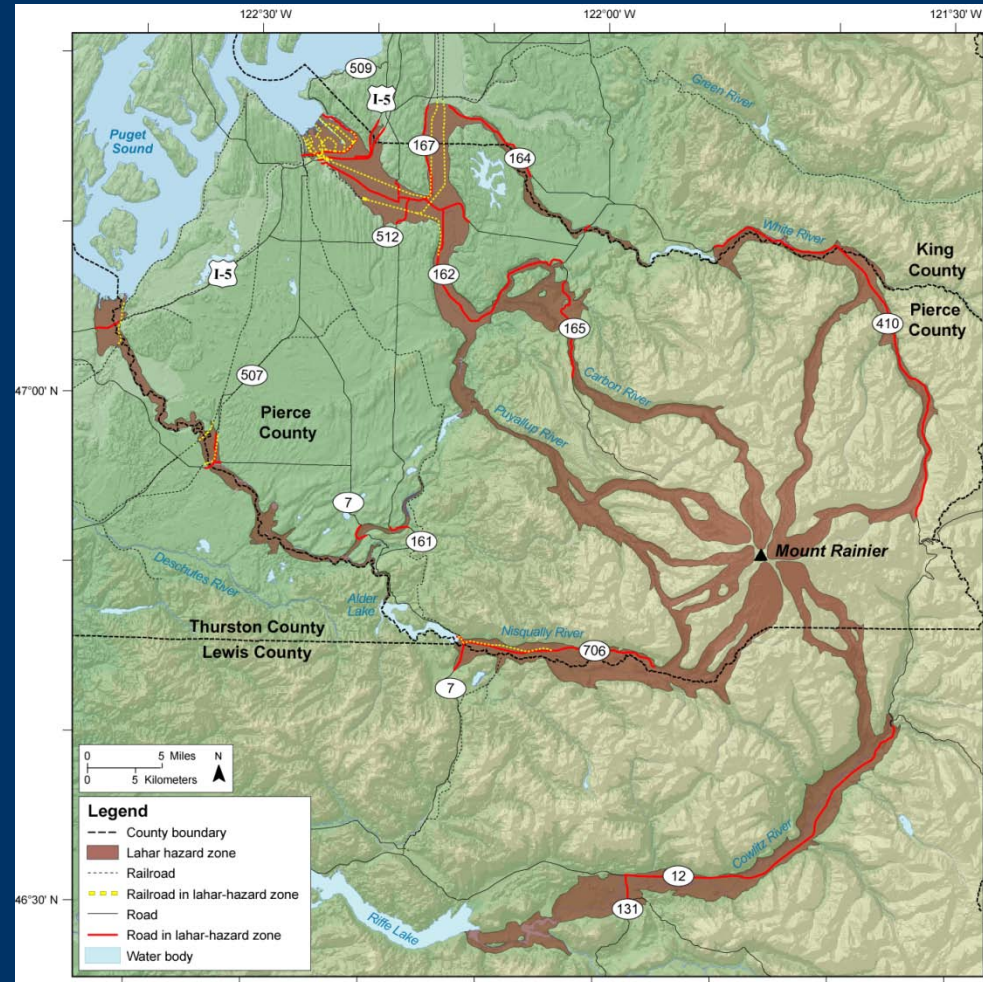
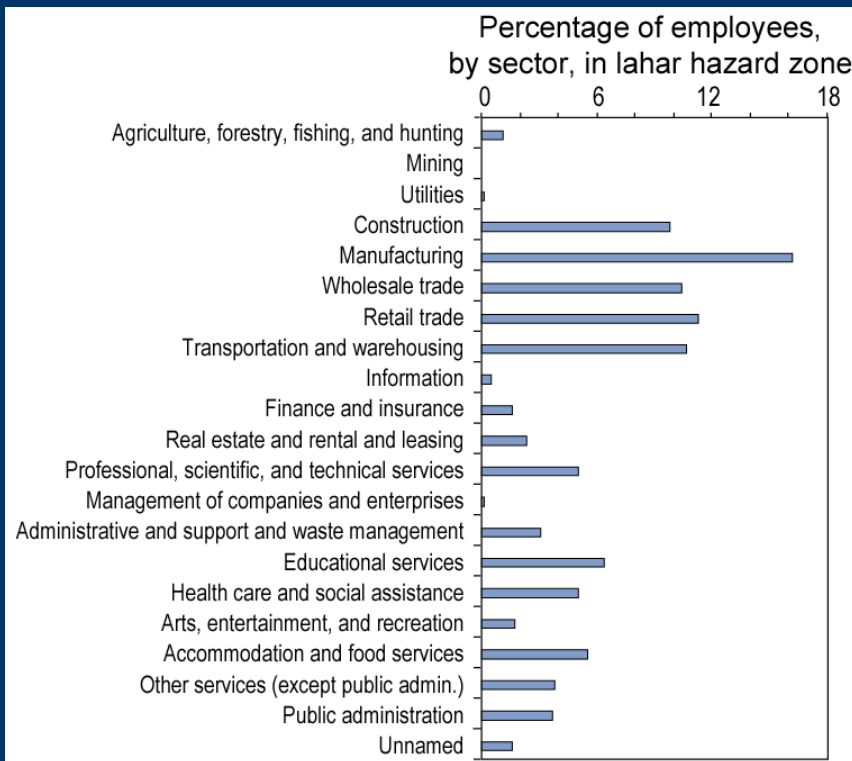


