

Real time water quality monitoring in Te Waihora

Prepared by Tim Davie, Environment Canterbury, for the 2015 Living Lake Symposium Field Trip, November 18, 2015.

Two water quality monitoring stations have been installed in Te Waihora. These provide real time information on the state of the lake. At the moment the data are coming into Environment Canterbury via telemetry. We are working on getting this information onto the public website



Fig 1: Sites of the water quality monitoring stations



Fig 2: Detail on near outlet site



Fig 3: Mid-lake monitoring station



Fig 4: Near outlet monitoring site

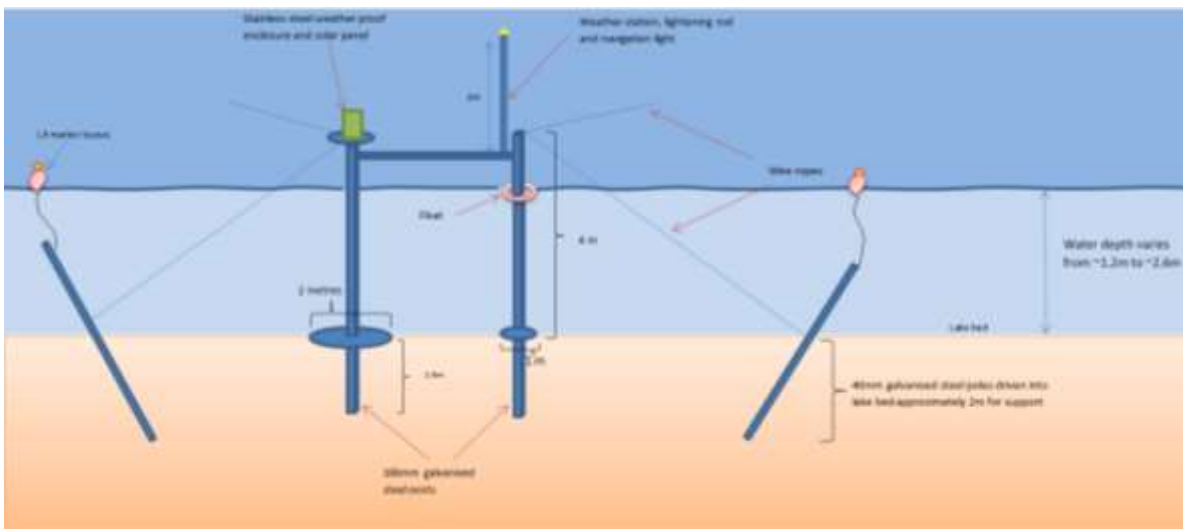


Fig 5: Design of monitoring stations

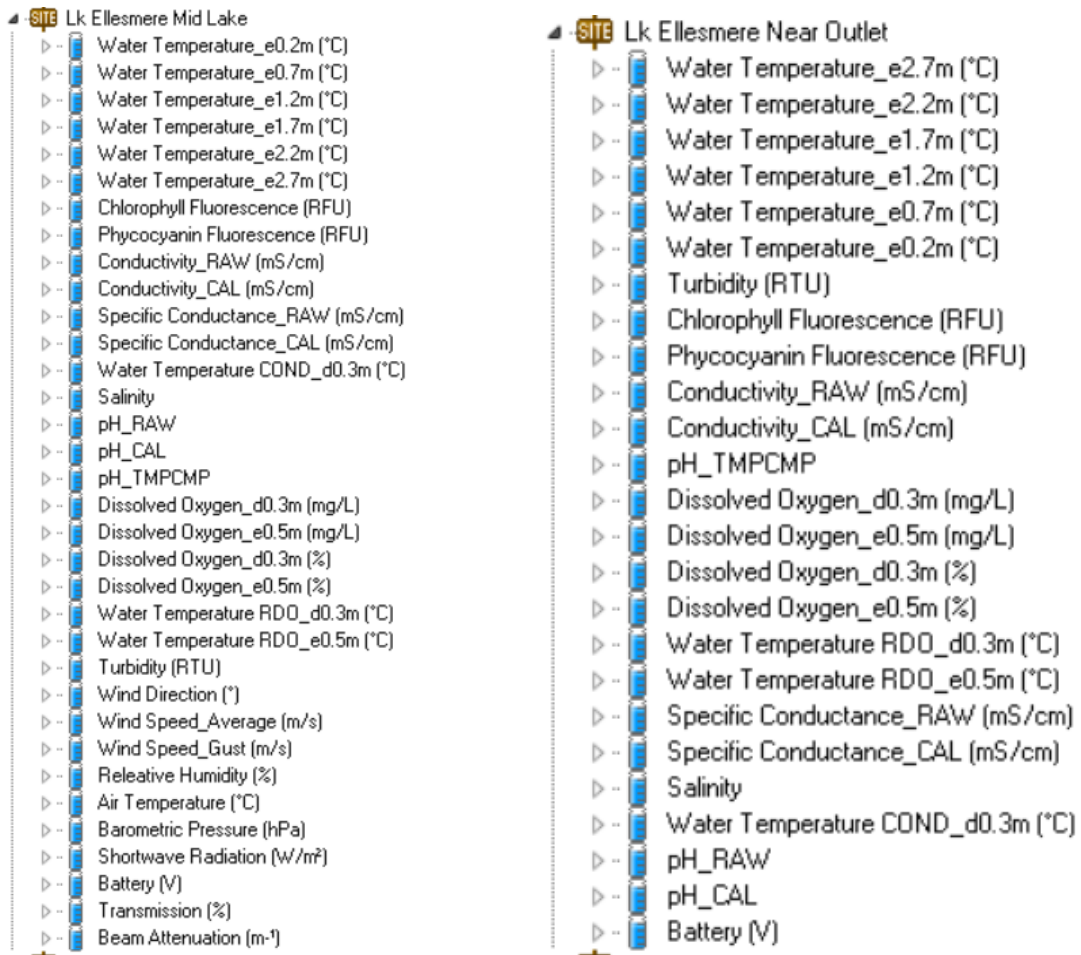


Fig 6: Parameters being measured at the two sites

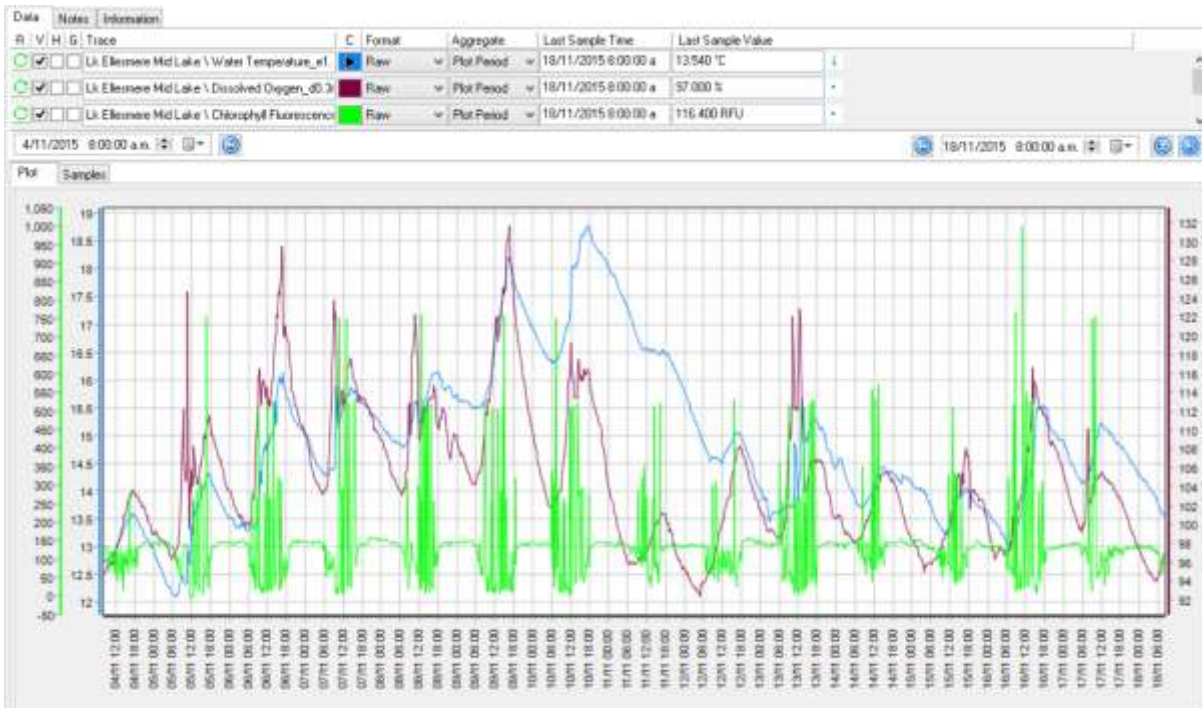


Fig 7: Mid-lake site for past two weeks. Blue line is temperature (lake bottom); Red line is dissolved oxygen; Green line is Chlorophyll a (algal growth). The algal growth during the day is increasing the dissolved oxygen levels above 100% saturation.

