Lake Tahoe Water Quality Investigations

Algal Growth Potential assays • Phytoplankton • Periphyton

Annual Report

July 1, 2016– June 30, 2017

Submitted to:
State Water Resources Control Board
Lahontan Regional Water Quality Control Board

By:

UCDAVIS
Tahoe Environmental
Research Center

August 22, 2018

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Agreement No. 16-076-160

Submitted to:
State Water Resources Control Board
Lahontan Regional Water Quality Control Board

Submitted by:
Tahoe Environmental Research Center
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Acknowledgments

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Disclosure Statement

This report was prepared through Agreement #16-076-160 with the State Water Resources Control Board, Lahontan Regional Water Quality Control Board. The total amount of funding under this agreement, for work done by the U.C. Davis Tahoe Environmental Research Center for a three year term (Dec. 15, 2016 to June 30, 2019) was $591,650.

Executive Summary

This document provides a report of work completed by the U.C. Davis – Tahoe Environmental Research Center (TERC) between July 1, 2016 and June 30, 2017 under Agreement No. 16-076-160: Lake Tahoe Water Quality Investigations. Primary areas of investigation or tasks presented in this report include: (1) algal growth potential assays; (2) phytoplankton identification and enumeration; and (3) quantification of periphyton (attached algae) in the littoral zone.

AGP Assays

The purpose of the Algal Growth Potential (AGP) assay task is to compare levels of algal growth potential in the nearshore to identify emerging problem areas. The Algal Growth Potential (AGP) assay test was first conducted as part of the California-Nevada-Federal Joint Water Quality Investigations in the late 1960's and early 1970's (California Department of Water Resources "DWR", 1970-75) to assess the maximum amount of algal growth supported by available nutrients in sampled waters. The Lahontan Regional Water Quality Control Board has an existing water quality standard which states that *mean annual AGP at a site should not be greater than two times the mean annual AGP at a mid-lake reference station"*. Sites with samples having repeatedly high AGP, or which exceed this standard repeatedly would deserve closer scrutiny of algae growth levels, and the environmental factors contributing to that growth.

The results from monitoring during 2016 indicated that the Lahontan standard was not exceeded at any sites. In the previous two years (2014 and 2015) the standard was exceeded only in 2015 at two stations, Tahoe City and Timber Cove. AGP at Tahoe City was 2.51 times the mid-lake annual mean, and AGP at Timber Cove was 2.65 times the annual mean in 2015.

There were differences in algal growth potential between sites on several individual collection dates. The highest level of variation for AGP between sites was for the experiment done using lake water collected 3/10/17. The highest levels of AGP in that experiment were measured for water collected from Timber Cove (1.70 µg/l chlorophyll *a*), Emerald Bay (1.49 µg/l), Tahoe Keys nearshore (1.38 µg/l) and Tahoe City (1.06 µg/l). The lowest levels of AGP in that experiment were measured for water collected from Mid-lake North (0.45 µg/l), Mid-lake South (0.50 µg/l) and Crystal Bay (0.50 µg/l). AGP was relatively similar among all sites in tests done on 9/14/16 and 6/28/17. Overall, no sites consistently had high or low AGP in the five experiments run.

Levels of nutrients (NO_3-N, NH_4-N, SRP and TP) and specific conductance were analyzed in the 3/10/17 experiment described above which showed high variation in AGP response. NO_3-N levels were elevated at all sites (range 8-16 ppb) except Emerald Bay (NO_3-N = 1ppb). The elevated NO_3-N was likely due to mixing in the main body of the lake. In addition, SRP was slightly elevated, (3ppb), at Timber Cove possibly associated with nearby surface runoff from one or more nearby sources (U. Truckee River and Trout Cr. to the west, and nearby Bijou Cr.). Specific conductance was slightly lower (range 87-89 µS cm^{-1}) than typical lake specific conductance (~92 µS cm^{-1}) at Tahoe City, Kings Beach, Crystal Bay, Timber Cove and Camp Richardson possibly indicating diluting influence of surface runoff at these sites on 3/10/17. Emerald Bay specific conductivity (62 µS cm^{-1}) was much lower than the main lake (typical

conductivity ~92 μS cm^{-1}), reflecting the input of low specific conductance tributary water from nearby Eagle Cr. on this date.

The AGP tests produced ambiguous results in at least one test. In the test done 6/21/16 it was difficult to know if the increase in chlorophyll *a* at many sites was a photoacclimation response (i.e. change in levels of cellular chlorophyll *a* due to changes in light conditions from intense natural light to lab incubation) or an actual growth response. In that experiment there was an unusually large amount of one type of diatom (*Cyclotella gordonensis*), and the overall sample had very low chlorophyll *a* levels relative to biovolume when collected. The levels of chlorophyll *a* could have been reduced due to the high intensity light and UV present at the shallow sampling depth of 0.5m. During laboratory incubation under much less intense light than natural conditions (and very little or no UV), chlorophyll *a* increased in sample water from nearly all sites. This may have been a photoacclimation response rather than a growth response.

Consideration should be given of either modifying or possibly substituting another method for assessing algal growth potential at sites. Use of the test with shallow nearshore waters in the summer, where light is particularly intense may be problematic due to the potential for photo-acclimation and changing chlorophyll *a* levels in response to changing light. In addition, the different phytoplankton assemblages collected from sites, may have different chlorophyll *a* to biomass relationships and different chlorophyll *a*: biomass relationships in response to nutrient stress. Chlorophyll *a*: growth relationships may differ in algae collected from different sites.

Phytoplankton Enumeration

Characterization of phytoplankton species and abundance provides important data with regard to the base of the food web and nearshore condition in Lake Tahoe. Changes in the number and biodiversity of phytoplankton are indicators of nutrient loading, eutrophication and trophic status. Additionally, data and information generated through this task helps managers to determine if new and undesirable species (e.g. bloom-forming organisms, taste and odor species, or species that indicate a move away from the lake's current ultra-oligotrophic status) are colonizing the lake. Furthermore, these organisms influence lake clarity.

In this year's report, phytoplankton data from eleven near-shore sites and two open water (mid-lake) sites, collected March 23, 2016 to May 23, 2017 were presented. The highest total bio-volume during the March 2016 to May 2017 period was seen in June 2016 at all sites except Camp Richardson and Emerald Bay for which biovolumes were more consistent with levels on other the other sampling dates. The high biovolumes in this June sampling, were due to the unusually large presence of one type of diatom, *Cyclotella gordonensis*. Winder and Hunter, 2008 and Winder et. al. 2009 indicate these algae are excellent competitors during low nutrient, high light and warmer temperature conditions. It is interesting that the biovolume was greatest among all sites near the middle-north portion of the lake (Mid-lake North) on 6/21/17. Very strong south and southwest winds were noted during the week prior to sampling, and it could be the high levels of *Cyclotella gordonensis* at the Mid-lake North station, were the result of accumulation associated with lake circulation patterns.

Occasionally a few sites had types of algae which can be associated with more fertile waters (green algae, cyanobacteria, or euglenophytes). The biovolumes of overall algae at these sites however were relatively low at the time of sampling. In June, 2016 green algae (predominantly *Spirogyra*) contributed to about half the biovolume at the nearshore site near the Tahoe Keys. In September 2016, the green algae *Botryococcus braunii* contributed substantially to the biovolume at Sunnyside, Tahoe Keys offshore, and Rubicon Bay sites. A green filamentous algae *Mougeotia* also contributed to the biovolumes at Glenbrook and the Tahoe Keys offshore site. Cyanophytes constituted about one third of the phytoplankton abundance at Glenbrook and Zephyr Cove in the June 2016 sampling. The cyanophyte present at both sites was *Aphanothece*. These algae were not consistently present at the sites and overall biovolume or abundance was relatively low.

Emerald Bay continues to often be an 'outlier' station, in terms of phytoplankton community. In June of 2016 it did not have the high biovolumes of *Cyclotella gordonensis* observed at most other parts of the lake and overall biovolume was low relative to most other sites. In March of 2017 the biovolume in Emerald Bay was much higher than other sites around the lake, due to a large biovolume contribution from *Synedra acus*.

Tahoe City continued to have the greatest mean number of species for samples (35±7 species), followed by Tahoe Keys nearshore (32±6 species), Emerald Bay (29± 7 species) and Kings Beach (29± 4 species). In contrast, the two mid-lake sites had the lowest mean numbers of species: Mid-lake No. (21±6) species and Mid-lake So. (21±4). In (Heyvaert et al., 2013, Table 14-2) number of species from 20-50 are characterized as levels associated with oligotrophic conditions, levels <20 species are characterized to be associated with ultra-oligotrophic conditions and levels 50-100 with mesotrophic, and >100 with eutrophic conditions. The levels during 2016-2017 continue to be in the oligotrophic range.

Periphyton Quantification

The purpose of the periphyton quantification task is to assess biomass levels of nearshore attached algae (periphyton) around the lake. Excessive attached algae biomass coats the rocks in the spring in many areas around the lake and bright green filamentous algae occur along portions of the shoreline in the summer. Nearshore periphyton can adversely impact the aesthetic, beneficial use of the shore zone in areas where thick growth develops. The amount of periphyton biomass can reflect local nutrient loading and also be affected by long-term environmental changes. Monitoring trends in periphyton biomass is important in assessing local and lake-wide nutrient loading trends. This report presents the results for periphyton monitoring during the period October 2016 to July 2017.

Lake level had an impact on periphyton levels near the surface at 0.5m both when it was low in the fall and as it rose steadily throughout the winter. In the fall of 2016, the lake level was very low, below the natural rim of 6223.0 ft. At many sites the heaviest biomass of the year at 0.5m, was measured in the October, 2016 sampling. Cyanobacteria were present at many sites at 0.5m (due to the lowered lake level), which resulted in light to moderate amounts of periphyton biomass. Beginning in mid-October multiple very large wet storms impacted the lake (including in notable storms in mid-Oct., mid-Dec., early January and early Feb.). A substantial rise in lake level occurred during this period of over four feet from Dec. to March, with an additional rise of 2 feet from March to early summer associated with a prolonged spring runoff. The large

increases in lake level during the winter resulted in areas of little or no periphyton growth on the newly submerged substrate right along shore at 0.5m. Only Pineland and Tahoe City showed small peaks in biomass at 0.5m late in March.

At many routine sites, much heavier biomass was observed at 1 or 1.5m during the winter and spring sampling. On May 22, 2017 we collected samples from 1.0 and 1.5m at Pineland using SCUBA, in addition to the routine 0.5m chlorophyll samples. These samples showed a gradient in biomass with depth. Levels of chlorophyll *a* were 3.01 mg/m^2 at 0.5m, 12.52 mg/m^2 at 1m and 104.79 mg/m^2 at 1.5m.

Once each spring an intensive synoptic sampling is done in which levels of periphyton at approximately 50 sites are assessed using a rapid assessment method called the Periphyton Biomass Index (PBI). This sampling provides essentially a "snapshot" of the levels of periphyton around the lake during the period of peak spring biomass. This year due to the large rise in lake level, we made observations at 1.0 and approximately 1.5m at many of these sites in addition to the standard measurements at 0.5m. Generally light PBI was observed at 0.5m around much of the lake. Only a few sites had moderate to heavy PBI, i.e.: Tavern Pt. (PBI=1.62), Tahoe City Boat Ramp (1.47), Lake Forest (1.09) and Brockway (1.20). Heavier PBI was observed at 1.0m many sites, particularly in the northwest and southwest portions of the lake and at individual sites along the east shore. Very high levels of PBI levels at 1.5m were observed at: South Dollar Cr. (5.0), Tahoe City Tributary (5.0), South Dollar Pt. (4.5) and Pineland (4.5). The generally high levels of biomass at 1.5m may have resulted from these sites being submerged much of the winter and spring allowing for long periods for colonization and growth and exposure to nutrient inputs associated with storms.

The predominant algal types in the periphyton observed around the lake during the spring synoptic were primarily stalked diatoms and a pennate diatom tentatively identified as *Synedra ulna*. At some sites there was a low-growing film of a particularly small stalked diatom possibly either *Gomphonema* or *Gomphoneis*. This algae appeared to do well in some areas with significant wave activity.

Finally, on June 25, 2017 we had the opportunity to view the shoreline around the lake by helicopter. One of the features that was quite obvious on this flight was the periphyton still present along much of the shoreline at the base of the Ward Valley watershed. The periphyton was very apparent from the air as a white coverage over the bottom extending from slightly south of the Ward Cr. mouth to Sunnyside Marina.

Nearshore Station Network

Two new nearshore stations were added in November 2017. One is located at Timber Cove and the other is at Camp Richardson. Real-time data from both stations is available through the UC Davis Fluxstream account (access provided to Lahontan). The Timber Cove station was damaged by a lightning surge in May 2018, and is currently under repair.

Critical Review of Present Monitoring Program

A review of the program is being conducted by Geoff Schladow, Steve Sadro, Scott Hackley and Shohei Watanabe.

Introduction

This report presents the results of work completed by the U.C. Davis – Tahoe Environmental Research Center (TERC) between July 1, 2016 and June 30, 2017 under Agreement No. 16-076-160: Lake Tahoe Water Quality Investigations. Primary areas of investigation or tasks presented in this report include: (1) algal growth potential assays; (2) phytoplankton identification and enumeration; and (3) quantification of periphyton (attached algae) in the littoral zone. Quality assurance and quality control details for the investigations are presented in Section IV of the report. Detailed summaries of AGP data and phytoplankton enumeration data are presented in the appendix. Other elements of the contract, specifically the installation of two nearshore stations and a review of the monitoring program were not complete as of June 30, 2017.

Section I. Algal Growth Potential Assays

With increasing focus on the environmental health of the nearshore the AGP test was included with monitoring work beginning in August 2013 to evaluate algal growth potential at different nearshore and offshore stations around Lake Tahoe. These tests have been continued into 2018. The purpose of these measurements is to compare levels of algal growth in the nearshore and offshore, to identify potential problem areas, and to evaluate conditions relative to an established water quality standard. Availability of the nutrients, nitrogen (N) and phosphorus (P) in the water, and levels of nutrients previously taken up by phytoplankton (known as luxury uptake) are important factors that contribute to growth.

Methods

AGP assay tests are performed on samples collected from 13 stations (Figure 1, Table 1) four times per year (usually in early winter, late winter/early spring and late spring/early summer, and late summer/early fall). Samples of lake water (usually from a depth between 0.5-1.5m) are collected from a boat, using a Van Dorn water sampler. Many of the current sites are in proximity to sites sampled by DWR in their study of Lake Tahoe in the 1970's (DWR, 1970-1975). Two open-water reference sites are also sampled, one near mid-lake north (U.C. Davis's MLTP station), and the other a mid-lake south site (similar to that used by DWR). A sample for phytoplankton identification and enumeration is also collected directly from the Van Dorn sampler and treated with Lugol's reagent at the time water is collected for the AGP assay. Lake water from each site for the AGP assay is filtered through an 80 µm size mesh netting to remove large zooplankton, and collected in 4 liter HDPE bottles. The samples are kept near lake temperature in the dark in a cooler and returned to the lab at TERC where the experiment is usually started the same day.

In the AGP experiment, lake water from each site is divided into duplicate flasks and incubated under controlled light (CW fluorescent light with intensity ~ 74 µ E m^{-2} sec^{-1}), standard light cycle (i.e. 16 hour light, 8 hour dark) and at ambient lake temperature.[1] Algal biomass changes are measured by tracking *in vivo* chlorophyll *a* fluorescence in water from the flasks throughout

[1] These methods differ slightly from the early DWR studies with respect to: lighting (DWR used a light intensity of 700 foot candles or ~91 µ E m^{-2} sec^{-2}) and temperature (DWR used a constant temperature of 20° C) However, we think incubation at 20° C might adversely affect some cold water species represented in the winter community.

the experiment using a Turner Designs 10AU fluorometer (configured for *in vivo* and extractable chlorophyll *a* measurement). On one or more days of the experiment, typically near the growth peak, subsamples are also filtered for later chlorophyll *a* extraction and analysis. Equations relating *in vivo* fluorescence measurements to extracted chlorophyll *a* are determined. The equations may then be used to calculate chlorophyll *a* on days when *in vivo* fluorescence peaks and extracted chlorophyll *a* was not measured. The peak chlorophyll *a* value achieved during the assay is considered the Algal Growth Potential (AGP).

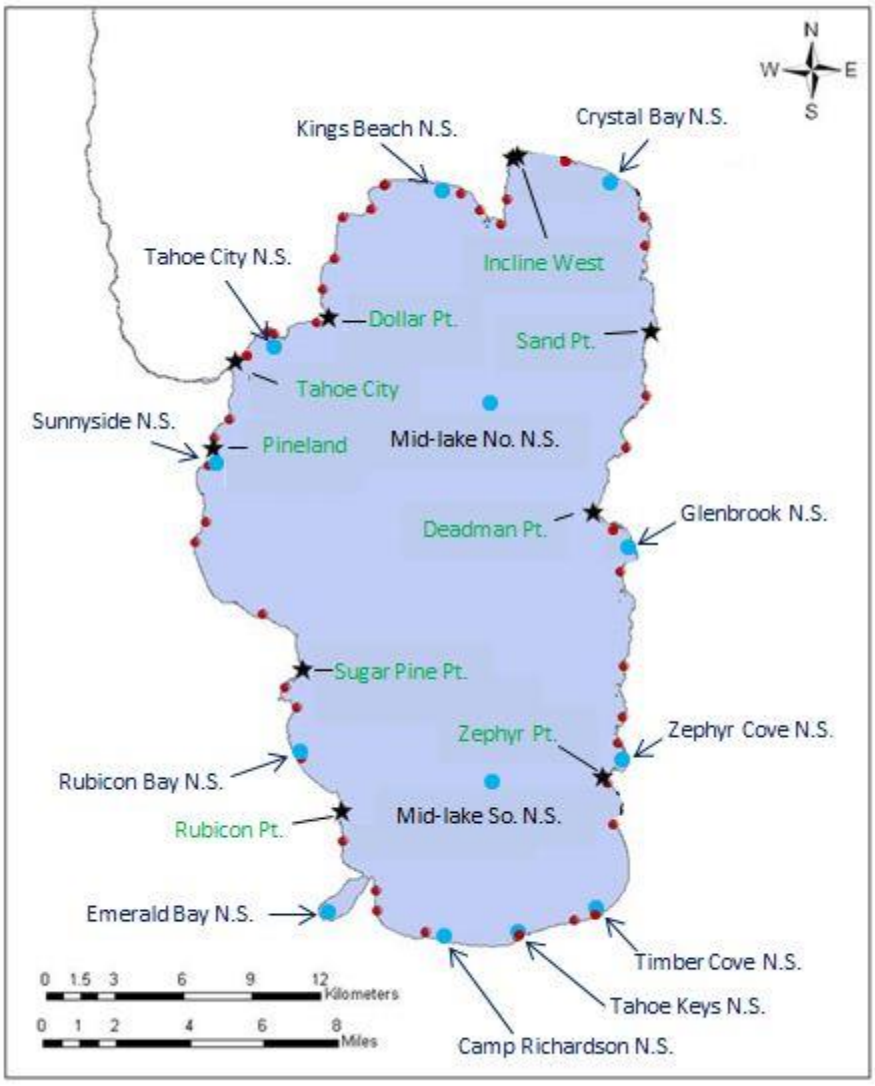


Figure 1. Map showing locations of AGP nearshore stations (light blue dots), routine periphyton monitoring stations (green text, black stars) and spring synoptic periphyton stations (red dots).

Table 1. Description of AGP and phytoplankton monitoring sites.

Site	Coordinates	Site Description	Water Depth at Station
Nearshore Sites			
Sunnyside	N39 07.805 W120 09.216	~ 15 m from first pier just north of Ward Cr.	~ 3-4m
Tahoe City	N39 10.808 W120 07.173	~18-27 m outside of entrance to Tahoe City Boat Ramp area and pier	~2.5-3.5m
Kings Beach	N39 14.179 W120 02.207	~ 70 m from shore, offshore of "Lake Point Pier" slightly east of "Heritage Cove" condominiums	~ 2-3m
Crystal Bay	N39 14.258 W119 56.798	~45 m offshore of mouth of Incline Cr., Crystal Bay	~2.5-3.5m
Glenbrook	N39 05.371 W119 56.489	~ 15 m from right side "T" of old pilings, near piling at boundary of swim area,~70 m from shore, Glenbrook	~2.5-3.5m
Zephyr Cove	N39 00.512 W119 56.993	Off first set of beach stairs north of Zephyr Cove pier, ~27 m outside of swim area boundary, ~90 m from shore.	~2.5-3.5m
Timber Cove	-	~45-70 m northwest of end of Timber Cove pier	~2-3m
Tahoe Keys Nearshore	N38 56.423 W120 00.574	~70 m offshore of lake-side pier at Tahoe Keys, (Note- site for AGP#1 was ~115 m further offshore)	~1.5-3m
Camp Richardson	N38 56.531 W120 03.383	Adjacent to end of Camp Richardson pier	2-4m
Emerald Bay	N38 57.187 W120 06.367	Adjacent to either the pier or near north edge of swim area boundary, both near Vikingsholm	~4-6m
Rubicon Bay	N39 00.875 W120 06.840	~70 m offshore of pier in shallow area	~2-4m
Mid-lake Sites			
Mid-lake North	N39 09.255 W120 00.478	Location of TERC MLTP station in north mid-lake, approx. 10.5 km east of Tahoe City	>450m
Mid-lake South	N38 59.641 W120 00.080	South mid-lake approximately 6.5 km north of Pope Beach.	>400m

Extracted chlorophyll *a* is analyzed fluorometrically using a Turner Designs 10AU fluorometer, calibrated with pure chlorophyll *a* from *Anacystis nidulans* algae. Frozen sample filters containing algae are thawed and extracted overnight at 4°C, in 100% methanol, then fluorescence before and after acidification with 0.05ml of 0.3N HCl is measured. Chlorophyll *a* and pheophytin concentrations are determined using the following equations:

Chlorophyll *a* (µg/l) = $(r/(r-1)) \times (R_b-R_a) \times V_{ex}/V_{fil}$
Pheophytin (µg/l) = $(r/(r-1)) \times (rR_a-R_b) \times V_{ex}/V_{fil.}$
R_b= Fluorescence of sample extract before acidification (minus) fluorescence of filter blank
R_a= Fluorescence of sample extract after acidification (minus) fluorescence of filter blank
V_{fil}= Volume of lake water filtered (Liters), usually 0.1 L

V_{ex} = Volume of methanol used for extraction (Liters), usually 0.005L
r = mean of R_b/R_a values for a range of pure chlorophyll standards.
(r = 2.475 for current calibration)

Additional field and lab data collected for these experiments includes: lake surface water temperature at time of collection; background fluorescence of the initial water collected (fluorescence of GF/F filtered water); and results of chemical analysis of N and P in the initial lake water for the 3/10/17 sampling (not part of contracted work; however, this was done to provide supplementary information on nutrients in water at time of sampling).

AGP Assay Results June 2016 - June 2017:

This report presents the results of 5 AGP assay tests were done on lake between June, 2016 and June, 2017. Table 2 presents a summary of initial lake temperature, chlorophyll *a* and maximum chlorophyll *a* level achieved during the test (algal growth potential). Figures 2.a-2.e present the initial chlorophyll *a* and AGP results graphically for each experiment. Detailed summaries of the AGP test data are included in Appendix 1.

Summary of Results by AGP Assay:

AGP Assay #12 (6/21/16)
This sampling was done in early summer 2016, the results were not ready for inclusion in the 2016 report and so are presented here. Stream flows were declining as the spring runoff was nearly over. It was noted to be very windy the week prior to the sampling with SW or SSW winds. Much pollen was noted on the surface at many of the sites. Lake surface temperature ranged between 13-16 °C. Lake chlorophyll *a* concentrations were relatively low at most sites (between 0.13 to 0.25µg/l). This was despite there being an unusually high amount of the very small diatom *Cyclotella gordonensis* present at most sites. Chlorophyll *a* in Emerald Bay was higher (0.43 µg/l). The results of this experiment showed the highest AGP level occurred at the Mid-lake North station where maximum chlorophyll *a* reached 0.86 µg/l. AGP at the Mid-lake South station was much lower 0.38 µg/l. AGP levels at the shoreline sites ranged from 0.22 µg/l in Rubicon Bay to 0.61 µg/l at Tahoe City.

AGP Assay #13 (9/14/16)
This was a late summer sampling. Lake surface temperature was still very warm and ranged between 17-19 °C. Initial lake chlorophyll *a* concentrations were low at all sites (between 0.15 to 0.27 µg/l). AGP levels were also low at all sites. Little additional growth occurred in samples with AGP ranging between 0.20-0.31 µg/l.

Table 2. Summary of Lake Tahoe Algal Growth Potential Test results for nearshore and mid-lake sites, for samples collected 2016-2017.

	Date Collected	Time Collected	Lake Surface Temp. (°C)	Collection Depth (m)	Initial Chl *a* (µg/l)	Final AGP Results (Maximum Chl *a* Achieved) Chl. *a* ± s.d. (µg/l)
AGP#12						
Sunnyside	6/21/2016	13:55	14	0.5	.16±.02	.31 ± .01
Tahoe City	6/21/2016	9:10	13	0.5	.25±.01	.61 ± .02
Kings Beach	6/21/2016	10:00	14.5	0.5	.23±.00	.55 ± .05
Crystal Bay	6/21/2016	10:22	15	0.5	.21±.01	.42 ± .03
Glenbrook	6/21/2016	10:50	15	0.5	.19±.01	.45 ± .01
Zephyr Cove	6/21/2016	11:15	14	0.5	.13±.01	.38 ± .02
Timber Cove	6/21/2016	11:45	15	0.5	.13±.01	.50 ± .04
Tahoe Keys	6/21/2016	12:00	15	0.5	.19±.01	.53 ± .01
Camp Rich.	6/21/2016	12:10	15	0.5	.15±.01	.32 ± .01
Emerald Bay	6/21/2016	12:40	15.5	0.5	.43±.00	.43 ± .00
Rubicon Bay	6/21/2016	13:10	16	0.5	.11±.01	.22 ± .01
Mid-lake North	6/21/2016	9:32	13.5	0.5	.17±.00	.86 ± .07
Mid-lake South	6/21/2016	11:30	14	0.5	.15±.01	.38 ± .04
AGP#13						
Sunnyside	9/14/2016	14:20	17	0.5	.21±.03	.25 ± .00
Tahoe City	9/14/2016	9:20	15	0.5	.20±.01	.23 ± .01
Kings Beach	9/14/2016	10:20	16.5	0.5	.25±.02	.25 ± .02
Crystal Bay	9/14/2016	10:40	17	0.5	.21±.04	.24 ± .01
Glenbrook	9/14/2016	11:17	17	0.5	.24±.01	.24 ± .01
Zephyr Cove	9/14/2016	11:40	17	0.5	.15±.06	.26 ± .01
Timber Cove	9/14/2016	12:15	15.5	0.5	.18±.02	.20 ± .00
Tahoe Keys	9/14/2016	12:30	15.5	0.5	.27±.01	.27 ± .01
Camp Rich.	9/14/2016	12:47	16.5	0.5	.16±.01	.31 ± .01
Emerald Bay	9/14/2016	13:15	17	0.5	.26±.02	.29 ± .02
Rubicon Bay	9/14/2016	13:50	17	0.5	.17±.00	.23 ± .00
Mid-lake North	9/14/2016	9:45	16.5	0.5	.21±.04	.26 ± .01
Mid-lake South	9/14/2016	12:00	16.5	0.5	.19±.02	.20 ± .02

Table 2 Continued

	Date Collected	Time Collected	Lake Surface Temp. (°C)	Collection Depth (m)	Initial Chl *a* (µg/l)	Final AGP Results (Maximum Chl *a* Achieved) Chl. *a* ± s.d. (µg/l)
AGP#14						
Sunnyside	3/10/2017	14:10	5.5	1	0.38	.65 ± .00
Tahoe City	3/10/2017	9:10	5.5	1	.24±.00	1.06 ± .07
Kings Beach	3/10/2017	10:05	-	1	.44±.01	.55 ± .04
Crystal Bay	3/10/2017	10:35	5.5	1	.47±.04	.50 ± .02
Glenbrook	3/10/2017	11:10	5.5	1	.36±.01	.72 ± .05
Zephyr Cove	3/10/2017	11:30	6	1	.59±.04	.65 ± .03
Timber Cove	3/10/2017	12:00	6	1	.37±.01	1.70 ± .05
Tahoe Keys	3/10/2017	12:15	6.5	1	.58±.06	1.38 ± .04
Camp Rich.	3/10/2017	12:25	6	1	.26±.01	.82 ± .01
Emerald Bay	3/10/2017	12:50	3	1	1.49±.01	1.49±.01
Rubicon Bay	3/10/2017	13:45	6	1	.33±.04	.69 ± .06
Mid-lake North	3/10/2017	9:30	5.5	1	.20±.00	.46 ± .03
Mid-lake South	3/10/2017	11:40	5.5	1	.27±.06	.50 ± .01
AGP#15						
Sunnyside	5/23/2017	13:45	14	1	.09±.01	.44 ± .04
Tahoe City	5/23/2017	9:00	9.5	1	.69±.04	.72 ± .05
Kings Beach	5/23/2017	9:45	10.5	1	.36±.03	.64 ± .04
Crystal Bay	5/23/2017	10:15	11.5	1	.21±.04	.49 ± .02
Glenbrook	5/23/2017	10:50	11.5	1	.40±.00	.45 ± .00
Zephyr Cove	5/23/2017	11:15	11	1	.41±.04	.43 ± .01
Timber Cove	5/23/2017	11:45	13.5	1	.21±.01	.48 ± .02
Tahoe Keys	5/23/2017	11:55	13	1	.24±.06	.42 ± .09
Camp Rich.	5/23/2017	12:10	13	1	.14±.04	.33 ± .01
Emerald Bay	5/23/2017	12:45	14.5	1	.29±.01	.54 ± .08
Rubicon Bay	5/23/2017	13:15	15	1	.14±.01	.47 ± .03
Mid-lake North	5/23/2017	9:25	11	1	.12±.01	.40 ± .01
Mid-lake South	5/23/2017	11:30	13	1	.18±.00	.41 ± .04

Table 2 Continued

	Date Collected	Time Collected	Lake Surface Temp. (°C)	Collection Depth (m)	Initial Chl *a* (µg/l)	Final AGP Results (Maximum Chl *a* Achieved) Chl. *a* ± s.d. (µg/l)
AGP#16						
Sunnyside	6/28/2017	14:10	16.5	1	.24±.01	.36 ± .02
Tahoe City	6/28/2017	8:20	16	1	.24±.02	.33 ± .04
Kings Beach	6/28/2017	9:05	17.5	1	.28±.01	.31 ± .04
Crystal Bay	6/28/2017	9:30	NA	1	.29±.02	.33 ± .00
Glenbrook	6/28/2017	10:15	18	1	.22±.01	.33 ± .01
Zephyr Cove	6/28/2017	10:37	18.5	1	.25±.01	.40 ± .02
Timber Cove	6/28/2017	11:25	20	1	.33±.01	.33 ± .01
Tahoe Keys	6/28/2017	11:45	17	1	.29±.01	.29 ± .01
Camp Rich.	6/28/2017	12:20	NA	1	.23±.01	.25 ± .02
Emerald Bay	6/28/2017	13:00	18	1	.39±.01	.39 ± .01
Rubicon Bay	6/28/2017	13:40	18	1	.22±.02	.32 ± .03
Mid-lake North	6/28/2017	8:45	17	1	.21±.03	.34 ± .05
Mid-lake South	6/28/2017	10:55	13	1	.18±.00	.30 ± .01

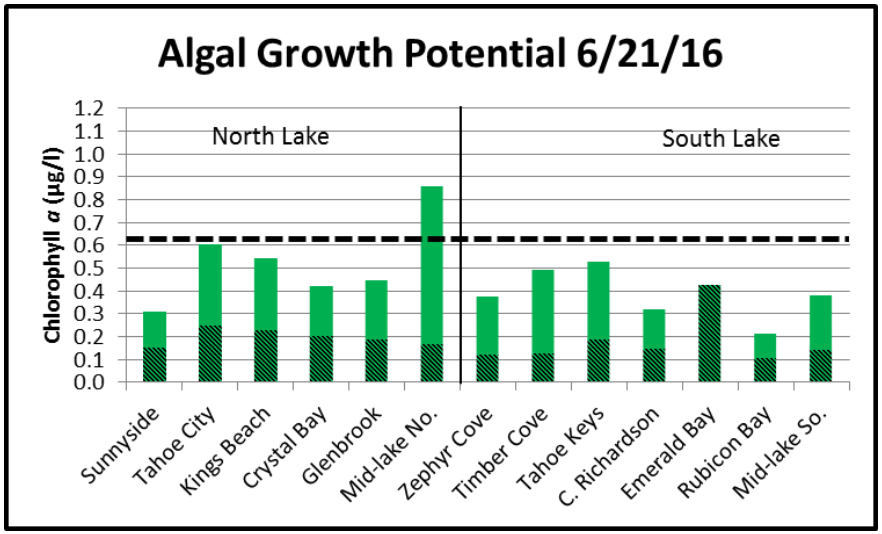


Figure 2a. 6/21/16 algal growth potential experiment. In all figure 2 charts, dark shading is initial chlorophyll *a* concentration, light green is subsequent increase in chlorophyll *a* (if any) during experiment, total height of bar(s) (dark + light green) is algal growth potential, dashed line is mean of Mid-lake North and South AGP levels.)

