

Dix River Watershed Council
October 30, 2007

Meeting Notes

Participants: Preston Miles, Roger Trent (Boyle Co. Health Dept.), Mary Ann Sharp (Boyle Co. NRCS), Bill Payne, Malissa McAlister (UK / Kentucky River Authority), John Webb (Ky. Division of Water), Roger Fischer, Mike Rose, Jack Leech, Jim Roe (KDOW), Angie Wingfield (Ky. Div. of Conservation), Norman Jennings (Mercer Co. Solid Waste), Owen Phillips (North Point Training Center), Josh Morgan (City of Danville), Kerry Prather (Ky. Fish & Wildlife)

After a welcome and introductions, participants mentioned several current watershed-related activities.

- The Division of Water contracted with Third Rock consultants to conduct microbial source tracking in the Dix River Watershed, primarily in the Clark's Run and Hanging Fork subwatersheds. The purpose of this effort is to better identify human, bovine, or other sources of coliform bacteria. The sampling plan calls for 3 sets of samples—2 after rain events and one during dry conditions. Sampling was supposed to have been conducted between May and October 2007. However, low rainfall and water levels prevented sampling at some locations. Water sampling will now take place during the 2008 primary contact recreation season (May thru October).
- Funding is available for a workshop series that would assist local officials, Planning and Zoning staff, developers and others in implementing Low Impact Development principles. Titles of the workshop segments are "Understanding Growth's Impact on Water," "Having Growth and Water Quality Too," "Deciding What's Right for our Community," and "Getting Organized for Action." The Division of Water, the University of Louisville and the Southeast Watershed Forum are already planning to provide these workshops for Washington, Anderson, and possibly Mercer Counties. They would also like for the other Dix River Watershed counties to be involved, if possible. Josh Morgan believed that Boyle County would be interested in participating and suggested a direct meeting among the lead parties (KDOW, Southeast Watershed Forum, Boyle County P&Z).
- Several area residents collected water samples through the Kentucky River Watershed Watch program to assess pathogen (E coli) levels in Herrington Lake. Samples were collected between June 30th and July 28th at 8 different sites. In general, levels of E coli were low at all sites. The greatest findings were at the tributary, Rocky Fork near Dix Dam and at South Rocky Fork near its headwaters.
- The CREEC (Clark's Run Environmental and Educational Corp.) organization is continuing to seek grant opportunities to help fund the extension of an existing one-mile recreational trail beside Clark's Run. They are also working with a Lexington-based consultant to improve the downtown Danville riparian zone of Clark's Run and make it more appealing an attraction for the community.
- The Bluegrass Watershed Summit was held in Lexington on October 23rd. The Dix Watershed Council was represented by Preston Miles, Rose-Marie Roessler, Linda Alexander, Malissa McAlister and John Webb. The first half of the summit included roundtable discussions of successes and achievements in watersheds throughout the Bluegrass. During the second part of the event, groups were broken out into watershed location. Dix Watershed representatives discussed ways to make us of Division of

Conservation funding to implement agricultural practices that would improve water quality. They also talked with Jack Stickney, of the Kentucky Rural Water Association, about ways that the organization could assist with improving collaboration between the Dix River Watershed Council and area sewage and drinking water treatment plants.

- On September 20th, the Lincoln County Conservation District held a Peyton Creek Watershed Field Day. This event included demonstrations of recommended cattle handling facilities, nutrient management, and other conservation practices at the Lowell Atwood Farm. Since the project's inception, the Cumberland Environmental Group in cooperation with the Kentucky Division of Water has monitored water quality along Peyton Creek in an effort to show water quality improvement.
- The Department of Transportation is using road construction mitigation fee money to complete a stream and wetland restoration project near Crab Orchard in Lincoln County. The project is located near Saylor Road and the Dix River.
- The Soil Conservation District is accepting cost-share applications until the week of November 12th.

