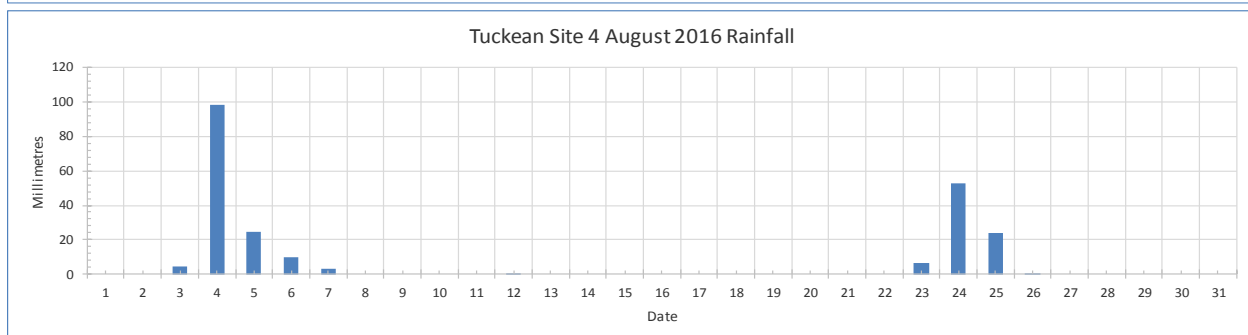
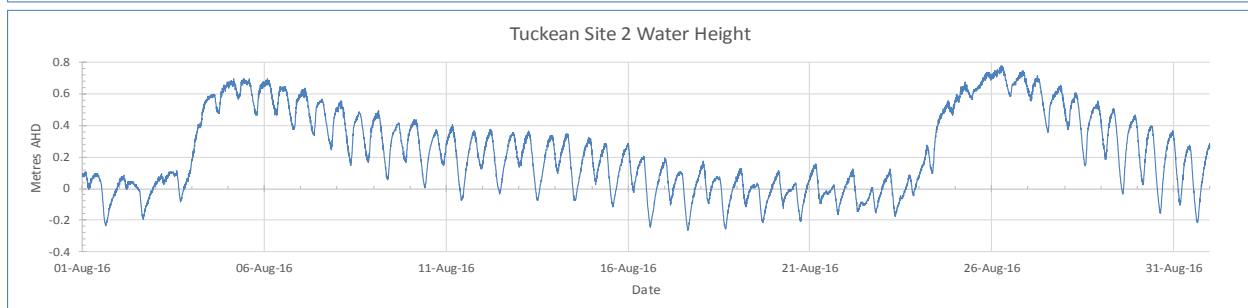
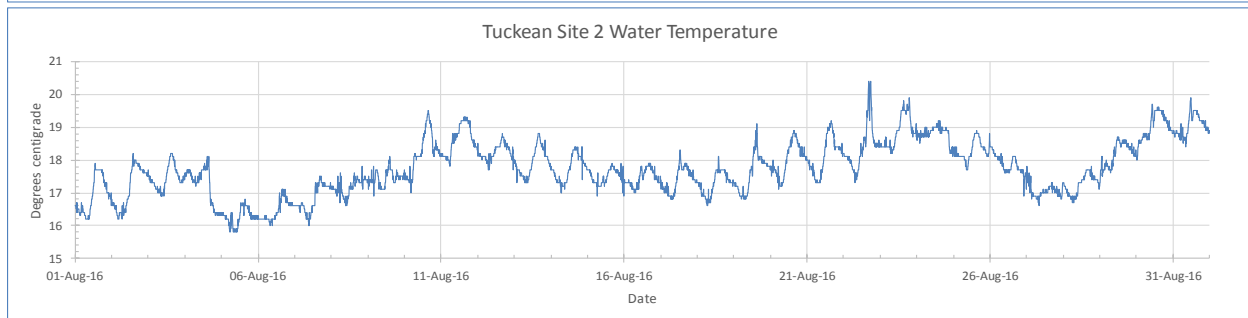
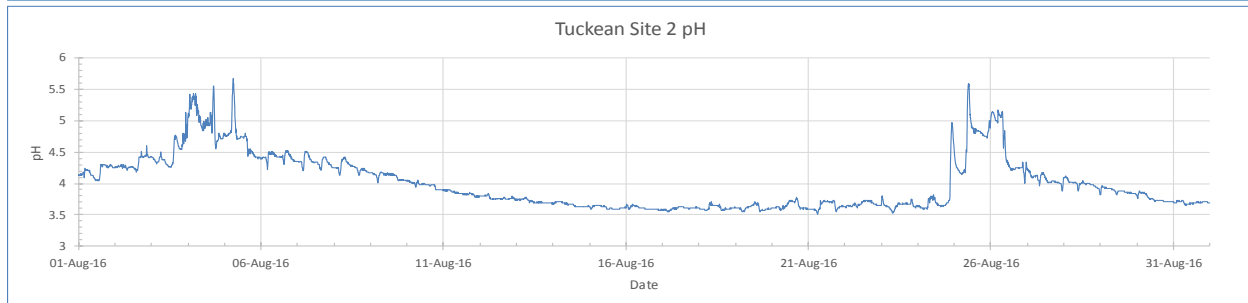
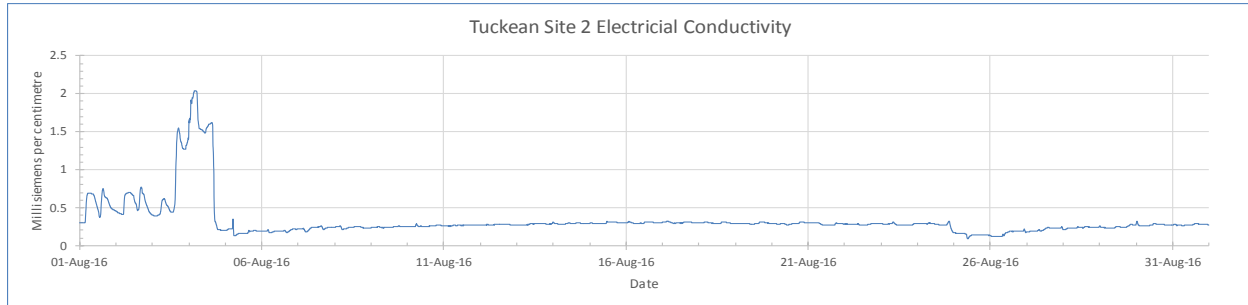


