

Spring 3-27-2024

## Molecular Detection of Human and Dog Fecal Pollution in Pensacola, Florida

Logan McCullers  
logan.mccullers@bobcats.gcsu.edu

Jodel Nicholas  
*Georgia College & State University*, jodel.nicholas@bobcats.gcsu.edu

Dave Bachoon  
*Georgia College & State University*

Follow this and additional works at: <https://kb.gcsu.edu/grposters>

 Part of the [Microbiology Commons](#), and the [Public Health Commons](#)

---

### Recommended Citation

McCullers, Logan; Nicholas, Jodel; and Bachoon, Dave, "Molecular Detection of Human and Dog Fecal Pollution in Pensacola, Florida" (2024). *Graduate Research Showcase*. 139.  
<https://kb.gcsu.edu/grposters/139>

This Poster is brought to you for free and open access by the Graduate Research at Knowledge Box. It has been accepted for inclusion in Graduate Research Showcase by an authorized administrator of Knowledge Box.

## 1) Molecular Detection of Human and Dog Fecal Pollution in Pensacola, Florida

Pensacola, Florida (USA), has a thriving coastal community that depends on its coastal areas for recreation, shellfish harvesting, and fisheries. However, increasing levels of fecal pollution pose a potential threat to the water quality of these coastal systems. Identifying the source and abundance of contaminants in these environments is critical to controlling fecal pollution in these areas. This study aimed to use Microbial Source Tracking techniques to determine the source of pollution in five sites (Bayou Texar Lower, Willard Norris Road Creek, Clear Creek Boat Ramp @ 87, Quinette River Boat Ramp and Pensacola Bay Bridge) in the Pensacola area. DNA was extracted from water samples and then analyzed using PCR-based molecular Microbial Source Tracking techniques to determine the presence of human (HF-183-1), dog (BacCan), and avian (CP1) fecal pollution in these sites. Human-specific fecal bacteria were detected in Bayou Texar Lower, Willard Norris Road Creek, and Pensacola Bay Bridge sites. Dog-specific fecal bacteria were detected in Willard Norris Road Creek, Clear Creek Boat Ramp, and Pensacola Bay Bridge. There was no detection of avian-specific fecal bacteria in any of the sites. Human and dog fecal pollution detection in these coastal areas was attributed to urban developmental activities.

Keywords: Pensacola, Florida, Coastal pollution, Microbial Source Tracking, Fecal Contamination, Water Quality, PCR-based analysis, Avian pollution, Urban development impact, Dog-specific fecal bacteria, Human-specific fecal bacteria