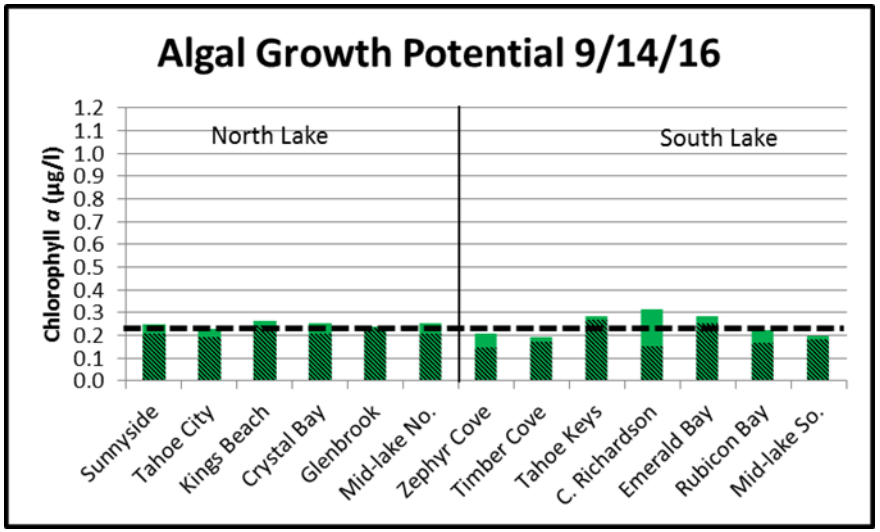


Figure 2b. 9/14/16 algal growth potential experiment.

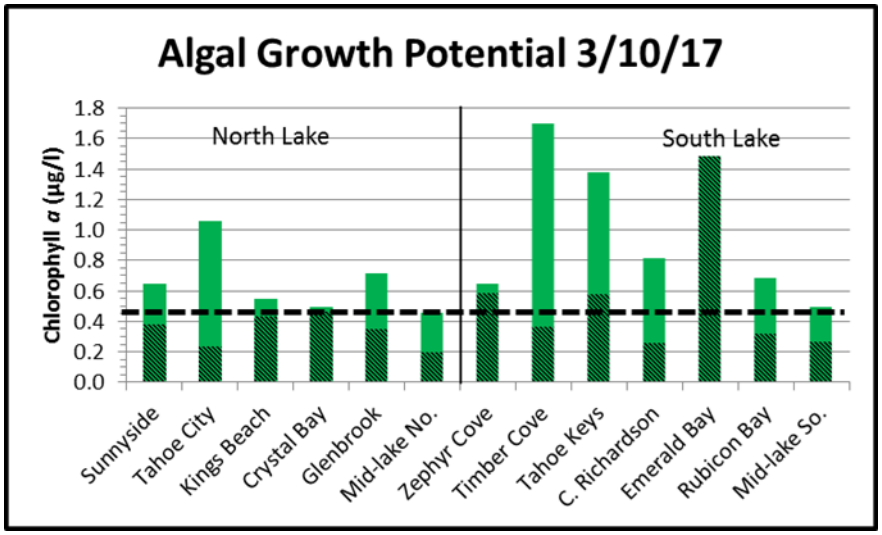


Figure 2c. 3/10/17 AGP results. Stream inputs were quite elevated in February associated with strong storm events. Note scale change for chlorophyll *a* levels.

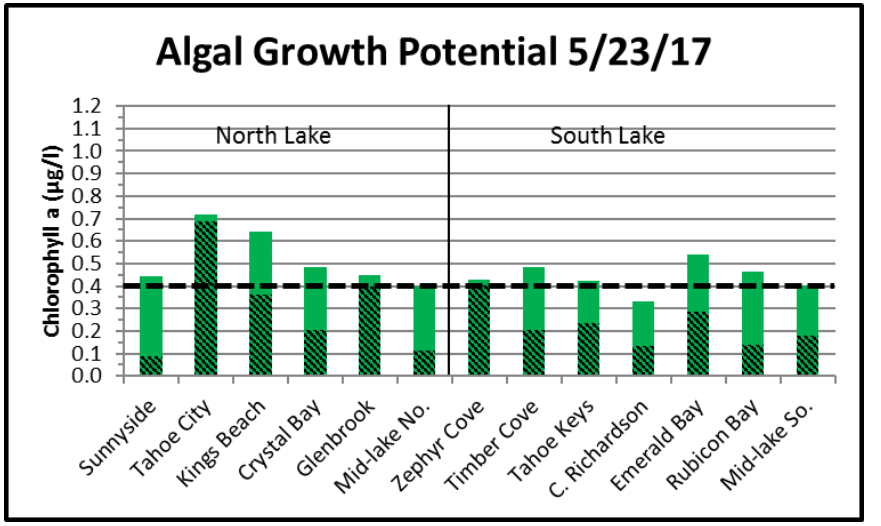


Figure 2d. 5/23/17 AGP results.

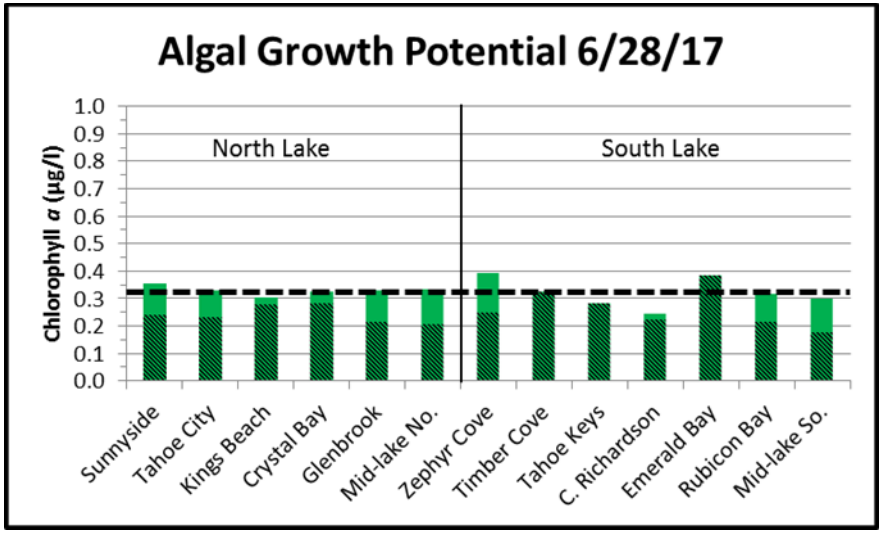


Figure 2e. 6/28/17 AGP results.

AGP Assay #14 (3/10/17)

A December bioassay was not done. Our research boat was not available during this period due to repairs. The period December to March included multiple large storm events. Stream flows were quite elevated during two storm events in December 2016, as well as for large storm events in January and February 2017. Between Dec. 1, 2016 and March 10, 2017 the lake level increased by over four feet due to the storms. A very large snowpack also developed which would fuel a substantial spring runoff and additional lake level rise.

This was a late winter/early spring sampling. This sampling just preceded onset of the spring runoff. A very strong SW wind event occurred on March 4. Initial lake chlorophyll *a* concentrations ranged between 0.24 µg/l to 0.59 µg/l in the main body of the lake, while initial chlorophyll *a* in Emerald Bay was relatively high (1.49 µg/l). Three sites in the south portion of the lake showed substantial increases in chlorophyll *a* during the experiment resulting in moderately high AGP chlorophyll *a* levels (i.e. Timber Cove (1.69 µg/l), Tahoe Keys (1.35 µg/l), and Camp Richardson (0.82 µg/l)). Emerald Bay AGP was the initial chlorophyll *a* value (1.49 µg/l). One site in the north portion of the lake had relatively high AGP (Tahoe City (1.03 µg/l)). For comparison, the mean AGP for the mid-lake sites was 0.48 µg/l. The elevated AGP for Emerald Bay, the 3 south shore sites and Tahoe City site may have reflected tributary inputs in these regions and enrichment of the waters nearby in the previous month.

Levels of nutrients (NO_3-N, NH_4-N, SRP and TP) and specific conductance were analyzed in initial lake water from AGP monitoring sites for the 3/10/17 experiment. The results of these analyses are presented in Table 3. Though not part of the contracted work these analyses were done to provide supplementary information to aid in understanding the test results. Some variation in nutrient levels and specific conductance were observed. NO_3-N levels were elevated at many sites. This is consistent with elevated NO_3-N levels observed in lake samples collected during standard LTP profiles on 2/23/17 and 3/9/17 where NO_3-N concentrations ranged between 14 to 16 µg/l. The elevated NO_3-N may have been due to lake mixing during these periods. Specific conductivity is often near 92 µS in lake water. When lake conductivity is less than 92 µS, this may reflect dilution with stream inputs of lower conductivity water. Emerald Bay specific conductivity (62 µS) was much lower than the main lake (92 µS) while NO_3-N there was low, (1 µg/l). The Emerald Bay site is near the inflow of Eagle Cr. and inputs of lower conductivity water there may have resulted in the relatively low conductivity readings. This site may not receive the same level of NO_3-N from lake mixing that sites in the main body of the lake do. Tahoe City, Kings Beach, Crystal Bay, Timber Cove and Camp Richardson had slightly reduced specific conductance relative to the lake, possibly indicating dilution with tributary water. SRP was slightly elevated at Timber Cove. This site may be impacted by inflows from the U. Truckee River and Trout Cr. to the west, and nearby Bijou Cr. The combination of elevated NO_3-N and SRP may have been the cause of the high AGP response at Timber Cove.

Table 3. Initial NO_3-N, NH_4-N, SRP and TP concentrations and specific conductance in lake samples collected for the 3/10/17 AGP experiment.

	NO_3-N	NH_4-N	SRP	TP	S.C.
	3/10/17	3/10/17	3/10/17	3/10/17	3/10/17
Sunnyside	14	2	1	13	92
Tahoe City	8	2	1	11	88
Kings Beach	12	2	1	12	89
Crystal Bay	12	2	1	10	89
Glenbrook	11	2	1	11	92
Mid-lake No.	16	2	1	10	92
Zephyr Cove	14	2	1	17	90
Timber Cove	12	2	3	17	87
Tahoe Keys	11	1	1	14	91
C.Richardson	13	2	1	14	88
Emerald Bay	1	2	1	11	62
Rubicon Bay	14	2	1	12	91
Mid-lake So.	14	2	1	12	92

AGP Assay #15 (5/23/17)
This was a sampling done during the period of higher spring runoff flows for many of the streams. Distinct plumes of turbid tributary water were observed off the mouths of Third and Incline Cr. and the lake water had a slight green color at many sites. Lake surface temperature ranged from 9.5 to 15.0 °C. Initial lake water chlorophyll *a* was variable and ranged from a 0.09 µg/l at Sunnyside to 0.69 µg/l at Tahoe City. Chlorophyll *a* increased at most sites during the experiment. Sites with the highest AGP included Tahoe City (0.72 µg/l), Kings Beach (0.64 µg/l) and Emerald Bay (0.54 µg/l). The mean of the two mid-lake AGP levels was 0.40 µg/l.

AGP Assay #16 (6/28/17)
This sampling was done in summer 2017. Stream flows from many of the tributaries around the lake were declining. Third and Incline Cr. were also on the decline but still producing a sediment plume at the stream mouths (Figure 3 shows sediment plume at Incline Cr. on 6/28/18). The lake surface temperature ranged from 16.0 to 20.0 °C. Initial lake water chlorophyll *a* was relatively low ranging from 0.18 µg/l at Mid-lake South to 0.39 µg/l at Emerald Bay. Six sites showed little or no chlorophyll *a* increase during the experiment. While seven sites showed small increases in chlorophyll *a*. Most sites had AGP near to the mean mid-lake AGP (0.32 µg/l) while two sites had slightly elevated AGP (Zephyr Cove (0.40 µg/l) and Emerald Bay (0.39 µg/l).

Figure 3. Plume of turbid water flowing into lake from Incline Cr. 6/28/17 at 09:30. Samples were taken slightly offshore of plume.

Levels of AGP and the Lahontan AGP Standard

The Lahontan standard for AGP states that mean annual AGP at a site should not be greater than two times the mean annual AGP at a mid-lake reference station. We evaluated the AGP data relative to the Lahontan Standard for 2016. Table 4 presents the algal growth potential test results by date for monitoring sites, along with the mean annual values for annual data (including all three tests) and mean annual values for only the tests done during May – Aug. DWR in 1960's and 1970's typically calculated their annual means based on AGP tests during the May to Aug. period. The annual means for the nearshore sites were then divided by the annual means for the Mid-lake stations to determine whether the Lahontan standard of 2X the mean annual growth at Mid-lake was exceeded. The Lahontan standard was not exceeded in 2016 for either the annual data or for the data May-Sept. Table 5 presents the results for the AGP standard using May – Sept. data. The standard was only exceeded in 2015 at two stations, Tahoe City and Timber Cove.

Table 4. Calendar Year 2016: Algal Growth Potential (AGP) test results by date; Mean Annual AGP; May-Sept. AGP; Station Mean Annual AGP ÷ Mid-lake Mean Annual; May-Sept. Station Mean AGP ÷ May-Sept. Mean Mid-lake AGP.

	AGP Peak Chl.a (µg/l)	AGP Peak Chl. a (µg/l)	AGP Peak Chl. a (µg/l)	Annual Mean AGP	May-Sept. Mean AGP	Annual Mean AGP/ Mid-lake Annual Mean AGP	May-Sept. Mean AGP/ May-Sept. Mid-lake Mean AGP
	3/23/16	6/21/16	9/14/16				
Sunnyside	0.79	0.31	0.25	0.45	0.28	0.81	0.66
Tahoe City	0.78	0.61	0.23	0.54	0.42	0.98	0.99
Kings Beach	0.82	0.55	0.25	0.54	0.40	0.98	0.94
Crystal Bay	0.93	0.42	0.24	0.53	0.33	0.96	0.78
Glenbrook	0.95	0.45	0.24	0.55	0.35	0.99	0.81
Zephyr Cove	0.98	0.38	0.26	0.54	0.32	0.98	0.75
Timber Cove	1.04	0.5	0.2	0.58	0.35	1.05	0.82
Tahoe Keys	1.07	0.53	0.27	0.62	0.40	1.13	0.94
Camp Rich.	0.77	0.32	0.31	0.47	0.32	0.84	0.74
Emerald Bay	0.84	0.43	0.29	0.52	0.36	0.94	0.85
Rubicon Bay	0.56	0.22	0.23	0.34	0.23	0.61	0.53
Mid-Lake:							
Mid-lake No.	0.79	0.86	0.26	0.64	0.56		
Mid-lake So.	0.83	0.38	0.2	0.47	0.29		
Mean Mid-lk	0.81	0.62	0.23	0.55	0.43		

Table 5. May-Sept. Station Mean AGP ÷ May-Sept. Mean Mid-lake AGP. "*" and highlighted in gray, indicates mean May-Sept. AGP levels exceed the Lahontan Standard where mean annual AGP at a station is not to exceed twice the mean annual AGP at a mid-lake reference station

	May-Sept. Mean AGP/ May-Sept. Mid-lake Mean		
	2014	2015	2016
Sunnyside	1.35	1.33	0.66
Tahoe City	1.73	2.51*	0.99
Kings Beach	1.03	1.43	0.94
Crystal Bay	0.99	1.33	0.78
Glenbrook	1.02	1.11	0.81
Zephyr Cove	1.35	1.35	0.75
Timber Cove	1.39	2.65*	0.82
Tahoe Keys	1.47	1.47	0.94
Camp Rich.	1.55	1.25	0.74
Emerald Bay	1.31	1.31	0.85
Rubicon Bay	0.85	1.25	0.53

Chlorophyll *a* and Test Results

The AGP tests produced ambiguous results in at least one test. In the test done 6/21/16 it was difficult to know if the increase in chlorophyll *a* at many sites was a photoacclimation response (change in levels of cellular chlorophyll *a* due to changes in light conditions from intense natural light to lab incubation) or an actual growth response. Through the course of laboratory incubation under much less intense light than natural conditions (and very little or no UV), chlorophyll *a* increased at nearly all sites during the incubation. This could indicate the increase in chlorophyll *a* was due to photoacclimation of the algae and not necessarily growth.

In this experiment there was an unusually large amount of one type of diatom, Cyclotella gordonensis, which may have impacted chlorophyll *a* levels in the tests. The shallow, 0.5m lake water collected for the 6/21/16 test, initially had very low chlorophyll *a* levels relative to biovolume. It's possible the levels of chlorophyll *a* were low in these samples due to their being collected from high light and high UV light zones at 0.5m near the surface (i.e. the algae were photoacclimated to high light intensity environment). There was a very poor association between initial chlorophyll *a* and biovolume (Figure 4) for the initial lake water samples from the sites. Upon transfer to the incubator, chlorophyll *a* levels increased for most sites and maximum chlorophyll *a* achieved (AGP) showed a good association with *initial* biovolume (Figure 5) in samples. Upon transfer to the incubator it's possible the cells responded to lower light and no UV with increased production of chlorophyll *a*.

Consideration must be given to all the factors which may impact chlorophyll *a* in these experiments. Chlorophyll *a* levels in algae cells can be impacted by photoacclimation (adjustment in amount of chlorophyll a relative to light levels) and nutrient stress. There are interspecies differences in the amount of chlorophyll relative to biomass and interspecies differences in the relationships between chlorophyll *a*: carbon biomass in response to nutrient stress (Kruskopf and Flynn, 2006). Use of the test with shallow nearshore waters in the summer, where light is particularly intense may be problematic, due to effects of photoacclimation and photoinhibition on chlorophyll *a*. In addition, the phytoplankton enumeration results showed there can be different species assemblages at different sites. These different species may have different chlorophyll *a* to biomass relationships and different chlorophyll *a*: biomass relationships in response to nutrient stress. Chlorophyll *a* : growth relationships may differ in algae collected from different sites. There is potential for these tests to give ambiguous results under some conditions.

Consideration should be made of either modifying or possibly substituting another method for the algal growth potential test at sites. One potential modification would be to incubate bottles from all sites in the lake at a shallow depth at one site. This would reduce problems associated with photoacclimation, but it would be logistically be more complicated to collect samples during the experiment. A potential alternative to the simple AGP tests would be to measure primary productivity at nearshore sites as an estimate of enrichment status. Such monitoring could be modeled after synoptic studies of the late 1960s and early 1970s done by Goldman (1974) but perhaps with fewer sites.

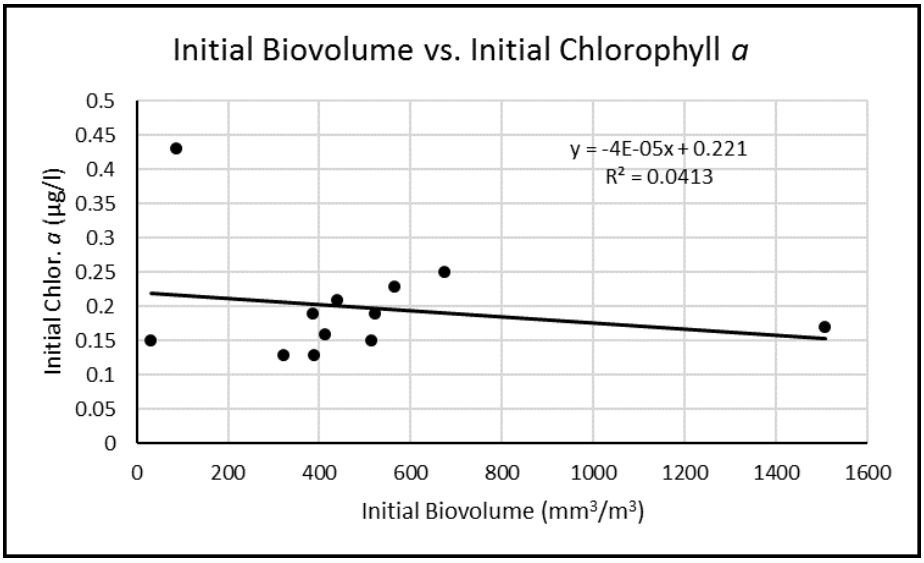


Figure 4. Association between initial biovolume and initial chlorophyll *a* in samples collected from nearshore water samples collected from 0.5m on 6/21/16 for AGP tests.

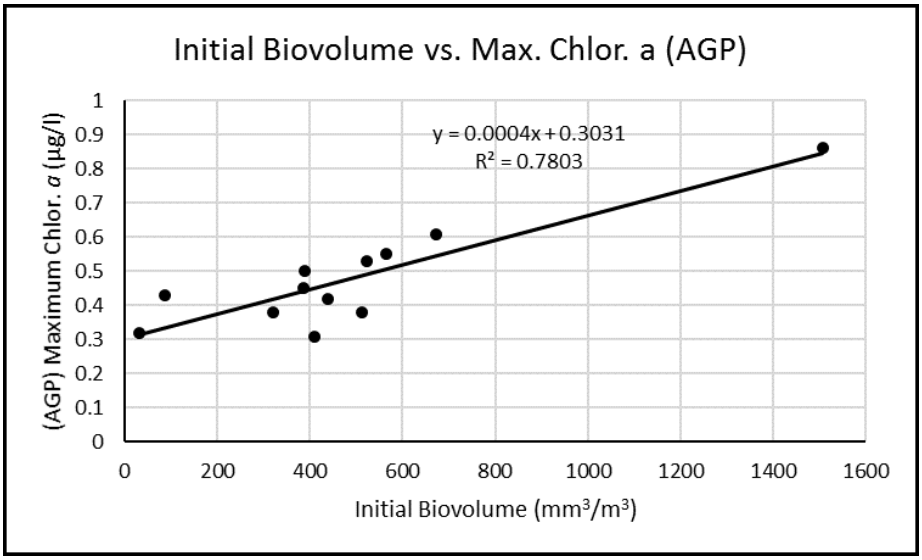


Figure 5. Association between initial biovolume and maximum chlorophyll *a* achieved (AGP) in the AGP tests for samples collected from the nearshore at 0.5m, on 6/21/16.

Section II. Enumeration and Identification of Phytoplankton

This section summarizes the results for nearshore phytoplankton monitoring done March 2016-May 2017. Phytoplankton are the free-floating algae in lakes. They typically form the base of the aquatic food web. They utilize energy from the sun, carbon dioxide and nutrients for production of biomass and growth. If changes occur in lake water quality, the phytoplankton are among the first indicators of that change. The abundance or numbers of the cells will change, the biodiversity may change, and these changes may trigger changes in other parts of the food web. When present in too high a level phytoplankton degrade water quality.

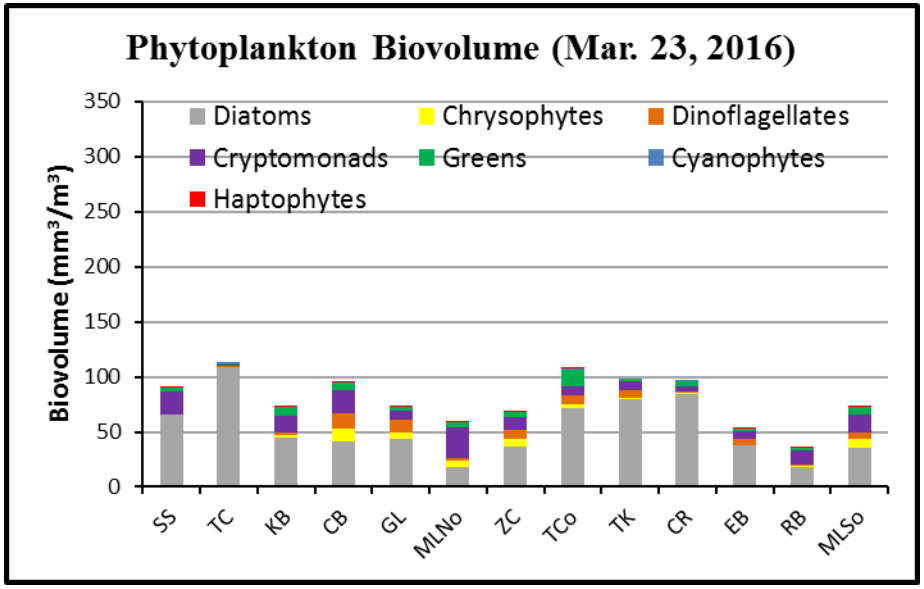
Phytoplankton consists of a diverse assemblage of many different major taxonomic groups (e.g. diatoms, chrysophytes, dinoflagellates, cryptomonads, greens, blue-green algae (cyanobacteria), haptophytes, euglenophytes and myocetes occur in Tahoe). The phytoplankton species which make up each of the different groups have characteristics common to the particular group (such as pigment composition, morphological characteristics, resource requirements, growth rates, sinking velocities). Their size can range over several orders of magnitude (~0.2-200 µm) (Heyvaert et al., 2013). As lake conditions change over the course of a year, the phytoplankton experience seasonal succession. Variation in algae may also occur in regions associated with localized nutrient inputs or other factors, resulting in differences in the algal community composition from other sites around the lake. For instance, green algae, cyanophytes and euglenoids, three groups which are more indicative of lake water fertility, were more abundant at the south shore in a study done 1981-82 (Loeb, 1983).

With increased interest in the state of the nearshore, nearshore phytoplankton monitoring was included as part of the Lake Tahoe Water Quality Investigations monitoring starting in 2013. Phytoplankton samples were collected at the same time as water collected for the Algal Growth Potential experiments. Eleven near-shore sites and two open water (mid-lake) sites were sampled quarterly for phytoplankton identification and enumeration. Cells were counted and identified to species level when possible following established TERC protocol (see Hackley et al., 2016).

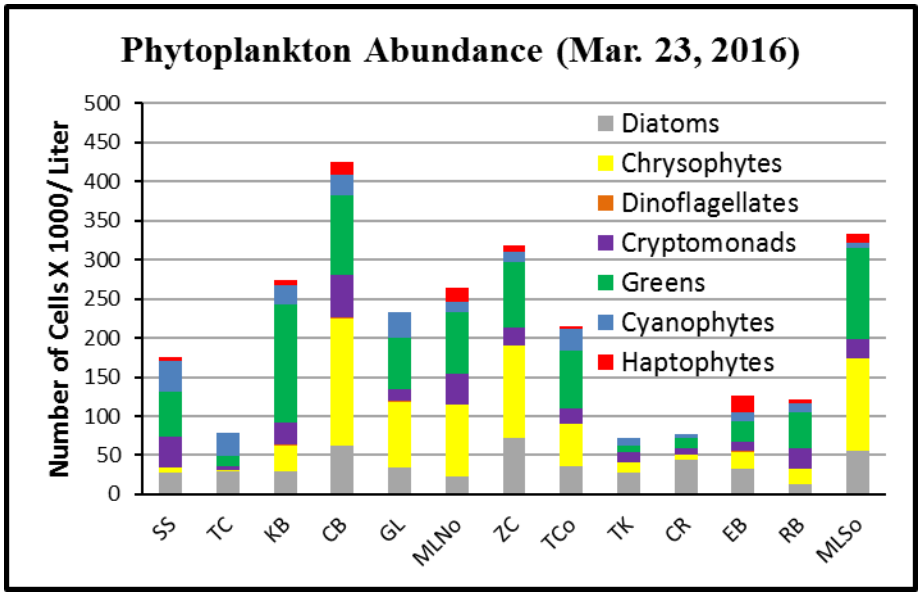
Nearshore Phytoplankton Monitoring Results March 2016 to March 2017

Phytoplankton enumeration data for March 2016 to May 2017 is reported in Appendix 2. These data were used to compile summary graphs of phytoplankton abundance and biovolume data by algal group (i.e. diatoms, chrysophytes, dinoflagellates, cryptomonads, greens, cyanophytes, haptophytes, euglenophytes and myocetes) which are presented in Figures 6 a-6j below.