Tuckean site water quality – August 2016

Data logger located upstream of Bagotville Barrage, Tuckean Swamp, NSW.



Interpretation

- **Electrical conductivity (EC)** is related to salinity with EC at site 2 ranging between 0.10 ms/cm and 2.14 millisiemens per centimetre (ms/cm) during August and averaging 0.32 ms/cm, which is considered fresh water and has increased from the July fresh water average of 0.28 ms/cm due to a spike from high rainfall on the 4th August. Water is considered fresh if below 1.8 ms/cm, brackish from 1.8 – 4.8 and saline above 4.8, with seawater approximately 60 ms/cm.
- **pH** in August was recorded between 3.5 and 5.7 and averaged 4.0, which is 0.1 units lower, or 1.26 times more acid, than the July average of 4.1 due to runoff from the swamp from high rainfall from the 3rd August. On the pH scale neutral is at pH 7, and for every consecutive whole number below 7 acidity increases by ten times on a logarithmic scale. pH is affected by surface and groundwater level, drainage, rainfall, runoff and tidal exchange.
- **Water temperature** for August ranged between 15.8°C and 20.3°C, giving a range of 4.5°C and averaging 17.7°C, which is 0.6°C higher than the July average of 17.1°C due to seasonal change. Water temperature peaks in the afternoon around 4.30 pm as air temperature and solar radiation decreases. Temperature variations can be caused by a combination of factors, including solar radiation, air temperature, tidal exchange, day /night, shade, turbidity and rainfall.
- **Water level** was recorded between -0.27 and +0.77 m AHD for August, giving a range of 1.04 m and averaging +0.23 m AHD, which is 0.16 higher than the July average of +0.07 m AHD and 0.15 m lower than the site 1 August average of +0.38m. Water height at site 2 fluctuates with tides, degree of sluice gate opening, rainfall in the catchment and to a lesser extent temperature, wind and barometric pressure.
- **Rainfall** was not recorded at the site 4 data logger 4 km to the north, however a nearby station recorded 224.9 mm over 10 days, which compares to the July reading of 18.4 mm over 6 days. Peak daily rainfall of 98.0 mm was recorded between 9 am on the 3rd and 9 am on the 4th August. During August, the Rocky Mouth Creek data logger located 19 km to the SSW recorded 214 mm over 24 days, while Ballina AWS located 19 km to the NE recorded 140.8 mm over 12 days.