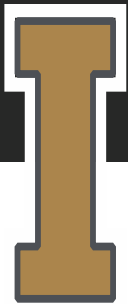
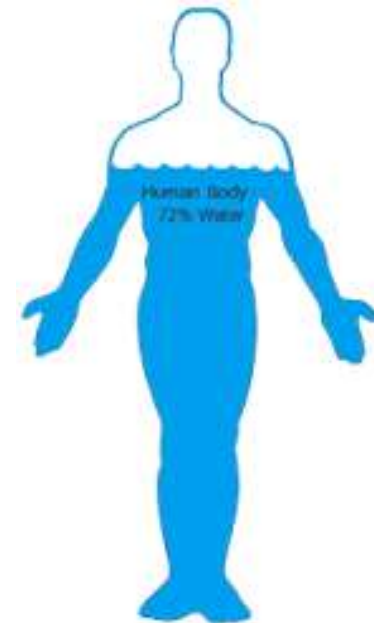


ADAPTING WATER LAW TO A CHANGING CLIMATE: THROUGH THE WINDOW OF DROUGHT

Barbara Cosens
Professor
University of Idaho College of Law
Waters of the West Interdisciplinary Program



Water is a common pool resource



Tragedy of the Commons

- (1968) Garrett Hardin's essay addressed the conflict between the short-term interests of individuals and the long-term welfare of society

