PARSONS

APEC Climate Symposium 2013:
Regional Cooperation on Drought Preparedness and Response

Drought Information for Policy and Decision Making

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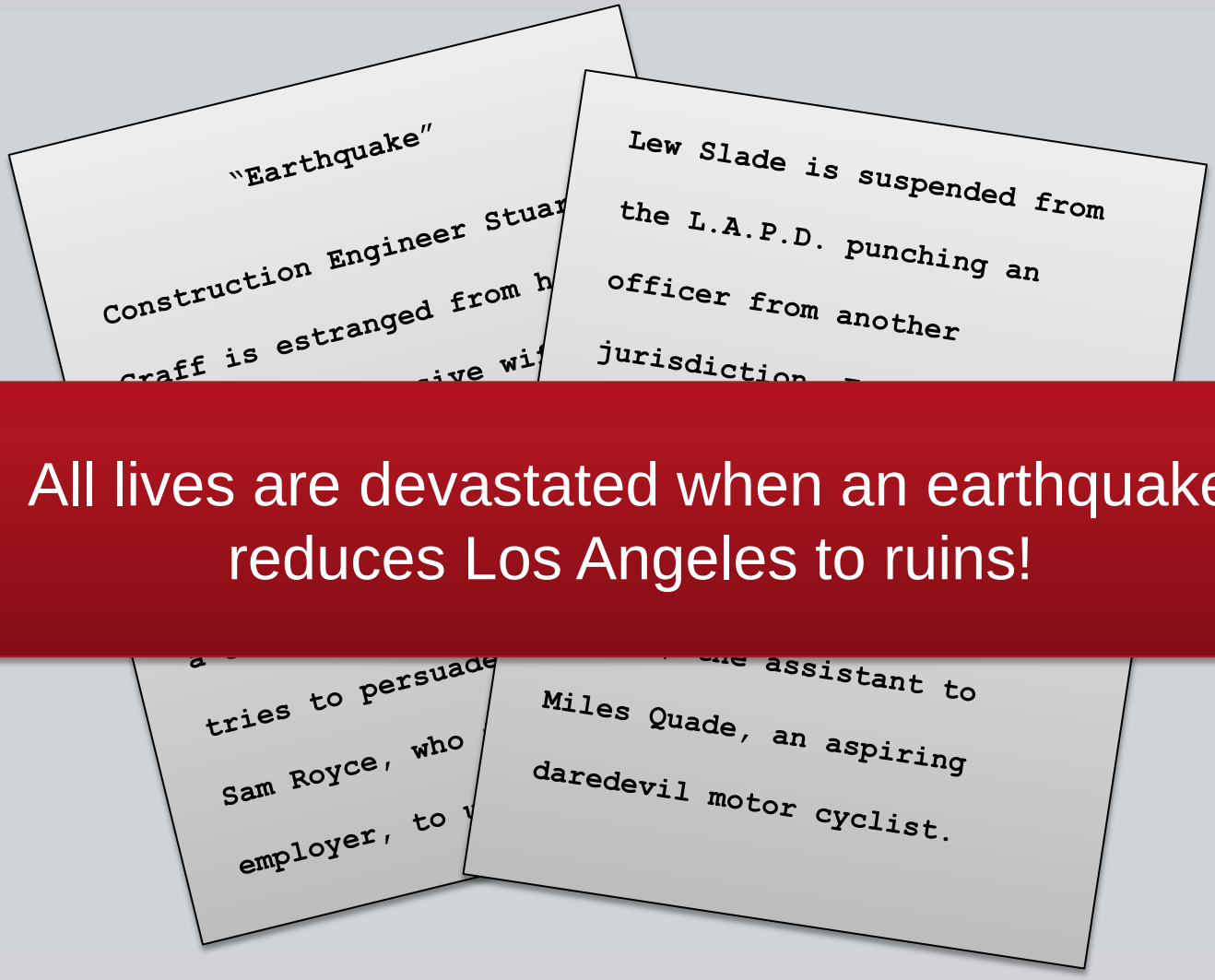
Outline

- Public official dilemma
  - Competing disasters
  - Scientific – local jurisdiction
  - Social – common bond
  - Attention span
    - Linkage through benefits – regional examples
- Organizational change management
- Northern CA success story
  - Five agencies, elected officials
  - Blend conceptual and quantitative info
  - Shared Vision Planning and Modeling – Officials and Public as Resources
- Success Factors
- Maintenance – involvement, transparency

