

SRA's 2020 Water Quality Monitoring Creek-By-Creek Report Series



Whitehall Creek and Ridout Creek Watershed



SRA's water quality monitoring program is sponsored by a generous grant from Delaplaine Foundation.



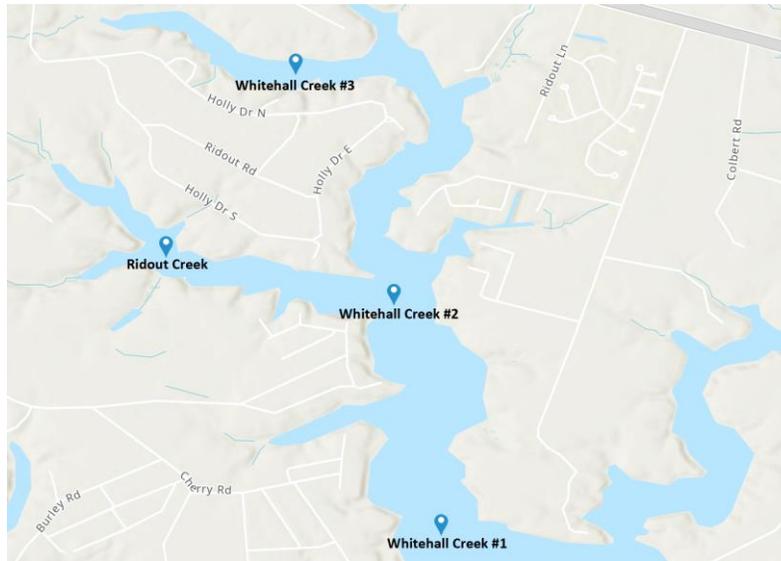


Figure 1. Locations of monitoring stations in Whitehall Creek and Ridout Creek. Monitoring at four locations in Whitehall Creek and Ridout Creek in the 2020 monitoring season occurred biweekly from June to November. This resulted in a total of 10 monitoring days and 98 volunteer hours.

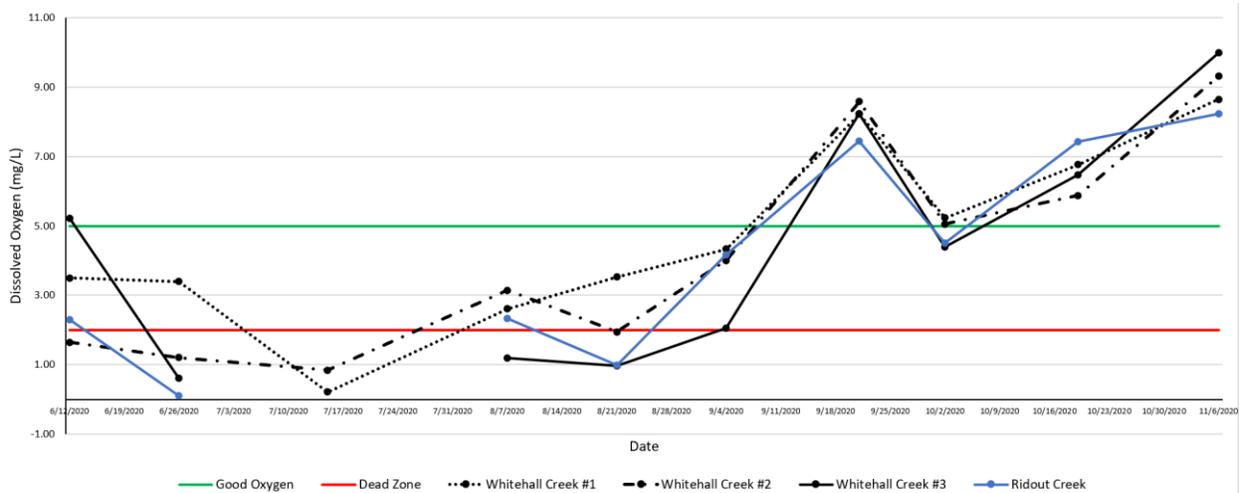


Figure 2. Bottom dissolved oxygen at Whitehall and Ridout Creek stations. During summer months water is stratified by temperature. Warmer surface water on top of deeper water prevents mixing of the water column. Therefore, water at bottom depths typically holds the lowest oxygen in the water column. This graph shows the dissolved oxygen content for that bottom depth water. Dead zone conditions (D.O. < 2.0 mg/L) occurred in Whitehall Creek stations #1 and #2 in the summer (June 12 and 26, and July 15) with worse conditions occurring at Whitehall Creek #2. Dead zones were evident at Whitehall Creek #3 starting in late June and ending in early September. Ridout Creek had similar conditions in late June and late September. Data for Whitehall Creek #3 and Ridout Creek is missing for

July. Oxygen rebounded in August and remained in moderate to good levels (D.O. >2-5 mg/L) for all monitoring stations into the fall.

