

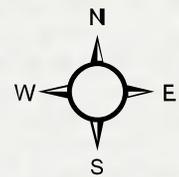
Summary of Data

Water quality sampling occurred at six sites within the Lake Glenville watershed on 06/01/21. All sites were located as close as possible to sites sampled in previous monitoring years. The 06/01/21 sampling was a dry weather sampling with antecedent conditions consisting of a rainfall event that produced 0.84 inches of rainfall on 5/28/21. The suite of parameters sampled included water temperature, dissolved oxygen, pH, specific conductivity, and turbidity. Fecal coliform, ammonia, nitrate, phosphate, and alkalinity were sampled for on 06/21/21, however the results of that sampling have not yet been received from the laboratory. Overall, the water quality at the six tributaries to Lake Glenville as observed on 06/01/21 was excellent.

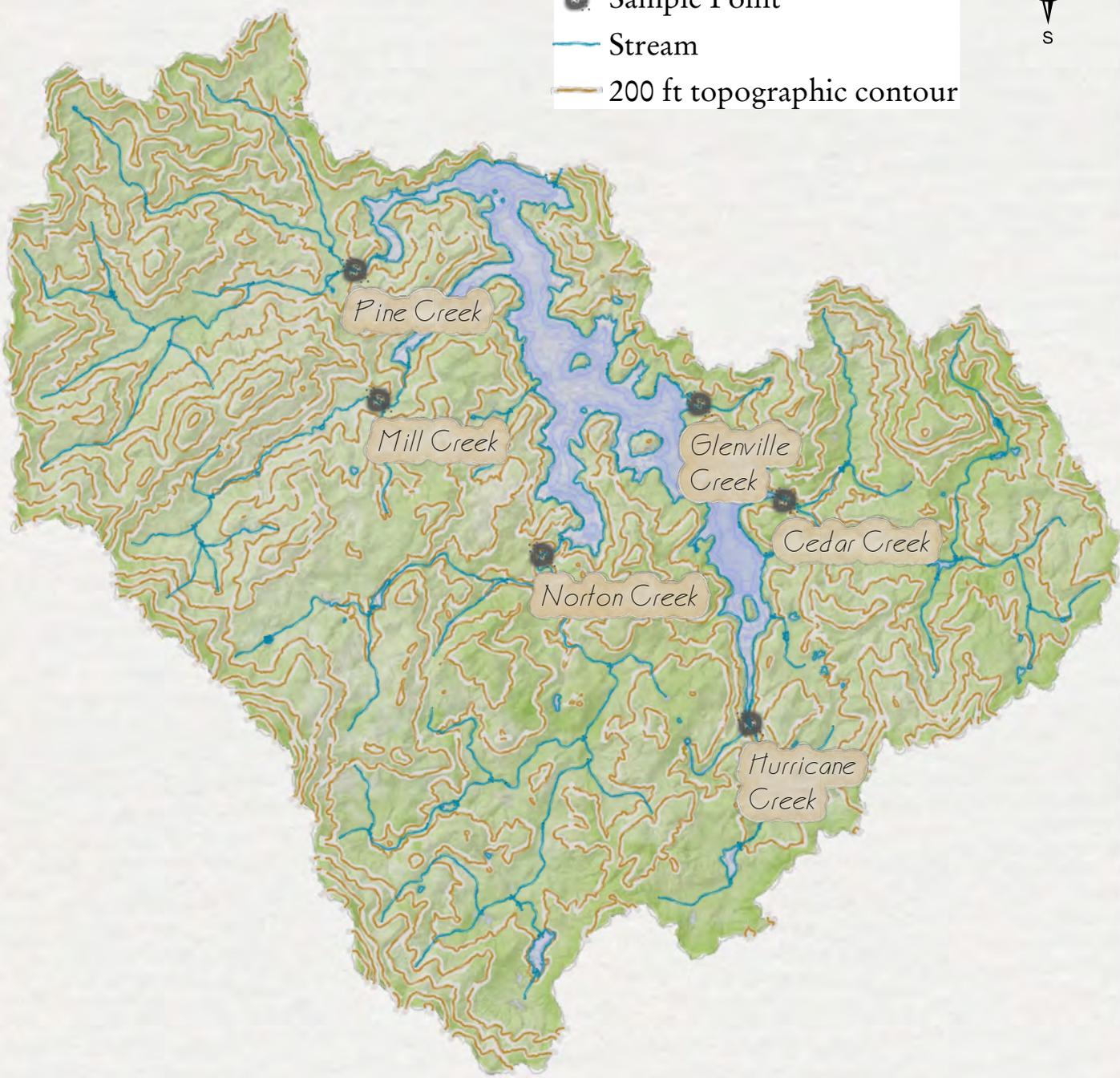
Dissolved oxygen is the amount of oxygen dissolved in water. As the accompanying graph shows, concentration of dissolved oxygen in surface water is affected by temperature and has both a seasonal and a daily cycle. Cold water can hold more dissolved oxygen than warm water. In winter and early spring, when the water temperature is low, the dissolved oxygen concentration is high. In summer and fall, when the water temperature is high, the dissolved-oxygen concentration is often lower. Dissolved oxygen is important for ecological health as most aquatic organisms need oxygen to survive and grow. Some species, such as trout and stoneflies, require high DO levels (>6 mg/L) for survival and trout show improved reproductive health when DO levels are above 10 mg/L. Dissolved oxygen concentrations for the sampling event ranged between 8.8 and 9.4 mg/L. These concentrations are lower in comparison to the fall 2020 sampling, however the temperature for each stream sampled was 1-2 °C higher than in the fall. Higher stream temperatures during summer are inevitable, however good riparian buffer with vegetative canopy that shades the stream can help keep water temperatures low and the stream healthy. Runoff from hot asphalt roads and parking lots can also increase stream temperatures significantly and suddenly. Fish kills can be a consequence of this kind of sudden water temperature increase. Roadside and parking lot stormwater control and retention is vital in keeping stream water temperatures regulated during the hot summer months.