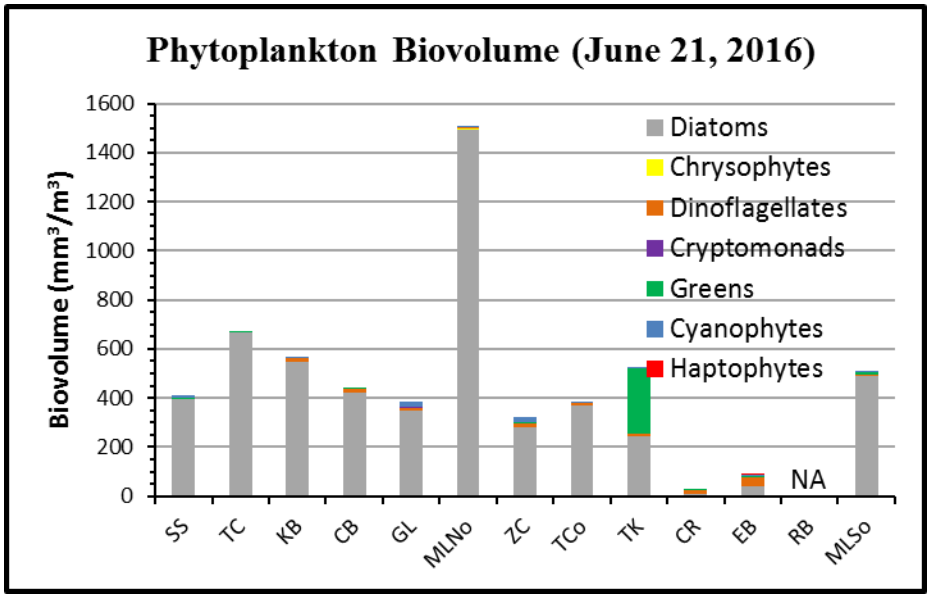
Figures 6.a – 6.j are presented in the following pages. Phytoplankton biovolume and abundance at nearshore and mid-lake stations during sample collections March 2016 to May 2017. Stations are shown along bottom in each graph and include: “SS”= Sunnyside; “TC”= Tahoe City; “KB”=Kings Beach; “CB”=Crystal Bay; “GL”=Glenbrook; “MLNo”=Mid-lake North; “ZC”=Zephyr Cove; “TCo”=Timber Cove; “TK”= Tahoe Keys nearshore; “CR”=Camp Richardson; “EB”=Emerald Bay; “RB”=Rubicon Bay; “MLSo”=Mid-lake South.



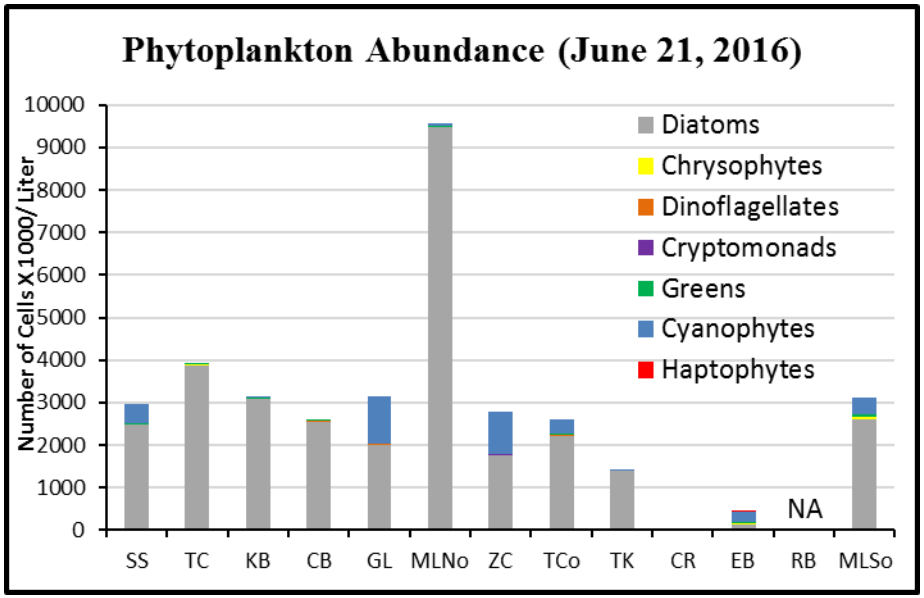
6.a) Phytoplankton Biovolume at nearshore sites 3/23/16.



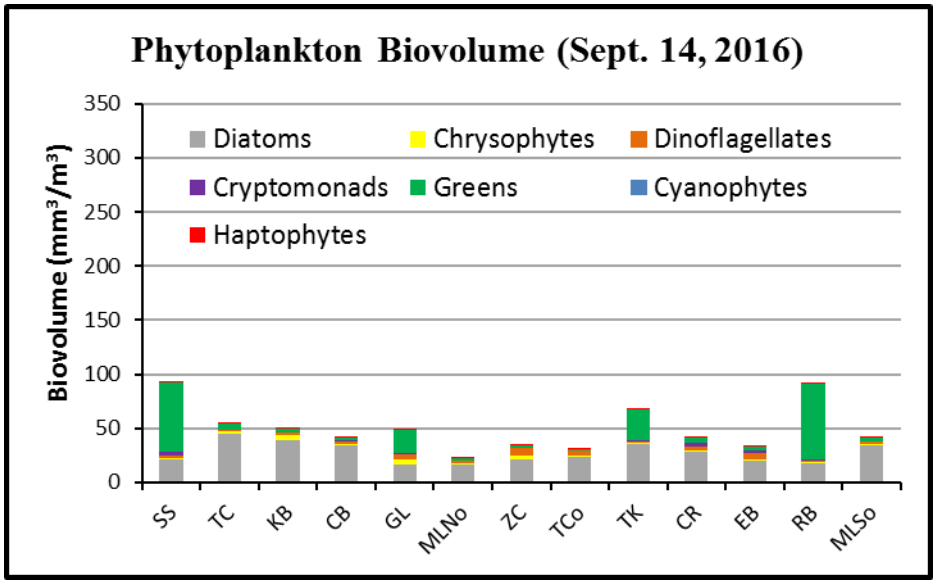
6.b) Phytoplankton Abundance (cell numbers) 3/23/16.



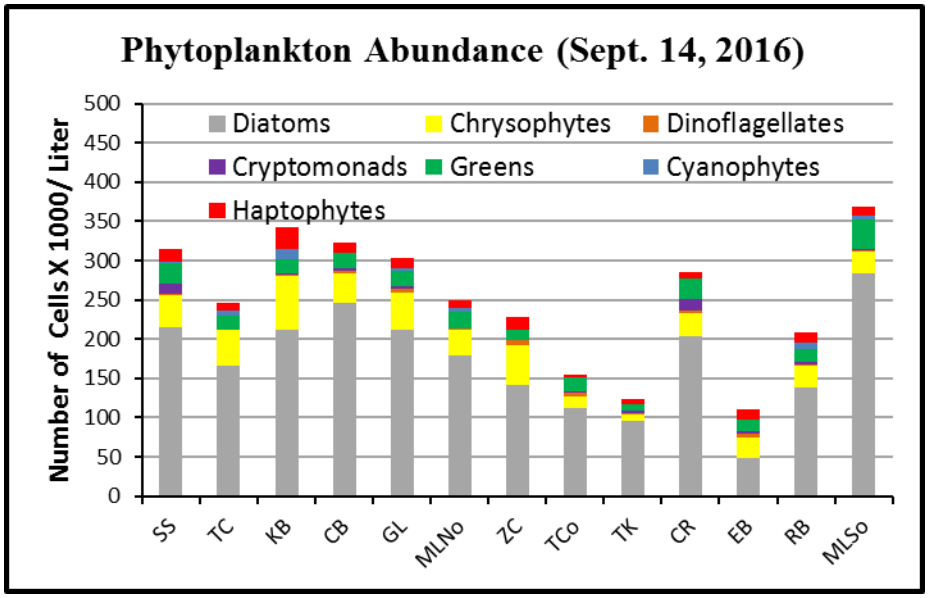
6.c) Phytoplankton Biovolume at nearshore sites 6/21/16.



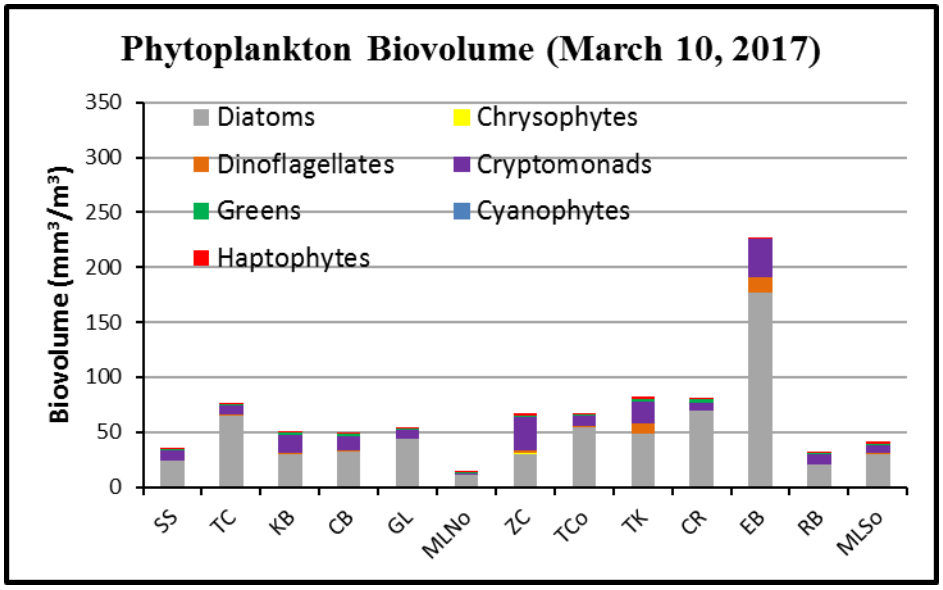
6.d) Phytoplankton Abundance (cell numbers) 6/21/16.



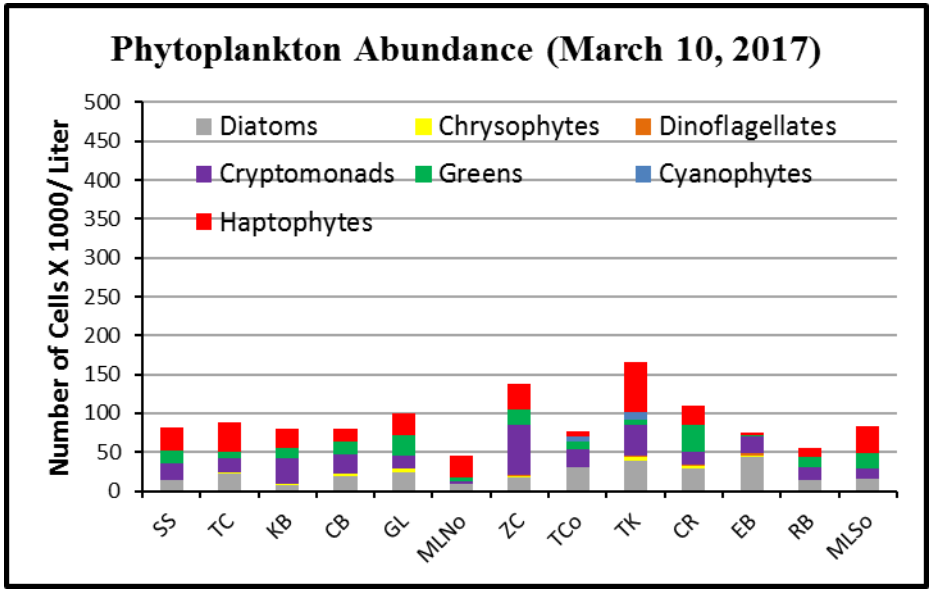
6.e) Phytoplankton Biovolume at nearshore sites 9/14/16.



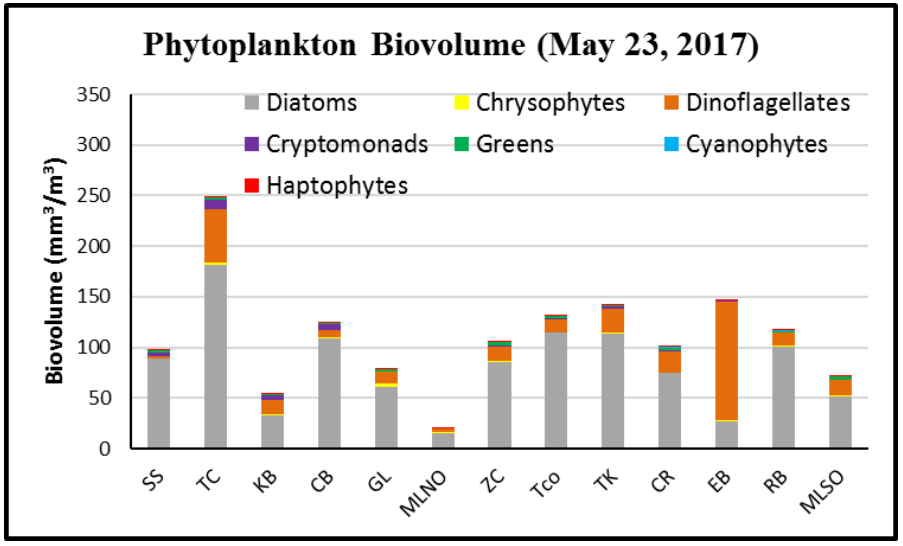
6,f) Phytoplankton Abundance (cell numbers) 9/14/16.



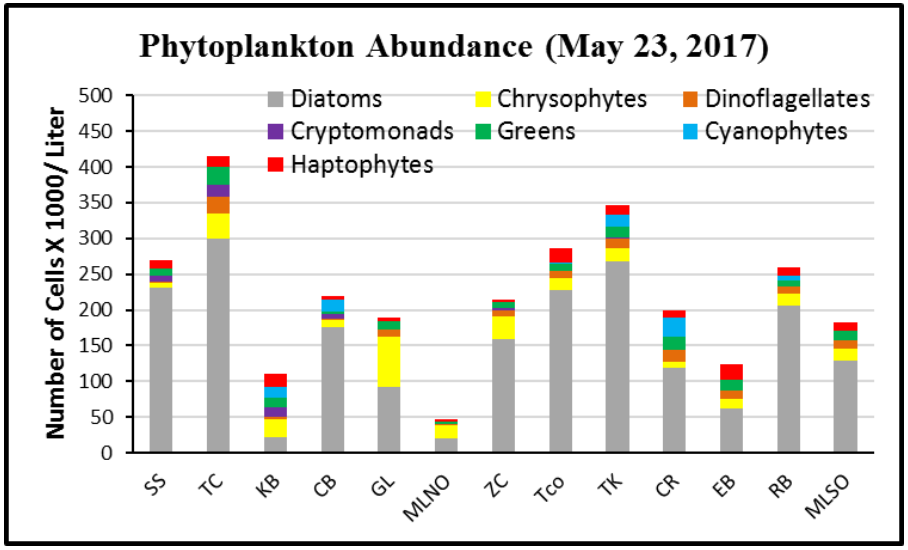
6.g) Phytoplankton Biovolume at nearshore sites 3/10/17.



6.h) Phytoplankton Abundance (cell numbers) 3/10/17.



6.i) Phytoplankton Biovolume at nearshore sites 5/23/17.



6.j) Phytoplankton Abundance (cell numbers) 5/23/17.

Phytoplankton have successional patterns in abundance and community composition throughout the year. Each sampling date generally shows that similar groups of phytoplankton are found at many of the stations. However, between dates, phytoplankton taxonomic groups change as new successional communities are established. The highest total biovolumes and abundances during the March 2016 to May 2017 period were seen in June 2016 at all sites except Camp Richardson and Emerald Bay which levels were more similar to those on other dates (Fig. 3-d,e) (data not available for Rubicon). The high biovolumes in this June sampling, were primarily due to the unusually large presence of the diatom, *Cyclotella gordonensis* shown in Figure 7 below.

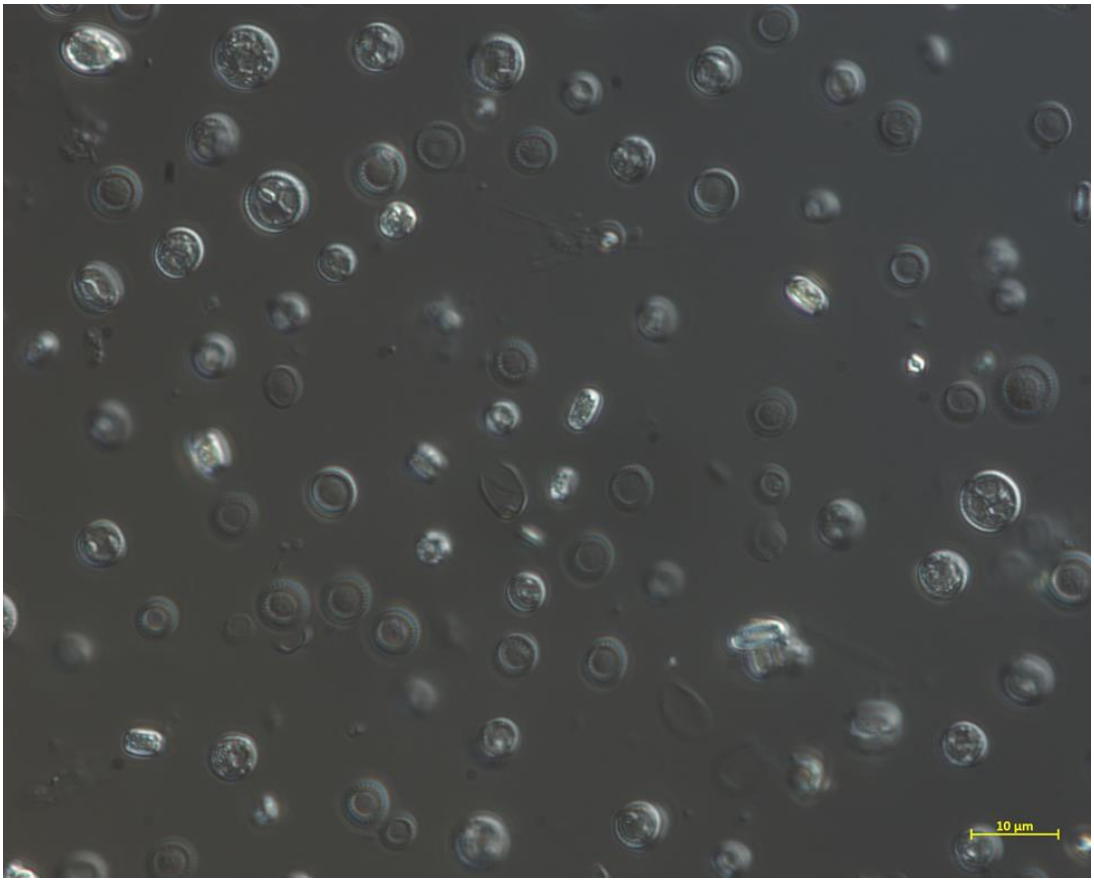


Figure 7. Microscope image of settled small diatoms, *Cyclotella gordonensis* that was abundant at many sites on 6/21/16. Yellow bar at bottom provides scale (10µm). Photo courtesy of Lidia Tanaka.

The timing of the greatly elevated biovolume associated with the small centric diatom, *Cyclotella gordonensis* may be indicative of lower nutrient conditions during the summer. Winder and Hunter (2008), and Winder et. al. (2009) indicate *Cyclotella gordonensis* is an excellent competitor during low nutrient, high light and warmer temperature conditions. It is interesting that the biovolume was greatest near the middle-north portion of the lake (Mid-lake North) on 6/21/16. Very strong south and southwest winds were noted during the week prior to sampling, and it could be the high levels of *Cyclotella gordonensis* at the Mid-lake North station, were the result of accumulation associated with lake circulation patterns.

Seasonal variation in the predominant algal groups was apparent in the data. In March 2016, biovolume was dominated by diatoms and cryptomonads at many sites. While in June 2016, the biovolume was dominated the large numbers and biovolumes of diatoms (due to a very large contribution from *Cyclotella gordonensis* as noted above). In September 2016, diatoms dominated at most sites, with a substantial contribution to biovolume also made by green algae at Sunnyside, Glenbrook, Tahoe Keys and Rubicon Bay. In March 2017 diatoms and cryptomonads again dominated the biovolume. While in May 2017, the biovolume was dominated by diatoms with a lesser contribution by dinoflagellates.

Emerald Bay continues to frequently be an 'outlier' station, in terms of phytoplankton community. In June of 2016 it did not have the high biovolumes of *Cyclotella gordonensis* observed at most other parts of the lake and overall biovolume was low relative to most other sites. In March of 2017 the biovolume in Emerald Bay was much higher than other sites around the lake, due to a large contribution from *Synedra acus*. In May 2017, the biovolume was dominated by dinoflagellates while at other sites diatoms dominated the biovolume.

Occasionally a few sites had types of algae which can be associated with more fertile waters (green algae or cyanobacteria). In June, 2016, green algae (predominantly *Spirogyra*) contributed to about half the biovolume at the nearshore site near the Tahoe Keys. *Spirogyra* is often an algae associated with the metaphyton (algae which is often observed over the sandy bottom along the south shore in the summer). In September 2016, the green algae *Botryococcus braunii* contributed substantially to the biovolume at Sunnyside, Tahoe Keys nearshore, and Rubicon Bay sites. The biovolumes of overall algae at these sites were relatively low at the time of sampling though. A green filamentous algae *Mougeotia* also contributed to the biovolumes at Glenbrook and the Tahoe Keys offshore site. *Mougeotia*, like *Spirogyra* is often found in the summer metaphyton growth. Cyanophytes constituted about one third of the phytoplankton abundance at Glenbrook and Zephyr Cove in the June 2016 sampling. The cyanophyte present at both sites was *Aphanothece*. These algae were not consistently present at the sites and overall biovolume or abundance was relatively low however.

Species richness (number of different species) at a site provides some indication of the diversity of species among sites. Table 6 shows a summary of the mean numbers of species along with mean total cell numbers and mean biovolumes for the samples analyzed back to August 2013. Tahoe City continued to have the greatest mean number of species for samples (35±4 species), followed by Tahoe Keys nearshore (32±6 species), Emerald Bay (29± 7 species) and Kings Beach (29± 4 species). In contrast, the two mid-lake sites had the lowest mean numbers of species: Mid-lake No. (21±6 species) and Mid-lake So. (21±4 species). Heyvaert et al., (2013), Table 14-2 provides a general characterization of trophic state based on numbers of species. Levels of number of species less than 20 species, are characterized to be associated with ultra-oligotrophic conditions, levels from 20-50 are characterized as oligotrophic, levels 50-100 mesotrophic, and levels with greater than 100 species associated with eutrophic conditions. The levels during 2016-2017 continue to be in the oligotrophic range.

Table 6. Mean number of phytoplankton species, mean number of cells (abundance) and mean biovolume ± Std. Dev. (S.D.) for phytoplankton samples Aug. 2013 – May 2017.

	Number of Species/ Date Mean ± S.D. (n)	Number of Cells/ Liter Mean ± S.D. (n)	Biovolume (mm^3/m^3) Mean ± S.D. (n)
Tahoe City	35 ± 7 (15)	703183 ± 991976 (15)	155 ± 167 (15)
Mid-lake North	21 ± 6 (15)	1722401 ± 2944720 (15)	174 ± 374 (15)
Kings Beach	29 ± 4 (15)	684350 ± 852758 (15)	107 ± 129 (15)
Crystal Bay	25 ± 4 (15)	668158 ± 733599 (15)	106 ± 96 (15)
Glenbrook	28 ± 5 (15)	950228 ± 1783599 (15)	97 ± 88 (15)
Zephyr Cove	24 ± 4 (15)	862068 ± 1128497 (15)	93 ± 80 (15)
Mid-lake South	21 ± 4 (15)	827488 ± 1220303 (15)	100 ± 119 (15)
Timber Cove	27 ± 5 (14)	805509 ± 1469018 (14)	96 ± 90 (14)
Tahoe Keys	32 ± 6 (15)	757692 ± 1117099 (15)	130 ± 114 (15)
Camp Richardson	28 ± 5 (14)	560725 ± 977947 (14)	78 ± 36 (14)
Emerald Bay	29 ± 7 (14)	337041 ± 264058 (14)	141 ± 142 (14)
Rubicon Bay	23 ± 7 (14)	559053 ± 874520 (14)	69 ± 39 (14)
Sunnyside	25 ± 4 (15)	605310 ± 855927 (15)	106 ± 92 (15)

Patterns for mean biovolume showed some changes from those recorded in the last report. In the previous report (Hackley et al., 2016), Emerald Bay had the highest mean biovolume (159 mm^3/m^3) followed by Tahoe City (116 mm^3/m^3), Tahoe Keys (103 mm^3/m^3) then Mid-lake North (99 mm^3/m^3). For the current reporting period, the mean biovolume was highest at the Mid-lake North site (174 mm^3/m^3) for the samples through May 2017 largely a result of the contribution to biovolume from the large amount of *Cyclotella gordonensis* in June 2016. Next highest mean biovolumes were Tahoe City (155 mm^3/m^3), Emerald Bay (141 mm^3/m^3) and Tahoe Keys (130 mm^3/m^3).

Patterns for cell abundance remained similar for sites with the highest and lowest cell counts. Mid-lake north continued to have the highest mean number of cells (1722401 cells/liter), followed by Glenbrook (950228 cells/L). Emerald Bay continued to have the fewest cells (337041 cells/L).

Section III. Periphyton Results

The purpose of the periphyton monitoring task is to assess the levels of nearshore attached algae (periphyton) growing around the lake. As with phytoplankton, nutrient availability plays a large role in promoting periphyton growth. The amount of periphyton biomass can reflect local nutrient loading and also be affected by long-term environmental changes. Periphyton biomass is considered an important indicator, which together with nearshore chlorophyll, phytoplankton and macrophyte metrics provide information on the trophic status of the Lake Tahoe nearshore. Trophic status in turn, along with nearshore clarity, community structure and conditions for human health are considered primary indicators of nearshore condition or health as outlined in the Lake Tahoe nearshore monitoring framework (Heyvaert et al., 2013).

Periphyton grows in the littoral (shore) zone of Lake Tahoe, which may be divided into the eulittoral zone and the sublittoral zone, each with distinct periphyton communities. The eulittoral zone is the shallow area between the low and high lake level and is substantially affected by wave activity. Substrata within this region desiccate as the lake level declines, and periphyton must recolonize this area when lake level rises. The sublittoral zone extends from the bottom of the eulittoral to the maximum depth of photoautotrophic growth. The sublittoral zone remains constantly submerged and represents the largest littoral benthic region of Lake Tahoe.

The algal community in the eulittoral zone is typically comprised of filamentous green algae (i.e., *Ulothrix sp., Zygnema sp.*) and stalked diatom species (i.e., *Gomphoneis herculeana*). The attached algae in the eulittoral zone display substantial growth resulting in rapid colonization of suitable areas. These algae are able to take advantage of localized soluble nutrients, and can establish a thick cover over the substrate within a matter of months. Similarly, this community rapidly dies back as nutrient concentrations diminish and shallow nearshore water temperatures warm with the onset of summer. The algae can slough from the substrate and disperse into the open water, or wash onto the shore. In areas where biomass is high, the slimy coating on the rocks, and sloughed material that accumulates along shore can be a nuisance. The eulittoral zone periphyton has a substantial influence on the aesthetic condition of the shorezone. It is the strong response of eulittoral periphyton to localized nutrient inputs that lends particular value to monitoring this community as an indicator of localized differences in nutrient loading.

The sublittoral zone is made up of different algal communities down through the euphotic zone. Cyanobacteria (blue-green) algal communities make up a substantial portion of the uppermost sublittoral zone. These communities are slower growing and more stable than the filamentous and diatom species in the eulittoral zone.

Stations and Methods

Nine routine stations were monitored (Rubicon Pt., Sugar Pine Pt., Pineland, Tahoe City, Dollar Pt., Zephyr Pt., Deadman Pt., Sand Pt and Incline West). These nine sites are located around the lake (Figure 1 presents a map of locations and Table 7 provides coordinates of locations) and represent a range of backshore disturbance levels from relatively undisturbed land (Rubicon Point and Deadman Point) to a developed urban center (Tahoe City).

Table 7. Locations of Routine Periphyton Monitoring Stations

SITE NAME	LOCATION
Rubicon	N38 59.52; W120 05.60
Sugar Pine Point	N39 02.88; W120 06.62
Pineland	N39 08.14; W120 09.10
Tahoe City	N39 10.24; W120 08.42
Dollar Point	N39 11.15; W120 05.52
Zephyr Point	N39 00.10; W119 57.66
Deadman Point	N39 06.38; W11957.68
Sand Point	N39 10.59; W119 55.70
Incline West	N39 14.83; W119 59.75

A detailed description of the sample collection and analysis procedures is given in Hackley et al. (2004). Briefly, the method entails collection while snorkeling of duplicate samples of attached algae from a known area of natural rock substrate at a depth of 0.5m, using a syringe and toothbrush sampler. These samples are transported to the laboratory where the samples are processed and split, with one portion of the sample analyzed for Ash Free Dry Weight (AFDW) and the other portion frozen for later analysis of chlorophyll *a* concentration (both AFDW and chlorophyll *a* are used as measures of algal biomass). We also measure average filament length and percent algal coverage which are used to calculate the Periphyton Biomass Index PBI (which is the average filament length or height of the periphyton (cm) multiplied by the estimate of percent coverage of algae over the rock). The PBI provides a means to rapidly assess the level of periphyton biomass at a site. A subjective ranking of the level of periphyton at a site is also made, where 1 is least offensive appearing (usually natural rock surface with little or no growth) and 5 is the most offensive condition with very heavy growth. Finally, notes are made on which of three predominant algae types (stalked diatoms, filamentous green algae, or cyanobacteria (blue-green algae) are likely present based on observations underwater, a portion of the samples were also examined under the microscope to determine predominant algal types present.

Results

Monitoring at Routine Sites

In this report we summarize the data collected during the period July 1, 2016 to July 30, 2017. Nine routine sites were sampled. Sites were sampled at least five times during the year. A fall sampling was completed Oct. 20, 2016 when the lake level was very low (6222.76 ft.). The next sampling was not completed until the end of March and beginning of April, 2017 due to engine repairs on the research boat and the frequency of storms. By this time the lake level had risen 4.48 ft. Additional monitoring at the routine site was done in late May, mid-June and mid-July. Table 8 presents the results for biomass (chlorophyll *a* and Ash Free Dry Weight (AFDW)) and field observations (visual score, average filament length, percent algal coverage, biomass index and basic algal types) at the nine routine periphyton sites. The results for periphyton chlorophyll *a* biomass are also presented graphically in Figures 8 (a-i) together with earlier data collected since 2000. Figure 9 presents a graph of lake surface elevation and 0.5m sampling elevation Jan. 2000-July, 2017.

