

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

Data logger on upstream side of floodgates



## Interpretation

Note – DO readings are being substituted with manual measurements.

- **Dissolved oxygen (DO)** for January was recorded by weekly manual measurements ranging between 5.9 and 6.6 milligrams per litre (mg/L) and averaging 6.2 which has risen by 0.1 when compared to the December average of 6.1. 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 January levels ranged between 0.85 and 3.1 ms/cm with an average of 1.47 ms/cm, which is considered fresh and has risen compared to the December average of 0.77 due to reducing rainfall and high tides. 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 January was recorded from 6.5 to 7.1 with an average of 6.7 which is 0.2 higher or 1.58 times less acidity than the December average of 6.5 due to reduced rainfall and less acid discharge 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 January ranged between 26.9°C and 30.7°C giving a range of 3.8° with an average of 28.8°C which has increased by 1.9° from the December average of 26.9 due to a warmer than average January. 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 January, the Rocky Mouth Creek data logger recorded 1.6 mm over 3 days which compares to the December reading of 80.2 mm over 19 days. The highest fifteen-minute rainfall for the month was 0.8 mm, which occurred on 7<sup>th</sup> January between 1:45 pm and 2:00 pm. There were two potential dew readings of 0.2 mm during January as the site is located over water. During January the Tuckean site 4 data logger situated 19 km to the north recorded 12.2 mm over 1 day from a thunder storm, while the Ballina AWS located 37 km to the north-east recorded 2.4 mm over 5 days.