

NSF Food-Energy-Water Nexus

October 19-20, 2015

“The Heart of Everything That Is”
SD School of Mines and Technology

Agriculture and it's Externalities:
Irony and Paradox

Barry H. Dunn, Ph.D.

Dean, College of Agriculture & Biological Sciences

South Dakota State University



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Agriculture and it's Externalities: Irony and Paradox

**Unbelievable
Productivity**

**Lessons From
the Past**

**Unintended
Consequences**

**We are not
In Control**

**Who's
Responsible**



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Unimaginable productivity!



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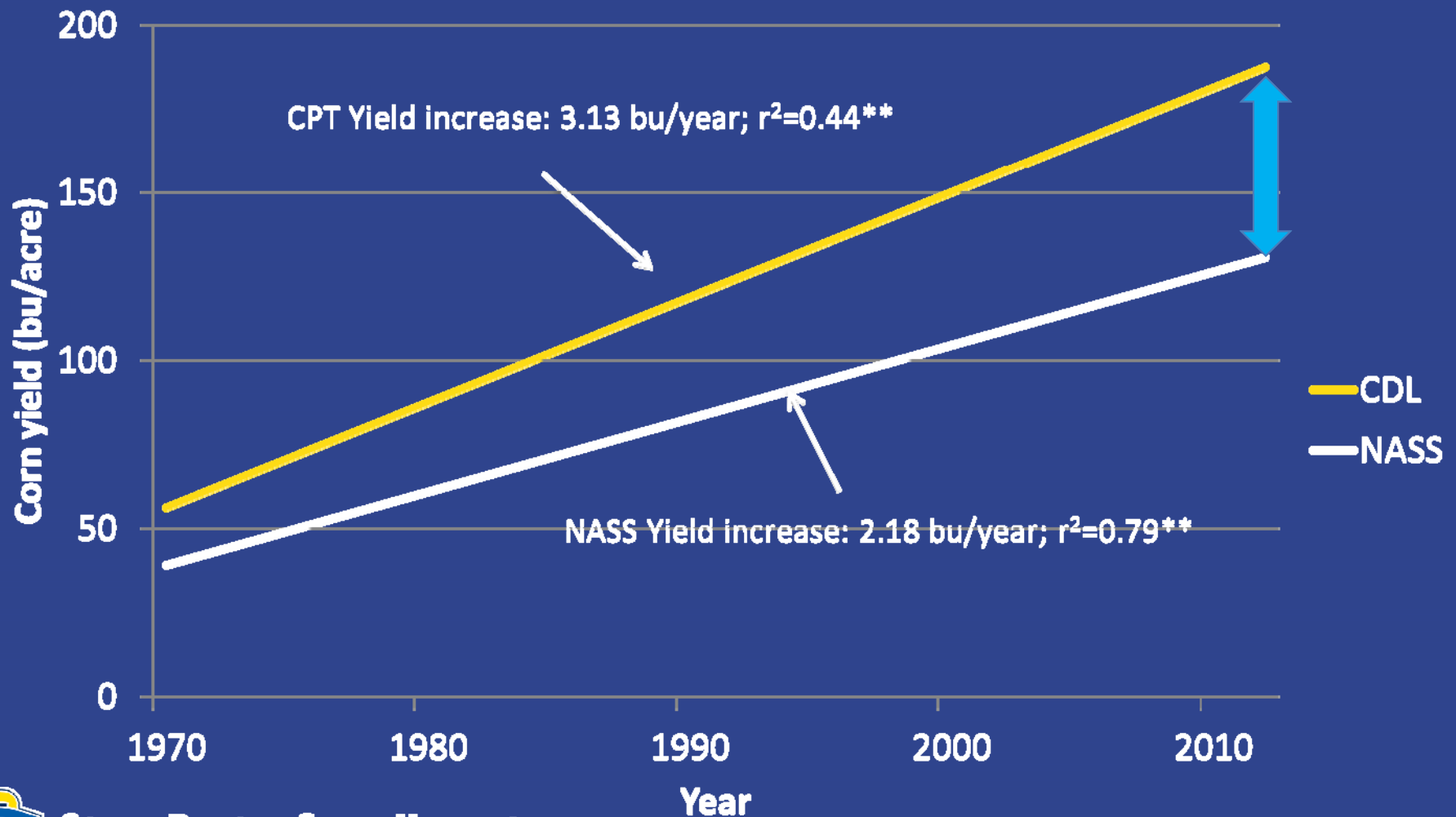
Extremely
diverse!



