



KANSAS WRAPS

Milford Reservoir RCPP

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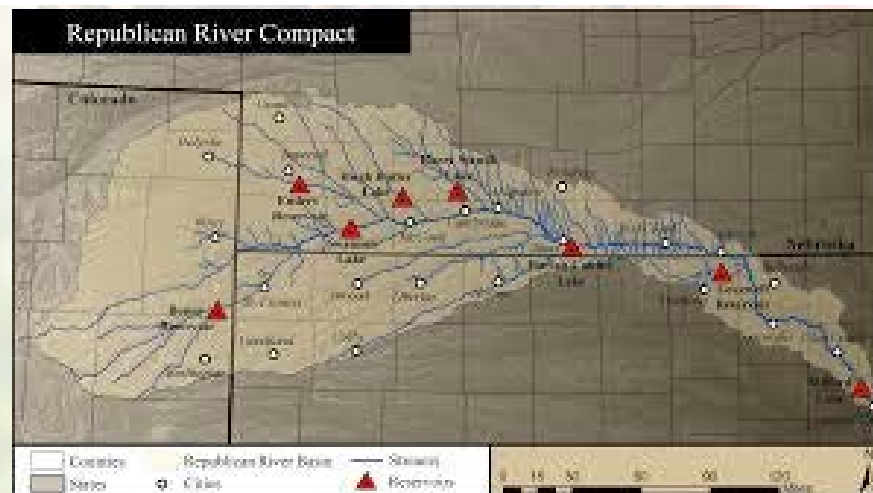
What's the Problem?



What's the Problem?

- Let's be more specific

| Lake Inflow | Current Avg. Condition | TMDL | % Reduction Needed |
|------------------------------------|------------------------|---------|--------------------|
| TP- Annual Load (lbs./yr) | 1,216,912 | 148,341 | 88% |
| TP – Lake Concentration (µg/L) | 287 | 83 | 71% |
| TN – Annual Load (lbs./yr) | 4,875,835 | 674,882 | 86% |
| TN – Daily Load (lbs./day) | 20,706 | 2,866 | 86% |
| TN – Lake Concentration (lbs./day) | 1,722 | 428 | 75% |



What's the Problem?

- Let's be more specific

1,216,912 lbs. of Phosphorus loading per year



617,204 lbs. Phosphorus load reduction Goal

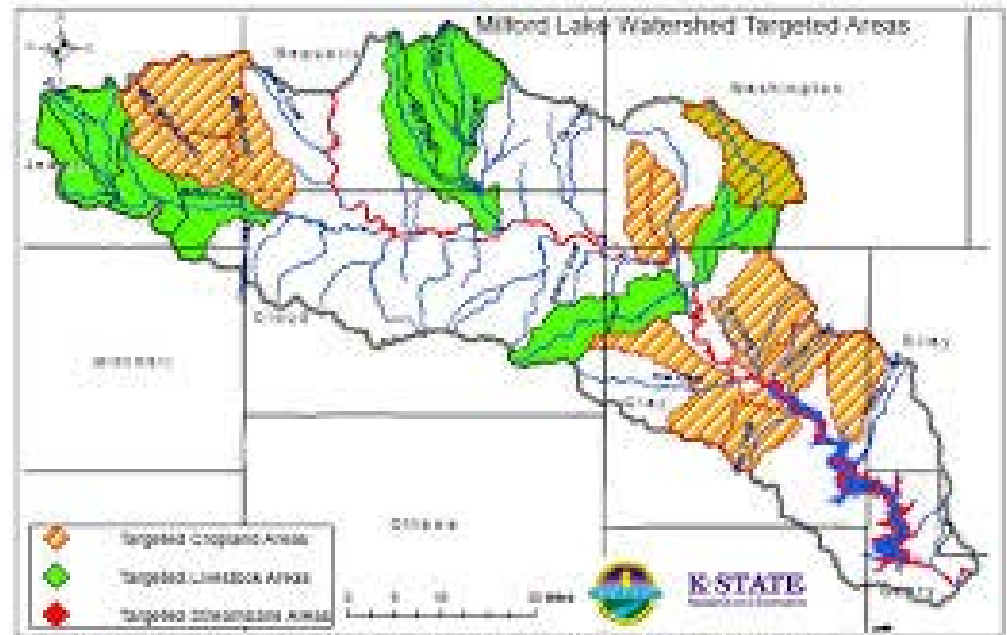
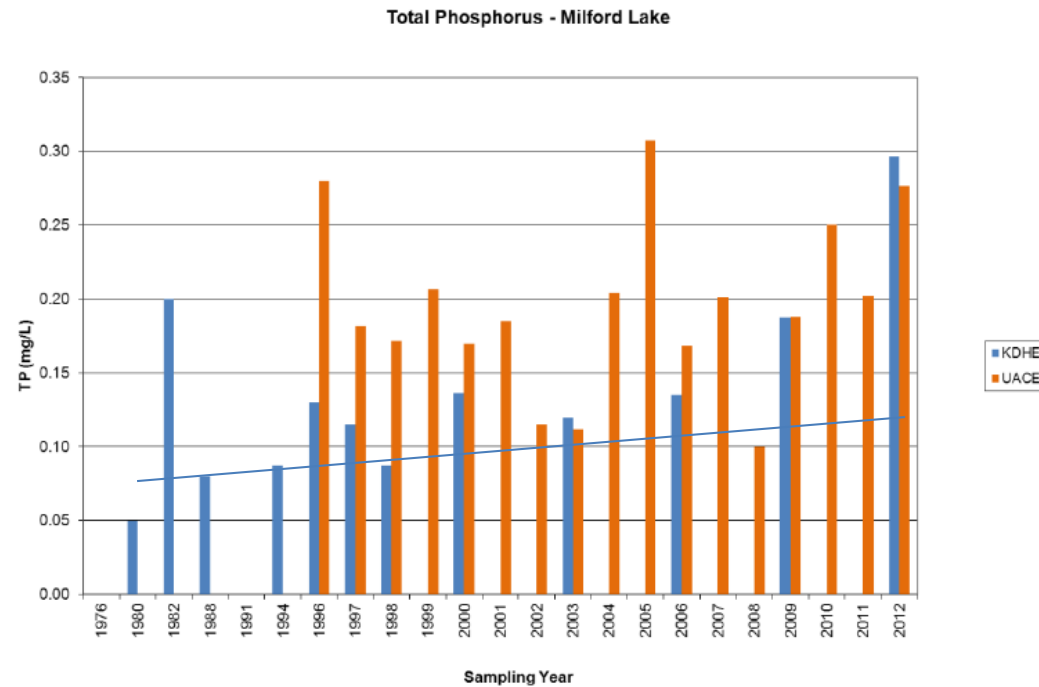


