

Curry's Fork Technical Committee Meeting

April 1, 2010 9:30 – 11:30 am
Oldham County Fiscal Court Building

I. Welcome and Introductions

Paul Maron welcomed 10 stakeholders.

II. Agenda Overview

Paul reviewed the day's agenda with a brief summary of topics to be covered. During the March meeting, the data results were presented. Today's meeting will go into detail concerning identification of sources.

III. Bacteria Source Identification

Curry's Fork watershed is largely open land, forest and cropland according to the 2007 census of agriculture. The quantities of animals are midrange quantities in comparison to state statistics. Animals present in the county include many goats, bison, and llamas. Soils consist of group C. Waterlines are distributed throughout the area. In contrast sewer lines are located only in the La Grange area. The Health Department identified two subdivisions as vulnerable for septic conditions, Borowick Farms and Crystal Lake. The criteria for selection were based on soil, and age of subdivisions. There are pockets of good soil for septic tanks but it is highly variable. There are KPDES permits for homeowner units located within the watershed. Overall, the bacteria water quality data presented low geometric mean concentrations. The stakeholder group discussed the suspected possible sources of pollution for each subwatershed. Suspected sources are listed in **no particular order**.

Asher's Run Sources

Upper Area (High Priority Restoration)

- Low-intensity animal operations (small numbers of goats, horses, etc. as well as some 'non-traditional' livestock on relatively small properties)
- Pets
- Failing septic systems
- Stormwater from MS4 and Non-MS4 Areas

Downstream Area (High Priority Protection)

- Wildlife
- Pets (likely less of an issue than in the upper area)
- Re-suspended sediment with bacteria loads
- Stormwater from MS4 and non-MS4 Areas

North Curry's Sources:

Upper Area (Lower Priority Restoration)

- Failing septic systems in Crystal Lake Subdivision
- Re-suspended sediment from Crystal Lake with bacteria loads
- Pets

Downstream Area (Medium Priority Restoration)

- Failing septic systems in Borowick Farms and Crystal Lake Subdivisions
- Package treatment plants (plants in the watershed are meeting permits but still contribute a load)
- Permitted Household Discharger Permit (permits in the watershed are meeting permits but still contribute a load)

- Wildlife (especially along I-71)
- Pets
- Stormwater from MS4 Areas
- Non-regulated (non-MS4) stormwater runoff from LaGrange and other areas
- Suspected RVs/Motor homes illegally discharging into stormwater system at Wal-Mart parking lot
- Stormwater leaking into sewers and taking up capacity (I&I)

South Curry's Sources:

Headwaters Area (Medium Priority Restoration)

- Small Farms/Livestock Operations (horses and cattle, primarily)
- Wildlife
- Package Treatment Plants (plants in the watershed are meeting permits but still contribute a load)
- Permitted Household Discharger Permit (permits in the watershed are meeting permits but still contribute a load)
- Stormwater from non-MS4 areas

Downstream Area (Medium Priority Restoration)

- Failing septic systems (Borowick Farms Subdivision)
- Package Treatment Plants (plants in the watershed are meeting permits but still contribute a load)
- Wildlife
- Stormwater from MS4 Areas and non-MS4 areas
- Re-suspended sediment with bacteria load
- Permitted Household Discharger Permit (permits in the watershed are meeting permits but still contribute a load)

Curry's Sources:

Main Stem (High Priority Protection)

- North Curry's Upstream Contribution
- South Curry's Upstream Contribution
- Stormwater from MS4 Areas and non-MS4 areas
- Failing septic systems
- Package Treatment Plants (plants in the watershed are meeting permits but still contribute a load).
- Permitted Household Discharger (Permit No.KYG401962) has repeated violations
- Wildlife
- Pets
- Re-suspended sediment with bacteria load
- Stormwater from MS4 Areas and non-MS4 areas

The Health Department voiced concern over the perception that septic tank problems are widespread. The number of homes that are malfunctioning are likely a small percentage of the total number of homes. Concerns about septic systems could be addressed through septic tank education programs and identifying priority sewer areas.

