Harris Branch Watershed

Catchment
- Total area: 11 sq. miles
- Area in recharge: 0
- Creek length: 11 miles
- Receiving water: Gilleland Creek

Demographics
- 2000 population: 10,173
- 2005 demographics: 2000 population: 10,173, 30 year projected % increase: 135%
- 2030 projected population: 23,867

Land Use
- Impervious cover (*97 crwr data): 8%

Overall EII Scores
- 1999: 59
- 2002: 61
- 2005: 58

Flow Regime* for Sample Sites on Harris Branch Upstream to Downstream

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Name</th>
<th>Feb 20th WQ</th>
<th>Feb 27-28th WQ</th>
<th>May 22nd WQ</th>
<th>Aug 7th WQ</th>
<th>Nov 20th WQ</th>
<th>Mar 30th WQ</th>
<th>Jun 13th WQ</th>
<th>Jun 28th WQ (Habitat)</th>
<th>Sep 29th WQ</th>
<th>Dec 7th WQ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1199</td>
<td>Harris Branch at Crystal Bend Dr</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>888</td>
<td>Harris Branch at Cameron</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>n</td>
<td>B</td>
<td>B</td>
<td>B</td>
</tr>
<tr>
<td>1201</td>
<td>Harris Branch at Boyce Lane</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
<td>B</td>
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</tbody>
</table>

* B = baseflow conditions, n = no flow was present, Storm = storm flow was present

Blue = Samples were taken, Grey = Samples were not taken, Blank = site not visited

Physicochemical
- DO (mg/l): 7.56 to 9.86, Average (storm)
- pH: 7.80 to 7.99, Wide range, mostly average
- Cond (uS/cm): 758.7 to 868.4, Average
- SO4 (mg/l): 72.96 to 137, Average

Nutrients
- NH3 (mg/l): 0.13, Average upstream, very high at site 1201
- NO3 (mg/l): 3.65, Highest overall mean, very high at 1201, increasing trend downstream
- Ortho P (mg/l): 0.55, Average upstream, extremely high at site 888

Sediment Load
- TSS (mg/l): 6.0, Average upstream levels at site 1201, increasing trend downstream
- Turbidity (ntu): 6.1, Average upstream levels at site 1201, increasing trend downstream

Biology
- E.Coli (100ml): 549, Above average, with one very high value in September at site 1199
- Benthic Macs: PTI appears to decrease from upstream to downstream sites. Site 1201 had a high % of motile taxa and a dominance of Nitzschia inconspicua (42%). Both sites had low Cymbella richness and a similar diversity

Discussion: One extremely high E.coli value (3000 col./100ml) at site 1199 in September lowered contact recreation scores and raised concerns for the site. A follow-up sample collected at 1199 in February showed lower concentrations of E. coli (160 col./100ml) and reduced concerns for this location. Results for most parameters were average compared to the rest of the Phase 3 watersheds. However, site 888 had very high ortho-P and the downstream site (1201) had above average sulfate, TSS and turbidity. More importantly, site 1201 had very high ammonia and nitrate concentrations. There appears to be an increasing trend downstream in pH, conductivity, TSS, turbidity, nitrate and ammonia. Water quality scores have been chronically poor at all sites since 1999.

Executive Summary: Site 1201 has high nutrients and above average sulfate, TSS and turbidity. E.coli is high at site 1199, and above average at site 888. Chronically poor water quality scores since 1999.

Sub-index scores for Harris Branch Sites (upstream to downstream) 1999, 2002, 2005

<table>
<thead>
<tr>
<th>Site Number</th>
<th>Year of Sampling</th>
<th>1199</th>
<th>888</th>
<th>1201</th>
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<tbody>
<tr>
<td>Water Quality</td>
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<td>Sediment</td>
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<td>Contact Recreation</td>
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<td>Physical Integrity</td>
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<tr>
<td>Aquatic Life</td>
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<tr>
<td>Benthic Mac.</td>
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<td>74</td>
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<tr>
<td>Diatom</td>
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<td>64</td>
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<tr>
<td>Total EII Score</td>
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<td>55</td>
<td>55</td>
<td>57</td>
</tr>
</tbody>
</table>

* sediment samples only collected at the downstream site, blank cells indicate parameter was not collected, blank columns indicate site was dropped

100-87.5 Excellent | 87.5-75 V. Good | 75-62.5 Good | 62.5-50 Fair | 50-37.5 Marginal | 37.5-25 Poor | 25-12.5 Bad | 12.5-0 V. Bad
Land Use and Development:
The Harris Branch watershed is rapidly being converted from agricultural cropland and grazing to urban land use. Municipal wastewater permits are held by Dessau Fountains Estates (upstream of site 1199), Dessau Utilities, and City of Austin Harris Branch which contributes to the perennial baseflow. An industrial discharge permit is held by Samsung in the southwest corner of the watershed. The entire creek runs through the deep, black clayey soils typical of the Blackland Prairie.
Nutrient Parameters by Site (Upstream to Downstream)

Ammonia as N (mg/l) - Harris Branch 2005

Nitrate as N (mg/l) - Harris Branch 2005

Orthophosphorus as P (mg/l) - Harris Branch 2005
Bacteria and Physical Parameters by Site (Upstream to Downstream)

E. coli (colonies/100ml) - Harris Branch 2005

Total Suspended Solids (mg/l) - Harris Branch 2005

Turbidity (NTU) - Harris Branch 2005