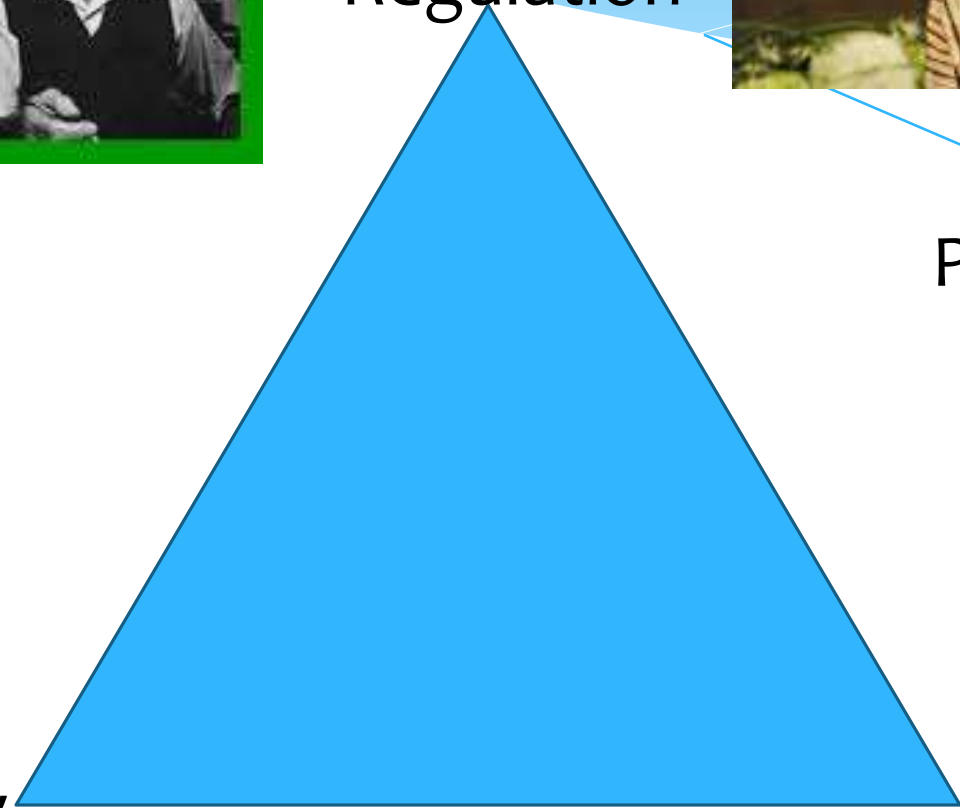


Regulation

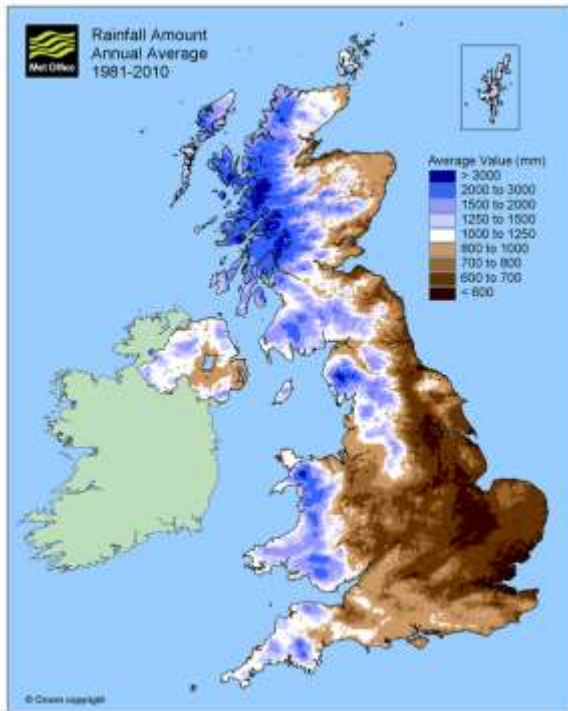
Planning

Property

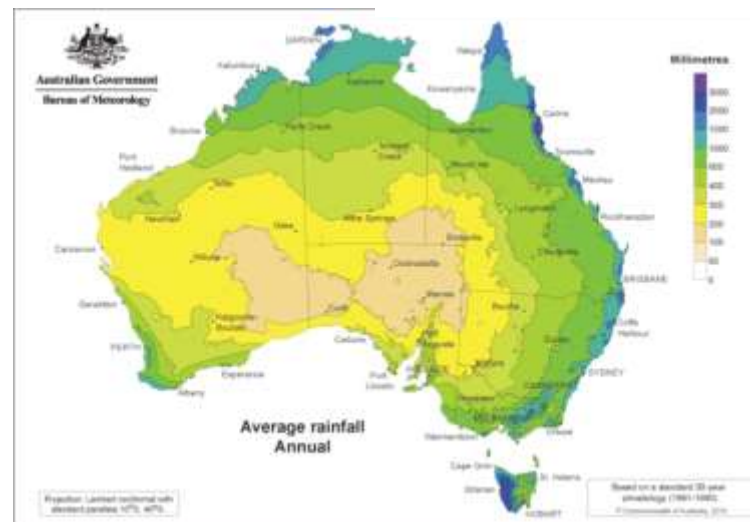
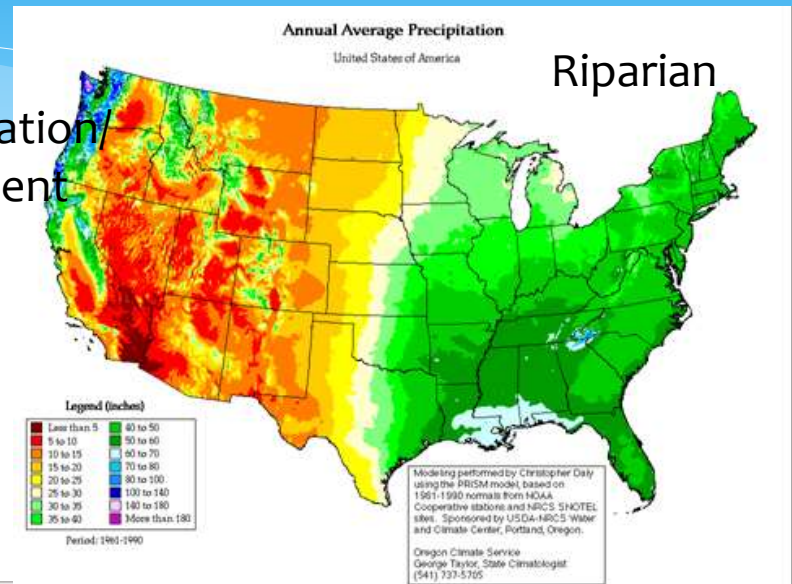
Self-Organization



