

Technical Memorandum BCWA



Date: February 5, 2020
To: Bear Creek Watershed Association
From: Russell N. Clayshulte, Manager

Re: BCWA TM 2019.06 P1 Station Summary

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The BCWA P1- routine water quality monitoring stations measure water quality inputs into Bear Creek Reservoir and outflow characterizations. The two inflow sites are on Turkey and Bear Creek. There are now two outflow monitoring sites: reservoir discharge into lower Bear Creek, and the lower edge of the monitoring watershed near Wadsworth. The P1 sites are long-term reference monitoring sites consistent with the intent of the BCWA monitoring program outlined in the Bear Creek Reservoir Control Regulation #74. The Bear Creek Reservoir 2019 data is summarized in *TM2019.01 BCR Sediment Study*, *TM2019.04 BCR Summary Statistic and Graphs*, and *TM2019.9 BCR Phytoplankton*.

The average inflow into Bear Creek Reservoir from both Turkey Creek & Bear Creek (1987-2012) was 27,100 acre-feet per year. From 2013-2019 the average inflow into Bear Creek Reservoir was 39,966 acre-feet. The 2019 inflow is estimated at 18,450 acre-feet (Figure 1) with most of the flow in June and July.

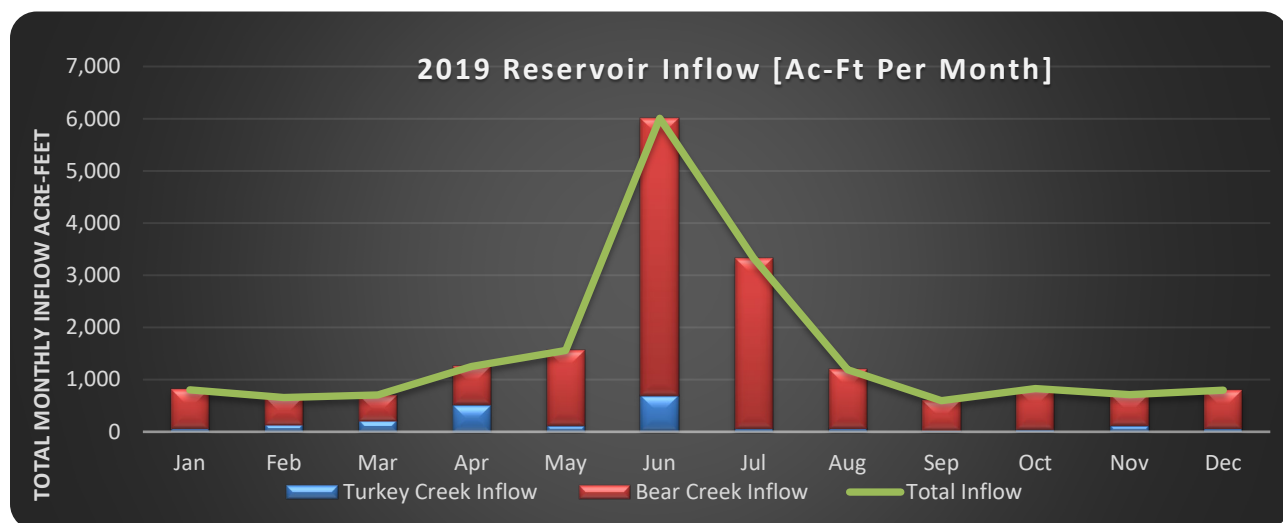


Figure 1 Inflow into BCR

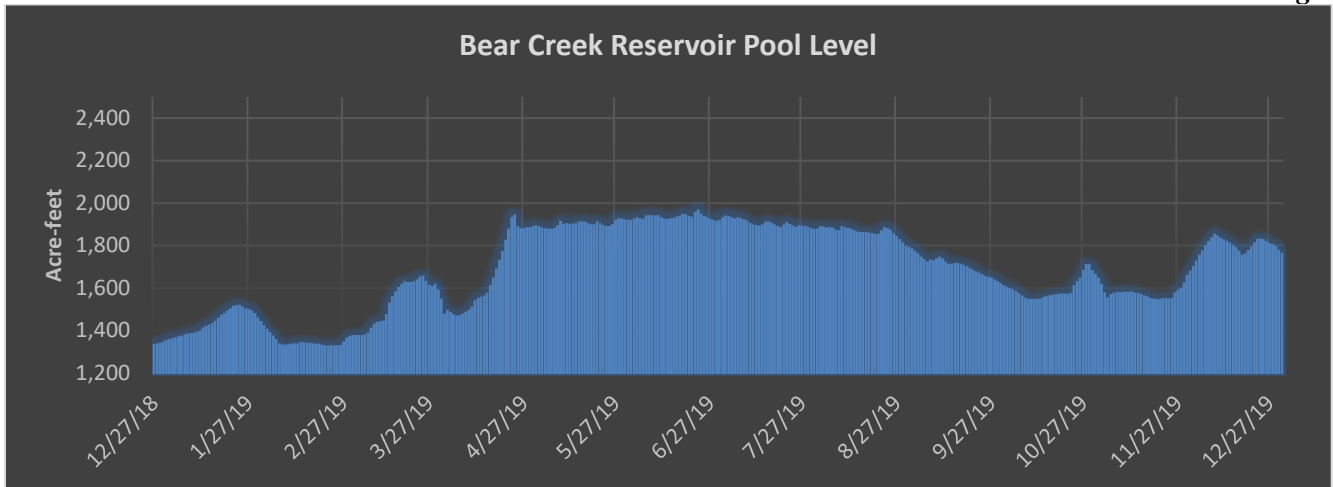


Figure 2 BCR 2019 Reservoir Levels

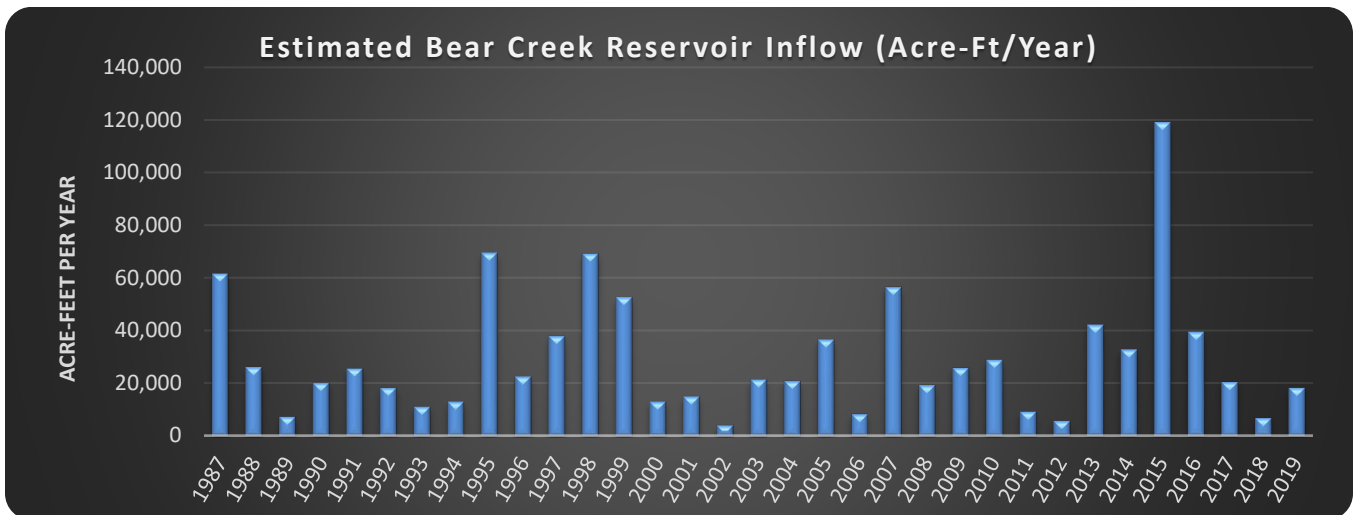


Figure 3 Inflow Trend

2019 was an average nutrient loading year with much of the load coming in June. The Total Nitrogen concentrations were relatively consistent, with the loading from Bear Creek at 89%. This year included Total Phosphorus loading (1,818 pounds) with a normal load coming from the Turkey Creek drainage (about 11%).