Everyone Talks About the Weather…

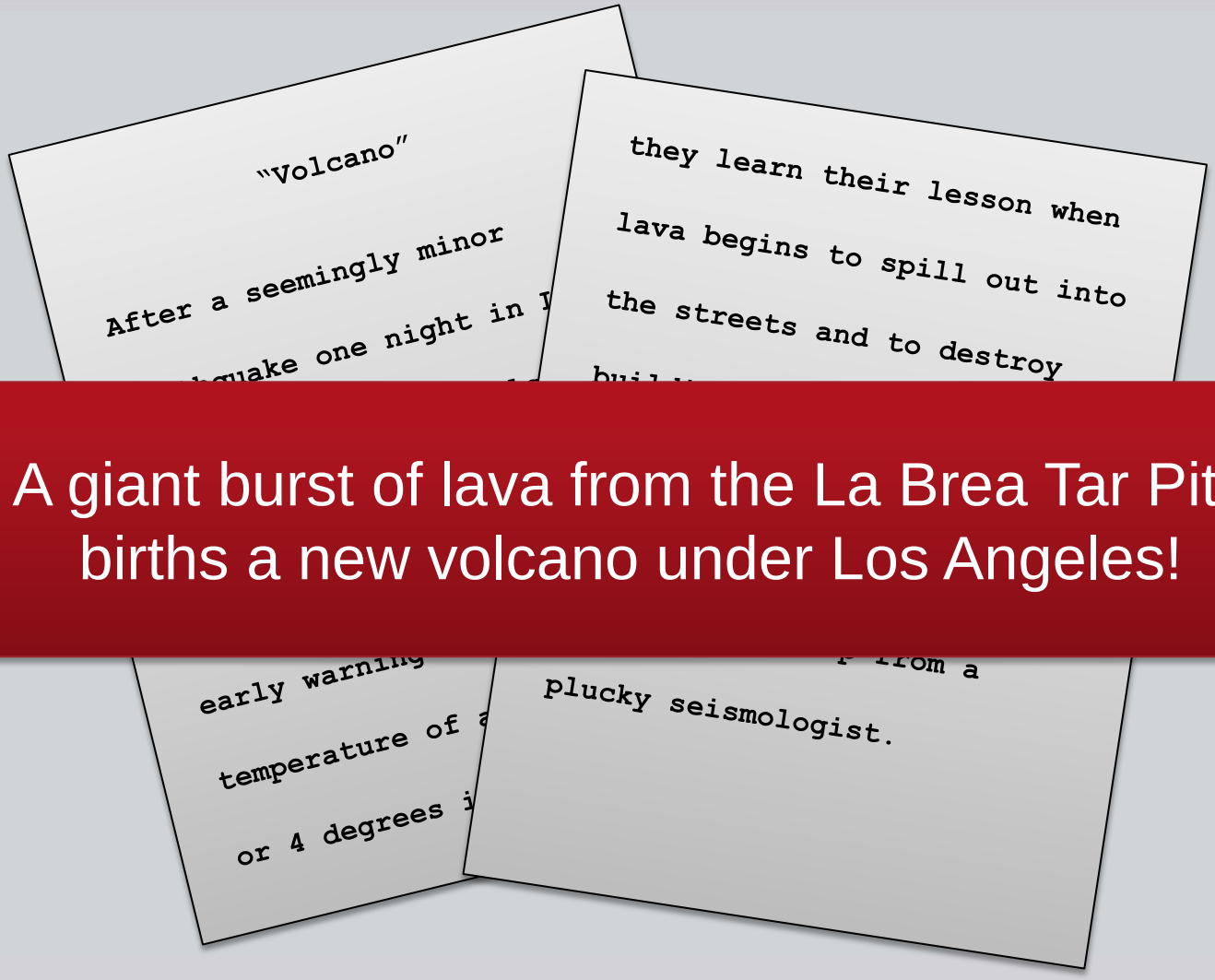
…but Movies are Made About Disasters

“Earthquake” (1974)



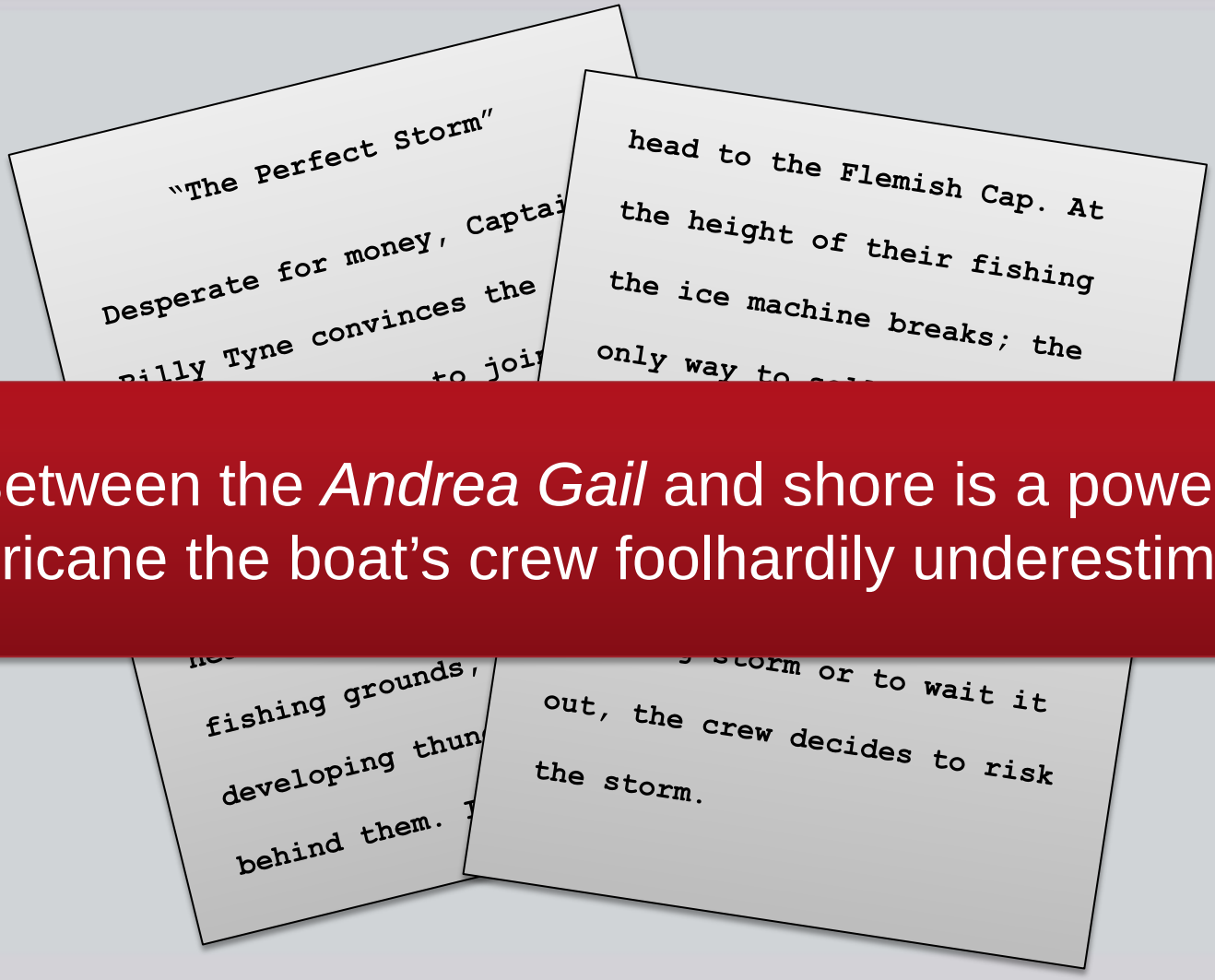
All lives are devastated when an earthquake reduces Los Angeles to ruins!