IV. Project Updates

Currys Fork website was updated with meeting materials and minutes. If a meeting is missed please visit the website to stay current with project progress. Paul and Beth presented at the Kentucky Water Resources Research Institute. The topic of the presentation was public outreach and engagement. Overall the presentation was well received with numerous questions following. This is a testament to the commitment and dedication of the stakeholder group. The next technical meeting is on Thursday, May 6, 2010 at 9:30 A.M. at Oldham County Fiscal Court.

Bacteria Subwatershed Analysis

Currys Fork Technical Committee Meeting
 April 1, 2010
 9:30-11:00 AM

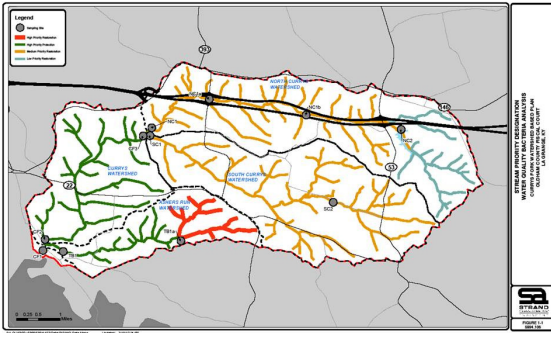
Bacteria Results

Subwatershed	Bi-weekly Sampling			Storm Sampling			All Samples		
	Sample Sites	Samples	Geometric Mean	Samples	Geometric Mean	Samples	Geometric Mean	% of Samples That Exceed WQS PCR*	% of Samples That Exceed WQS SCR**
North Currys	4	63	586	12	3,045	75	793	87%	33%
South Currys	2	45	1,017	12	1,759	57	1,142	68%	35%
Asher's Run	2	32	895	12	1,619	44	1,052	73%	34%
Currys Fork	3	71	844	18	3,565	89	1,129	70%	34%
Entire Watershed	11	211	795	54	2,469	265	1,001	69%	34%

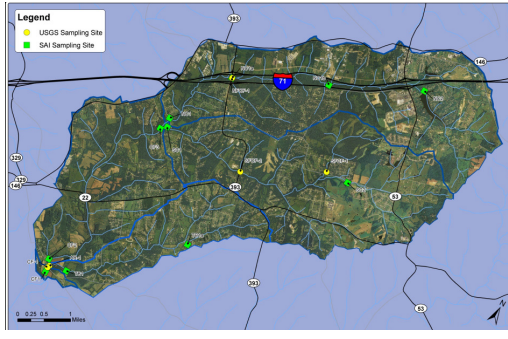
Table 1-4 2007 and 2009 Bacteria Samples

*Primary Contact Recreation Water Quality Standard is 400 (cfu/100L)
 **Secondary Contact Recreation Water Quality Standard is 2,000 (cfu/100L)

