AGRICULTURAL WATER:

PROTECTING THE FUTURE OF OUR NATION

National Farm Business Management Conference

Salt Lake City, UT

June 12, 2014

Warren H. Peterson
Vice President
Farmland Reserve, Inc.

Agricultural Water:

Shaping Our Nation

Agriculture –

- *Shaped and sustained our past*
- *Provides abundant food, fiber, and fuel today*
- *Will determine our future*

Agricultural Water:

The Challenge for Agriculture

The 21st century expects U.S. agriculture to:

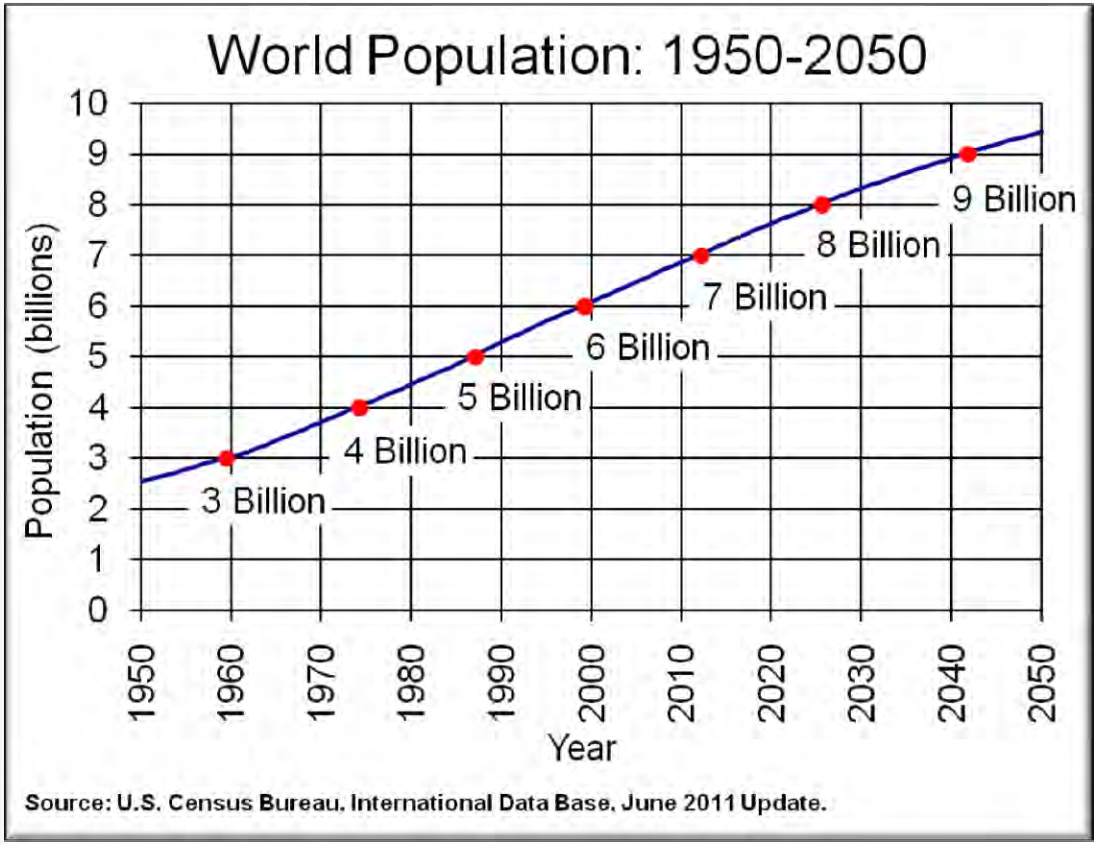
- *Produce more food and fiber*
- *Meet bio-energy demands*
- *"[A]dopt more efficient and sustainable production methods"*
- *Continue good land stewardship*
- *Utilize a smaller rural workforce*
- *"Adapt to climate change"*

