

Rocky Mouth Creek (RMC) water quality – March 2017

Data logger on upstream side of floodgates



Interpretation

Note –The DO sensor failed for the whole of March and was substituted with manual measurements.

- **Dissolved oxygen (DO)** for March was not recorded by the data logger, however weekly manual measurements were recorded between 0.28 and 6.98 mg/L averaging 5.2, which is 0.5 higher than last month's 4.7. Dissolved oxygen crashed towards the end of the month due to rain from mid-month coupled with hot conditions and high exotic organic matter, which led to a blackwater fish kill. 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 0.06 and 2.23 ms/cm with an average of 0.66 ms/cm, which is considered fresh and has fallen by 0.5 compared to last month's average of 1.16. EC fell following rain during mid-March. EC not only responds to salinity from sodium chloride, but also to acid salts. Levels below 1.8 ms/cm are considered freshwater, while 1.8 to 4.8 ms/cm is considered brackish. EC is affected by rainfall, runoff, temperature and tidal exchange.
- **pH** during March was recorded between 4.0 and 7.1 and averaged 5.5, which is 0.8 pH units lower or 6.3 times more acid than last month's average of 6.3. pH 7 is considered neutral with acid concentration increasing on a logarithmic scale equal to ten times for every whole number below 7.
- **Water temperature** recorded for March ranged between 23.1°C and 27.7°C giving a range of 4.6° with an average of 25.6°C, which is 3.7°C cooler than the February average of 29.3°C due to high rainfall from mid-March. 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 702.4 mm over 28 days. This compares to the February total of 161.0 mm of rain recorded over 11 days. The highest fifteen minute rainfall for the month was 19.8 mm, which occurred on 30th March between 7:15 pm and 7:30 pm. During March the site 4 data logger situated 19 km to the NNE failed to record, however a nearby station recorded 710.5 mm over 23 days, while the Ballina AWS located 37 km to the NE recorded 432.2 mm over 20 days.