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- Volcanology
- Science Communication
- Perception of Natural Hazard and Risk
- Promoting Community Resiliency to Natural Hazards and Climate Change

Presentation Goals

A Volcanologist's Journey



Explore Hazards in Boise (and Idaho)



Boise State Hazard and Climate Resilience Institute (HCRI)



What YOU can do to help promote resilience for your community



I will share these slides

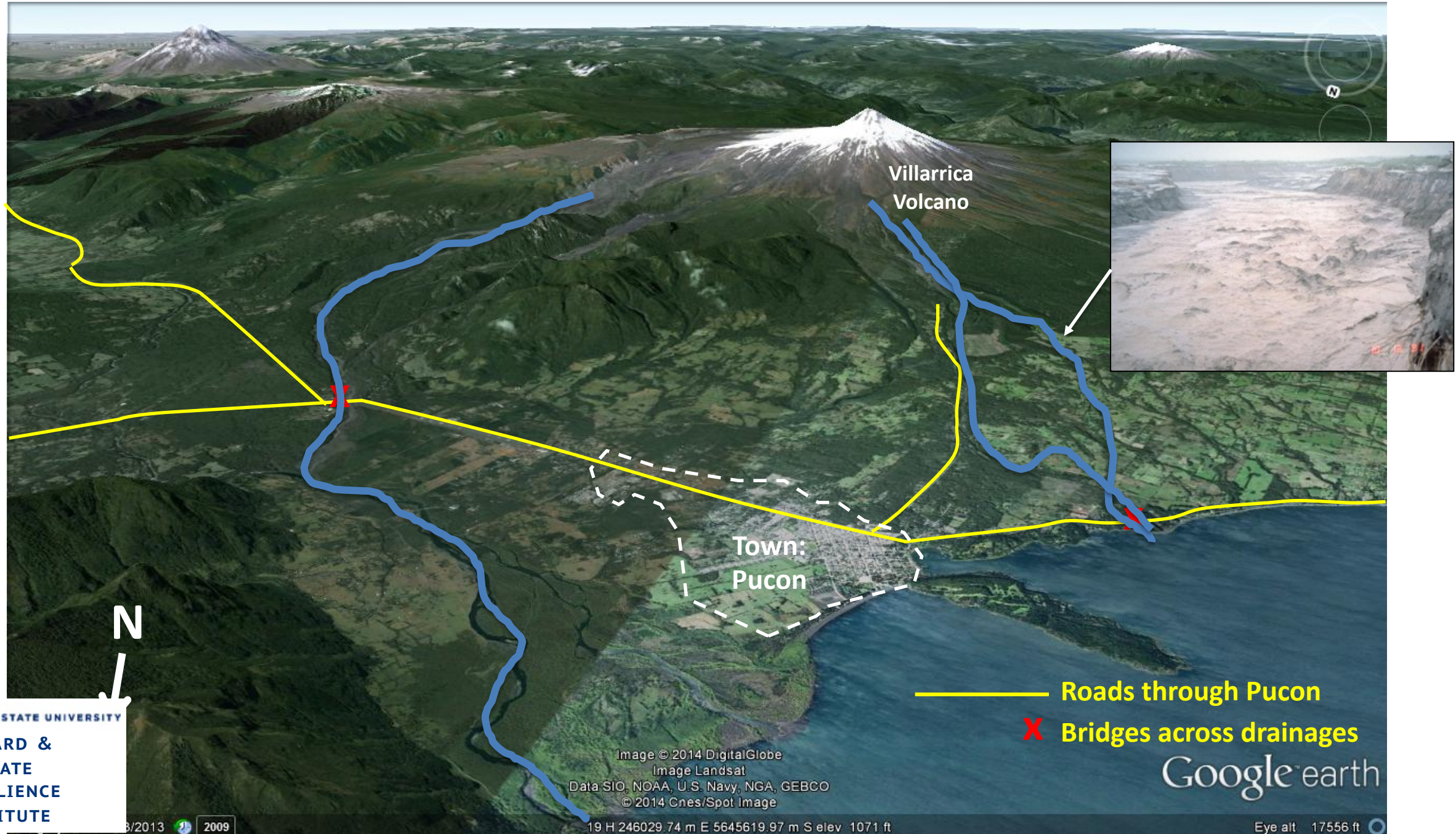


A Volcanologist's Journey

March 3, 2015 Eruption of Villarrica Volcano, Chile



Villarrica Volcano - ~15 km from town of Pucon



What does it take to build prepared, resilient communities?

Pucon, Chile



Tacoma, WA



Valley Fire, CA



California's
San Andreas Fault

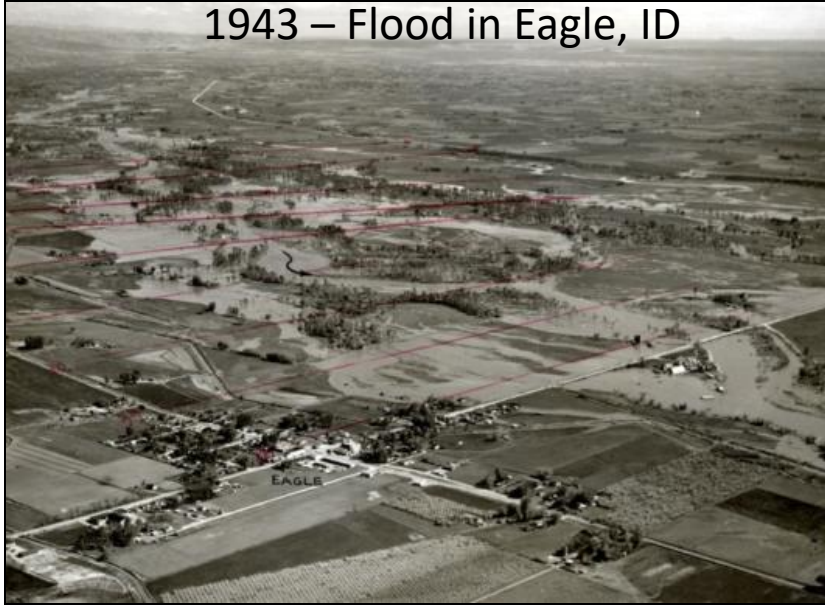


What natural hazard events are possible in Boise?