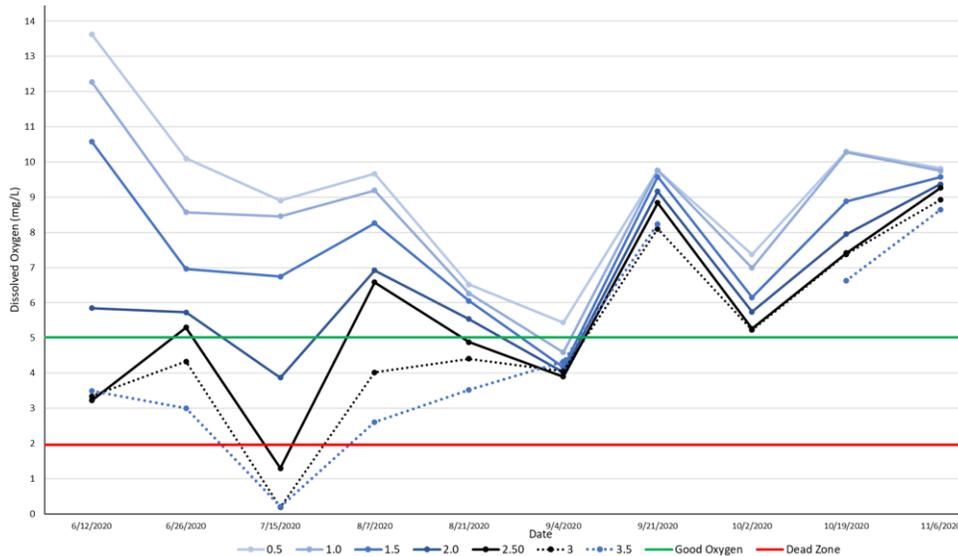


Figure 3. Dissolved oxygen for all depths at Whitehall Creek #1.

Dead zone conditions only occurred once during monitoring at Whitehall #1. The dead zone occurred on July 15 and was 1.5 m tall. All other monitoring days, dead zone did not exist, with moderate to good oxygen existing for the full water column (3.0-3.5m to the surface). The highest reading recorded was 13.63 mg/L in the surface water on June 12 and the lowest, 0.19 mg/L on July 15.

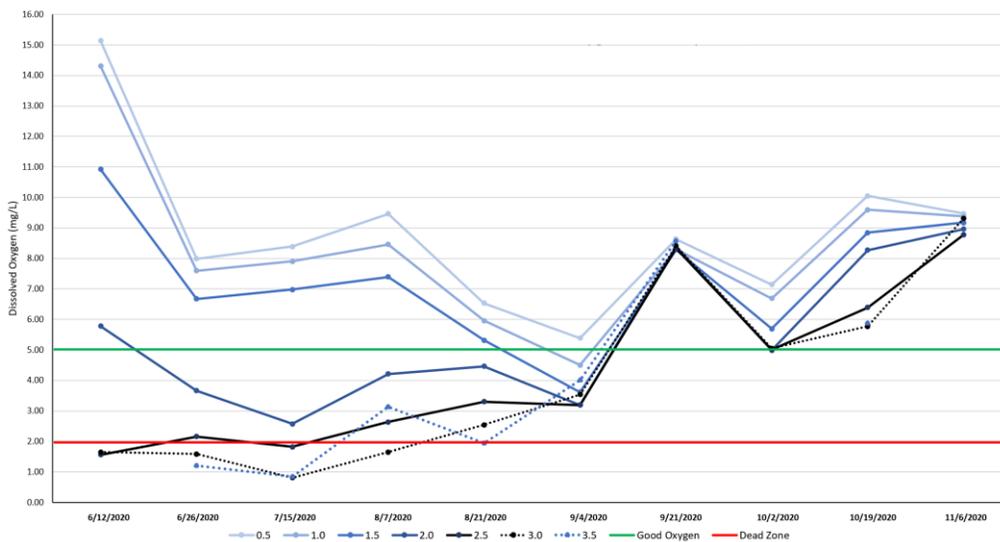


Figure 4. Dissolved oxygen for all depths at Whitehall Creek #2.

