

Harris County Water Quality Prioritization for Bacteria Reduction Efforts

E. Coli: Total Score

- 1 - 5 (Low Priority)
- 6 - 9
- 10 - 12
- 13 - 15
- 16 - 20 (High Priority)

Enterococci: Total Score

- 0 - 5 (Low Priority)
- 6 - 9
- 10 - 12
- 13 - 15
- 16 - 20 (High Priority)

Commissioner's Precincts

- 1
- 2
- 3
- 4

Metrics and Methods used in Spatial Analysis

The goal county wide stream prioritization project was to use existing water quality data in combination with several other metrics to find a more complete view of the stream sections within the county that were most susceptible to primary contact from residents. The initial water quality dataset was provided by the Houston Galveston Area Council (H-GAC) and included the geometric means by monitoring station and stream Assessment Units (AUs) for both E. Coli and Enterococci. The two bacteria types were analyzed under the same parameters, but were done so separately. There were several cases of multiple stations per AU segment.

The following metrics were used to assign point values to each station:

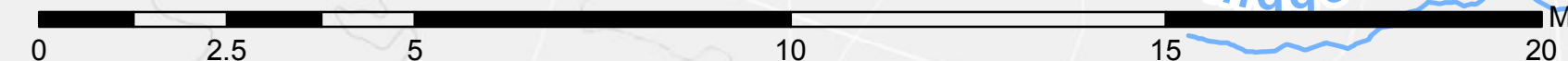
- Percent above 126CFU/100ml:
 - 0-500% - 3 points
 - 500-1000% - 5 points
 - 10000-20000% - 7 points
 - >20000% - 10 points
- Station located in a watershed that drains to Lake Houston:
 - 10 points
- Stations located on AU segment that crosses a bike path, trail, or greenway:
 - 1 point
- Station located on AU segment that is within 300 feet of a park
 - 1 point
- Average population density within the associated AU segment in a 2000ft buffer:
 - High density - 8 points
 - Medium density - 4 points
 - Low density - 0 points

The population density component was calculated from a 2010 U.S. Census Block Centroid data. The points were used to calculate a density surface using ArcGIS Spatial Analyst. A 2000ft buffer was applied to the AU segments and an average of the density surface for each buffer section was created as a raster file. The raster was then reclassified based on the natural breaks to determine the three density classes of high, medium, and low.

The point values for each station were totaled to identify the stations (and associated AU segments) with the highest relative score.

Prioritization Score	Number of Stations	Average Score	High Score
E. Coli	162	11	20
Enterococci	70	4	17

Prioritization Scores based on metrics for bacteria, proximity to drinking water sources, proximity to parks and trails, and population density.



Date: 11/14/13

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