

# Improving the Federal Response to Western Drought

## Five Areas for Reform

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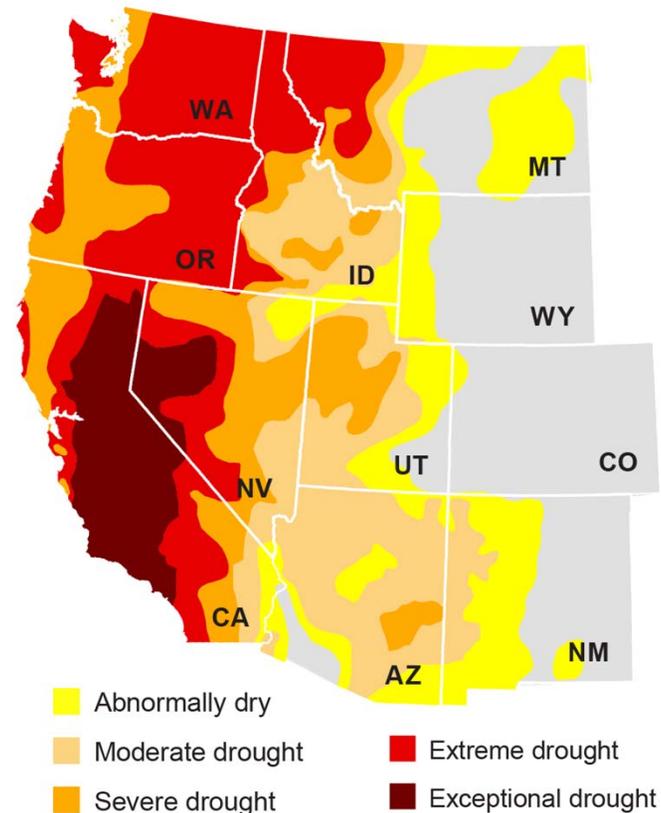
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# Report examines options for improving drought resilience

- Offers pragmatic solutions, not sweeping reforms
- Draws on:
  - Public information
  - Interviews with 40+ federal, state, local experts

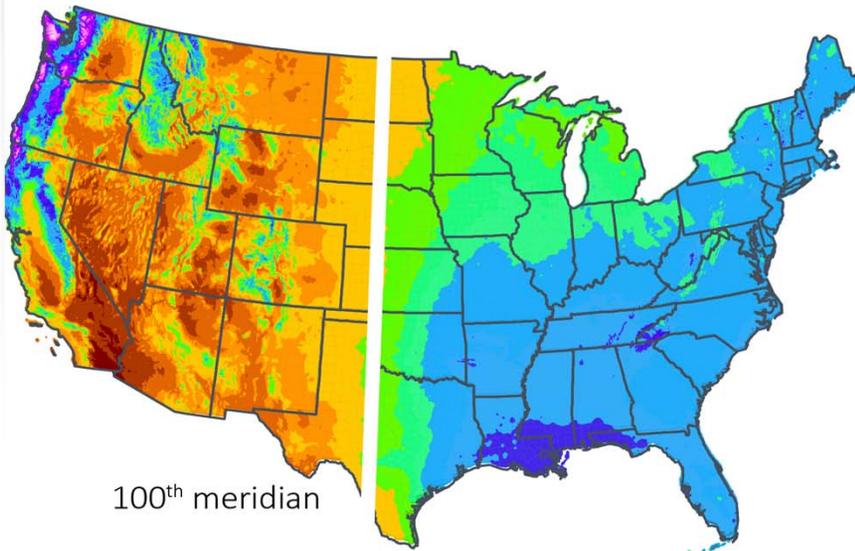
In 2015, much of the West was in severe drought