Figure 14. Composite of Targeted Areas for Cropland, Livestock and Streambank BMP Placement.

What about P?

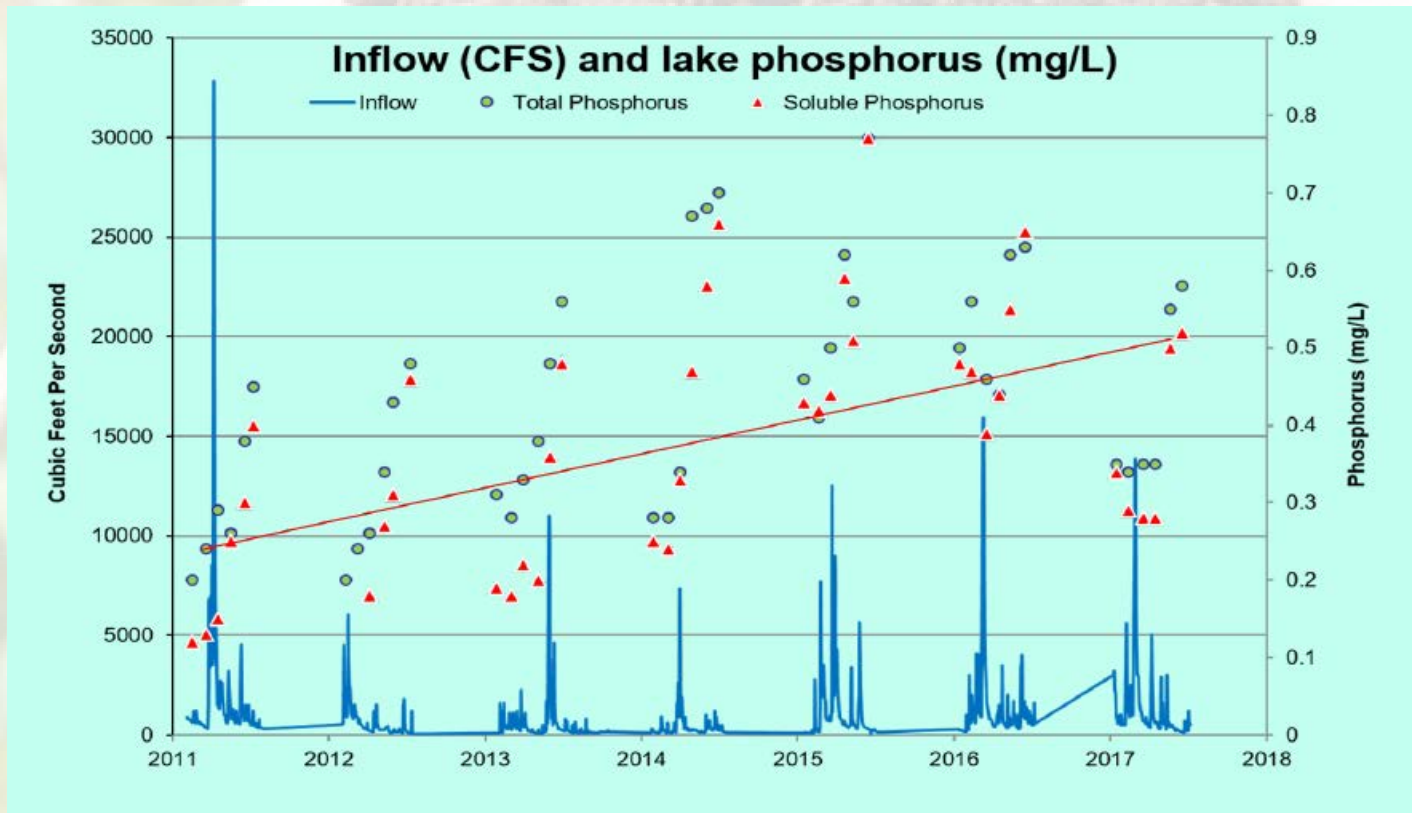
- TP increasing over time

Figure 4. Total Phosphorus Concentrations in Milford Lake for all data



What about P?

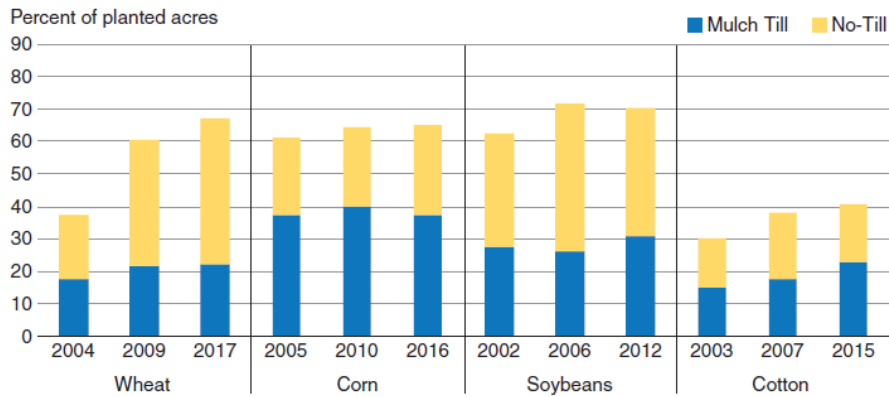
- Soluble P increasing over time



What about P?

- Less Sediment but more P?