Flooding in Boise

1943 – Flood in Eagle, ID



2017 – Boise River Flooding



2017 – Boise River Flooding

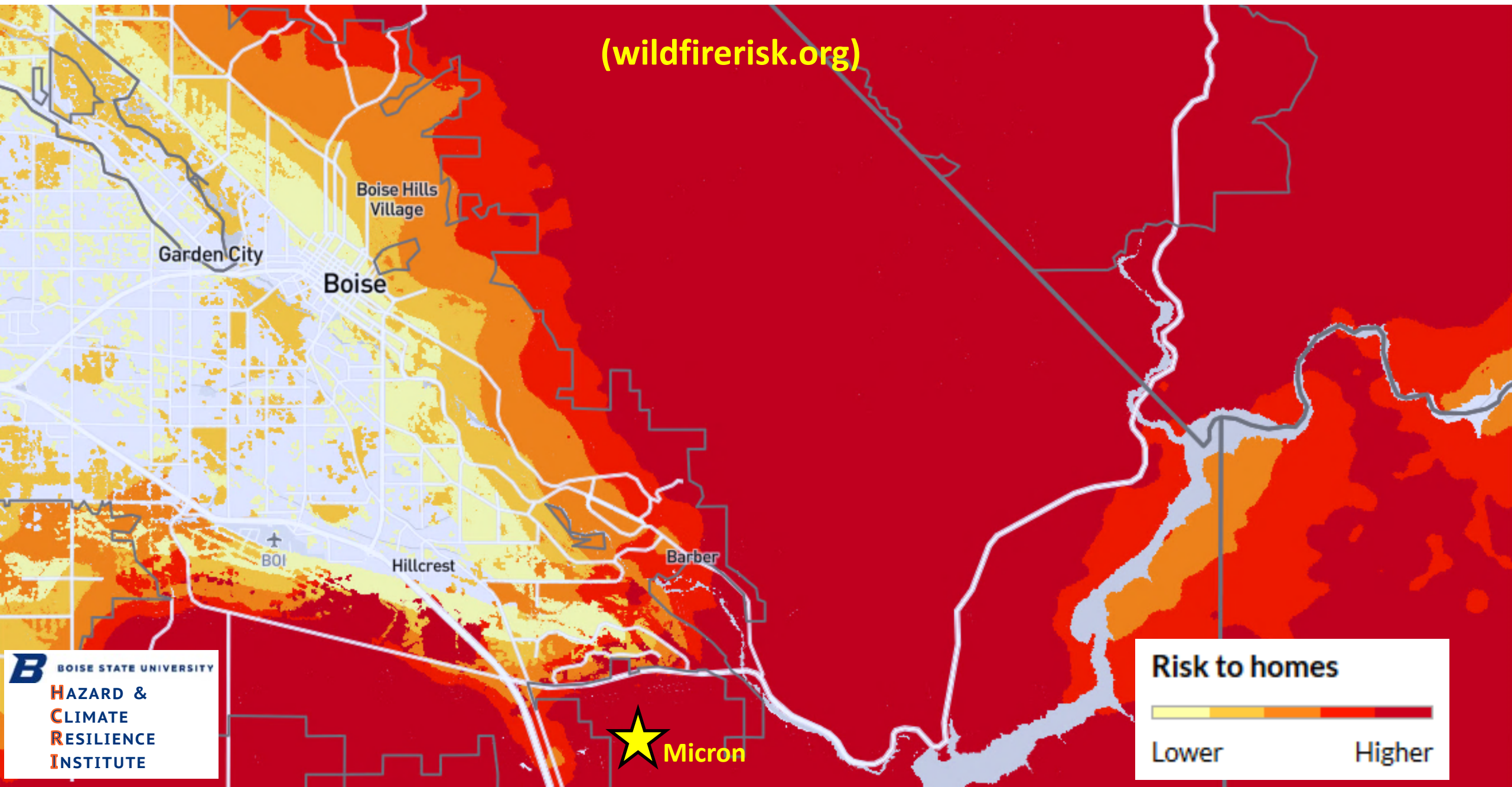


Do you live in a flood zone?

<https://msc.fema.gov/portal/home>

Local Wildfire Zone

(wildfirerisk.org)

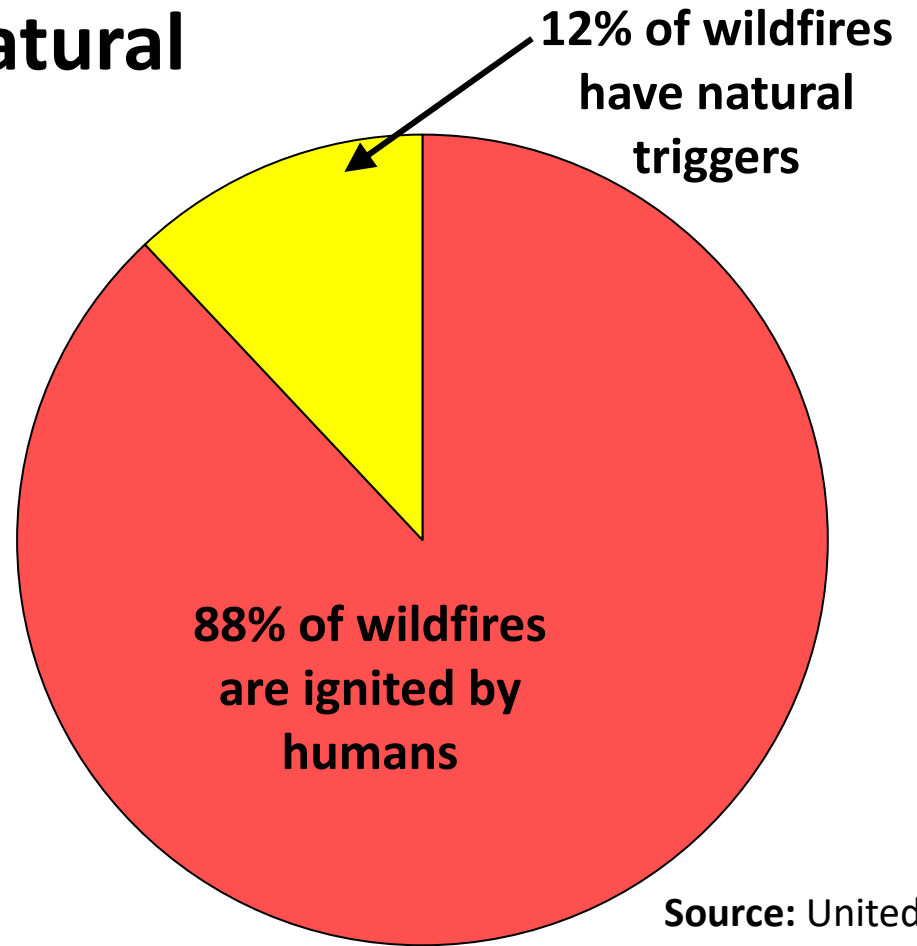
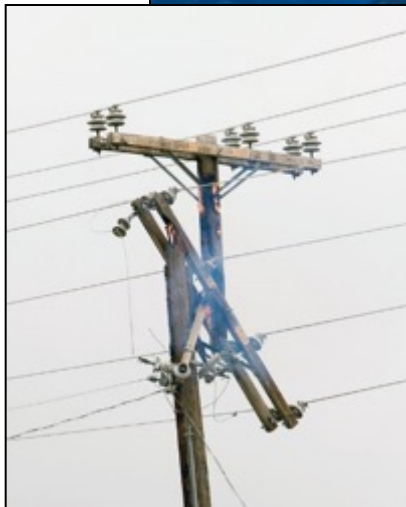
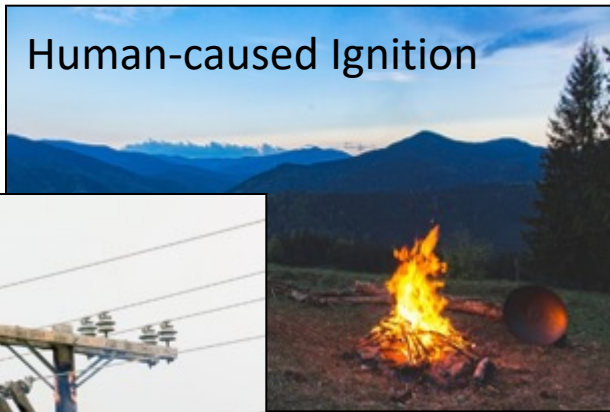