Turbidity during the sampling event was less than 1 NTU for four sites: Norton, Hurricane, Cedar, and Glenville Creeks. Turbidity was 3.57 NTU at Pine Creek and 3.65 NTU at Mill Creek. Despite being higher than the previous sampling, turbidity this low is considered exceptionally low, as the regional VWIN mean is 6.2 NTU. Agricultural land use in the headwaters of Pine Creek and Mill Creek could potentially be contributing to higher sediment loads in the stream.

As soon as the results from the 06/21/21 sampling are received from the laboratory, Equinox will begin working on summarizing and contextualizing the data. It will be interesting and informative to see what the level of nutrient concentrations are in the streams.



-  Sample Point
-  Stream
-  200 ft topographic contour



Lake Glenville Watershed

This map depicts streams, water quality sampling locations, and topography of the Lake Glenville watershed.

2021

Prepared by:

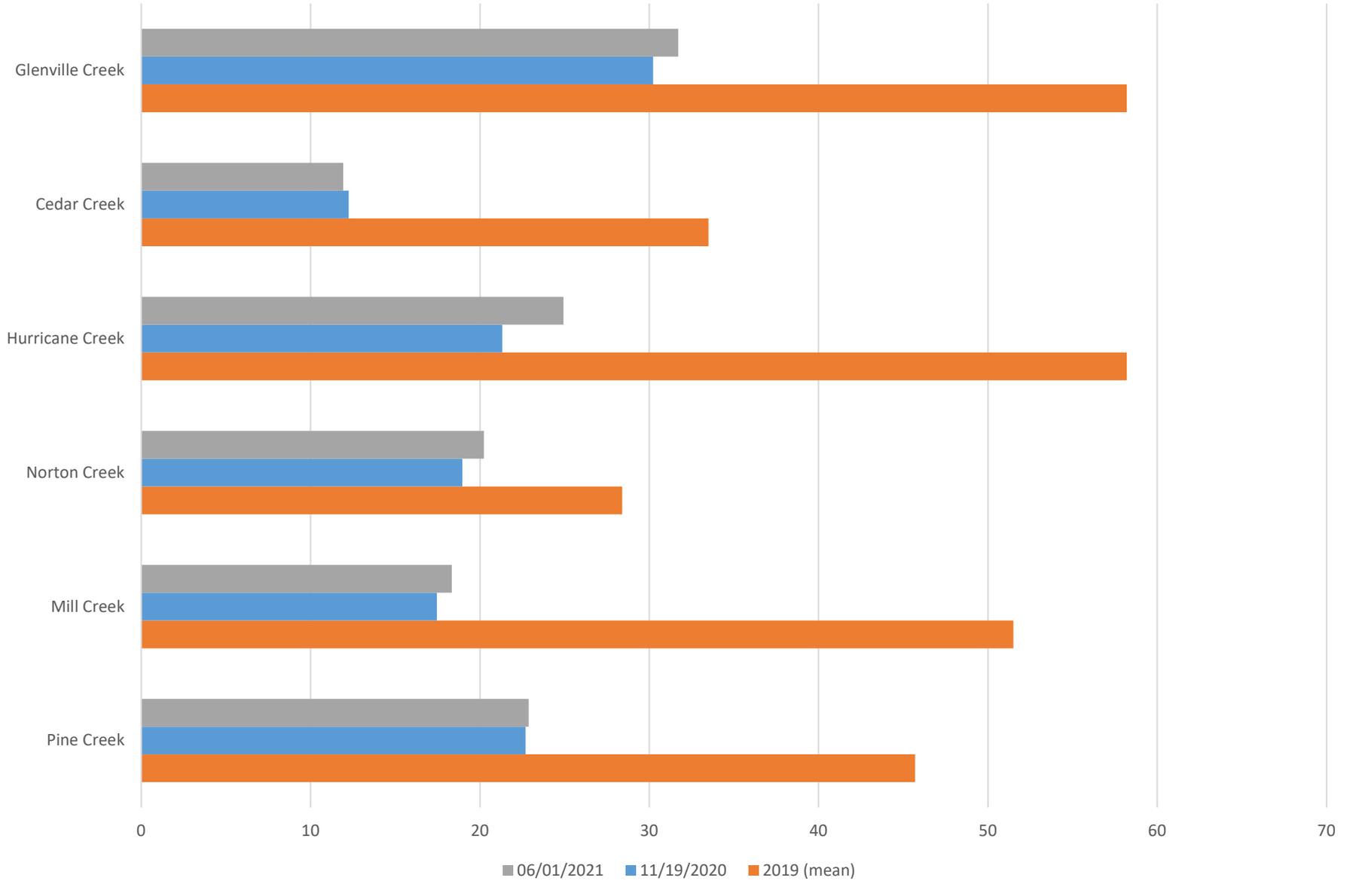


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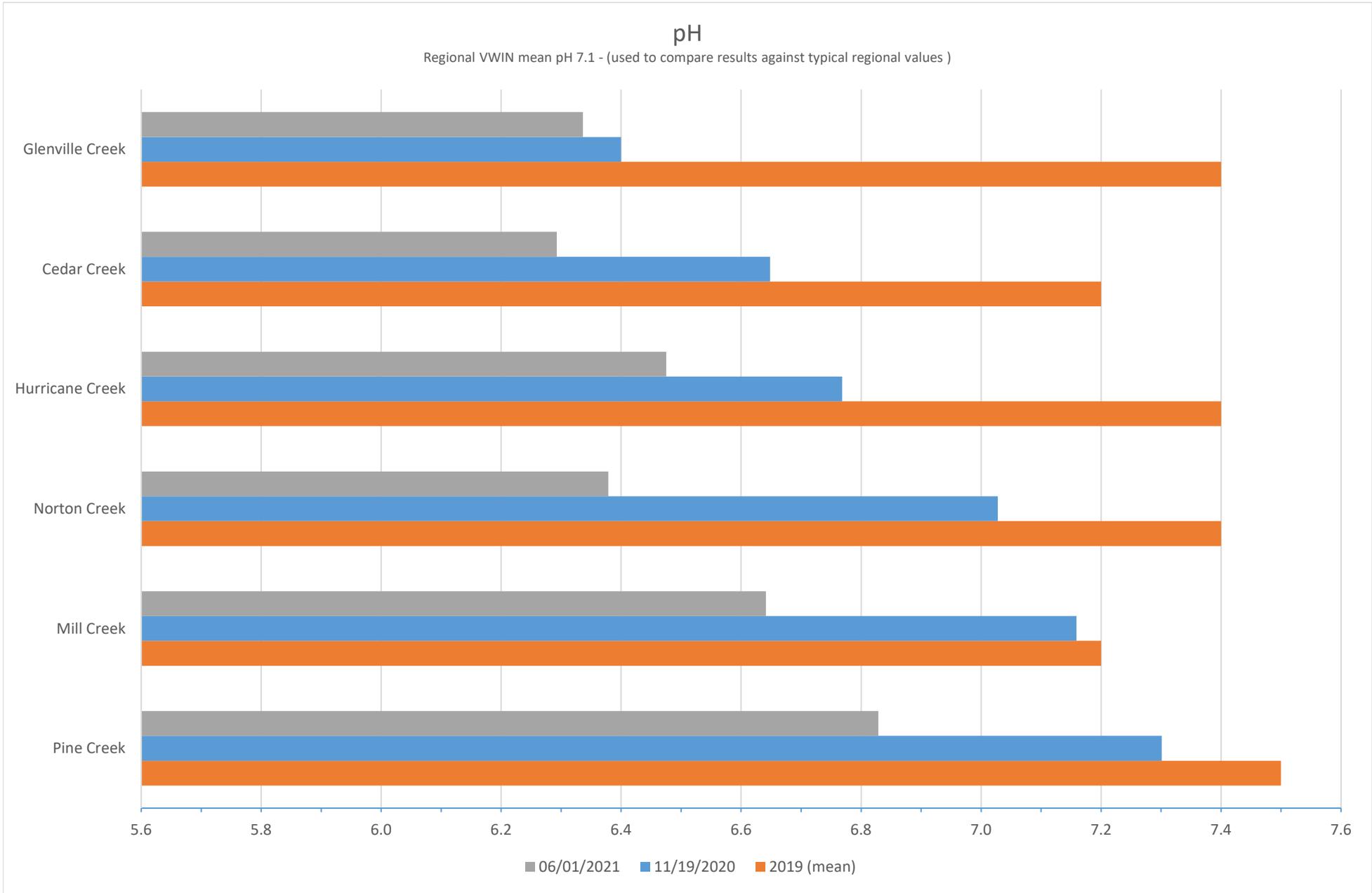
Specific Conductivity ($\mu\text{S}/\text{cm}$)

Regional VWIN mean 60 ($\mu\text{S}/\text{cm}$)- (used to compare results against typical regional values)



