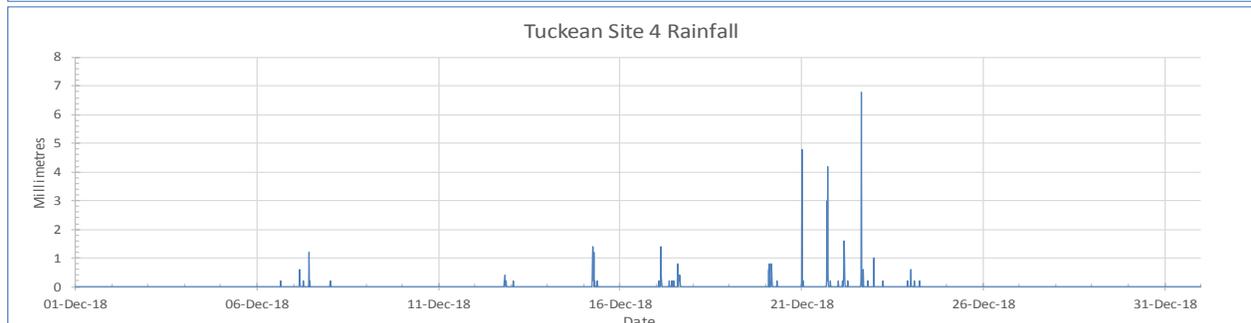
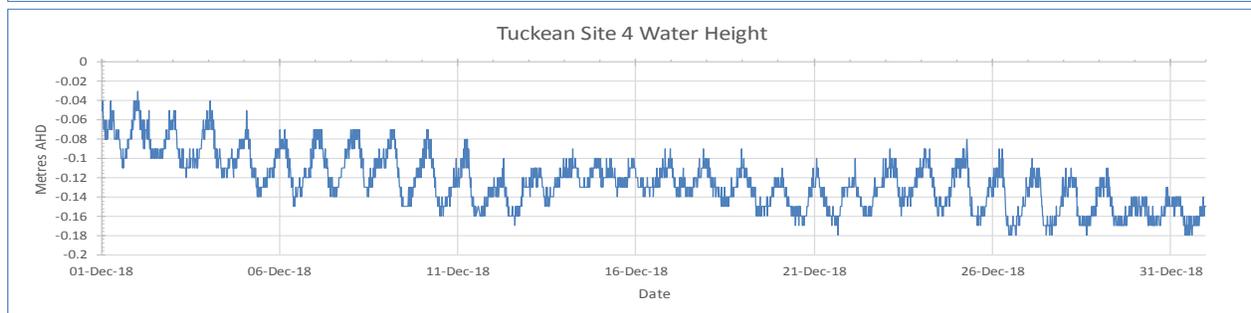
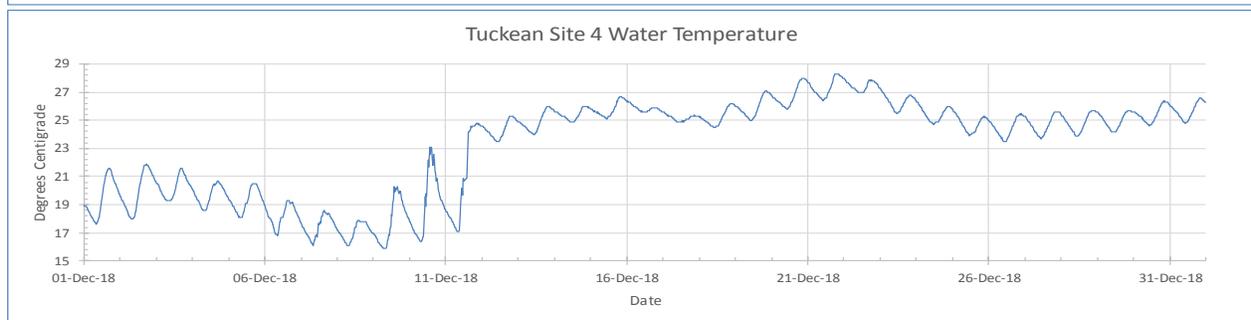
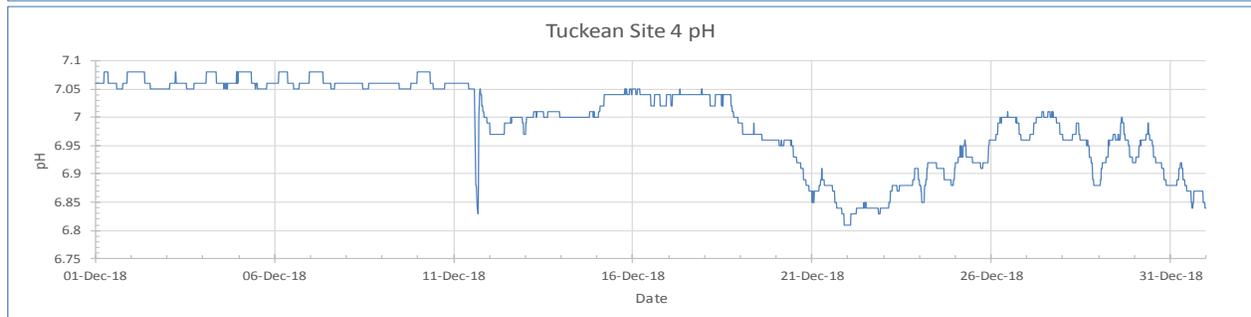
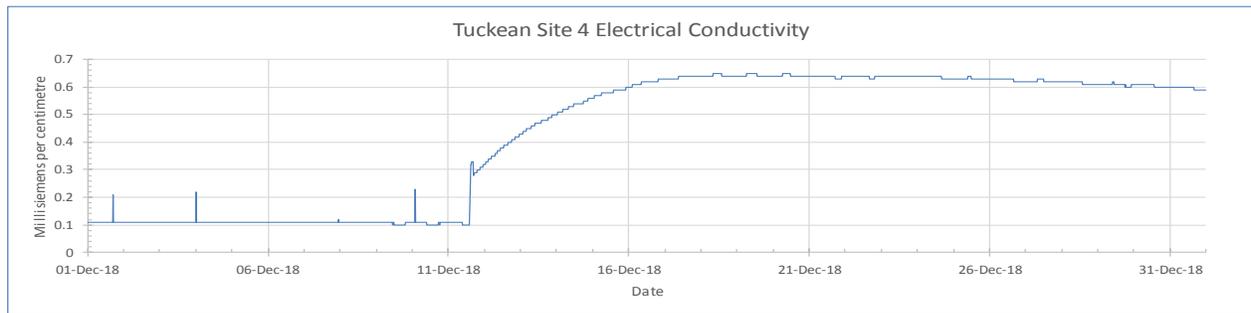


