An Update on Drought Planning: The West in Perspective

Session 4: Lessons from Drought Planning and Management

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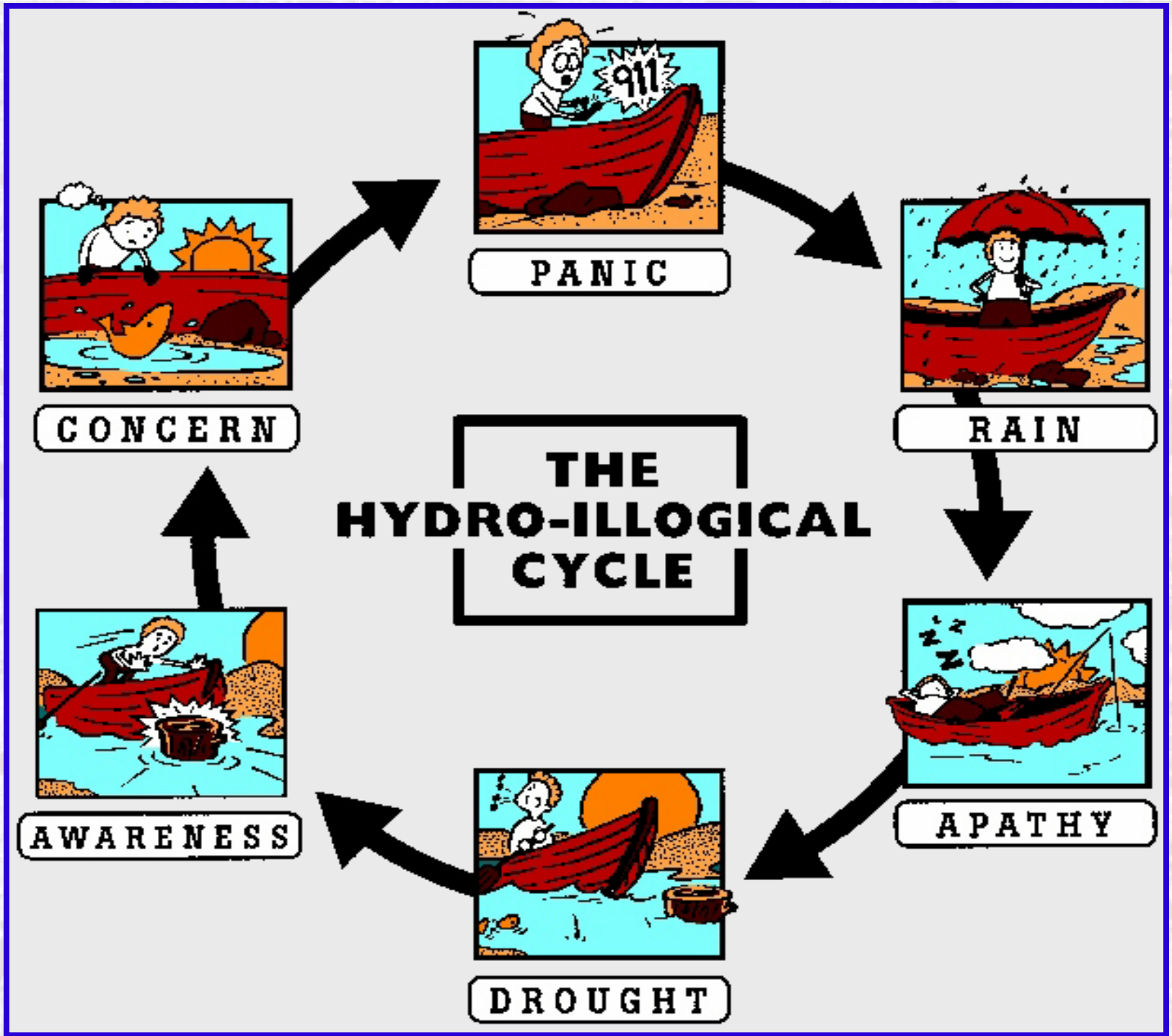
Colorado's Planning Legacy

