ISET

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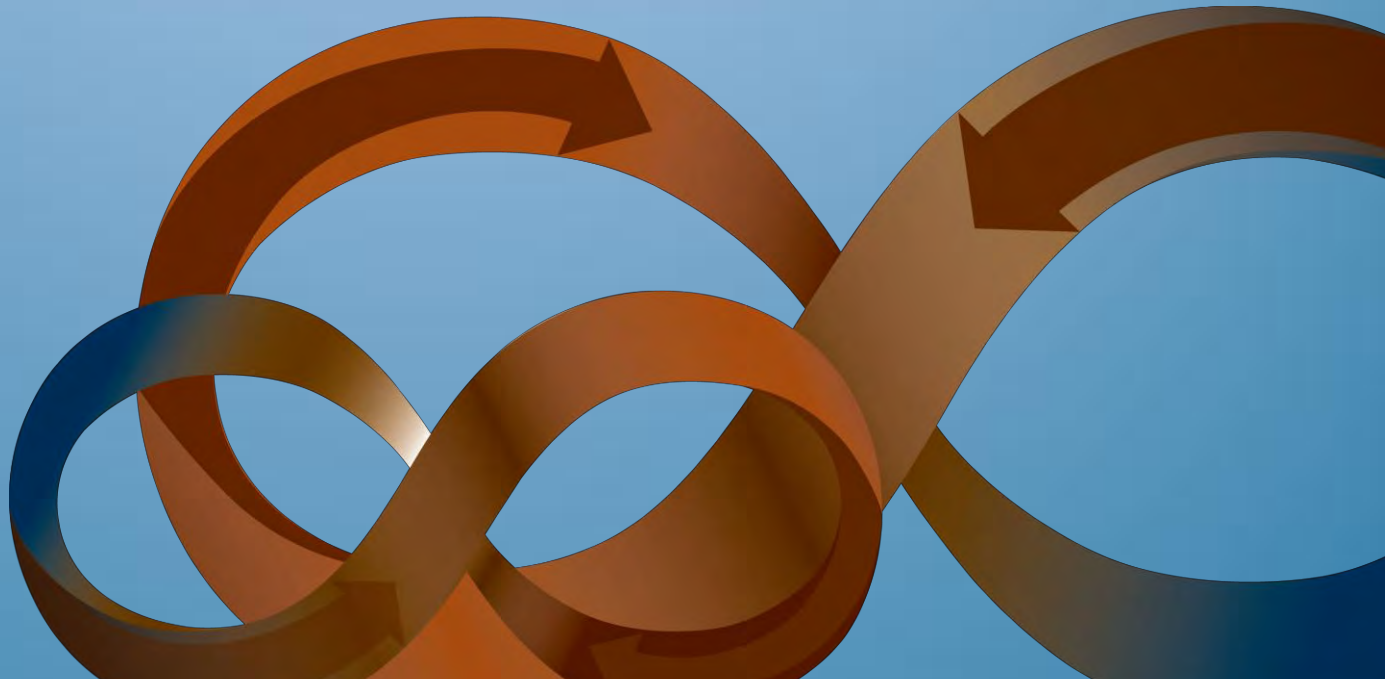
Instructional Design

What can we do with this information?