- How to Feed the World 2050,
FAO High-Level Expert Forum Report, 2009

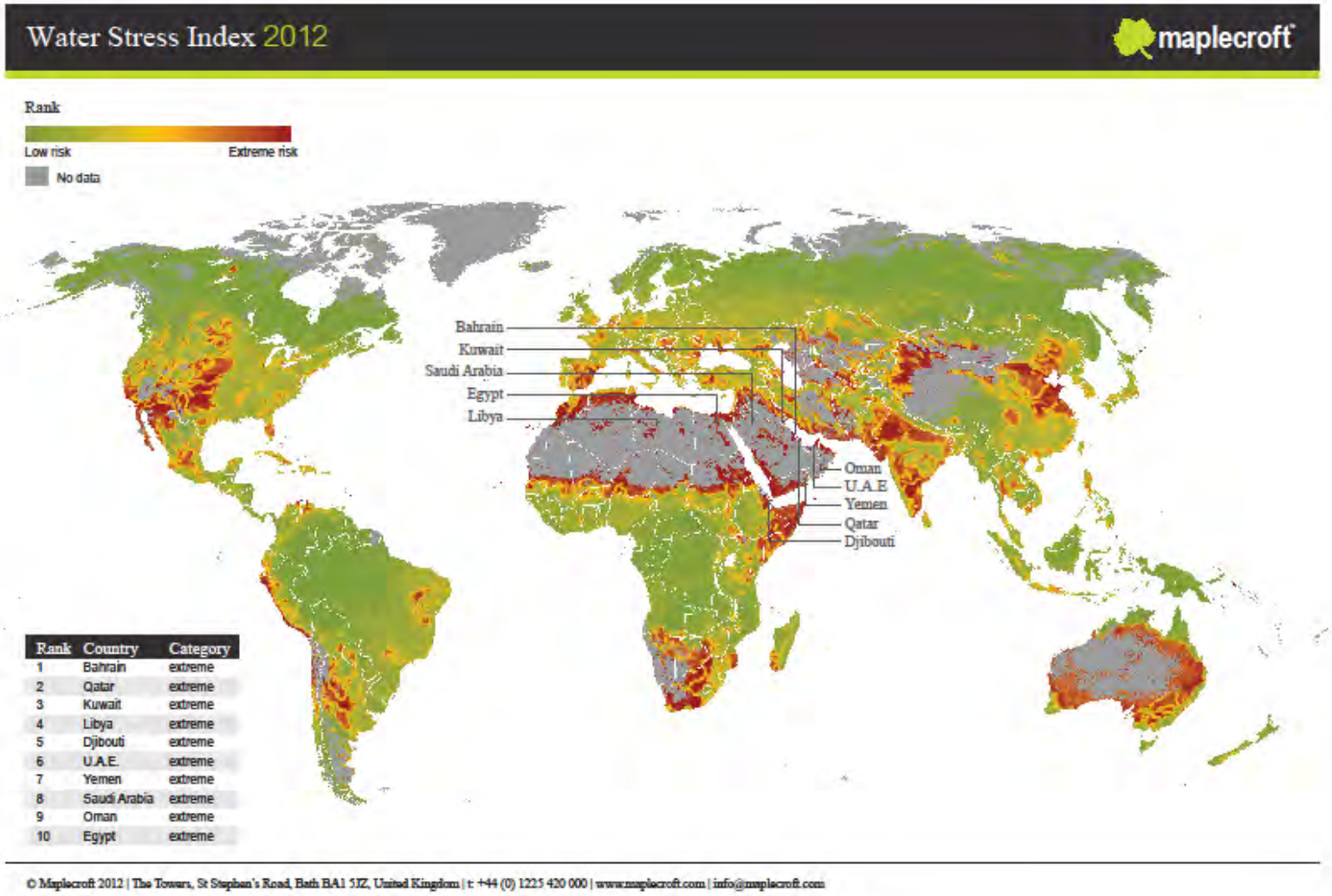
Agricultural Water:

Water Supply - World Food Demand

"World population is expected to increase from roughly 7.2 billion today [2012] to about 9.7 billion in 2050."



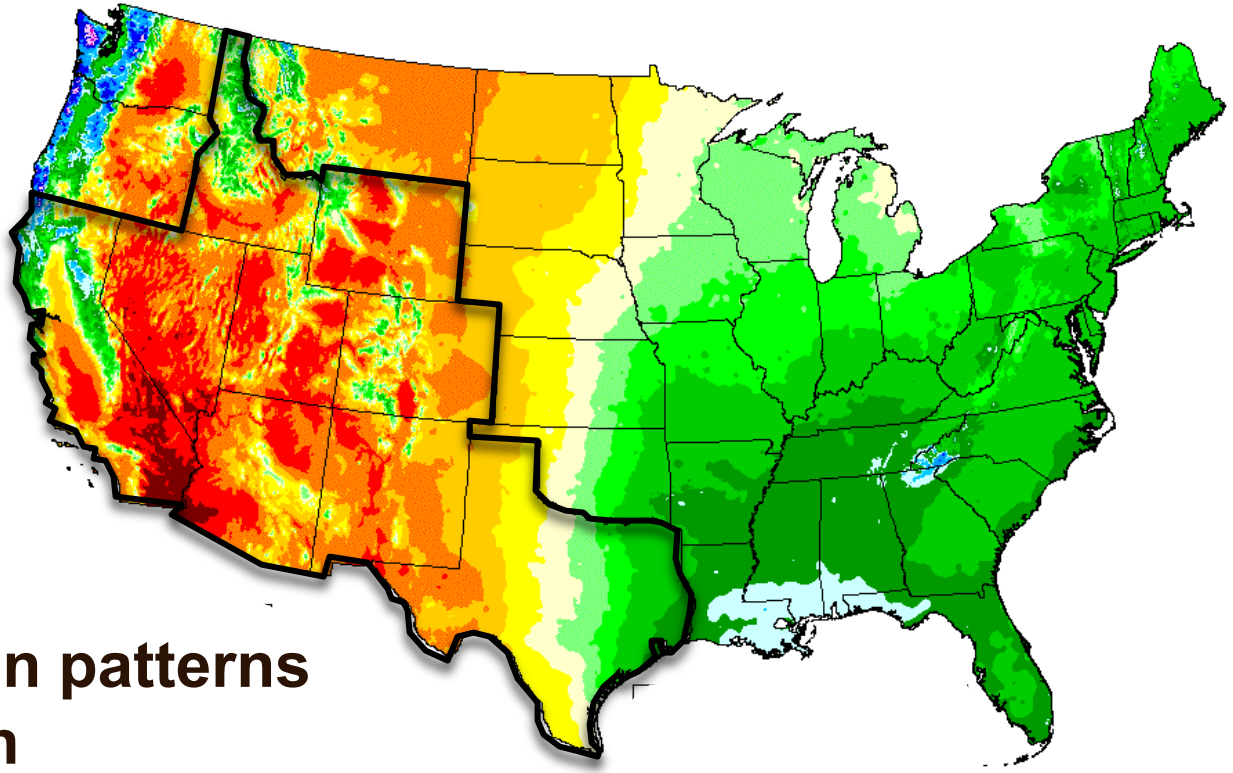
Water As a Critical Global Resource



Agricultural Water:

Water Supply – Population

In 35 years the U.S. will realize a population growth of 130 million, reaching 439 million.