B BOISE STATE UNIVERSITY
HAZARD &
CLIMATE
RESILIENCE
INSTITUTE

★ Micron

Pop Quiz!

What percent of wildfires are started by natural ignitions?



Source: United States National Park Service

Wildfire in Boise

Learn more about [what the City of Boise has done](#) to prevent future wildfire disasters:

1996 8th Street Fire



Photo provided by Boise Fire Department

2008 Oregon Trail Fire



Photo from Idaho Firewise

2016 Table Rock Fire Footprint



Photo by Leo Gies, Idaho Airships, Inc

Is this an example of a natural hazard event?



Earthquakes in Boise/Idaho

Idaho
Statesman

BOISE

Earthquake aftershocks felt in Boise;
Custer courthouse damaged; avalanches
dot Sawtooths

APRIL 03, 2020 2:21 PM

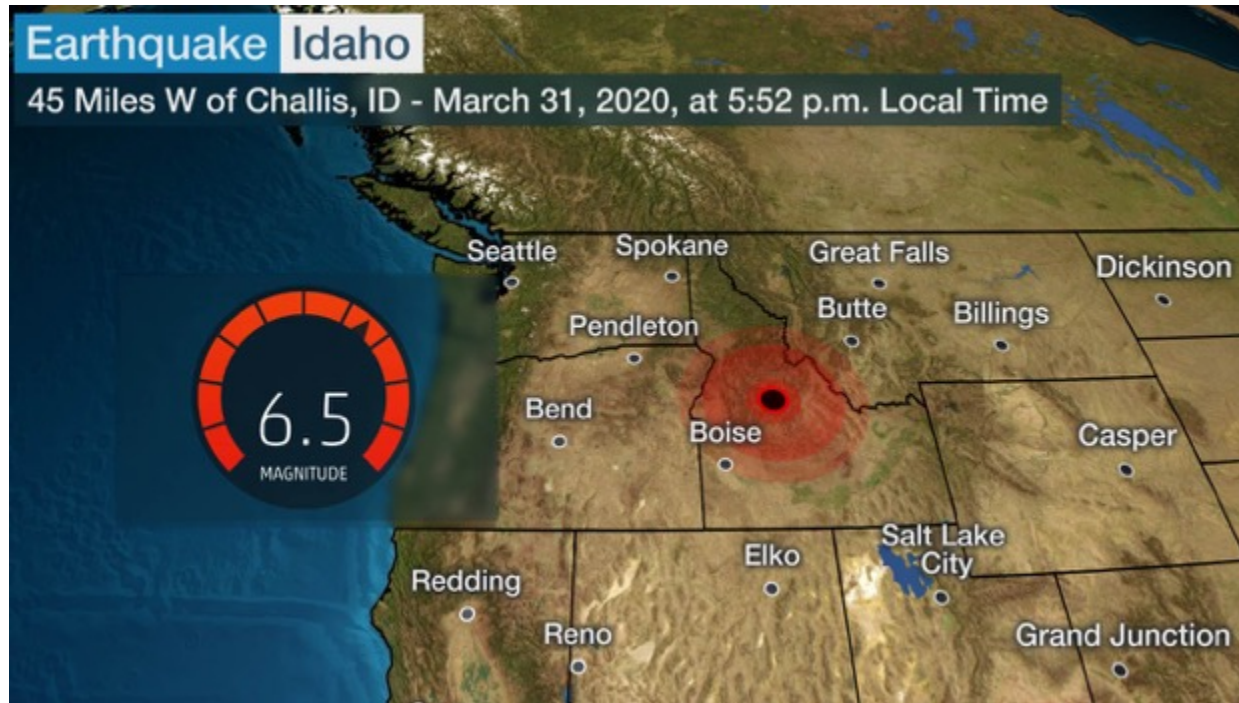
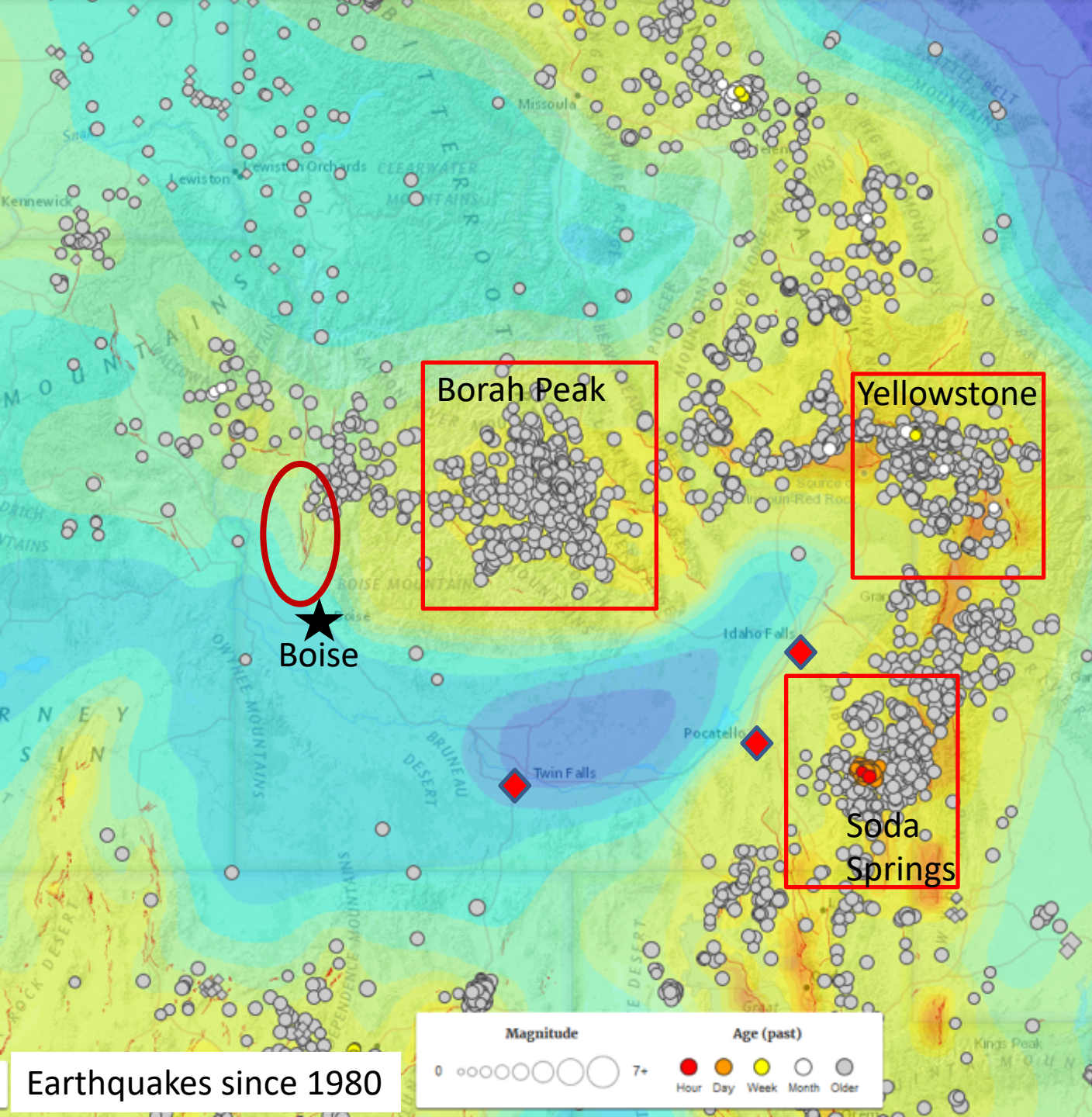