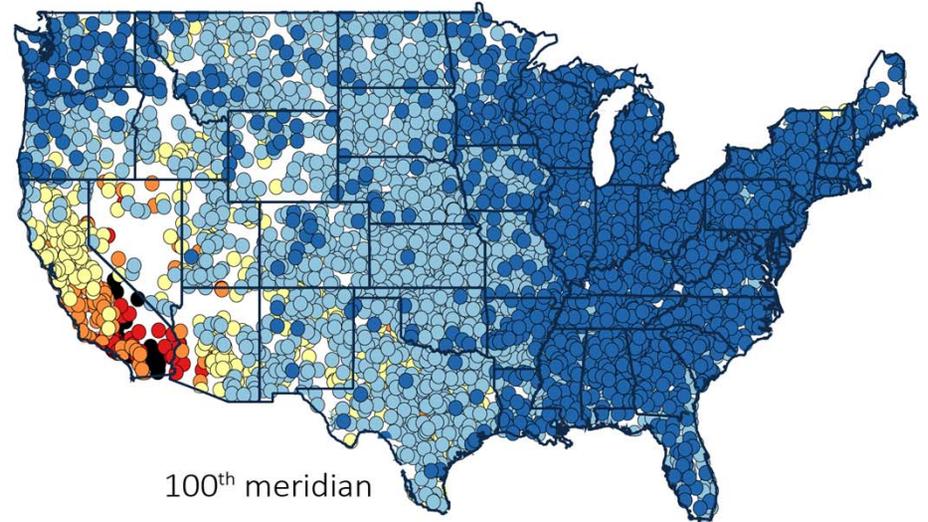
Source: US Drought Monitor, August 25, 2015

# Western challenges: Drier, more variable climate and growing population

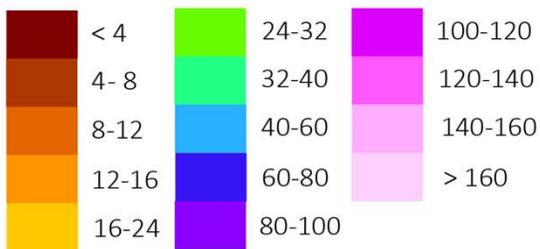
Average Annual Precipitation (1981-2010)



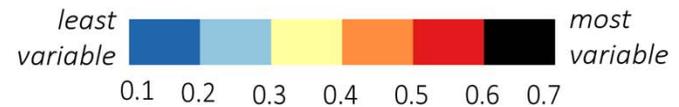
Rainfall Variability



Annual Precipitation (inches)