“Volcano” (1997)



A giant burst of lava from the La Brea Tar Pits births a new volcano under Los Angeles!

“The Perfect Storm” (2000)



Between the *Andrea Gail* and shore is a powerful hurricane the boat’s crew foolhardily underestimates!

(Non-Movie) Drought Challenges for Decision Makers

- Drought sneaks up
- Impact not always immediately felt
- Competition for attention from other disasters
- Preparedness competes for planning $
- Impact varies, unlike hurricane, earthquake, tornado
- Multi-year droughts often required
- But there *was* a movie, of sorts…

“Breaking The Drought” (1920)

Silent film with superb footage of a drought-stricken Outback. Uses striking and indelible images of starving animals eating carcasses, a dust-storm, dry rivers, and cracked Earth.

Weak Plot!

Not drought, but wayward son, causes farmer’s financial ruin

Family’s farmhouse surrounded by lush lawns and gardens

Murder, mayhem, and debauchery, but no effects of drought

How much more interesting is a plot about the farmer's struggle with drought?

Climate Chg/Drought Challenges for Decision Makers

Scientific	Social/Psychological	Attention Span
Global climate forces affecting weather over time - may lead to drought declarations	Prevailing psychological state - 'climate' affects decision making	Have to get their attention early
▪ Slow progressive flow of information ▪ Doesn't affect all the same way	▪ Climate of opinion, attitudes ▪ National mood changes near elections	▪ Drought doesn't have visibility of other disasters

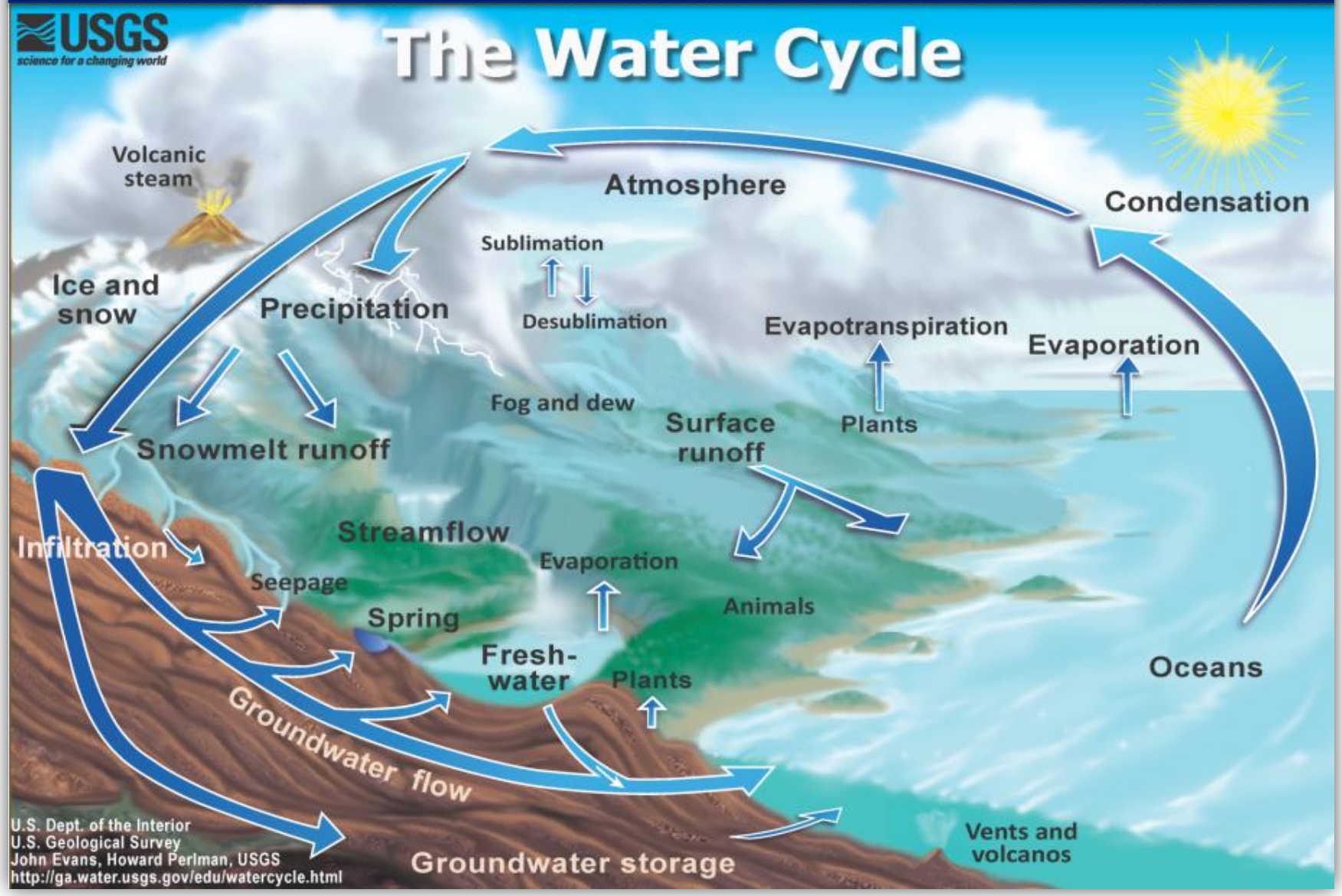
Best to Use Facilitated Decision Making Process, then...