Population growth and precipitation patterns do not align

AGRICULTURAL WATER:

PROTECTING THE FUTURE OF OUR NATION

"Increased food demand

=

increased water demand"

"Agriculture faces many challenges, but two facts remain:

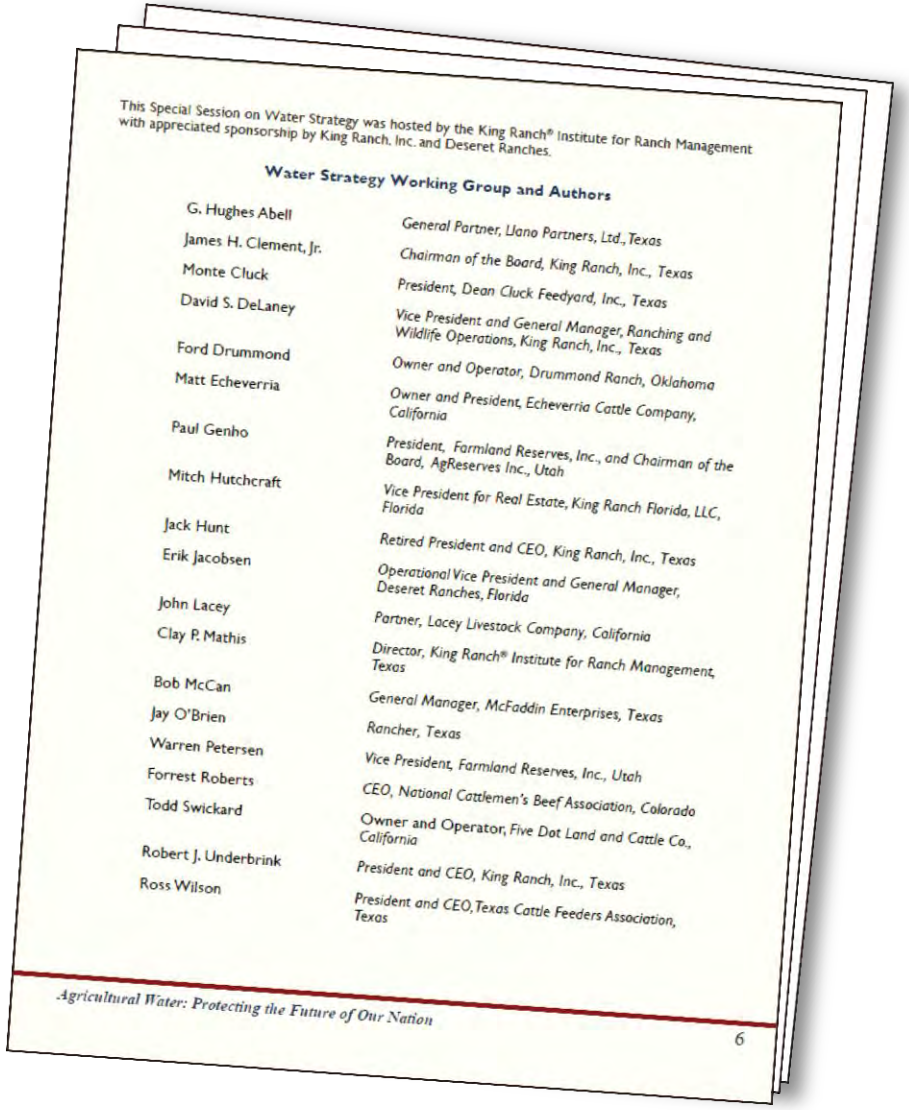
Agricultural Water:

Basics

Agricultural Water:

Special Session on Water Policy

"On May 1-2, 2012, the King Ranch Institute invited agricultural stakeholders to identify solutions for future water resource management."



This Special Session on Water Strategy was hosted by the King Ranch® Institute for Ranch Management with appreciated sponsorship by King Ranch, Inc. and Deseret Ranches.

Water Strategy Working Group and Authors

G. Hughes Abell	General Partner, Llano Partners, Ltd., Texas
James H. Clement, Jr.	Chairman of the Board, King Ranch, Inc., Texas
Monte Cluck	President, Dean Cluck Feedyard, Inc., Texas
David S. DeLaney	Vice President and General Manager, Ranching and Wildlife Operations, King Ranch, Inc., Texas
Ford Drummond	Owner and Operator, Drummond Ranch, Oklahoma
Matt Echeverria	Owner and President, Echeverria Cattle Company, California
Paul Genho	President, Farmland Reserves, Inc., and Chairman of the Board, AgReserves Inc., Utah
Mitch Hutchcraft	Vice President for Real Estate, King Ranch Florida, LLC, Florida
Jack Hunt	Retired President and CEO, King Ranch, Inc., Texas
Erik Jacobsen	Operational Vice President and General Manager, Deseret Ranches, Florida
John Lacey	Partner, Lacey Livestock Company, California
Clay P. Mathis	Director, King Ranch® Institute for Ranch Management, Texas
Bob McCan	General Manager, McFaddin Enterprises, Texas
Jay O'Brien	Rancher, Texas
Warren Petersen	Vice President, Farmland Reserves, Inc., Utah
Forrest Roberts	CEO, National Cattlemen's Beef Association, Colorado
Todd Swickard	Owner and Operator, Five Dot Land and Cattle Co., California
Robert J. Underbrink	President and CEO, King Ranch, Inc., Texas
Ross Wilson	President and CEO, Texas Cattle Feeders Association, Texas