Table 8. Summary of eulittoral periphyton chlorophyll *a* (Chlor.*a*), Ash Free Dry Weight (AFDW), visual score from above and below water, average filament length, percent algal coverage, and predominant algal types for routine periphyton monitoring sites during October, 2016-July, 2017. Note for chlorophyll *a* and AFDW, n=2 unless otherwise indicated (i.e. two replicate samples were taken and analyzed). Visual score is a subjective ranking of the aesthetic appearance of algal growth ("above" viewed above water; "below" viewed underwater) where 1 is the least offensive and 5 is the most offensive. Biomass Index is Filament Length (cm) X % Algal Cover. Also,"NA" = not available or not collected; "NES" = not enough sample for analysis; "Var." = variable amount of cover. Sampling depth and corresponding sampling elevation are also indicated. For algae types – SD=stalked diatoms; CY= Cyanobacteria; FG= filamentous greens; "-f" indicates algae type best estimate based on field observation; "-m" indicates predominant algae types checked under microscope, where SD-G_1= Stalked diatom likely *Gomphoneis herculeana*; SD-G_2- unidentified very small stalked diatom, possibly *Gomphonema* or *Gomphoneis*; S= *Synedra ulna*; d= diatom mix

Site Name	Date	Samp. Depth (m)	Samp. Elev. (ft)	Chl a (mg/m^2)	Std Dev (mg/m^2)	AFDW (g/m^2)	Std Dev (mg/m^2)	Above Visual Score	Below Visual Score	Fil. Length (cm)	Algal Cover. %	Biomass Index	Algal Type
Rubicon Pt.	10/20/16	0.5	6221.12	16.55	1.14	22.86	2.78	2	3	0.5	95%	0.48	CY,FG -f
Rubicon Pt.	4/4/17	0.5	6225.60	2.63	0.52	NA	NA	1	1	0.2	20%	0.04	SD-$G_{1,2}$;d-m
Rubicon Pt.	5/22/17	0.5	6226.50	4.21	1.59 (n=3)	3.35	0.73	2	4	1.0-4.0	20%	0.50	SD-$G_{2,1}$;S-m
Rubicon Pt.	5/22/17	1	6224.86	NA	NA	NA	NA	NA	5	3.0-4.0	80%	2.80	SD-f
Rubicon Pt.	6/14/17	0.5	6226.98	2.93	0.56	3.00	0.57	1.5	2.5	0.4	70%	0.28	SD-$G_{1,2}$-m
Rubicon Pt.	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	NA	1.0-2.0	40%	0.60	SD-f
Rubicon Pt.	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	NA	0.5	30%	0.15	SD-f
Rubicon Pt.	7/20/17	0.5	6227.28	2.01	0.60	NA	NA	2	2	0.2	60%	0.12	D;FG;CY-m
Rubicon Pt.	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	NA	1.0	40%	0.40	FG-f
Sugar Pine Pt.	10/20/16	0.5	6221.12	23.44	5.93	20.65	4.47	NA	2	0.2	70%	0.14	CY-f
Sugar Pine Pt.	4/4/17	0.5	6225.60	6.44	(n=1)	3.89	(n=1)	NA	3	0.7	70%	0.49	SD-G_1-m
Sugar Pine Pt.	5/22/17	0.5	6226.50	1.93	0.38	NA	NA	NA	2	0.5	30%	0.15	SD-$G_{1,2}$-m
Sugar Pine Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	NA	1.5	60%	0.90	SD-f
Sugar Pine Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	3.0	80%	2.40	SD-G_1-m
Sugar Pine Pt.	6/14/17	0.5	6226.98	2.97	0.37	2.70	0.76	NA	2	0.1	80%	0.08	SD-G_1-m
Sugar Pine Pt.	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	3	0.8	80%	0.64	SD-f
Sugar Pine Pt.	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	4	2.5	80%	2.00	SD-f
Sugar Pine Pt.	7/20/17	0.5	6227.28	NES	NES	1.11	(n=1)	NA	2	<0.1	60%	<0.06	SD-G_2 -m
Sugar Pine Pt.	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	1	0	0%	0.00	
Pineland	10/20/16	0.5	6221.12	15.05	0.32	18.97	2.73	2	2	0.6	60%	0.36	SD,CY-f
Pineland	2/13/17	0.5e	6224.55e	NA	NA	NA	NA	NA	NA	NA	Photos	NA	SD-f
Pineland	2/13/17	1.1e	6222.68e	NA	NA	NA	NA	NA	NA	NA	Photos	NA	SD-f
Pineland- Rock A	2/13/17	0.2e	6225.53e	NA	NA	NA	NA	NA	NA	NA	Photos	NA	
Pineland	3/29/17	0.5	6225.52	NA	NA	NA	NA	3	3	0.5	50%	0.25	SD- f
Pineland- Rock A	3/29/17	0.5	6225.52	31.46	1.45 (n=3)	16.52	2.38 (n=3)	3.5	3.5	0.8	90%	0.72	SD-G_1;S-m

Site Name	Date	Samp. Depth (m)	Samp. Elev. (ft)	Chl a (mg/m^2)	Std Dev (mg/m^2)	AFDW (g/m^2)	Std Dev (mg/m^2)	Above Visual Score	Below Visual Score	Fil. Length (cm)	Algal Cover. %	Biomass Index	Algal Type
Pineland	3/29/17	1.03	6223.78	NA	NA	NA	NA	5	5	3.0-4.0	100%	3.5	SD-f
Pineland	4/4/17	0.5	6225.60	NA	NA	NA	NA	NA	2	0.1	60%	0.06	SD-G_1;S-m
Pineland- Rock A	4/4/17	0.55	6225.44	8.54	0.32 (n=3)	6.67	0.66 (n=3)	NA	3	0.4	80%	0.32	SD-G_1;S-m
Pineland	5/22/17	0.5	6226.50	3.01	1.12	4.27	1.29	1.5	1.5	0.1	40%	0.04	SD-G_1;S-m
Pineland- Rock A	5/22/17	0.8	6225.52	20.21	0.25	22.39	1.98	NA	NA	1.2	90%	1.08	SD-G_1;S-m
Pineland	5/22/17	1.0	6224.86	12.52	4.42 (n=3)	14.85	6.49 (n=3)	2	4	1.5	60%	0.90	SD-G_1-m
Pineland	5/22/17	1.5	6223.22	104.79	9.02 (n=3)	98.47	30.87 (n=3)	5	5	4.5	100%	4.50	SD-G_1;S-m
Pineland	6/14/17	0.5	6226.98	1.01	0.01	NES	NES	2	2	0.1	70%	0.07	SD-G_1-m
Pineland- Rock A	6/14/17	0.96	6225.47	NA	NA	NA	NA	NA	3.5	1.5	80%	1.20	
Pineland	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	2.5	0.6	22%	0.13	SD-f
Pineland	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	5	4.5	95%	4.28	SD-f
Pineland	7/20/17	0.5	6227.28	2.26	0.85	NES	NES	2	1.5	<0.1	15%	<0.02	CY,FG,d-m
Pineland	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	NA	<0.1	10%	<0.01	SD-f
Pineland	7/20/17	1.5	6224.00	NA	NA	NA	NA	NA	NA	<0.1	10%	<0.01	SD-f
Tahoe City	10/20/16	0.5	6221.12	3.52	1.82	4.69	1.16	2	2	0.1	50%	0.05	SD,CY-f
Tahoe City	3/29/17	0.5	6225.52	26.24	2.02 (n=3)	30.20	3.65 (n=3)	3	3	1.0	80%	0.80	SD-G_1;S-m
Tahoe City	5/22/17	0.5	6226.50	13.60	2.93 (n=3)	26.34	0.39 (n=3)	NA	2	0.6	70%	0.42	SD-G_1-m
Tahoe City	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	NA	1.0-1.5	50%	0.63	SD-f
Tahoe City	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	1.0-1.5	20%	0.25	SD-f
Tahoe City	6/14/17	0.5	6226.98	7.96	4.05	11.47	7.02	3	2.5	0.30	80%	0.24	SD-G_1;d-m
Tahoe City	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	2	0.60	40%	0.24	SD-f
Tahoe City	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	NA	1.0	20%	0.20	SD-f
Tahoe City	7/20/17	0.5	6227.28	3.27	0.12	NA	NA	2	2	0.1	50%	0.05	FG;d-m
Tahoe City	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	NA	0.1	40%	0.04	SD-f
Dollar Pt.	10/20/16	0.5	6221.12	15.94	5.13	12.11	4.27	3	2	0.1	60%	0.06	SD,CY-f
Dollar Pt.	4/4/17	0.5	6225.60	10.74	1.58 (n=3)	13.42	1.39 (n=3)	3	3.5	0.8	80%	0.64	SD-G_1-m
Dollar Pt.	5/22/17	0.5	6226.50	7.74	0.23	22.03	0.32	2	3	0.8	85%	0.68	SD-G_1:S;d-m
Dollar Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	NA	1.0	70%	0.70	SD-f
Dollar Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	1.0	30%	0.30	SD-G_1-m
Dollar Pt.	6/14/17	0.5	6226.98	3.77	0.82	4.29	0.15	NA	2	0.3	90%	0.27	SD; d-m
Dollar Pt.	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	2	0.3	80%	0.24	SD-f

Site Name	Date	Samp. Depth (m)	Samp. Elev. (ft)	Chl a (mg/m^2)	Std Dev (mg/m^2)	AFDW (g/m^2)	Std Dev (mg/m^2)	Above Visual Score	Below Visual Score	Fil. Length (cm)	Algal Cover. %	Biomass Index	Algal Type
Dollar Pt.	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	2	0.5	20%	0.10	SD-f
Dollar Pt.	7/20/17	0.5	6227.28	4.28	0.37	NES	NES	NA	2	0.1	80%	0.08	FG;SD-m
Dollar Pt.	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	1.5	0.4	3%	0.01	SD-f
Incline West	10/20/16	0.5	6221.12	31.61	9.00	49.99	14.08	3	3	0.3	80%	0.24	CY-f
Incline West	4/4/17	0.5	6225.60	16.82	4.07 (n=3)	10.72	2.69 (n=3)	4	4	1.2	100%	1.20	SD-$G_{1,2}$-m
Incline West	5/22/17	0.5	6226.50	4.18	0.71	7.88	1.09	3	3	0.6	70%	0.42	SD-G_1;S;FG-m
Incline West	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	4	1.5	70%	1.05	SD-f
Incline West	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	3.0	70%	2.10	SD;FG-f
Incline West	6/13/17	0.5	6226.97	2.53	0.45	4.08	1.16	1.5	2	0.2	70%	0.14	SD-G_1-m
Incline West	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	0.7	50%	0.35	
Incline West	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	3.0/1.0	25%/75%	1.50	SD-f
Incline West	7/20/17	0.5	6227.28	4.74	1.60	NES	NES	1	2	0.3	30%	0.09	D;FG-m
Incline West	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	NA	0.3	30%	0.09	
Sand Pt.	10/20/16	0.5	6221.12	23.65	5.03	49.99	14.08	3	3	0.3	80%	0.24	CY-f
Sand Pt.	4/4/17	0.5	6225.60	5.01	1.46	3.34	0.99	3.5	3.5	0.9	95%	0.86	SD-$G_{1,2}$-m
Sand Pt.	5/22/17	0.5	6226.50	7.15	3.52	8.98	5.14	3	3.5	1.0	95%	0.95	SD-$G_{2,1}$-m
Sand Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	4	3.0-4.0	30%	1.05	SD-f
Sand Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	3	NA	NA	NA	SD-f
Sand Pt.	6/13/17	0.5	6226.97	2.56	0.43	NES	NES	NA	1.5	<0.1	50%	<0.05	SD-$G_{2,1}$-m
Sand Pt.	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	NA	2.0	30%	0.60	
Sand Pt.	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	2.0	0-70%	0.70	
Sand Pt.	7/20/17	0.5	6227.28	2.58	0.02	3.40	0.05	1	2	0.3	40%	0.12	SD-G_2;FG-m
Sand Pt.	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	NA	3.0	80%	2.40	SD-f
Deadman Pt.	10/20/16	0.5	6221.12	49.52	18.38	80.58	32.23	3	3	0.3	95%	0.29	CY-f
Deadman Pt.	4/4/17	0.5	6225.60	1.72	0.18	NES	NES	2	3	0.3	95%	0.29	SD-$G_{2,1}$-m
Deadman Pt.	5/22/17	0.5	6226.50	4.62	0.33	6.37	4.30	2	2.5	0.3	70%	0.21	SD-$G_{2,1}$;CY-m
Deadman Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	2	NA	NA	NA	
Deadman Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	2	NA	NA	NA	
Deadman Pt.	6/13/17	0.5	6226.97	0	0	0	0	NA	0	0	0	0	
Deadman Pt.	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	NA	0.3	50%	0.15	SD-f
Deadman Pt.	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	1.0	30%	0.30	
Deadman Pt.	7/20/17	0.5	6227.28	2.20	0.27	NES	NES	2	3	0.4	30%	0.12	SD-G_2;CY-m

Site Name	Date	Samp. Depth (m)	Samp. Elev. (ft)	Chl a (mg/m^2)	Std Dev (mg/m^2)	AFDW (g/m^2)	Std Dev (mg/m^2)	Above Visual Score	Below Visual Score	Fil. Length (cm)	Algal Cover. %	Biomass Index	Algal Type
Deadman Pt.	7/20/17	1.0	6225.64	NA	NA	NA	NA	NA	NA	1.5	80%	1.20	FG-f
Zephyr Pt.	10/20/16	0.5	6221.12	10.95	0.62	11.82	2.08	2	2	0.2	95%	0.19	SD;CY-f
Zephyr Pt.	4/4/17	0.5	6225.60	2.99	0.86	2.82	n=1	2	2	0.5	40%	0.20	SD-G_1;d-m
Zephyr Pt.	5/22/17	0.5	6226.50	2.49	0.32	3.27	0.23	2	2	0.1	100%	0.10	SD-$G_{1,2}$;d-m
Zephyr Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	3	0.75	30%	0.23	SD-f
Zephyr Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	3.5	1%	0.04	SD-f
Zephyr Pt.	6/14/17	0.5	6226.98	NES	NES	0.90	0.21	NA	1.5	<0.1	70%	<0.07	SD-G_1;S-m
Zephyr Pt.	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	NA	<0.1	50%	<0.05	
Zephyr Pt.	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	NA	<0.1	50%	<0.05	
Zephyr Pt.	7/20/17	0.5	6227.28	8.78	3.99	5.83	0.85	2	3	0.40	30%	0.12	FG-m

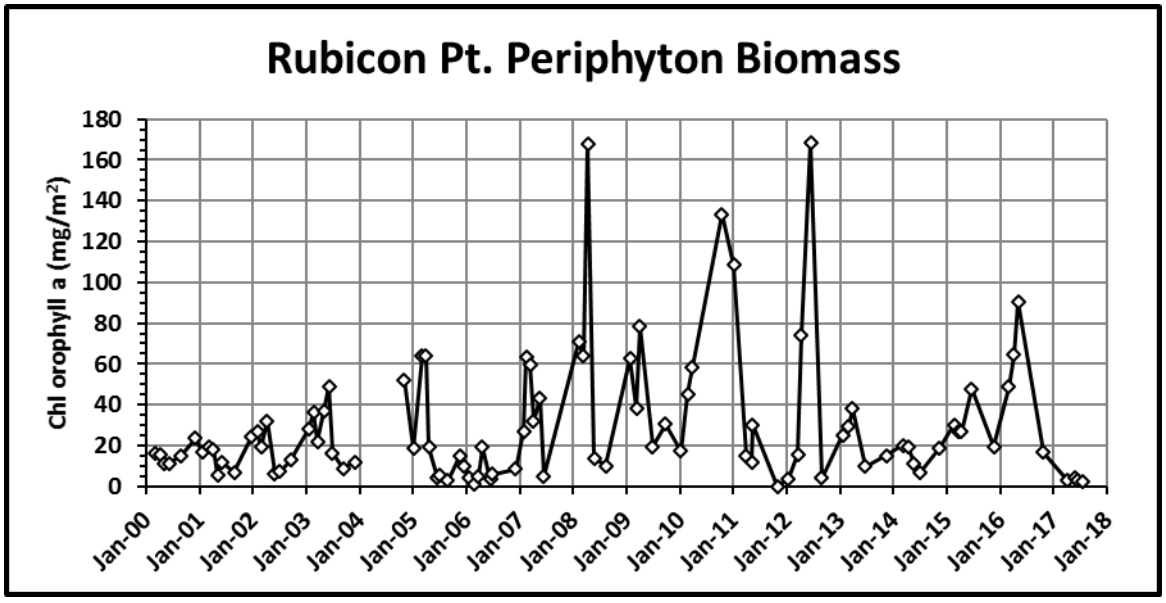


Figure 8 a. Rubicon Pt. periphyton biomass (chlorophyll *a*) 2000-2017.

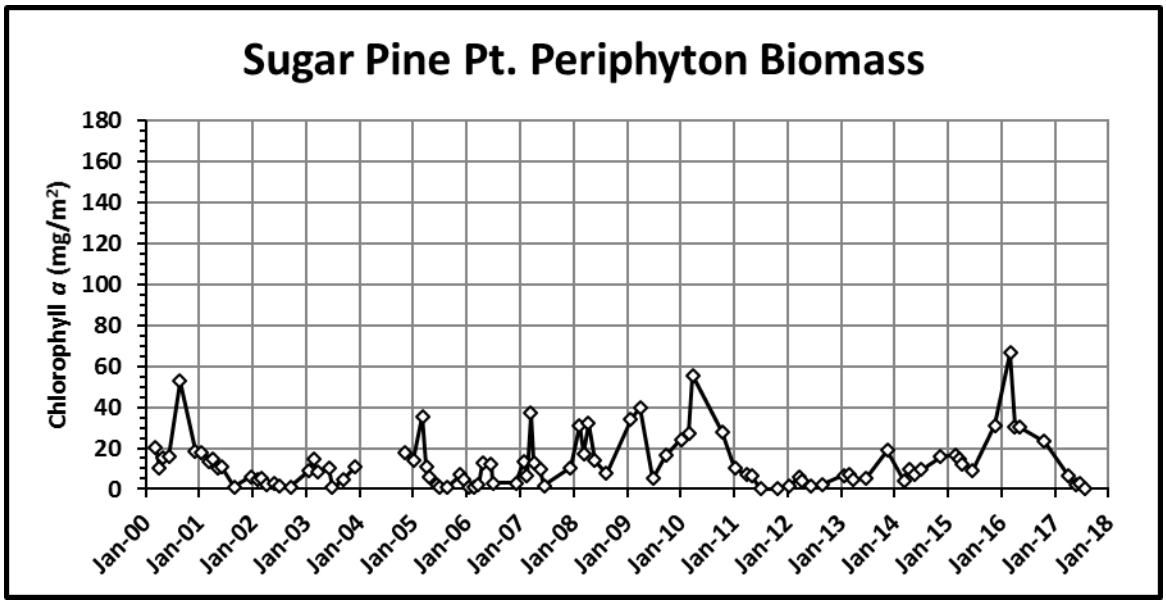


Figure 8 b. Sugar Pine Pt. periphyton biomass (chlorophyll *a*) 2000-2017.

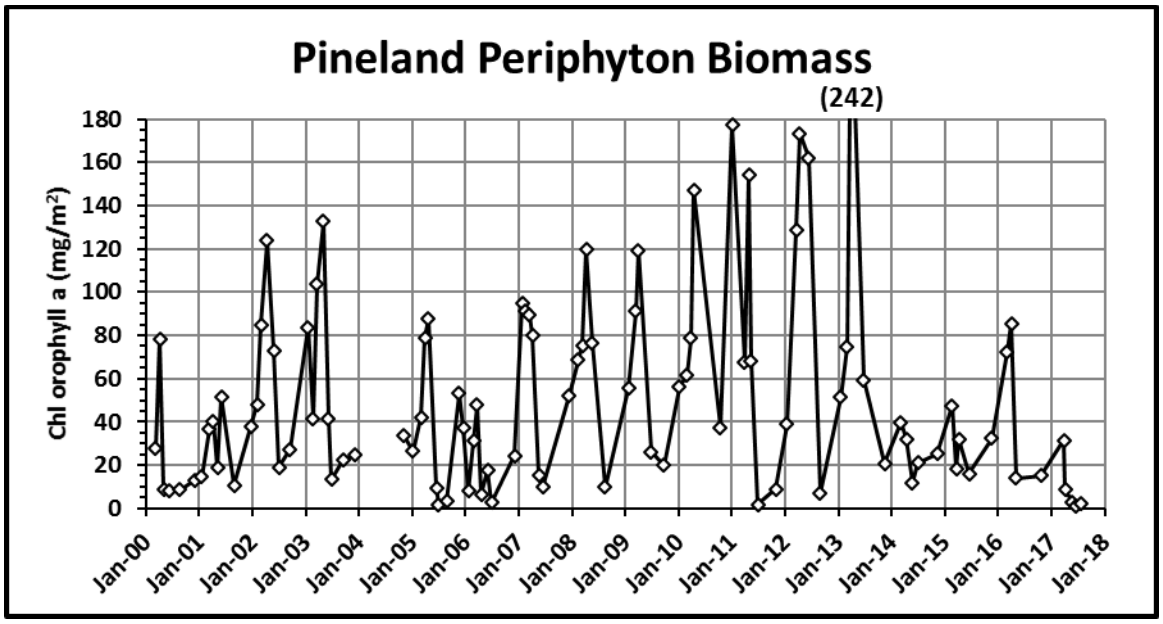


Figure 8 c. Pineland periphyton biomass (chlorophyll *a*) 2000-2017.

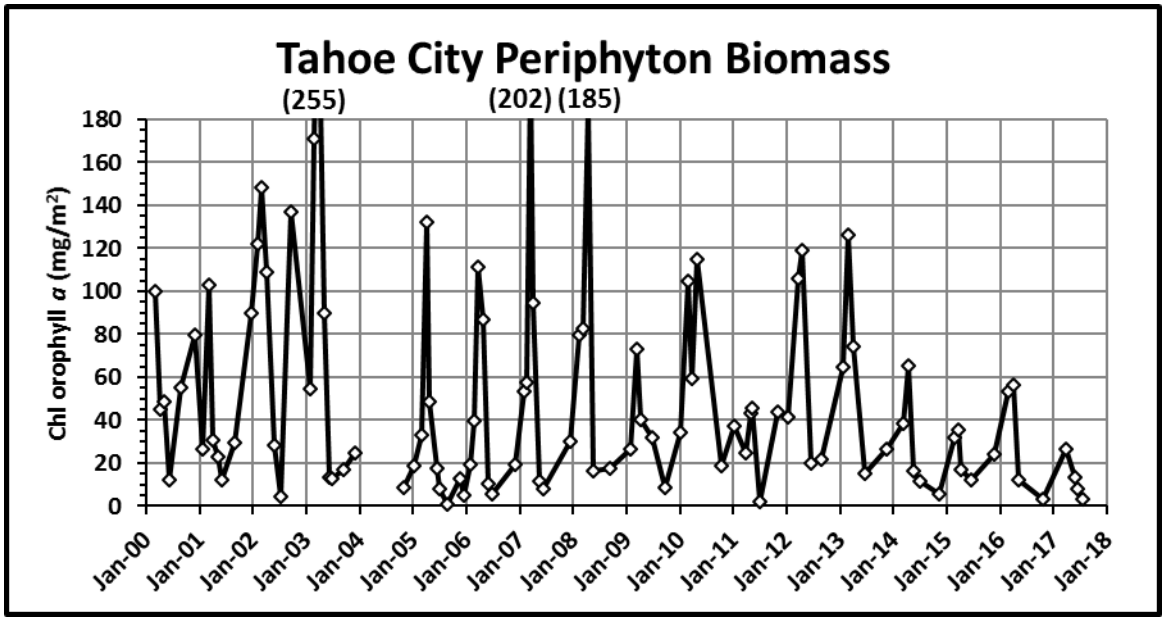


Figure 8 d. Tahoe City periphyton biomass (chlorophyll *a*) 2000-2017.

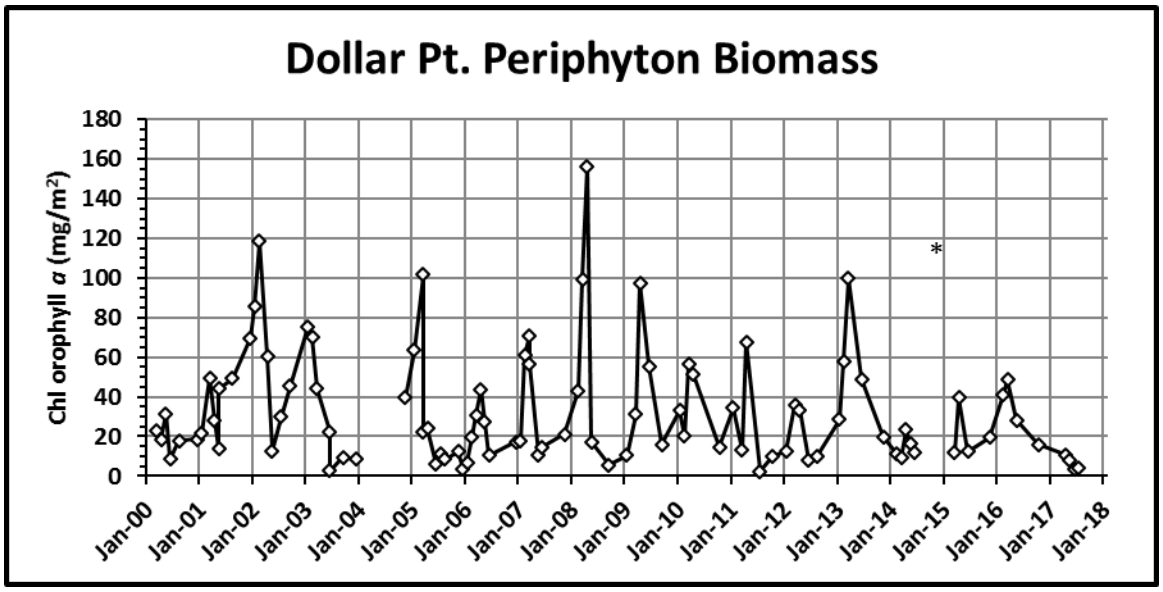


Figure 8 e. Dollar Pt. periphyton biomass (chlorophyll *a*) 2000-2017. *Note- the chlorophyll data for 11/11/14 was considered anomalous and not included in the long-term data.

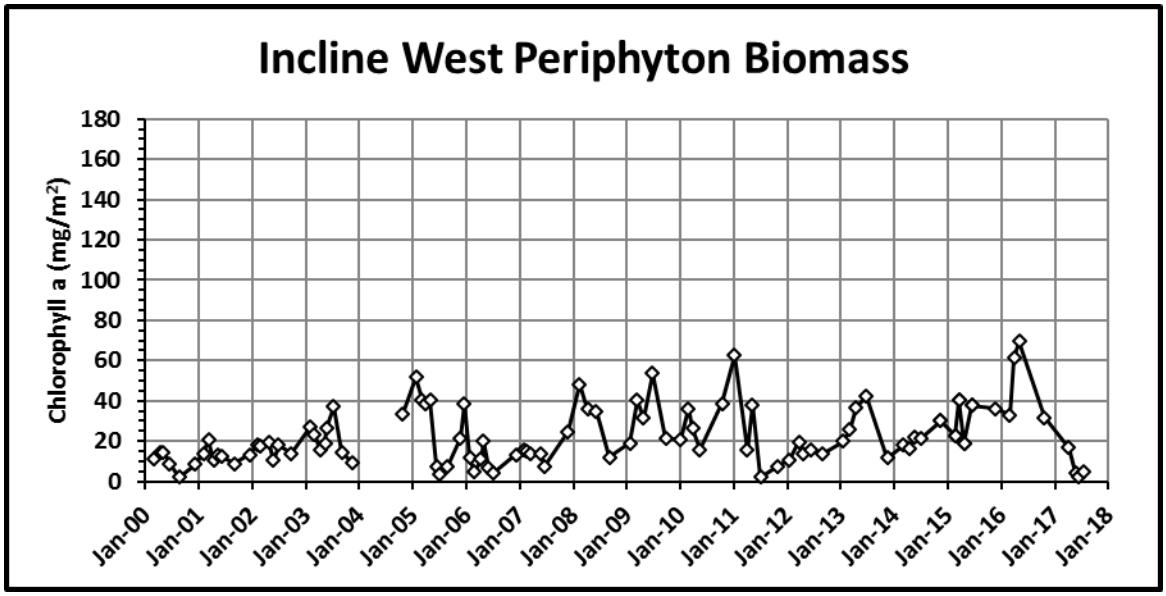


Figure 8 f. Incline West periphyton biomass (chlorophyll *a*) 2000-2017.

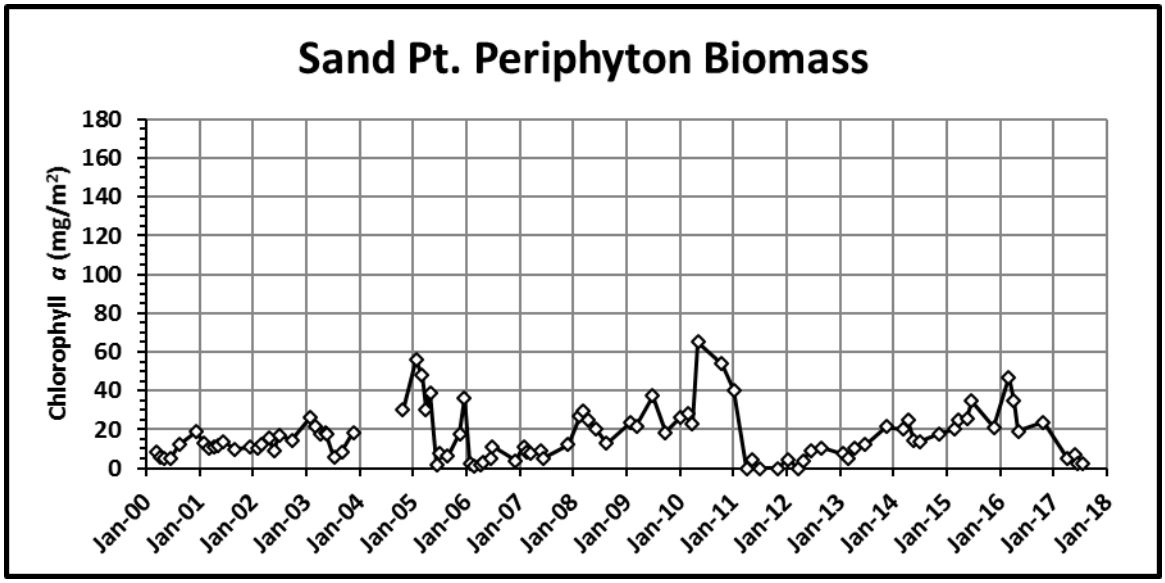


Figure 8 g. Sand Pt. periphyton biomass (chlorophyll *a*) 2000-2017.

