




### Conservation and Legacy Sediment in Dorn Creek



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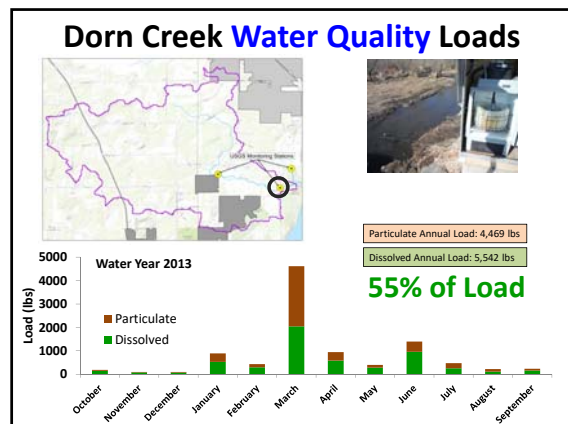
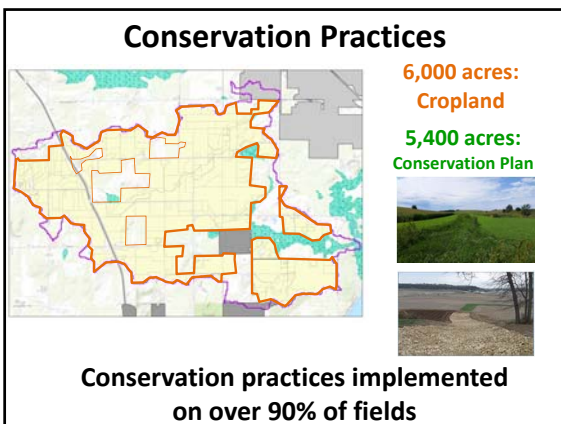
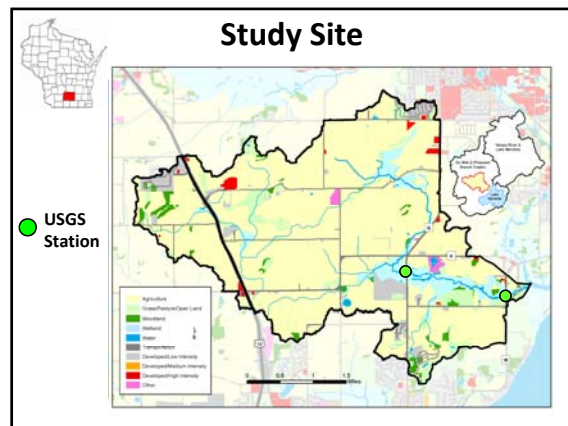
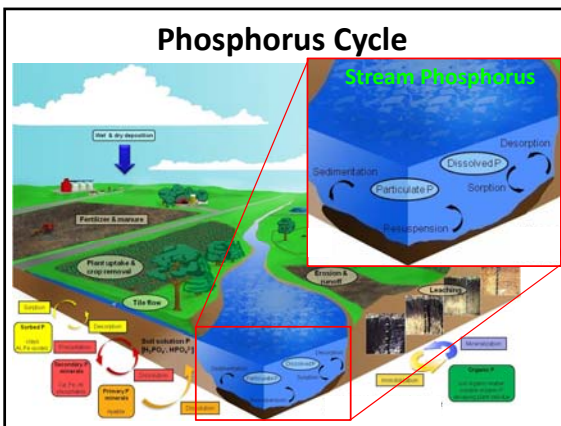
### Background History

Clean Water is a priority in Dane County

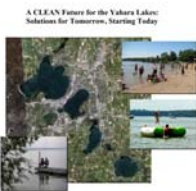
- Major pollutant of concern: **Phosphorus**
- Numerous water quality initiatives (Federal, State, local)
  - High level of conservation implementation

The **Water Quality** criterion has not been achieved for most waterbodies





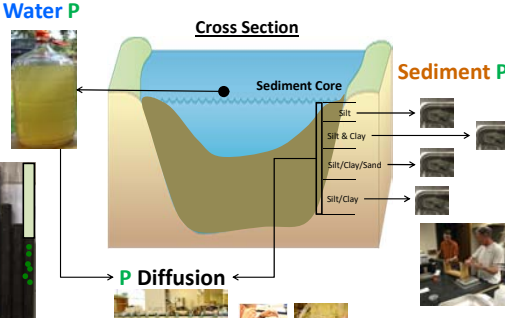
- Reduce **phosphorus** load by 50%
  - Examples
    - Agriculture Practices
    - Application of Fertilizer/Manure
    - Urban Stormwater Practices
    - Drainage Ditch Sediment Removal



- Does reducing **phosphorus** load improve **water quality**?
  - Legacy **Phosphorus**?
- **How long** until we see **water quality** improvement?
  - Legacy **Phosphorus**?

### Measurements

**Water P**      **Sediment P**



**Cross Section**

Sediment Core

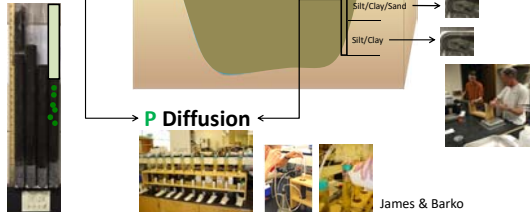
Silt

Silt & Clay


Silt/Clay/Sand

Silt/Clay

P Diffusion



James & Barko




### Results

- **Sediment P**
  - Crop Field < 700 mg/kg
  - Stream < 5,000 mg/kg
  - Barnyard < 10,000 mg/kg

Hwy M to Q (2.3 Miles)

**TP ~ 75,000 lb**

- **P Diffusion**



**0.075 mg/l**

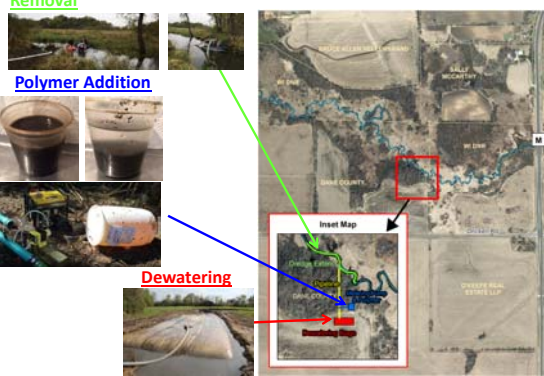
= Water Quality Standard

### Sediment Removal Pilot

**Removal**

**Polymer Addition**

**Dewatering**




### 2017-2020: Legacy Sediment Removal (33 Miles)

Sediment Volume: 150,000 cy  
Removal: \$60/cy  
Cost: \$9 Million

Additional Costs:  
Water and Sediment Monitoring  
Engineering Plans  
Permitting  
Streambank and habitat restoration  
Stream/floodplain reconnection

**Cost = \$12 Million**

**P Load = 870,000 lb**



### QUESTIONS