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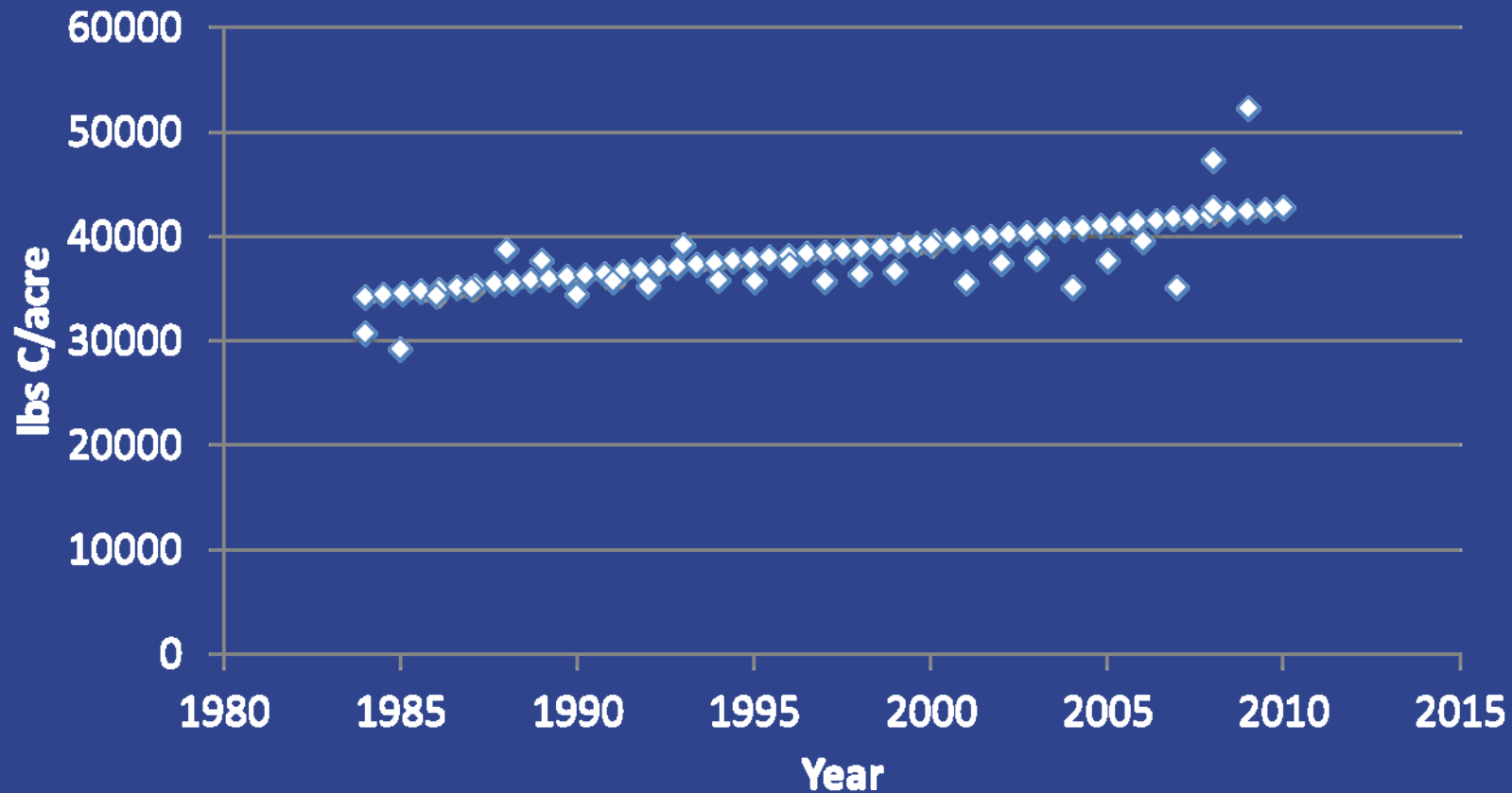
The Hope and the Challenge



