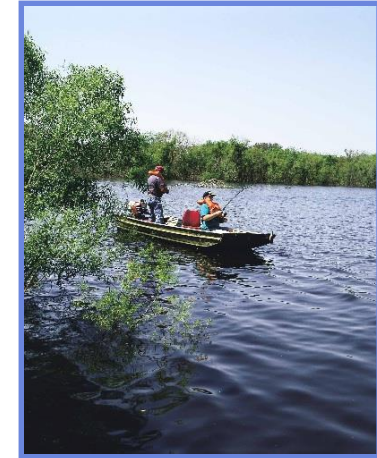


# The Great Western Drought - Implications for the East

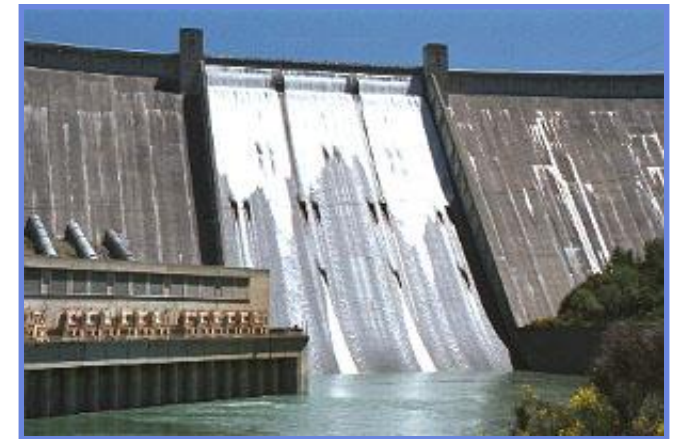


AWRA NCRS

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June 24, 2002

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# HydroLogics Uses Science to Help Resolve Disputes

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- Combination of engineering and mediation
- Water resources problems are multi-objective problems
- Operating and regulatory policies are often the key to resolving disputes

# HydroLogics Experience

## Converging Waters (USACE IWR)

- DRBC
- SRBC
- SFWMD
- California  
CVP/SWP
- North Carolina
- Kansas
- Nature Conservancy
- New York City
- S.Nevada Water Auth
- S.Saskatchewan,  
Alberta
- Bay of Plenty, NZ
- Yellow River, China

# Disclaimer

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- The opinions that follow are mine, based on my experience, education, and values
- They represent:

**TRUTH, JUSTICE, and THE AMERICAN WAY**

to me – you probably think differently,  
and I reserve the right to change my mind

# Three Questions and short answers

- Are Eastern droughts different
  - Yes, allocation and impacts are different
  - No, mitigation strategies are the same
- What are the lessons for the East
  - Do not, under any circumstances, adopt the Western system of water rights
- How are Eastern regions preparing
  - Management plans, ensemble forecasts, drought exercises, none of the above

# Drought Nature – West v. East

- West - reliability highly dependent on human intervention in hydrologic cycle, much less so in the East
- In the West:
  - Large dams, canals, pipes
  - Demands closer to average yield
  - Groundwater mining – loss of aq. capacity
  - Longer critical periods – less resiliency
  - Longer-term and more severe consequences

# Water Allocation

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- Water rights exist in the West
- They are property rights as defined by law and courts
- Property rights are vital to a democratic, capitalist system
- Water rights are a problem that must be dealt with in mitigating drought impacts in the West

# Water Allocation

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- Appropriative rights are designed to maximize the use of water
- Regulated riparian permits – even straight riparian laws – *allow* judges or administrators to maximize the utility of water use
- This difference is very important in determining how droughts can be managed



# Water Rights Limit the Ability to Mitigate Drought Impacts

- Water is a public good
- Collaborative action is often the best way to deal with drought
- Water rights inhibit the ability to achieve collaborative action
- Government or collaborative actions are more easily enforced in the East – less legal delay, condemnation or compensation generally not required

# Who Owns the Water?

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- The States!
  - For the benefit of their citizens!?
- Even in the West – usufructory rights
- In the East reasonable use can be defined through law or permits

# What Happens When a Right or Permit is Granted

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- The State and its citizens agree to accept externalities associated with the use of water
- The extent of the accepted externalities is not well defined – CA Public Trust, Eastern instream flows

# How Does This Play Out

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- East – Waterbury
- West – return flows, rain harvest, California GMA, Kansas
- Interstate
  - NC v. VA
  - Colorado
  - MT v. WY

# Drought Mitigation Measures Are the Same East and West

- Reactive Measures – water allocation to minimize overall impacts
  - Prior appropriation makes this very difficult
- Pro-active measures
  - improve reliability of supply
    - Facilities
    - Operations – including use of forecasts
    - Long and short-term conservation
    - Water markets

# Water Markets

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- The “no externalities to other water rights” property makes water trades difficult – except proximate and similar uses
- High transaction costs reduce market effectiveness
- Who should bear the non-water rights externalities of trades?

# Things are Far From Perfect in the East

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- Case by case determinations of “reasonable use” in riparian states
- Arbitrary decisions by regulators
- Water permits are limited term “leases”
- Unless there is a charge, water permits, like water rights, are subsidies

# Lesson #1 For the East

***DO NOT, UNDER ANY  
CIRCUMSTANCES, ADOPT THE  
WESTERN SYSTEM OF WATER  
RIGHTS!***

- Why give my water away in perpetuity?
- No benefit to people of the state
- Must bear the external costs



# Other Lessons

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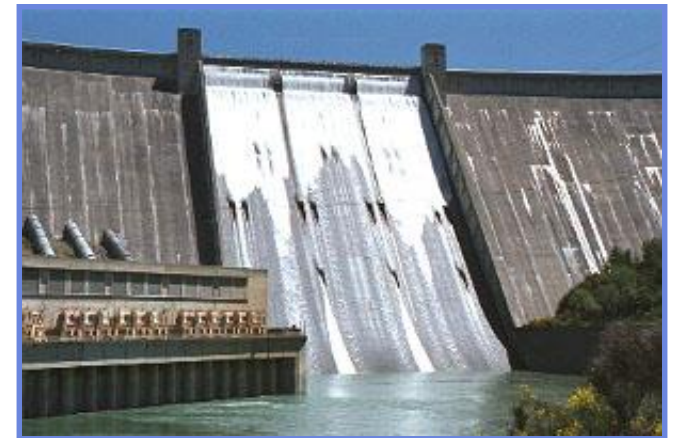
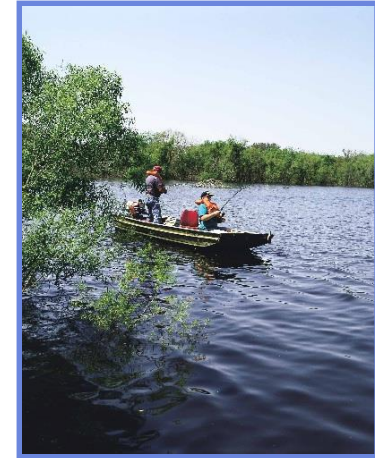
- Ensure reliability of supply – have a reserve
- Have a plan for reducing water use
- Practice the plan
- Evaluate the impacts of permitting decisions
- Go to a regulated riparian system

# What is Being Done

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- In many, if not most cases, ***nothing***
- In some cases - a lot
  - North Carolina – basin planning
  - Georgia – groundwater pumping
  - New York City – OST
  - Washington Metro – COOP
  - Delaware and Susquehanna drought plans

Thank You!



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