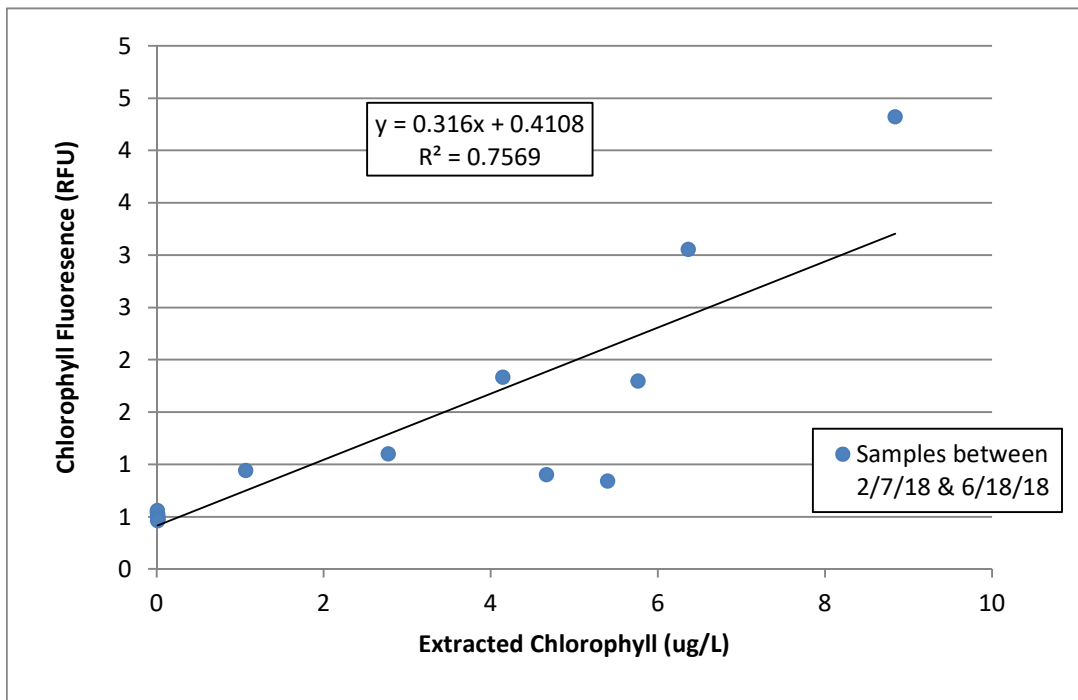


# SATURN-03 PRELIMINARY Chlorophyll Sensor Field Calibration (1/31/18 - 7/1/18)

## Calibration Details:

The fluorometer at SATURN-03 was replaced with another Turner Designs Cyclops 7 chlorophyll fluorometer on 1/31/17. The new sensor was calibrated against extracted chlorophyll samples taken from field samples collected between February and June 2018. The corresponding sensor reading was determined by interpolating the *in situ* sensor data to the grab sample time-point. Data from 8 grab samples and 10 *in-situ* DI readings made at SATURN-03 were used to calculate the relationship between sensor response and extracted chlorophyll concentration (see figure & table below). The data were fit with the sensor output as the dependent variable and then translated to the following calibration equation: Chlorophyll ( $\mu\text{g/L}$ ) =  $3.17 * \text{rfu} - 1.3$ . The calibration should be considered preliminary and may change once additional samples are collected and included in the calibration.



## Field Sample Data for calibration:

Sample Date	Level (m)	Replicates	Extracted Chlorophyll ( $\mu\text{g/L}$ )	Ex. Chl std. dev.	Ex. Chl. % c.v.	Station Chlorophyll (rfu)
2/7/18 0:00	0.0		0.01			0.523
2/7/18 13:23	2.4	2	1.068	0.006	0.588	0.940
3/6/18 10:59	2.4	2	4.148	0.051	1.228	1.831
3/7/18 0:00	0.0		0.01			0.505
3/19/18 0:00	0.0		0.01			0.476
3/19/18 10:10	2.4	2	2.774	0.056	2.004	1.099

4/9/18 0:00	0.0		0.01			0.537
4/9/18 8:52	2.4	2	8.841	0.277	3.134	4.321
4/23/18 0:00	0.0		0.01			0.486
4/23/18 8:52	2.4	2	6.367	0.325	5.112	3.052
5/14/18 0:00	0.0		0.01			0.558
5/29/18 0:00	0.0		0.01			0.486
5/29/18 9:10	2.4	2	5.764	0.043	0.743	1.794
6/4/18 0:00	0.0		0.01			0.492
6/4/18 9:52	2.4	2	4.670	0.034	0.724	0.901
6/12/18 0:00	0.0		0.01			0.471
6/18/18 0:00	0.0		0.01			0.459
6/18/18 9:04	2.4	2	5.401	0.029	0.542	0.838