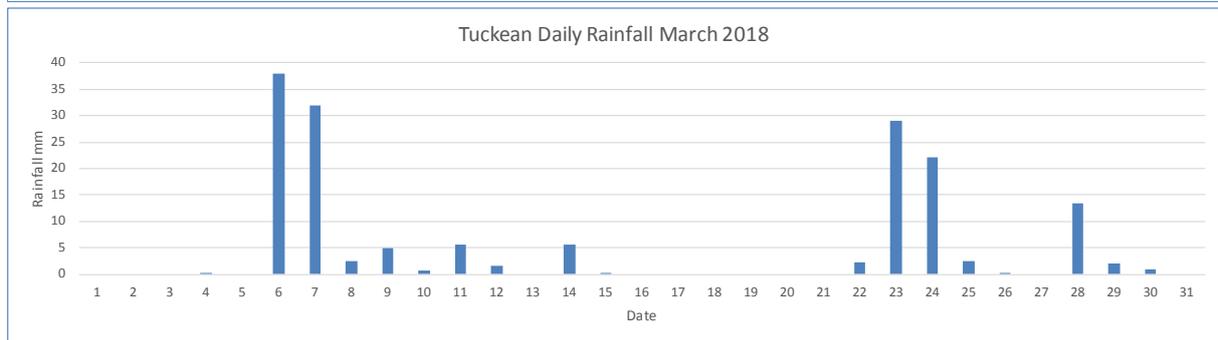
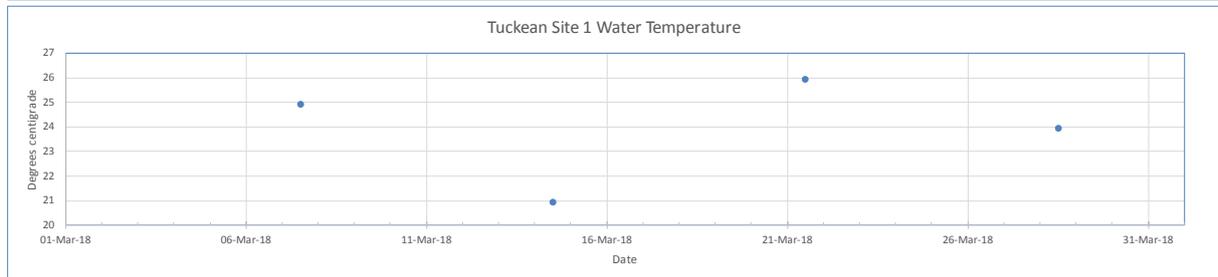
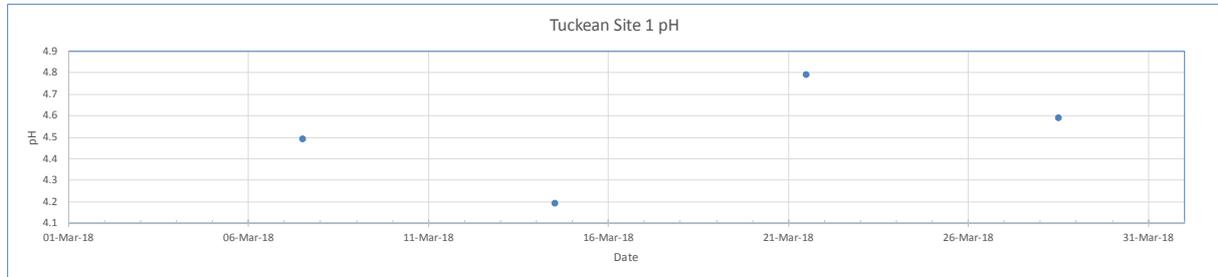
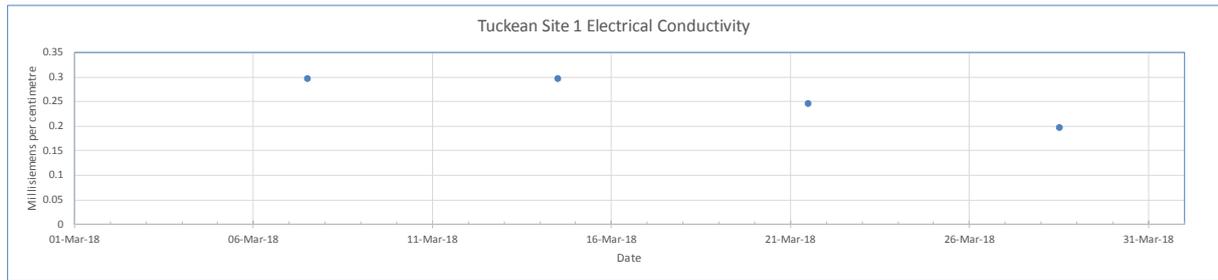
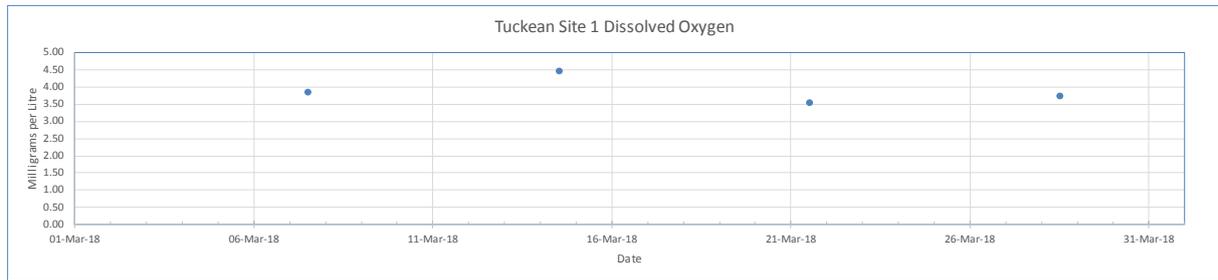


