PURDUE UNIVERSITY

Welcome to the Conservation Drainage Field Day

Two-Stage Ditch and Denitrifying Bioreactor

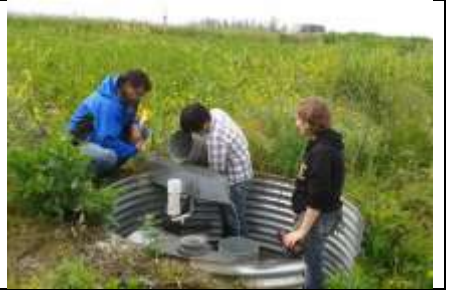
Water impacts of Bioenergy Crops (Miscanthus, switchgrass, poplar)

1. A **Dentrifying Bioreactor** reduces nitrate by passing drainage water through a hole filled with wood chips. Our research is determining reduction in nitrate, effect on phosphorus loads, as well as water table and temperature of woodchips. Nearly complete nitrate removal was achieved in 2013-2014.

2. **Two-Stage Ditch Water Quality**. Our ditch was constructed in 2012 by adding benches that serve as floodplains, stabilizing the channel and removing nutrients. Research is determining vegetation establishment on the benches and impacts on water.

3. **Two-Stage Ditch Fish Community** research is determining what fish live in these ditches and any impacts of the two-stage ditch construction in 2012. Turbidity is expected to decrease in the two-stage section, benefiting aquatic communities.

4. Bioenergy crops including Miscanthus, switchgrass, and poplar, are being grown as potential feedstock for ethanol on marginal land. Monitoring of runoff, nitrogen, phosphorus, and sediment shows these crops have less negative impact of water quality than corn & soybeans.



Schedule

9 am	First shuttle leaves for the field
9:05	**Dentrifying Bioreactor** *Erin Chichlowski, Graduate Student*; *Dr. Jane Frankenberger, Agricultural Engineer*
9:20	**Two-stage Ditch Construction and Water Quality Impacts** *Andi Hodaj, Graduate Student; Dr. Laura Bowling, Hydrologist*
9:35	**Two-stage Ditch Fish Communities** *Dr. Reuben Goforth, Aquatic Ecologist*
9:50	**Bioenergy Crops Surface Water Impacts** *Dr. Indrajeet Chaubey, Ecohydrologist*

A second shuttle will leave at **9:30 am** and follow the same program.

Field Day Co-Sponsors

- Wabash River Enhancement Corporation (WREC) -- Contact: Sara Peel, Director of Watershed Projects; 765-337-9100. Construction of the bioreactor and ditch were partially funded by WREC through an IDEM 319 grant.
- Tippecanoe County Soil and Water Conservation District – Contact Angie Garcia-Miller, Rural Conservationist; 765-474-9992, Ext. 110

For More Information: https://engineering.purdue.edu/watersheds/event/twostage/

Funding from USDA-NRCS Conservation Innovation Grant and Tri-State Integrated Research and Extension Program

(We would welcome your photos documenting this field day. Send to Jane Frankenberger, frankenb@purdue.edu)

PURDUE EXTENSION | LOCAL FACES COUNTLESS CONNECTIONS