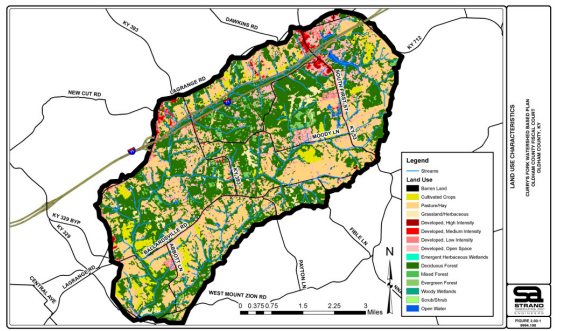
Bacteria Results



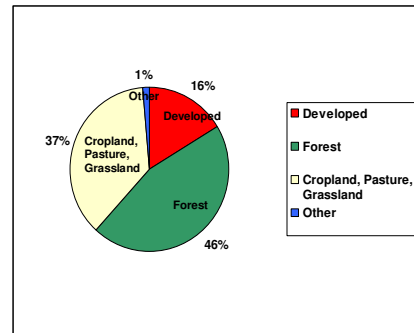
Watershed Characteristics



Watershed Characteristics



Land Use Characteristics

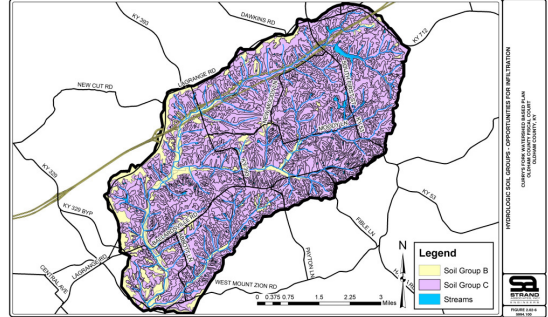


Watershed Characteristics

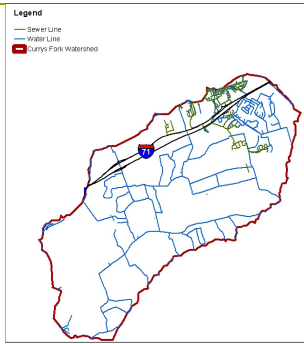
Cattle	8,319	Layers	669
Hogs/Pigs	18	Turkeys	NA
Sheep/Lambs	73	Ducks	323
Horses/Ponies	2,838	Other Poultry	526

