

Land-use policy and water in the West

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Why linking water and land use matters

- Water quantity:
 - Making sure enough water is available to support long-term investments
 - Not putting people and investments in harm's way from too much water
 - Not blocking recharge areas (storage)
- Water quality:
 - Poor drainage planning = pollution (urban, ag)

Why linkage doesn't automatically happen

- Separation between land use and water planning responsibilities (even in cities with water departments)
- Short time horizons of some decision makers (private and public)
- Many municipalities do plan ahead
- Biggest challenges where oversight limited:
 - Rural communities
 - Open access groundwater basins

A scan of the big issues

- Water supply adequacy for new development
- Other (re)emerging issues
 - Agricultural land use
 - Groundwater recharge
 - Upper watershed/forest health
 - Floodplain management

Most western states have water supply adequacy laws for some new development

	Year	Subdivisions covered
AZ	1973	All housing (disclosure)
	1995	Housing in AMAs
CA	1995/ 2001	Big projects (>500 units or +>10% water use)
CO	1972	Unincorporated areas
NV	1973	All housing
NM	1995	Unincorporated areas

How can developers comply with state and local rules?

- Within municipal service areas:
 - Buying water rights
 - Paying for water system development
 - Retrofitting older homes
 - Using less water (landscaping)
 - Meter caps (rare)
- In remote well-dependent areas:
 - Housing limits (min. lot sizes)
 - Water rationing (pumping limits)



How is it working?

In California:

- State law doesn't preempt stricter local action
- Rarely blocking development, sometimes downsizing
- Encouraging more conservation, recycled water use
- Related water planning law is helping

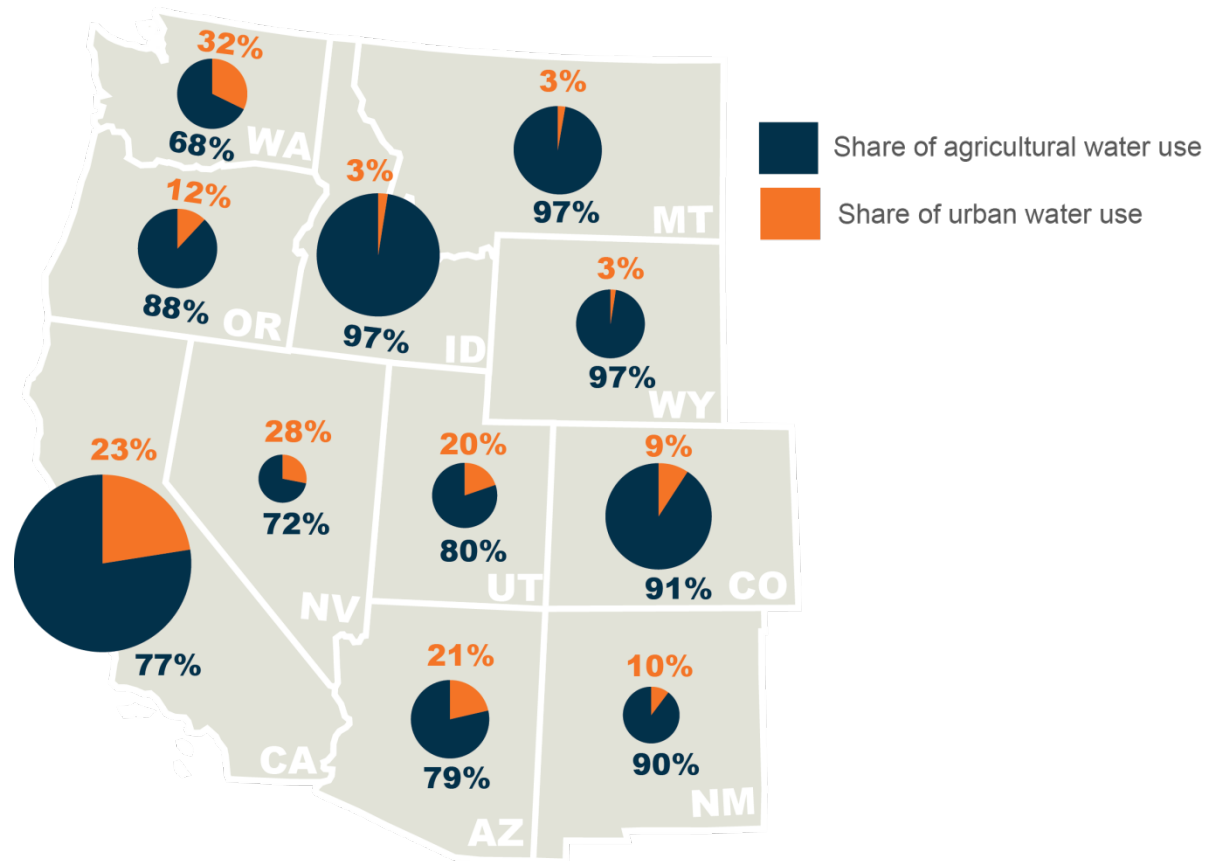
In Colorado, New Mexico:

- State restrictions in unincorporated areas shifting some development to municipal areas
- But domestic well loophole also encouraged some off-grid development

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The Willie Sutton problem: Agriculture is still the predominant western water user



Planning may yield better outcomes than a laissez-faire approach to ag land use

- Rotational fallowing vs permanent retirement to deal with water scarcity
- Long-term trading deals to support permanent crops
- Early vs late retirement of saline lands



Late retirement

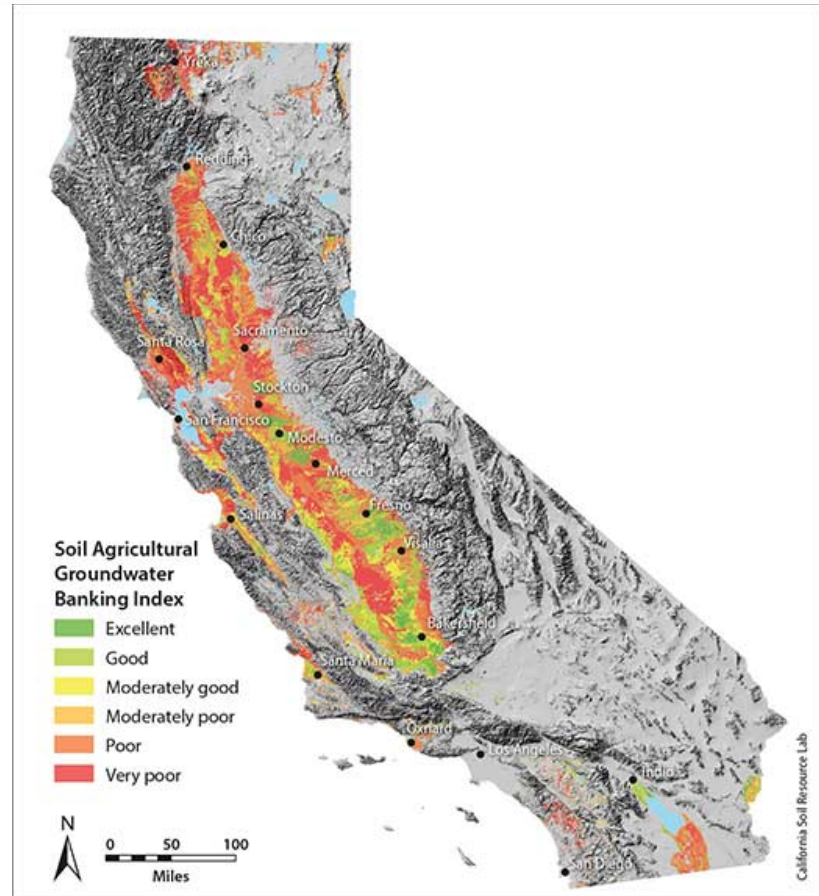


Early retirement

Pop-up wetlands helped provide waterbird habitat in California during the drought

