

## Water Quality Parameters Information Sheet

Water Test	What It Measures	Natural Reading	Danger Reading	Influenced by	Comments
<b>Water Temperature</b>	Amount of heat in water	0°-30° C	Generally above 27 C (81 F)	<ul style="list-style-type: none"> <li>• solar heat</li> <li>• groundwater</li> <li>• industrial cooling</li> </ul>	Many estuarine organisms have a narrow temperature tolerance range.
<b>pH</b>	Acidity or alkalinity of water,	Freshwater is typically between 6 and 8; salt water generally 8 or higher	Below 6 or above 8.5; some freshwater areas may have natural pH of 5 - 6	<ul style="list-style-type: none"> <li>• local plants and soils</li> <li>• acid rain</li> <li>• atmospheric CO<sub>2</sub></li> <li>• chemical spills</li> </ul>	Low pH levels affect the ability of organisms to incorporate calcium carbonate.
<b>Turbidity</b>	Clearness of the water (NOT color)	0-10 NTU, Nephelometric Turbidity Units	Above 20 NTU	<ul style="list-style-type: none"> <li>• sediment</li> <li>• excessive algae growth</li> <li>• storms</li> </ul>	Turbidity determines how much light can penetrate to reach seagrasses. It is an indicator of the level of phytoplankton or silt in the water and is closely linked with eutrophication.
<b>Dissolved Oxygen</b>	Amount of available oxygen in water (in between water molecules)	5-12 ppm (parts per million)	Below 5 = stress 1-3 = poor 0 = anoxic (no oxygen)	<ul style="list-style-type: none"> <li>• photosynthesis</li> <li>• wind</li> <li>• waves</li> <li>• running water</li> </ul>	D.O. is vitally important to estuary organisms. Warmer temps allow less O <sub>2</sub> to be dissolved. Decomposers may deplete D.O.
<b>Dissolved Oxygen Percent Saturation</b>	Amount of oxygen in water relative to calculated saturation level	0% (anoxia) to 200% (supersaturation)	Below about 70%= stress Below 50% = poor 0%= anoxic, fatal for many organisms Supersaturation, > about 120% can be harmful	<ul style="list-style-type: none"> <li>• photosynthesis</li> <li>• respiration</li> <li>• temperature</li> <li>• salinity</li> <li>• wind and wave action</li> </ul>	A wide variation in D.O. saturation over the course of a day is a sign of eutrophication. Warm water holds less D.O. than cold; salty water holds less D.O. than fresh.
<b>Salinity</b>	Amount of salt in the water	0 ppt (parts per thousand) for freshwater; about 5 – 30 ppt for estuaries; about 35 ppt for oceans	Salinity can be 40 ppt or higher in salt marsh tide pool on a hot day; lethal for most estuary creatures.	<ul style="list-style-type: none"> <li>• tide level</li> <li>• rain events</li> <li>• evaporation</li> <li>• local geology &amp; soils</li> </ul>	Most marine and aquatic organisms are adapted to either fresh water (0 ppt) or sea water (35 ppt). Some estuarine organisms and anadromous fish can tolerate a wide salinity range.
<b>Water Level</b>	Depth of water	0 m (meters) if uncovered at low tide; up to tens of meters in estuaries	Depends on location; if normally submerged, 0 m is danger reading.	<ul style="list-style-type: none"> <li>• tides</li> <li>• wind direction</li> <li>• wind speed</li> <li>• storms</li> <li>• atmospheric pressure</li> </ul>	Estuaries have wide variation in water levels. Some organisms must be able to survive both salt water inundation and exposure to air.