Source: 2007 Census of Agriculture

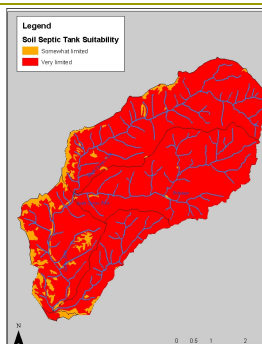
Watershed Characteristics



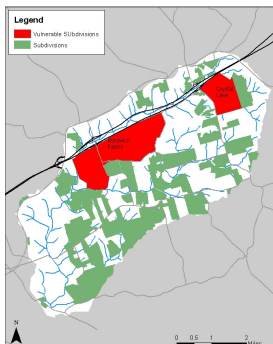
Watershed Characteristics



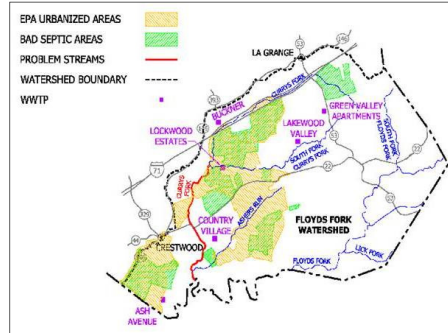
Watershed Characteristics

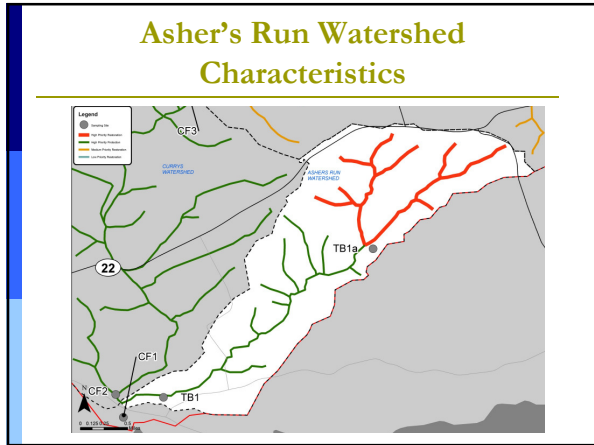
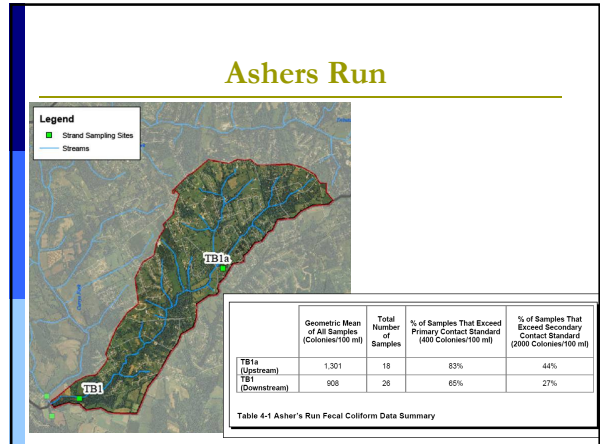
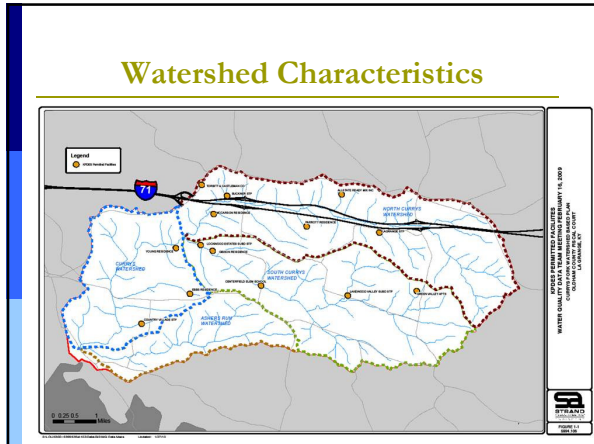


Watershed Characteristics

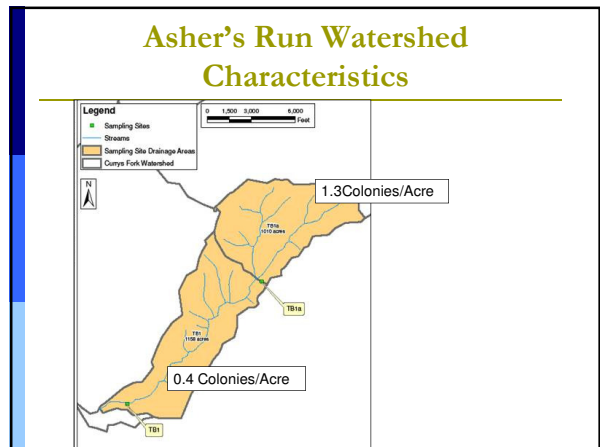
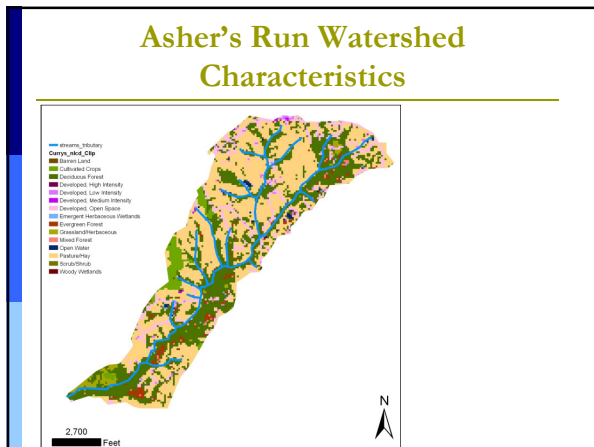


Watershed Characteristics





- ### Asher's Run Notes
- No KPDES Permitted Facilities
 - Low-intensity Animal Operations (small numbers of goats, horses, etc.) in Upper Reaches
 - More Development in Upper Reaches and on Tributaries
 - Less Buffer in Upper Reaches and Tributaries
 - Improved Pathogen Levels Downstream
 - WQS Exceedances at Both Sites Over Entire Flow Regimes
 - Wet Weather Increases Pathogen Levels