Image from the National Weather Service



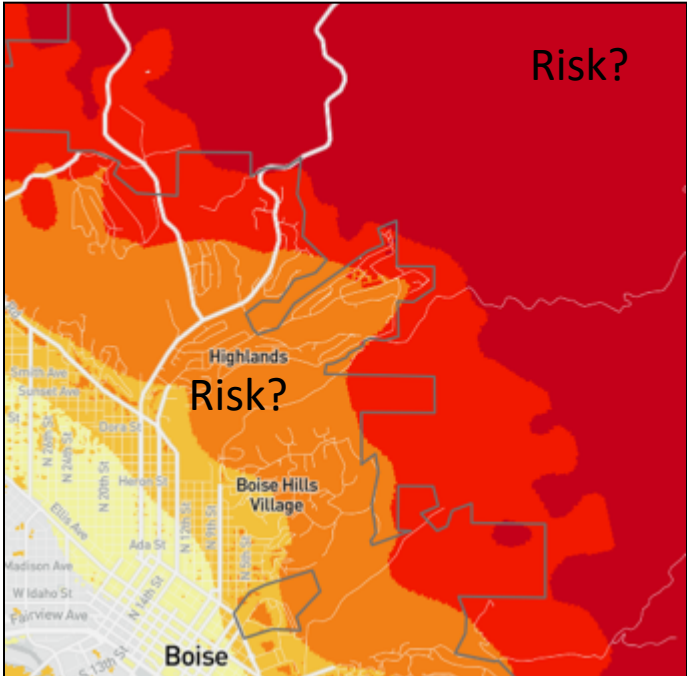
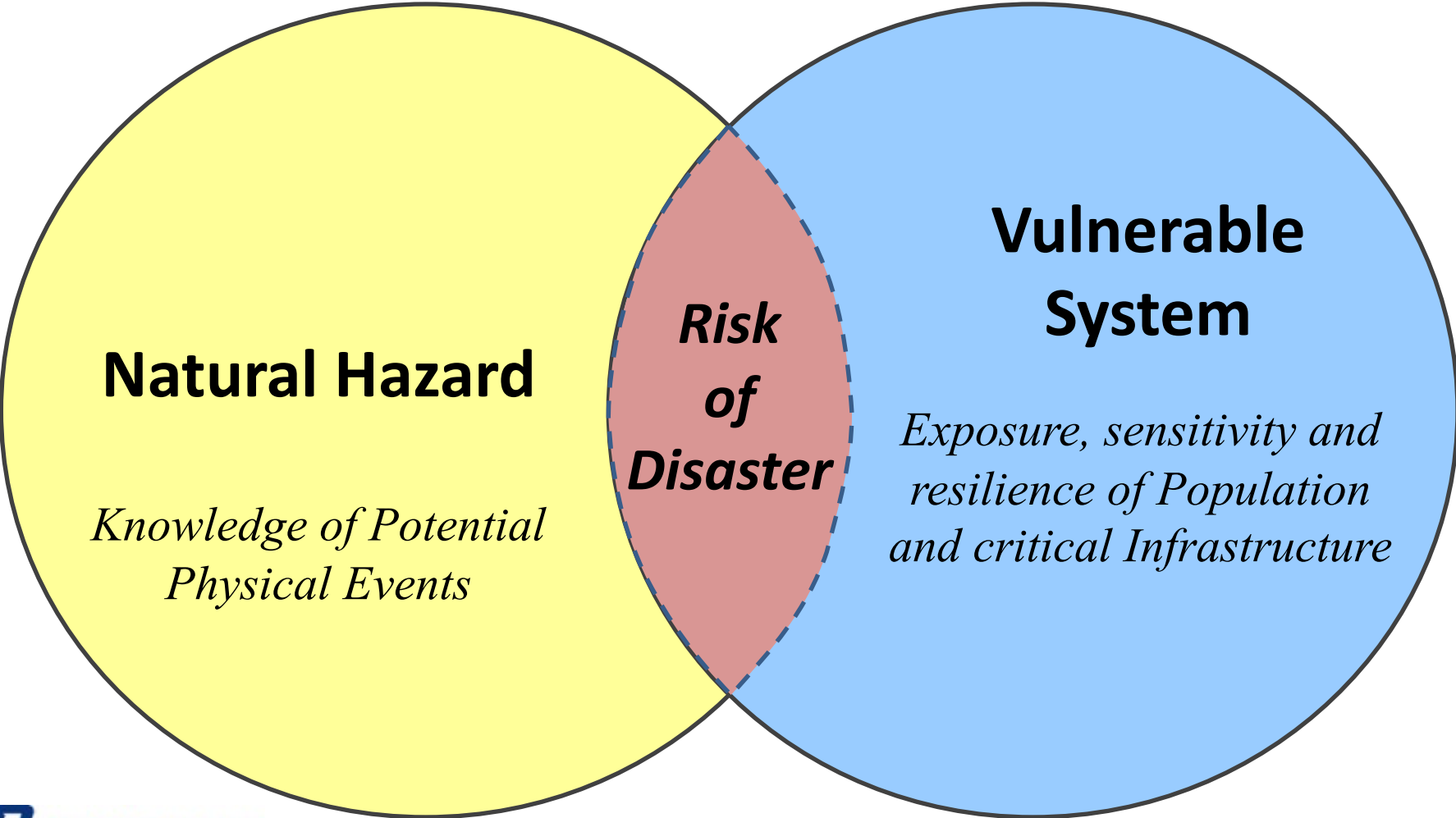