Santa Fe Watershed Climate Change Workshop

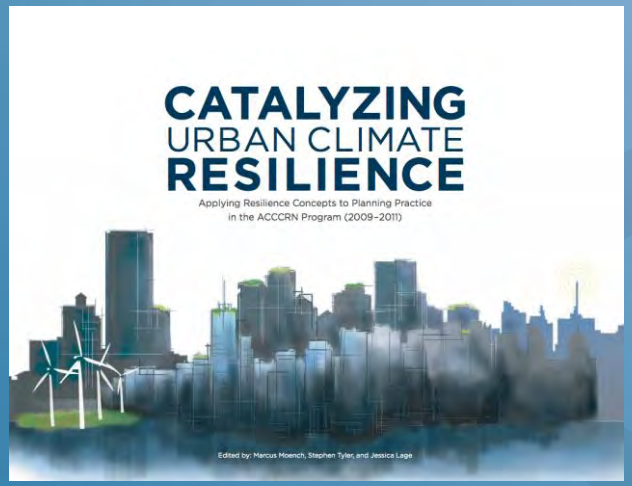


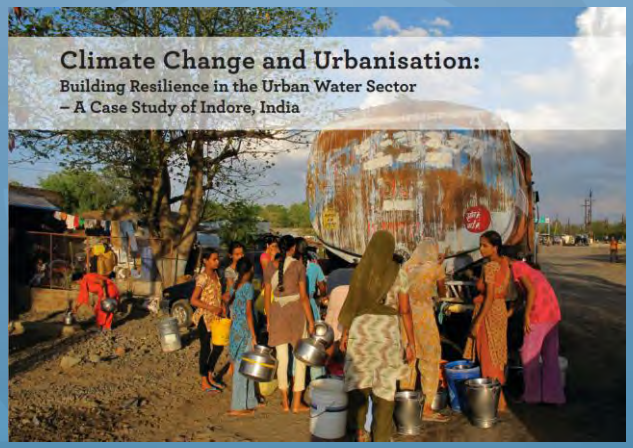

I DON'T BELIEVE IN

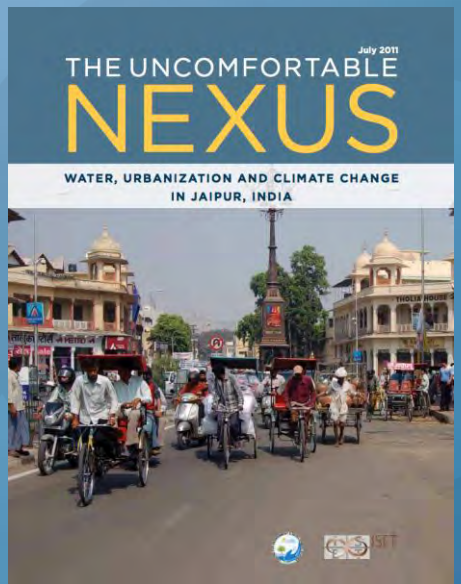

GLITCH
PROBLEM
DISASTER

ISET – The Institute for Social and Environmental Transition
www.i-s-e-t.org

- International non-profit based in Boulder, CO
- Focus on understanding social and environmental change processes, including climate change and urbanization, and supporting adaptive responses
- Historically focused in China, India, Indonesia, Nepal, Pakistan, Thailand & Vietnam