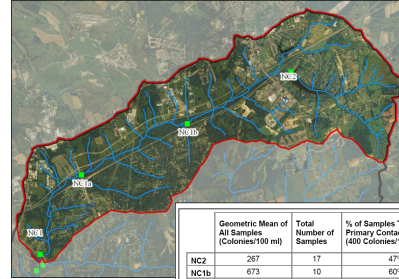


Asher's Run

- Potential Sources Previously Identified:
 - Failing Septic Systems
 - Livestock and/or Wildlife
 - Re-suspended sediment (i.e. bacteria settles out during low flows, re-suspends during sudden high flows)

- Other sources?
- Where to target?

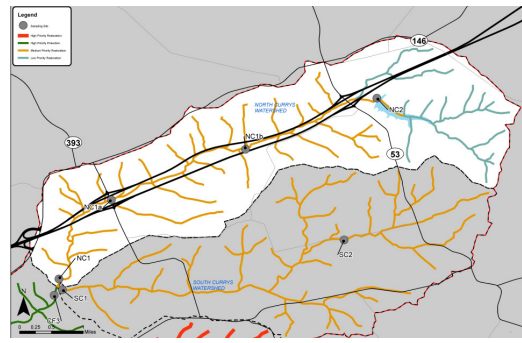
North Currys



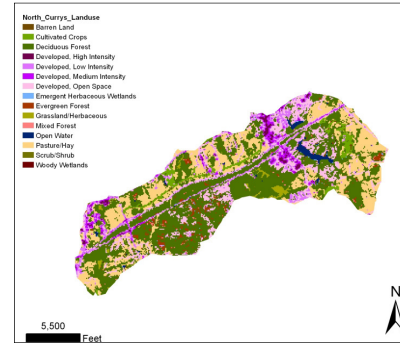
	Geometric Mean of All Samples (Colonies/100 ml)	Total Number of Samples	% of Samples That Exceed Primary Contact Standard (400 Colonies/100 ml)	% of Samples That Exceed Secondary Contact Standard (2000 Colonies/100 ml)
NC2	267	17	47%	12%
NC1b	673	10	60%	40%
NC1a	935	18	72%	39%
NC1	1,276	30	77%	40%

Table 2-1 North Currys Fecal Coliform Data Summary

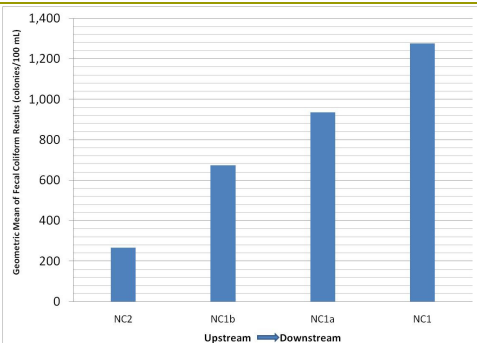
North Curry's Watershed Characteristics



North Curry's Watershed Characteristics



North Currys



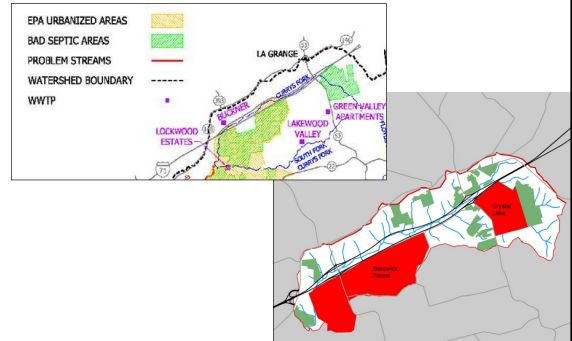
North Curry's Notes

- Six KPDES Permitted Facilities
 - LaGrange WWTP – 13 colonies/100 mL ('09 avg)
 - Buckner WWTP – Improved Performance
 - All-State Ready Mix – No Pathogens to Report
 - Carriage House – No Pathogens to Report
 - McCarson Residence – Resolved Path. Violations
 - Parrott Residence – No Path. Violations
- Suspected Failing Septic Tanks
- Pathogen Levels Proportional to Drainage Areas

