

Agriculture and Drinking Water, How it affects YOUR operation

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Agriculture and Drinking Water



My (Eric's) "Operation"



Sheep Operation





The Water PROBLEMS

- * DBP - Disinfection By-Products
- * Atrazine
- * Nitrates
- * Phosphorus
- * Algal blooms
- * Dead Zones

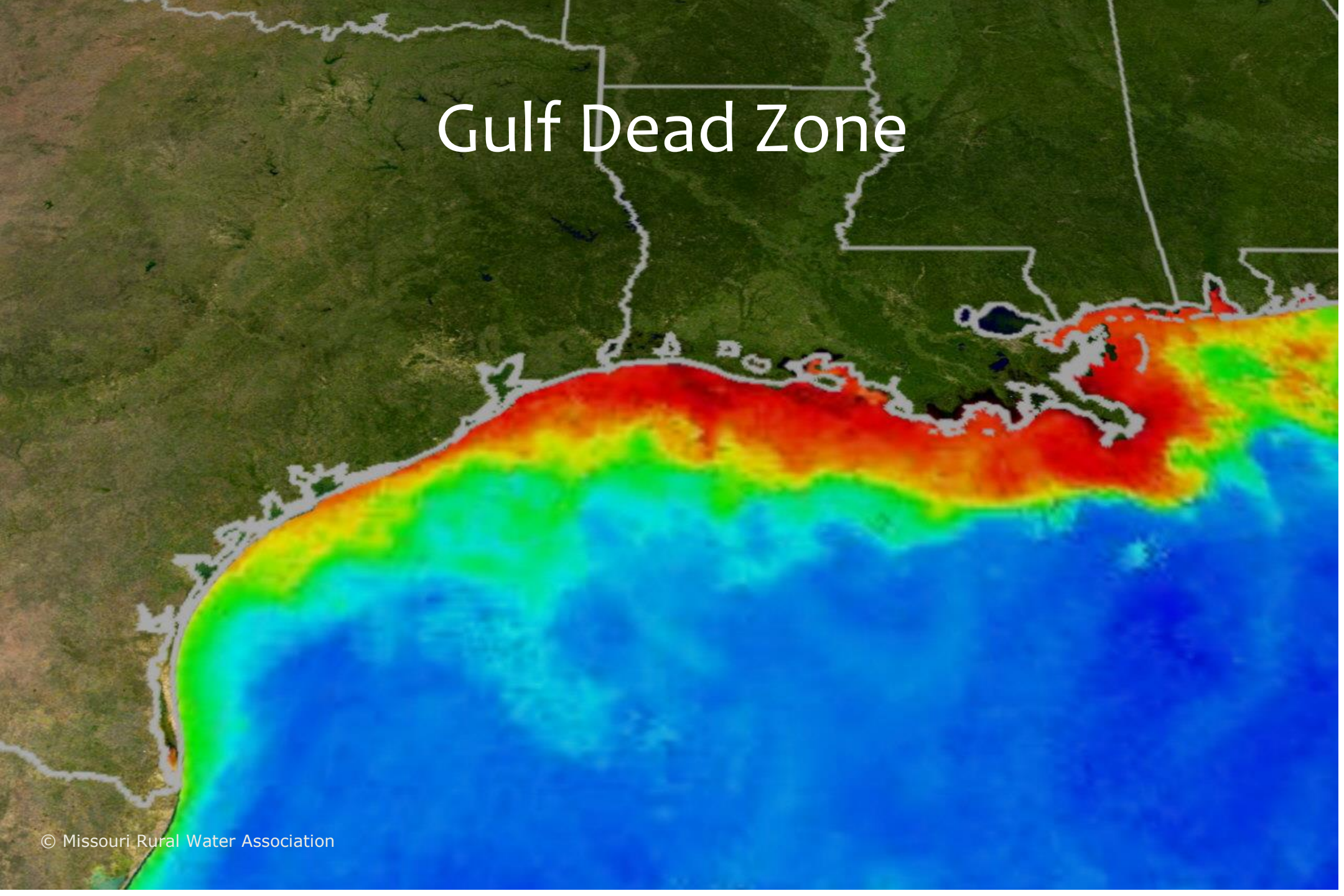
History/Past Lawsuits

- * Atrazine
- * Hannibal
- * Des Moines
- * Who is Next??