- Relate solid, technical information to decision makers' "jurisdiction"
- Address non-technical social pressures
- Explain community impact
- Validate regional approach

Begin the ‘socialization’ tech integration process

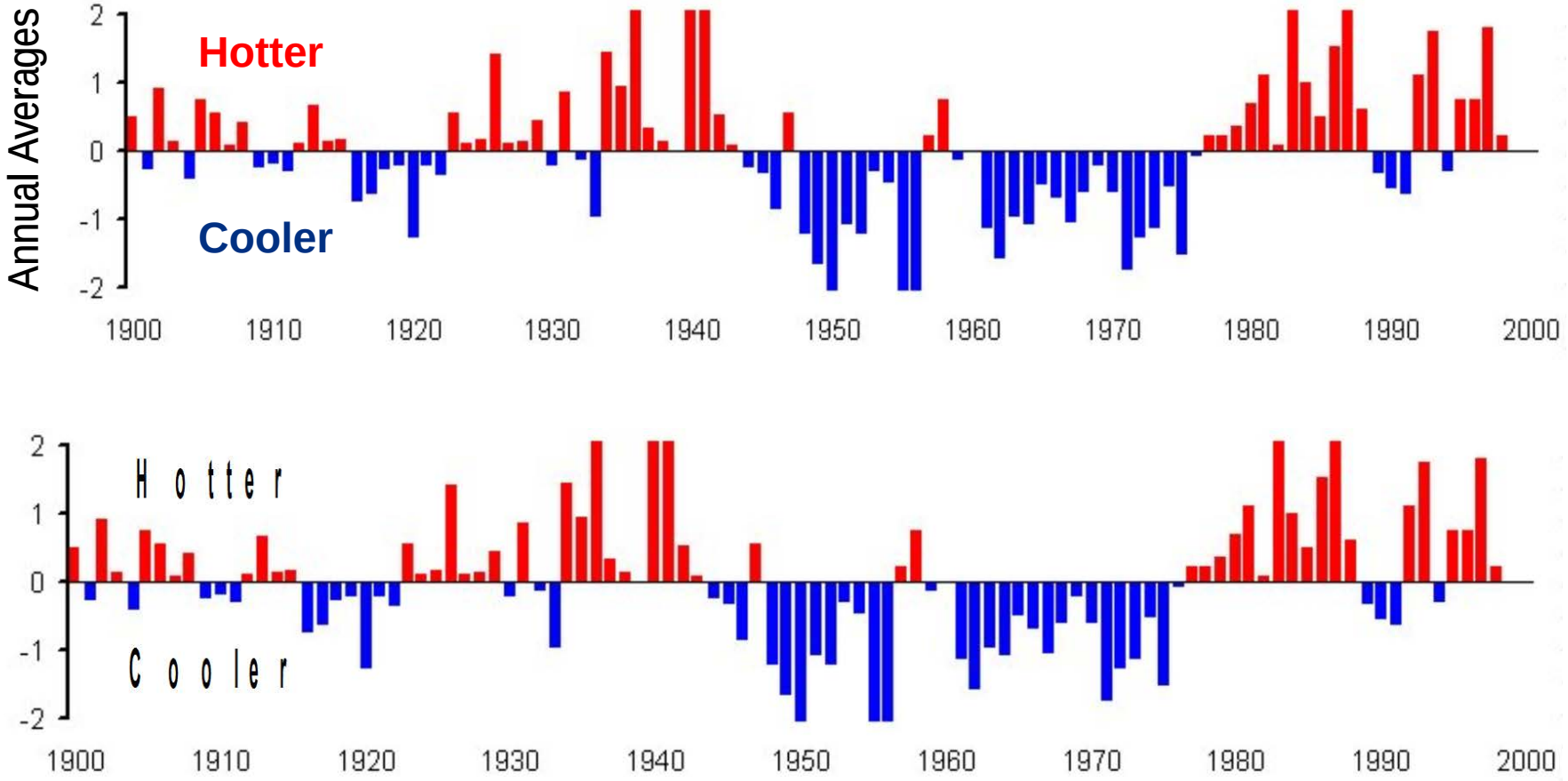
- Relate solid, technical information to decision makers’ “jurisdiction”