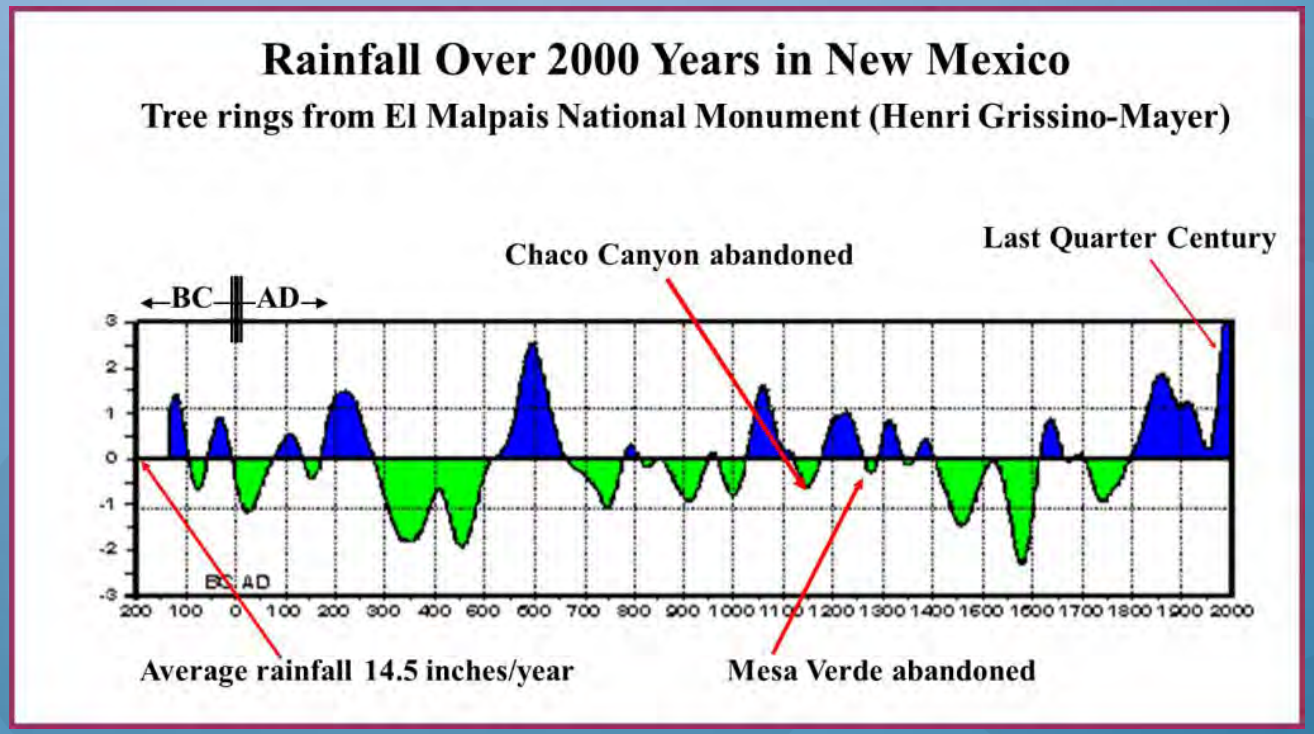






Water in New Mexico

- New Mexican climate is historically highly variable
- Local water systems did not fully understand this variability when set-up
- Reservoirs, prior appropriation, compacts fairly rigid
- Demands are changing – competition now between agriculture, cities, environment, tourism



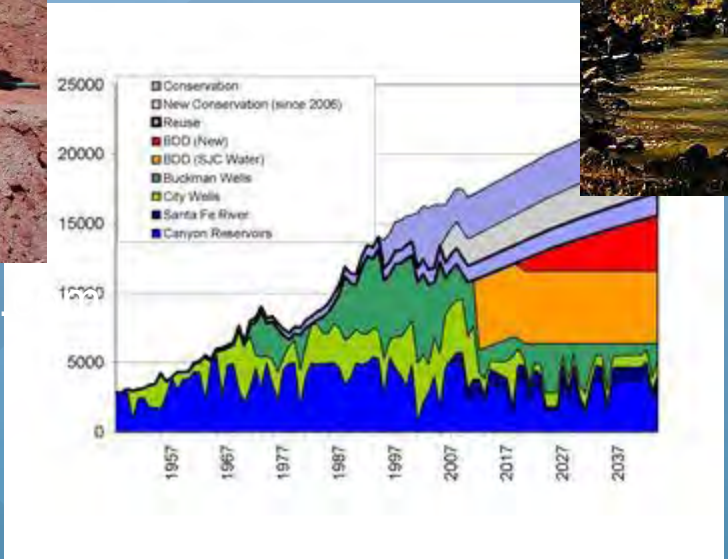
Water in New Mexico

Systems are stressed

BUT… flexibilities are increasingly being built in, e.g. conjunctive use, water markets, in-stream flows

http://www.theraincatcherinc.

artsblog.ocregister.com



What we can expect from Climate Change

- Increased temperatures
- Increased evapotranspiration
- Shift in precipitation – more as rain, less as snow
- Changes in precipitation intensity and timing
- Potential changes in precipitation amount
- Increase in overall variability

So what should we do?

- The future is uncertain
- We can't plan for a new, stable climate – we need to be planning for a warmer, more variable climate.