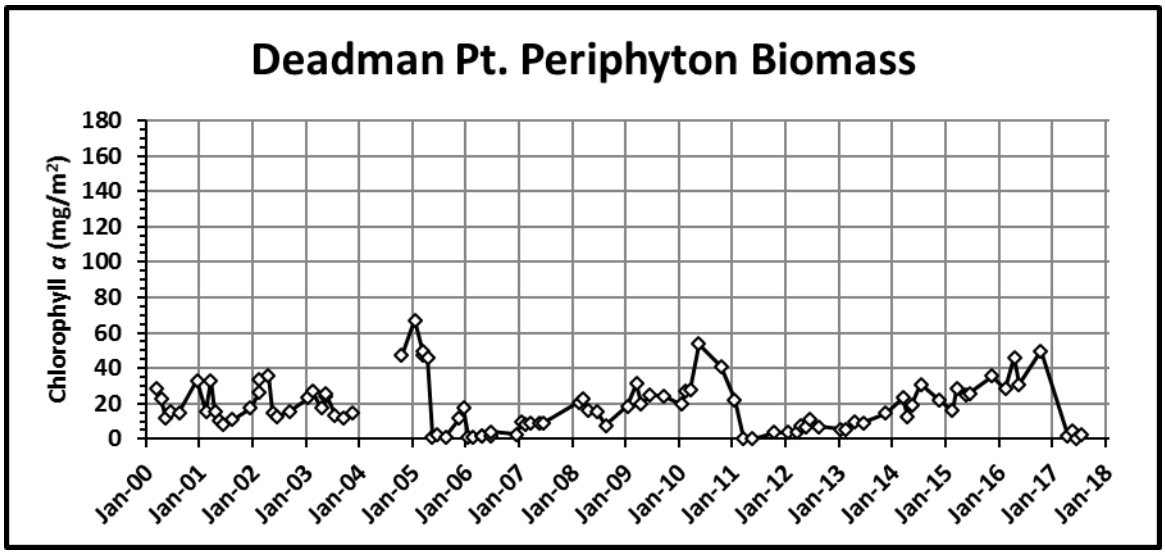


Figure 8 h. Deadman Pt. periphyton biomass (chlorophyll *a*) 2000-2017.

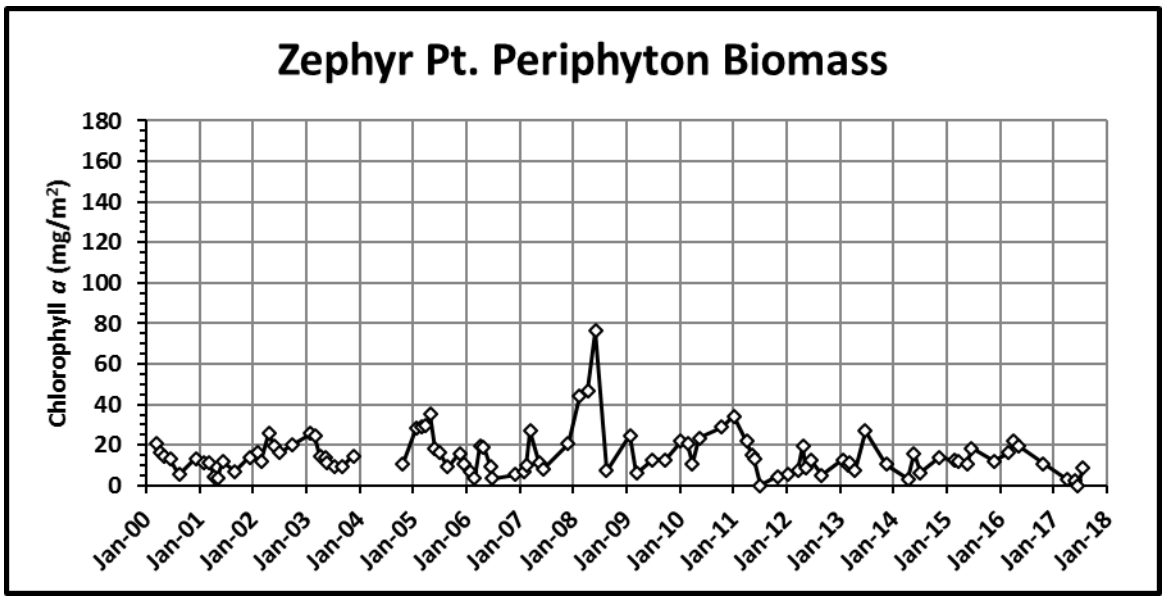


Figure 8 i. Zephyr Pt. periphyton biomass (chlorophyll *a*) 2000-2017.

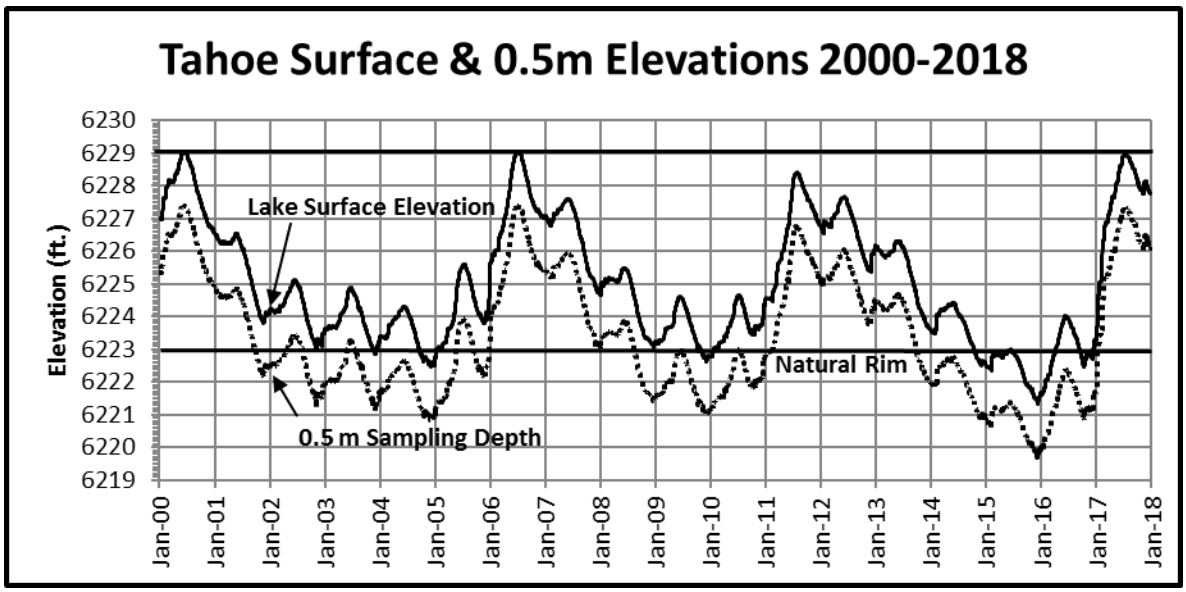


Figure 9. Fluctuation in Lake Tahoe surface elevation 1/1/00-1/1/18. Periphyton samples were typically collected during the period from natural rock substrata at a depth of 0.5m below the water surface. The 0.5m sampling depth (shown as a dotted line) fluctuates with the lake surface elevation. The elevation of the natural rim of Lake Tahoe is 6223 ft. The top 6.1 ft. of the lake above the natural rim (to 6229.1 ft.) is operated as a reservoir. Lake level data is from USGS web site (http://nwis.waterdata.usgs.gov).

Water Year 2017 Patterns of Periphyton Biomass

The first sampling was done October 20, 2016, after a fairly strong fall storm in the middle of the month. The lake level was very low, below the natural rim at 6223 ft, and cyanobacteria contributed to the biomass at 0.5m at many sites. Moderate levels of chlorophyll *a* were measured at several sites (i.e. Deadman Pt. (chlorophyll *a* = 49.52 mg/m^2), Incline West (31.61 mg/m^2), Sand Pt. (23.65 mg/m^2) and Sugar Pine Pt. (23.44 mg/m^2)), while chlorophyll *a* biomass at other sites was very low i.e. at Tahoe City (3.52 mg/m2) and Zephyr Pt (10.95 mg/m2).

Multiple large storms contributed much rain at lower elevations (particularly in mid- and late October, mid-December 2016, early January and early February 2017 (figure 10).

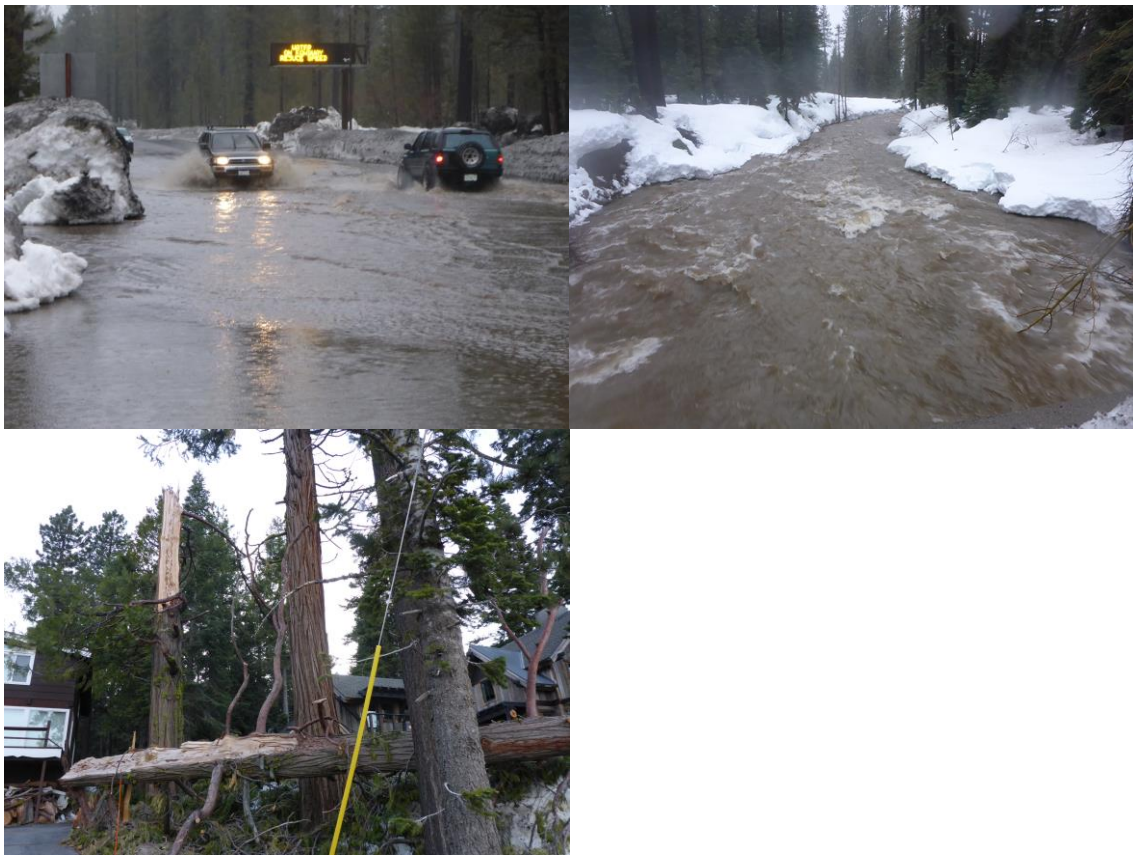


Figure 10. Several large storms occurred in the fall and winter of 2016-2017: (top left) flooded section of Highway 89 near Tahoe City during the large January 2017 storm; (top right) high flow on Ward Cr. during the same storm; (lower left) snapped tree along west shore from high winds during one storm.

The precipitation and runoff from these storms resulted in stepwise or incremental increases in lake level amounting to nearly 4.5 feet by early April (Figure 11). Substantial nutrients and sediments were contributed to the lake from basin streams. Very strong winds accompanied some of the storms. There were also strong northeast winds in late March which resulted in sloughing of algae along portions of the west shore.

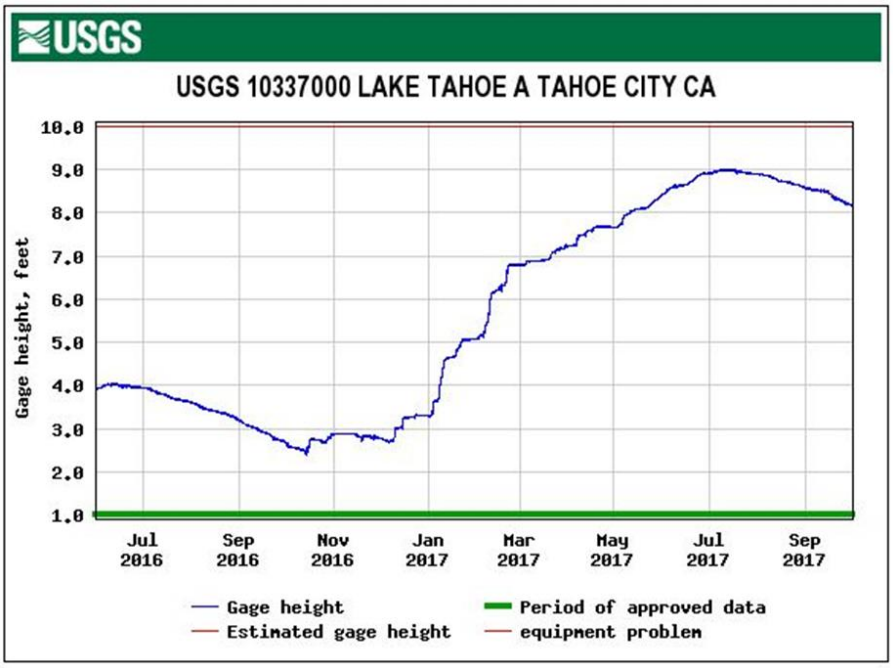


Figure 11. Lake Tahoe surface elevation (6220.0 ft. + elevation shown) from mid-July 2016 to September 2017. Incremental increases in lake level due to many large storms in 2016-2017 are apparent. Data from USGS website. https://nwis.waterdata.usgs.gov/nv/nwis/

The first mid-winter observations of periphyton growth were made in mid-February at Pineland. This was after one of the large stepwise increases in lake level of about a foot associated with a large storm in early February. There was no periphyton right along shore on the newly submerged shoreline. At 0.5m there was light to moderate growth, while at a little over 1m there was a thick furry growth present. The first biomass measurements of the spring were made on March 29, 2017 at Pineland and Tahoe City. The levels of chlorophyll *a* were (31.5 mg/m^2) and (26.2 mg/m^2) respectively at 0.5m. These levels are low-moderate. The 0.5m sampling depth included substrate that had only been submerged for a little under 2 months, so the algae had little time to colonize and establish growth.

At the end of March, a strong north-northeast wind event occurred March 30-31, which impacted algae levels in some areas. Figure 12 shows the waves along shore near the Pineland station during this event. The strong wave activity along the shoreline from these winds caused the algae to partially slough from the rocks, the chlorophyll *a* levels at Pineland dropped from 31.46 on March 29 to 8.54 mg/m^2 on April 4. This wind event also appeared to impact other sites along the central west shore including several spring synoptic sites. Biomass at the other routine sites on April 4 were also low ranging from 1.72 mg/m^2 at Deadman Pt. to 16.82 mg/m^2 at Incline West.

a.

b. c.

Figure 12. On March 30-31 a strong North – Northeast wind event impacted portions of the west shore with substantial wave activity. Figure 12 a shows waves along the shoreline near the Pineland periphyton monitoring site on March 31, 2017. Figure 12.b. shows a rock (Pineland Rock A) at 0.5m with moderate periphyton growth on March 29 before the wind event. Figure 12.c. shows the same rock on April 4 after the wind event. Much of the algae had sloughed from the rock and the surrounding lakebed.

The next sampling of routine sites was done on May 22. By that date, the lake level had risen to over 6228 ft. Levels of periphyton at 0.5m routine sites were all low ranging from 1.93 mg/m^2 at Sugar Pine Pt. to 13.60 mg/m^2 at Tahoe City. Levels were also low at routine sites in mid-June at 0.5m, ranging from 0 mg/m^2 at Deadman Pt. to 8 mg/m^2 at Tahoe City.

This year we also sampled the routine sites during the mid-summer on July 20, 2017. Summer monitoring has also been done during several years in past monitoring studies. Levels of chlorophyll *a* were very low at 0.5m at all sites on this date, ranging from non-detectable at Sugar Pine Pt. to 8.78 mg/m^2 at Zephyr Pt. The level at Zephyr Pt. had actually increased from nondetectable in mid-June. At Sand Pt. at 1m the PBI increased from 0.60 in mid-June to 2.40 on July 20 associated with stalked diatom growth.

Heavier periphyton biomass was observed in slightly deeper water than 0.5m at many of the routine sites during the winter and spring. Relatively heavy growth of stalked diatoms was observed at a little over a meter deep at Pineland on February 13, 2017. This represented substrate at approximately 6222.68 ft. that was originally submerged in the fall. On March 29 at 1.03m (6223.78 ft.) there was a thick growth of periphyton (PBI near 3.5) at Pineland. On May 22, 2017, levels of PBI greater than 2.0 were observed at Rubicon 1m, Sugar Pine Pt. 1.5m, Pineland 1.5m, and Incline West. On May 22, 2017 we also collected chlorophyll *a* biomass samples from 1.0 and 1.5m at Pineland using SCUBA, in addition to the routine 0.5m samples. These samples showed a gradation in biomass with depth. Levels of chlorophyll *a* were 3.01 mg/m^2 at 0.5m, 12.52 mg/m^2 at 1m and 104.79 mg/m^2 at 1.5m. The periphyton at 1.5m on May 22 had been submerged since early January.

Overall, spring biomass at 0.5m was low in 2017 we believe largely due to the rapidly rising lake level and short colonization times. However, at many sites, much heavier biomass was observed at 1 or 1.5m. Much of the heavier growth was associated with large and or small-sized stalked diatoms. A pennate diatom which appeared to be *Synedra ulna* was also present at many sites.

Aerial Observations of Pineland Periphyton 6/25/17

On 6/25/17 we had the opportunity to survey the shoreline around Lake Tahoe from helicopter (courtesy of pilot Mike Bruno). One highly visible feature of the shoreline observed on that flight was the heavy periphyton growth still remaining in the region of the Ward Cr. mouth (Figure 13) and along the shoreline near the Pineland periphyton monitoring site (Figures 14 and 15). The periphyton was very apparent as a white coverage over the bottom rocks, extending from slightly south of the Ward Cr. mouth to Sunnyside Marina. This shoreline area represents much of the lakeshore boundary of the lower portion of the Ward Valley watershed. Future aerial imaging (possibly by AUV) at this site may be useful to better understand patterns of growth there.

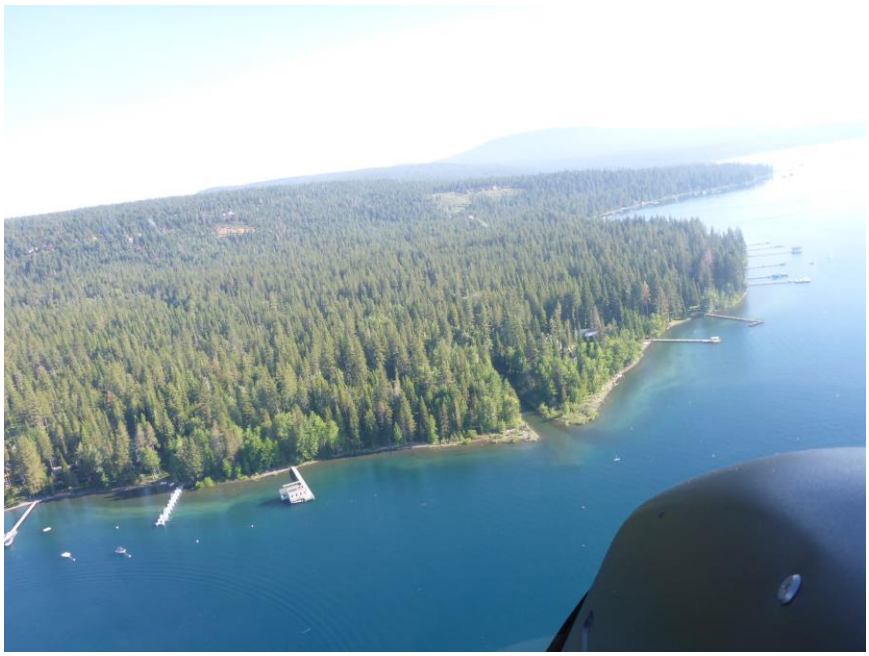


Figure 13. View of the Ward Cr. mouth and periphyton along shore, observed on 6/25/17 from helicopter. White bands of heavy periphyton growth (largely stalked diatoms) are visible along shore.

Figure 14. West Lake Tahoe shoreline north of Ward Cr. observed on 6/25/17 with white bands of heavy periphyton growth quite apparent. The black arrow indicates the section of shoreline where the Pineland routine periphyton monitoring site is located.

Figure 15. The Pineland periphyton monitoring site as observed on 6/25/17 from helicopter. White areas of heavy periphyton (stalked diatom) growth are still visible along shore, although the level of biomass was declining.

Annual Maximum Biomass

Figure 16 presents the maximum periphyton chlorophyll *a* biomass for water years 2013-2017.

- Annual January –July maximum chlorophyll *a* levels at 0.5m for most sites in 2017 were very low. We believe this was primarily a consequence of the rapid rise in lake level. Algae had little time to establish a thick growth at 0.5m before it was submerged to greater depths. Heavier biomass was observed deeper (at 1 or 1.5m at many sites – see the PBI values in Table 8). The biomass at these depths better represents the cumulative seasonal biomass in 2017m since for 1.5m the substrate was submerged for much more of the period January – July compared with the biomass at 0.5m which was submerged for a shorter duration. In addition to PBI measurements, samples for chlorophyll *a* determination were collected at the Pineland site in late May, 2017. The biomass at 1.5m was 104.79 mg/m^2. This was slightly more than the 2016 WY maximum at 0.5m. Its possible biomass was heavier on the same substrate earlier in the spring.

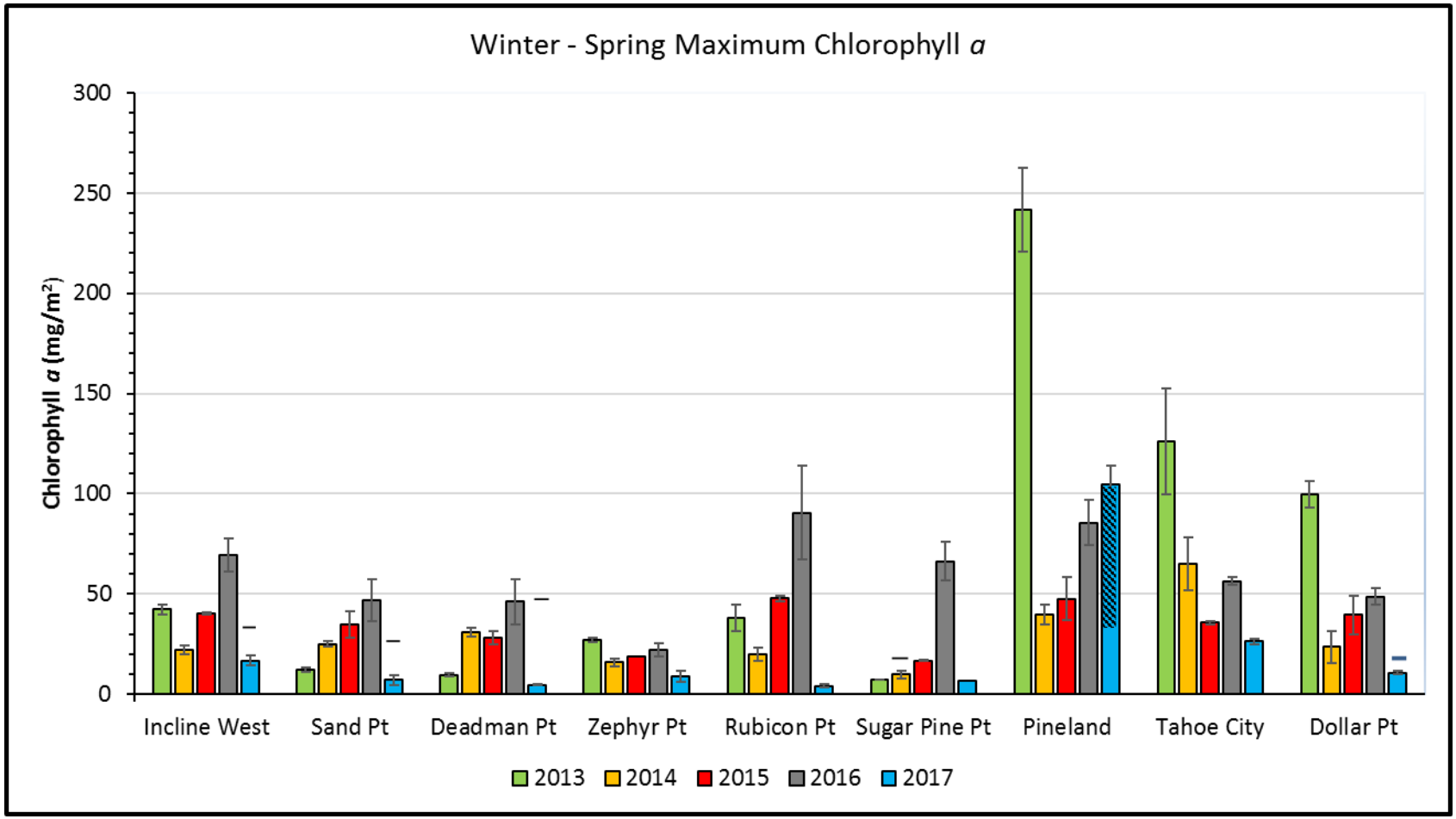


Figure 16. Maximum winter – spring (Jan.-early July) periphyton chlorophyll *a* for Water Years 2013-2017 at the nine routine periphyton monitoring sites at 0.5m (solid colors). In 2017 the spring biomass was low at most 0.5m sites we believe due to the rapid lake level rise and short growth periods. At many sites heavier biomass was observed at 1 or 1.5m based on PBI. 1.5m chlorophyll *a* biomass was measured at Pineland in May and that value (top of shaded portion of bar) was higher than the peak 0.5 level (top of blue bar). This better represents the cumulative seasonal growth at Pineland. For some sites and WY, the WY maximum occurred in the fall (these values were indicated by a line above bar).

Results of Spring Synoptic Monitoring 2017

An additional 46 sites (Table 9) were monitored in the spring to provide lake-wide information on the distribution of periphyton biomass. Monitoring of these additional sites is timed as much as possible to occur with the peak spring biomass, the routine sites are also monitored during this period. This "spring synoptic" sampling provides essentially a "snapshot picture" of the distribution of periphyton biomass around the lake. Since peak periphyton growth does not necessarily occur at the same time at all sites around the lake, this synoptic monitoring may catch some sites prior to or following their peak biomass. Due to the rapid rise in lake levels in 2017, relatively light biomass was observed at 0.5m around the lake. Heavier biomass was observed deeper (at 1 and 1.5m at many sites. Therefore we included measurements of PBI at 1 or 1.5 meters in addition to 0.5m at many of the sites. The data collected in the spring synoptic monitoring are summarized in Table 10.

Chlorophyll *a* to Periphyton Biomass Index Relationship

At all spring synoptic sites, a "Periphyton Biomass Index (PBI)" value was determined. PBI is useful for rapidly assessing the aesthetic condition of the nearshore with respect to periphyton growth. Periphyton chlorophyll *a* was also determined on about a third of samples. Comparison of PBI with chlorophyll *a* measurements has shown there is an association between the two but it is not always strong. Figure 17 presents the relationship between PBI and chlorophyll *a* for 2017. A fairly good association between PBI and chlorophyll *a* was found ($R^2 = 0.64$). The PBI relies on rapidly measured physical features of the overall periphyton mat (algal length, % coverage- when multiplied the product is PBI), while chlorophyll *a* is a laboratory extraction of the photosynthetic pigment. PBI relates more to the visual characteristics of the periphyton while chlorophyll *a* is a measure of live biomass. PBI and chlorophyll *a* are not interchangeable, they measure different aspects of the periphyton.

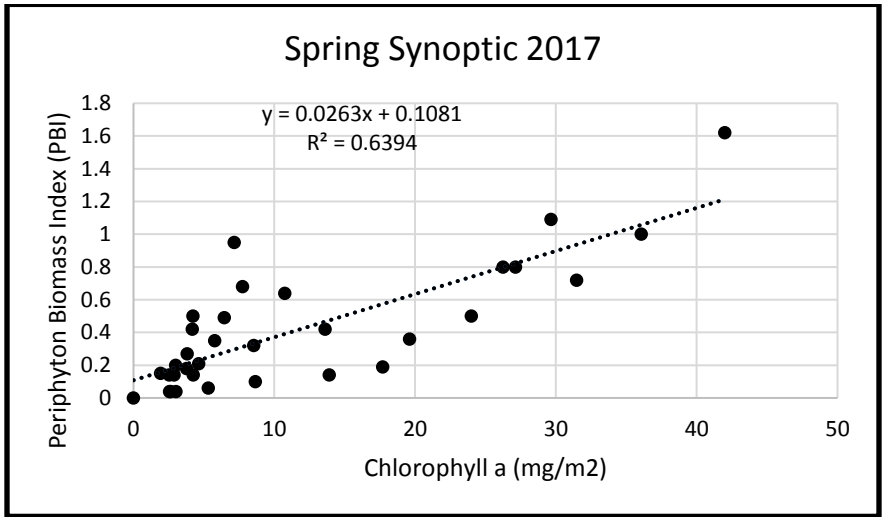


Figure 17. Relation between periphyton chlorophyll *a* and Periphyton Biomass Index for sites where both were measured during the 2017 spring synoptic survey.

Table 9. Periphyton Spring Synoptic monitoring locations.