Science is Sound, by John M. Evans USGS, Colorado District



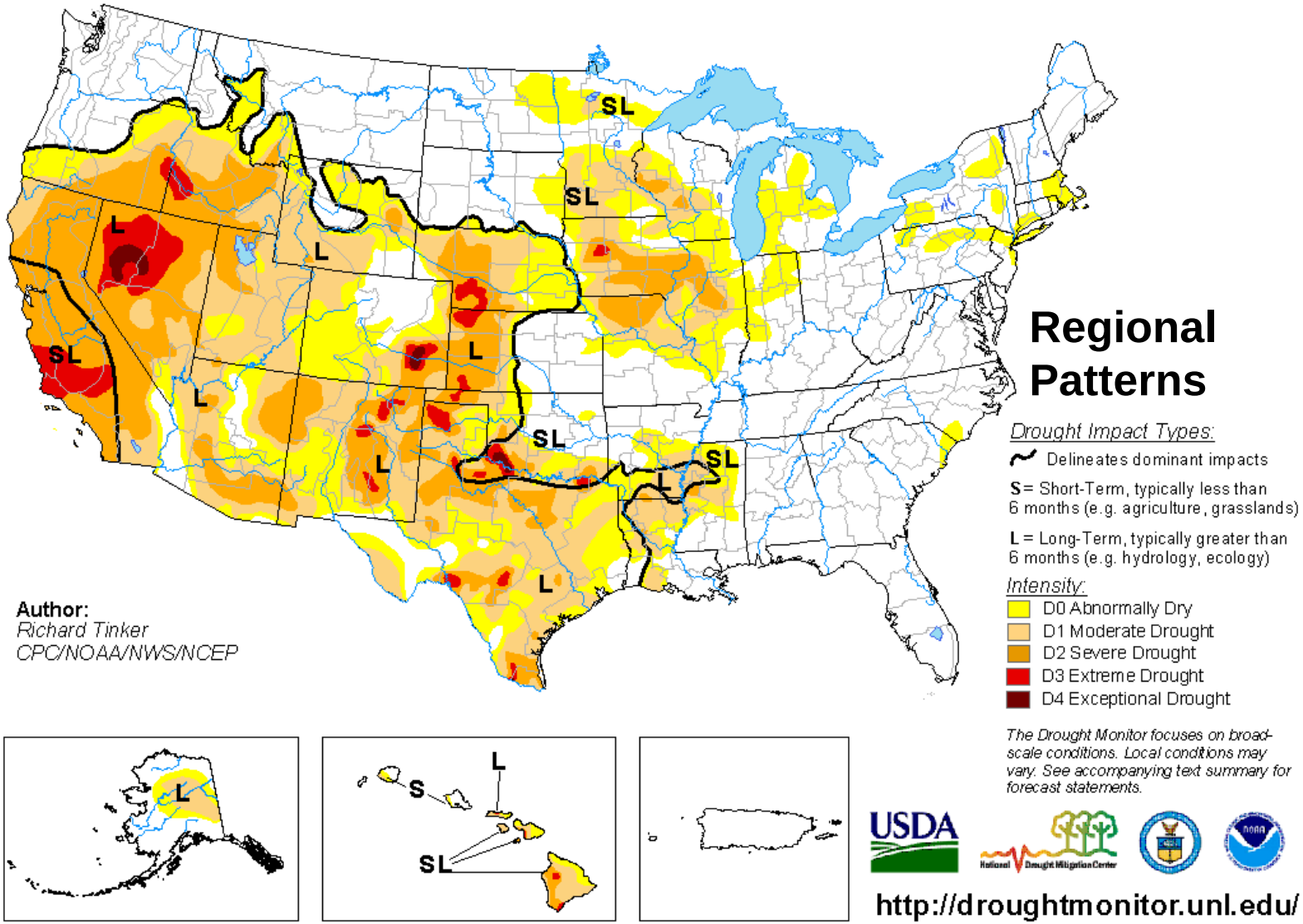
Pacific Decadal Oscillation (PDO)

Not always understood (or believed)



Source: CalTech Jet Propulsion Laboratory (Dr. William Patzert)

