Water Quality Volunteer

WATER CHEMISTRY REFERENCE TABLE

Use this table as a guide as you interpret your water quality field data. Remember that each aquatic system is different, so this table is only a guide, not a hard fast rule!

WATER PARAMETER TESTED	WHAT IT MEASURES	NATURAL READINGS	CAUTIONARY READINGS (could be a problem)	POSSIBLE SOURCES/ INFLUENCES	REMEDIES
Water Temperature	average amount of heat in the water	0° - 34°C (32° - 93°F)	above 32ºC (90ºF) above 24ºC for smallmouth bass/goggle eye streams (84°C) above 20°C for trout streams (68°C)	- thermal discharges (e.g., industrial, waste water treatment plants) - increased turbidity - solar heat (e.g., loss of shade in riparian areas) - heated runoff from impervious surfaces (e.g., asphalt, concrete)	- discharges adhering to limits set in permits/regulations - increased riparian (stream side) shade - decrease impervious surfaces (i.e., revegetate watershed)
Dissolved Oxygen	amount of oxygen dissolved in the water	**natural readings:** 5 – 15 mg/L (milligrams per liter) or more than 80% dissolved O_2 % saturation in Ozark streams and more than 60% dissolved O_2% saturation in prairie streams or streams with no aeration **cautionary readings:** - below 6 mg/L cold water *Standard*s violation - below 5 mg/L cool and warm water *Standards* violation - 3 - 5 mg/L (40% - 80%) causes stress resulting in abnormal feeding , reduced reproduction - < 3 mg/L (<40%) results in death in most species - 0 mg/L = anoxic		- atmosphere via aeration (e.g., wind, running water) - photosynthesis by algae and other aquatic plants	- can control quantity of algae by limiting nutrients (N, P) entering the water - reduce water temperature
pH	acid/base of the water	generally 6.5 – 9.0	below 6.5 above 9.0	- acid rain - industrial pollution - chemical spills	- pollution controls - pH moderation by addition of acid or basic compounds
Nitrates	organic matter or fertilizer materials in water	0.0 – 2.0 mg/L	consistent readings above 2 mg/L	- human sewage - industry output - domestic use of detergents - fertilizer (urban and agricultural) - animal wastes	vegetated riparian zones limit usage of agricultural and yard fertilizers properly maintained septic systems
Phosphates	organic matter or fertilizer materials in water	0.0 – 0.2 mg/L	consistent readings above 0.2 mg/L	- animal wastes - fertilizer - domestic use of detergents - industry output	vegetated riparian zones agricultural waste management limit use of agriculture and yard fertilizers
Turbidity	clarity of the water	highly variable measured in Nephelometric Turbidity Units (NTUs)	increasing turbidity measurements in a waterbody over a period of time	- sediment, usually from increased surface runoff (e.g., off construction sites, cropland) - excessive algae growth - watercraft traffic	sediment controls riparian zones to reduce nutrients watercraft speed limits