Idaho ranks number 8 in the nation for earthquake risk

- 1959 7.3 Hebgen Lake, MT (west Yellowstone area)
- 1983 6.9 Borah Peak
- 2017 5.3 Soda Springs earthquake
- 2020 6.5 Sawtooth Fault

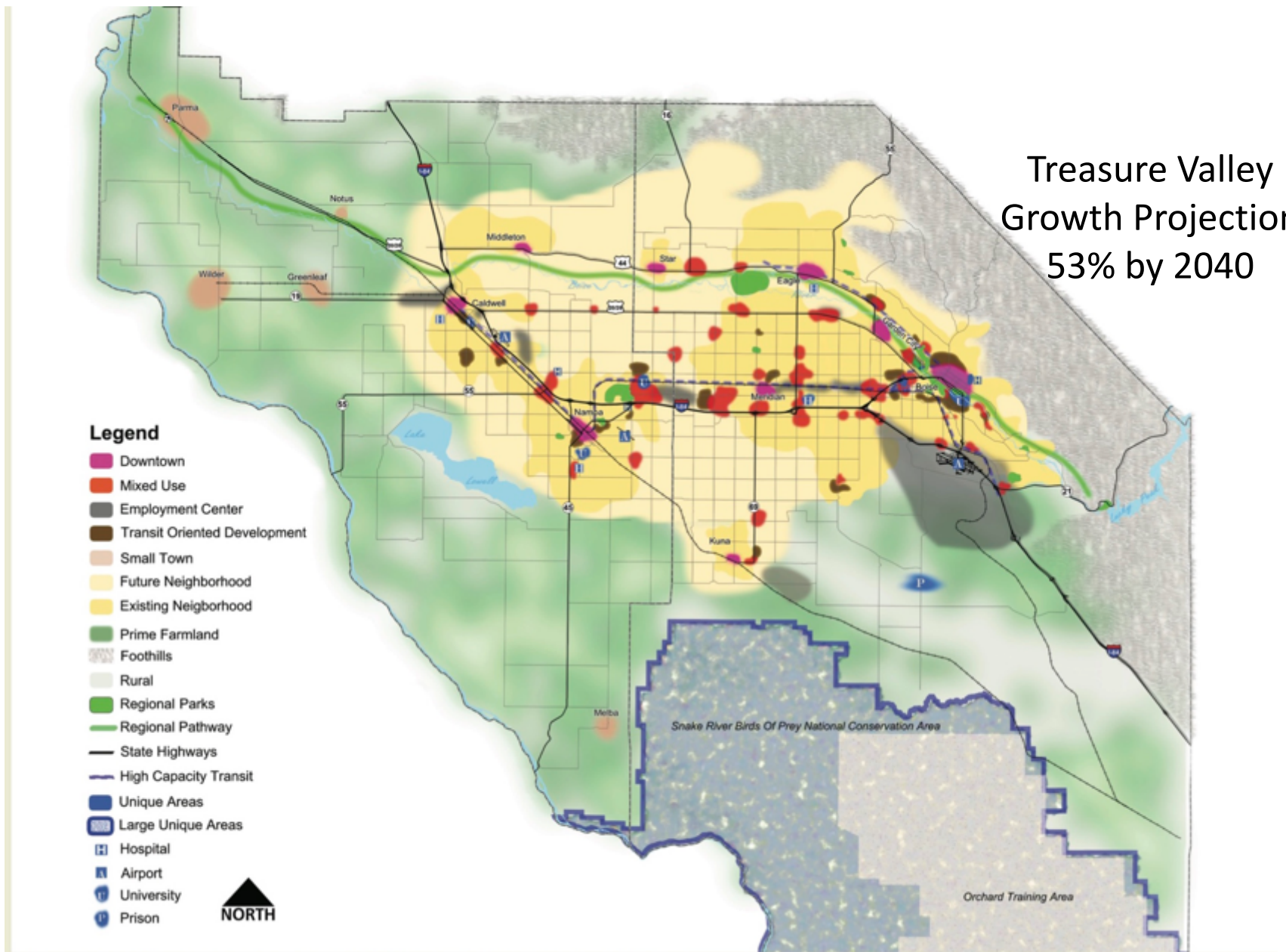
How did the March 31, 2020 event shape your perception of earthquakes?

When do Natural Hazard Events Become Disasters?



Risk diagram modified from <http://pubs.usgs.gov/fs/2011/3008>

Population Growth into Hazardous Areas and Preparing for a Changing Climate



COMPASS growth scenario for the Treasure Valley

What is Community Disaster Resilience?

The capacity of a community to prepare for, respond and adapt to, and recover from an adverse event or condition. **The ability for a community to thrive.**



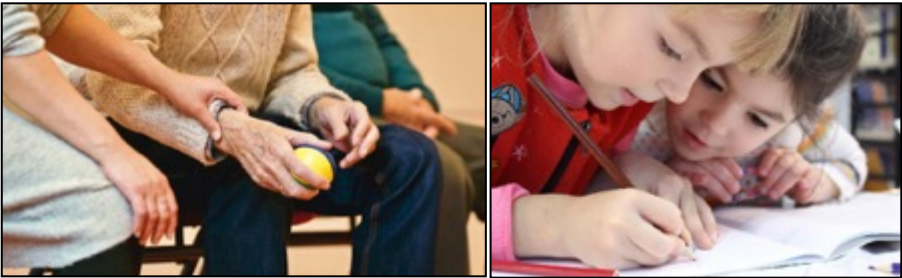
Factors that Influence Community Disaster Resilience