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Agricultural Water:

Water Leadership Priorities

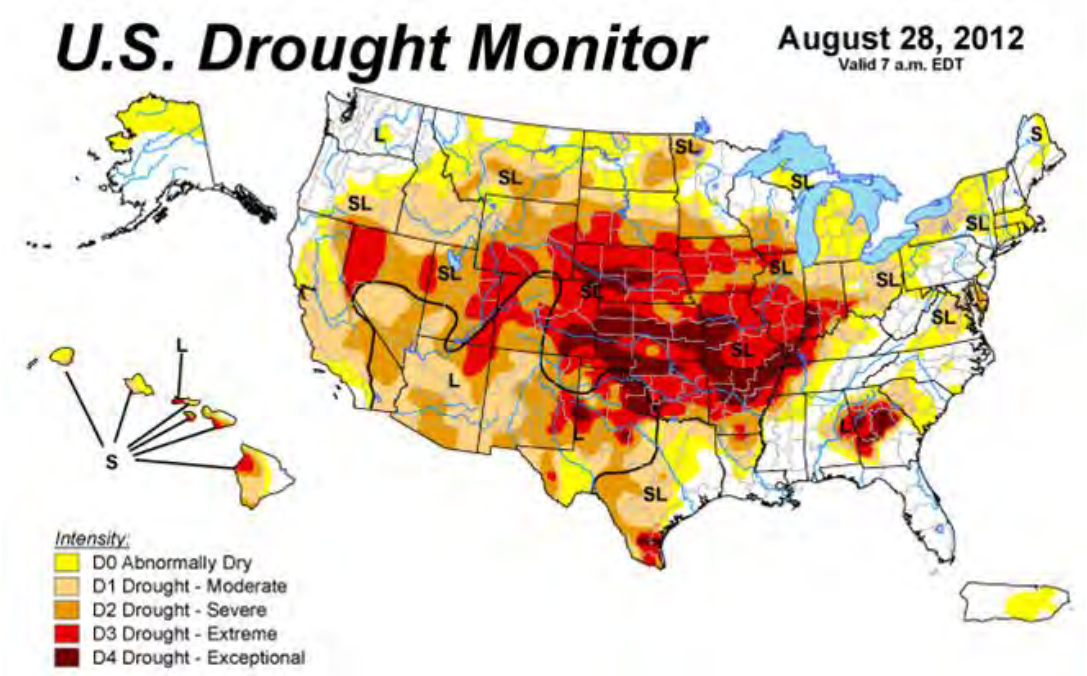
These participants identified three key priorities –

Key points:

1. ***Water Supply – will there be enough?***
2. ***Water Resource Management – who will lead on managing water?***
3. ***Long-Term Water Policy – what can we do to promote good policy?***

Agricultural Water:

Water Supply – Weather



As of August 28, 2012:

- **78% of the U.S. was "abnormally dry" or in "drought"**
- **20% was "extreme to exceptional drought"**

The 2012 drought emphasized our limitations:

- **lack of water supply**
- **lack of resource management**
- **lack of viable policy**

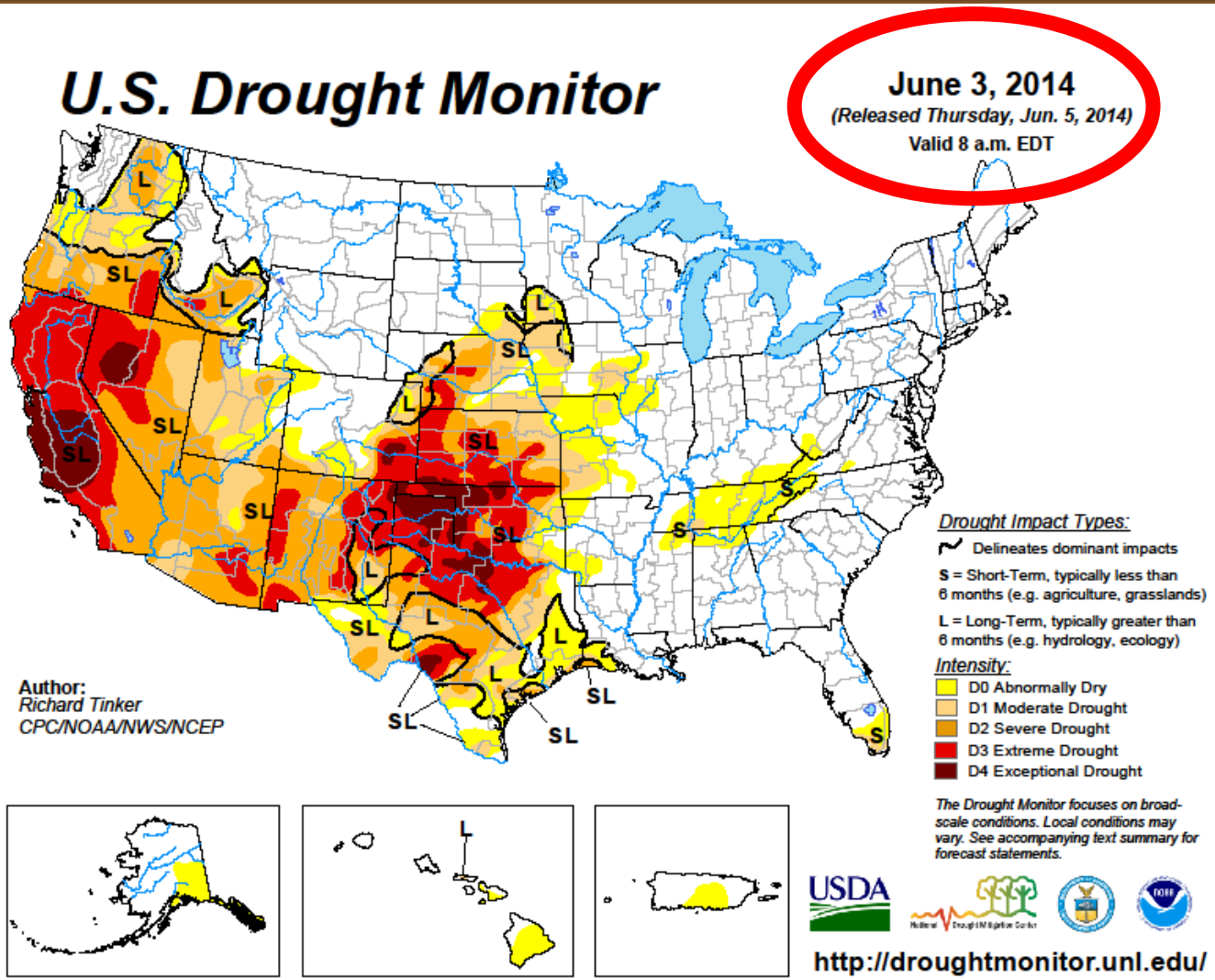
Agricultural Water:

Water Supply – Infrastructure

- **16% of U.S. farmland is irrigated and produces 50% (in value) of our food supply**
- **The remaining 84% could produce more with irrigation – *but not without infrastructure expansion and water allocations.***

Agricultural Water:

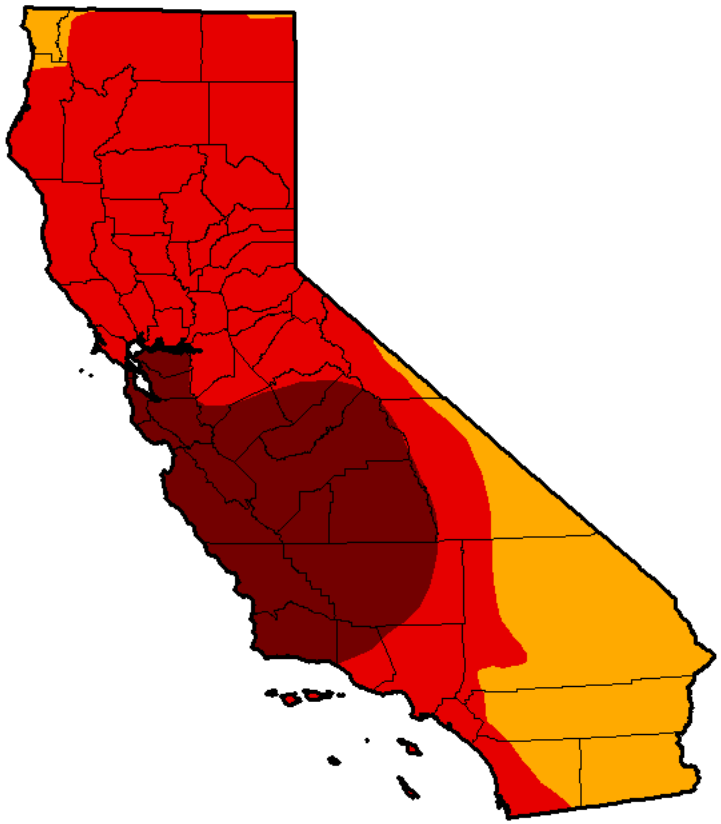
Water Supply



Agricultural Water:

Water Supply – California 2014

U.S. Drought Monitor
California



June 3, 2014

(Released Thursday, Jun. 5, 2014)

Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.00	100.00	100.00	100.00	76.68	24.77
Last Week 5/27/2014	0.00	100.00	100.00	100.00	76.68	24.77
3 Months Ago 3/4/2014	0.00	100.00	94.56	90.82	65.89	22.37
Start of Calendar Year 12/31/2013	2.61	97.39	94.25	87.53	27.59	0.00
Start of Water Year 10/1/2013	2.63	97.37	95.95	84.12	11.36	0.00
One Year Ago 6/4/2013	0.00	100.00	98.16	53.64	0.00	0.00

Intensity:

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

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

http://droughtmonitor.unl.edu/

Agricultural Water:

Water Supply – Infrastructure

Other Compounding Issues:

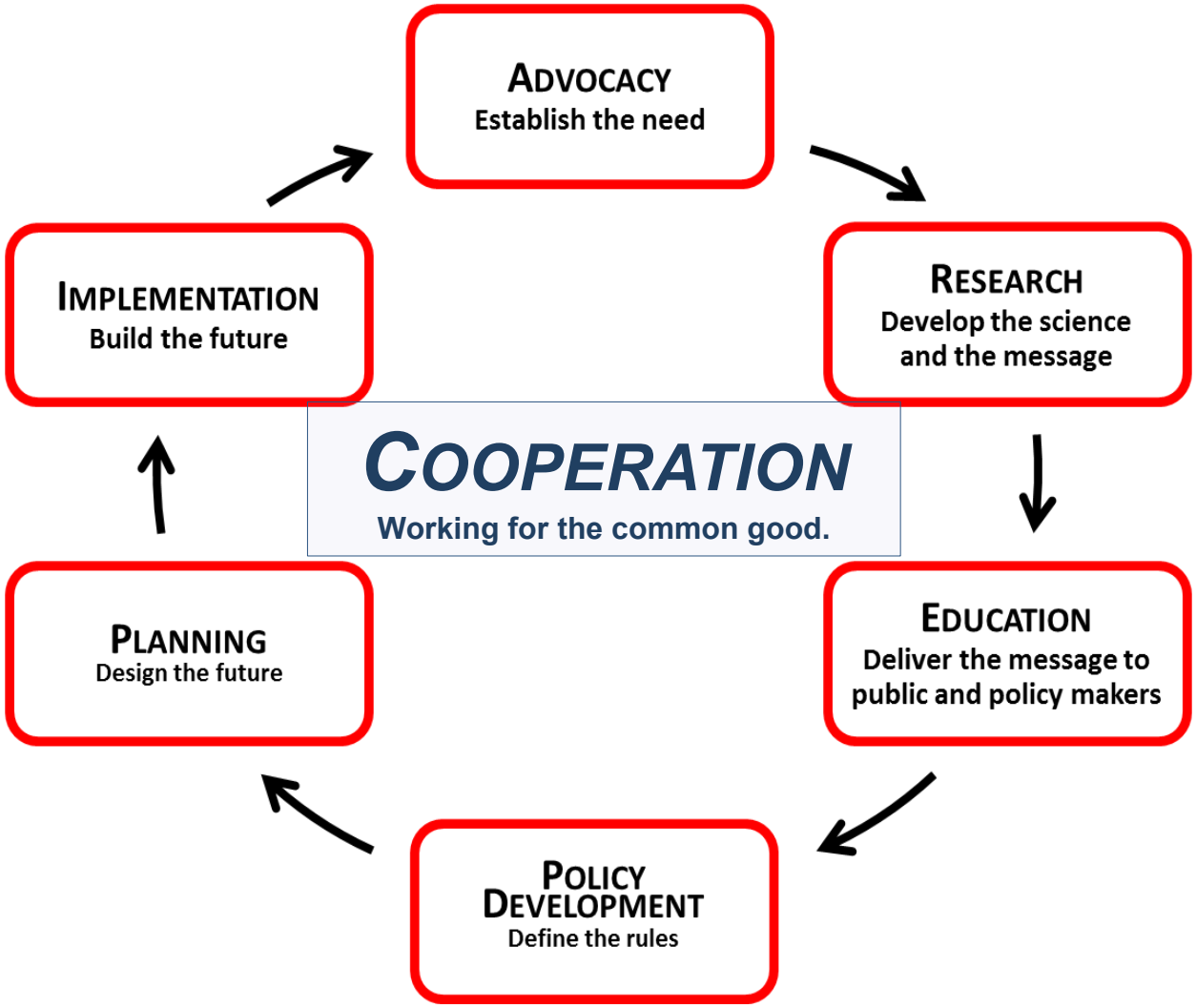
- Many dams, aqueducts, etc. are more than 50 years old, with no redundancy or reserve capacity
- Federal policy is to not replace facilities; local economies don't have the funds
- Water infrastructure does not match up with population growth and distribution
- Weather patterns, changing technology, and other factors make infrastructure obsolete
- Current policies discourage private investment

Agricultural Water:

Protecting the Future of Our Nation - Recommendations

"The telling of this story belongs to the agriculturalist, those 2% of the American population who actually manage soil and water, whether as farmer or rancher."

Agricultural Water:
Policy Leadership Model



Tell the story –

"Only agricultural producers can tell the whole story first hand."

Agricultural Water:

Water Leadership – Advocacy

Key Points – Advocacy:

- Develop the message
- Target the audience
- Deliver the message consistently and well, again and again and again

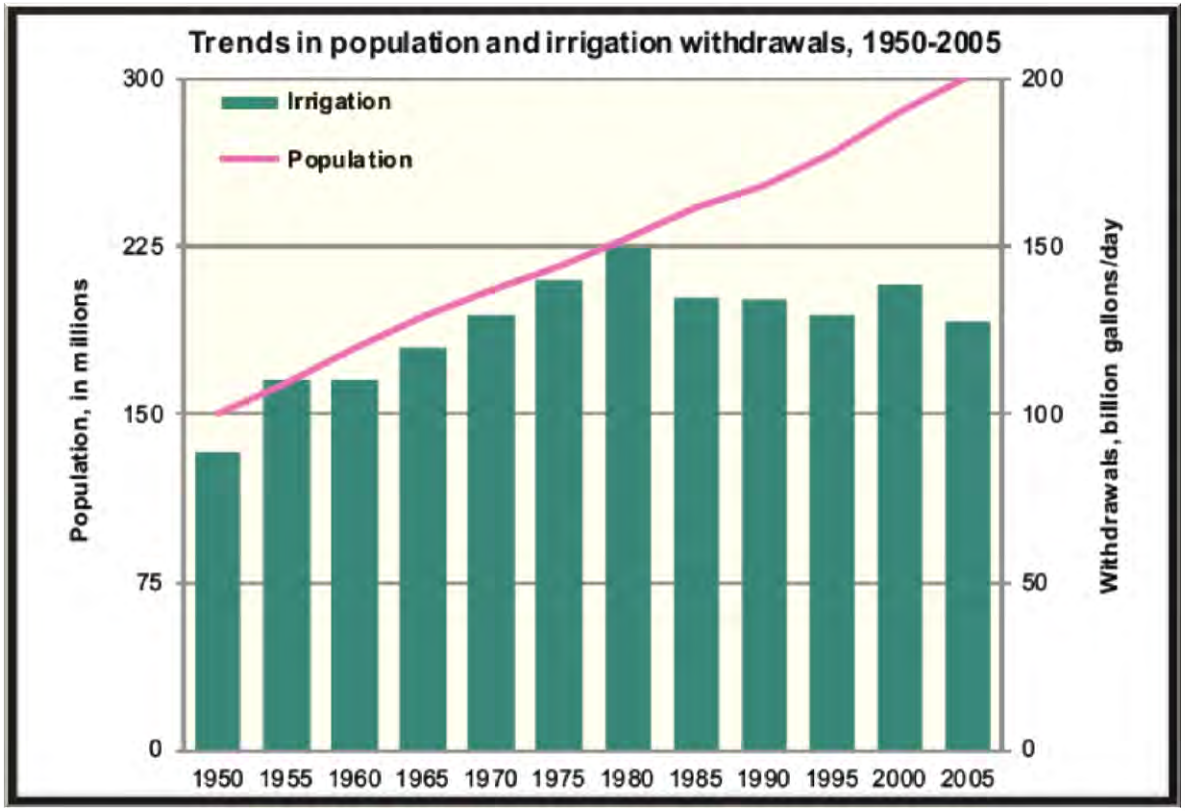
AGRICULTURAL WATER:

WATER LEADERSHIP – RESEARCH

Infrastructure investment alone will not meet water supply needs; a new emphasis on research is critical.

Irrigation Efficiency:

- *Agriculture produces 5 times more than in the 1950s.*
- *U.S. irrigation water use grew from 89 bgd in 1950 to 128 bgd in 2005*



Agricultural Water:

Water Leadership – Research

"[T]he special session participants expressed concern that university programs devoted to agricultural research are shrinking at the very time that our food production needs to be expanded and our water resources more carefully managed."

Key points – Research:

- Increased funding for production oriented research such as storage (*e.g.*, ASR), delivery efficiencies, drought resistant plant varieties, etc.
- Improved weather forecasts
- Incentives for cooperation among university, government, and private researchers
- Greater accountability, *e.g.,* the “climate change” debacle

Agricultural Water:

Water Leadership – Education

Water and food are more abundant, cheap, and convenient than at any time in human history.

"The general public does not know what agriculture producers know, in part because there is little incentive to know."

Agricultural Water:

Water Leadership – Education

"Only 2% of the U.S. population is directly involved in production of agriculture, and only 1% in full-time farming."

Key Points – Education:

- The water/food/security connection:

  "Our nation needs agriculture and agriculture needs water."

- Agriculture provides:
  - Flora and fauna habitat
  - Critical open space
  - Watershed management
  - Riparian area protection

Education Outcomes:

- The food/water/security connection seen as part of the “conventional wisdom”
- Public support for sound water policy, infrastructure development, and other needs
- Effective countering of activists' disinformation
- Regulators and legislators with improved understanding of water issues

Agricultural Water:

Water Leadership – Policy Development

- Existing water policy often based on politics without good science or consideration of long-term impacts
- These policies:
  - Threaten water rights & permit ownership
  - Cause waste of usable water
  - Create conflict
  - Punish water conservation
  - Discourage or prohibit private investment
  - Enable “citizen” lawsuits that block good management practices

Agricultural Water:

Water Leadership – Policy Development

"[L]ong-term stability of water rights and permits surfaced in every part of the discussion, along with . . .protecting investments in infrastructure."

Agricultural Water:

Water Leadership – Policy Development

"Huge investments in land improvements. . .and financial systems tie back to investments in water rights and permits. Any impairment of water rights ownership shakes this entire structure."

Agricultural Water:

Water Leadership – Policy Development

Key Points - Policy:

- Ag must have a leadership role in water policy
- Water rights/permits must be a stable, protected property right

Key Points – Policy (cont'd):

- Good policy must be based on good science
- Align incentives and objectives
- Agricultural water use must expand to meet U.S. and world food needs, not shrink
- The market place should govern movement of water to uses other than agriculture

Agricultural Water:

Water Policy Leadership – Action Steps & Outcomes

Action Steps:

- Become a leader
- County, state, and national organizations need to be more assertive
- Promote:
  - Science-based policy
  - Private investment
  - Water rights and permits protections
  - Basin-specific policies
- Coalitions with key allies

Outcomes:

- Agriculture leading on policies that affect ag
- Protection of water rights/permits
- Incentives to invest in storage, conservation, and reuse of water
- Greater innovation
- Reduced conflict
- Full market value for water rights/permits taken for other uses

Agricultural Water:

Water Leadership – Planning and Implementation

"Agriculture is often not perceived as being innovative, but farmers and ranchers are resilient and innovative problem solvers who use their education, technical training, common sense, and experience to overcome challenges. Agriculture needs to be heard in planning circles and planners need to listen to agriculture."

Agricultural Water:

Water Policy - Planning & Leadership

- Water shortages fall first on agriculture – then on consumers
- Ag's volume of water use (80%+ in some states) brings public scrutiny, but also experience and incentive

Key Point:

"The agricultural community, in light of its unique perspective, can and must offer leadership in critical water resource planning."