Figure 6. Conceptual diagram of populations at risk from natural hazards.

What impact could lahars have on the local and regional economy?

- Exposure of tax-parcel values?
- Percentage of workforce in hazard zones?
- Types of businesses in hazard zone?
- Business reliance on transportation system?



Instrumentation Needs Commensurate with Level of Threat

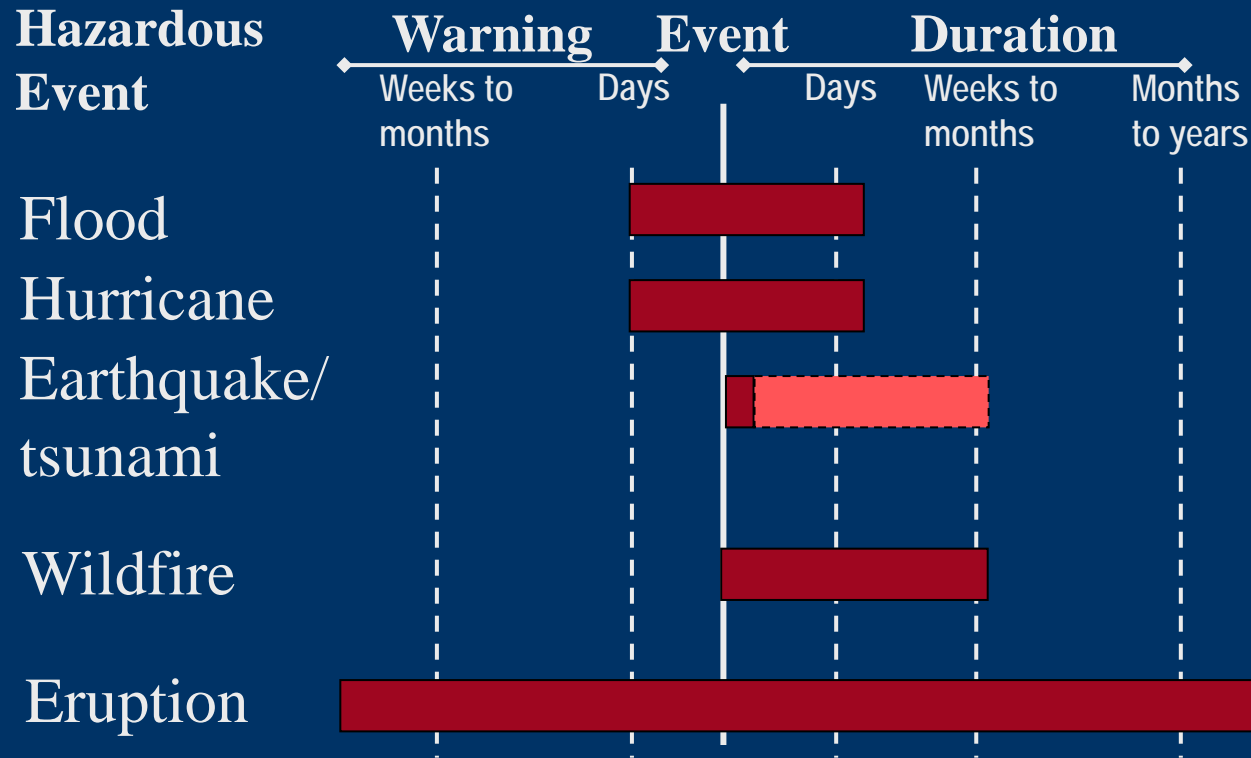
Ongoing
Periods of
Limited
Visibility



Also Important . . .

