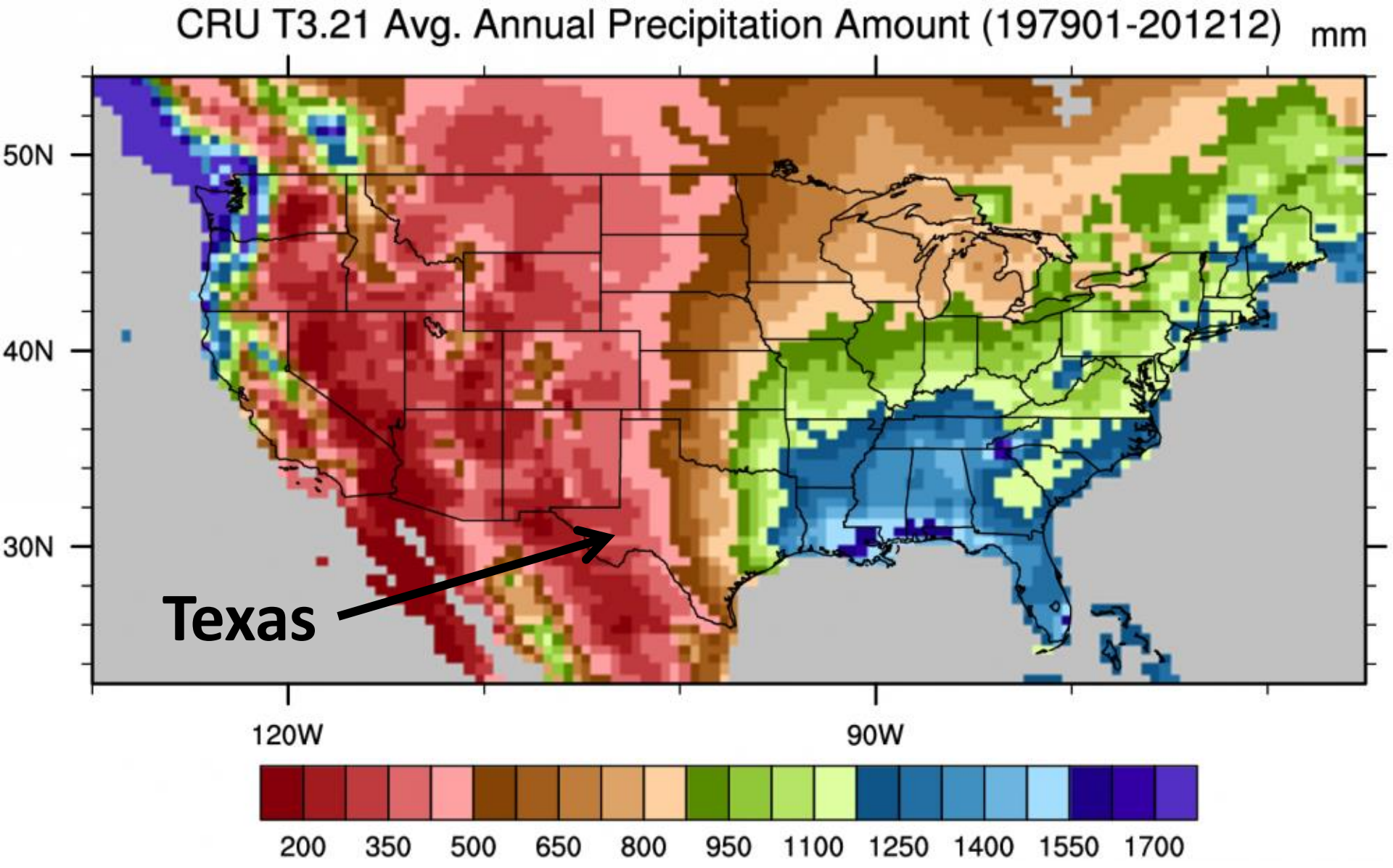
OCP Policy Center Conference series

Livestock Farming in Texas- The Ogallala Case Study

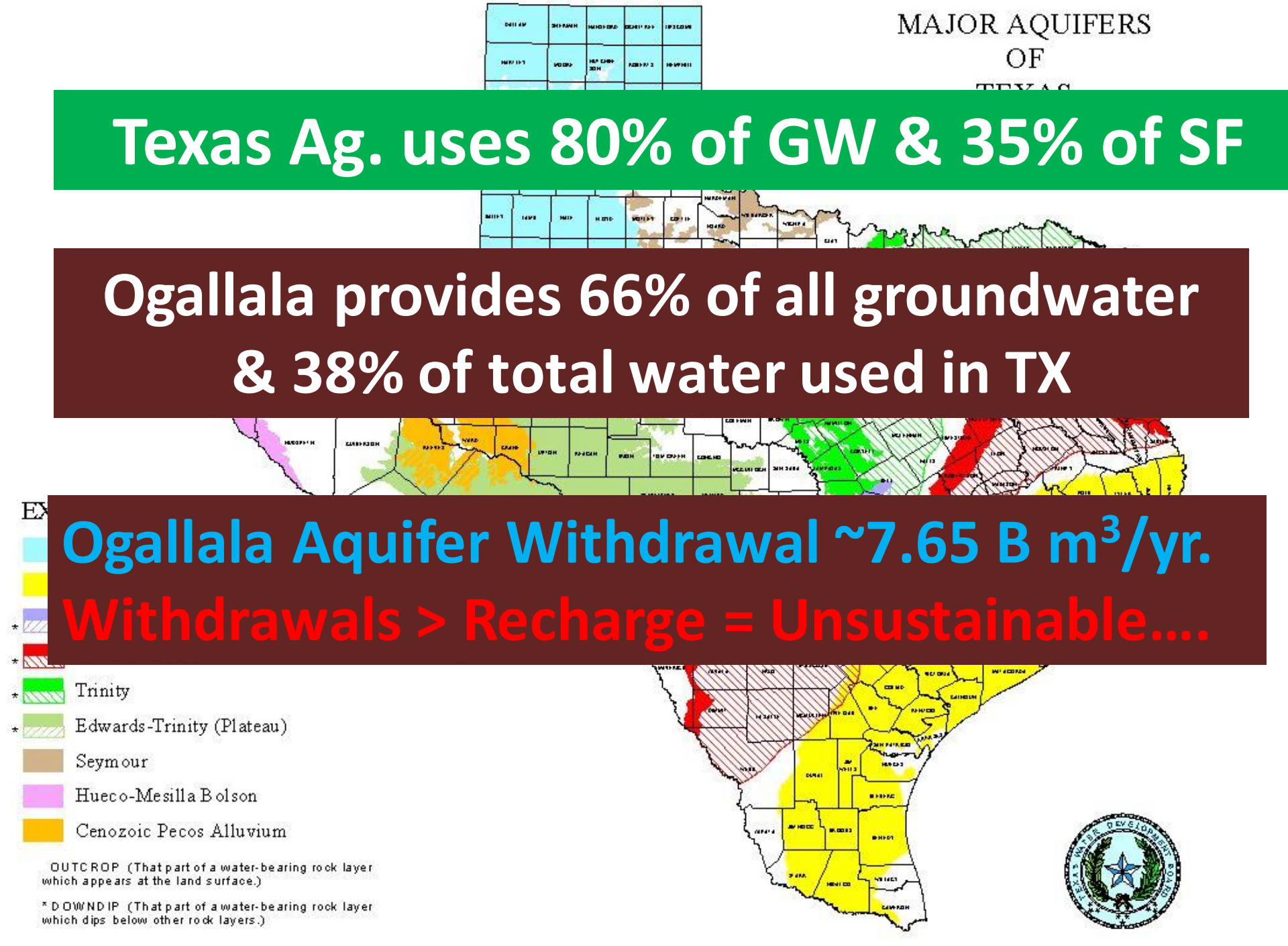
Saqib Mukhtar

11-13 June 2014

http://www.ducksters.com/geography/us_states/us_rivers.php



National Center for Atmospheric Research, 2014



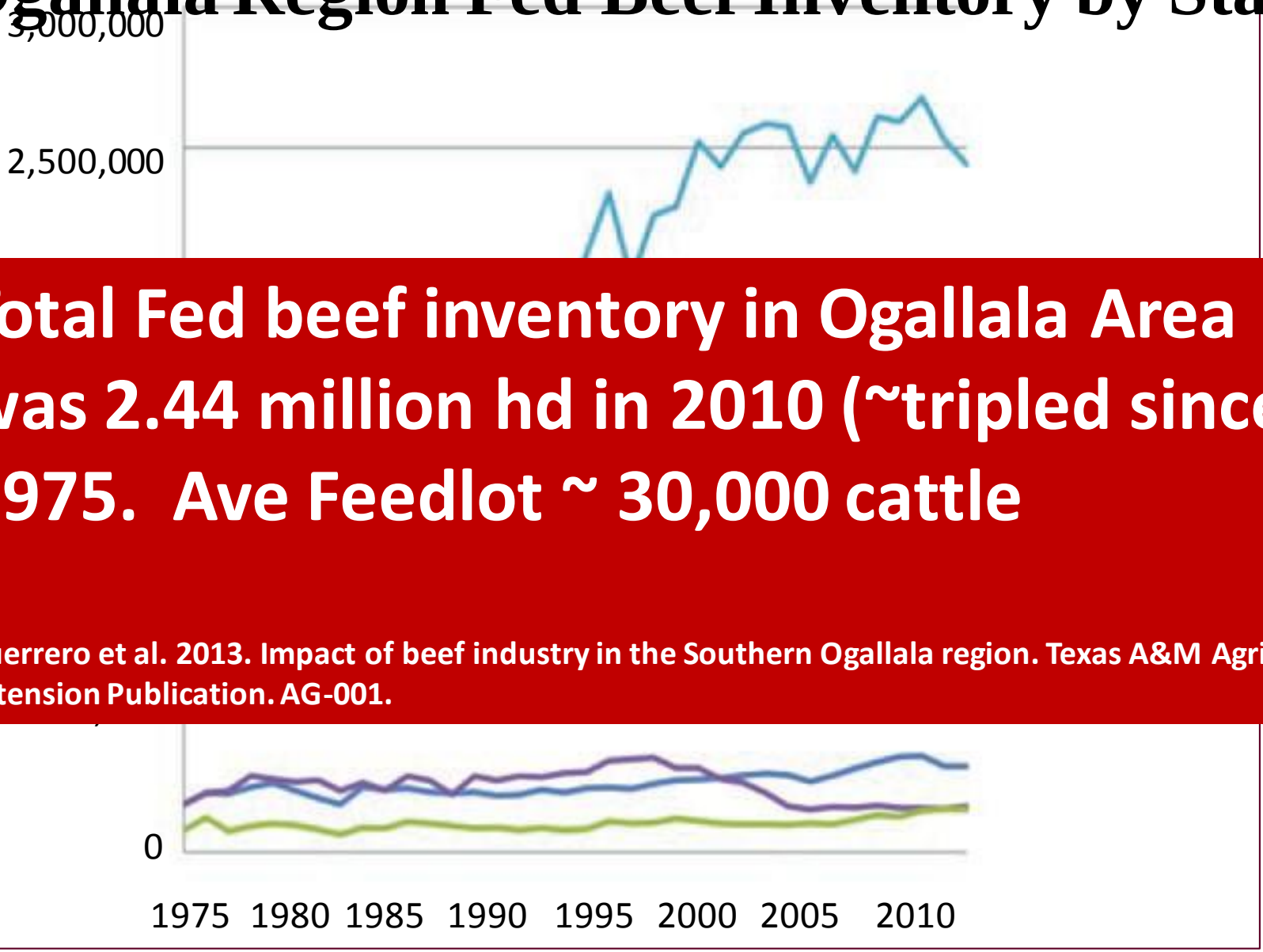
Texas Ag. uses 80% of GW & 35% of SF

Ogallala provides 66% of all groundwater & 38% of total water used in TX

Ogallala Aquifer Withdrawal ~7.65 B m^3/yr.

Withdrawals > Recharge = Unsustainable….