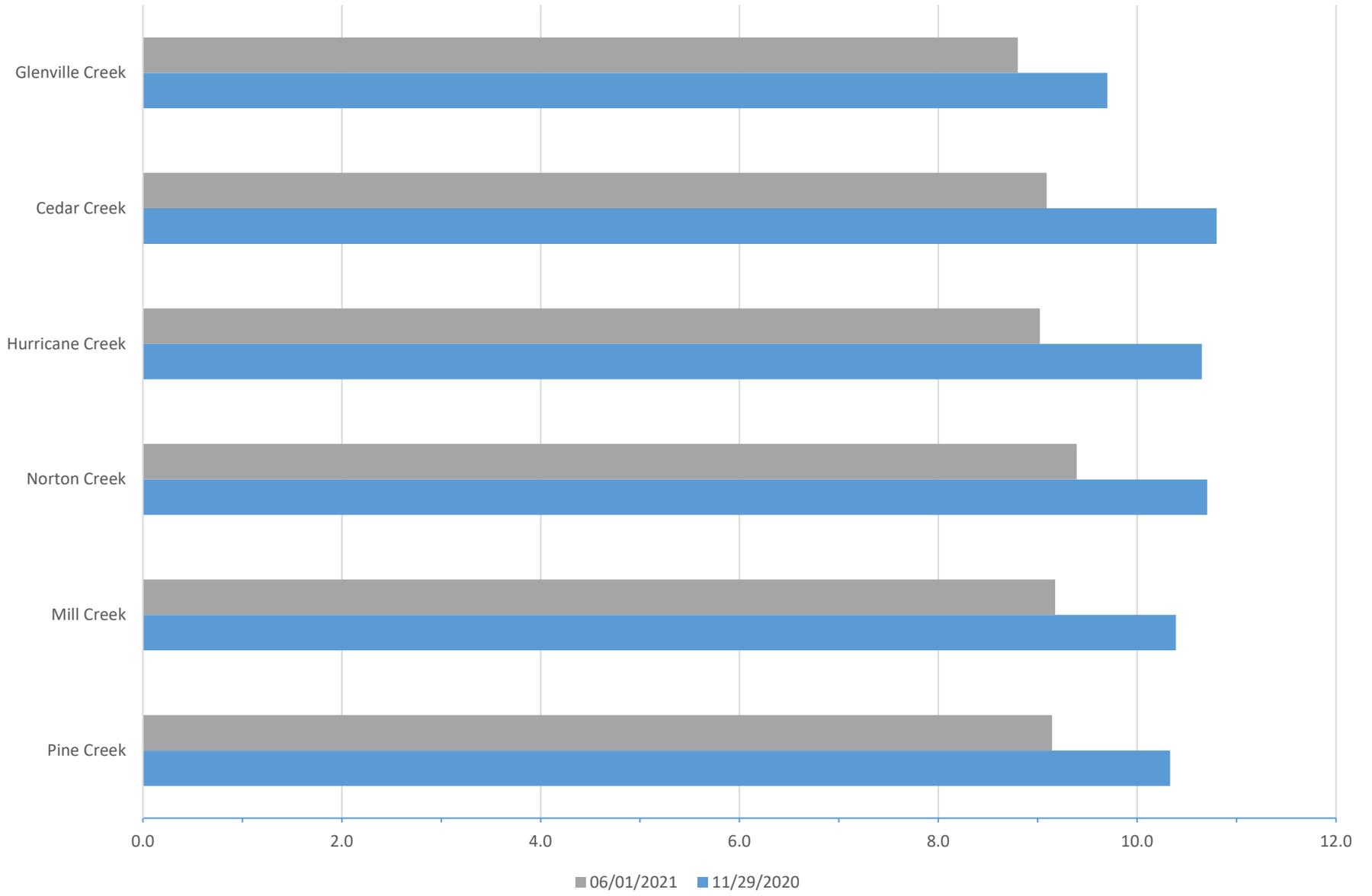
pH

Regional VWIN mean pH 7.1 - (used to compare results against typical regional values)