# Tuckean site 4 water quality – December 2018

Data logger located in Tuckean Swamp, Northern NSW



## Interpretation

Note – The original water quality meter and sensors have now been repaired and were reinstalled on 11<sup>th</sup> December affecting EC, pH and Temp.

**Electrical conductivity (EC)** was recorded from 11<sup>th</sup> December between 0.29 and 0.64 ms/cm<sup>3</sup> averaging 0.43 which compares to the November average of 0.11 ms. EC measures the ability of the water to conduct an electric current, which is the inverse of electrical resistance (R expressed in ohms) and is affected by rain and runoff, acid water, tidal brackish water and temperature.

**pH** was recorded from December 11<sup>th</sup> between 6.8 and 7.0. Peaks of pH normally occur in late afternoon as plants draw CO<sub>2</sub> from the water, while troughs occur in early mornings as plants respire CO<sub>2</sub> forming carbonic acid. pH is measured on a logarithmic scale, therefore each consecutive whole number below neutral represents 10 times the acidity that the previous number.

**Water temperature.** Water temperature for December ranged between 15.9 and 28.2°C with an average of 23.3 deg C which has increased by 1.9°C compared to the November average of 21.4 deg C. Temperature variations are caused by time of day affecting solar radiation and air temperature, while cloud cover, rain, degree of shading and season also affect water temperature.

**Water level** was recorded for December between -0.18 and -0.03 m AHD giving a range of 0.15 m with a max daily tidal range of -0.09 m and average height of -0.12 m AHD which is 0.07 m lower than the November average of -0.05m due to decreased rainfall and increased evaporation and transpiration. For accuracy the sensor will need to be resurveyed in to AHD. Rainfall, tidal fluctuations, river level, sluice gate opening, in stream vegetation, sediment build up and drain blocks and to a lesser extent temperature, wind and barometric pressure can all affect the water level.

**Rainfall:** In December the site 4 data logger recorded 46.2 mm over 12 days which compares to 45.8 mm recorded over 8 days in November. Peak 15-minute rainfall of 6.8 mm was recorded between 3:15 pm and 3:30 pm on 22<sup>nd</sup> December. The December 32 year average for this location is 132.1 mm therefore rainfall is well below average. During December the Rocky Mouth Creek data logger located 19 km to the SSW recorded 80.2 mm over 19 days, while the Ballina AWS located 19 km to the NE recorded 36.6 mm over 11 days.