



Response to Media Reports about Flat Creek, Fecal Coliform and Poultry Processors March 22, 2015

The Atlanta Journal-Constitution published an article on Sunday, March 22, 2015 about fecal coliform in Flat Creek and poultry processing plants' impacts on the stream. The story also covered Flat Creek's flow into Lake Lanier which is relied upon by millions as a source of drinking water and recreational activities. On March 20, Georgia Public Broadcasting's radio program "On Second Thought" aired a discussion between the AJC reporter and a representative of the Chattahoochee River Keeper on this same topic.

We understand that media outlets have a limited amount of print space and radio time to cover issues completely. We thought that their readers and listeners might benefit from additional information about this complicated topic to fill in the gaps that the reports left out.

Poultry companies have a responsibility to protect the environment where they have operations, and they take this responsibility very seriously. Storm Water Pollution Prevention Plans are the basis for implementing practices to reduce the amount of pollutants, including bacteria that have the potential to reach our waterways. Poultry company facilities spend significant financial resources to employ best management practices and build storm water capture and treatment systems to protect nearby streams. That is happening all over the state, including in Flat Creek. In fact, we are not aware of any private regulated entity that is required to take such concrete and costly steps to reduce fecal coliform and other constituents in runoff, even though water quality sampling demonstrates that fecal coliform originates from everywhere regardless of land use.

Summary of the key findings contained in this response:

- Sampling data demonstrates that fecal coliform concentrations are higher upstream of the processing plants than downstream of the plants.
- Sampling data demonstrates that fecal coliform concentrations in Flat Creek are extremely low as the creek enters Lake Lanier.
- Fecal coliform concentrations in Flat Creek entering Lake Lanier are well below the in-stream water quality standards established by Georgia EPD.
- In terms of fecal coliform, Lake Lanier is "fully supporting" its designated uses for drinking water and recreational purposes according to EPA and Georgia EPD.
- Samples collected and analyzed by Georgia EPD demonstrates extremely low levels of fecal coliform in Lake Lanier.
- Drinking water obtained from Lake Lanier is highly treated and supplied to the public in a very safe condition.

- Fecal coliform is a criteria which has serious limitations when used as an indicator of potential human health impacts.
- According to the EPA, “fecal coliforms as a group were determined to be a poor indicator of the risk of digestive system illness. However, many states continue to use fecal coliforms as their primary health risk indicator.”
- In Georgia EPD’s rules for water quality standards, the agency states, “there is no positive scientific evidence correlating elevated fecal coliform counts with transmission of enteric diseases. In addition, these bacteria can originate from any warm blooded animal or from the soil.”

The following are excerpts from the Atlanta Journal-Constitution article and quotes from the Georgia Public Radio program, followed by additional information that will hopefully provide the public with a more complete understanding of this issue.

AJC: “He (Mike Giles, Georgia Poultry Federation) pointed to independent studies showing fecal coliform levels decreasing as water reaches Lake Lanier.”

GPF Response: That is a correct statement, but the detailed data supporting the statement is even more enlightening.

The City of Gainesville’s Public Utilities Department has been sampling in the Flat Creek watershed for many years. Five-years of data from the City demonstrates at least two things: (1) Flat Creek is very clean, in terms of fecal coliform bacteria, in the lower segments of Flat Creek downstream of the poultry processing plants and before the creek enters the lake. This is also true for the embayment area just after Flat Creek enters Lake Lanier. (2) The data also demonstrates that fecal coliform concentrations are generally lower downstream of the two poultry processing plants compared to the sampling site upstream of the poultry processing plants.

Here are a few highlights from the City’s sampling data:

- 98.3% of the samples taken in the embayment area of Flat Creek very near its entrance into Lake Lanier during the 5-year period have lower fecal coliform concentrations than the Georgia water quality standard for fecal coliform. There was only one sample outlier above the standard during the 5-year period.
- The median sample result at the Flat Creek embayment site during May-October over the 5-year period was 5, which is below the Georgia water quality standard of 200. The median sample result for the Flat Creek embayment site during November-April over the 5-Year period was 15, which is below the Georgia water quality standard of 1,000. Regardless of your perspective on this issue, these are remarkably low levels, and this data suggests that the fecal coliform contribution from Flat Creek to Lake Lanier is miniscule.