The relation between water allocation law and climate

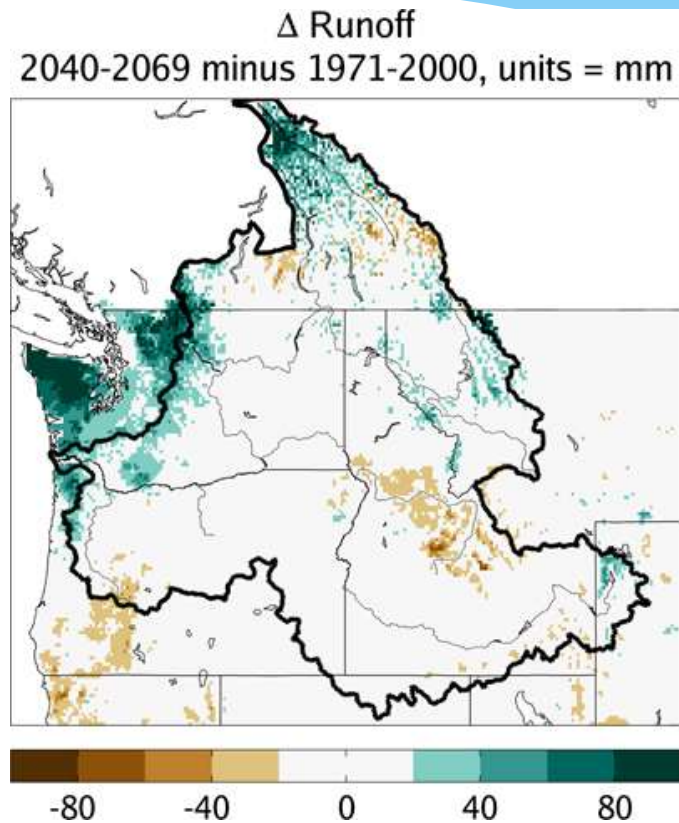


Prior
Appropriation/
Government
Owned



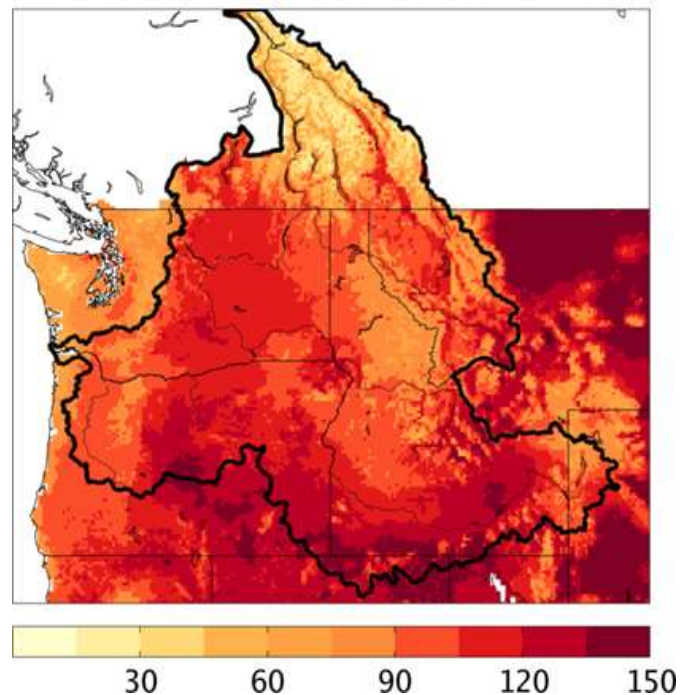
Government Owned/
License issued

Predicted Water Deficit with Climate Change: Columbia River Basin, N. America

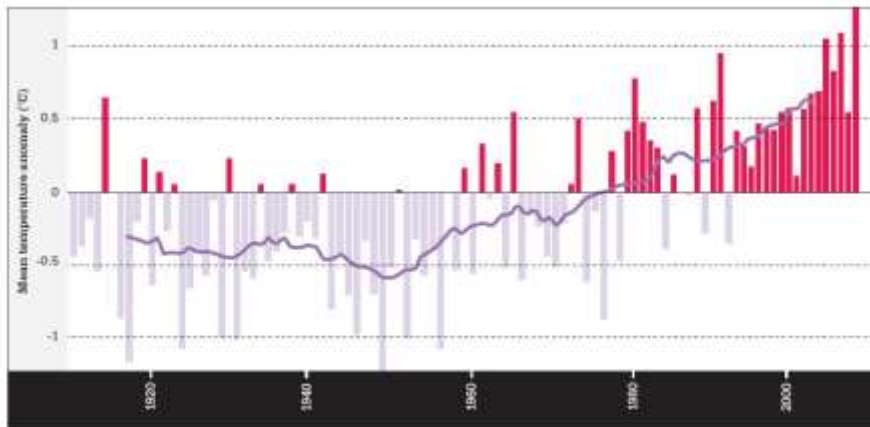


Source of figures:
Dr. John
Abatzoglou

Δ Climatic Water Deficit (PET minus AET)
2040-2069 minus 1971-2000, units = mm

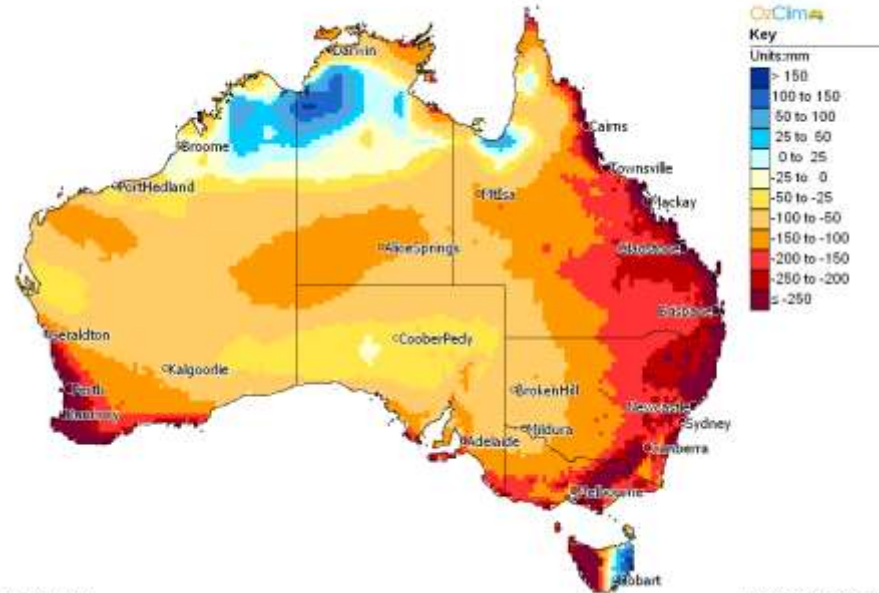


Climate Change: Australia



Mean Temperature South Australia

Title: Change in Total Rainfall (mm) , in AUSTRALIA for the year 2095, Annual
Detail: Model: ECHAM5MPI-OM, Emission Scenario: GRES marker scenario A1FI, Global Warming Rate: high



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Predicted change to annual rainfall 2095

Climate Change Preview: Drought



Australia

* 1997-2011



California

* 2011 – 2015?



Millennium Drought in SE Australia

- 1997 to 2009: Longest, most severe on record
- Equivalent to 'worst case' 2050 climate change scenario