Ogallala Region Fed Beef Inventory by State



Total Fed beef inventory in Ogallala Area was 2.44 million hd in 2010 (~tripled since 1975. Ave Feedlot ~ 30,000 cattle

Guerrero et al. 2013. Impact of beef industry in the Southern Ogallala region. Texas A&M AgriLife Extension Publication. AG-001.

Feedlot Operation

~2.1 B m^3 / yr or 28% of the total Ogallala Water Withdrawal is for 64 % of feed produced locally.

~ 50% water is exported with beef

Sales from beef production and processing sector = $11.4 billion/yr.

Amosson et al., 2009. *Texas Crop and Livestock Enterprise Budgets, Texas High Plains, Projected for 2010.* Texas A&M AgriLife Extension Service.

Possible Solutions

1.Reduce feedlot inventory?????

2. Reduce Pumped Irrigation (12-200)

3. Import more feed ???

4. Irrigation Withdrawal Reducing Practices (USDA-NRCS Incentive programs)

12 inch-200 Bu /ac Corn

(30 cm- 13.4Mg/ha Corn)

The "200-12" Irrigation Demonstration Project

2010 Crop Season: **Above average rainfall**

In-Season Rainfall = 12.9 – 14.3 inches

Soil: Silty Clay Loam (SCL) or Fine Sandy Loam (FSL)

Actual Production History (APH) for each farm is indicated

Grower	Irrigation Applied	Total Water (rain + Irrig + Soil)	Yield (APH) (bu/ac)
Grower 1 (SCL)	10.9"	28.8"	198 (217)
Grower 2 (SCL)	11.8"	30.0"	192 (196)
Grower 3 (FSL)	11.2"	30.6"	191 (240)

Data from Dr. Dana Porter: Extension Irrigation Specialist.

"200-12" Demonstration Project

2011 Crop Season: **Below average rainfall (severe drought)**

In-Season Rainfall = 0.7 - 2.9 inches

Soil: Silty Clay Loam (SCL), Clay Loam (CL) or Fine Sandy Loam (FSL)

Actual Production History (APH) is indicated.