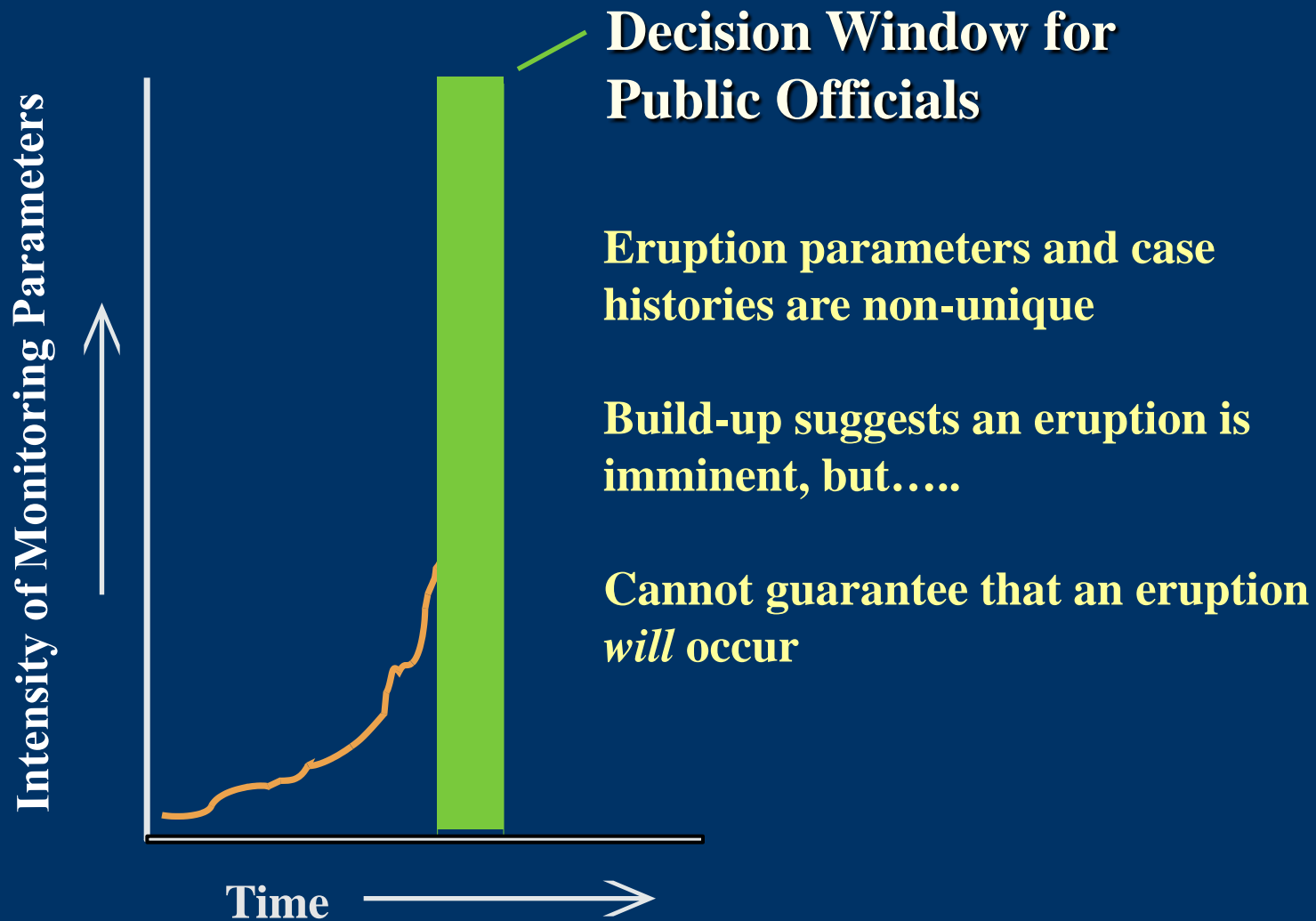
- Volcano Coordination Planning
 - Currently Updating the 2005 Mt Hood Volcano Coordination Plan
 - Clackamas County - Mt Hood Evacuation Plan begin 2010
- Community Outreach
 - Interpret Science for decision makers
 - Public
 - Students

Volcanic Eruptions are Unique Natural Hazards



Hazards associated with volcanic activity will require action before the outcome is known.....