- 1981 Drought Plan
- Len Boulas and Jack Truby
  - Colorado Office of Emergency Management
- Regular revisions (1986, 1990, 2001, 2002, 2007)
- Mitigation options identified (2001)
- Municipal planning
  - Ex. Denver Water Drought Response Plan (1997)
- Governor's Conference on Managing Drought and Climate Risk


911
PANIC
RAIN
APATHY
DROUGHT
AWARENESS
CONCERN
THE HYDRO-ILLOGICAL CYCLE

Why Plan for Drought?

- Drought is a normal part of climate
- Drought is difficult to define
- Impacts of drought are becoming more complex
- Improves coordination within and between agencies and levels of government
- Improves communication, public awareness
- Opportunity to involve stakeholders, reduce conflict
- Identifies areas of risk and appropriate response and mitigation strategies

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Components of Successful Drought Mitigation Plans

- Monitoring, early warning, and prediction
  - Foundation of a drought mitigation plan
  - Indices/indicators linked to impacts and triggers
- Risk and impact assessment
  - Who and what is at risk and why?
- Mitigation and response
  - Programs and actions to reduce future drought impacts
  - Programs and actions during drought events

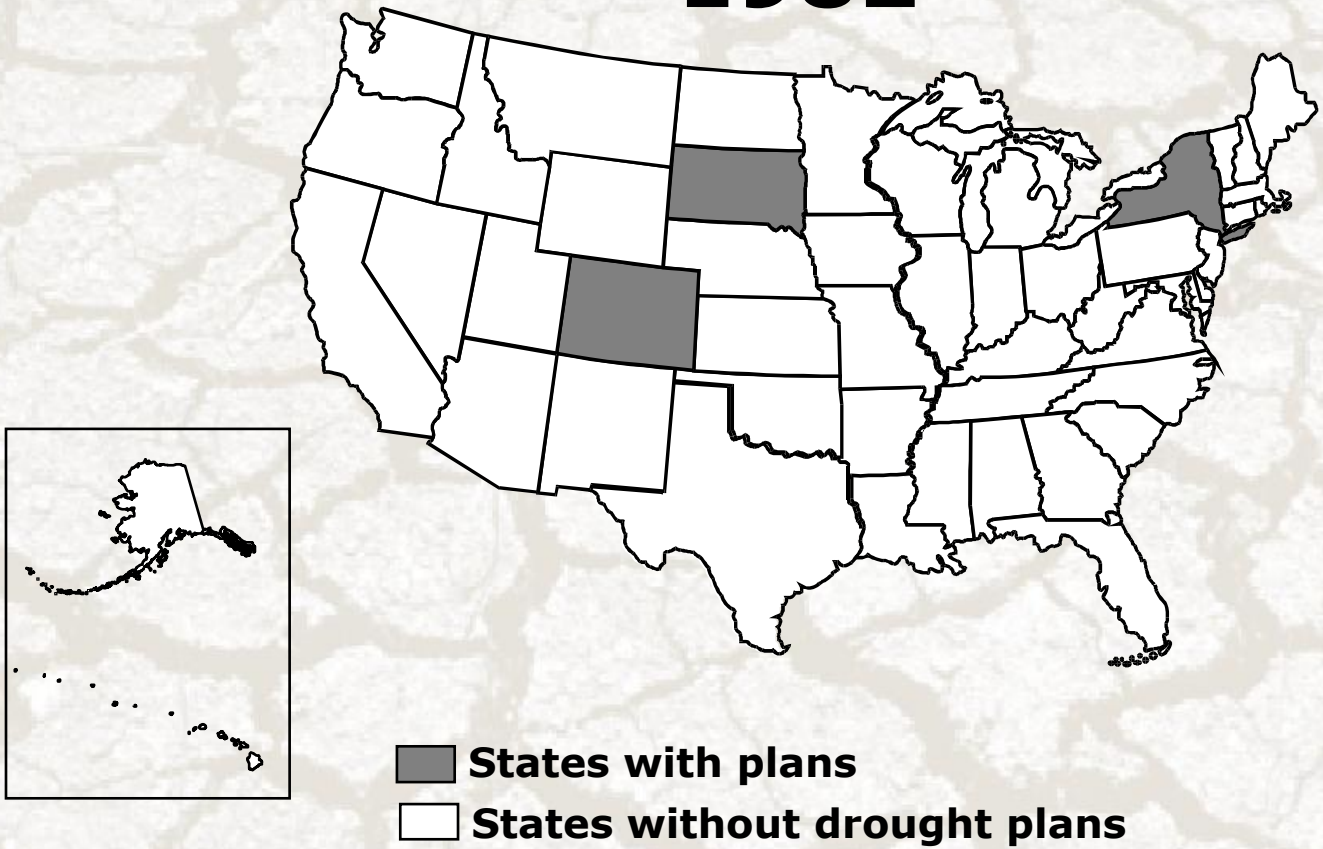
Most drought plans contain only the monitoring and response components.