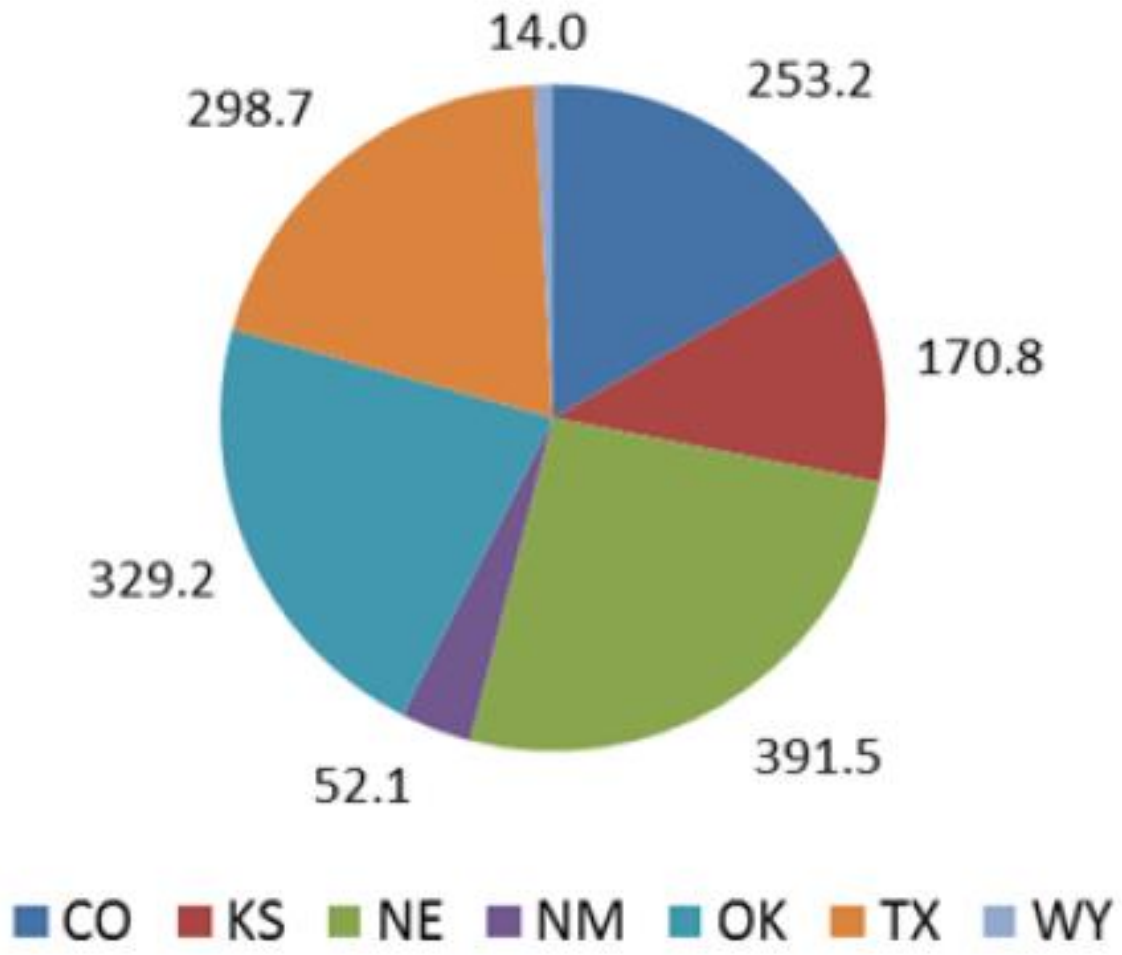
Grower	Irrigation Applied	Total Water (rain + Irrig + Soil)	Yield (APH) (bu/ac)
Grower 1 (SCL)	18.8"	21.6"	178 (217)
Grower 2 (SCL)	21.3"	23.8"	121 (196)
Grower 2 (SCL)	23.6"	26.1"	131 (196)
Grower 3 (FSL)	13.1"	30.6"	0 (240)
Grower 4 (CL)	31.2"	32.6"	153 (180)
Growers 5-9	6.4"–14.2"		0

Data from Dr. Dana Porter: Extension Irrigation Specialist.