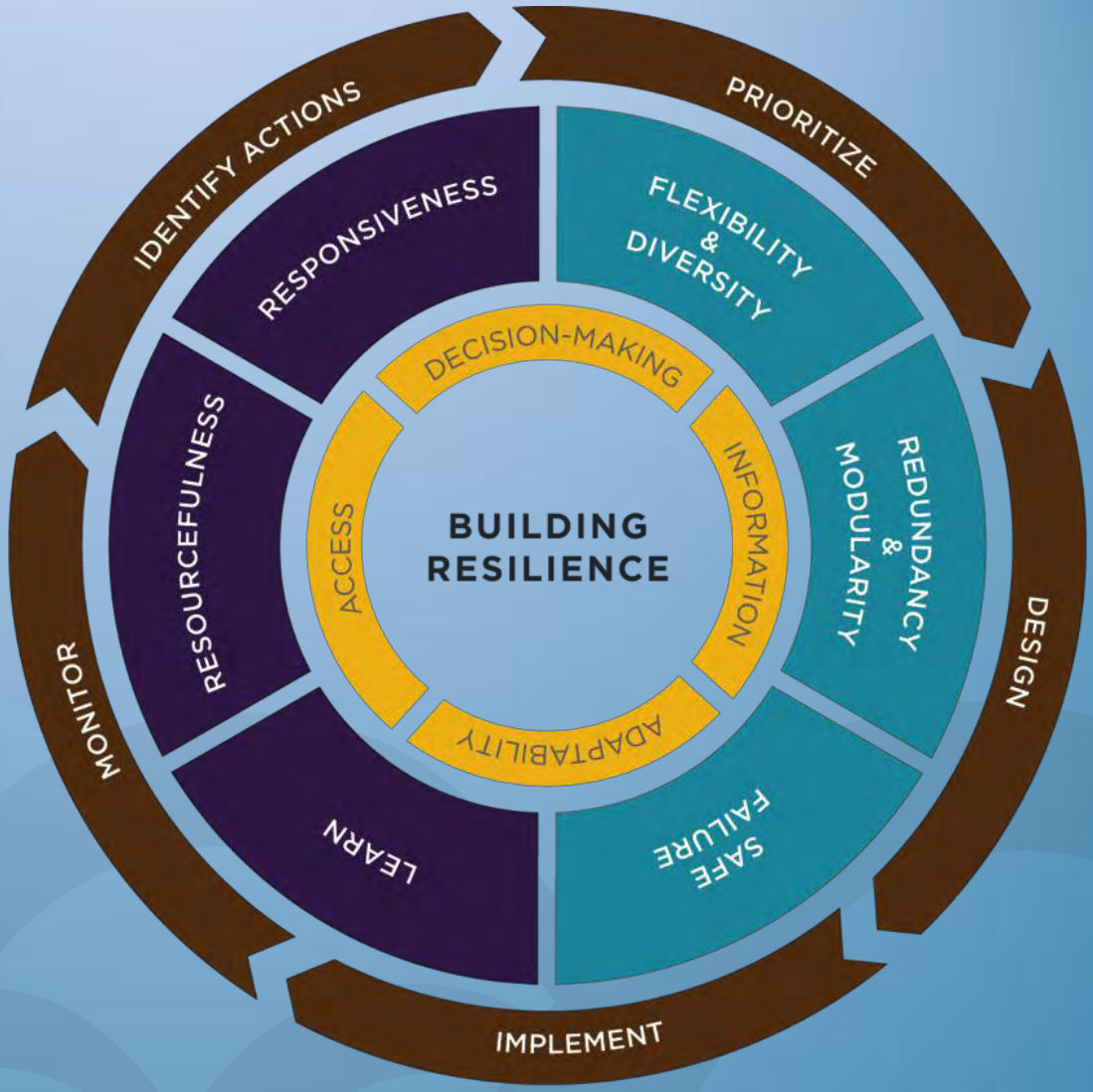
We need to become **resilient**, so that we can address whatever we get.

The ability to absorb disturbances, change or adjust, and then re-organize and still have the same basic structure and ways of functioning OR to elegantly anticipate and move to a new way of functioning.

http://twentytwowords.com

A resilient system is flexible, modular, and, if it fails, can fail safely.

In people, resilience also includes responsiveness, resourcefulness, and capacity to learn.