Drought Planning Progress

- Federal level
- State level
- Native American Tribes
- Local level
  - Municipalities
  - River Basins
  - Counties
  - Producers
  - Businesses

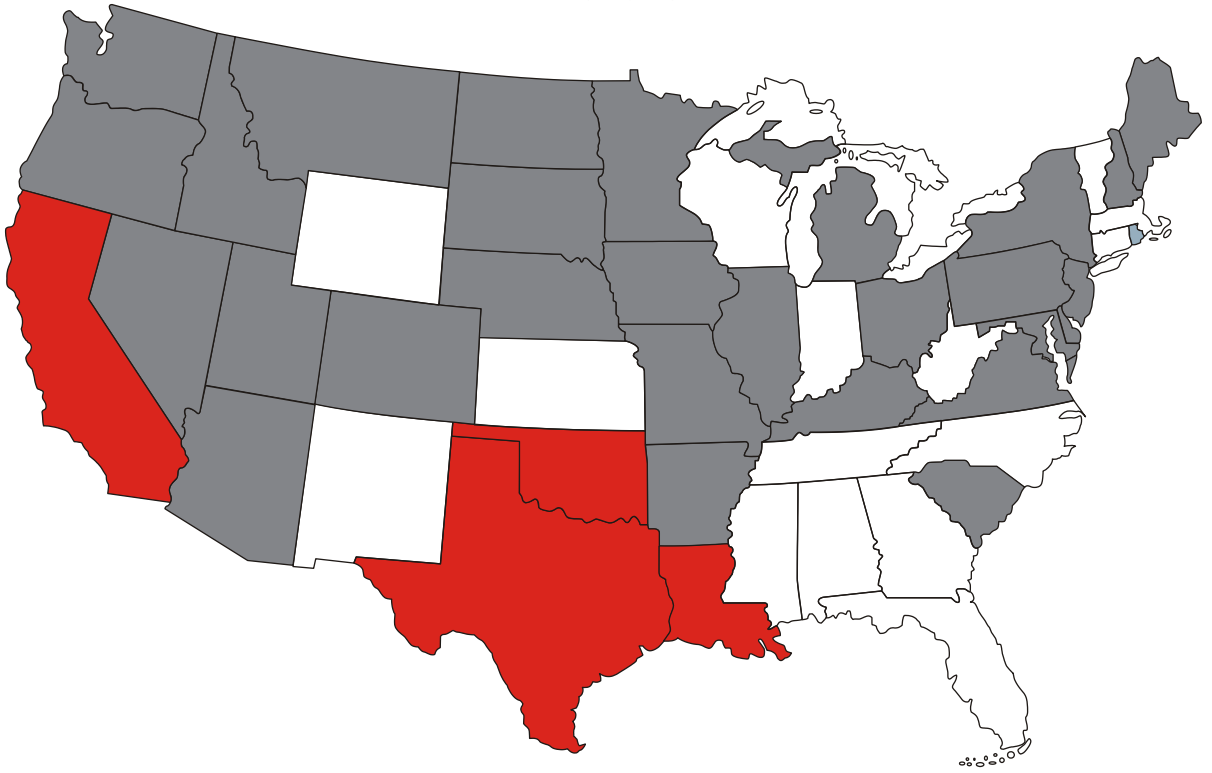
Status of Drought Planning

1982



Status of Drought Planning

1995

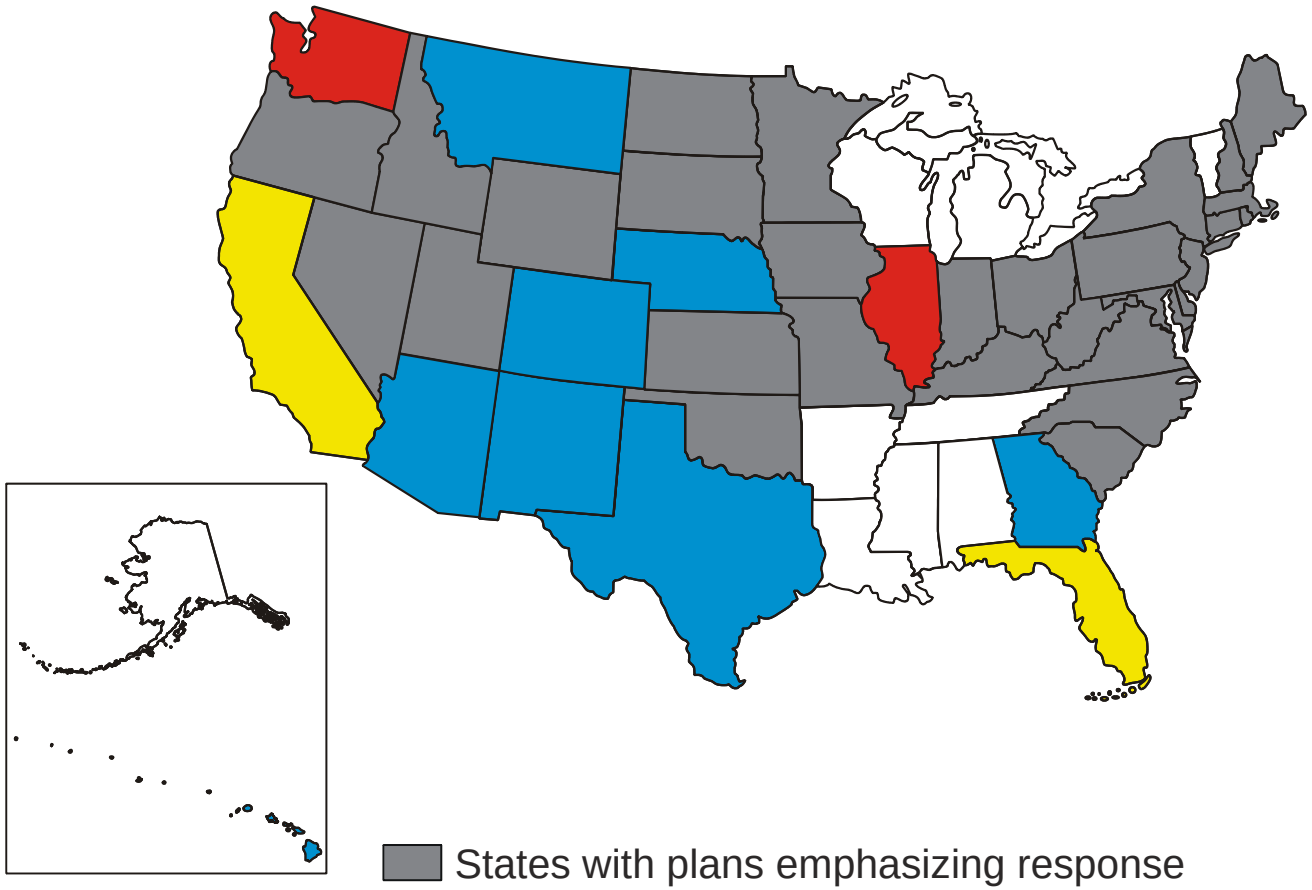


States with plans

States intending to develop long-term plans

Status of Drought Planning

October 2006



- States with plans emphasizing response
- States with plans emphasizing mitigation