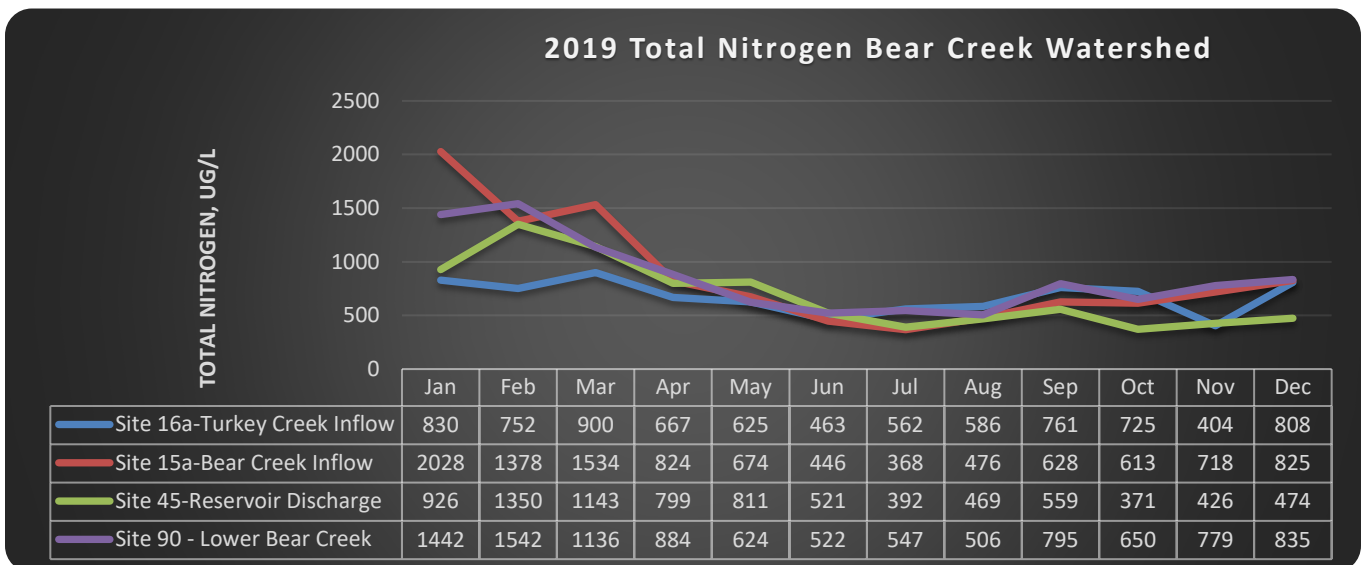


Figure 4 Total Nitrogen Loading

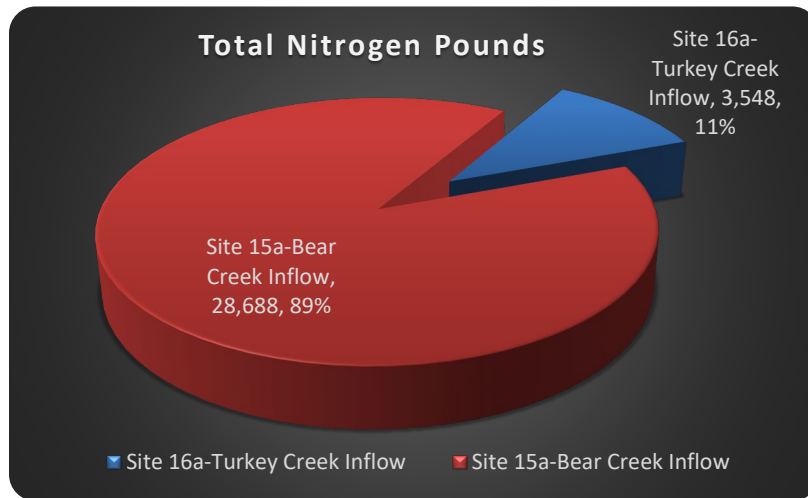


Figure 5 Total Nitrogen Load Inflow Distribution