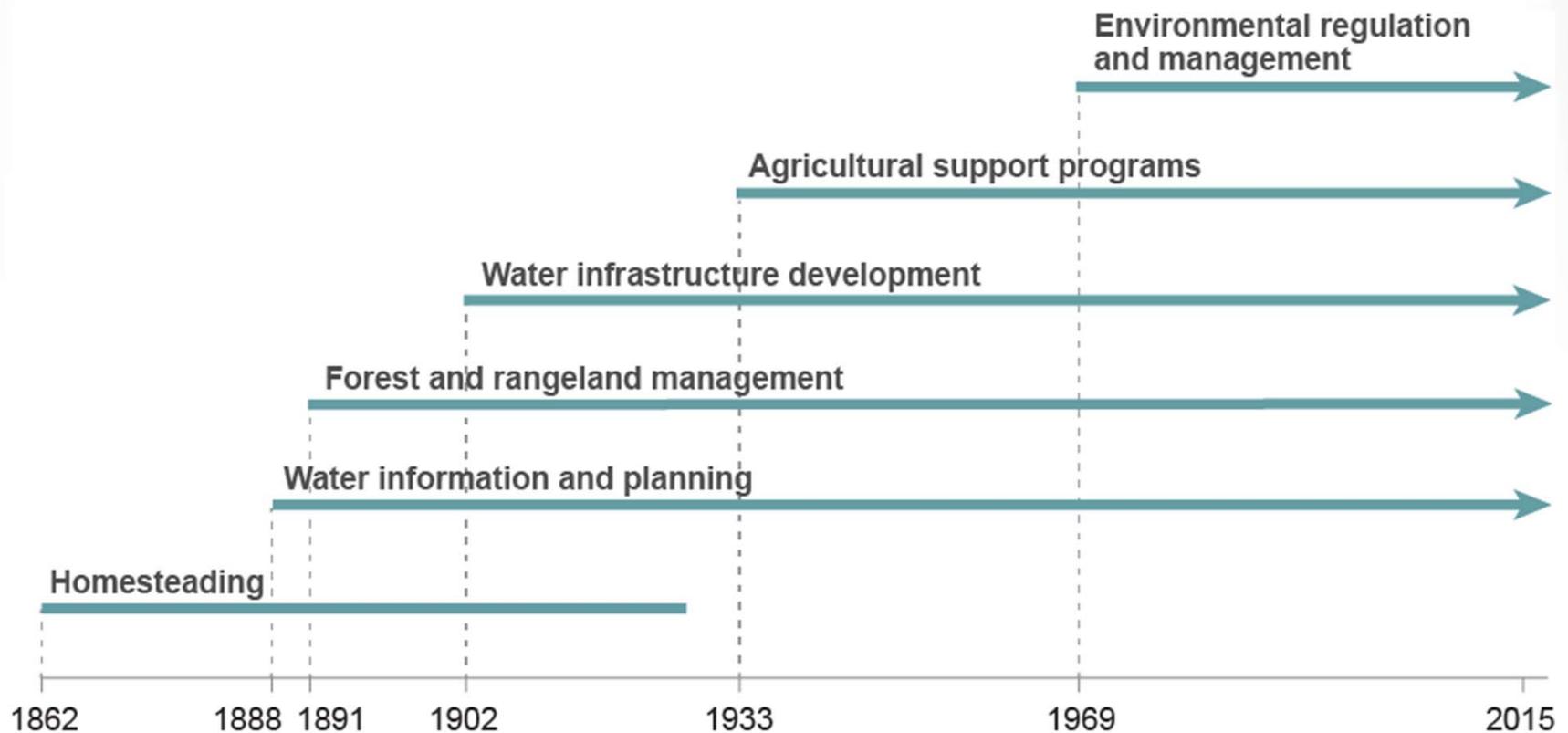
Rainfall Variability



Left map source: Oregon State University (2015)

Right map source: Dettinger (2011)

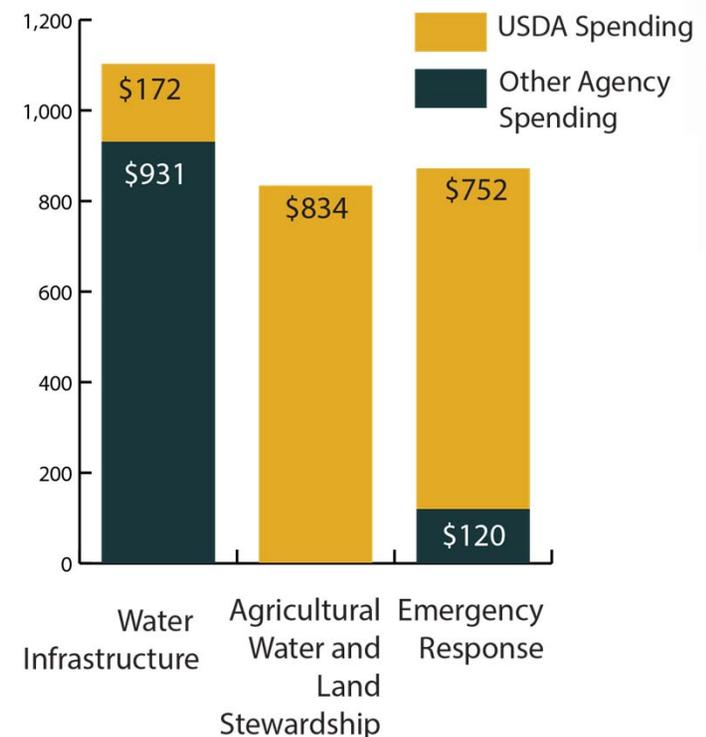
# The federal role is longstanding and evolving



# Today, the federal government is a key partner

- Largest landowner, including headwaters
- Major irrigation supplier and hydropower generator
- Key provider of water information
- Chief environmental regulator
- Important source of funds

Federal funding for water and drought, \$2.8 billion (FY 2014)



Source: Agency budgets

# Modest federal reforms can boost drought resilience in the West

1. Leverage authorities
2. Coordinate actions
3. Change agricultural support programs
4. Improve headwater management
5. Improve water data and forecasting



# 1. Leverage federal authority

- History of federal capacity for resolving tough problems
- Reforms:
  - Use mix of support and regulatory programs (carrots and sticks)
  - Immediate need:
    - Colorado River
    - Sacramento-San Joaquin Delta
    - Klamath Basin