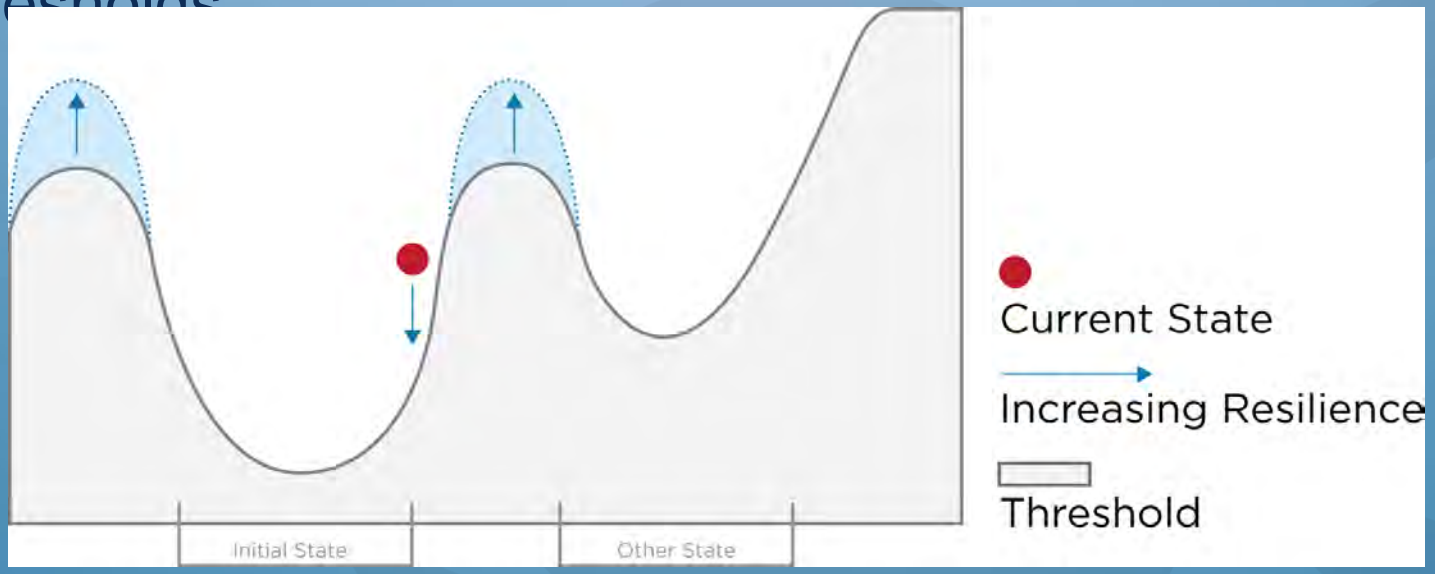


Building resilience - Thresholds

To address the uncertainty inherent in future climate, we will focus on **climate thresholds**

Thresholds – key levels at which, if the levels are exceeded the system is unable provide its services or shifts to a new state.

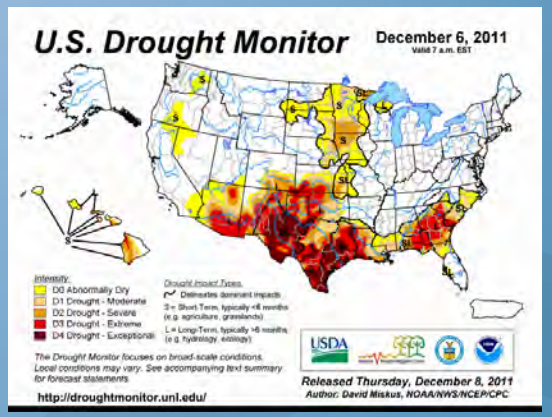
Building resilience helps you stay below critical thresholds



Today's Task: Identifying Thresholds and Brainstorming Ways to Avoid Them

Probably all systems we will talk about today are stressed.

Climate change will generate new vulnerabilities and risks.



Direct vs. Indirect Impacts

Warmer winter temperature impacts on water supply

Direct

- More snow lost to evaporation, earlier runoff

Indirect:

- Pine beetles proliferate, killing trees
- Forests become more susceptible to wildfires
- Burnt hillsides are more prone to erosion
- Ash washes into rivers and reservoirs, which impacts the ability of users to withdraw water

Waiting for a wave….

Exercise:

- What elements of climate change will have the greatest impact on the systems you are thinking about?