AJC: “The U.S. Environmental Protection Agency discovered multiple violations of the Clean Water Act by the two plants.”

GPB: Shannon McCaffrey speaking – “Those were concerns that were basically violations of the Clean Water Act.”

GPF Response: The characterization of these items as violations of the Clean Water Act appears several times in the article and radio program. The EPA reports mentioned in the stories are based on observations made by EPA personnel during a site visit to the facilities. Due process allows the permit holders to address the allegations and defend themselves. Wouldn't professional journalism practices dictate the use of the term “alleged” as is so often used in other reporting?

AJC: “Drinking water contaminated with the bacteria can cause diarrhea, nausea, vomiting, cramps and other gastro-related distresses. Exposure can cause rashes and other skin problems.”

GPB: Celeste Headlee speaking -- “Lake Lanier is a primary source of drinking water for residents in Metro Atlanta, but that lake which is also used recreationally may be at risk of contamination.”

GPF Response: The article and radio program appear to make this a drinking water issue which readers and listeners would naturally be concerned about. While the AJC statement above is theoretically true, it seems to be completely unrelated to the story about storm water. A reader or listener would understandably be frightened about any significant levels of bacteria in drinking water. Drinking water is sourced from (in the case of Lake Lanier) a body of water that, according to EPA and Georgia EPD, is fully supporting its designated drinking water use in terms of bacteria concentrations (i.e. very low concentrations). The water is then treated by the public utility and delivered to water users in an extremely clean and safe condition. This process is heavily regulated by the Environmental Protection Agency. Linking fears about contracting diseases from drinking water to this story about stream impairments in the upper reaches of Flat Creek only serves to confuse the reader or anyone trying to understand this issue.

Furthermore, Lake Lanier is listed as a lake “fully supporting” its designated uses for drinking water and recreation. The Environmental Protection Agency has oversight in this area, and EPA approves or denies Georgia's proposed list of impaired or fully supporting waterbodies.

In our opinion, the overall tone of the newspaper article and the radio program would lead people who rely on Lake Lanier for drinking water to be very concerned (maybe scared) about their health and safety. With regard to fecal coliform, the data and state/federal agencies' regulatory oversight suggest otherwise.

GPB: Shannon McCaffrey speaking – “They also argue that some of the water downstream from the plant you can see that the fecal contamination is lessening. I would argue that any contamination of that kind would probably not be a good idea to come in contact with humans”
Celeste Headlee speaking – “Right, we don't want feces in the water.”

GPF Response: We agree with the argument that the water downstream of the processing plants shows lower concentrations of fecal coliform, especially as Flat Creek nears the lake. The data presented above demonstrates that fact. The statement that “any contamination (emphasis added) of that kind would probably not be a good idea to come in contact with humans” suggests a lack of understanding about bacterial risk thresholds set by public health experts and regulatory agencies at the state and federal level. The statement about not wanting “feces in the water” is misleading because the actual discussion is about bacterial concentrations from fecal and non-fecal sources. If there is actual feces in Lake Lanier, the most likely sources are geese and fish.

AJC: “The U.S. Army Corps of Engineers conducts water quality testing along Lanier’s beaches and only during the recreation season. The most extensive testing is conducted, instead, by volunteers with the Lake Lanier Association.”

GPF Response: The Lake Lanier Association does not conduct bacteria sampling. A video was included in the online version of the AJC article showing volunteers taking samples of water in Lake Lanier. It would be logical for readers to assume that the group is conducting bacterial water sampling, but that is not the case.

The implication seems to be that the state of Georgia does not sample for bacteria in Lake Lanier. Georgia EPD conducts extensive sampling in the lake for a large number of parameters, including fecal coliform.