US Drought Monitor



Move Integration Along

- Address non-technical social pressures
- Explain community impact

Process Models Illustrate Benefits of Cooperation

Regional: Western Governors' Association

Point Out Where it is Working and Can Work

- Validate regional approach

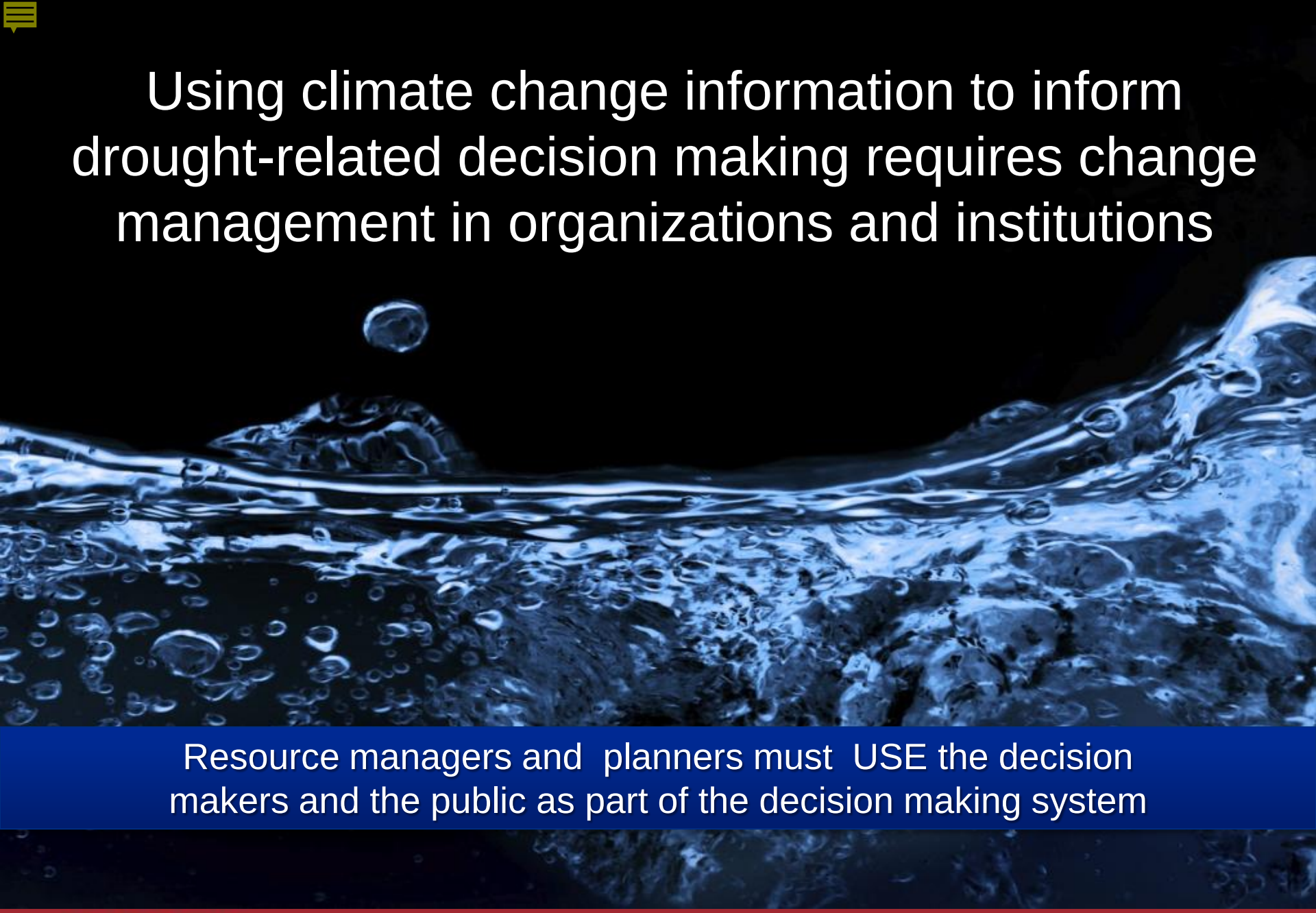
National Policy Development Model

- National Drought Policy Commission
- Built on Western Gov's collaboration

State and Regional Case Studies

- **Delaware River Basin Commission**
  Coordinated drought mitigation
- **Interstate Compact for the Potomac River**
  Brokered water supply agreements
- **Ohio River Basin Commission**
  Collaborative discussion around water conditions
- **Susquehanna River Basin Commission**
  Coordinated drought activities

Using climate change information to inform drought-related decision making requires change management in organizations and institutions



Resource managers and planners must USE the decision makers and the public as part of the decision making system

Sweet Success

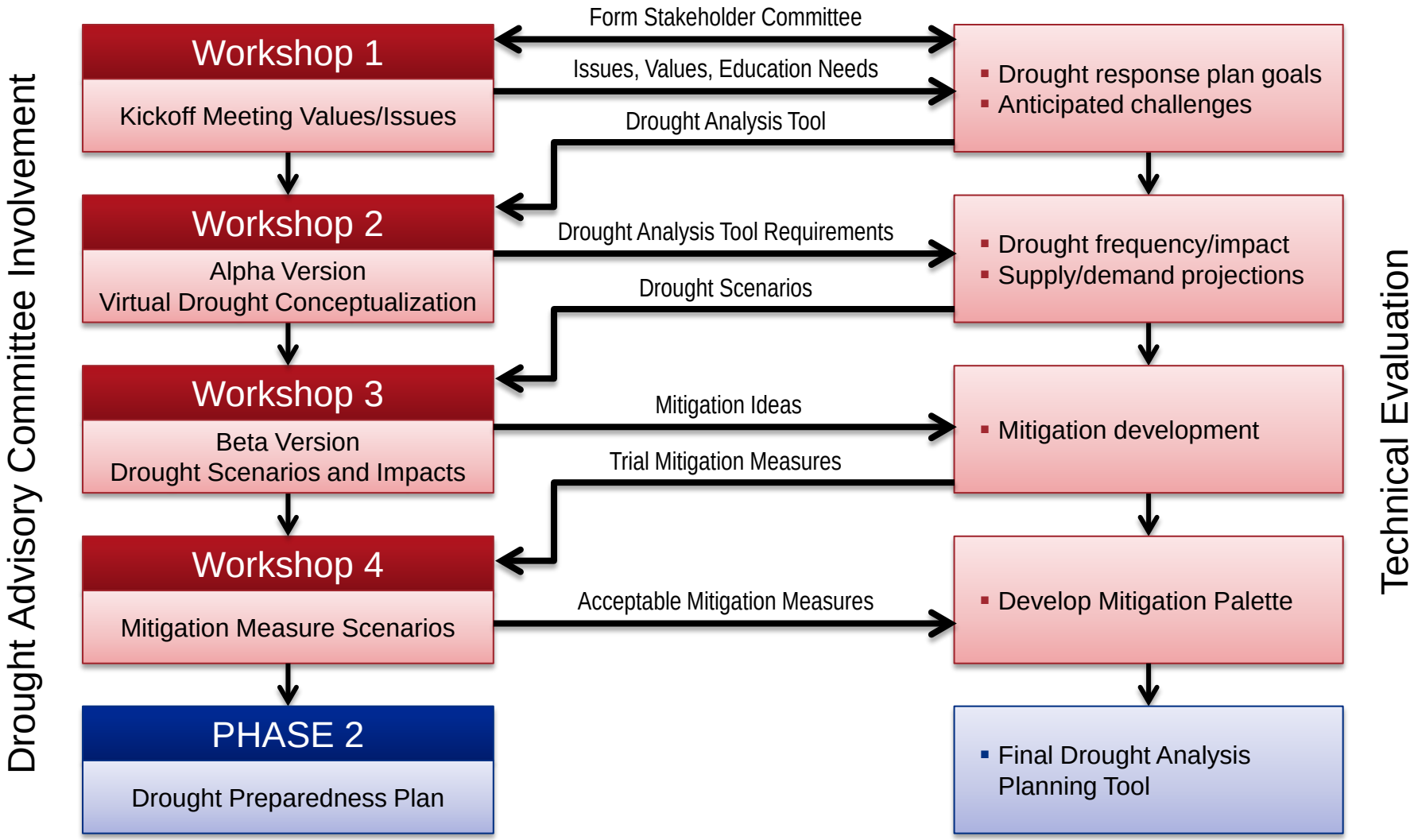
Blending Conceptual and Quantitative Info for Success

- Decision makers and public as **resources**
- El Dorado County CA politics – don't engage
- Two-year drought preparedness program
  - Year 1: Data
  - Year 2: Agreement data usage, results
- Elected boards – all voices heard, valued
- Environment, agriculture, and business focus
- Generational learning – be aware!