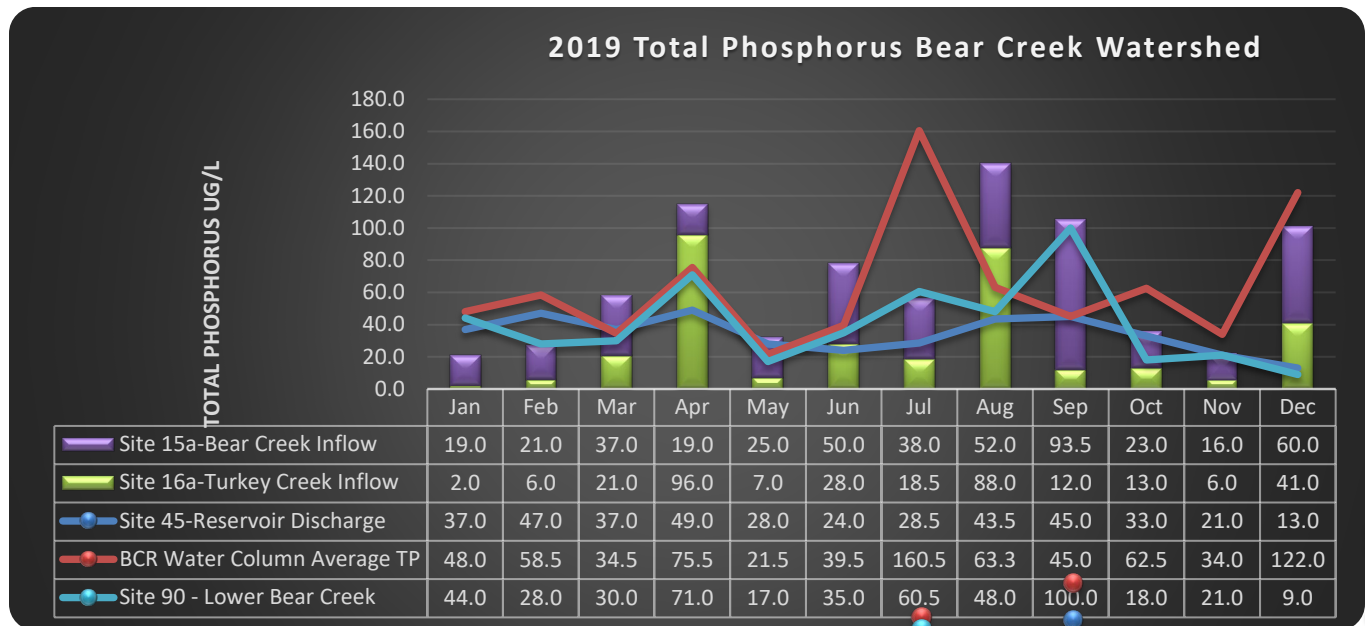


Figure 6 Total Phosphorus Loading and Discharge

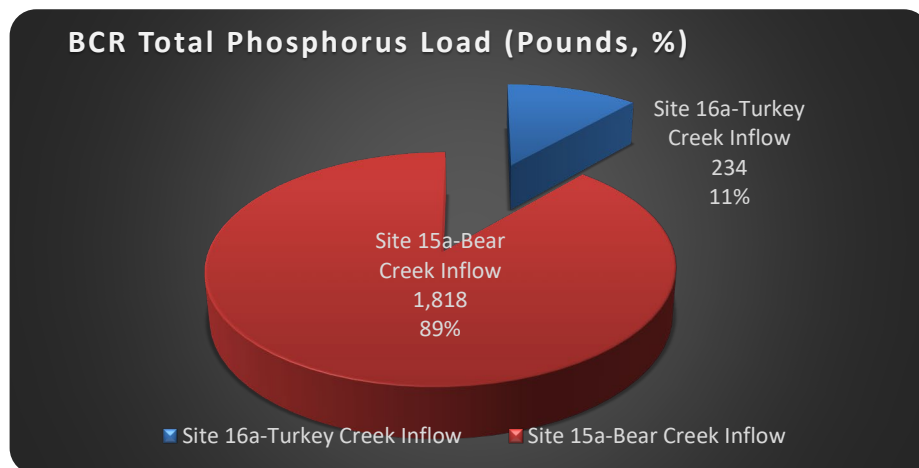