Natural Environment



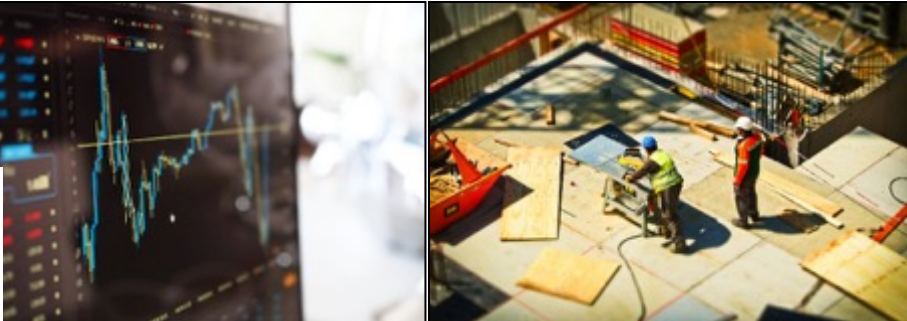
Built Environment



Health and Well-being



Social Connections and Engaged Citizens



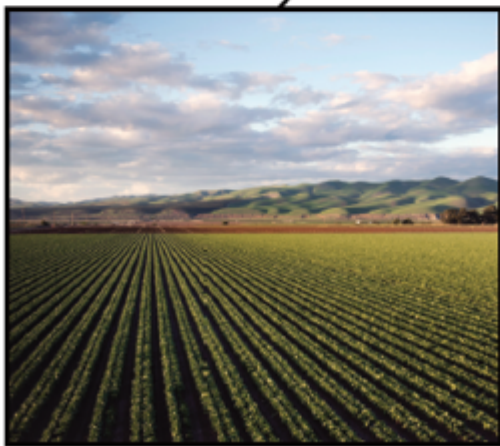
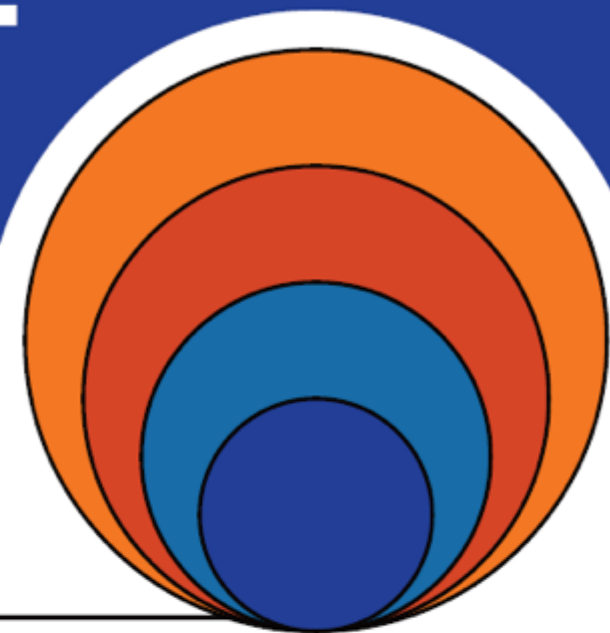
Economic Prosperity



Leadership and Strategy

HAZARD AND CLIMATE RESILIENCE INSTITUTE

We are a community of researchers and practitioners dedicated to improving society's resilience to natural hazards and the impacts of a changing climate.



Environment



Region & City



Community



Individual & Family

Faculty

Pei Lin Yu

Kendall House

Roger Rosentreter

Mojtaba Sadegh

Cynthia Curl

Jayash Paudel

Pamella Aishlin

David Wilkins

Edwin Deyoung

Donna Calhoun

Grady Wright

Vicken Hillis

Kelly Hopping

John Gardner

John Kaplan

John Freemuth

Rebecca Som Castellano

Jillian Moroney

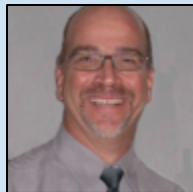
Advisory Board



Michael Lindell
Former director for Texas
A&M Hazards Center



Liisa Itkonen
COMPASS
(Metropolitan Planning)