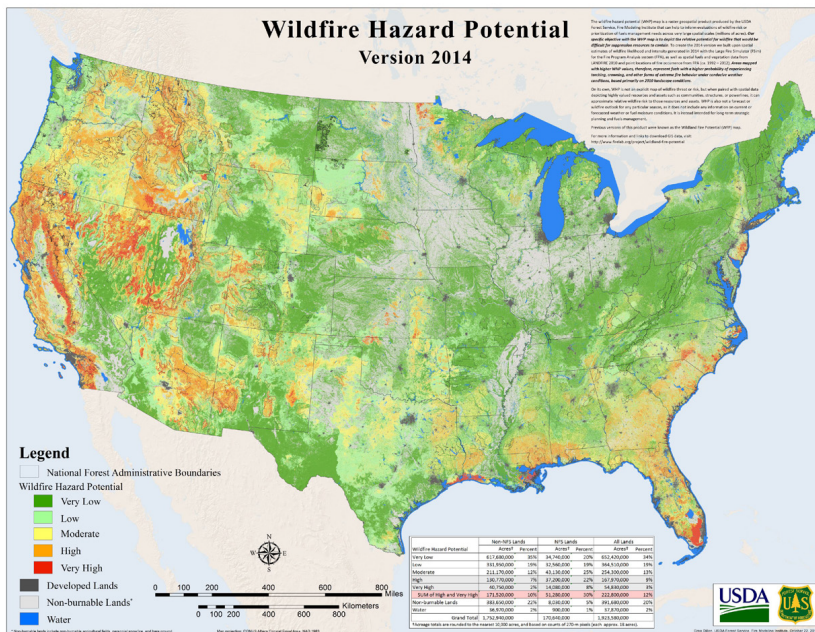


Groundwater recharge potential should be an urban and ag land use concern



http://news.ucdavis.edu/search/news_detail.lasso?id=11334

Drought, climate warming are exacerbating wildfire risks in western forests

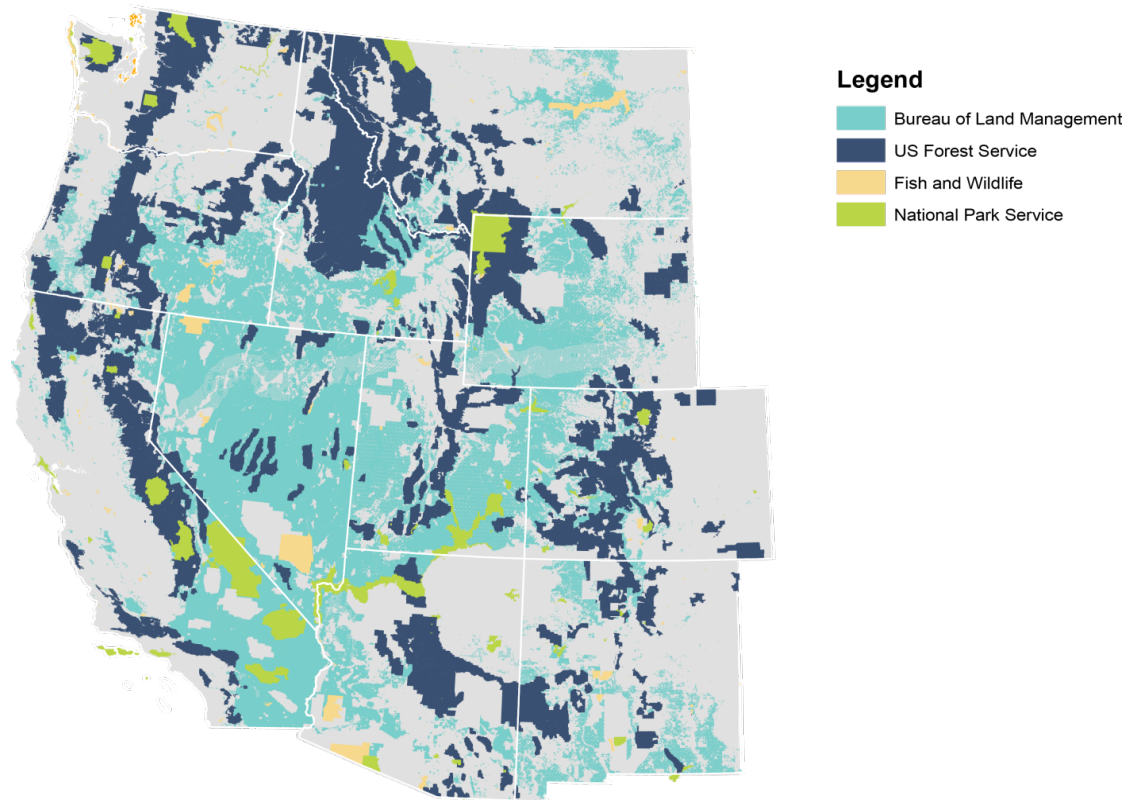


- Restoring healthy (less dense) forests is a land use issue with many consequences
 - Air quality
 - Infrastructure safety
 - Habitat
 - Water quality and supply

<http://www.firelab.org/project/wildfire-hazard-potential>

Fed's role key in upper watershed management

Federally owned western lands



Source: Congressional Research Service

Flood risks are high, and rising with climate change



Texas, drought-busting flood, 2015

US land use policy on mitigating flood risk is minimalist compared with other flood-prone regions (e.g., Netherlands)

Thank you!



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.