## 2. Coordinate federal actions more effectively

- Conflicting goals, mandates, regions
- “Wring every drop” vs. stewardship
- Reforms:
  - Coordinate, align at the basin or watershed scale
  - Develop drought biodiversity plans

### Regional office boundaries vary greatly



US Army Corps of Engineers,  
regulatory boundaries



US Bureau of Reclamation  
regions



US Fish and Wildlife regions



US Forest Service regions



Environmental Protection  
Agency regions

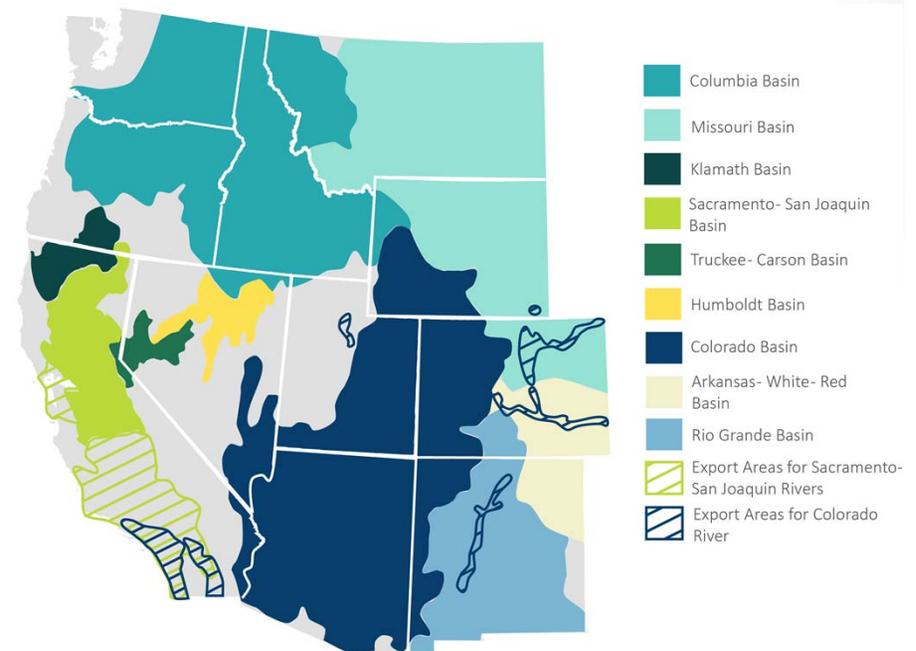


USDA Farm Service Agency and  
Natural Resource Conservation  
Services, state offices

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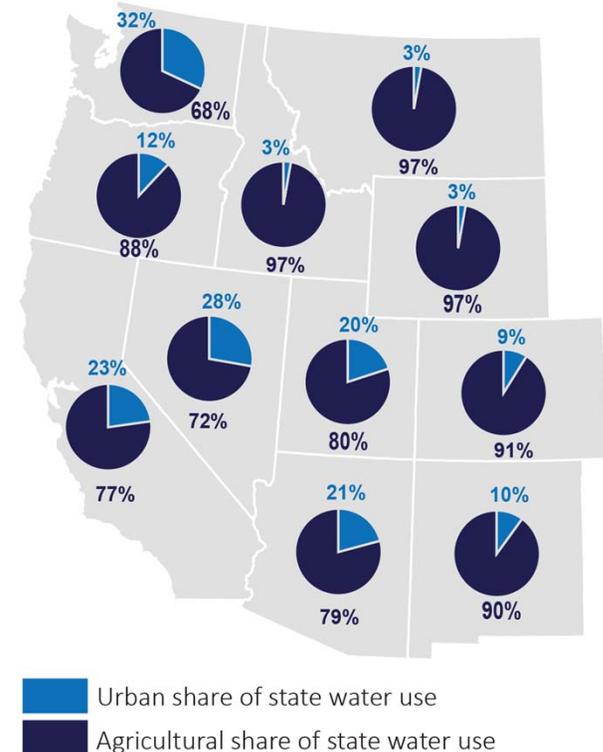
Major river basins are the appropriate scale for aligning many federal actions



### 3. Modify agricultural support programs

- Agriculture: 85% of water use
- USDA: 63% of federal water and drought funding
- Reforms:
  - Align conservation programs with basin goals
  - Use on-farm efficiency to build supply and ecosystem resilience
  - Promote innovation