Rob Flaner
TetraTech

Executive Team

Dr. Emily Wakild



*Environmental
Studies and
History*

Dr. Kelly Rossetto



*Personal Resilience
Communication*

Dr. Jayash Paudel



*Environmental
Economics*

Dr. Luke Montrose



*Environmental Health
Community and
Environmental Health*

Dr. Matthew Isbell



*Organizational
Development
Communication*

Leadership

Dr. Brittany Brand



Director
Geoscience

**Carson
MacPherson-Krutzky**



**Community Engagement
Coordinator**
Geoscience

Dr. Saleh Ahmed



*Urban Planning and
Climate Change
Global Studies*

Dr. Bhaskar Chittoori



*Infrastructure Resilience
Civil Engineering*

Rob Littrell



*Boise State
Emergency
Manager*



Megan Gambs
Boise State STEM & Diversity



Paul Marusich
Ada County
Emergency Planner



Eric Lindquist
Boise State Public Policy

Students

Matt Clark

Lauren Hunt

Jenn Butt

Aaron Marshall

Alex Witsil

Monica Vermillion

Hannah Spero

Cera Windham

Community Partners

Boise State Office of
Emergency Management

Engineering with a Mission,
LLC

Boise Fire Department

Ada County Emergency
Management

Idaho Office of Emergency
Management

USGS ID Water Center

US Fish and Wildlife Service

Ecosystem Sciences
Foundation

Grand Challenges the HCRI will Address

Natural Hazard and Resilience Modeling

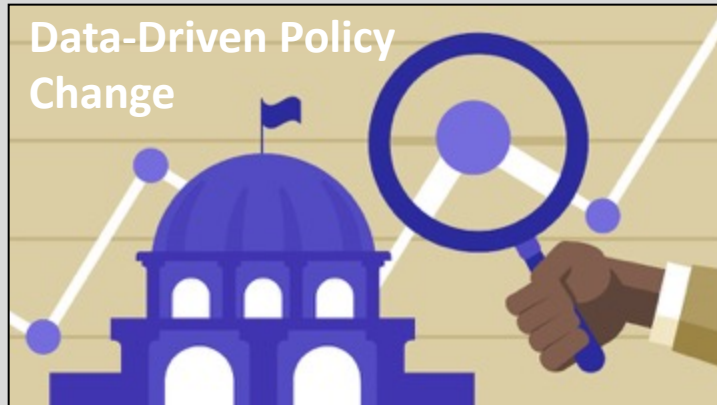


Identifying Ways to Reach Resilience Goals

Resource Management in a Changing Climate



Data-Driven Policy Change



Multi-Sector Engagement

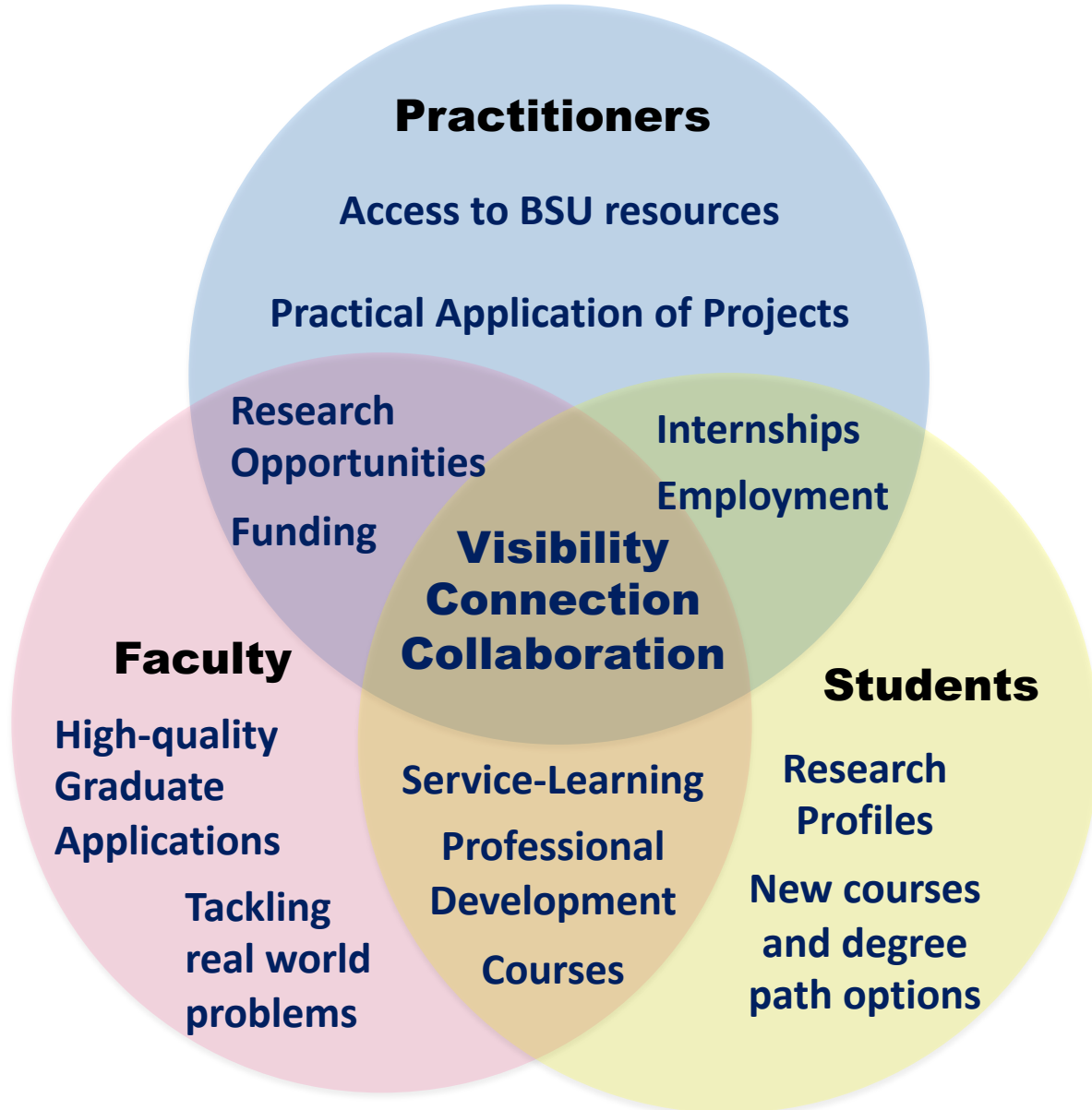


Developing Multi-disciplinary Education Opportunities to Promote Societal Resilience



“Local Applications – Global Implications”

HCRI Value to Members



Value to Boise State



Value to Community



Value to Region and Beyond



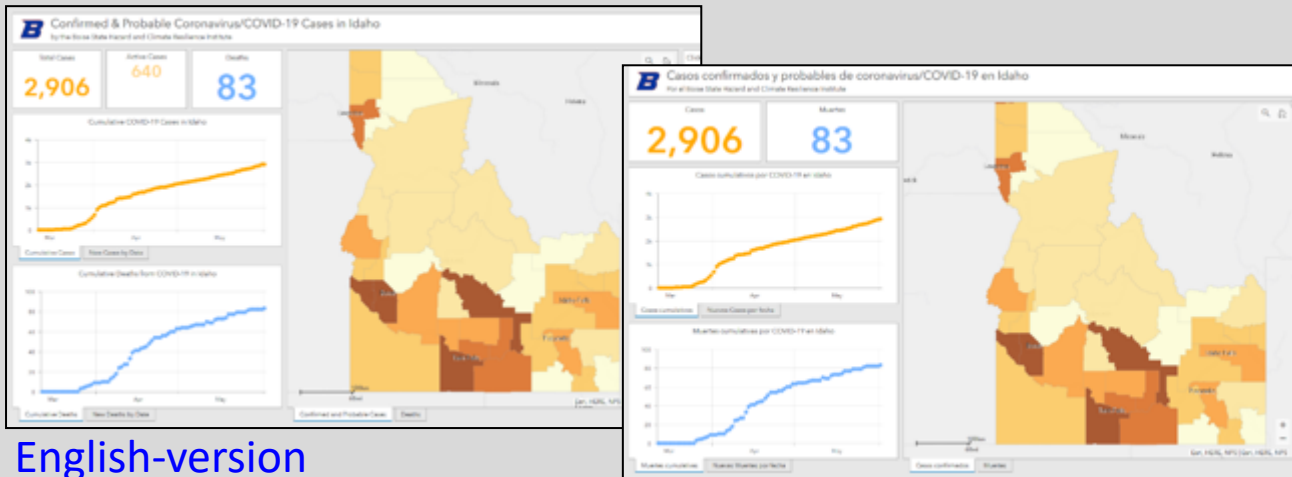
What are We Currently Doing?

Using active-learning and goal-setting strategies to promote wildfire awareness and preparedness



Campus Survey: Hazard Knowledge, Risk Perception, and Preparedness

COVID-19 Dashboard



[English-version](#)

[Spanish-version](#)



What are We Currently Doing?



BOISE STATE UNIVERSITY

HAZARD AND CLIMATE RESILIENCE INSTITUTE

We foster whole community collaboration to proactively build resilience to hazards and the impacts of a changing climate.

