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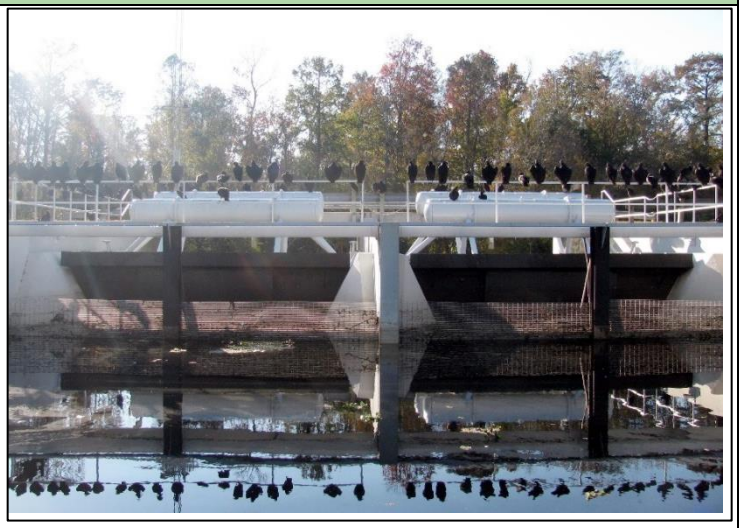
# Fecal Coliform Exceedances in Reedy Creek (WBID 3170F7) are Caused by Natural (Wildlife) Sources (Osceola County)

February through May, 2014

Client: Reedy Creek Improvement District

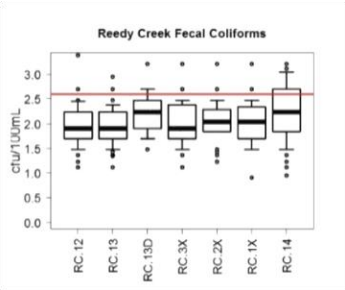
## Project Summary



Frydenborg EcoLogic compiled and statistically analyzed multidisciplinary data to assess the reasonable cause for fecal coliform exceedances in a central Florida blackwater creek, and to evaluate whether there was evidence to indicate human or wildlife sources.

Using a weight of evidence approach similar to the EPA Stressor Identification (CADDIS) process, cumulative data indicated that the bacterial exceedances in the basin was from wildlife sources. For example, the relationship between fecal coliform exceedances and the human HF 183 marker in the basin ($r^2$ = -0.008) indicated that fecal coliforms in the basin were not correlated with human sources. Additionally, human markers at the station with the most exceedances were not statistically different from upstream stations that never exceeded the fecal coliform criterion, indicating that the bacteria were from sources other than humans. Finally, there was no evidence of human influence in the creek based on qPCR and traditional PCR using the Bachum, HF183, and PMMoV markers. These markers showed no spatial pattern and did not correlate to fecal coliform exceedances.

## Innovative approach




The genetics and microbiological expertise of Senior Scientist, Beck Frydenborg was critical for analyzing this complex issue. The EPA CADDIS approach was an effective framework to test hypotheses and draw defensible conclusions.

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