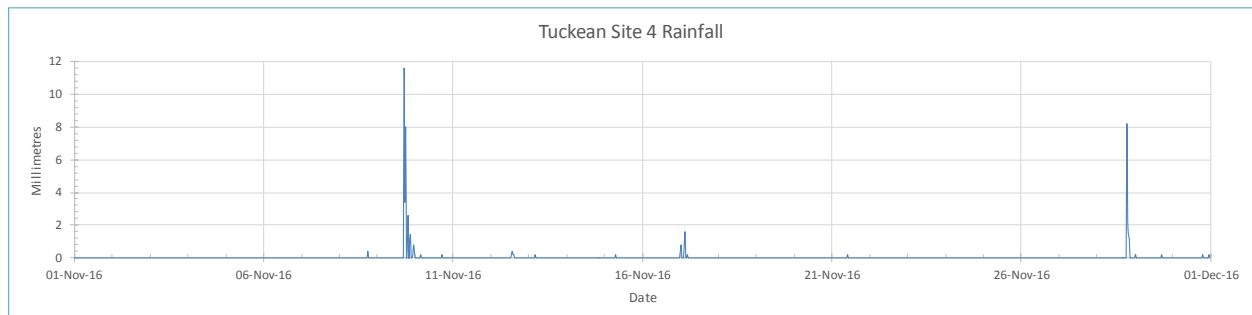
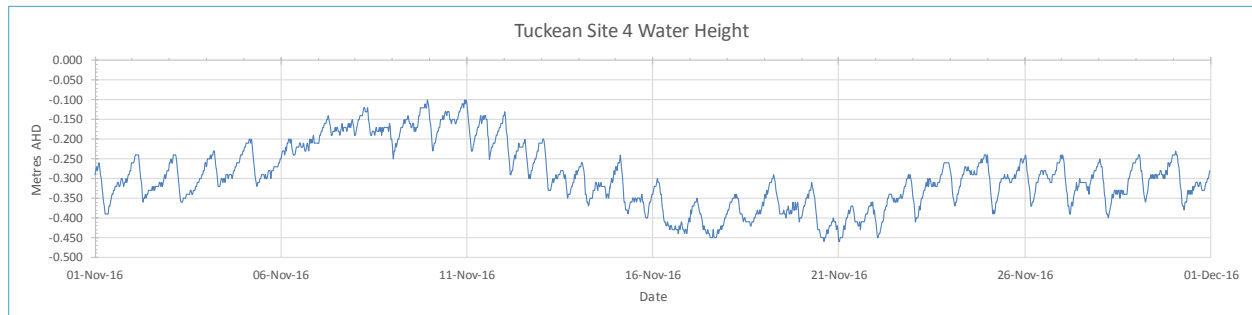
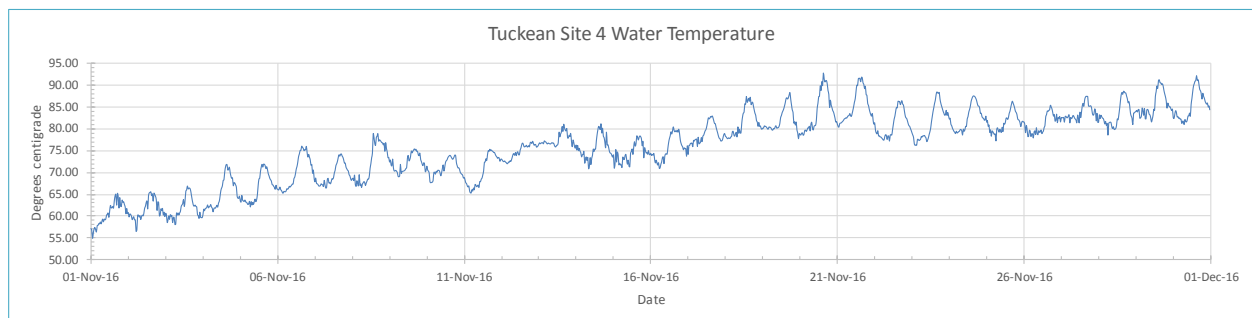
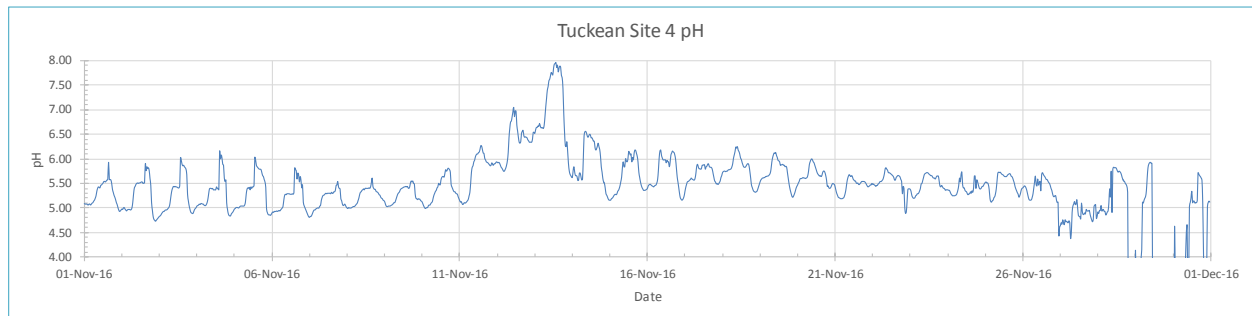
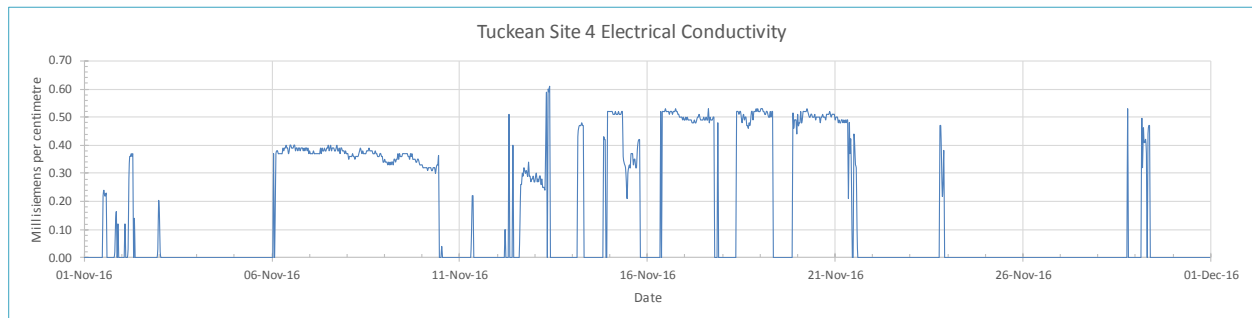