Tuckean Site 1 water quality – March 2018

Data logger located at Bagotville in the Broadwater downstream from Bagotville Barrage



Interpretation

*Note – Due to the availability of suitably experienced/approved contractors for maintenance/repair of equipment, the logger failed on 15 November 2017. Inspection in March 2018 indicates the modem requires repair. The dissolved oxygen sensor failed and is awaiting replacement. For March the weekly manual measurements are being substituted for all readings.

- **Dissolved oxygen (DO)** in March was recorded by weekly manual measurement on the upstream side of the barrage between 0.36 and 4.5 mg/L with an average of 3.95. Levels below 3 mg/L are considered critical to fish, while between 3 and 6 mg/L is considered marginal and above 6 mg/L is optimal. DO is influenced by temperature, rainfall, tidal movement and chemical and biological oxygen demand.
- **Electrical conductivity (EC)** for March ranged between 0.2 and 0.3 and averaged 0.26 ms/cm, which is considered fresh. Levels below 1.8 ms/cm are considered freshwater, while from 1.8 to 4.8 is considered brackish and above 4.8 ms/cm saline with seawater equal to approximately 60 ms/cm. EC is influenced by rainfall, runoff, temperature and tidal movement.
- **pH** in March ranged from 4.2 to 4.8 and averaged 4.5, which is acid. River water under normal conditions is generally near neutral (pH 7), while brackish or saline water moving upstream during dry periods may be higher. pH is measured on a logarithmic scale with each consecutive whole number different by a factor of 10.
- **Water temperature** for March ranged from 21° to 26°C, giving a range of 5.0°C and averaging 24°C. Water temperature is influenced by season, air temperature, solar radiation, cloud cover, day/night, turbidity, tidal movement and rainfall.
- **Water height** was not recorded for March. The highest tides of the month at 1.79 m occurred on 1st at 8:49am and 2nd at 9:35 am at the Ballina River entrance, while the corresponding peak at the logger normally occurs plus 2 hrs. Water height can be affected by river level, tides and rainfall and to a lesser extent temperature, wind and barometric pressure.
- **Rainfall** during March at the site 4 data logger situated 4 km to the north failed to record after 11 February 2017, however a nearby station recorded 163.6 mm over 18 days, which compares to the February reading of 210.4 mm over 17 days. Peak daily rainfall of 38 mm was recorded between 9:00 am on 5th and 9:00 am on 6 March. During March, the Rocky Mouth Creek data logger located 19 km to the SSW recorded 178.8 mm over 29 days, while Ballina AWS located 19 km to the NE recorded 119.2 mm over 16 days.