Presentation of Water Sampling Results

Water quality samples were collected between March 2006 and February 2007 at 30+ sites throughout the Dix River Watershed. Council members were reminded of the purpose of collecting and assessing these water quality samples:

- to identify high quality waters for protection
- to identify areas of water quality concern for improvement
- to develop water quality management recommendations for inclusion in the overall Dix River Watershed Plan that must be completed by 2009 (according to the USEPA funding requirements for this project)

Meeting attendees received tables of the sampling findings at each of the sampling sites. These tables included columns displaying first sample, last sample, number of samples taken, minimum reading, maximum reading, median reading, benchmark values and the number of readings that exceeded the benchmark value. Mapped findings were also presented to further illustrate the water sampling results.

As background for assessing these results, council members were informed that benchmark levels for each of the water quality parameters were indicated, where possible. There are a variety of reasons that legal water quality standards have not been established for each of the parameters. These reasons include the intensive (i.e., lengthy and costly) scientific validation required to set these levels, wide variations in the acceptable levels for certain parameters among the different regions of Kentucky, and the political climate needed to enable the setting of these standards.

John Webb and Malissa McAlister presented the findings for six main parameters of concern—those which are believed to be the most illustrative of overall water quality conditions. These parameters included dissolved oxygen, orthophosphate, nitrate-nitrogen, E coli, total suspended solids, and chlorophyll a. A handout was also provided which further described these and all other sampling parameters listed in the data summary tables.

Dissolved Oxygen: Dissolved oxygen is critical to the survival of aquatic life and the overall health of waterbody. Organisms become stressed at levels below 5 mg/L

Orthophosphate: Orthophosphate is the form of phosphorus most readily available for uptake by aquatic organisms (algae). It is an essential nutrient (along with nitrogen) for plants and animals that make up the aquatic food web. There are both natural and human sources, including; bedrock, sewage treatment plants, fertilizers, failing septic systems, and livestock manure. In response to deterioration of the Chesapeake Bay and the Gulf of Mexico, technical experts are recommending a standard of 0.3 mg/L.

Nitrate-Nitrogen: Nitrate-Nitrogen is the form of nitrogen needed for algal growth. It is commonly found in agricultural runoff and wastewater. Natural nitrate levels are typically less than 1 mg/L. In response to deterioration of the Chesapeake Bay and the Gulf of Mexico, technical experts are recommending a standard of 3.0 mg/L.

E coli: E coli is a species of fecal coliform bacteria and is an indicator of other harmful pathogens in human and animal sewage. Kentucky's safe swimming standard is 240 cfu/ml.

Total Suspended Solids: Suspended sediment is the #1 impairment to U.S. streams and rivers. The Kentucky average value for total suspended solids is 10 mg/L.

Chlorophyll a: Chlorophyll a is an indicator of algae growth in water. It can be used to measure the presence of the eutrophication reaction in waterbodies, in which increased nutrients in the water lead to increased algae production, which results in decreased dissolved oxygen levels. This chain reaction can lead to conditions unfavorable for the survival of aquatic life, such as those occurring in the Gulf of Mexico's "Dead Zone" where aquatic animals no longer exist. The Bluegrass median value for chlorophyll a is 35 mg/meter².

Some general observations were made about the sampling results throughout the Dix River Watershed. Dissolved oxygen levels were generally good at all sampling sites throughout the watershed. The greatest orthophosphate and nitrate levels were observed at the sampling sites located immediately downstream of both the Danville and Lancaster sewage treatment plants. High total suspended solids were observed at two sites on the Dix River, one of which was at KY52 downstream of a rock quarry and the other was a few miles upstream at KY 1150, near Hubble. E coli levels were the highest in Hanging Fork and the Balls Branch tributary of Clark's Run.

Future discussion of the sampling results will include a focused discussion of the sampling data from Herrington Lake. A lakes specialist from either the Kentucky Division of Water or the USEPA will provide this analysis.

Other

A request was made to have Third Rock Consultants provide a presentation on the microbial source tracking approach that they are using to assess sources of high E coli values found in the watershed. This request will be passed along to the consulting firm and scheduled for a future Council meeting.

Next Meeting

The next Dix River Watershed Council meeting was scheduled for Tuesday, December 4th at 6:00 p.m. at the Danville City Hall. Discussion of the sampling results will continue, with further analysis using graphical illustrations of the data showing trends, influence of stream flows, and correlations of various sampling parameters with one another.