

## Rocky Mouth Creek (RMC) water quality – February 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 11<sup>th</sup> Feb.

- **Dissolved oxygen (DO)** for February was recorded by weekly manual measurements ranging between 5.75 and 6.64 milligrams per litre (mg/L) and averaging 6.15, which has decreased by 0.05 when compared to the January average of 6.2. 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 February levels ranged between 2.1 and 14.4 ms/cm with an average of 7.04 ms/cm, which is considered saline and has risen compared to the January average of 1.47 due to below average rainfall and high tides from cyclone Oma. 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 February was recorded from 6.4 to 7.1 with an average of 6.8 which is 0.1 higher or 1.26 times less acidity than the January average of 6.7 due to below average rainfall, high tides, low groundwater and reduced runoff from drains. pH rose in the last week of February due to storm surge from cyclone Oma and then fell as rainfall generated limited runoff from drains. 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 February ranged between 24.3°C and 30.0°C giving a range of 5.7° with an average of 27.7°C which has decreased by 1.1° from the January average of 28.8 due to decreased temperature from cyclone Oma in the last week of February. 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 February, the Rocky Mouth Creek data logger recorded 54 mm over 16 days which compares to the January reading of 1.6 mm over 3 days. The highest fifteen-minute rainfall for the month was 9.8 mm, which occurred on 21<sup>st</sup> February between 10:30 pm and 10:45 pm. During February the Tuckean site 4 data logger situated 19 km to the north recorded 79.0 mm over 19 days, while the Ballina AWS located 37 km to the north-east recorded 70.2 mm over 18 days.