Learn more about Regional Hazards



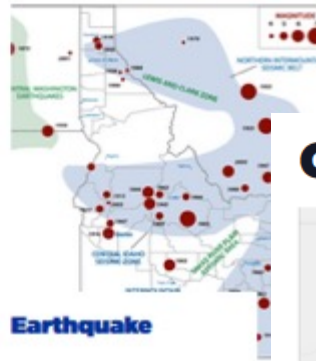
Wildfire



Flooding

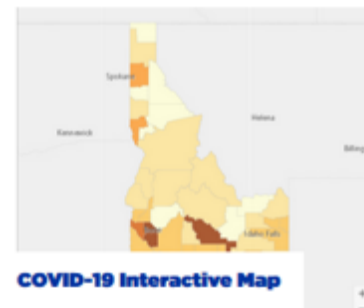


Extreme Winter Weather



Earthquake

COVID-19 Resources



COVID-19 Interactive Map



Boise State COVID-19



Idaho State COVID-19 Info

NSF Civic Engagement Challenge Project - \$1 M for 1 Year

Study Area: Canyon and Ada Counties

- Quantitatively and holistically analyze community disaster resilience
- Resilience Network Assessment
- Identify and set goals to address the needs of our vulnerable/frontline communities



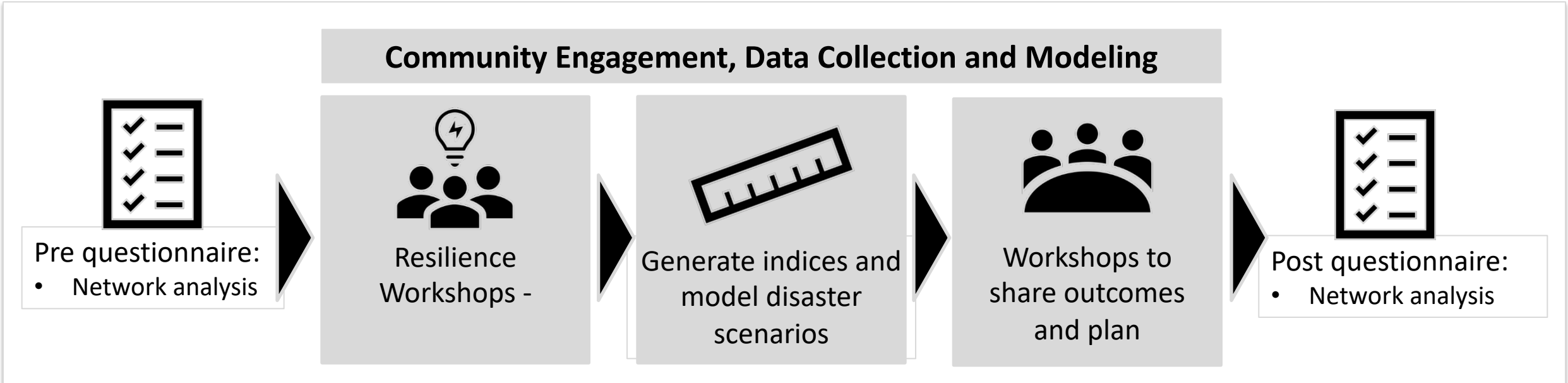
U.S. Department of Energy



National Science Foundation

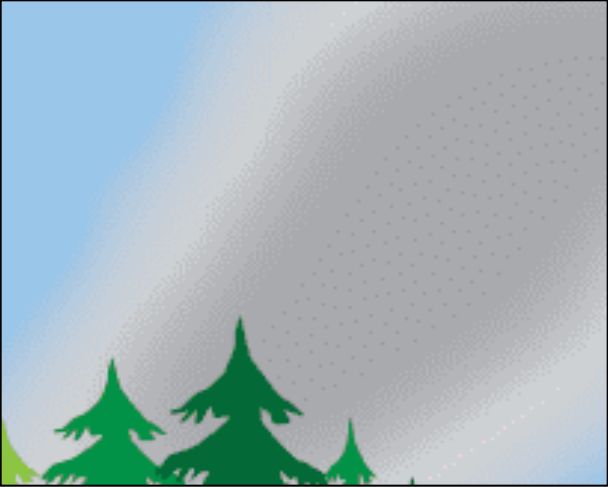


U.S. Department of Homeland Security



How you can help promote community resilience

Be Informed

An illustration showing a grey, stormy sky with rain falling over a landscape of green evergreen trees. The scene is framed within a rounded rectangle.


Take Action



<https://www.ready.gov/>

The 'Ready.gov' logo features the word 'Ready' in a bold, green, sans-serif font. Above the 'y' is a stylized green checkmark. Below the logo is the URL 'https://www.ready.gov/' in a smaller, blue, underlined font. The entire content is set against a light grey background within a rounded rectangle.

Talk to Neighbors

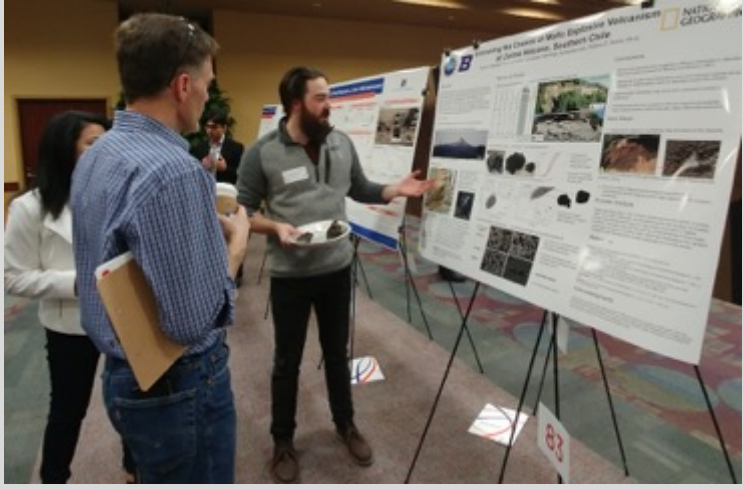
A photograph of a group of about seven people, including men, women, and children, sitting on a grassy lawn. A black dog is also present. They appear to be in a residential neighborhood with trees and houses in the background. The photo is framed within a rounded rectangle.

How you can help promote community resilience

Become a Member



Participate in Events and Research



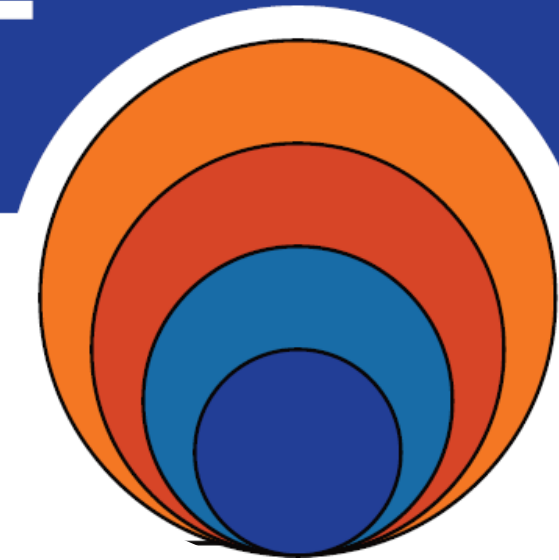
Support HCRI Research and Events



Thank you for your attention and support!



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HCRI@boisestate.edu

www.boisestate.edu/research-hcri/

Example Preparedness Table

Task	When will you do this?	Relative Cost (Free, \$, \$\$, \$\$\$)	How will this protect your family and/or property	What is the benefit of taking this action in addition to reducing your risk?