SITE DESIGNATION	WEST SHORE	LOCATION
A	Cascade Creek	N38 57.130; W120 04.615
B	S. of Eagle Point	N38 57.607; W120 04.660
C	E.Bay/Rubicon	N38 58.821; W120 05.606
D	Gold Coast	N39 00.789; W120 06.796
E	S. Meeks Point	N39 01.980; W120 06.882
F	N. Meeks Bay	N39 02.475; W120 07.194
G	Tahoma	N39 04.199; W120 07.771
H	S. Fleur Du Lac	N39 05.957; W120 09.774
I	Blackwood Creek	N39 06.411; W120 09.424
	Kaspian Pt.	(Point near Elizabeth Dr.)
J	Ward Creek	N39 07.719; W120 09.304
K	N. Sunnyside	N39 08.385; W120 09.135
L	Tavern Point	N39 08.806; W120 08.628
TCT	Tahoe City Tributary	(adjacent to T.C. Marina)
M	TCPUD Boat Ramp	N39 10.819; W120 07.177
	Lake Forest	
N	S. Dollar Point	N39 11.016; W120 05.888
O	S. Dollar Creek	N39 11.794; W120 05.699
P	Cedar Flat	N39 12.567; W120 05.285
Q	Garwood's	N39 13.486; W120 04.974
R	Flick Point	N39 13.650; W120 04.155
S	Stag Avenue	N39 14.212; W120 03.710
T	Agatam Boat Launch	N39 14.250; W120 02.932
	EAST SHORE	
E1	South side of Elk Point	N38 58.965; W119 57.399
E2	North Side of Elk Point	N38 59.284; W119 57.341
E3	South Side of Zephyr Point	N38 59.956; W119 57.566
E4	North Zephyr Cove	N39 00.920; W119 57.193
E5	Logan Shoals	N39 01.525; W119 56.997
E6	Cave Rock Ramp	N39 02.696; W119 56.935
E7	South Glenbrook Bay	N39 04.896;W119 56.955
E8	South Deadman Point	N39 05.998; W119 57.087
E9	Skunk Harbor	N39 07.856; W119 56.597
E10	Chimney Beach	N39 09.044; W119 56.008
E11	Observation Point	N39 12.580; W119 55.861
	NORTH SHORE	
E12	Hidden Beach	N39 13.263; W119 55.832
E13	Burnt Cedar Beach	N39 14.680; W119 58.132
	Incline Condo	N39 14.90; W119 59.63
	Old Incline West	(100 yds No. Incline West)
E14	Stillwater Cove	N39 13.789; W120 00.020
E15	North Stateline Point	N39 13.237; W120 00.193
E16	Brockway Springs	N39 13.560; W120 00.829
E17	Kings Beach Ramp Area	N39 14.009; W120 01.401
	SOUTH SHORE	
S1	Tahoe Keys Entrance	N38 56.398; W120 00.390
S2	Kiva Point	N38 56.555; W120 03.203
	Timber Cove Rocks	Rocks west T. Cove Pier

Table 10. Summary of periphyton chlorophyll *a*, Ash Free Dry Weight (AFDW), visual score, avg. filament length, percent algal coverage and Periphyton Biomass Index for routine sites (shaded) and Spring Synoptic survey sites during April 4, 2017-June 14, 2017. Note for chlorophyll *a* and AFDW, n=2 unless otherwise indicated. Visual score is a subjective ranking of the aesthetic appearance of algal growth (viewed underwater) where 1 is the least offensive and 5 is the most offensive. Biomass Index is filament length (cm) times percent algal cover. "NA" = not available or not collected; "NES" = not enough sample for analysis. Sampling depth and corresponding sampling elevation are also indicated. For algae types – SD=stalked diatoms; CY= Cyanobacteria; FG= filamentous greens; "-f" indicates algae type best estimate based on field observation; "-m" indicates predominant algae types checked under microscope, where SD-G_1= Stalked diatom likely *Gomphoneis herculeana*; SD-G_2- unidentified very small stalked diatom, genera possibly *Gomphonema* or *Gomphoneis*; S= *Synedra ulna*; d= diatom mix

Site	Site Name	Date	Samp. Depth (m)	Samp. Elev. (ft)	Chl a (mg/m^2)	Std Dev (mg/m^2)	AFDW (g/m^2)	Std Dev (mg/m^2)	Above Visual Score	Below Visual Score	Fil. Length (cm)	Algal Cover. %	Biomass Index	Algal Type
A	Cascade Creek	5/22/17	0.5	6226.50	NA	NA	NA	NA	1	2	1.0	40%	0.40	SD -f
A	Cascade Creek	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	2	1.0	40%	0.40	SD -f
A	Cascade Creek	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	2	1.0	60%	0.60	SD -f
B	S. of Eagle Point	4/10/17	0.5	6225.84	5.32	0.22	3.11	0.24	1	2	0.2	30%	0.06	SD-G_1;S-m
B	S. of Eagle Point	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	2	NA	NA	NA	SD-f
C	E.Bay/Rubicon	4/10/17	0.5	6225.84	NA	NA	NA	NA	3	3	0.8	90%	0.72	SD -f
C	E.Bay/Rubicon	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	5	2.5	100%	2.50	
	Rubicon Pt.	4/4/17	0.5	6225.60	2.63	0.52	NA	NA	1	1	0.2	20%	0.04	SD-$G_{1,2}$;d-m
	Rubicon Pt.	5/22/17	0.5	6226.50	4.21	1.59 (n=3)	3.35	0.73	2	4	1.0-4.0	20%	0.50	SD-$G_{2,1}$;S-m
	Rubicon Pt.	5/22/17	1	6224.86	NA	NA	NA	NA	NA	5	3.0-4.0	80%	2.80	SD- f
D	Gold Coast	4/10/17	0.5	6225.84	NA	NA	NA	NA	2	3	0.5	80%	0.40	SD -f
D	Gold Coast	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	5	3.5	100%	3.50	SD -f
E	S. Meeks Point	4/10/17	0.5	6225.84	5.77	0.55	1.59	0.31	2	3	0.5	70%	0.35	SD-G_2,G_1-m
E	S. Meeks Point	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	4	1.5	90%	1.35	SD -f
F	N. Meeks Bay	4/10/17	0.5	6225.84	NA	NA	NA	NA	2	4	1.5	60%	0.90	SD -f
F	N. Meeks Bay	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	5	3.0	100%	3.0	SD -f
F	N. Meeks Bay	4/10/17	1.5	6222.56	NA	NA	NA	NA	NA	5	3.0	100%	3.0	SD -f
	Sugar Pine Pt.	4/4/17	0.5	6225.60	6.44	(n=1)	3.89	(n=1)	NA	3	0.7	70%	0.49	SD-G_1-m
	Sugar Pine Pt.	5/22/17	0.5	6226.50	1.93	0.38	NA	NA	NA	2	0.5	30%	0.15	SD-$G_{1,2}$-m
	Sugar Pine Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	NA	1.5	60%	0.90	SD-f
	Sugar Pine Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	3.0	80%	2.40	
G	Tahoma	4/10/17	0.5	6225.84	NA	NA	NA	NA	NA	2	0.2	30%	0.06	SD -f
G	Tahoma	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	2	0.2	20%	0.04	SD -f

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G	Tahoma	4/10/17	1.5	6222.56	NA	NA	NA	NA	NA	3.5				SD -f
H	S. Fleur Du Lac	4/10/17	0.5	6225.84	3.76	1.41	3.13	(n=1)	NA	2	0.3	60%	0.18	SD-G_1;S;FG-m
H	S. Fleur Du Lac	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	2	0.5	53%	0.27	FG-f
I	Blackwood Creek	4/10/17	0.5	6225.84	NA	NA	NA	NA	NA	1.5	0.1	5%	0.005	
I	Blackwood Creek	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	1	<0.1	1%	<0.001	
	Kaspian Pt.	4/10/17	0.5	6225.84	NA	NA	NA	NA	2	2	0.4	70%	0.28	SD -f
	Kaspian Pt.	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	4	1.75			SD -f
J	Ward Creek	4/10/17	0.5	6225.84	13.90	0.67	12.51	0.03	2	2.5	0.6	24%	0.14	SD-$G_{1,2}$;S-m
J	Ward Creek	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	4	2.25	63%	1.42	SD -f
J	Ward Creek	4/10/17	1.5	6222.56	NA	NA	NA	NA	NA	5	NA	NA	>1m	SD -f
	Pineland- Rock A	3/29/17	0.5	6225.52	31.46	1.45 (n=3)	16.52	2.38 (n=3)	3.5	3.5	0.8	90%	0.72	SD-G_1;S-m
	Pineland- Rock A	4/4/17	0.55	6225.44	8.54	0.32 (n=3)	6.67	0.66 (n=3)	NA	3	0.4	80%	0.32	SD-G_1;S-m
	Pineland	3/29/17	0.5	6225.52					3	3	0.5	50%	0.25	SD -f
	Pineland	3/29/17	1.1						5	5	3.5	100%	3.50	SD -f
	Pineland	5/22/17	0.5	6226.50	3.01	1.12	4.27	1.29	1.5	1.5	0.1	40%	0.04	SD-G_1;S-m
	Pineland	5/22/17	1.0	6224.86	12.52	4.42 (n=3)	14.85	6.49 (n=3)	2	4	1.5	60%	0.90	SD-G_1-m
	Pineland	5/22/17	1.5	6223.22	104.79	9.02 (n=3)	98.47	30.87 (n=3)	5	5	4.5	100%	4.50	SD-G_1;S-m
K	N. Sunnyside	4/10/17	0.5	6225.84	NA	NA	NA	NA	NA	1	0	0	0	
K	N. Sunnyside	4/10/17	1.0	6224.20	NA	NA	NA	NA	NA	2	1.2	20%	0.24	SD -f
L	Tavern Pt.	4/10/17	0.5	6225.84	42.00	5.81	29.61	3.34	4	4	1.7	95%	1.62	SD-G_1;S-m
L	Tavern Pt.	4/10/17	1.0	6224.20							2.0	90%	1.80	SD -f
	Tahoe City	3/29/17	0.5	6225.52	26.24	2.02 (n=3)	30.20	3.65 (n=3)	3	3	1.0	80%	0.80	SD-G_1;S-m
	Tahoe City	5/22/17	0.5	6226.50	13.60	2.93 (n=3)	26.34	0.39 (n=3)	NA	2	0.6	70%	0.42	SD-G_1-m
	Tahoe City	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	NA	1.0-1.5	50%	0.63	SD-f
	Tahoe City	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	1.0-1.5	20%	0.25	SD-f

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TCT	Tahoe City Trib.	5/2/17	0.5	6226.02	27.13	8.26 (n=3)	35.02	21.96 (n=3)	3.5	3.5	1.0	80%	0.80	S;SD-G_1-m
TCT	Tahoe City Trib.	5/2/17	1.0	6224.38	NA	NA	NA	NA	NA	5	4.0	90%	3.6	SD -f
TCT	Tahoe City Trib.	5/2/17	1.5	6222.74	NA	NA	NA	NA	NA	5	5.0	100%	5.0	SD -f
M	TCPUD Boat Ramp	4/25/17	0.5	6226.05	NA	NA	NA	NA	4	4	1.5	98%	1.47	
M	TCPUD Boat Ramp	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	5	3.5	100%	3.50	SD- f
M	TCPUD Boat Ramp	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	5	3.5	100%	3.50	
	Lake Forest	5/9/17	0.5	6226.33	29.65	3.78 (n=3)	72.00	16.63 (n=3)	3	4	1.2	91%	1.09	SD- f
	Lake Forest	5/9/17	1.0	6224.69	NA	NA	NA	NA	NA	4	1.5	90%	1.35	
	Lake Forest	5/9/17	1.5	6223.05	NA	NA	NA	NA	NA	5	3	90%	2.70	
N	S. Dollar Pt.	4/25/17	0.5	6226.05	NA	NA	NA	NA	2	2	0.4	53%	0.21	SD-G_1;S-m
N	S. Dollar Pt.	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	4	2	90%	1.80	SD- f
N	S. Dollar Pt.	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	5	4.5	90%	4.05	SD- f
	Dollar Pt.	4/4/17	0.5	6225.60	10.74	1.58 (n=3)	13.42	1.39 (n=3)	3	3.5	0.8	80%	0.64	SD-G_1-m
	Dollar Pt.	5/22/17	0.5	6226.50	7.74	0.23	22.03	0.32	2	3	0.8	85%	0.68	SD-G_1.S;d-m
	Dollar Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	NA	1.0	70%	0.70	SD-f
	Dollar Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	1.0	30%	0.30	
O	S. Dollar Creek	4/25/17	0.5	6226.05	17.69	3.38	16.57	0.29	3	3	0.4	47%	0.19	SD-G_1;S-m
O	S. Dollar Creek	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	4	2.5	80%	2.00	SD- f
O	S. Dollar Creek	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	5	5	100%	5.00	SD- f
P	Cedar Flat	4/25/17	0.5	6226.05	NA	NA	NA	NA	NA	3	0.4	80%	0.32	SD- f
P	Cedar Flat	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	4	2.5	80%	2.00	SD- f
P	Cedar Flat	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	4	2.5	90%	2.25	SD- f
Q	Garwood's	4/25/17	0.5	6226.05	NA	NA	NA	NA	2.5	2.5	0.2	50%	0.10	SD- f
Q	Garwood's	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	4	2.5	70%	1.75	SD- f
Q	Garwood's	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	4	3.25	80%	2.60	SD- f
R	Flick Point	4/25/17	0.5	6226.05	8.66	0.85	2.13	0.71	2.5	2.5	0.3	34%	0.10	SD-G_1;S-m
R	Flick Point	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	4	2.5	70%	1.75	SD-f
R	Flick Point	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	4	2.5	70%	1.75	
S	Stag Avenue	4/25/17	0.5	6226.05	NA	NA	NA	NA	3	3	0.5	100%	0.50	SD- f
S	Stag Avenue	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	5	3	100%	3.00	SD- f

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S	Stag Avenue	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	5	3	100%	3.00	SD- f
T	Agatam Boat R.	4/25/17	0.5	6226.05	NA	NA	NA	NA	3	3	0.4	90%	0.36	SD- f
T	Agatam Boat R.	4/25/17	1.0	6224.41	NA	NA	NA	NA	NA	4	2	80%	1.60	
T	Agatam Boat R.	4/25/17	1.5	6222.77	NA	NA	NA	NA	NA	4	2	80%	1.60	
E17	Kings Beach	4/25/17	0.5	6226.05	NA	NA	NA	NA	3	4	1	100%	1.00	SD-G_1;S-m
E17	Kings Beach	4/25/17	1.5-1.5	6222.77	NA	NA	NA	NA	NA	5	3.5	100%	3.50	SD- f
E16	Brockway Springs	4/25/17	0.5	6226.05	NA	NA	NA	NA	NA	4	1.2	100%	1.20	SD- f
E16	Brockway Springs	4/25/17	1-1.5	6224.41	NA	NA	NA	NA	NA	5	3	100%	3.00	SD- f
E15	No. Stateline Point	6/13/17	0.5	6226.97	NA	NA	NA	NA	NA	2.5	0.2	60%	0.12	SD- f
E15	No. Stateline Point	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	1	60%	0.60	SD- f
E15	No. Stateline Point	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	5	5	60%	3.00	SD- f
E14	Stillwater Cove	6/13/17	0.5	6226.97	NA	NA	NA	NA	2	2.5	1.2	50%	0.60	SD- f
E14	Stillwater Cove	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	2.5	0.8	50%	0.40	SD- f
E14	Stillwater Cove	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	3	2	50%	1.00	SD- f
	Old Incline West	6/13/17	0.5	6226.97	NA	NA	NA	NA	2	2	0.2	30%	0.06	SD- f
	Old Incline West	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	1	50%	0.5	SD- f
	Old Incline West	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	4	4	80%	3.2	SD- f
	Incline West	5/22/17	0.5	6226.50	4.18	0.71	7.88	1.09	3	3	0.6	70%	0.42	SD-G_1;S;FG-m
	Incline West	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	4	1.5	70%	1.05	SD-f
	Incline West	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	NA	3.0	70%	2.10	SD;FG-f
	Incline West	6/13/17	0.5	6226.97	2.53	0.45	4.08	1.16	1.5	2	0.2	70%	0.14	G_1-m
	Incline West	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	0.7	50%	0.35	
	Incline West	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	3.0/1.0	25%/75%	1.50	SD-f
	Incline Condo	6/13/17	0.5	6226.97	NA	NA	NA	NA	3.5	3	0.4	100%	0.40	SD-f
	Incline Condo	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	0.7	100%	0.70	
	Incline Condo	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	4	2	90%	1.80	SD-f
E13	Burnt Cedar	6/13/17	0.5	6226.97	3.80	0.25	5.02	0.39	3	3	0.3	90%	0.27	SD- f
E13	Burnt Cedar	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	NA	0.5	90%	0.45	SD- f
E13	Burnt Cedar	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	2.5	80%	2.00	SD- f
	Hidden Beach Insh.	6/13/17	0.5	6226.97	NA	NA	NA	NA	1.5	2	0.2	50%	0.10	

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	Hidden Beach Insh.	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	2	0.6	60%	0.36	
	Hidden Beach Insh.	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	3.5	2	50%	1.00	
	Hidden Beach Offsh	6/13/17	0.5	6226.97	NA	NA	NA	NA	NA	2	0.4	20%	0.08	SD- f
	Hidden Beach Offsh	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	0.3	50%	0.15	
	Observation Pt.	6/13/17	0.5	6226.97	NA	NA	NA	NA	NA	1.5	0.2	1%	0.002	SD- f
	Sand Pt.	5/22/17	0.5	6226.50	7.15	3.52	8.98	5.14	3	3.5	1.0	95%	0.95	SD-$G_{2,1}$-m
	Sand Pt.	5/22/17	1.0	6224.86	NA	NA	NA	NA	NA	4	3.0-4.0	30%	1.05	SD-f
	Sand Pt.	5/22/17	1.5	6223.22	NA	NA	NA	NA	NA	3	NA	NA	NA	SD-f
	Sand Pt.	6/13/17	0.5	6226.97	2.56	0.43	NES	NES	NA	1.5	<0.1	50%	<0.05	SD-$G_{2,1}$-m
	Sand Pt.	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	NA	2.0	30%	0.60	
	Sand Pt.	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	2.0	0-70%	0.70	
E10	Chimney Beach	6/13/17	0.5	6226.97	NA	NA	NA	NA	1.5	1.5	<0.1	50%	<0.05	SD-f
E10	Chimney Beach	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	1	80%	0.80	SD-f
E10	Chimney Beach	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	1.25	80%	1.00	
E9	Skunk Harbor	6/13/17	0.5	6226.97	NA	NA	NA	NA	NA	1	<0.1	5%	<0.005	
E9	Skunk Harbor	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	NA	0.1	5%	0.005	SD-f
	Deadman Pt.	5/22/17	0.5	6226.50	4.62	0.33	6.37	4.30	2	2.5	0.3	70%	0.21	SD-$G_{2,1}$;CY-m
	Deadman Pt.	6/13/17	0.5	6226.97	0	0	0	0	NA	0	0	0	0	
	Deadman Pt.	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	NA	0.3	50%	0.15	SD-f
	Deadman Pt.	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	NA	1.0	30%	0.30	
E8	So. Deadman Point	6/13/17	0.5	6226.97	2.88	0.91	2.08	(n=1)	2	2.5	0.2	70%	0.14	SD-$G_{2,1}$ -m
E8	So. Deadman Point	6/13/17	1.0	6225.33	NA	NA	NA	NA	NA	3	0.5	50%	0.25	SD-f
E8	So. Deadman Point	6/13/17	1.5	6223.69	NA	NA	NA	NA	NA	4	3	70%	2.10	SD-f
E7	So. Glenbrook Bay	6/14/17	0.5	6226.98	NA	NA	NA	NA	NA	2	0.1	70%	0.07	SD-f
E7	So. Glenbrook Bay	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	NA	0.4	40%	0.16	SD-f
E7	So. Glenbrook Bay	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	NA	0.5	25%	0.13	SD-f
E6	Cave Rock Ramp	5/2/17	0.5	6226.02	24.00	7.13 (n=3)	25.89	11.15 (n=3)	3	3	1.5	33%	0.50	SD-$G_{2,1}$;S -m
E6	Cave Rock Ramp	5/2/17	1.0	6224.38	NA	NA	NA	NA	NA	4	3.5	50%	1.75	SD-f
E6	Cave Rock Ramp	5/2/17	1.5	6222.74	NA	NA	NA	NA	NA	NA	To 7.6	NA	NA	SD-f
E6	Cave Rock Ramp	6/14/17	0.5	6226.98	4.25	0.84	4.02	0.21	2	2.5	0.2	70%	0.14	SD-G_1;S-m
E6	Cave Rock Ramp	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	4	3	40%	1.2	SD-f

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E6	Cave Rock Ramp	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	2.5	1.25	30%	0.38	
E5	Lincoln Park	6/14/17	0.5	6226.98	NA	NA	NA	NA	1.5	2	<0.1	50%	<0.05	SD-f
E5	Lincoln Park	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	2	<0.1	40%	<0.04	SD-f
E5	Lincoln Park	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	2	0.1	30%	0.03	
E4	No. Zephyr Cove	6/14/17	0.5	6226.98	NA	NA	NA	NA	NA	2.5	0.3	40%	0.12	SD-f
E4	No. Zephyr Cove	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	3	1	70%	0.7	SD-f
E4	No. Zephyr Cove	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	2.5	0.5	30%	0.15	
	Zephyr Pt.	4/4/17	0.5	6225.60	2.99	0.86	2.82	n=1	2	2	0.5	40%	0.20	SD-G_1;d-m
	Zephyr Pt.	6/14/17	0.5	6226.98	NES	NES	0.90	0.21	NA	1.5	<0.1	70%	<0.07	SD-G_1;S-m
	Zephyr Pt.	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	NA	<0.1	50%	<0.05	
	Zephyr Pt.	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	NA	<0.1	50%	<0.05	
	So. Zephyr Pt.	6/14/17	0.5	6226.98	NA	NA	NA	NA	2	2.5	0.3	70%	0.21	SD-f
	So. Zephyr Pt.	6/14/17	1.0	6225.34	NA	NA	NA	NA	NA	2.5	0.4	60%	0.24	
	So. Zephyr Pt.	6/14/17	1.5	6223.70	NA	NA	NA	NA	NA	NA	0.4	40%	0.16	SD-f
E2	No. Elk Pt.	5/19/17	0.5	6226.45	NA	NA	NA	NA	2	2	0.4	40%	0.16	SD-f
E2	No. Elk Pt.	5/19/17	1.0	6224.81	NA	NA	NA	NA	NA	NA	0.4	50%	0.20	SD-f
E2	No. Elk Pt.	5/19/17	1.5	6223.17	NA	NA	NA	NA	NA	NA	NA	50-70%		SD-f
E1	So. Elk Point	5/19/17	0.5	6226.45	19.60	2.12 (n=3)	31.73	3.66 (n=3)	3	4	1.8	20%	0.36	SD-G_1-m
E1	So. Elk Point	5/19/17	1.0	6224.81	NA	NA	NA	NA	NA	5	4.5	100%	4.50	SD-f
E1	So. Elk Point	5/19/17	1.5	6223.17	NA	NA	NA	NA	NA	5	5.5	100%	5.50	SD-f
	Timber Cove Rock	4/5/17	0.9	6224.29	NA	NA	NA	NA	NA	3	1.4	65%	0.91	SD-f
S1	T. Keys Entrance	4/5/17	0.5	6225.60	NA	NA	5.15	1.70	NA	3	0.4	70%	0.28	SD-f
	Kiva Pt.	5/2/17	0.5	6226.02	NA	NA	NA	NA	NA	3.5	1.2	10%	0.12	SD-f
	Kiva Pt.	5/2/17	1.0	6224.38	NA	NA	NA	NA	NA	3.5	1.2	14%	0.17	
	Kiva Pt.	5/2/17	1.5	6222.74	NA	NA	NA	NA	NA	3	NA	NA	NA	

The PBI values were used to prepare maps of synoptic distribution of periphyton for spring 2017 at three different depths 0.5m (Fig 18), 1m (Fig. 19) and approximately 1.5m (Fig. 20) (the depth measurements near 1.5m were approximated relative to a measuring ruler which was 1.2m long). For the map at 1m there were a few areas where 1m PBI was not measured. The levels of PBI in those areas were assumed to be similar to the levels at adjacent sites extending from either side. At 1.5m there were larger areas where PBI data was not collected, these areas were left as white areas in the maps. Spring synoptic sampling was carried out from 3/29/17 to 6/14/17.

Generally light PBI (indicated by the two shades of green, in the map) was observed at 0.5m around much of the lake (Figure 18) while heavier biomass was observed at 1 and 1.5m at many sites. At 0.5m Tavern Point had the heaviest PBI (1.62). Three other sites had moderately heavy PBI, Brockway (PBI of 1.20), Lake Forest (PBI of 1.09) and Tahoe City Boat ramp (PBI of 1.47).

At 1.0 meters (Figure 19), heavier PBI was observed in the northwest and southwest portions of the lake and at individual sites along the east shore. From Tahoe City Tributary to Brockway in the northwest portion of the lake, measurements were made between 4/25-5/9/17 and PBI levels at 1 m were mostly between 1.35 and 3.6. Biomass from Tahoe City to Sugar Pine Pt. at 1.0 m was variable with several low values. Measurements spanned the period between 3/29/17 and 5/22/17. Levels of PBI at many of the sites was noted to be wind-impacted. From No. Meeks Bay to Emerald Bay Rubicon, the 1 m PBI was relatively high PBI ranging from 1.35 to a high of 3.5 at Gold Coast. Along the north and east shore at 1m, PBI levels were low to moderate, with a few sites with high levels. Levels of PBI ranged between <0.04 to 0.91 at most sites. Moderate to high PBI was measured a few 1m sites including: Incline West (1.05), Sand Pt. (1.05), Cave Rock (1.75) (see photo in Figure 21) and South Elks Pt. (4.5).

PBI measurements were also determined for the lake at approximately 1.5m (Figure 20) for a portion of the lake. These areas were primarily the north and northwest portion of the lake and the southeast portions of the lake. Along the north and northwest portion of the lake, levels of PBI were quite high ranging from 1.0-5.0. The levels at this depth tended to be similar or higher than levels at 1.0 m. The highest PBI levels were observed at South Dollar Cr. (PBI=5.0), Tahoe City Tributary (5.0), South Dollar Pt. (4.5) and Pineland (4.5). The generally high levels of biomass at 1.5m likely resulted from these sites being submerged most of the winter and spring, allowing for long periods for colonization and growth. Sites may have been impacted by nutrient inputs associated with some of the large storms. Levels of PBI along the southeast portion of the lake at 1.5m tended to be relatively low (i.e. less than 0.5) at many sites. There were a few exceptions notably South Elk Pt. (5.5) and South Deadman (2.1). Cave Rock on 5/2/17 at 1.5m was also noted to have very heavy biomass at 1.5m (with some algal lengths over 7 cm) an estimate of percent cover though was not collected there.

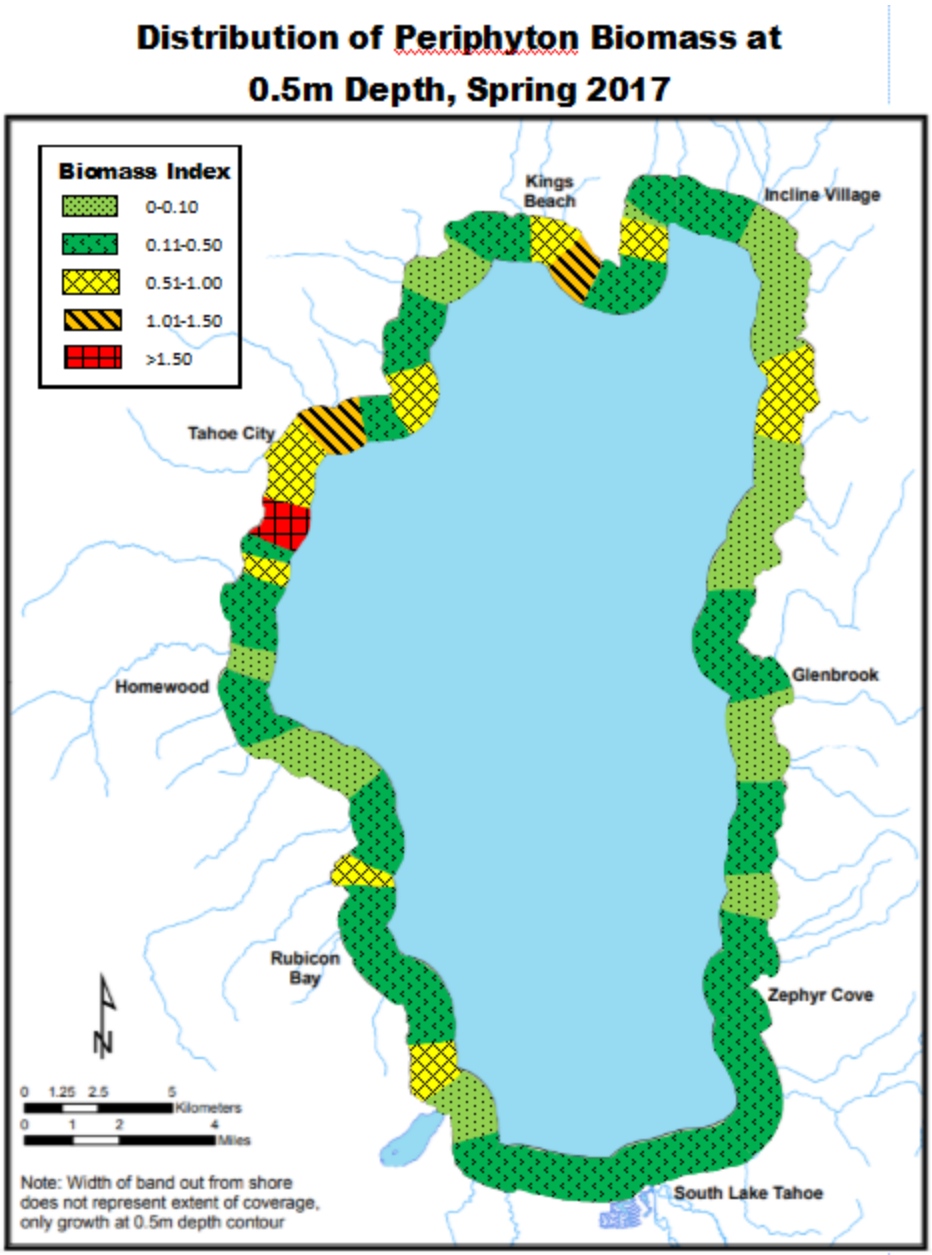

Figure 18. Distribution of peak periphyton biomass measured during the spring synoptic 2017 (3/29/17-6/14/17) at 0.5m. Shading indicates levels of biomass measured using a rapid assessment method: Periphyton Biomass Index (PBI). (PBI= Avg. Filament Length X (multiplied by) Percent Area Covered with Algae).