Figure 7 Total Phosphorus Load Inflow Distribution

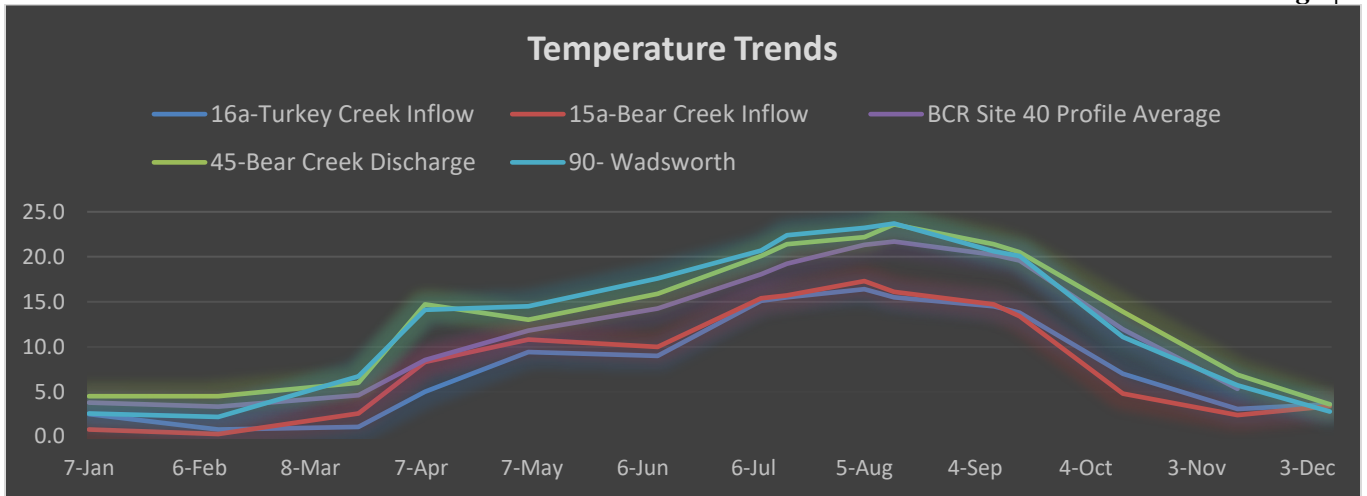


Figure 8 P1 Temperatures