EPD’s data is publically available at <http://www1.gadnr.org/dnr/wrdb/homePage.do>

Samples are collected from 10 locations in the lake. Over the most recent 10-year period, 610 samples were collected from these 10 locations. The median result was 20 CFU/100mL for fecal coliform, well below Georgia’s water quality standard. In fact, 96% of Georgia EPD’s sample results are 20 CFU/100mL for fecal coliform over the 10-year period at these 10 sampling locations. The reality is that the “20” measurement means that the actual concentration of fecal coliform in the sample is less than 20. This data demonstrates extremely low levels of fecal coliform bacteria in Lake Lanier over a long period of time.

GPB: Celeste Headlee speaking – “The average citizen would assume that the state is at least doing the minimum of watching out, right, and therefore because we haven’t heard about this before, it means they haven’t reached levels that are unsafe to either drink or swim in, is that correct?”

GPF Response: Yes, the state regularly collects bacterial samples in Lake Lanier. It is correct to say that Georgia EPD’s data (explained above) demonstrates that Lake Lanier has not indicated levels that are “unsafe to either drink or swim in.”

AJC: “Mike Giles, head of the Georgia Poultry Federation, said the plants are not the only ones to blame for high levels of bacteria in the creek, which runs through one of the city’s heaviest industrial stretches.”

GPF Response: The City of Gainesville sampling data demonstrates this point convincingly, and the data behind this fact is striking.

The City of Gainesville’s sampling data reveals that 77% of the samples upstream of the poultry processing plants had higher fecal coliform concentrations than samples taken on the same day downstream of the poultry plants. More importantly, 27% of the monthly samples taken upstream of the poultry plants exceeded 10,000 CFU/100mL for fecal coliform. The Georgia water quality standard is 200 for the months of May through October and 1,000 for the months of November through April.

In summary, the City of Gainesville data suggests that Flat Creek’s impairment for fecal coliform begins upstream of the poultry processing plants, and the concentrations at the sampling site just below the plants generally have lower concentration levels than the site upstream of the plants.

The scientific literature confirms what many are saying about Flat Creek and this bacterial criteria in general – fecal coliform is everywhere!

An EPA study reported on fecal coliform concentrations in storm water from 10 different land uses. The study included 1704 observations. The median result for fecal coliform over all of these samples was 5,091, well above the Georgia in-stream water quality standard of 200 CFU/100mL for May through October and 1,000 for November through April. For example, the median for residential was 7,000; Mixed residential was 11,210; and Commercial was 5,400. It is very likely to presume that many of these sites would fail the benchmarks in Appendix C. of Georgia’s Industrial Storm Water Permit which would cause them to install costly measures to reduce the concentrations of fecal coliform in their storm water discharges.

Source: Table 3 on pages 17 and 18 of the EPA document linked below

<http://rpitt.eng.ua.edu/Publications/Stormwater%20Characteristics/NSQD%20EPA.pdf>

The bottom-line is that fecal coliform is a flawed bacterial indicator for human health purposes, and as Georgia EPD states, “there is no positive scientific evidence correlating elevated fecal coliform counts with transmission of enteric diseases.” Furthermore, the scientific literature and EPA reports demonstrate that storm water containing fecal coliform is discharged from everywhere – from our lawns, our shopping centers, our industrial sites and every acre in between.

Georgia EPD’s water quality rule recognizes that certain pollutants appear naturally in streams. Excerpt from 391-3-6-.03 Water Use Classifications and Water Quality Standards:

(7) Natural Water Quality. It is recognized that certain natural waters of the State may have a quality that will not be within the general or specific requirements contained herein.

These circumstances do not constitute violations of water quality standards. This is especially the case for the criteria for dissolved oxygen, temperature, pH and fecal

coliform. NPDES permits and best management practices will be the primary mechanisms for ensuring that discharges will not create a harmful situation.

AJC: “And he (Mike Giles, Georgia Poultry Federation) questioned whether fecal coliform, common in human and animal feces, was a reliable pollution benchmark.”

GPF Response: We are pleased that this statement was included in the article, but for a reader who really wants to understand this issue, this is perhaps the most important untold part of the story.