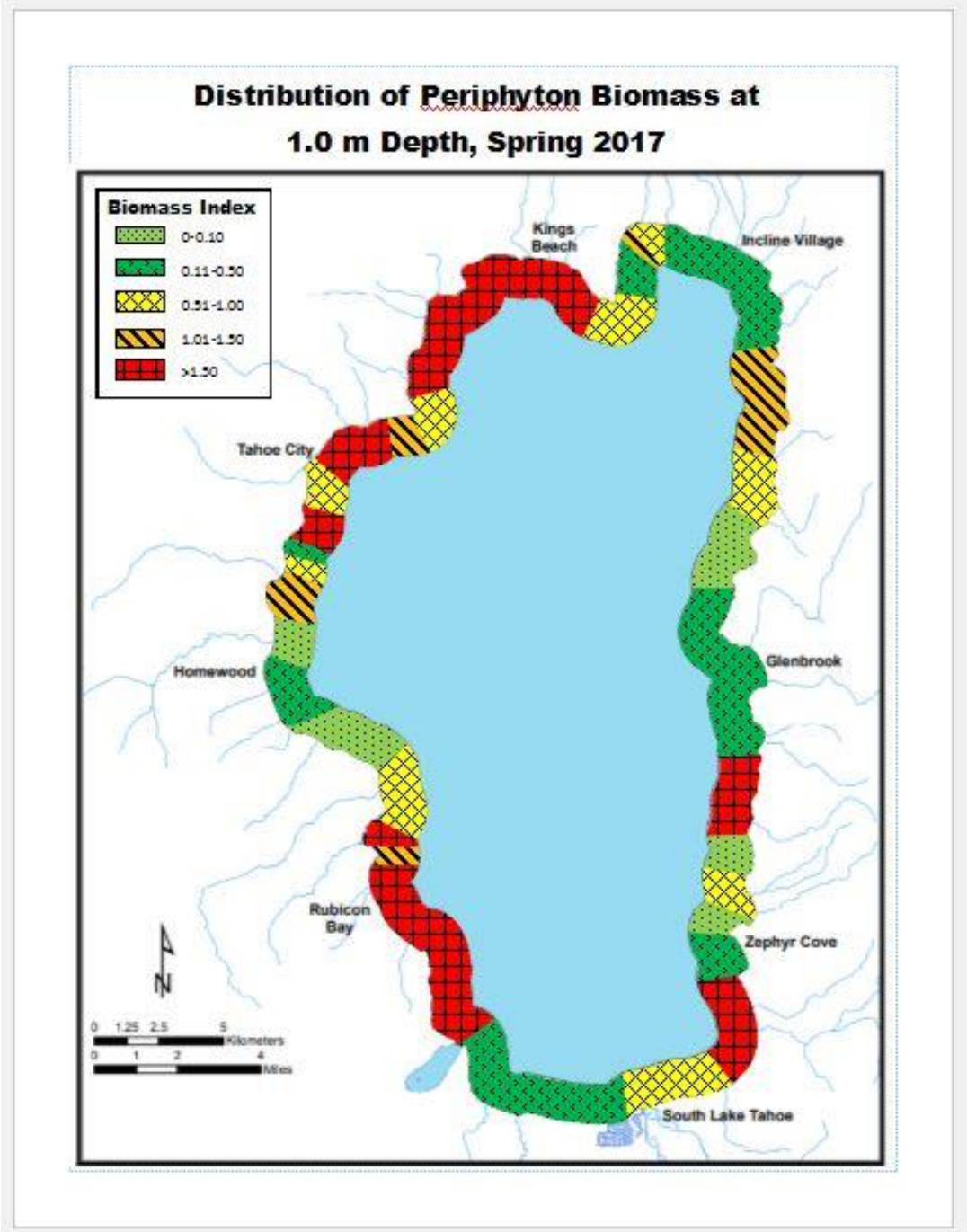

Figure 19. Distribution of peak periphyton biomass measured during the spring synoptic 2017 (4/10/17-6/14/17) at 1.0 m. Shading indicates levels of biomass measured using a rapid assessment method: Periphyton Biomass Index (PBI). (PBI= Avg. Filament Length X (multiplied by) Percent Area Covered with Algae). For the map at 1m there were a few areas where 1m PBI was not measured. The levels of PBI in those areas were assumed to be similar to the levels at adjacent sites extending to the sampling point with no data.

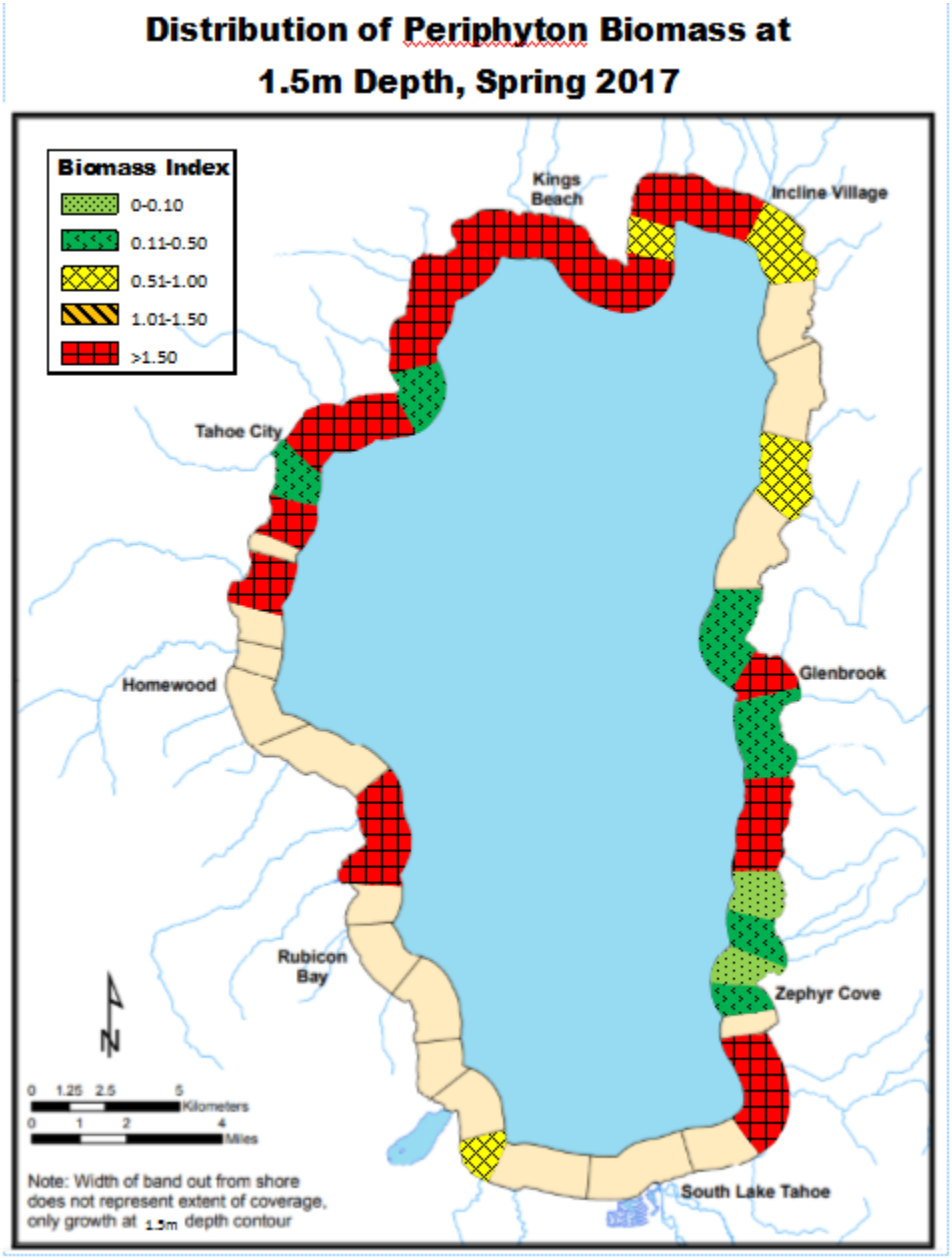

Figure 20. Distribution of peak periphyton biomass measured during the spring synoptic 2017 (4/10/17-6/14/17) at approximately 1.5 m. Shading indicates levels of biomass measured using a rapid assessment method: Periphyton Biomass Index (PBI). (PBI= Avg. Filament Length X (multiplied by) Percent Area Covered with Algae). There were large areas where PBI data was not collected, these areas were left a white areas in the maps.

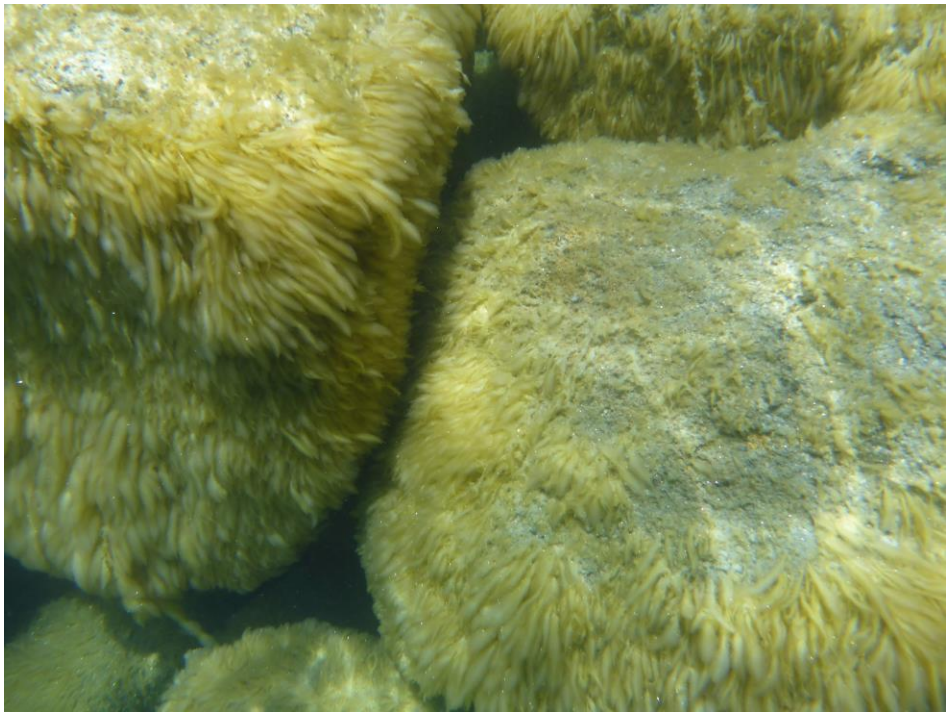

Figure 12. Growth of stalked diatoms at 1m at Cave Rock 5/2/17.

The predominant algal types in the periphyton observed around the lake during the spring synoptic were primarily stalked diatoms and a pennate diatom tentatively identified as *Synedra ulna*. At some sites there was a low-growing film of a particularly small stalked diatom possibly either *Gomphonema* or *Gomphoneis*. This algae appeared to do well in some areas with significant wave activity.

Section IV. Project Quality Assurance

This section provides details of the project quality assurance and quality control measures for the primary areas of study associated with this contract. The QA/QC is an explicit task (Task 2) as required in the original contract. QA/QC provides information on procedures for assuring quality in the research being done and the observation techniques or measures that are used to help verify quality data are being collected. The QA/QC details are presented for the three primary areas study below: (1) algal growth potential assays; (2) phytoplankton enumeration; (3) periphyton analyses.

1. Quality assurance and quality control for algal growth potential bioassays

(QA/QC) applied to the AGP bioassays was similar to methods used for QA/QC in algal nutrient bioassays, see: "Lake Tahoe Algal Bioassay Procedure" in Hackley et al., (2007). Avoidance of sources of contamination and factors that can compromise samples is a critical quality assurance concern in collection of AGP bioassay samples. Glassware and

carboys are carefully cleaned in the lab with Liquinox soap, tap water, 0.1N HCl and deionized water. When sampling on the research boat, standard, clean limnological sampling techniques are employed to prevent contamination. After collection, samples are protected from direct sunlight and kept cool. The bioassays are typically initiated on the same day of collection. Similarly, avoidance of sources of contamination in bioassay set-up is of critical concern.

To distinguish differences among sites in the AGP tests, it is desirable to have low variation among treatment replicates. Appendix Tables 1.a-1.e. provide the means and standard deviations for extracted chlorophyll *a* measurements and in vivo fluorescence measurements in the AGP experiments. Generally, treatment replication was good using duplicate treatments. The standard deviations were low relative to treatment means for most of the replicates. One of two replicates was censored for the initial chlorophyll *a* sample collected from Sunnyside on 3/10/17. The replicate values were 0.38 and 0.80 µg/l and the 0.80 µg/l value seemed anomalously high based on comparing in vivo fluorescence values at Sunnyside and other sites with chlorophyll *a* levels. The in vivo fluorescence at Sunnyside on that date was 0.297. Other sites with similar in vivo fluorescence levels (i.e. Rubicon (0.284), Camp Richardson (0.281) and Tahoe City (0.304)) had mean chlorophyll *a* levels more similar to the lower Sunnyside value (i.e. 0.33, 0.26 and 0.24 µg/l respectively). The high Sunnyside chlorophyll was censored. All other replicate pairs were used.

2. Quality Assurance for Phytoplankton

Quality assurance for phytoplankton enumeration focuses on careful preparation and settling of samples and multiple counts of settled samples. Counts were made along multiple strips of view of settled samples, under the inverted microscope. The replicate strip counts are a measure of precision, much like duplicate water samples provide an estimate of precision for water chemistry. Precision measures the goodness of the procedure, i.e., did the cells settle randomly in the chamber. 1 cm^2 areas of view in the settling chamber were first counted at low magnification to quantify larger cells. Then multiple counts were made at high magnification along 1 cm long strips. The data from all counted strips are combined in computation of totals for the sample. The data from individual counts of settling chamber 1 cm strips is retained in a database if needed for further analysis.

3. Quality Assurance and Quality Control for Periphyton

For QA/QC applied to periphyton monitoring see "Periphyton Quality Assurance Project Plan" in Hackley et al. (2004). Periphyton monitoring is designed to reflect the amount of attached algal biomass present in specific lake locations. There is no standard growth pattern that the collected samples can be compared to; therefore, it is assumed that the collected biomass is representative of the area in which it was collected. Assurances that collected samples are representative rely on replicate samples and expertise of the sampling personnel to place sampling tubes over sections of substrate that reflect the area's growth pattern. During periods of high standing biomass, when within site

variability can be high, researchers may collect triplicate samples. The additional sample increases the statistical power of the analysis and can help account for the presence of higher variability. Collection of the triplicate sample is at the discretion of the scientist. During the study period, triplicate samples were collected for 9 of 47 routine site samples and 4 of 14 spring synoptic site samples.

In 2017, data from 1 site showed substantial variation and was censored. At Kings Beach on 4/25/17 replicates showed large variation (13.47 and 58.62 mg/m^2) and were censored.

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Appendix 1. Summary of data for Algal Growth Potential Assays

Appendix 1.a. Summary of field and experimental data collected for Algal Growth Potential (AGP) experiment done on Lake Tahoe water collected from nearshore and mid-lake sites on 6/21/16. Data for date of collection from various sites is shown in upper left (Date, Time, Surface Temp., Depth collected, chlorophyll *a*, selected observations). On selected dates, extracted chlorophyll *a* was measured, these values are summarized under heading "Extracted Chlor. *a*". Final AGP results are shown at top right of table (in bold). Initial background fluorescence (i.e. fluorescence of filtered lake water) and mean daily *in vivo* fluorescence readings during the AGP experiment are shown along bottom of table.

AGP #12 H_2O Collection 6/21/16	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. *a* (µg/l)	Observations	**Extracted Chlor. *a*** AGP D6 6/27/16	**Extracted Chlor. *a*** AGP D10 7/1/16	**Final AGP Results Chl. *a* ± s.d. (µg/l)**
Nearshore:						Very Windy			
Sunnyside	6/21/16	13:55	14	0.5	.16 ± .02	Previous Wk.	.31 ± .01		.31 ± .01
Tahoe City	6/21/16	9:10	13	0.5	.17 ± .00		.61 ± .02		.61 ± .02
Kings Beach	6/21/16	10:00	14.5	0.5	.23 ± .00		.55 ± .05	.54 ± .00	.55 ± .05
Crystal Bay	6/21/16	10:22	15	0.5	.21 ± .01		.42 ± .03		.42 ± .03
Glenbrook	6/21/16	10:50	15	0.5	.19 ± .01		.45 ± .01		.45 ± .01
Zephyr	6/21/16	11:15	14	0.5	.13 ± .01		.37 ± .01		.38 ± .02
Timber Cove	6/21/16	11:45	15	0.5	.13 ± .01		.50 ± .04		.50 ± .04
Tahoe Keys	6/21/16	12:00	15	0.5	.19 ± .01		.53 ± .01		.53 ± .01
Camp Rich.	6/21/16	12:10	15	0.5	.15 ± .01		.32 ± .01		.32 ± .01
Emerald Bay	6/21/16	12:40	15.5	0.5	.43 ± .00		.41 ± .01	.40 ± .01	.43 ± .00
Rubicon Bay	6/21/16	13:10	16	0.5	.11 ± .01		.22 ± .01	.22 ± .04	.22 ± .01
Mid-Lake:									
Mid-lk No.	6/21/16	9:32	13.5	0.5	.17 ± .00		.86 ± .07	.59 ± .06	.86 ± .07
Mid-lk So.	6/21/16	11:30	14	0.5	.15 ± .01		.30 ± .03	.38 ± .04	.38 ± .04

Experiment Daily Fluorescence	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 6/21/16 19:50	D2 Fluor. 6/23/16 14:40	D3 Fluor. 6/24/16 16:07	D4 Fluor. 6/25/16 17:10	D6 Fluor. 6/27/16 14:30	D9 Fluor. 6/30/16 15:10	D10 Fluor. 7/1/16 14:10
Sunnyside	.045	.180	.185± .004	.190± .004	.196	.206± .007	.198± .007	.198± .016
Tahoe City	.047	.250	.293± .004	.268± .003	.297± .001	.319± .008	.269± .017	.261± .016
Kings Beach	.041	.240	.234± .002	.231± .002	.253± .003	.285± .004	.285± .008	.283± .003
Crystal Bay	.044	.218	.234± .003	.217± .001	.237± .004	.255± .001	.242± .007	.243± .011
Glenbrook	.037	.205	.193± .010	.196± .006	.220± .001	.241± .006	.255± .017	.254± .001
Zephyr	.026	.160	.198± .002	.198± .006	.203± .001	.225± .006	.242± .011	.237± .021
Timber Cove	.053	.181	.200± .009	.224± .002	.241± .001	.273± .006	.221± .006	.206± .010
Tahoe Keys	.056	.195	.211± .005	.220± .004	.235± .012	.277± .001	.266± .004	.247± .010
Camp Rich.	.039	.181	.171± .003	.180± .001	.185± .008	.193± .003	.203± .011	.204± .002
Emerald Bay	.089	.318	.303± .010	.302± .001	.286± .001	.256± .006	246± .005	.267± .002
Rubicon Bay	.043	.143	.141± .006	.149± .001	.150± .005	.153± .007	.177± .011	.180± .015
Mid-Lake:								
Mid-lk No.	.032	.221	.325± .003	.382± .006	.447± .001	.500± .004	.426± .025	.426± .014
Mid-lk So.	.028	.171	.186± .006	.190± .000	.198± .004	.204± .006	.214± .002	.221± .006

Appendix 1.b. Summary of field and experimental data collected for Algal Growth Potential (AGP) experiment done on Lake Tahoe water collected from nearshore and mid-lake sites on 9/14/16. Data for date of collection from various sites is shown in upper left (Date, Time, Surface Temp., Depth collected, chlorophyll *a*, selected observations). On selected dates, extracted chlorophyll *a* was measured, these values are summarized under heading "Extracted Chlor. *a*". Final AGP results are shown at top right of table (in bold). Initial background fluorescence (i.e. fluorescence of filtered lake water) and mean daily *in vivo* fluorescence readings during the AGP experiment are shown along bottom of table.

AGP #13 H_2O Collection 9/14/16	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. *a* (µg/l) 9/14/16	Observations	**Extracted Chlor. *a*** AGP D6 9/20/16	**Final AGP Results Chl. *a* (µg/l)**
Nearshore:								
Sunnyside	9/14/16	14:20	17	0.5	.21±.03		.14±.02	.25 ± .00
Tahoe City	9/14/16	9:20	15	0.5	.20±.01		.15±.04	.23 ± .01
Kings Beach	9/14/16	10:20	16.5	0.5	.25±.02		.10±.03	.25 ± .02
Crystal Bay	9/14/16	10:40	17	0.5	.21±.04		.12±.05	.24 ± .01
Glenbrook	9/14/16	11:17	17	0.5	.24±.01		.13±.00	.24 ± .01
Zephyr	9/14/16	11:40	17	0.5	.15±.06		.18±.04	.26 ± .01
Timber Cove	9/14/16	12:15	15.5	0.5	.18±.02		.12±.04	.20 ± .00
Tahoe Keys	9/14/16	12:30	15.5	0.5	.27±.01		.18±.01	.27 ± .01
Camp Rich.	9/14/16	12:47	16.5	0.5	.16±.01		.22±.04	.31 ± .01
Emerald Bay	9/14/16	13:15	17	0.5	.26±.02		.30±.06	.29 ± .02
Rubicon Bay	9/14/16	13:50	17	0.5	.17±.00		.12±.00	.23 ± .00
Mid-Lake:								
Mid-lk No.	9/14/16	9:45	16.5	0.5	.21±.04		.21±.04	.26 ± .01
Mid-lk So.	9/14/16	12:00	16.5	0.5	.19±.02		.19±.02	.20 ± .02

Experiment Daily Fluorescence	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 9/14/16 20:25	D2 Fluor. 9/16/16 16:40	D4 Fluor. 9/18/16 14:50	D5 Fluor. 9/19/16 15:40	D6 Fluor. 9/20/16 13:15	D8 Fluor. 9/22/16	D9 Fluor. 9/23/16 14:00
Sunnyside	.036	.196	.239±.003	.207± .001	.190± .006	.159± .006	.113± .006	.115± .001
Tahoe City	.047	.192	.218±.005	.163± .008	.139± .014	.142± .010	.146± .013	.147± .006
Kings Beach	.043	.198	.221± .002	.165± .017	.148± .023	.121± .025	.113± .001	.115± .003
Crystal Bay	.043	.191	.226± .013	.179± .004	.152± .008	.127± .028	.114± .001	.121± .018
Glenbrook	.036	.196	.219± .011	.186± .001	.167± .011	.146± .011	.122± .002	.123± .004
Zephyr	.028	.180	.243± .005	.215± .001	.204± .000	.190± .017	.146± .014	.135± .018
Timber Cove	.027	.185	.194± .003	.164± .012	.161± .004	.146± .004	.119± .012	.102± .005
Tahoe Keys	.049	.236	.237± .010	.211± .002	.203± .013	.190± .017	.168± .002	.142± .000
Camp Rich.	.046	.192	.269± .000	.277± .010	.246± .004	.223± .000	.174± .011	.149± .015
Emerald Bay	.059	.255	.270± .015	.256± .013	.253± .015	.235± .017	.208± .008	.203± .004
Rubicon Bay	.047	.195	.216± .004	.191± .001	.177± .006	.152± .004	.120± .004	.110± .001
Mid-Lake:								
Mid-lk No.	.045	.168	.244± .009	.199± .011	.176± .001	.162± .004	.138± .008	.130± .008
Mid-lk So.	.030	.182	.190± .016	.166± .001	.152± .008	.138± .011	.105± .010	.103± .011

Appendix 1.c. Summary of field and experimental data collected for Algal Growth Potential (AGP) experiment done on Lake Tahoe water collected from nearshore and mid-lake sites on 3/10/17. Data for date of collection from various sites is shown in upper left (Date, Time, Surface Temp., Depth collected, chlorophyll *a*, selected observations). On selected dates, extracted chlorophyll *a* was measured, these values are summarized under heading "Extracted Chlor. *a*". Final AGP results are shown at top right of table (in bold). Initial background fluorescence (i.e. fluorescence of filtered lake water) and mean daily *in vivo* fluorescence readings during the AGP experiment are shown along bottom of table.

AGP #14 H_2O Collection 3/10/17	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. *a* (µg/l)	Observations	**Extracted Chlor. *a*** AGP D7 3/17/17	**Extracted Chlor. *a*** AGP D14 3/24/17	**Final AGP Results Chl. *a* (µg/l)**
Sunnyside	3/10/17	14:10	5.5	1	0.38		.54 ± .04		.65 ± .00
Tahoe City	3/10/17	9:10	5.5	1	.24±.00		1.06 ±.07		1.06 ± .07
Kings Beach	3/10/17	10:05	-	1	.44±.01		.55 ± .04		.55 ± .04
Crystal Bay	3/10/17	10:35	5.5	1	.47±.04		.47 ± .06		.50 ± .02
Glenbrook	3/10/17	11:10	5.5	1	.36±.01		.57 ± .04		.72 ± .05
Zephyr	3/10/17	11:30	6	1	.59±.04		.65 ± .04		.65 ± .03
Timber Cove	3/10/17	12:00	6	1	.37±.01		1.55 ± .01	0.64 ± .01	1.70 ± .05
Tahoe Keys	3/10/17	12:15	6.5	1	.58±.06		1.38 ± .04		1.38 ± .04
Camp Rich.	3/10/17	12:25	6	1	.26±.01		.62 ± .11		.82 ± .01
Emerald Bay	3/10/17	12:50	3	1	1.49±.01		.94 ± .09	.63 ± .04	1.49±.01
Rubicon Bay	3/10/17	13:45	6	1	.33±.04		.55 ± .05		.69 ± .06
Mid-Lake:									
Mid-lk No.	3/10/17	9:30	5.5	1	.20±.00		.32 ± .02		.46 ± .03
Mid-lk So.	3/10/17	11:40	5.5	1	.27±.06		.41 ± .01	.36 ± .03	.50 ± .01

Experiment Daily Fluorescence	Backgrd. Fluor.	D0 Fluor. 3/10/17 19:10	D2 Fluor. 3/12/17 12:40	D4 Fluor. 3/14/17 16:00	D5 Fluor. 3/15/17 15:00	D7 Fluor. 3/17/17 15:10	D9 Fluor. 3/19/17 15:00	D12 Fluor. 3/22/17 14:30	D14 Fluor. 3/24/17 11:00
Sunnyside	.040	.297	.225±.008	.292± .018	.319± .003	.440± .002	.508± .001	.468± .007	.433± .007
Tahoe City	.071	.304	.262±.006	.388± .013	.497± .057	.729± .037	.769± .031	.618± .021	.573± .050
Kings Beach	.036	.340	.286± .011	.308± .001	.362± .002	.424± .004	.409± .001	.396± .006	.380± .018
Crystal Bay	.044	.378	.280± .008	.303± .011	.351± .011	.403± .001	.405± .015	.374± .013	.362± .004
Glenbrook	.044	.364	.312± .015	.372± .004	.418± .008	.537± .005	.556± .032	.510± .011	.474± .021
Zephyr	.077	.444	.360± .010	.384± .011	.417± .018	.505± .018	.511± .019	.495± .029	.487± .032
Timber Cove	.232	.529	.490± .001	.754± .030	.997± .033	1.225±.035	1.175±.049	.891± .005	.687± .008
Tahoe Keys	.134	.474	.436± .000	.607± .013	.712± .006	.904± .021	.991± .027	.906± .004	.751± .013
Camp Rich.	.067	.281	.252± .006	.336± .037	.373± .012	.517± .000	.614± .006	.629± .006	.601± .006
Emerald Bay	.135	.791	.610± .001	.608± .023	.575± .006	.583± .012	.557± .002	.492± .013	.464± .012
Rubicon Bay	.038	.284	.217± .006	.275± .008	.325± .008	.453± .023	.539± .039	.524± .035	.483± .001
Mid-Lake:									
Mid-lk No.	.037	.226	.164± .014	.205± .005	.240± .005	.326± .002	.366± .005	.379± .020	.358± .018
Mid-lk So.	.037	.277	.490± .001	.257± .010	.290± .014	.379± .003	.411± .009	.400± .001	.380± .004

Appendix 1.d. Summary of field and experimental data collected for Algal Growth Potential (AGP) experiment done on Lake Tahoe water collected from nearshore and mid-lake sites on 5/23/17. Data for date of collection from various sites is shown in upper left (Date, Time, Surface Temp., Depth collected, chlorophyll *a*, selected observations). On selected dates, extracted chlorophyll *a* was measured, these values are summarized under heading "Extracted Chlor. *a*". Final AGP results are shown at top right of table (in bold). Initial background fluorescence (i.e. fluorescence of filtered lake water) and mean daily *in vivo* fluorescence readings during the AGP experiment are shown along bottom of table.