Gulf Dead Zone









Non point















The image shows three large, light blue cylindrical storage tanks in an industrial facility. The tanks are arranged in a row, with the largest one in the foreground on the left, and two smaller ones behind it to the right. Each tank has a circular hatch on top and a small black dot near the bottom. The facility has a high ceiling with exposed steel beams and fluorescent lighting. The floor is a light-colored concrete.

2013 Nitrate Concentration Record on Raccoon and Des Moines Rivers

Raccoon River: 24 milligrams per liter (mg/L)

Des Moines River: 17.87 mg/L

Not Just Nitrate

- * Cyanotoxin detected in Des Moines finished drinking water in August 2016
- * Same toxin found in Toledo's water supply in August 2014



Toledo, Ohio, August 2014

New Hampton MO

* 130 Connections

* 279 Population

* \$917,000 upgrade costs

* \$3286.00 Per person

* 36lbs ammonia discharge per year



1 Acre Corn Field

- 200lbs Actual Nitrogen Average per acre
- 30-50% Nitrogen efficiency
- 100-140lbs per acre lost to the environment
- 90 million acres of corn in the US

Nutrient Efficiency

Nitrogen Efficiency:

- 30-50% conventional
- Increase to 80-90% with Cover Crop & No-till

Phosphorus Efficiency:

- 50% conventional
- Increase to 80-90% with Cover Crop & No-till

Healthy Soils are FERTILE Soils
Healthy Soils mean Clean Water



Soil and Water Quality Issues



Water Quality Issues Around The U.S.



- * Very Little No-Till
- * Extended periods where ground isn't covered
- * Huge Disconnect between Ag and Water Quality (Drinking Water)
- * Huge Disconnect between Water and Consumers

Current Solutions



- * Grass Water Ways
- * Terraces
- * 4 R's
- * Bio Reactors





4 R's



- * Right Source

- * Right Rate

- * Right Time

- * Right Place

Plant available Nitrogen, exactly what we want...right???



Reduce N losses

- Nitrate mineralized from crop residues and soil OM Is highly soluble through the winter
- N Leaching can exceed 50lb/ac. even without a fall N application.

