

# Rocky Mouth Creek (RMC) water quality – August 2019

Data logger on upstream side of floodgates



## Interpretation

Note – DO readings are being substituted with weekly manual measurements. The site was cleaned and calibrated on 8<sup>th</sup> August.

- **Dissolved oxygen (DO)** for August was recorded by weekly manual measurements ranging between 7.01 and 9.13 milligrams per litre (mg/L) and averaging 8.0, which has increased by 1.1 when compared to the July average of 6.9, although reading can vary between tides. Levels below 3 mg/L are considered critical to most fish, from 3 to 6 is considered marginal and 6 to 8 optimal. DO is mainly affected by organic and inorganic loadings but is also affected by temperature, barometric pressure, salinity, wind and wave action.
- **Electrical conductivity (EC)** is measured in millisiemens per cubic centimetre (ms/cm<sup>3</sup>) and represents salinity with seawater equivalent to approximately 60 ms/cm<sup>3</sup>. During August levels ranged between 0.62 and 1.52 ms/cm<sup>3</sup> with an average of 1.2 ms/cm<sup>3</sup>, which is considered freshwater and has risen by 0.1 compared to the July freshwater average of 1.1. EC not only indicates salinity from sodium chloride, but also acid salts. Levels below 1.8 ms/cm are considered freshwater, while 1.8 to 4.8 ms/cm is considered brackish and above 4.8 saline. EC is affected by rainfall, runoff, temperature and tidal exchange.
- **pH** for August was recorded from 3.8 to 6.8 with an average of 5.4 which is 0.9 higher, or 7.9 times decreased acidity when compared to the July average of 4.5. pH fell as a response to rainfall in early August which generated runoff from acid drains then rose throughout the month with no rain. pH 7 is considered neutral with acid concentration increasing on a logarithmic scale equal to ten times for every whole number below 7 while pH above 7 is considered alkaline.
- **Water temperature** recorded during August ranged between 14.7°C and 18.1°C giving a range of 3.4° with an average of 16.2°C which has increased by 0.7° from the July average of 15.5° due to increasing air temperature and seasonal change. Water temperature is influenced by season, solar radiation and degree of shading, cloud cover, tidal movement, air temperature, day/night, turbidity and rainfall.
- **Rainfall:** during August, the Rocky Mouth Creek data logger recorded 19.2 mm over 11 days which compares to the July reading of 69.8 mm over 21 days. A number of readings were from dew as the site is located over water, while the highest fifteen-minute rainfall for the month was 3.0 mm, which occurred on 30<sup>th</sup> August between 11:30 pm and 11:45 pm. During August the Tuckean site 4 data logger situated 19 km to the north recorded 30.4 mm over 6 days, while the Ballina AWS located 37 km to the north-east recorded 52.0 mm over 5 days.