

Dix River Watershed Council
January 16, 2007
Danville

Present:

Preston Miles
Mary Ann, NRCS
Bill
Josh
Scott Herrington lake
Ken douglas citizen, danville
Randall OWW
Heath Stone Garrard
Brian

Bill
Pamla
Linda Alexander, President, HLCL
Mark Coyne, UK Plant & Soil Science
Kay
Lee
Malissa
John

Announcements

- March 6 Clarks Run event
- Danville HS grant applic
- Red Gate Marina
- KU Brown Plant Mgr met with F&W; F&W agreed to enforce all litter laws on Herrington, including natural debris.

Bacteria data (from handout)

The e.coli std is 240 [colonies/ml?] (from mean calculations based on 5 samples, not one)

Clarks Run wasn't initially listed for pathogens (but was, for nutrients), so no pathogen TMDL is planned. It probably will be listed, after these data.

Very high numbers were found on Sept 18 on Hanging Fork. This was a high flow event. It's likely these are from runoff, i.e. agricultural, because the low-flow data aren't anywhere near as high.

Lee said that **phosphorus samples** were low in value. The highest was in White Oak, which measured 1.9, downstream of Stanford WWTP. However, Lee said there is discussion about making the std something like 0.3, so the low ones would still be relevant. [ARE THESE PPM?]

Lee explained the "Trading" concept. Because it would be very expensive to upgrade a plant to meet more stringent phosphorus standards, a permittee's funds could be spent to reduce or remove phosphorus in other ways.

RFP – pathogen source project

RFP doesn't have to go to the Finance Cabinet. Will be advertised and bid out once it is improved in-house.

Presentation

Lee pointed out that 55% of Dix watershed is agricultural.

Dr. Mark Coyne, soil microbiology. How do fecal bacteria get into our soil and water, how do they move, and how might we get them out? – and from where? They've used the antibiotic assay method. If you know there's a particular source, you can select

where, when, and how frequently to sample so as to confirm or disprove your expectation. They haven't found anything as good.

Fecal coliform/fecal strep ratio works if you are near the source, but it doesn't work as well when you are more removed from the source.

Antibiotic method: look at species and what they are resistant to. This creates a library. What bacteria look like based on their resistance, but when you get close up and specific, it isn't so clear. In VA, they looked at the antibiotic resistance upstream and downstream of their town. Dr. Coyne worked on a project and found they could not isolate specific livestock (e.g., pigs vs. horses), but they could get a 60% accuracy (i.e. "probably) for domesticated livestock (poultry/birds vs. horses and cows, vs. wildlife vs. human). However, this requires sampling from all the sorts of animals you think are in the watershed. The antibiotic resistance changes over time, too.

If source is generally constant, this method should work. However, older or periodic sources aren't going to work as well. Could come from re-suspended sediments, from months-old deposits.

Need to know what animals you are looking for, where.

Human sources: Look for caffeine or fecal sterols, or use Ribo-typing, which is looking at the RNA of an organism. This can isolate specific herds, but it doesn't work far away; has geographic limitations. DNA approaches are expensive, technically sophisticated, requiring expensive equipment.

There are geographic limits.

Best management practices are recommended to control runoff. Do we know who has filed AWQ plans? Mary Ann said the majority of farmers in Boyle Co (90-93%) have them.

Filter strip can knock down but cannot stop fecal flow.

Tile drainage moves water/contamination to creek. No-till causes macropores to develop around tile drains. Mary Ann said there isn't much row-cropping in Boyle Co. anymore.

Use riparian strip for phosphorus, too.

If you can force surface runoff to go into subsurface flow, the soil significantly strips out nitrates/nutrients. May also work for bacteria. Example is wetland.

20 Feet will work as well as 40 feet, and both of them fail in high rainfall.

Mary Ann said NRCS used to offer cost-share for 100 ft; but has decreased the required width so as to appeal to more farmers.

Mark said it isn't economically worth the 50-100 ft., just to prevent that high-rainfall catastrophe.

Deer will mix stream and re-suspend sediment, but don't produce as much waste and move around more.

The colder it is, the longer pathogens survive. They bloom when it warms up. When sampling, be sure the weather is variable. (Thus, the geometric mean.) The more fine the sediment, the longer pathogens survive. Silty clays provide extra carbon and a lot of surface area, plus facilitates re-suspension.

They sampled in one place where summer, low-flow samples were higher, but they attributed it to survival rates, not to new pathogens arrival.

Erosion and sediment are key.

Mary Ann said NRCS is finding good results with uptake in riparian trees and bushes. Unfortunately, this method requires more landowner initiative and years of management.

Elected Preston as Co-chair.

Preston expressed the community's commitment to health and welfare, and his appreciation for the expert assistance.

Misc announcements/comments

- Malissa mentioned encouraging local leaders to come to the next meeting, especially.
- Malissa mentioned the availability of Growth Readiness presentations.
- Heath said he would try to get someone from Lincoln Co gov to attend.
- Heath also invited the Council to come to the Onsite Wastewater demonstration site in Anderson County.
- EQIP signup going through the end of January.
- State sign-up program in February.
- Tree-planting buffers on the creek, is continuous sign-up.
- Louise said F&W has also agreed to enforce. It is illegal for a Houseboat to have the ability to directly dump into the lake. Each marina must have pumpout or arrangement with one within 8 miles. F&W has permission to board houseboats without a warrant.
- One of the marinas will cut the lease of slip rentals if they catch them dumping.
- For spray irrigation, land application of waste (by septic owners). No reporting required, or inspections, but there are rules. Chlorination. Slope requirements, etc. Heath said there is one in Garrard, DOW-approved, that he knows of. He also said human waste can be treated with hydrated lime and put into trenches, but there are setbacks and slope requirements as well. Heath says there are annual inspections.
- You can take your raw septage and spread it on your farm if you want.

Next meeting:

Tuesday, March 27, Danville.

Go over what's in a watershed plan