Figure 1a
Conservation tillage, 2002-2017



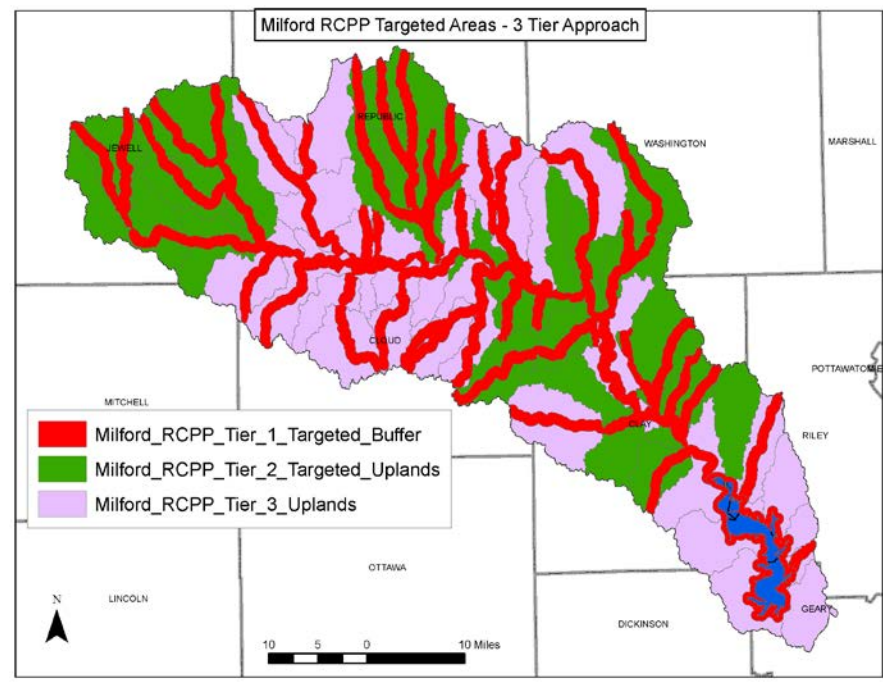
Note: No-till is based on the absence of tillage operations reported in the Agricultural Resource Management Survey (ARMS). Mulch till is indicated when the Soil Tillage Intensity Rating (STIR) is less than or equal to 80 (for the entire season) with some tillage operations.