Tuckean site 4 water quality – November 2016

Data logger located in Tuckean Swamp, Northern NSW.



Interpretation

Note – Due to a fault the EC sensor experienced drop outs while the temperature sensor was well above range. Site 4 is scheduled for an upgrade, which should improve reliability.

Electrical conductivity (EC) during November the EC sensor experienced dropouts indicate unreliable data. Levels below 1.8 ms/cm indicate fresh water conditions. 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 in November between 4.4 and 7.9, however dropouts to 2.3 and high readings indicate unreliable data. The November average of 5.4 compares to the October average of 5.3. Peaks of pH normally occur in late afternoon as plants draw CO_2 from the water, while troughs occur in early mornings as plants respire CO_2 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 recorded in November ranged from 55.0 to 92.7°C, which is far too high and indicates an equipment fault. Temperature variations are caused by cloud cover affecting solar radiation and air temperature, while rain, degree of shading, and season also affect water temperature.

Water level in November ranged from -0.46 to -0.1 m AHD giving a range of 0.36 m and averaging -0.30m AHD, which has fallen by 0.05 m compared to last months -0.25m AHD. This was 28 cm lower than site 2 water level (-0.02 m) and 36 cm lower than site 1 (+0.06 m) due to low rainfall, evaporation and restricted tidal flushing. Rainfall, tidal fluctuations, river level, sluice gate opening and to a lesser extent temperature, wind and barometric pressure can all affect the water level.

Rainfall recorded during November at the site 4 data logger was 50.0 mm over 11 days, which compares to the October reading of 30.0 mm over 13 days. Peak daily rainfall of 11.6 mm was recorded between 4:30 pm and 5:00 pm on the 9th November. During November, the Rocky Mouth Creek data logger located 19 km to the SSW recorded 52.8 mm over 12 days, while Ballina AWS located 19 km to the NE recorded 60.2 mm over 9 days.