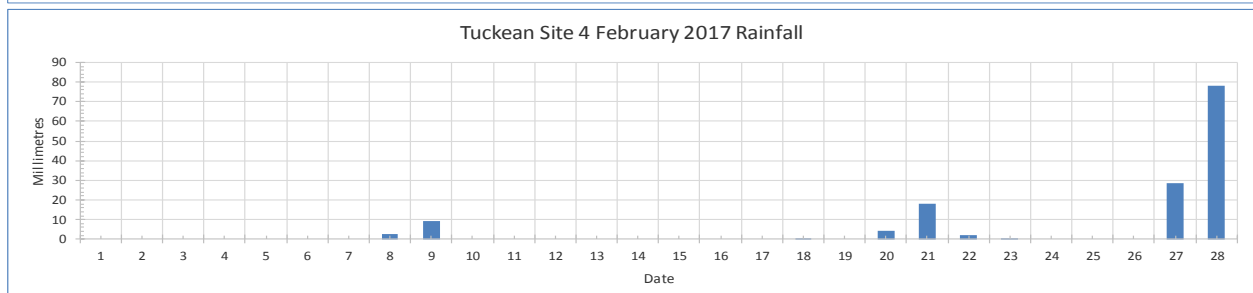
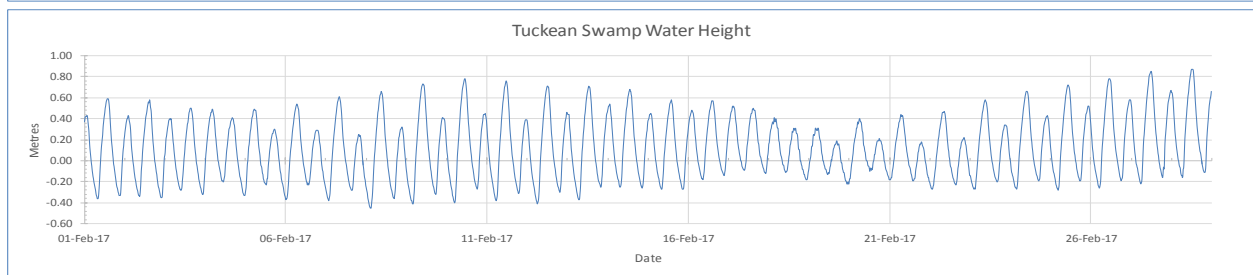
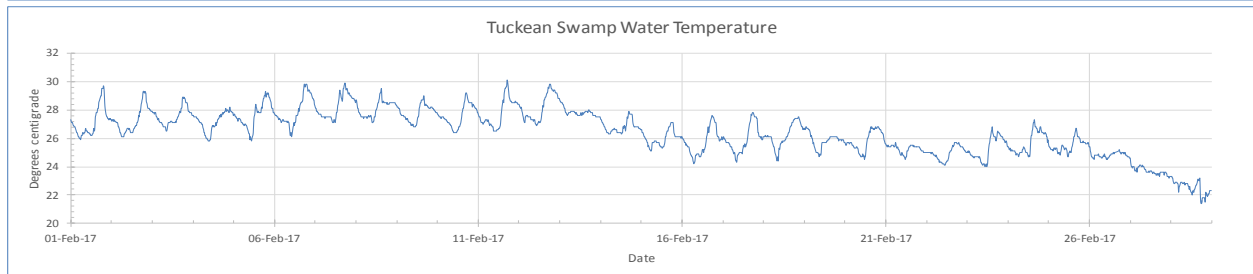
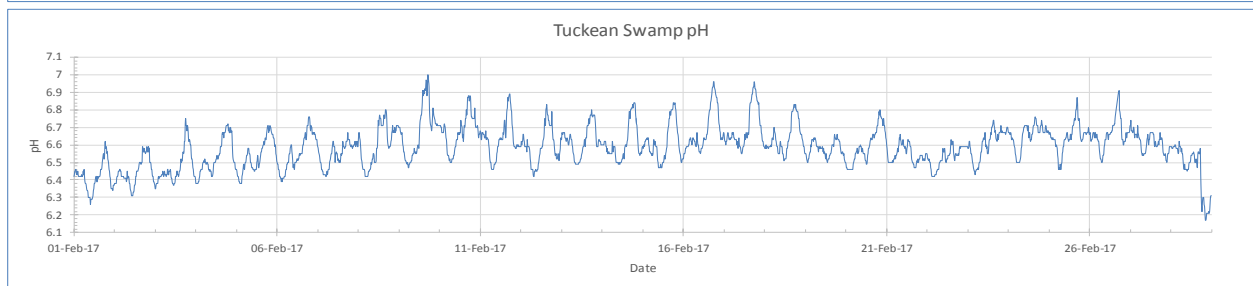
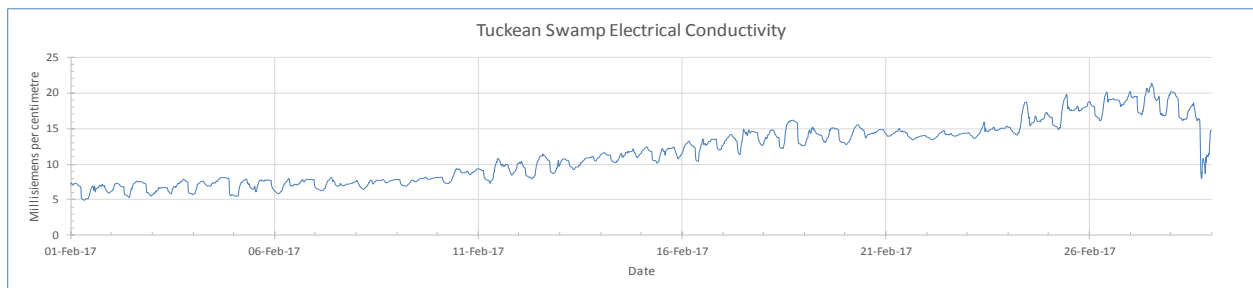
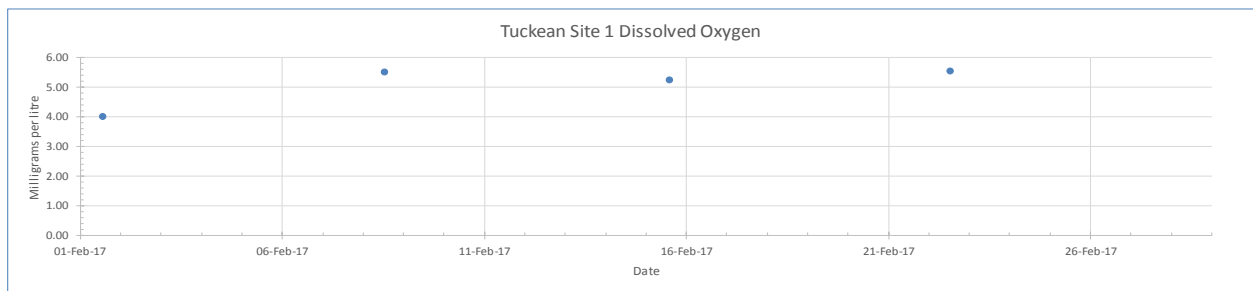