Source: USDA Agricultural Resource Management Survey data for 2002-2017.



What to do about it?

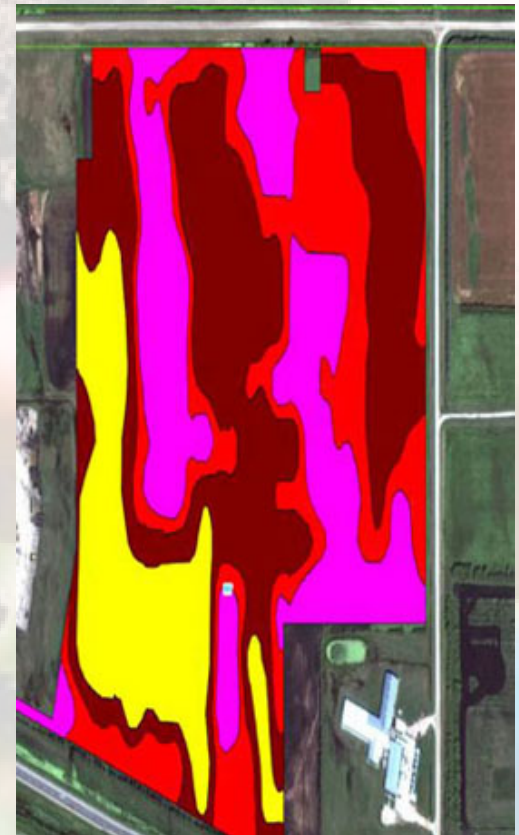
- RCPP - Focus the Right Practices in the Right Places
 - 3 Tier Targeting Approach
 - Primary Practices
 - Livestock Exclusion Practices
 - Reduced Tillage
 - Precision Nutrient Management
 - Cover Crops



Why Nutrient Management?

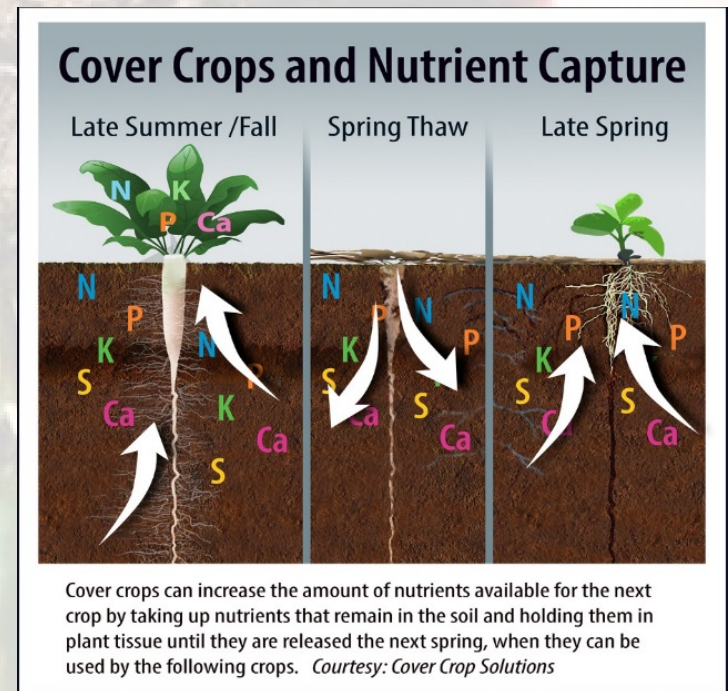
- Precision Agriculture Technology
 - Data Acquisition to create Soil Management Zones
 - Grid Soil Sampling
 - Soil Series Mapping
 - Yield Monitoring
 - Normalized Differential Vegetative Index
 - Drones, Satellite Imagery, Aerial Imagery
 - Variable Rate Technology
 - Nutrient and Seeding Application

Figure 1b: Soil Management Zone Map
(Source: AAFC)



Why Cover Crops?

- Cover Crops Uptake and Cycle Nutrients in Field
 - Reduce Leaching Below Crop Root Zone
 - Reduce Losses in Erosion and Dissolved Runoff
 - Reduce Losses in Gaseous Form – Denitrification
 - Brings Nutrients into Root Zone from Below
 - Fix Nitrogen (Legumes)
 - ~30% P Reduction
 - Nutrient Reduction Strategies



Why Cover Crops?

- Cover Crops Improve Soil Health
 - Soils are not P deficient
 - Soils are deficient in plant available P
 - Soil Biology determines how much P is made available each year





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