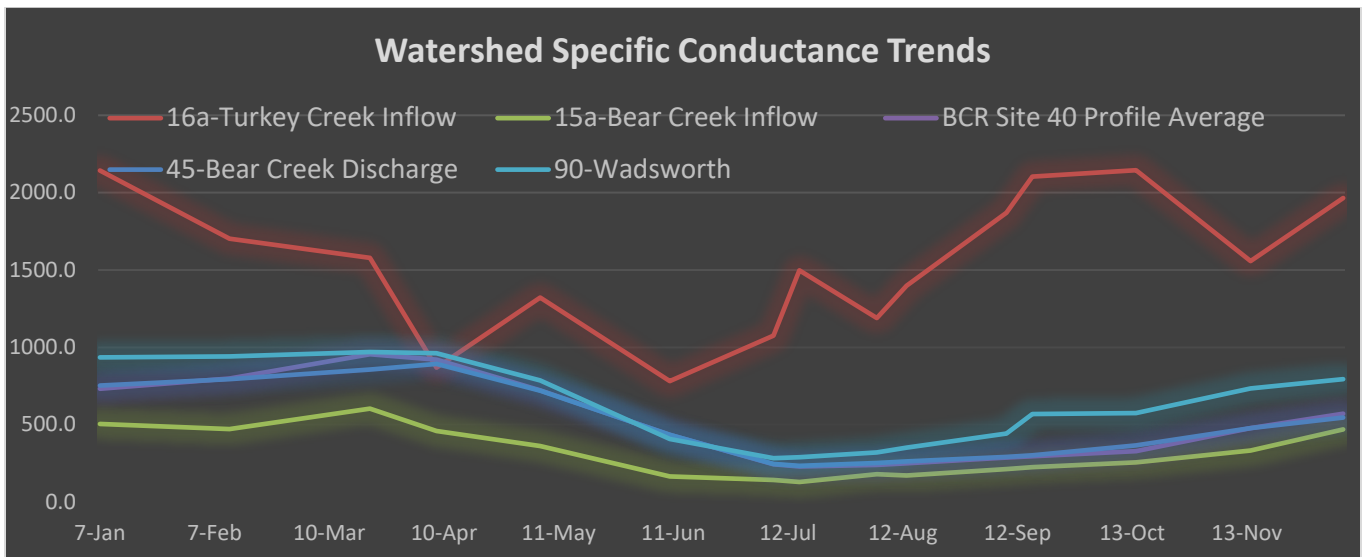


Figure 9 P1 Specific Conductance

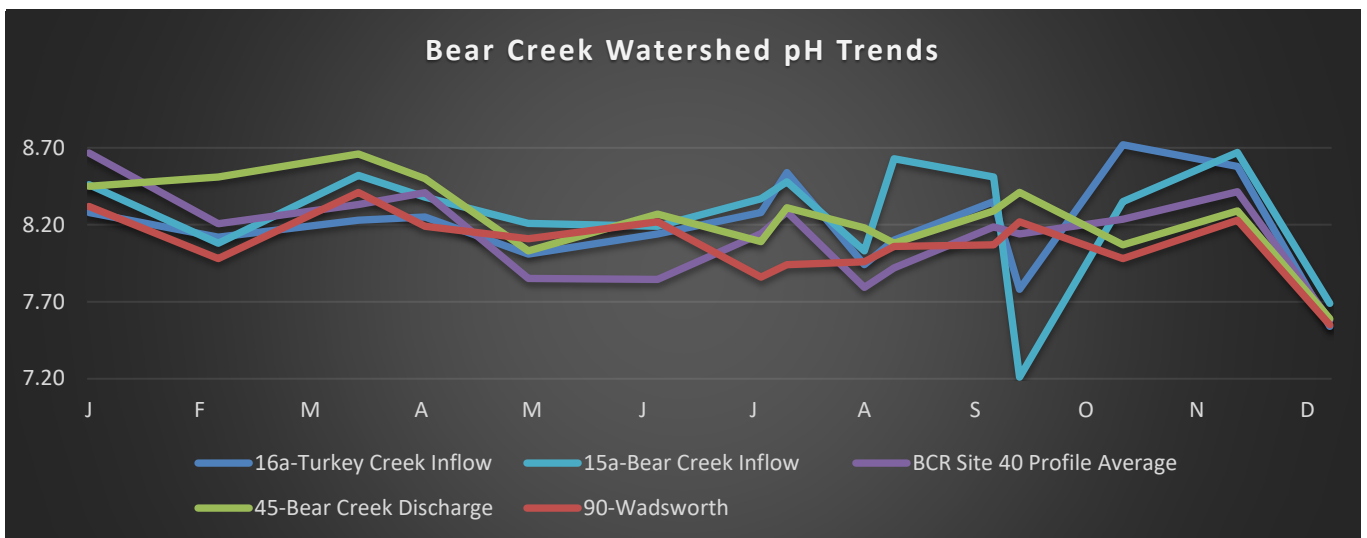


Figure 10 P1 pH

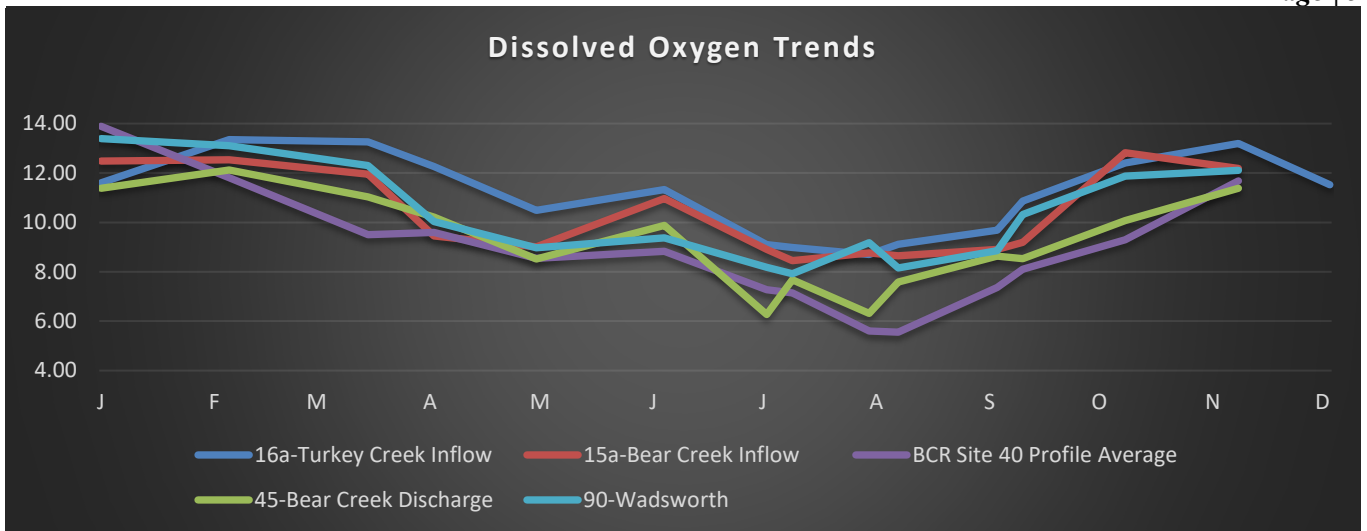