Reiterating from above, the bottom depths of the water column are usually where dead zone conditions exist. Here we see the dead zones on June 12 and 26, and July 15 at Whitehall Creek #2 only occurred in the bottom meter to 1.5 meters. We then see moderate to good dissolved oxygen levels (D.O. >2-5 mg/L)

for the upper 2 m of the water column, and the full water column from August to fall. The highest reading recorded was 15.14 mg/L in the surface water on June 12 and the lowest, 0.81 mg/L at 3.0 m on July 15.

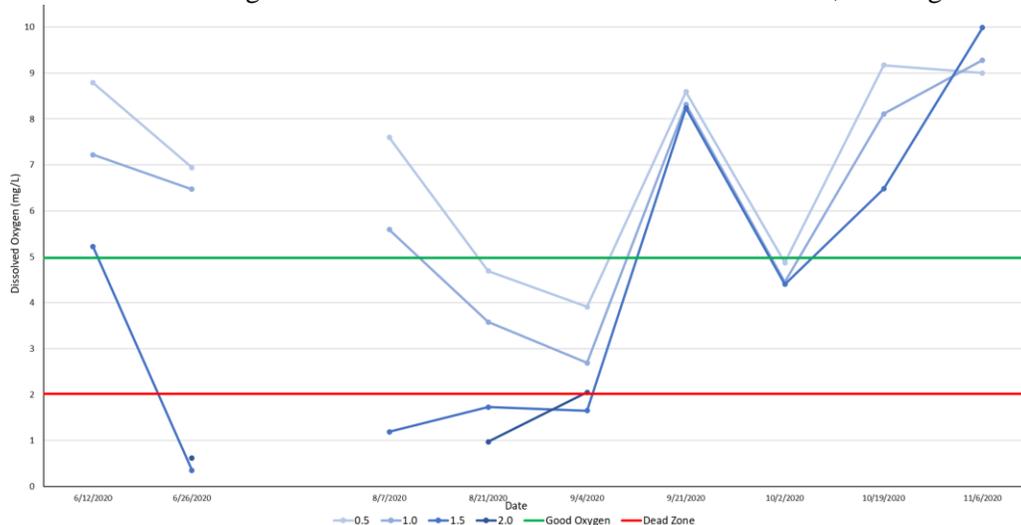


Figure 5. Dissolved oxygen for all depths at Whitehall Creek #3.

Dead zone at Whitehall Creek was measured on 4 days of the 2020 monitoring season. On June 26, August 21, and September 4 the dead zone occurred from 2.0 to 1.5 meters. On August 7, it was only measured at the bottom at 1.5 m. All other depths for every monitoring day show moderate to good levels of dissolved oxygen. Additionally, starting in September, differences in dissolved oxygen levels by depth decrease, resulting in similar levels regardless of depth. The highest reading recorded was 9.99 mg/L on the bottom at 1.5 m on November 6, and the lowest, 0.35 mg/L, on June 26 at 1.5 m.

