

Rocky Mouth Creek (RMC) water quality – March 2019

Data logger on upstream side of floodgates



Interpretation

Note – DO readings are being substituted with manual measurements. The site was cleaned and calibrated on 18th March.

- **Dissolved oxygen (DO)** for March was recorded by weekly manual measurements ranging between 5.45 and 6.28 milligrams per litre (mg/L) and averaging 5.9, which has decreased by 0.25 when compared to the February average of 6.15. 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 centimetre (ms/cm) and represents salinity with seawater equivalent to approximately 60 ms/cm. During March levels ranged between 2.1 and 14.4 ms/cm with an average of 10.9 ms/cm, which is considered saline and has risen compared to the February average of 7.04 due to reduced rainfall over summer. 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 March was recorded from 6.3 to 7.0 with an average of 6.6 which is 0.2 lower- or 1.58-times increased acidity when compared to the February average of 6.8 due to increasing rainfall and runoff during March. 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 March ranged between 24.4°C and 28.8°C giving a range of 4.4° with an average of 26.9°C which has decreased by 0.8° from the February average of 27.7 due to 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 March, the Rocky Mouth Creek data logger recorded 184.2 mm over 20 days which compares to the February reading of 54 mm over 16 days. The highest fifteen-minute rainfall for the month was 23.4 mm, which occurred on 27th March between 1:15 am and 1:30 am. During March the Tuckean site 4 data logger situated 19 km to the north recorded 166.6 mm over 17 days, while the Ballina AWS located 37 km to the north-east recorded 139.2 mm over 18 days.