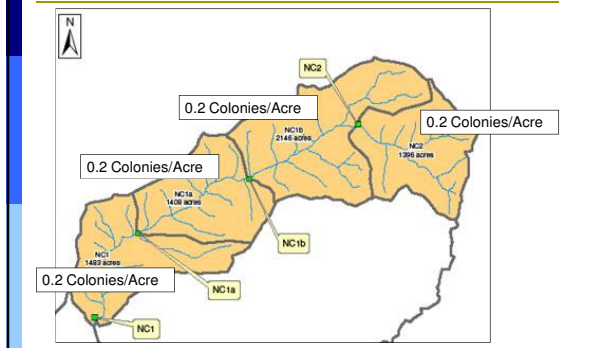
North Curry's Notes

- Bacteria Levels Increase with Increased Flow (wet weather)
- Crystal Lake Area Shows Low Levels of Pathogens (Lake Acting as a Pollutant Trap)

North Curry's Watershed Characteristics



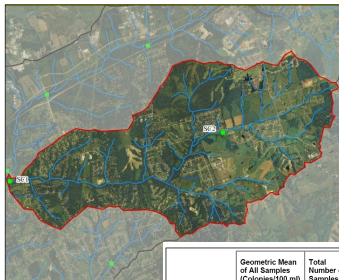
North Curry's Watershed Characteristics



North Curry's Fork

- Potential Sources Previously Identified:
 - Failing Septic Systems
 - Small Package Treatment Plants
 - Wildlife Along I-71
 - Re-suspended sediment (i.e. bacteria settles out during low flows, re-suspends during sudden high flows)
- Other sources?
- What areas to target?

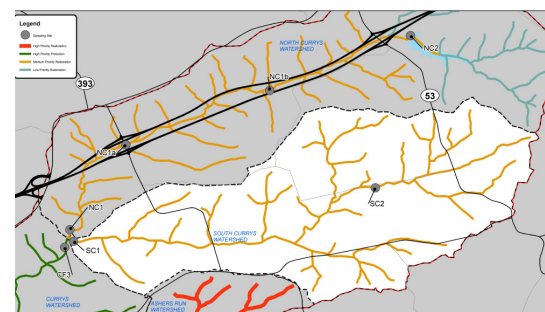
South Currys



	Geometric Mean of All Samples (Colonies/100 ml)	Total Number of Samples	% of Samples That Exceed Primary Contact Standard (400 Colonies/100 ml)	% of Samples That Exceed Secondary Contact Standard (2000 Colonies/100 ml)
SC2 (Upstream)	789	30	53%	33%
SC1 (Downstream)	1,722	27	85%	37%