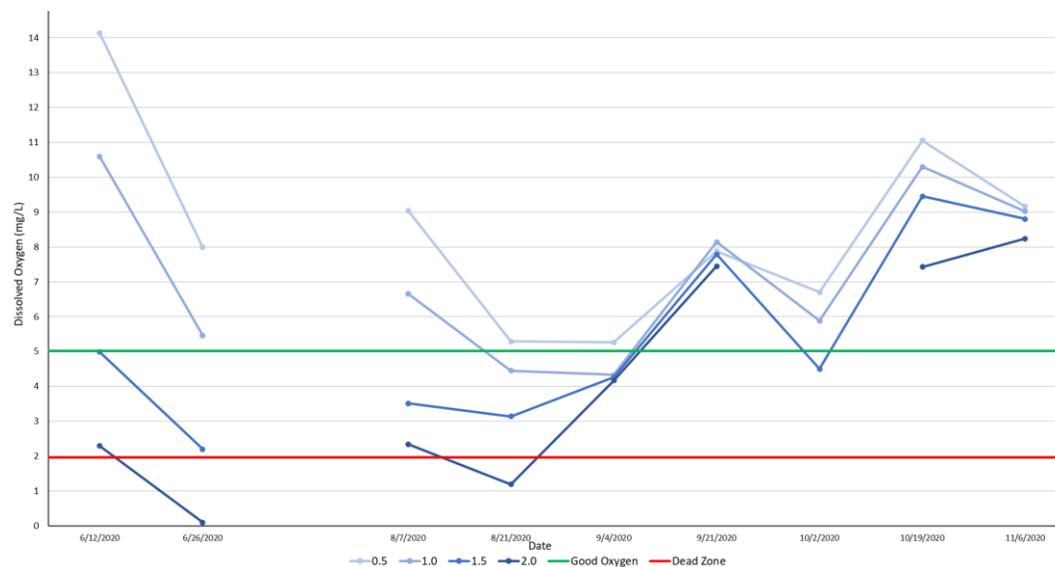


Figure 6. Dissolved oxygen for all depths at Ridout Creek.

Dead zone at Ridout Creek was measured on 2 days of the 2020 monitoring season. On June 26 and August 21 the dead zone occurred on the bottom at 2.0 m. All other depths for every monitoring day show

moderate to good levels of dissolved oxygen. The highest D.O. reading recorded was 14.13 mg/L in the surface water on June 12 and the lowest, 0.10 mg/L the following week at 2.0 m.

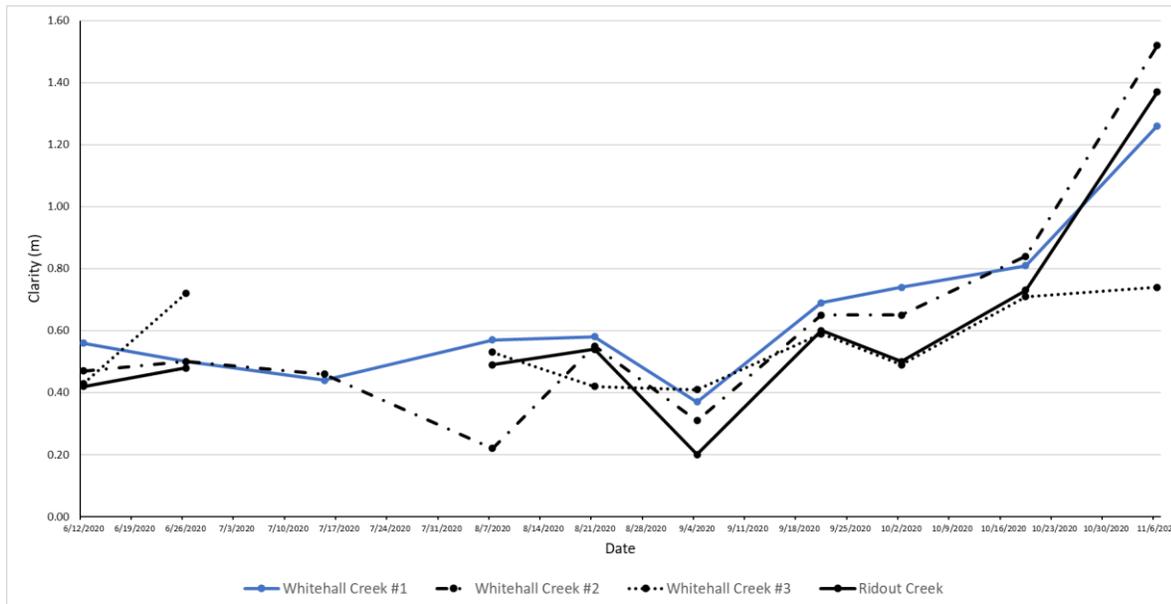


Figure 7. Water clarity at Whitehall and Ridout Creek stations.

Clarity was measured using a Secchi disk through the 2020 monitoring season. July data for Whitehall Creek #3 and Ridout Creek is missing. Clarity through the summer months ranged from 0.2 meters to 0.72 meters, with the worst clarity occurring at Whitehall Creek #2 and Ridout Creek (0.22 m and 0.2 m respectively). After the worst reading at Ridout on September 4, clarity began steadily increasing into the fall to reach 1.52 meters, the highest reading recorded at Whitehall Creek #2 on November 6.