Tuckean site 1 water quality – February 2017

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



Interpretation

The dissolved oxygen sensor failed for the whole of February and is awaiting replacement, therefore weekly manual measurements are being substituted.

- **Dissolved oxygen (DO)** in February was recorded by weekly manual measurement on the upstream side of the barrage between 4.1 and 5.6 mg/L with an average of 5.2, which is 0.4 higher than last month's 4.8. 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 February ranged between 5.0 and 21.4 and averaged 11.4 ms/cm, which is considered saline and has increased compared to the January saline average reading of 6.3 ms/cm due to low rainfall and increased tidal exchange. 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 too approximately 60 ms/cm. EC is influenced by rainfall, runoff, temperature and tidal movement.
- **pH** in February ranged from 6.2 to 7.0 and averaged 6.6, which is 0.1 higher or 1.26 times less acid than last month's reading of 6.5. 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 February ranged from 21.5° to a spike of 30.0°C, giving a range of 8.5°C and averaging 26.4°C, which has decreased by 0.1°C when compared to the January average of 26.5°C due to cooling temperatures in the second half of the month and a rain event at the end of the month. Water temperature is influenced by season, air temperature, solar radiation, cloud cover, day/night, turbidity, tidal movement and rainfall.
- **Water height** for February ranged between -0.45 m and +0.87 m, giving a range of 1.32 m and averaging +0.12 m, which is 0.02 m higher than last month's average of +0.10 m. The highest tides of the month at 1.84 m occurred on 11th at 9:32 am at the Ballina River entrance, while the corresponding peak at the logger of 0.76 m AHD occurred at 11:30 am on 11th, giving a delay of 1 hr 58 min. Water height can be affected by river level, tides and rainfall and to a lesser extent temperature, wind and barometric pressure.
- **Rainfall** during February at the site 4 data logger situated 4 km to the north failed to record after 11th, however a nearby station recorded 143.4 mm over 9 days, which compares to the January reading of 143.8 mm over 13 days. Peak daily rainfall of 28.5 mm was recorded between 9:00 am on 26th and 9:00 am on the 27th February. During February, the Rocky Mouth Creek data logger located 19 km to the SSW recorded 161.0 mm over 11 days, while Ballina AWS located 19 km to the NE recorded 86.8 mm over 8 days.