



Benefits of Irrigation in Humid Areas

Ed Barnes

Precision Irrigation Workshop
November 9, 2012 – Tunica, MS



Cotton
Incorporated

Acknowledgements

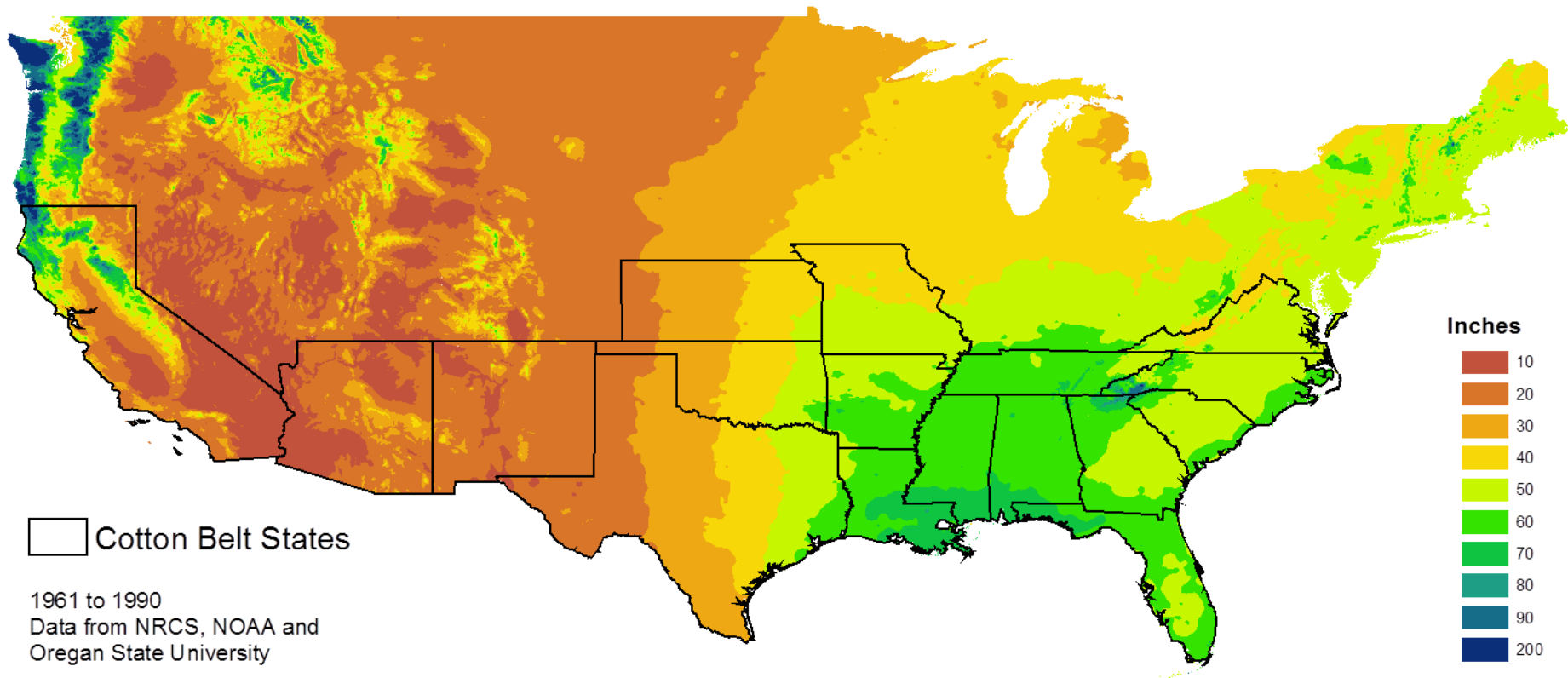
(those not on program)

- Joe Henggeler – University of Missouri
- Calvin Perry – University of Georgia
- Phil Bauer – USDA, ARS - SC
- Ahmad Khalilian – Clemson
- Janet Reed – Cotton Incorporated
- Dana Porter – Texas A&M
- And see the author list in the irrigation publication for other experts.