Consider
Cover Crops



“Catch and Release” Nutrients



10.24.2012



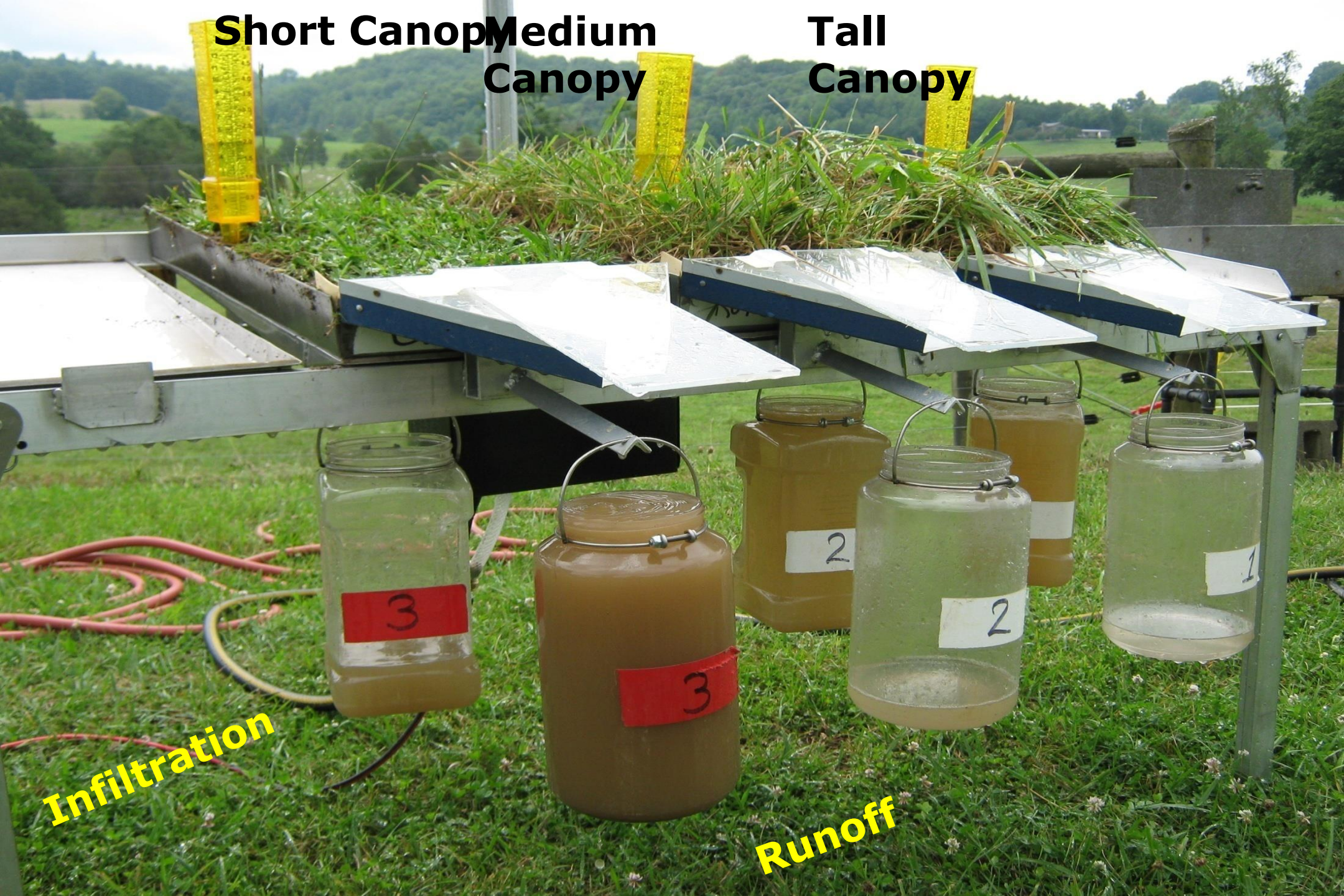


Comparisons



Short Canopy
Medium Canopy

Tall Canopy



Infiltration

Runoff



The Future



- * More Regulations
- * More Consumer Input
- * Costly Upgrades
- * More Expertise

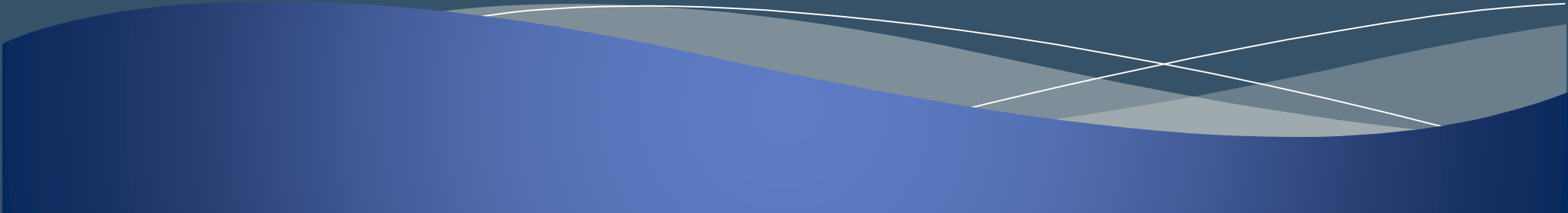
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The Government's Solution

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Rule to live by



*Do unto those
downstream as you
would have those
upstream do unto you