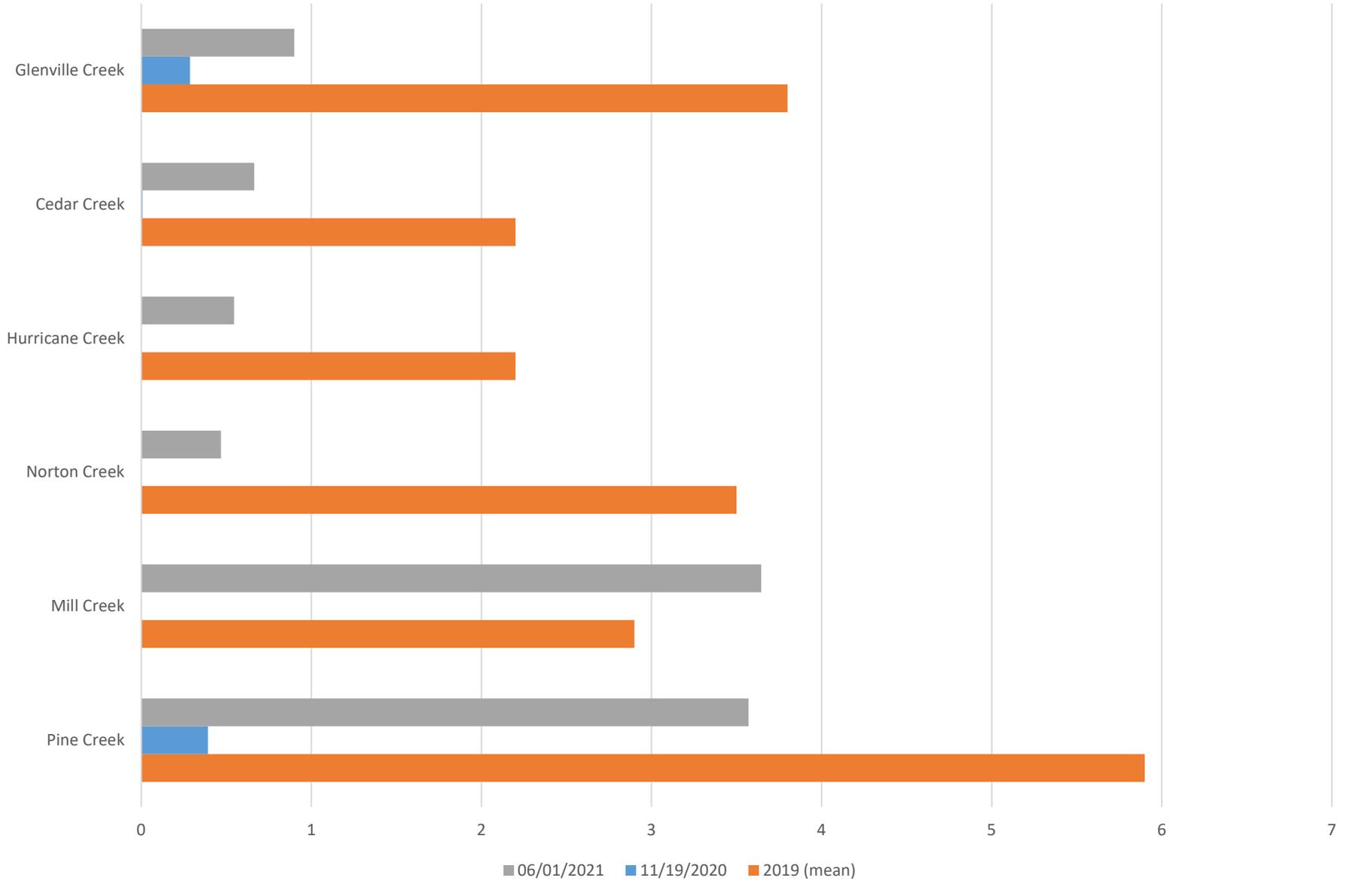
Dissolved Oxygen (mg/L)

NC Trout Water designation standard ≥ 6 mg/L



Turbidity (NTU)

Regional VWIN mean 6.2 NTU - (used to compare results against typical regional values)



Dissolved Oxygen as a function of Water Temperature

• 11/30/2020 • 06/21/2021