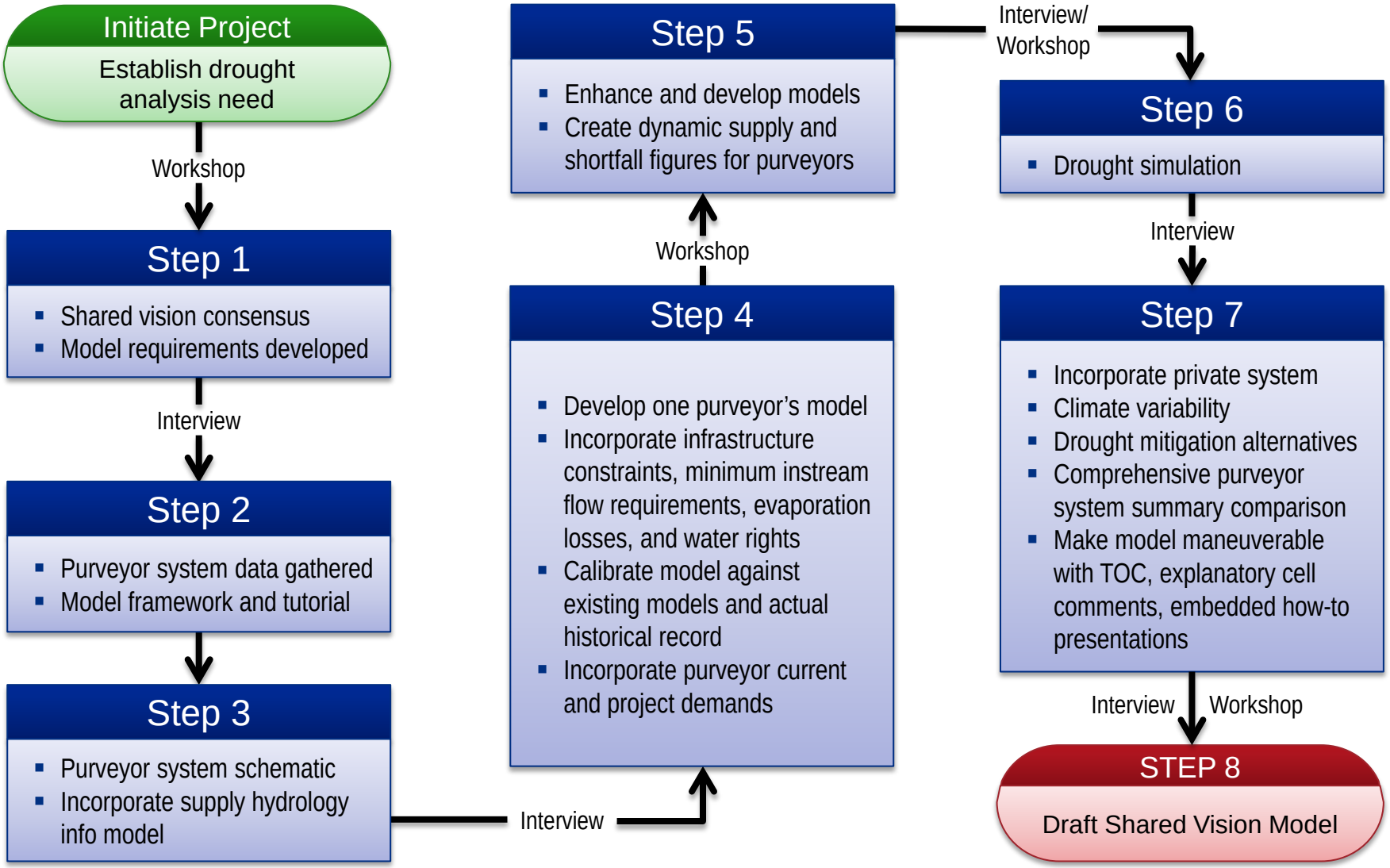
Calls for organizational change management about approaches to adapting to climate change impacts including drought preparedness/response