It is widely acknowledged by scientists and regulatory agencies that fecal coliform has serious limitations as an indicator bacteria for human illness. Contrary to what the name implies, fecal coliform is not necessarily of fecal origins. Many of the bacteria that show up in a fecal coliform test are non-pathogenic.

The Environmental Protection Agency agrees: “Interestingly, fecal coliforms as a group were determined to be a poor indicator of the risk of digestive system illness. However, many states continue to use fecal coliforms as their primary health risk indicator.”

Source: <http://water.epa.gov/type/rsl/monitoring/vms511.cfm>

Georgia EPD agrees as well. Georgia EPD’s Water Quality Rules, which govern the water quality standards in streams, states the following:

- “However, there is no positive scientific evidence correlating elevated fecal coliform counts with transmission of enteric diseases. In addition, these bacteria can originate from any warm blooded animal or from the soil.”
- “The problem appears to lie in the lack of an organism which specifically indicates the presence of human waste materials which can be correlated to human illness.”
- “The Environmental Protection Division will continue to conduct monitoring to evaluate the use of E. coli and Enterococci as indicators of bacteriological quality in Georgia.
- The Environmental Protection Division will also conduct studies to determine if a better human specific indicator can be found to replace current indicator organisms.”

Source: <http://rules.sos.state.ga.us/docs/391/3/6/03.pdf> 391-3-6-.03 (12) (a), (b) and (c)

This article by Dr. Mike Doyle at UGA, one of the world’s foremost experts on food safety, explains this concept very well – <https://www.woodsend.org/pdf-files/MicrobeNews.pdf> -- From the article, “Several genera of bacteria that are common contaminants of nonfecal sources (e.g., plant materials and pulp or paper mill effluents) meet this definition. Examples include *Klebsiella*, *Enterobacter*, and *Citrobacter* species. Moreover, these bacteria which are false-positive indicators of fecal contamination can grow under appropriate conditions in nonfecal niches such as water, food, and waste.”

AJC: “Cloud (Joanna Cloud with the Lake Lanier Association) said Flat Creek has been an ongoing problem. Sometimes after rains the creek is so choked with garbage you can barely see the water, she said.”

GPF Response: This is undoubtedly true. We certainly don’t think Ms. Cloud was suggesting that this “garbage” is coming from poultry processing facilities. Could the bacteria associated with garbage be another one of the many sources of fecal coliform in Flat Creek?

AJC: (Presumably sourced from the EPA report’s) “Large chicken parts, such as legs, were seen being dumped into lines leading to water treatment on the site, the report found.”

GPF Response: A reader might be confused by this statement and think that this scenario would have something do with storm water discharges because it appears in an article about storm water. It does not. At a typical poultry processing plant, the “lines leading to water treatment” means that the materials and fluids were properly captured and managed and not a potential storm water discharge.

AJC: (Presumably sourced from the EPA report’s) “To cool the birds, they were hosed down with water that could ultimately find it’s way to the creek.”

GPF: Again, the reader might be confused by this statement. At a typical poultry processing plant, this activity would be taking place in an area where water used would be properly captured and managed as process wastewater. Water that is captured and sent to process wastewater is pre-treated and returned to the public utility where it is further treated to extremely high standards before being discharged back into surface water. Process wastewater and storm water are two entirely different things.

AJC: “In most cases Mar-Jac’s readings have been within the required pollution caps. But Riverkeeper’s own testing near the Mar-Jac plant detected levels well above the caps.”

GPF Response: Two things to understand here: (1) The Chattahoochee River Keeper analyzes samples for E. coli while poultry facilities are required by the state to analyze samples for fecal coliform. (2) The poultry facility collects samples from the storm water discharge. The Chattahoochee River Keeper sampled “near the Mar-Jac plant.” To compare the two ignores the fact that these are two sampling locations with completely different flow characteristics being analyzed for two different bacterial criteria. The sample collected in the stream in this instance would presumably include upstream sources of fecal coliform.