

**Dix River Watershed Council Meeting
December 4, 2007**

Meeting Notes

Attendees: Jonathan Kneisley (Garrard County High School); Malissa McAlister (UK KWRRRI); Quentin and Becky Scholtz (landowners/Danville P&Z); Preston Miles (landowner); Mary Ann Sharp (NRCS-Boyle Co.); Bill Hundls (Boyle Co. Conservation Board); Heath Stone (Garrard Co. Health Dept.); Jerry Little (UK Boyle Co. Ext. Service); Angie Wingfield (Div. of Conservation); Brooke Shireman (Ky. Division of Water); Tony White (Mercer County Health Dept.); Tim Montgomery; Rose-Marie Roessler (CREEC); John Webb (Ky. Division of Water)

Watershed Activities

- CREEC trail grant proposal to “Get Healthy Kentucky” for recreational trail
- City of Danville held Stormwater Education public meeting on December 3rd

Updates

- Third Rock Consultants will begin Microbial Source Tracking (MST) in the spring of 2008, which will examine high E coli sites in the watershed and distinguish between human, bovine, and wildlife/pet sources. Data will be available in time to incorporate with the Dix River Watershed Plan. A presentation describing the MST sampling approach will be provided for the Council closer to the time that sampling begins.
- Either or both the USEPA and Kentucky Division of Water staff will provide an evaluation of the water quality sampling results from Herrington Lake in early 2008. The USEPA is currently assessing the data and developing the TMDL (Total Maximum Daily Load) report for nutrients in Herrington Lake.
- The Kentucky River Watershed Watch organization will be holding its annual conference on Saturday, January 26th at Midway College. These conferences are typically a good opportunity to meet other volunteer water quality samplers in the Kentucky River Basin and hear about statewide water quality issues. This year’s keynote speaker will be discussing the water quality impacts of mountaintop removal mining. (An e-mail reminder about this meeting was requested.)

Water Quality Data Review

For the benefit of those who missed the previous meeting and as a reminder to those who were present, John and Malissa reviewed the water quality sampling results covered at the October 30th meeting. These results included the mapped findings for nutrients (orthophosphate and nitrate-nitrogen), chlorophyll a, dissolved oxygen, E coli, and total suspended solids. It was again noted that the highest nutrient sites were located just downstream of the sewage treatment plants in the watershed (Danville, Lancaster and Stanford). High E coli results were observed throughout the watershed, and dissolved oxygen levels were generally acceptable at all sampling sites.

Graphs of Concentration and Flow vs. Time

The next approach in the data presentation was to examine graphs of the pollutant concentrations and instream flows over time. The intent of these graphs was to portray times of the year when higher concentrations were observed and to better understand if pollutant concentrations related to flow levels. If high pollutant levels coincide with high flows, and if these high flows occurred soon after a rain event, it is likely that the pollutant is being carried into the waterbody via

stormwater runoff. If the high pollutant levels are occurring during low flow periods, it is more likely that the source is from a specific discharge point, such as an industrial discharge pipe, sewage pipe leak, or sewage treatment plant discharge pipe.

These graphs were presented for the nitrate and orthophosphate findings throughout the watershed. For the most part, nutrient concentrations did not seem to correspond to instream flow levels. Higher nutrient levels were mainly observed downstream of the sewage treatment plant discharges on Clark’s Run (Danville), White Oak Creek (Lancaster) and Logan Creek (Stanford). The following table summarizes observations made from reviewing the nutrient graphs.

Subwatershed	Nitrate-Nitrogen	Orthophosphate
Nutrient Concentration Levels of Concern (From summary maps)	Green (acceptable) – 0 to 3.0 mg/L Yellow (of concern) – 3.0 to 6.0 mg/L Red (problematic) – 6.0 to 9.0 mg/L	Green (acceptable) – 0 to 0.1 mg/L Yellow (of concern) – 0.1 to 0.3 mg/L Red (problematic) – 0.3 to 1.4 mg/L
Hanging Fork	Highest nitrate values observed at Peyton Creek, McKinney Branch and Moores Lane sites. Peyton Creek displayed most consistently high nitrate levels. High Peyton Creek and McKinney Branch readings correspond somewhat to high flows. Higher values observed primarily in July, September, October, January and February, suggesting that they are not being caused by spring fertilizer applications.	Overall, Hanging Fork sites did not display problematic orthophosphate levels. Levels of concern were primarily observed at the McKinney Branch, McCormick Church, Peyton Creek, and Hanging Fork mouth sites. The only phosphorus readings that appear to correspond with flow occurred at the Oak Creek site.
Clark’s Run	Highest values at KY52 and Goggin Lane sites—several of which are considered “problematic.” High readings do not appear to strongly relate to high flow levels.	Highest phosphorus readings occurred in July and fall months. The high phosphorus sites at KY52 (downstream of STP on Lancaster Rd.) and Goggin Lane displayed peaks in June, August and September. Clark’s Run 2 nd Street had several readings of concern throughout the year. (Ball’s Branch sites did not display problematic levels of phosphorus.)
Dix River	Highest values in White Oak Creek, not related to flow levels. High values also observed in Logan Creek and do not appear to correspond to high flows.	Sewage treatment plants appear to be contributing to the high phosphorus levels observed at the Logan Creek and White Oak Creek sites. Logan Creek sampling produced 3 high results in the summer, with a reading of 2.3 mg/L in August. All phosphorus results from White Oak Creek (where Stanford discharges treated sewer water) were at problematic levels.

Direction for Next Meeting:

- Graphs of E coli results / Flow vs. time
- Add symbols to maps, showing package sewage treatment plants and stormwater outfalls.
- Find out what time of day dissolved oxygen samples were typically taken. (Concern was expressed that they were taken too late in the day to capture low early morning oxygen levels. High nutrient sites would be expected to have lower oxygen levels than were recorded.)
- Look at rainfall events/precipitation records preceding problematic sampling results. Are higher monthly flows occurring soon after a rainfall event, or delayed. This information would be helpful in determining if higher pollutant concentrations were recently flushed from nonpoint runoff sources.

For future meetings:

- Revisit findings of Mocks Creek/Spears Branch water quality findings from Heritage RC&D 319 grant project in this Dix River subwatershed.
- Request sewage treatment plant reporting forms, especially for recorded nutrient levels in plant discharge.

The next meeting of the Dix River Watershed Council was scheduled for Tuesday, January 29th at 6:00 p.m. at Danville's City Hall.