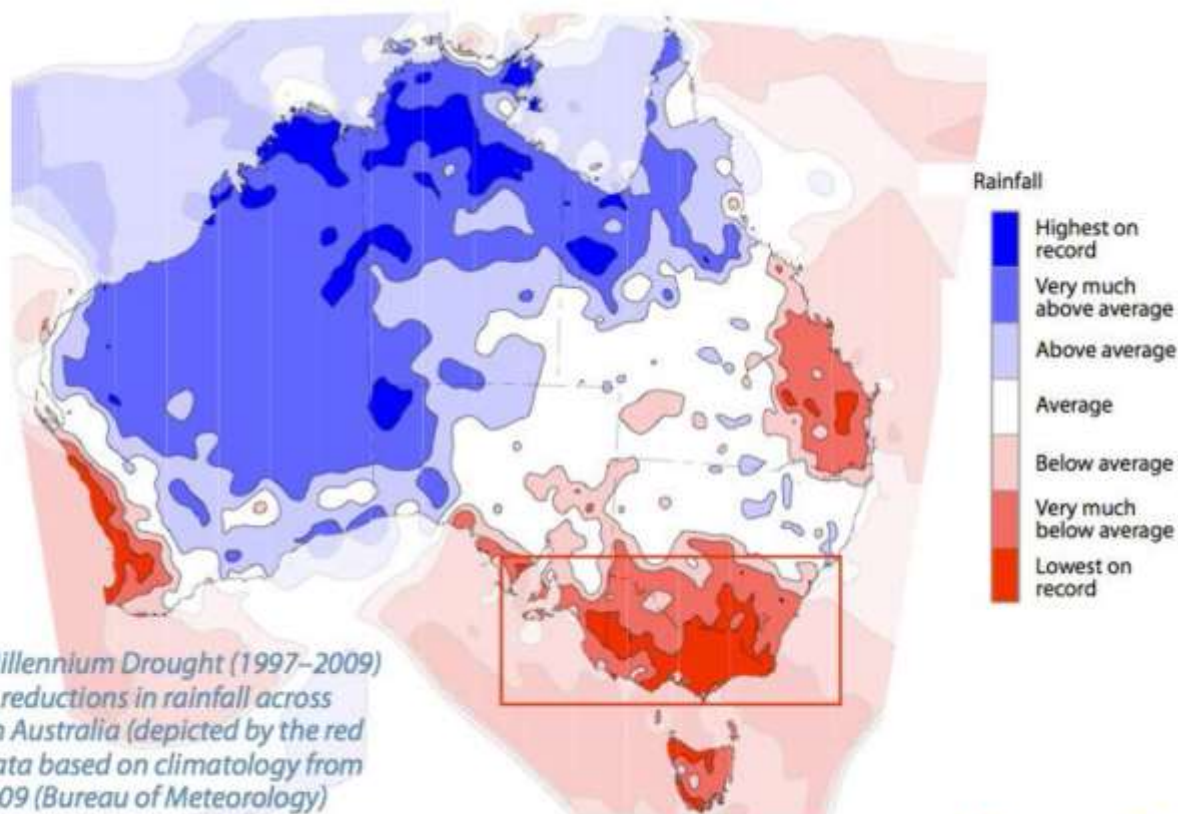
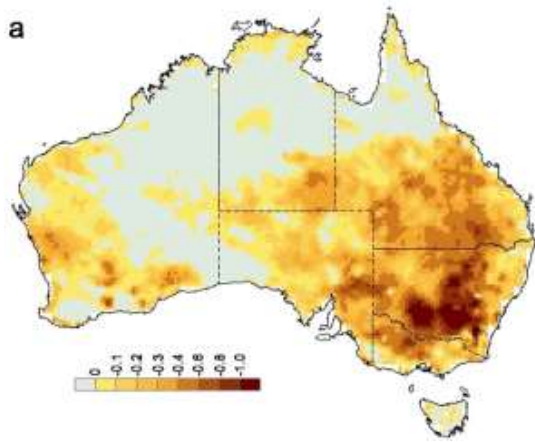


Figure 1. The Millennium Drought (1997–2009) saw major reductions in rainfall across south-eastern Australia (depicted by the red rectangle). Data based on climatology from 1900 to 2009 (Bureau of Meteorology)

The Millennium Drought in southeast Australia (2001–2009): Natural and human causes and implications for water resources, ecosystems, economy, and society