Key Points – Planning:

- Agriculture is a legitimate and priority water use, essential to our economy and our security
- Ag must provide leadership on issues affecting agriculture
- Good results require basin-wide planning, but local implementation
- Broad stakeholder inclusion reduces conflicts and creates better outcomes
- Good planning is based on good science

Agricultural Water:

Water Leadership – Planning & Implementation Outcomes

Outcomes:

- Recognition of agriculture's role in planning
- Efficient infrastructure design, financing, construction, and use
- Partial or full private funding
- Broader political support
- Less demand to convert water to non-ag uses
- More available water, more food production, and greater national security

Agricultural Water:

Water Leadership – Cooperation

Agriculture community groups can promote cooperation among others often in conflict with ag, such as:

- Policy makers
- Planners and developers
- Municipalities
- Environmental groups
- Industrial needs
- Other water users

Cooperation,

not

capitulation

Agricultural Water:

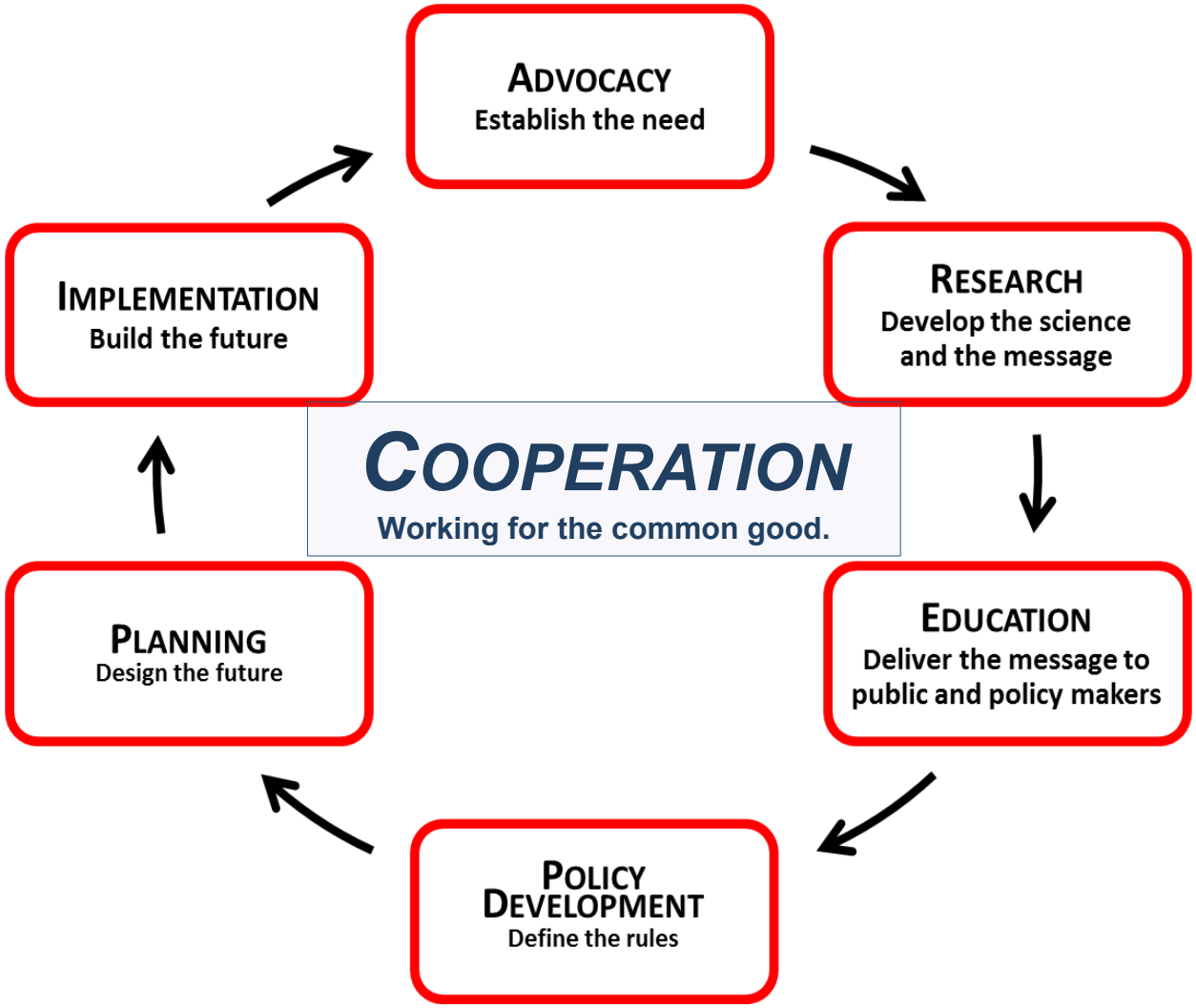
Water Policy – Cooperation

"Unless water stewards combine efforts, we must expect that activists will drive policy decisions through litigation. Litigation does not increase water supplies."

Water Lawyer commuting to work

Implementation

Agricultural Water:
Policy Leadership Model



Agricultural Water:

Protecting the Future of Our Nation – Conclusion

"The agricultural community knows the perils of bad policy and that we cannot wait for others to provide timely solutions. This paper is presented as a blueprint for constructive action"

Agricultural Water:

Protecting the Future of Our Nation – Conclusion

http://krirm.tamuk.edu/
http://krirm.tamuk.edu/text/agriculturalwater_whitepaper_final.pdf

Water Planning Team

- Owner or owner's rep.
- Record keeper
- Water Nerd: *e.g.*, hydrogeologist, engineer
- *Qualified* water rights attorney
- Financial analyst
- Others as needed, when needed