Western water use, 2010

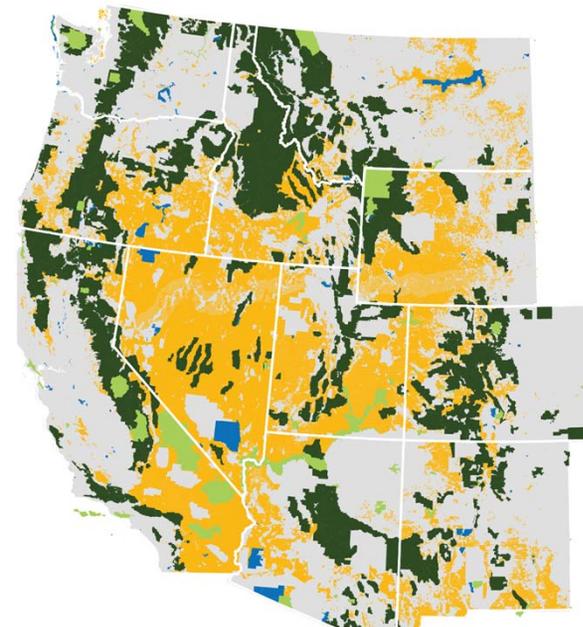


Source: USGS

## 4. Improve headwaters management

- Drought is accelerating decline in forest health
- Fire suppression >50% of US Forest Service budget
- Reforms
  - Shift budgeting to promote prevention over suppression
  - Implement large-scale restoration projects to show benefits

Federal lands in the West



Source: USGS

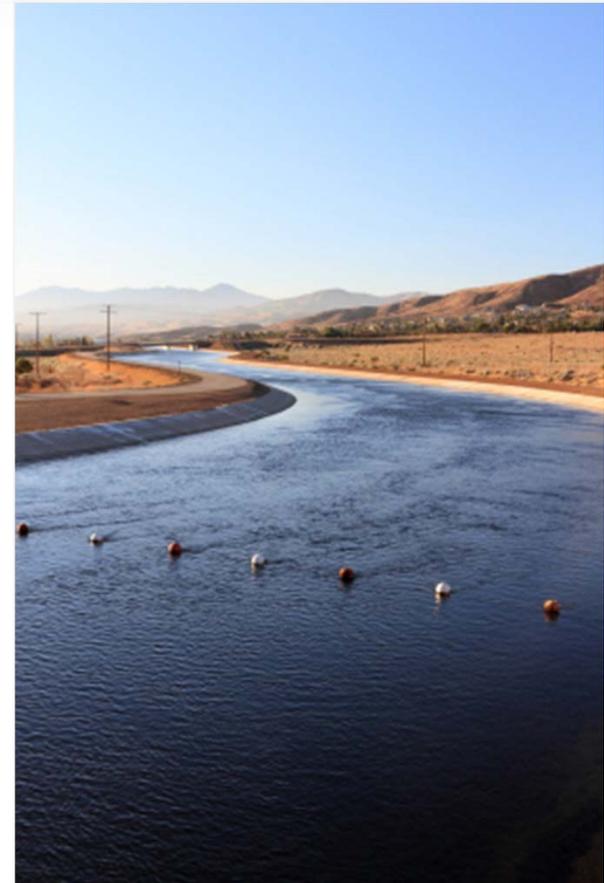
## 5. Improve water data and forecasting

- Water information and forecasting is a vital service
- Reforms:
  - Reverse decline in monitoring networks
  - Improve skill of NWS forecast models
  - Support water-use monitoring
  - Revisit research-observation-forecast budgets



# These reforms are modest and pragmatic, but not necessarily easy

- Complex relationship between federal government and western states
- Deeply entrenched reliance on some federal programs
- Inherently conservative and risk-averse agencies



# Latest drought provides opportunity to build resilience, prepare for an uncertain future



## Notes on the use of these slides

These slides were created to accompany a presentation. They do not include full documentation of sources, data samples, methods, and interpretations. To avoid misinterpretations, please contact:

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Thank you for your interest in this work.

For more information, see [www.ppic.org/water](http://www.ppic.org/water)