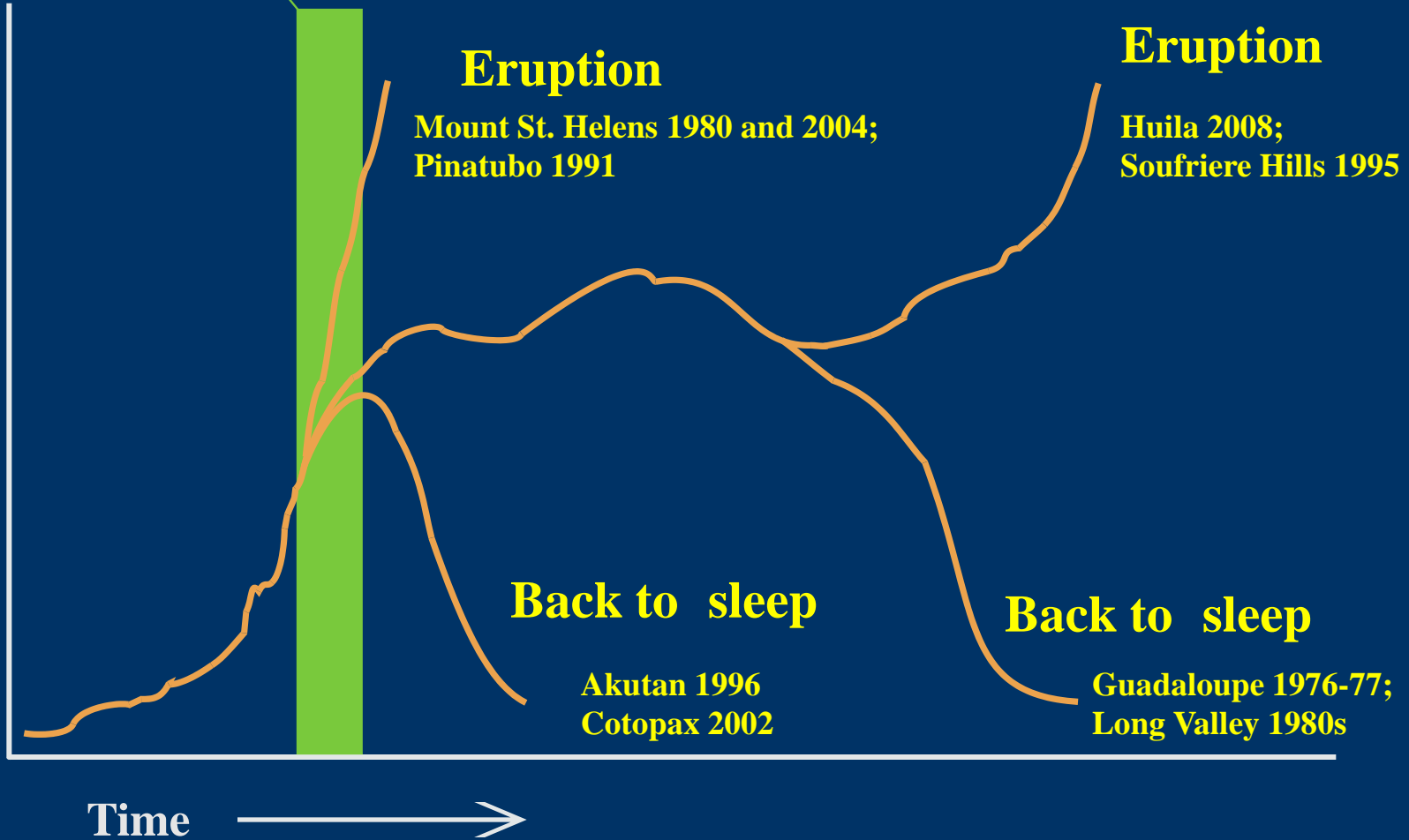
Difficult Decisions



Difficult Decisions

“Decision window”
for public officials

Intensity of Monitoring Parameters



The Need to Understand the Other Perspective

Public officials have to make black and white decisions based on the information scientists give them...



We are all interconnected



Portland International Airport

Clackamas County Emergency Management respectfully asks for your support for the Authorization and full funding of the National Volcano Early Warning System (NVEWS) as part of a comprehensive U.S. Geological Survey Volcano Hazards Program.

NEEDS – Clackamas County and the State of Oregon require the services and products from a robust U.S. Geological Survey Volcano Hazards Program that include:

- Ongoing research on volcano hazards and community vulnerability;
- Volcano monitoring commensurate with threat; and
- Community outreach.

Thank you

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