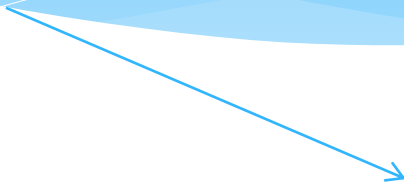
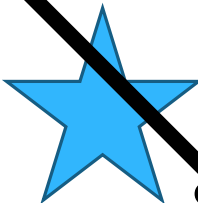
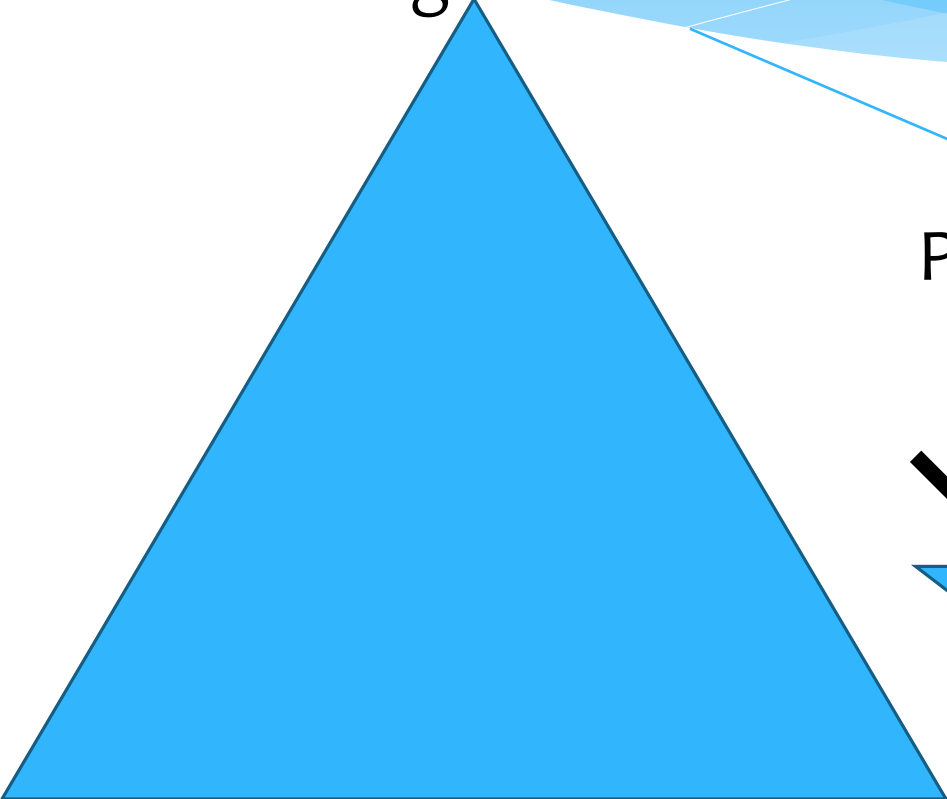
Australia

Regulation

Planning

Property

~~Self-Organization~~



California 5-Year Drought

U.S. Drought Monitor California



December 29, 2015
(Released Thursday, Dec. 31, 2015)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	0.00	190.00	87.33	97.95	89.87	88.34
Last Week (2/2/15)	0.00	190.00	87.33	98.63	88.83	86.04
3 Months Ago (9/29/15)	0.14	30.00	87.33	101.96	71.89	48.00
Start of Calendar Year (1/1/15)	0.00	190.00	88.12	94.24	77.84	32.21
Start of Water Year (9/1/14)	0.14	39.00	87.33	92.36	71.89	48.00
One Year Ago (1/3/14)	0.00	190.00	88.12	94.24	77.84	32.21

Intensity:

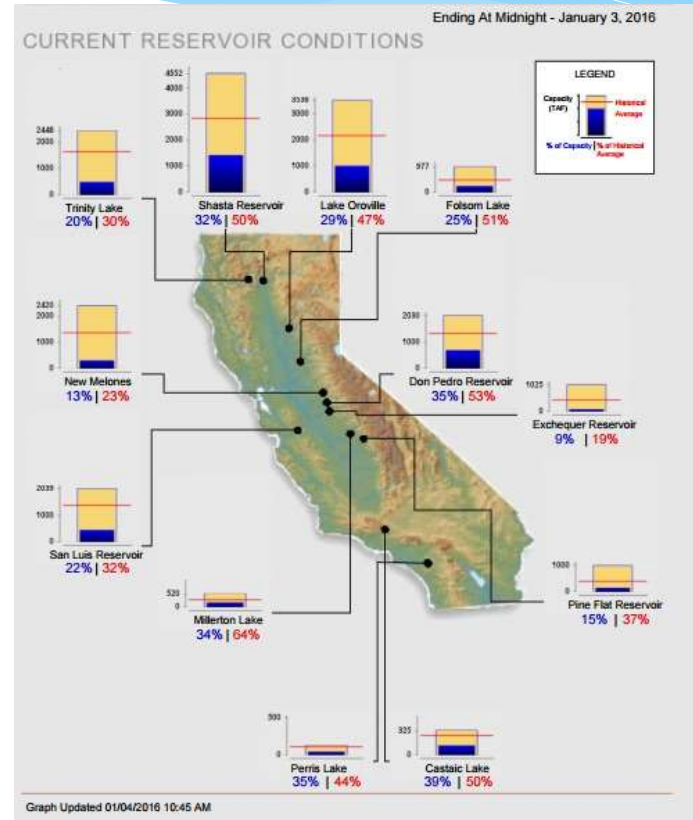
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Use of conditions may vary. See accompanying text services for more statements.

Author:
Chris Funkhouser
NOAA/MESDAS/NCEP



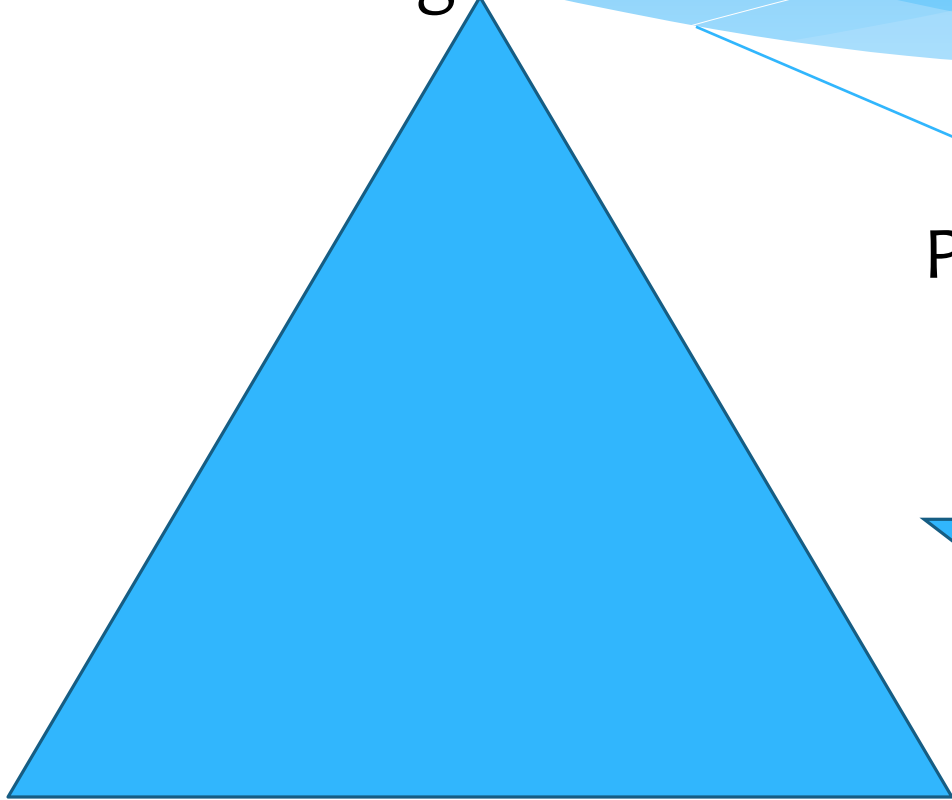
<http://droughtmonitor.unl.edu/>



California



Regulation



Planning

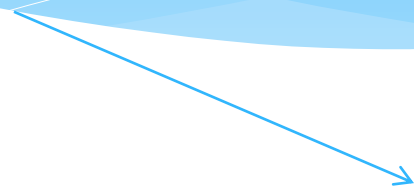


Self-

Organization



Property



Allocating a common pool resource