- States developing long-term plans
- States delegating drought planning to local authorities
- States without drought plans

Drought Programs: Western 19 States (Fontaine et al. 2008)

- 16 publically available state-level drought plans
- 19 states monitor drought conditions
  - 8 states have defined “triggers” to activate drought responses
- 6 states have as the “primary goal” USDA Secretarial Disaster Declarations, not internal actions

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Drought Programs: Western 19 States (Fontaine et al. 2008)

- 5 states perform formal post-drought assessments
  - Idaho, North Dakota, Oregon, Utah, Washington
- 3 states perform detailed impact and vulnerability assessments (Colorado, Kansas, Washington)
- Mitigation
  - 8 states incorporate mitigation actions into their drought plans
  - 16 states have taken mitigation actions

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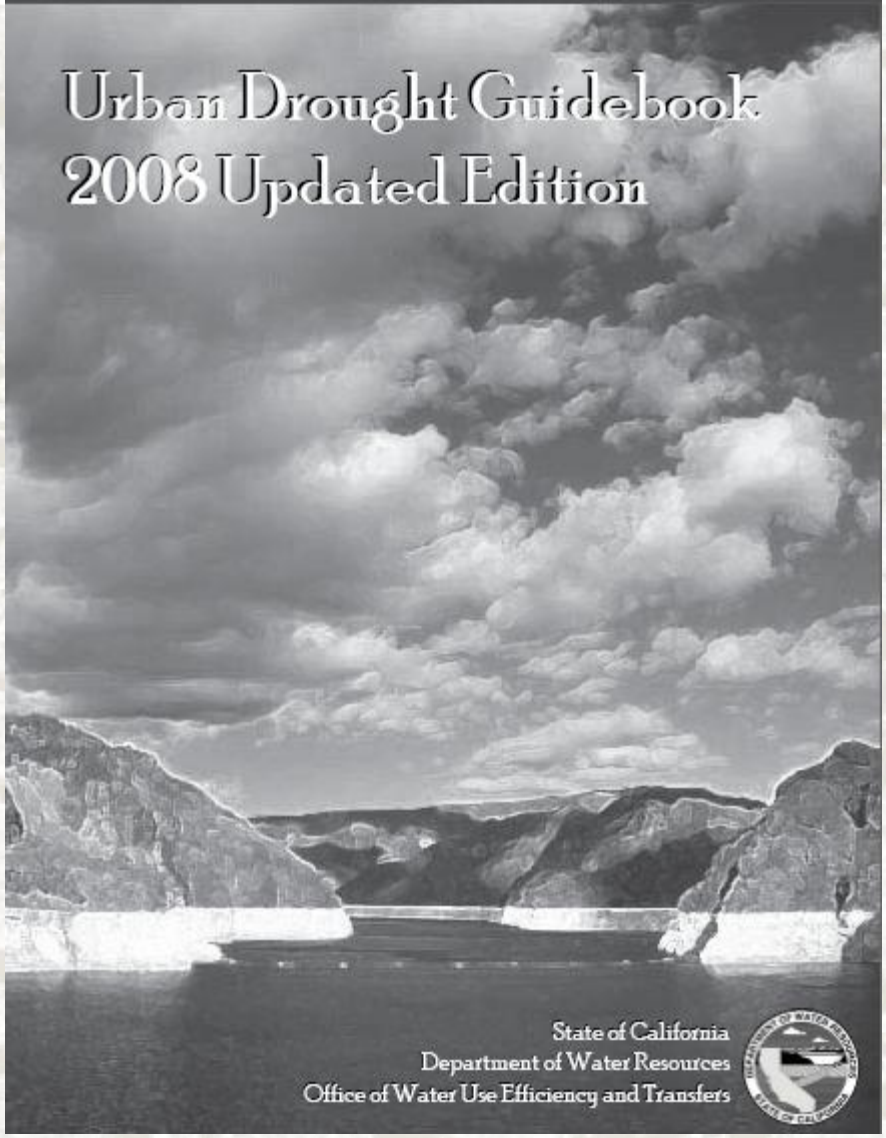
Municipal Drought Planning