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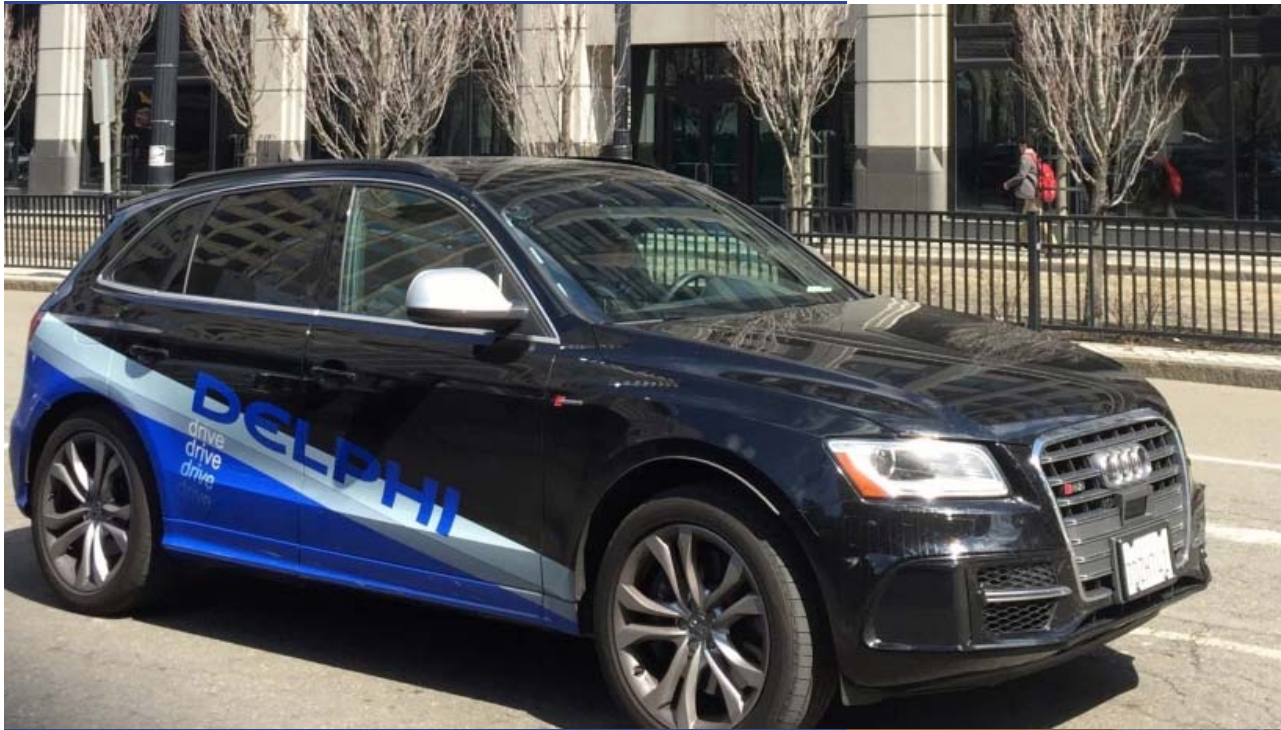
Clay et.al., 2013

Reduce Ag's Footprint



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Clay et.al., 2012



Human creativity
and potential
unleashed!



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Improved quality
of life &
increased longevity!



