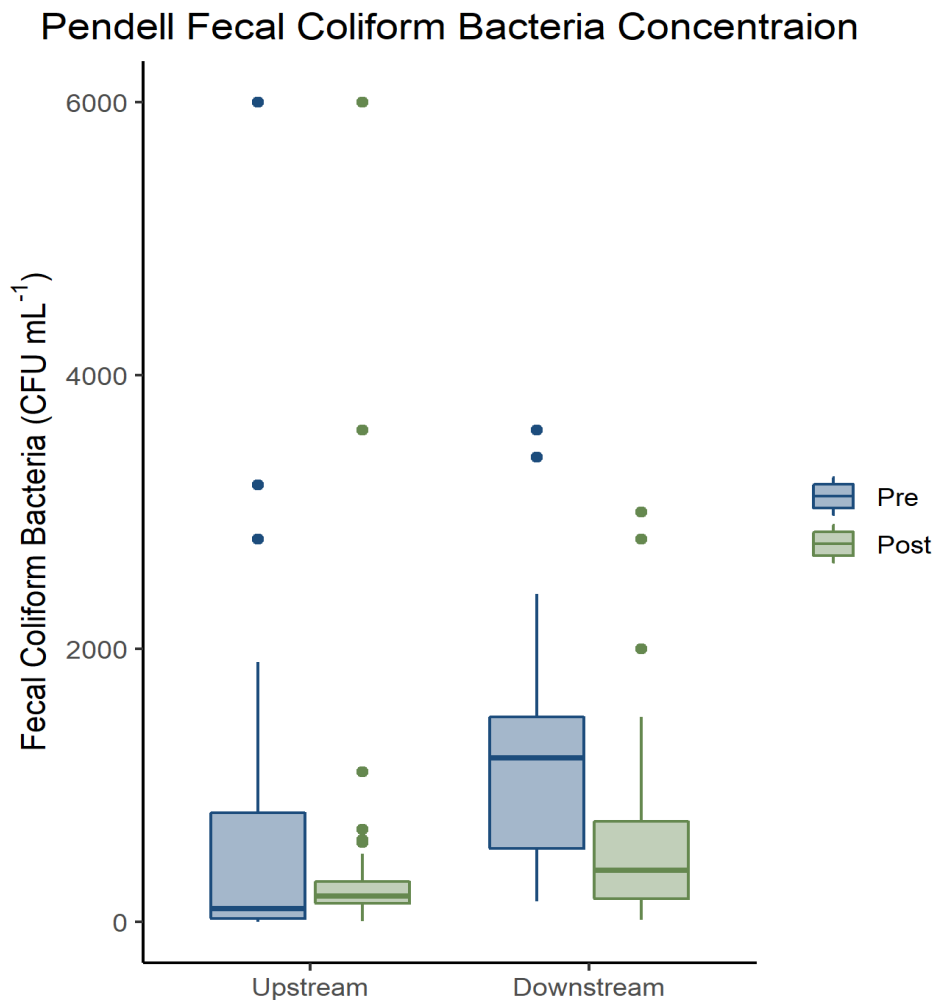


Pendell Fecal Coliform Results

Study Plan

The two water quality stations are located at the Top Reach 2 (PD_004, Upstream) and Reach 4 Down (PD_005, Downstream). The upstream station is used as the watershed control for pre vs post construction. This station is located at the upstream portion of the restored stream and we would expect little change in water quality. Reach 4-Bottom is located downstream of the stream restoration. If water quality improves due to stream restoration, we would expect a decrease in fecal coliform bacteria in the post-construction phase at Reach 4-Bottom.

Samples were collected at Both upstream and downstream locations. Pre-construction water samples for fecal coliform bacteria occurred from January 2017 until October 2017. Post-Construction water quality monitoring started in June 2019 through November 2019 and picked back up June 2020 – current.



Site Differences

Explanation of stats and results:

P-value < 0.05 are significant, and p-value < 0.01 is highly significant. Used Wilcoxon rank sum test with continuity correction. Nonparametric test, for if they are significantly different.

Upstream vs Downstream

Both Upstream (reference) and Downstream (treatment) show a significant difference. Upstream has an overall lower median for fecal coliform bacteria concentration.

Pre-Construction p-value = **0.0001304** (highly significant difference between up and down)

Post-Construction – p-value = **0.0292** (significant difference -downstream decreased concentration)

Pre-Construction vs. Post-Construction

There was no change found at the reference site (upstream). There was a highly significant reduction in the median fecal coliform concentration at the downstream site, post-construction. The downstream site also shows there is a 68% reduction in fecal coliform bacteria concentration (colony forming units/ml)

Upstream (PD_004) p-value = 0.1763 (Not significant. Reference site median no change post)

Downstream (PD_005) p-value = **0.002466** (Highly significant- Decrease in median fecal for post)

Stats	Upstream Pre	Upstream Post	Downstream Pre	Downstream Post
<i>n</i>	31	34	32	35
<i>median</i>	96	190	1200	380
<i>max</i>	6000	6000	3600	3000
<i>min</i>	1	4	150	14