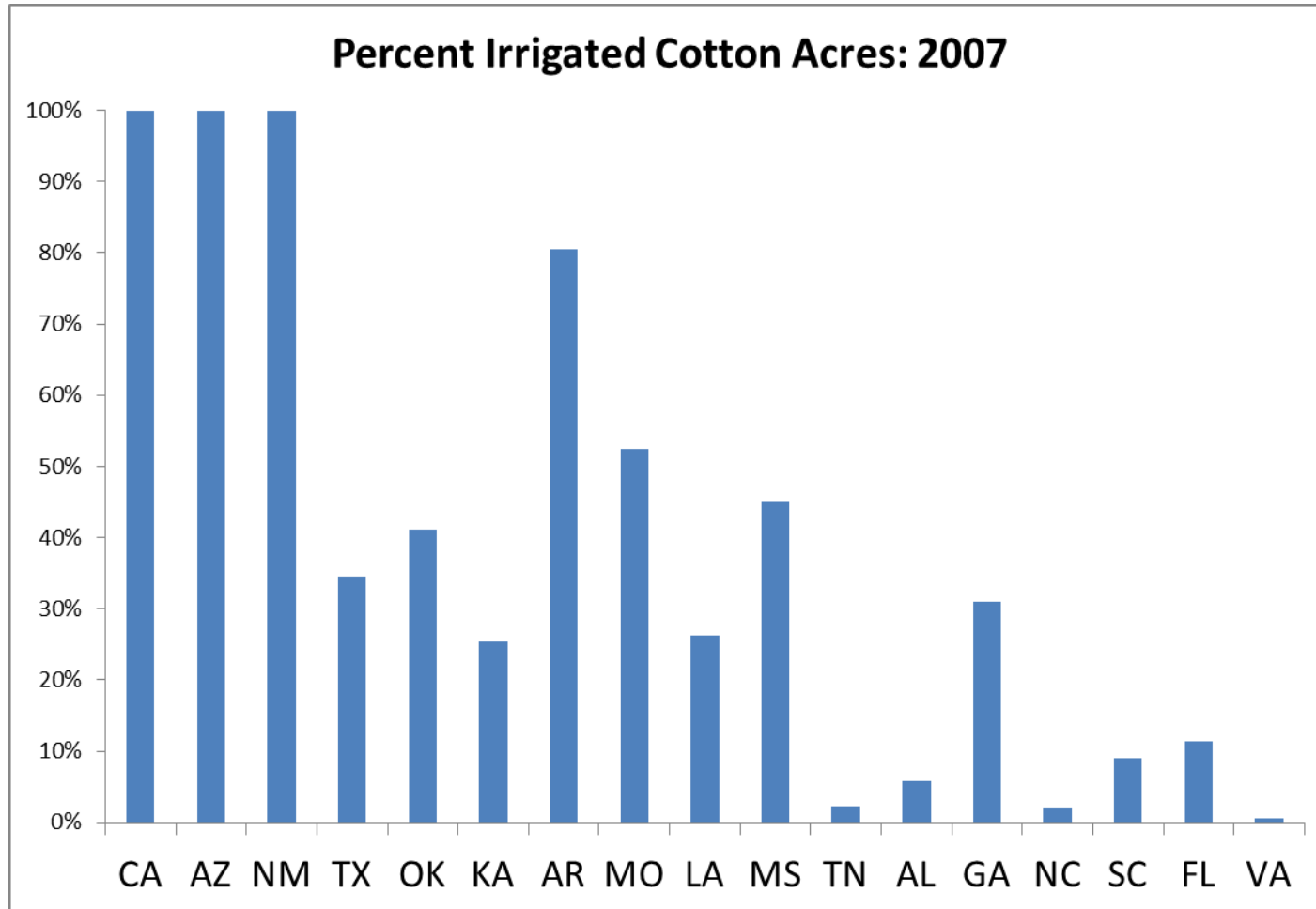
Overview

- Benefits of **Precision Managed** Irrigation:
 - Maximize Yield
 - Minimize Risk
 - Improve sustainability of operation
 - Reduce pressure from regulators
 - Better public perception of water used

Average Annual Rainfall



U.S. Irrigated Acres in 2007



West  East

Source: USDA 2007 Census of Agriculture

Impact on Productivity (Yield)

- **Cotton:** 40 to 70 lbs of fiber per acre inch
- **Corn:** 7 bushel per acre inch
- **Wheat:** 4 bushel per acre inch
- **Rice:** 250 lb per acre inch

