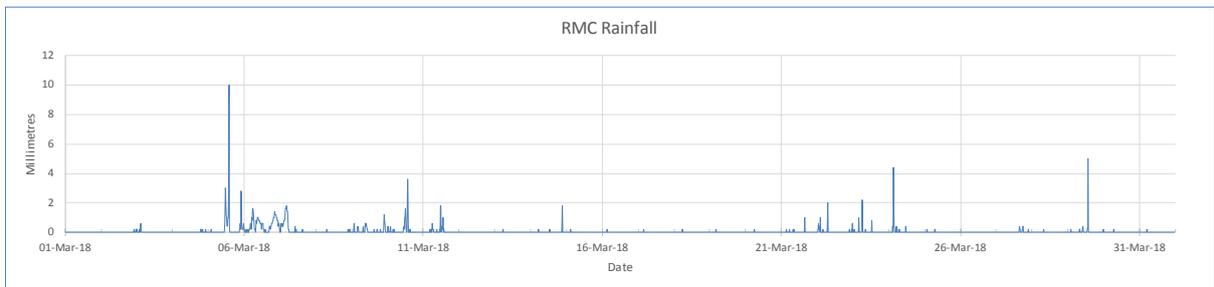
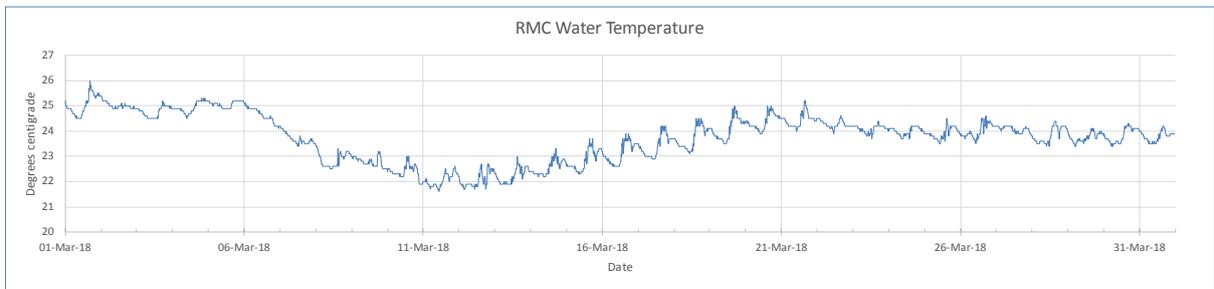
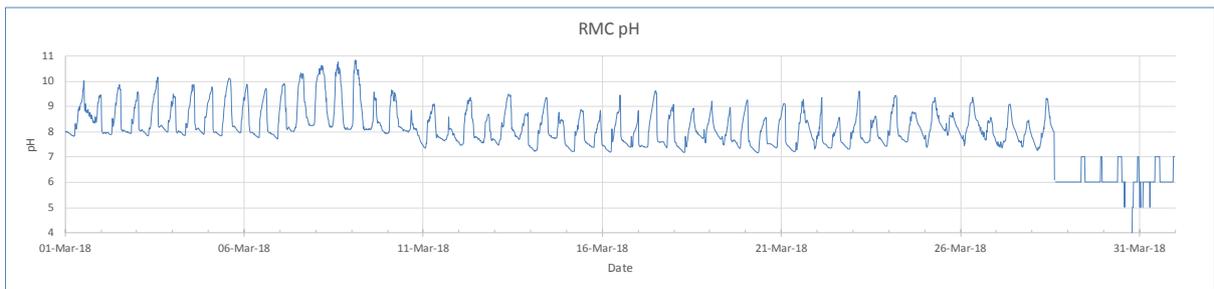
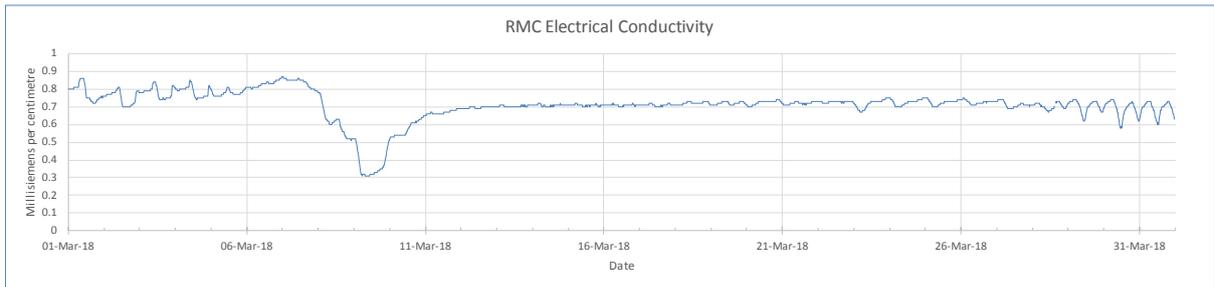
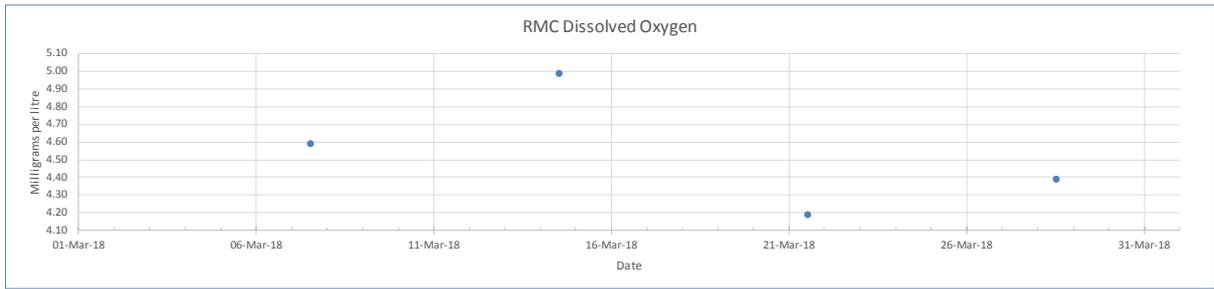