Figure 11 P1 Dissolved Oxygen

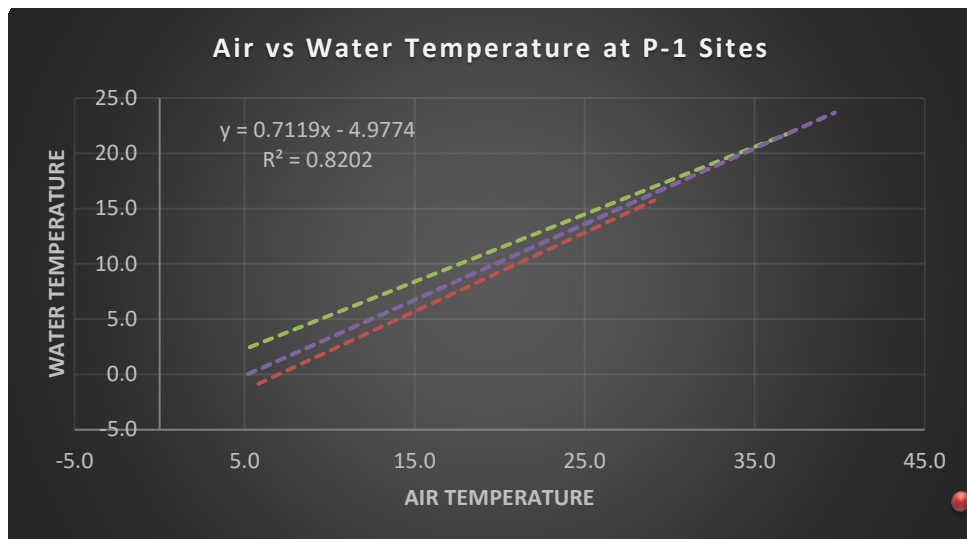


Figure 12 Air versus Water Temperature

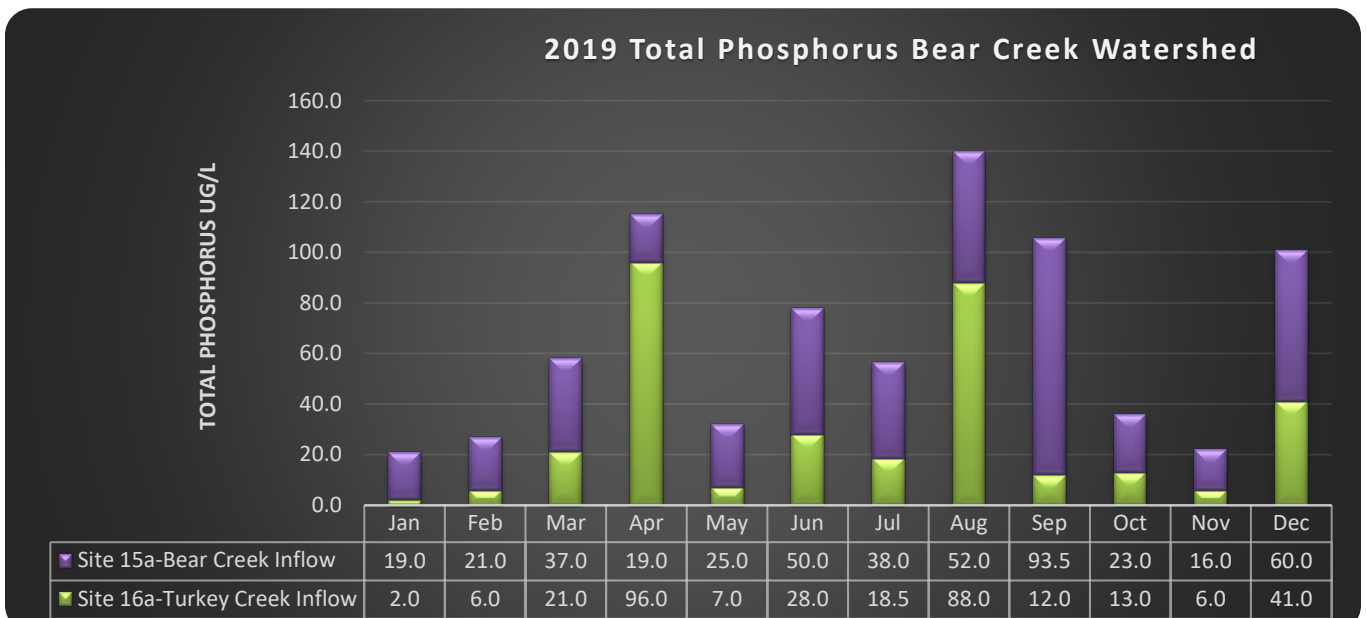