+ Risk Management



Yield from Irrigation in Mid-South

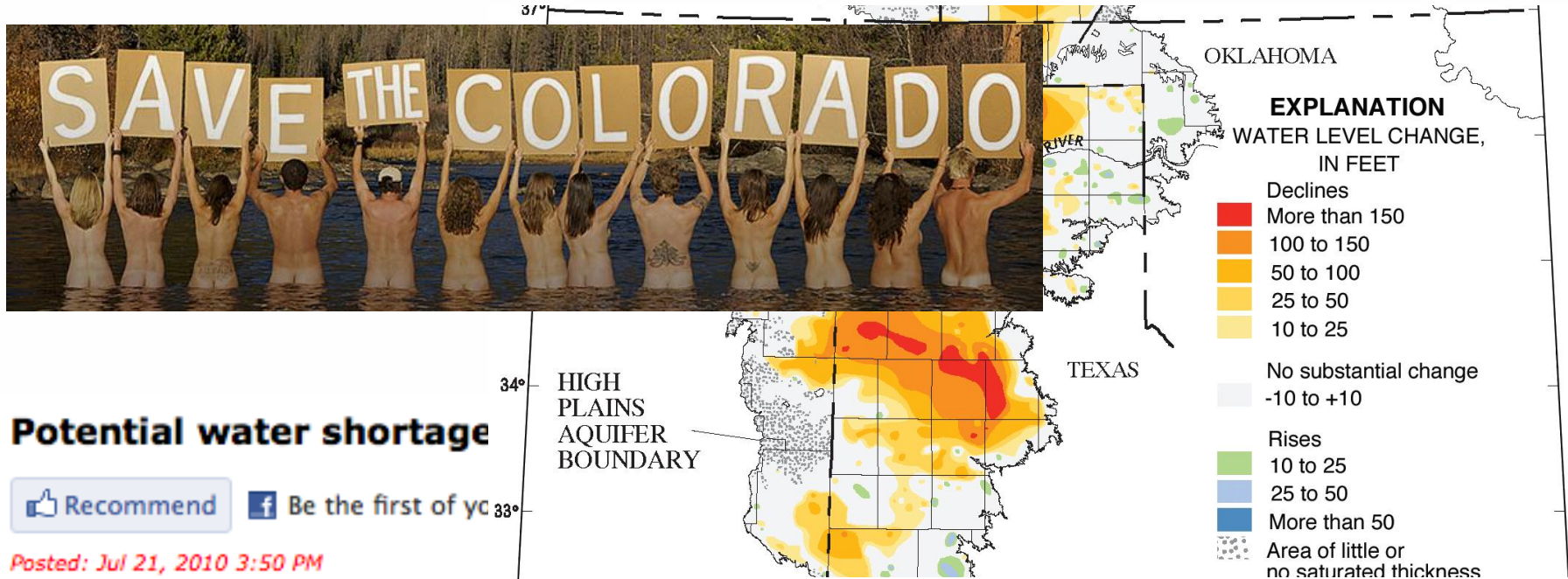
- **Pounds of fiber per acre:**
- Arkansas: **215**
- Mississippi: **185**
- Louisiana: **102**
- Range: **-13 to 365**
- Years: 1990 to 2011 (LA ends 2009)
- Source: USDA, NASS Survey Data



Regulatory

California's Man-Made Drought

The green war against San Joaquin Valley farmers.



Potential water shortage

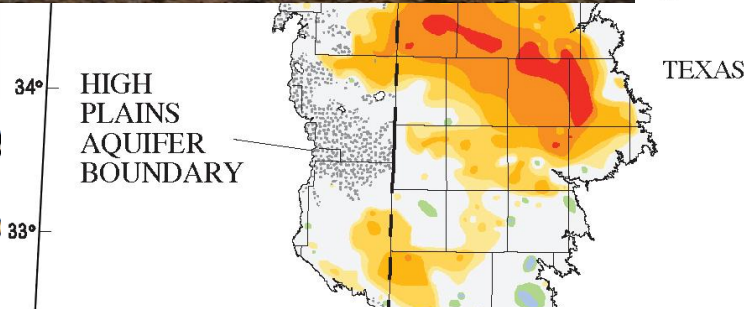
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Posted: Jul 21, 2010 3:50 PM
Updated: Jul 21, 2010 3:50 PM

STATE OF MISSISSIPPI (WLBT) - A new report from the Natural Resources Defense Institute (NRI) shows a picture of warm temperatures further taxing heavy agricultural and consumer use. Mississippi is one of fourteen states considered for a potential water shortage in the near future.

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New Water Councils Appointed for Georgia Water Management

February 18th, 2009

Last week the Atlanta Journal Constitution ran an article on the creation of 10 new water councils all throughout the state. Each council will be made up of "farmers, government officials, businessmen and others" and will be tasked with determining how to divide rivers, lakes and underground aquifers.

Sustainability Organizations Have Water Metrics



Coalition to set Common Metrics and Standards to Improve Apparel Sustainability

Sample of TSC Members:



501® ORIGINAL JEANS / DARK STONEWASH (PC9 00501-0194)	
IMPACT CATEGORY	QUANTITY
Global Warming Potential	16 Kg CO2 - equivalents
Energy Use	220 Megajoules
Renewable Energy	15%
Water Use	6.3 Cubic meters
Land Occupation	7.1 Square meter x year
Qualified Sustainably Grown Fiber	0%
Primary Waste	0.18 Kg
Materials Efficiency	75%
Recycled Content	1%
Eutrophication	0.003 Kg Phosphorous - equivalents
Land Transformation	0.005 Square meters
Restricted Substance List Compliance	Full Adherence <small>(Legal Minimum/Adherence with phase out chemical use/Full adherence with no phase out chemicals)</small>



Water Risk

CARBON DISCLOSURE PROJECT

**Collective responses
to rising water
challenges**



Today's Program

- Lessons Learned from Pumping Monitoring in the Midsouth – *Chris Henry*
- Cotton Water Requirements in Humid Areas – *Ken Fisher*
- Sensitivity of Cotton to Water Stress – *Derrick Oosterhuis*
- Agronomic Considerations Managing Irrigated Cotton- *Tom Barber*
- Overview of Sensor-based Irrigation Scheduling – *Brian Leib*
- Irrigation Sensor Company Presentations:
 - Tom Speed – Smartfield
 - Steve Perkins – CMA / Irrrometer
 - Mel Canterbury - EnviroSolutions, Inc.
 - Keith Patterson – John Deere Water