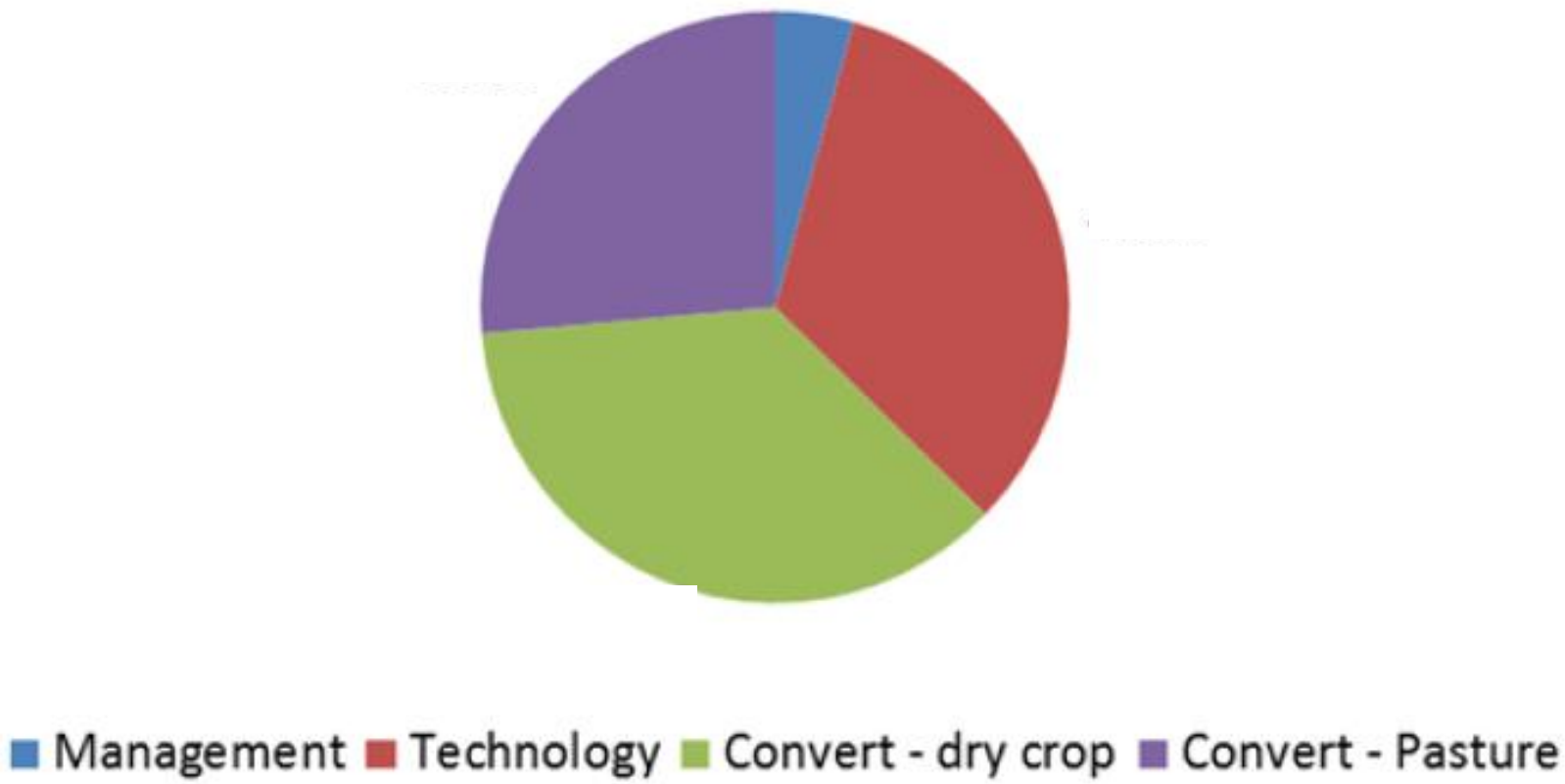
Irrigation Withdrawal Reducing Practices (USDA-NRCS Subsidy Programs)

1. Substitution of Non-irrigated Crops (dryland farming) for Irrigated Crops
2. Conventional to Micro Irrigation (drip-type) System
3. Improved Sprinkler Irrigation System
4. Irrigation Water Management- Knowing When to Turn Irrigation Technology On and Off
5. Conversion to Grassland

Reduced Water Withdrawals by State
Cumulative 1000 x ac-ft (1234 m^3) for 2009-2012



Reduced Water Withdrawals by Practice Type



USDA-NRCS. 2013. Groundwater irrigation and water withdrawals: The Ogallala aquifer initiative. Economic Series No.1.