Figure 13 P1 Total Phosphorus Inflow Trend

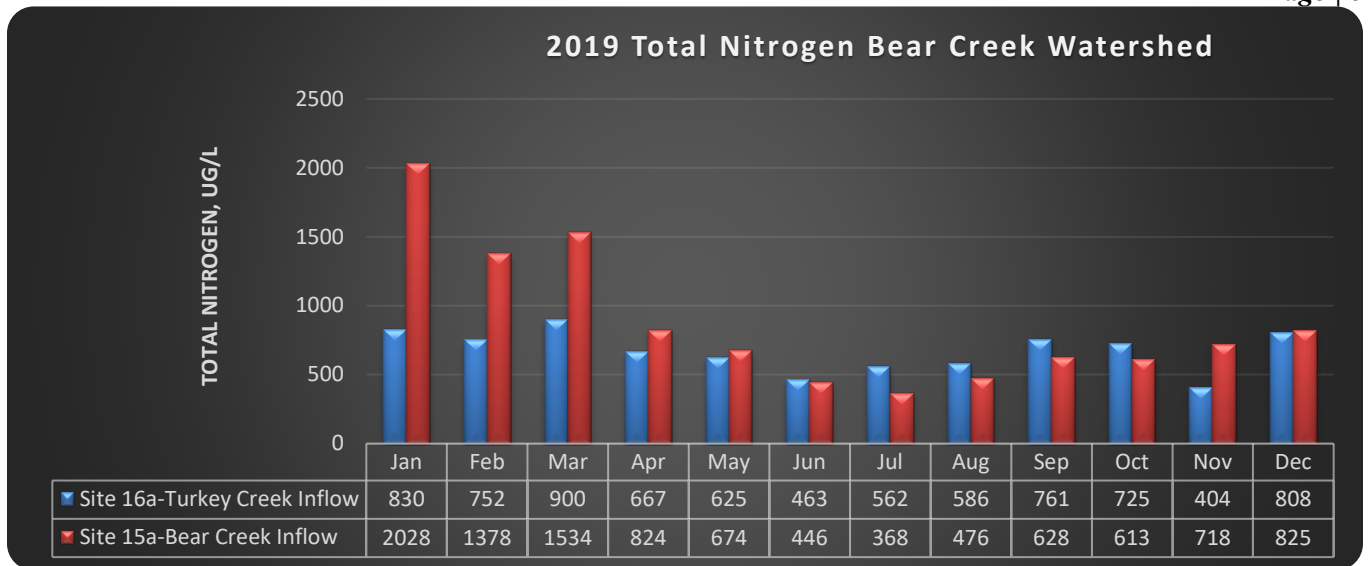


Figure 14 **Total Nitrogen Inflow Trend**