Shared Vision Planning and Modeling

Decision Web: Experts, Policy Makers, Public, Interests



8 Steps to Reach Agreement and the Plan



Celebrate Agreements, Publicize, Give Credit Away

Causes of Success

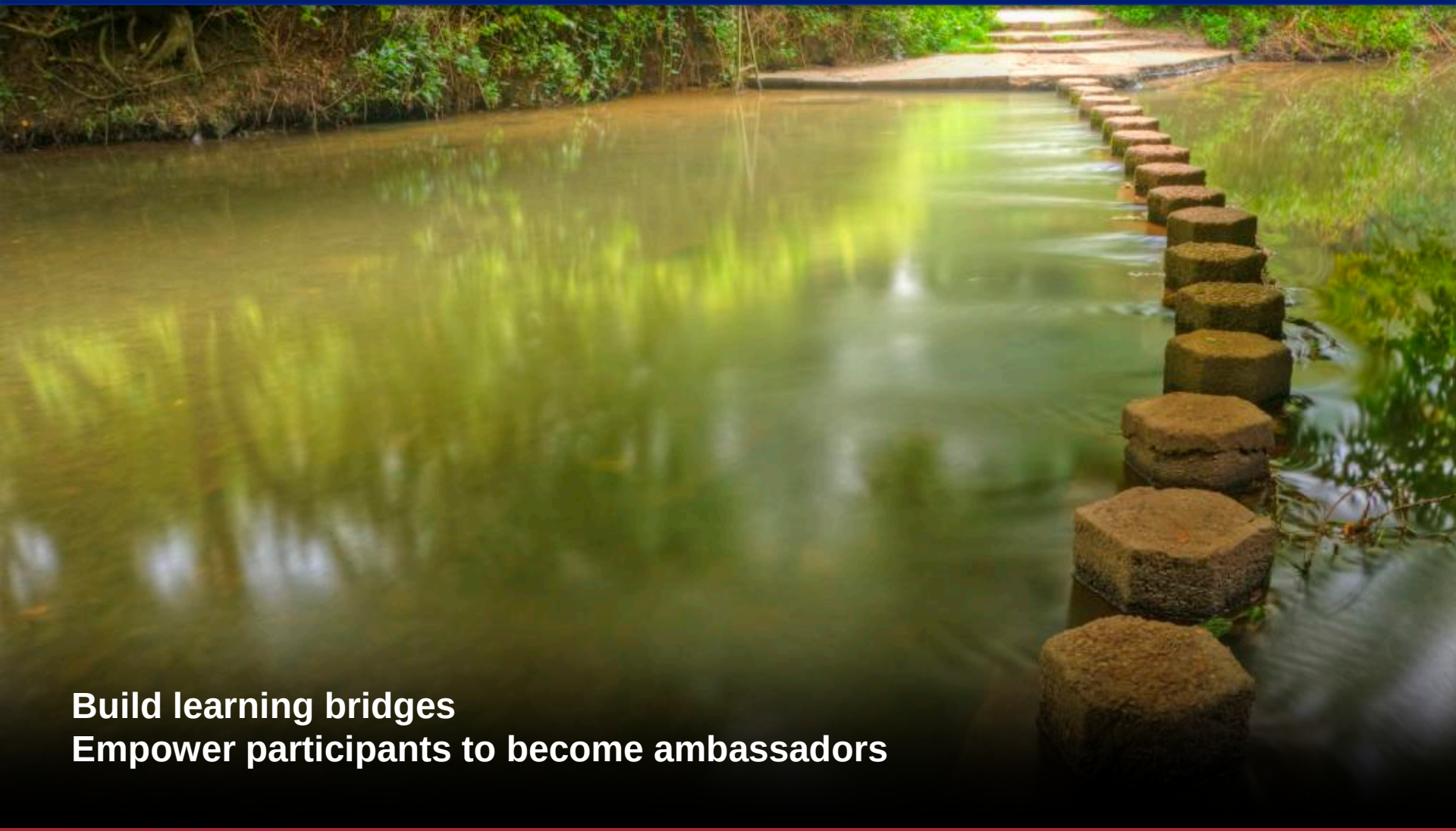
- Transparency of diverse information, assumptions and decision factors
- Trust building and equal participation by technical and non-technical members
- Quantitative water supply shortfalls predictions
- Clear depiction and agreement on water suppliers' jurisdiction and surrounding geographic features
- Demonstrating how shortfalls could occur using actual impacts and lessons from past

Success...

- Evaluating drought response effectiveness for basis of agreement on prevention/response
- Easy model tool updates
- Testing existing drought plans with proposed plans
- Integrating climate change impacts without politics
- Used Stockholm Institute climate models results as potential impact bookends, without debating “whys”

Continue Communicating

Don’t assume people won’t want to join the dialog after the fact or disrupt agreement

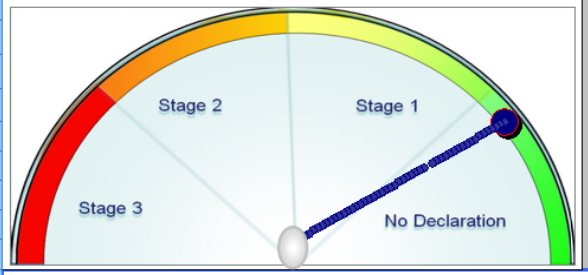


Build learning bridges
Empower participants to become ambassadors

Be transparent and make it easy to update, follow, drill down, and know when decisions are needed

Today's Drought Status in EID

Type in date (XX/XX/XXXX): 4/5/2008 Help



Under the terms of the Drought Status SRI plan, EID is not currently in drought. The current supply remaining index (SRI) is 0.24. Based on the simulation of the SRI plan using 1922-2002 supplies, there is a 100% chance that EID will go into a drought next month, and a 100% chance that EID will go into a drought sometime during the next five months.

Drought Stage and Supply Remaining Index for May .

Drought Stage NOW: No Drought **Enter last month's stage:** 0 More details

SRI: 0.24 *SRI ranges from 0-1 and is based on days supply remaining as a function of current storage, worst-case expected supplies, and normal (unconstrained) demand in the coming months. (go to HELP sheet for more info)*

Climate Cycle Episode El Nino Southern Oscillation (ENSO) and DWR Water Year Type Data

ENSO -0.4 Warm (positive value) and cold (negative value) episodes are based on a threshold of +/- 0.5 degrees Celcius for the Oceanic Niño Index (ONI), based on the 1971-2000 base period.

Current Water Year Type (1-5): 5 Water Year Type is Critical. Water Year obtained from DWR Sacramento Valley Water Year Type Index. Final determination is based on the May 1 50% exceedence forecast.
click to link to DWR website

Snow water content is not an indicator because analysis shows no consistent correlation with historical drought occurences.

Enter Current Reservoir Storage (acre-feet): *(click on underlined Lake name to link to online data source and update data manually)*

Sly Park 10,000 Sly Park is 24% full.

☐ **Check if the Board decides to add one stage to the SRI**

Meanwhile, everyone will still talk about the weather…


The End.