Table 3-1 South Currys Fecal Coliform Data Summary

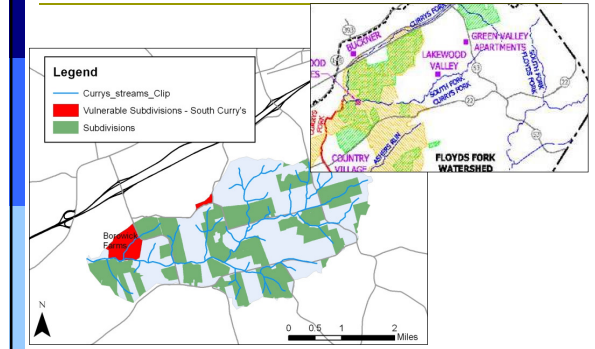
South Currys



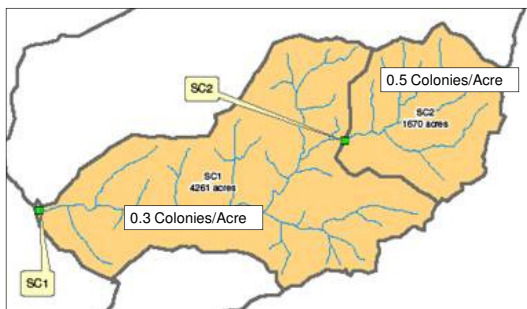
South Curry's Notes

- Five KPDES Permitted Facilities
 - Lockwood STP – No violations in past 2 years
 - Lakewood STP – No violations in past 2 years
 - Green Valley Apts. – 40 colonies/100mL ('09 avg)
 - Centerfield Elementary – No violations
 - Gibson Residence – One violation since '08
- Suspected Failing Septic Tanks
- Greater Loading per Acre from Upper Reaches of Watershed
- Less Vegetative Buffer on Tributaries than Main Stem
- Livestock (small farms/animal operations)

South Curry's Watershed Characteristics



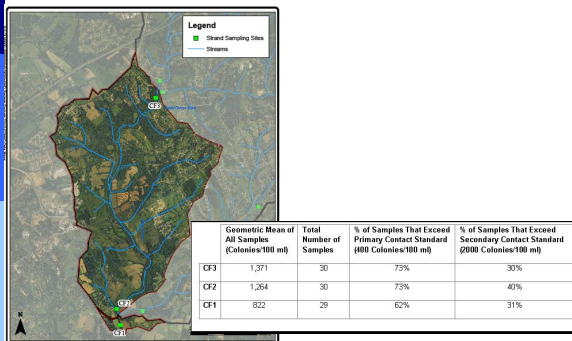
South Curry's Watershed Characteristics



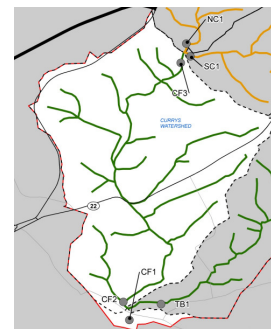
South Curry's Fork

- Potential Sources Previously Identified:
 - Failing Septic Systems
 - Small Package Treatment Plants
 - Small Livestock Operations
 - Wildlife
 - Re-suspended sediment (i.e. bacteria settles out during low flows, re-suspends during sudden high flows)
- Other sources?

Curry's Fork



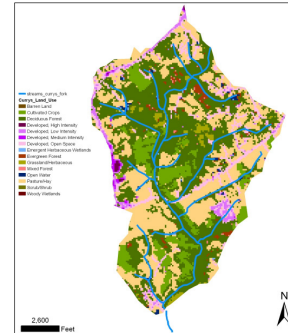
Curry's Fork Watershed Characteristics



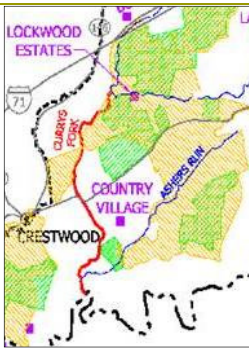
Curry's Fork Notes

- Three KPDES Permitted Facilities
 - Country Village STP – No violations past 2 years
 - Young Residence – Regular violations since '08
 - Ebbs Residence – No discharge since 6/08
- Suspected Failing Septic Tanks
- Bacteria Levels Increase with Increasing Flow (More Exceedances at High Flows)
- Homes on Larger Lots (5+ acres)

Curry's Fork Watershed Characteristics



Curry's Fork Watershed Characteristics



Curry's Fork

- Potential Sources Previously Identified:
 - Failing Septic Systems
 - Small Package Treatment Plants
 - Wildlife
 - Re-suspended sediment (i.e. bacteria settles out during low flows, re-suspends during sudden high flows)
- Other sources?
- Where to target?

Summation

- Asher's Run
- North Curry's
- South Curry's
- Curry's
- Overall Watershed