MICROBIAL SOURCE TRACKING IN THE CHATTAHOOCHEE RIVER NATIONAL RECREATION AREA

Anna McKee

AFFILIATION: U.S. Geological Survey, South Atlantic Water Science Center, Norcross, GA 30093
REFERENCE: *Proceedings of the 2017 Georgia Water Resources Conference*, held April 19-20, 2007, at the University of Georgia

The BacteriALERT program is a public-private partnership among the USGS, the National Park Service, and the Chattahoochee Riverkeeper. The BacteriALERT program monitors fecal indicator bacteria, including Escherichia coli, levels at two sites on the Chattahoochee River within the Chattahoochee River National Recreation Area (CRNRA), in the Atlanta metro area. When E. coli counts at either site exceed the U.S. Environmental Protection Agency (USEPA) Beach Action Value for primary contact, a health advisory is posted for designated swimming areas downstream of that site. While E. coli is commonly found in the gastrointestinal tract and feces of warm-blooded animals, the human health risk of exposure to human fecal contamination is greater than the risk of exposure to non-human fecal contamination. As E. coli is general to warm-blooded animals, E. coli counts are not always an accurate predictor of the risk of exposure to pathogens. Additionally, the presence of E. coli does not provide information about the sources of contamination, which is critical for remediation efforts. In Winter and Summer 2016 we collected water samples from the two BacteriALERT sites on the Chattahoochee River with the addition of 13 other locations within the CRNRA watershed, and used microbial source tracking as a means for assessing the presence and source locations of human fecal contamination and pathogenic bacteria that may cause gastrointestinal infections. We present these results and discuss implications for addressing sources of fecal contamination in the Chattahoochee River National Recreation Area.

Program reference: 1.4.18