- Drought plans required by law at this level: California, Texas, Kentucky, South Carolina, and Rhode Island
- Colorado, Oklahoma, Kansas, and Nebraska identified “most vulnerable…water systems”



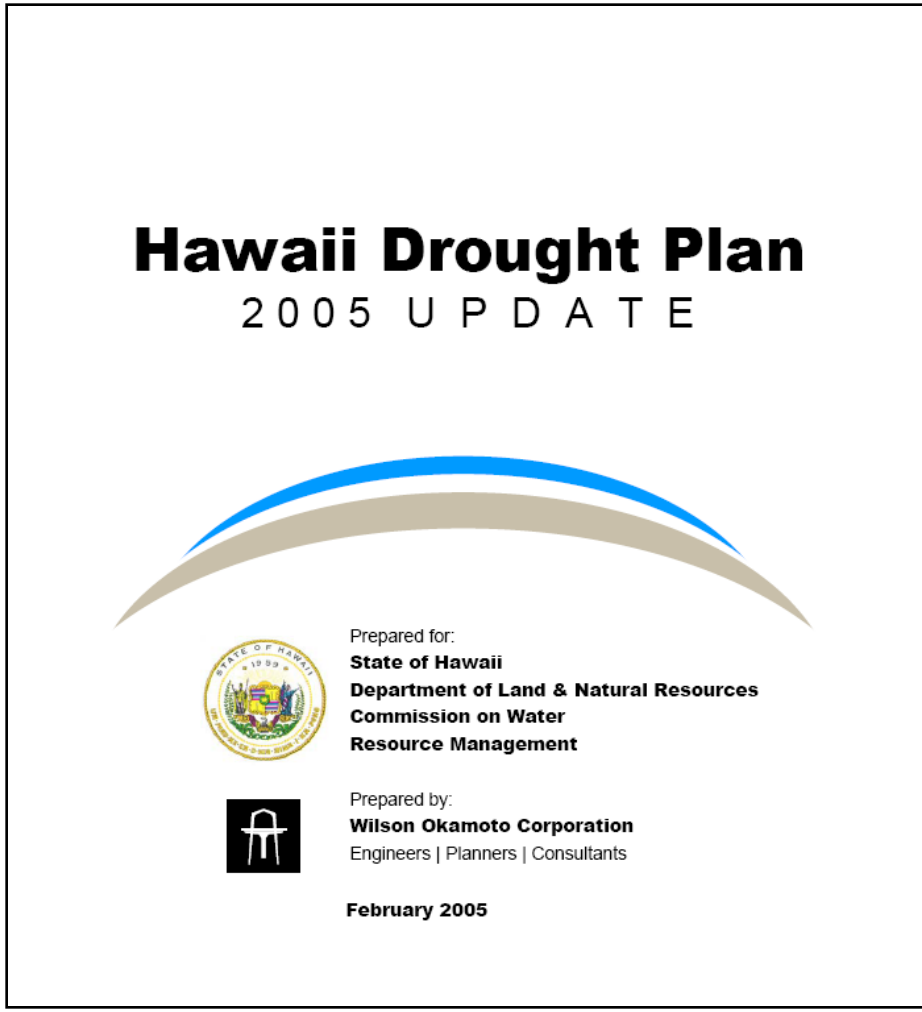
http://www.owue.water.ca.gov/docs/UrbanDroughtGuide.pdf