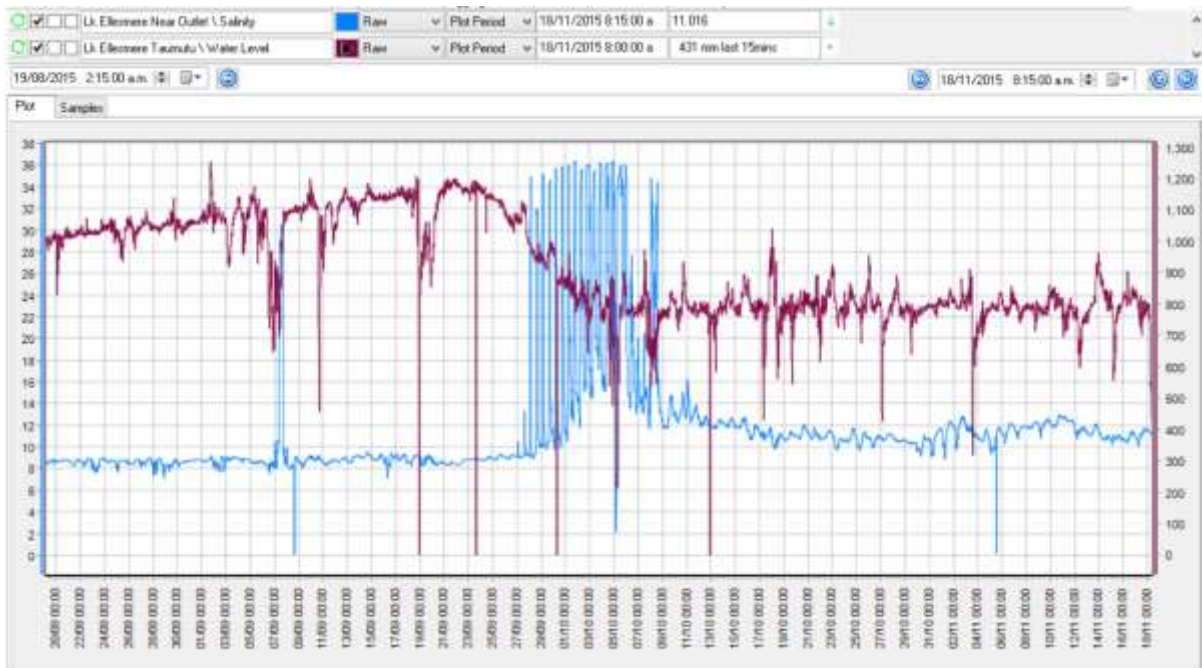


Fig 8: Near outlet site for past three months. Red line is the water level; Blue line is salinity. You can see as the level decreases following the recent opening the salinity increases and then you can see the tidal increases in salinity until the lake closes. You can also see an earlier event where the level has dropped significantly and the salinity increased. This is likely to be a southerly storm with the lake blowing northwards (causing the level to drop by 400 mm) and waves overtopping the barrier.