# Rocky Mouth Creek (RMC) water quality – March 2018

## Data logger on upstream side of floodgates



## Interpretation

\*Note – Due to the availability of suitably experienced/approved contractors for maintenance/repair of equipment, required calibration of the logger was not undertaken in late 2017. As of 28 March 2018, EC and pH sensors were covered in sediment and need to be recalibrated with a new sensor housing fitted. The DO sensor will be substituted with manual measurements until a replacement is fitted.

- **Dissolved oxygen (DO)** for March was not recorded by the data logger, however weekly manual measurements were recorded between 4.2 and 5.0 mg/L averaging 4.6. 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 0.31 and 0.87 ms/cm with an average of 0.71 ms/cm, which is considered fresh. The EC sensor was fouled with sediment due to a lack of maintenance prior to 28 March so it was not responding properly. 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. EC is affected by rainfall, runoff, temperature and tidal exchange.
- **pH** during March was recorded between 7.2 and 10.8 prior to 28<sup>th</sup>, which is incorrect and a result of fouling with sediment, the pH sensor was cleaned and calibrated which has dropped the level to between 4 and 7, however the blocky response indicates a problem requiring recalibration. 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 21.7°C and 26.0°C giving a range of 4.3° with an average of 23.7°C. Sensor fouling prior to 28<sup>th</sup> will have dampened temperature response. 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 178.8 mm over 28 days. The highest fifteen-minute rainfall for the month was 10.0 mm, which occurred on 5 March between 1:30 pm and 1:45 pm. During March the site 4 data logger situated 19 km to the NNE failed to record, however a nearby station recorded 163.6 mm over 18 days, while the Ballina AWS located 37 km to the NE recorded 119.2 mm over 16 days.