Mitigation

- Council of Governors' Policy Advisors (1997): The concept of mitigation will be difficult unless officials understand the economic impacts and the positive quantitative benefits of mitigation actions.
  - Multihazard Mitigation Council Report (2005): "…a dollar spent…on hazard mitigation...provides the nation about $4 in future benefits." **1:4 ratio**
  - Drought Impact Reporter (http://droughtreporter.unl.edu)

Act 238 (2007)

- $1 million appropriated for drought mitigation for each county
- 22 projects identified including: water system improve-ments, stormwater reclamation, ditch improvements, wildland fire, education, monitoring



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Session 4 Points

- What is going on elsewhere?
  - Conservation, municipal water systems, transboundary projects, counties, states, prediction
  - Sectors and cross-sectors
- National Integrated Drought Information System (NIDIS)
  - Link to the drought community and to lessons learned

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Michael Hayes
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Because drought is one of the most expensive hazards to occur within the United States, the need to plan and prepare for droughts is very important. Droughts also have several unique characteristics unlike other natural hazards that make planning more necessary such as their slow onset, their lack of a specific definition, and their lack of visual impacts. These characteristics highlight the need for drought planning before a drought occurs.

There are several clear benefits of drought planning. The following list provides some of these benefits. Drought planning:

- Enhances early warning through integrated monitoring efforts;
- Improves coordination between and within levels of government and provides an organizational structure to deal with droughts;
- Provides the opportunity to identify appropriate response and mitigation strategies before a drought occurs;
- Involves stakeholders into the planning process;
- Builds public awareness of the importance of droughts;
- Identifies areas, sectors, groups at risk;
- Targets the economic, social, and environmental impacts to focus on for response and mitigation;
- Reduces conflicts between water users;
- Improves communication and information dissemination.

Drought planning in recent years has occurred on a variety of scales. Unfortunately, there has not been much drought planning at the federal levels. States and American Indian Tribes have taken a lead in being proactive with drought planning efforts during the past 20 years. There have also been efforts at regional scales, such as counties in Hawaii and river basins in the eastern United States. Municipalities have also done quite a bit of drought planning. More recently, there have been increased efforts by agricultural producers, particularly ranchers, to develop drought plans tailored for their individual operations.

This presentation to begin Session 4 on the Lessons from Drought Planning and Management will give an update on drought planning around the country, with an emphasis on the western U.S. It will end by identifying a series of lessons learned from recent drought events and how these might be implemented by states interested in improving their drought planning capabilities. The presentation will naturally lead into the following five presentations within the session that are addressing drought planning and management issues at a variety of scales.

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Dr. Hayes became the Director for the National Drought Mitigation Center in August 2007 and has worked at the NDMC since 1995. The NDMC now has 22 faculty and staff working on local, tribal, state, national, and international drought- and water-related issues. Dr. Hayes is also an Associate Professor in the School of Natural Resources at the University of Nebraska-Lincoln. His responsibilities include conducting research on the economic, environmental, and social impacts of drought; developing new drought monitoring and impact assessment methodologies; assisting with the development and review of drought plans; and helping to organize and conduct drought workshops and conferences. Dr. Hayes received a Bachelors Degree in Meteorology from the University of Wisconsin-Madison, and his Masters and Doctoral Degrees in Atmospheric Sciences from the University of Missouri-Columbia. Dr. Hayes also spent a short time working with the National Biological Service investigating the impacts of climate on endangered plant populations in the central United States.