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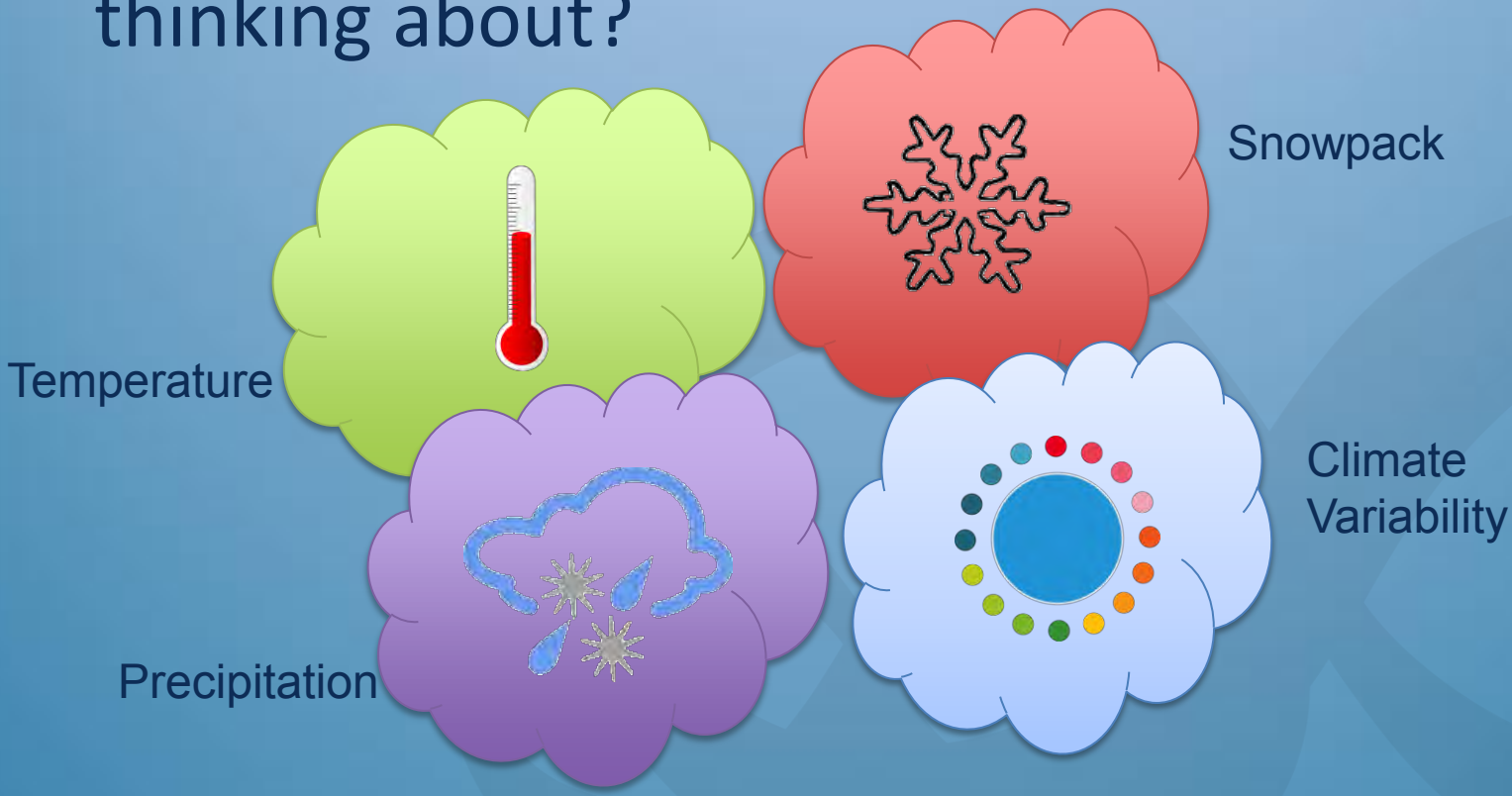
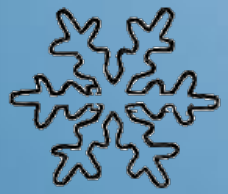


Show of Hands



- Most concerned about changes in temperature
- Most concerned about changes in precipitation
- Most concerned about changes in snowpack
- Most concerned about climate variability

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MANY THANKS!

For more information, please visit:

www.i-s-e-t.org