Dry Comal Creek and Comal River Watershed
Bacterial Source Tracking

QUESTION

What is Bacterial Source Tracking & why is it helpful?

ANSWER

Bacterial source tracking, or **BST**, is a way to figure out where the bacteria in your water is coming from. *E. coli* is a form of bacteria that lives in the intestines of humans and animals, and it enters our watershed if people or animals' fecal matter gets in our water, either directly or washed in through stormwater. BST comes in handy, because it can quantify which sources are the most significant contributors of *E. coli* in the water system. If we know where the *E. coli* in our water is coming from, we can focus our efforts on the largest contributors.

How BST works

A sample of water is taken from the water source that is being studied. The isolated *E. coli* "fingerprints" in the sample are compared to the contents of the Texas *E. coli* BST library, which contains 1,524 isolates from 1,358 different fecal samples, collected from 13 watersheds across Texas. We can identify the *E. coli* source based on which *E. coli* "fingerprints" match those in our water sample.
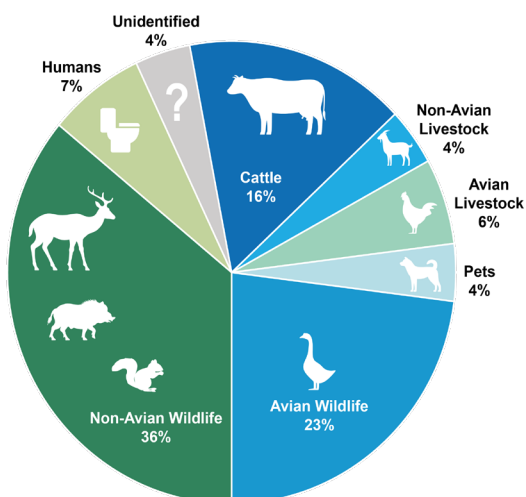
What BST tell us about the Comal River & Dry Comal Creek watershed

Three samples of water were taken from the Dry Comal Creek and the Comal River in 2013 and 2016 and given to the Texas A&M AgriLife Research to analyze using BST. The average BST results for the Dry Comal Creek and Comal River are shown in the pie charts below. Comparing data from 2013 and 2016, the percentage *of E. coli* in both the Dry Comal Creek and Comal River from wildlife increased. This information has helped the Watershed Partnership to initially decide to focus their resources on wildlife like overabundant urban deer and non-native ducks and geese.

Dry Comal Creek Average BST Results
2013 and 2016 Data

- Unidentified 4%
- Humans 7%
- Cattle 16%
- Non-Avian Livestock 4%
- Avian Livestock 6%
- Pets 4%
- Avian Wildlife 23%
- Non-Avian Wildlife 36%

Comal River Average BST Results
2013 and 2016 Data

- Humans 5%
- Unidentified 7%
- Cattle 14%
- Non-Avian Livestock 4%
- Avian Livestock 5%
- Pets 1%
- Avian Wildlife 18%
- Non-Avian Wildlife 46%