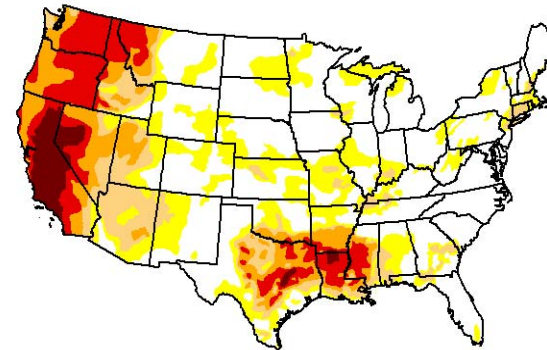
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U.S. Drought Monitor CONUS

October 13, 2015
(Released Thursday, Oct. 15, 2015)
Valid 8 a.m. EDT



Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	46.61	53.39	32.62	22.51	13.25	3.27
Last Week 10/6/2015	48.99	51.01	31.58	21.45	12.02	3.06
3 Months Ago 7/14/2015	64.79	35.21	25.97	17.49	7.48	2.83
Start of Calendar Year 12/01/2014	53.20	46.80	28.68	16.93	8.96	2.54
Start of Water Year 9/29/2015	44.91	55.09	31.36	20.09	11.45	3.00
One Year Ago 10/14/2014	55.59	44.41	29.78	18.14	9.30	3.87

Intensity:

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

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

Author(s):

David Miskus
NOAA/NWS/NCEP/CPC



<http://droughtmonitor.unl.edu/>

Historic problems!



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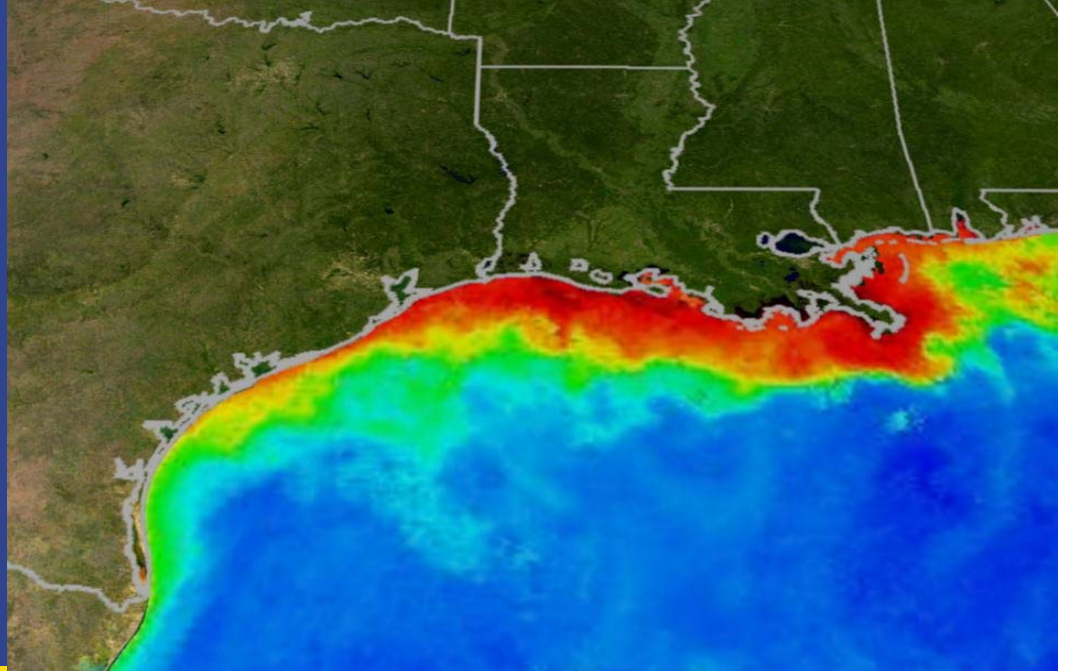




Epic proportions!



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Unintended consequences!



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Irony and paradox!



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Whose Responsibility is it to Feed World?



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Give a man a fish and you feed him for a day.
Teach a man how to fish and you feed him for a lifetime.

-LAO TZU



Land Ownership and Property Rights



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We are not in Control



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A landscape photograph showing a vast, green grassy field in the foreground, dotted with small yellow wildflowers. In the distance, a range of mountains with snow-capped peaks stretches across the horizon. The sky is a deep blue, filled with wispy, white clouds that are illuminated from below, creating a dramatic, ethereal effect.

“This House of Sky”

Ivan Doig



Thank You!