AGP #15 H_2O Collection 5/23/17	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. *a* (µg/l)	Observations	**Extracted Chlor. *a*** AGP D7 5/30/17 16:30	**Extracted Chlor. *a*** AGP D13 6/5/17 14:30		**Final AGP Results Chl. *a* (µg/l)**
Nearshore:										
Sunnyside	5/23/17	13:45	14	1	.09±.01		.26 ± .14	.18 ± .09		.44 ± .04
Tahoe City	5/23/17	9:00	9.5	1	.69±.04		1.02 ± .06	.44 ± .01		.72 ± .05
Kings Beach	5/23/17	9:45	10.5	1	.36±.03		.64 ± .04			.64 ± .04
Crystal Bay	5/23/17	10:15	11.5	1	.21±.04	Near plume	.49 ± .02			.49 ± .02
Glenbrook	5/23/17	10:50	11.5	1	.40±.00		.38 ± .18			.45 ± .00
Zephyr	5/23/17	11:15	11	1	.41±.04		.45 ± .00			.43 ± .01
Timber Cove	5/23/17	11:45	13.5	1	.21±.01		.42 ± .03			.48 ± .02
Tahoe Keys	5/23/17	11:55	13	1	.24±.06		.48 ± .04			.42 ± .09
Camp Rich.	5/23/17	12:10	13	1	.14±.04		.33 ± .01			.33 ± .01
Emerald Bay	5/23/17	12:45	14.5	1	.29±.01		.50 ± .04			.54 ± .08
Rubicon Bay	5/23/17	13:15	15	1	.14±.01		.41 ± .07			.47 ± .03
Mid-Lake:										
Mid-lk No.	5/23/17	9:25	11	1	.12±.01		.40 ± .01			.40 ± .01
Mid-lk So.	5/23/17	11:30	13	1	.18±.00		.41 ± .04			.41 ± .04

Experiment Daily Fluorescence	Backgrd. Fluor.	D0 Fluor. 5/23/17 20:00	D2 Fluor. 5/25/17 14:40	D4 Fluor. 5/27/17 15:55	D6 Fluor. 5/29/17 14:00	D7 Fluor. 5/30/17 14:15	D9 Fluor. 6/1/17 16:00	D11 Fluor. 6/3/17 15:20	D13 Fluor. 6/5/17 13:50
Sunnyside	.018	.136	.175±.001	.175± .007	.202± .000	.218± .001	.273± .006	.279± .013	.275± .022
Tahoe City	.087	.531	.567±.025	.542± .029	.552± .011	.552± .021	.514± .000	.455± .028	.394± .011
Kings Beach	.061	.348	.387± .007	.381± .012	.385± .025	.400± .007	.363± .001	.309± .004	.268± .002
Crystal Bay	.058	.260	.332± .011	.327± .010	.342± .007	.357± .001	.341± .001	.306± .003	.270± .001
Glenbrook	.031	.367	.363± .001	.346± .012	.333± .018	.335± .006	.297± .006	.245± .005	.220± .001
Zephyr	.064	.368	.386± .004	.334± .016	.325± .013	.326± .008	.298± .004	.259± .016	.262± .007
Timber Cove	.050	.253	.299± .002	.314± .013	.327± .009	.304± .004	.231± .001	.191± .002	.173± .005
Tahoe Keys	.028	.254	.279± .005	.264± .001	.275± .021	.280± .022	.281± .034	.254± .050	.226± .054
Camp Rich.	.026	.220	.226± .008	.228± .015	.238± .001	.261± .006	.259± .001	.258± .015	.237± .028
Emerald Bay	.084	.348	.377± .005	.378± .021	.382± .032	.365± .016	.323± .015	.287± .009	.274± .011
Rubicon Bay	.013	.187	.214± .000	.213± .013	.247± .009	.262± .008	.283± .011	.267± .016	.254± .004
Mid-Lake:									
Mid-lk No.	.012	.152	.208± .011	.210± .004	.237± .014	.260± .006	.234± .005	.223± .024	.227± .037
Mid-lk So.	.002	.198	.214± .004	.213± .001	.228± .001	.242± .004	.232± .006	.210± .002	.187± .007

Appendix 1.e. Summary of field and experimental data collected for Algal Growth Potential (AGP) experiment done on Lake Tahoe water collected from nearshore and mid-lake sites on 6/28/17. Data for date of collection from various sites is shown in upper left (Date, Time, Surface Temp., Depth collected, chlorophyll *a*, selected observations). On selected dates, extracted chlorophyll *a* was measured, these values are summarized under heading "Extracted Chlor. *a*". Final AGP results are shown at top right of table (in bold). Initial background fluorescence (i.e. fluorescence of filtered lake water) and mean daily *in vivo* fluorescence readings during the AGP experiment are shown along bottom of table.

AGP #16 H_2O Collection 6/28/17	Date Collected	Time Collected	Lake Surface T (°C)	Collection Depth (m)	Lake Chl. *a* (µg/l)	Observations	**Extracted Chlor. *a*** AGP D7 7/5/17		**Final AGP Results Chl. *a* ± s.d. (µg/l)**
Nearshore:									
Sunnyside	6/28/17	14:10	16.5	1	.24±.01		.36 ± .02		.36 ± .02
Tahoe City	6/28/17	8:20	16	1	.24±.02		.33 ± .04		.33 ± .04
Kings Beach	6/28/17	9:05	17.5	1	.28±.01		.31 ± .04		.31 ± .04
Crystal Bay	6/28/17	9:30	NA	1	.29±.02	Near plume	.27 ± .04		.33 ± .00
Glenbrook	6/28/17	10:15	18	1	.22±.01		.33± .01		.33 ± .01
Zephyr	6/28/17	10:37	18.5	1	.25±.01		.40 ± .02		.40 ± .02
Timber Cove	6/28/17	11:25	20	1	.33±.01		.25 ± .01		.33 ± .01
Tahoe Keys	6/28/17	11:45	17	1	.29±.01		.28 ± .06		.29 ± .01
Camp Rich.	6/28/17	12:20	NA	1	.23±.01		.25 ± .02		.25 ± .02
Emerald Bay	6/28/17	13:00	18	1	.39±.01		.31 ± .03		.39 ± .01
Rubicon Bay	6/28/17	13:40	18	1	.22±.02		.32 ± .03		.32 ± .03
Mid-Lake:									
Mid-lk No.	6/28/17	8:45	17	1	.21±.03		.34 ± .05		.34 ± .05
Mid-lk So.	6/28/17	10:55	13	1	.18±.00		.30 ± .01		.30 ± .01

Experiment Daily Fluor.	Backgrd. Fluor. GF/F Fil.	D0 Fluor. 6/28/17 19:15	D1 Fluor. 6/29/17 13:45	D2 Fluor. 6/30/17 16:00	D4 Fluor. 7/2/17 11:55	D5 Fluor. 7/3/17 10:00	D7 Fluor. 7/5/17 14:20	D9 Fluor. 7/7/17 14:30	D10 Fluor. 7/8/17 12:15
Sunnyside	.018	.188	.221±.006	.214± .002	.221± .004	.215± .003	.187± .009	.154± .020	.145± .009
Tahoe City	.024	.188	.228±.004	.205± .012	.214± .001	.191± .006	.168± .008	.146± .003	.136± .011
Kings Beach	.017	.216	.240± .006	.214± .004	.195± .004	.184± .003	.148± .001	.143± .009	.146± .004
Crystal Bay	.036	.256	.286± .004	.279± .004	.241± .004	.216± .001	.159± .006	.140± .008	.132± .005
Glenbrook	.022	.202	.228± .011	.205± .005	.202± .001	.198± .005	.166± .001	.169± .006	.176± .018
Zephyr	.026	.227	.258± .001	.229± .006	.220± .002	.213± .011	.219± .004	.191± .014	.184± .031
Timber Cove	.067	.275	.283± .009	.254± .006	.227± .004	.211± .013	.173± .006	.183± .000	.204± .010
Tahoe Keys	.093	.266	.276± .002	.259± .006	.239± .001	.214± .017	.203± .021	.213± .001	.226± .001
Camp Rich.	.045	.201	.210± .006	.204± .001	.179± .005	.167± .007	.147± .008	.149± .006	.155± .001
Emerald Bay	.096	.313	.294± .008	.266± .013	.240± .009	.234± .008	.227± .000	.238± .011	.238± .002
Rubicon Bay	.043	.199	.216± .004	.209± .010	.203± .002	.197± .001	.178± .006	.165± .005	.157± .006
Mid-Lake:									
Mid-lk No.	.010	.203	.221± .003	.221± .004	.209± .001	.196± .011	.168± .011	.156± .015	.156± .008
Mid-lk So.	.017	.178	.202± .002	.185± .007	.189± .002	.184± .006	.168± .008	.151± .013	.204± .010

Appendix 2. Phytoplankton Enumeration Results

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
6/21/16 9:10	Tahoe City	0.5	Chrysophytes	*Chrysolykos skujai*	1897	0.06
6/21/16 9:10	Tahoe City	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	1897	0.36
6/21/16 9:10	Tahoe City	0.5	Chrysophytes	*Flagellates (<5µm)*	7590	0.06
6/21/16 9:10	Tahoe City	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	2846	0.19
6/21/16 9:10	Tahoe City	0.5	Cryptomonads	*Cryptomonas sp.*	118	0.23
6/21/16 9:10	Tahoe City	0.5	Cryptomonads	*Rhodomonas lacustris*	5692	1.64
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Achnanthes exigua*	296	0.06
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Cyclotella bodanica*	356	2.07
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Cyclotella comensis*	541795	231.96
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Cyclotella gordonensis*	3328172	402.60
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Epithemia sorex*	2375	14.26
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Epithemia zebra*	59	1.63
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Staurosirella pinnata*	6949	1.01
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Rhopalodia gibba*	118	2.91
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Synedra acus*	1722	7.57
6/21/16 9:10	Tahoe City	0.5	Diatoms	*Synedra ulna*	118	1.18
6/21/16 9:10	Tahoe City	0.5	Greens	*Ankistrodesmus spiralis*	178	0.02
6/21/16 9:10	Tahoe City	0.5	Greens	*Cosmarium bioculatum*	2846	1.27
6/21/16 9:10	Tahoe City	0.5	Greens	*Mougeotia sp.*	356	3.19
6/21/16 9:10	Tahoe City	0.5	Greens	*Planktonema lauterbornii*	18233	1.11
6/21/16 9:10	Tahoe City	0.5	Greens	*Tetraedron minimum v.tetralobulatum*	948	0.05
6/21/16 9:32	Mid-lake North	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	5973	0.39
6/21/16 9:32	Mid-lake North	0.5	Cyanophytes	*Aphanothece*	54616	0.96
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Achnanthes exigua*	1013	0.21
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Cyclotella comensis*	654413	280.18
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Cyclotella gordonensis*	8813700	1206.25
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Epithemia sorex*	106	0.64
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Staurosirella pinnata*	373	0.05
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Gomphonema subtile*	53	0.04
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Navicula radiosa*	53	0.69
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Nitzschia sp.*	320	5.33
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Rhopalodia gibba*	53	1.31
6/21/16 9:32	Mid-lake North	0.5	Diatoms	*Synedra acus*	213	0.94
6/21/16 9:32	Mid-lake North	0.5	Dinoflagellates	*Gymnodinium fuscum*	53	0.78
6/21/16 9:32	Mid-lake North	0.5	Dinoflagellates	*Peridinium (Lg)*	4914	6.00
6/21/16 9:32	Mid-lake North	0.5	Greens	*Ankistrodesmus spiralis*	427	0.05
6/21/16 9:32	Mid-lake North	0.5	Greens	*Cosmarium bioculatum*	1706	0.76
6/21/16 9:32	Mid-lake North	0.5	Greens	*Cosmarium phaseolus*	106	0.21
6/21/16 9:32	Mid-lake North	0.5	Greens	*Elakatothrix gelatinosa*	6891	0.58
6/21/16 9:32	Mid-lake North	0.5	Greens	*Planktonema lauterbornii*	15546	0.95
6/21/16 10:00	Kings Beach	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	1991	0.13
6/21/16 10:00	Kings Beach	0.5	Cryptomonads	*Cryptomonas*	186	0.36
6/21/16 10:00	Kings Beach	0.5	Cryptomonads	*Rhodomonas lacustris*	995	0.29
6/21/16 10:00	Kings Beach	0.5	Cyanophytes	*Anabaena flos-aquae*	3490	0.23
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Cocconeis placentula*	995	1.15
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Cyclotella comensis*	422352	180.83
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Cyclotella gordonensis*	2655945	341.53
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Epithemia sorex*	685	4.11
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Staurosirella pinnata*	1246	0.18
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Gomphonema subtile*	249	0.20
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Mastogloia smithii*	436	1.18

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Meridion circulare*	685	2.75
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Navicula radiosa*	62	0.80
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Nitzschia*	498	8.29
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Rhopalodia gibba*	249	6.15
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Synedra acus*	124	6.15
6/21/16 10:00	Kings Beach	0.5	Diatoms	*Synedra ulna*	186	1.85
6/21/16 10:00	Kings Beach	0.5	Dinoflagellates	*Peridinium (lg)*	9785	11.96
6/21/16 10:00	Kings Beach	0.5	Greens	*Ankistrodesmus spiralis*	436	0.05
6/21/16 10:00	Kings Beach	0.5	Greens	*Cosmarium bioculatum*	995	0.45
6/21/16 10:00	Kings Beach	0.5	Greens	*Elakatothrix gelatinosa*	9224	0.77
6/21/16 10:00	Kings Beach	0.5	Greens	*Planktonema lauterbornii*	9099	0.55
6/21/16 10:00	Kings Beach	0.5	Greens	*Spondylosium planum*	249	0.11
6/21/16 10:22	Crystal Bay	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	51	0.01
6/21/16 10:22	Crystal Bay	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	9098	0.60
6/21/16 10:22	Crystal Bay	0.5	Cryptomonads	*Cryptomonas*	51	0.10
6/21/16 10:22	Crystal Bay	0.5	Cryptomonads	*Rhodomonas lacustris*	827	0.24
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Cyclotella comensis*	209176	89.56
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Cyclotella gordonensis*	2327934	309.95
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Epithemia sorex*	103	0.62
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Fragilaria crotonensis*	310	0.37
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Gomphonema subtile*	155	0.13
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Mastogloia smithii*	103	0.28
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Navicula pupula*	207	0.37
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Nitzschia*	983	16.37
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Synedra acus*	621	2.73
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Synedra capitata*	51	0.94
6/21/16 10:22	Crystal Bay	0.5	Diatoms	*Synedra ulna*	103	1.03
6/21/16 10:22	Crystal Bay	0.5	Dinoflagellates	*Peridinium (Lg)*	10718	13.10
6/21/16 10:22	Crystal Bay	0.5	Greens	*Cosmarium bioculatum*	1654	0.74
6/21/16 10:22	Crystal Bay	0.5	Greens	*Cosmarium phaseolus*	155	0.30
6/21/16 10:22	Crystal Bay	0.5	Greens	*Elakatothrix gelatinosa*	6161	0.52
6/21/16 10:22	Crystal Bay	0.5	Greens	*Oocystis parva*	51	0.00
6/21/16 10:22	Crystal Bay	0.5	Greens	*Planktonema lauterbornii*	8957	0.54
6/21/16 10:50	Glenbrook	0.5	Chrysophytes	*Bitrichia chodati*	116	0.01
6/21/16 10:50	Glenbrook	0.5	Chrysophytes	*Flagellates (<5µm)*	1853	0.01
6/21/16 10:50	Glenbrook	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	2780	0.18
6/21/16 10:50	Glenbrook	0.5	Cryptomonads	*Cryptomonas*	348	0.67
6/21/16 10:50	Glenbrook	0.5	Cryptomonads	*Rhodomonas lacustris*	7415	2.13
6/21/16 10:50	Glenbrook	0.5	Cyanophytes	*Aphanothece*	1096491	19.3
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	1276	0.15
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Cyclotella bodanica*	290	1.69
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Cyclotella comensis*	211736	90.65
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Cyclotella gordonensis*	1784633	223.32
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Epithemia sorex*	638	3.83
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Staurosirella pinnata*	290	0.04
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Gomphoneis herculeana*	116	2.66
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Gomphonema subtile*	232	0.19
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Navicula tuscula*	174	1.43
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Nitzschia hantzschiana*	58	0.22
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Nitzschia*	986	16.42
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Rhopalodia gibba*	58	1.43
6/21/16 10:50	Glenbrook	0.5	Diatoms	*Synedra acus*	1334	5.86

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
6/21/16 10:50	Glenbrook	0.5	Dinoflagellates	*Peridinium Inconspicuum*	174	0.17
6/21/16 10:50	Glenbrook	0.5	Dinoflagellates	*Peridinium (Lg)*	9516	11.63
6/21/16 10:50	Glenbrook	0.5	Greens	*Ankistrodesmus spiralis*	464	0.06
6/21/16 10:50	Glenbrook	0.5	Greens	*Cosmarium bioculatum*	2780	1.24
6/21/16 10:50	Glenbrook	0.5	Greens	*Cosmarium phaseolus*	290	0.57
6/21/16 10:50	Glenbrook	0.5	Greens	*Elakatothrix gelatinosa*	9342	0.78
6/21/16 10:50	Glenbrook	0.5	Greens	*Gloeocystis*	232	0.02
6/21/16 10:50	Glenbrook	0.5	Greens	*Mougeotia*	58	0.52
6/21/16 10:50	Glenbrook	0.5	Greens	*Tetraedron minimum v.tetralobulatum*	926	0.05
6/21/16 11:15	Zephyr Cove	0.5	Chrysophytes	*Bitrichia chodati*	876	0.1
6/21/16 11:15	Zephyr Cove	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	2629	0.17
6/21/16 11:15	Zephyr Cove	0.5	Cryptomonads	*Rhodomonas lacustris*	14302	4.11
6/21/16 11:15	Zephyr Cove	0.5	Cyanophytes	*Aphanothece*	972540	17.11
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	438	0.05
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Cyclotella bodanica*	109	0.63
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Cyclotella comensis*	135869	58.17
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Cyclotella gordonensis*	1616132	218.5
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Epithemia sorex*	438	2.63
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Staurosirella pinnata*	109	0.02
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Gomphonema subtile*	54	0.04
6/21/16 11:15	Zephyr Cove	0.5	Diatoms	*Synedra acus*	274	1.2
6/21/16 11:15	Zephyr Cove	0.5	Dinoflagellates	*Peridinium (Lg)*	10920	13.34
6/21/16 11:15	Zephyr Cove	0.5	Greens	*Ankistrodesmus spiralis*	274	0.03
6/21/16 11:15	Zephyr Cove	0.5	Greens	*Cosmarium bioculatum*	2629	1.18
6/21/16 11:15	Zephyr Cove	0.5	Greens	*Cosmarium phaseolus*	109	0.21
6/21/16 11:15	Zephyr Cove	0.5	Greens	*Elakatothrix gelatinosa*	2194	0.18
6/21/16 11:15	Zephyr Cove	0.5	Greens	*Mougeotia*	219	1.96
6/21/16 11:15	Zephyr Cove	0.5	Greens	*Planktonema lauterbornii*	11194	0.68
6/21/16 11:30	Mid-lake South	0.5	Chrysophytes	*Bitrichia chodati*	840	0.09
6/21/16 11:30	Mid-lake South	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	105	0.02
6/21/16 11:30	Mid-lake South	0.5	Chrysophytes	*Flagellates (<5µm)*	27412	0.22
6/21/16 11:30	Mid-lake South	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	20559	1.35
6/21/16 11:30	Mid-lake South	0.5	Cryptomonads	*Rhodomonas lacustris*	840	0.24
6/21/16 11:30	Mid-lake South	0.5	Cyanophytes	*Aphanothece*	383771	6.75
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	105	0.01
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Cyclotella bodanica*	105	0.61
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Cyclotella comensis*	418037	178.98
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Cyclotella gordonensis*	2192981	295.21
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Epithemia sorex*	52	0.31
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Nitzschia*	736	12.26
6/21/16 11:30	Mid-lake South	0.5	Diatoms	*Synedra acus*	105	0.46
6/21/16 11:30	Mid-lake South	0.5	Dinoflagellates	*Peridinium (lg)*	6100	7.45
6/21/16 11:30	Mid-lake South	0.5	Greens	*Cosmarium bioculatum*	13706	6.13
6/21/16 11:30	Mid-lake South	0.5	Greens	*Cosmarium phaseolus*	210	0.41
6/21/16 11:30	Mid-lake South	0.5	Greens	*Elakatothrix gelatinosa*	6047	0.51
6/21/16 11:30	Mid-lake South	0.5	Greens	*Planktonema lauterbornii*	9255	0.56
6/21/16 11:30	Mid-lake South	0.5	Greens	*Tetraedron minimum v.tetralobulatum*	20559	1.08
6/21/16 11:45	Timber Cove	0.5	Chrysophytes	*Dinobryon*	886	0.17
6/21/16 11:45	Timber Cove	0.5	Chrysophytes	*Flagellates (<5µm)*	2658	0.02
6/21/16 11:45	Timber Cove	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	1772	0.12
6/21/16 11:45	Timber Cove	0.5	Cyanophytes	*Aphanothece*	354251	6.23

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	166	0.02
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Aulacoseira italica var. tenuissima*	1772	0.21
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Cocconeis placentula*	886	1.03
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Cyclotella comensis*	144592	61.91
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Cyclotella gordonensis*	2067669	273.41
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Epithemia sorex*	110	0.66
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Staurosirella pinnata*	1775	0.26
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Mastogloia smithii*	110	0.3
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Aulacoseira granulata var.angustissima f.*	110	0.2
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Navicula pupula*	110	0.19
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Navicula radiosa*	55	0.71
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Nitzschia*	1607	26.76
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Pinnularia*	55	0.22
6/21/16 11:45	Timber Cove	0.5	Diatoms	*Synedra acus*	832	3.66
6/21/16 11:45	Timber Cove	0.5	Dinoflagellates	*Peridinium Inconspicuum*	110	0.11
6/21/16 11:45	Timber Cove	0.5	Dinoflagellates	*Peridinium (Lg)*	7267	8.88
6/21/16 11:45	Timber Cove	0.5	Greens	*Ankistrodesmus spiralis*	388	0.05
6/21/16 11:45	Timber Cove	0.5	Greens	*Cosmarium bioculatum*	1772	0.79
6/21/16 11:45	Timber Cove	0.5	Greens	*Cosmarium phaseolus*	166	0.32
6/21/16 11:45	Timber Cove	0.5	Greens	*Elakatothrix gelatinosa*	4937	0.41
6/21/16 11:45	Timber Cove	0.5	Greens	*Planktonema lauterbornii*	15200	0.92
6/21/16 11:45	Timber Cove	0.5	Greens	*Tetraedron minimum v.tetralobulatum*	1772	0.09
6/21/16 12:00	Tahoe Keys	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	1734	0.11
6/21/16 12:00	Tahoe Keys	0.5	Cryptomonads	*Cryptomonas*	54	0.1
6/21/16 12:00	Tahoe Keys	0.5	Cyanophytes	*Anabaena flos-aquae*	3582	0.23
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	2276	0.27
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Amphora ovalis*	54	0.43
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Cocconeis placentula*	108	0.13
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Cyclotella bodanica*	108	0.63
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Cyclotella comensis*	56593	24.23
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Cyclotella gordonensis*	1315789	180.17
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Epithemia sorex*	434	2.61
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Epithemia zebra*	108	2.99
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Fragilaria capucina*	1302	1.44
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Staurosira construens*	6459	1.23
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Gomphonema*	54	0.05
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Gomphonema subtile*	162	0.13
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Meridion circulare*	108	0.43
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Navicula anglica*	54	0.06
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Navicula pupula*	162	0.29
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Nitzschia*	1737	28.93
6/21/16 12:00	Tahoe Keys	0.5	Diatoms	*Synedra acus*	488	2.14
6/21/16 12:00	Tahoe Keys	0.5	Dinoflagellates	*Gymnodinium fuscum*	108	1.6
6/21/16 12:00	Tahoe Keys	0.5	Dinoflagellates	*Peridinium (Lg)*	3528	4.31
6/21/16 12:00	Tahoe Keys	0.5	Greens	*Ankistrodesmus spiralis*	379	0.05
6/21/16 12:00	Tahoe Keys	0.5	Greens	*Cosmarium bioculatum*	867	0.39
6/21/16 12:00	Tahoe Keys	0.5	Greens	*Elakatothrix gelatinosa*	4017	0.34
6/21/16 12:00	Tahoe Keys	0.5	Greens	*Mougeotia*	705	6.31
6/21/16 12:00	Tahoe Keys	0.5	Greens	*Planktonema lauterbornii*	9554	0.58
6/21/16 12:00	Tahoe Keys	0.5	Greens	*Spirogyra*	3148	261.68
6/21/16 12:10	Camp Richardson	0.5	Chrysophytes	*Chrysolykos skujai*	867	0.03

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
6/21/16 12:10	Camp Richardson	0.5	Chrysophytes	*Flagellates (<5µm)*	1734	0.01
6/21/16 12:10	Camp Richardson	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	9538	0.63
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Asterionella formosa*	54	0.03
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Cyclotella bodanica*	217	1.26
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Cyclotella comensis*	108	0.05
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Cyclotella gordonensis*	1101	0.14
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Gomphonema subtile*	54	0.04
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Aulacoseira granulata var.angustissima f.*	108	0.2
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Navicula radiosa*	54	0.7
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Nitzschia*	434	7.23
6/21/16 12:10	Camp Richardson	0.5	Diatoms	*Synedra acus*	217	0.95
6/21/16 12:10	Camp Richardson	0.5	Dinoflagellates	*Gymnodinium fuscum*	651	9.62
6/21/16 12:10	Camp Richardson	0.5	Dinoflagellates	*Peridinium inconspicuum*	379	0.37
6/21/16 12:10	Camp Richardson	0.5	Dinoflagellates	*Peridinium (Lg)*	4668	5.7
6/21/16 12:10	Camp Richardson	0.5	Greens	*Ankistrodesmus spiralis*	271	0.03
6/21/16 12:10	Camp Richardson	0.5	Greens	*Cosmarium bioculatum*	4335	1.94
6/21/16 12:10	Camp Richardson	0.5	Greens	*Cosmarium phaseolus*	54	0.11
6/21/16 12:10	Camp Richardson	0.5	Greens	*Elakatothrix gelatinosa*	7056	0.59
6/21/16 12:10	Camp Richardson	0.5	Greens	*Planktonema lauterbornii*	15199	0.92
6/21/16 12:40	Emerald Bay	0.5	Chrysophytes	*Bitrichia chodati*	1920	0.21
6/21/16 12:40	Emerald Bay	0.5	Chrysophytes	*Chrysolykos skujai*	2880	0.08
6/21/16 12:40	Emerald Bay	0.5	Chrysophytes	*Flagellates (<5µm)*	3840	0.03
6/21/16 12:40	Emerald Bay	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	1920	0.13
6/21/16 12:40	Emerald Bay	0.5	Cryptomonads	*Cryptomonas*	60	0.12
6/21/16 12:40	Emerald Bay	0.5	Cryptomonads	*Rhodomonas lacustris*	960	0.28
6/21/16 12:40	Emerald Bay	0.5	Cyanophytes	*Aphanothece*	240015	4.22
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Asterionella formosa*	33175	16.02
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Cocconeis placentula*	960	1.11
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Cyclotella bodanica*	420	2.44
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Cyclotella comensis*	1920	0.82
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Cyclotella gordonensis*	91205	12.79
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Epithemia sorex*	60	0.36
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Fragilaria capucina*	120	0.13
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Gomphonema subtile*	60	0.05
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Aulacoseira granulata var.angustissima f.*	240	0.45
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Navicula radiosa*	60	0.78
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Nitzschia*	6010	1.87
6/21/16 12:40	Emerald Bay	0.5	Diatoms	*Synedra acus*	360	1.58
6/21/16 12:40	Emerald Bay	0.5	Dinoflagellates	*Gymnodinium fuscum*	240	3.55
6/21/16 12:40	Emerald Bay	0.5	Dinoflagellates	*Peridinium (lg)*	27165	33.2
6/21/16 12:40	Emerald Bay	0.5	Greens	*Ankistrodesmus spiralis*	1081	0.13
6/21/16 12:40	Emerald Bay	0.5	Greens	*Cosmarium bioculatum*	8640	3.87
6/21/16 12:40	Emerald Bay	0.5	Greens	*Cosmarium phaseolus*	300	0.58
6/21/16 12:40	Emerald Bay	0.5	Greens	*Elakatothrix gelatinosa*	2163	0.18
6/21/16 12:40	Emerald Bay	0.5	Greens	*Mougeotia*	60	0.54
6/21/16 12:40	Emerald Bay	0.5	Greens	*Planktonema lauterbornii*	240	0.01
6/21/16 12:40	Emerald Bay	0.5	Greens	*Scenedesmus*	240	0.03
6/21/16 12:40	Emerald Bay	0.5	Greens	*Tetraedron minimum v.tetralobulatum*	1920	0.1
6/21/16 12:40	Emerald Bay	0.5	Haptophyte	*Chrysochromulina parva*	8640	0.39
6/21/16 13:55	Sunnyside	0.5	Chrysophytes	*Bitrichia chodati*	844	0.09

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
6/21/16 13:55	Sunnyside	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	5066	0.33
6/21/16 13:55	Sunnyside	0.5	Cyanophytes	*Aphanothece*	454670	8
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Cyclotella bodanica*	317	1.85
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Cyclotella comensis*	144667	61.94
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Cyclotella gordonensis*	2321576	297.8
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Epithemia sorex*	264	1.59
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Gomphonema subtile*	264	0.21
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Mastogloia smithii*	105	0.28
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Navicula pupula*	52	0.09
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Navicula radiosa*	1846	23.96
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Nitzschia*	370	6.16
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Synedra acus*	52	0.23
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Synedra capitata*	52	0.96
6/21/16 13:55	Sunnyside	0.5	Diatoms	*Synedra ulna*	52	0.52
6/21/16 13:55	Sunnyside	0.5	Dinoflagellates	*Gymnodinium fuscum*	105	1.55
6/21/16 13:55	Sunnyside	0.5	Greens	*Ankistrodesmus spiralis*	475	0.06
6/21/16 13:55	Sunnyside	0.5	Greens	*Cosmarium bioculatum*	1688	0.76
6/21/16 13:55	Sunnyside	0.5	Greens	*Elakatothrix gelatinosa*	12528	1.05
6/21/16 13:55	Sunnyside	0.5	Greens	*Mougeotia*	317	2.84
6/21/16 13:55	Sunnyside	0.5	Greens	*Planktonema lauterbornii*	12898	0.78
9/14/16 9:20	Tahoe City	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	11234	2.10
9/14/16 9:20	Tahoe City	0.5	Chrysophytes	*Flagellates (<5µm)*	30492	0.24
9/14/16 9:20	Tahoe City	0.5	Chrysophytes	*Kephyrion cupliforme*	1604	0.13
9/14/16 9:20	Tahoe City	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	1604	0.11
9/14/16 9:20	Tahoe City	0.5	Cyanophytes	*Aphanothece*	6419	0.11
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	401	0.05
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Cyclotella bodanica*	50	0.29
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Cyclotella gordonensis*	160487	10.68
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Diatoma vulgare*	100	0.45
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Epithemia sorex*	803	4.82
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Epithemia zebra*	100	2.77
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Fragilaria capucina*	452	0.50
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Staurosira construens*	1255	0.24
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Fragilaria crotonensis*	200	0.24
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Staurosirella pinnata*	552	0.08
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Gomphonema subtile*	100	0.08
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Mastogloia smithii*	200	0.54
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Navicula pupula*	100	0.18
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Navicula radiosa*	200	2.60
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Nitzschia sp.*	954	15.89
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Rhopalodia gibba*	100	2.47
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Synedra acus*	502	2.21
9/14/16 9:20	Tahoe City	0.5	Diatoms	*Synedra ulna*	100	1.00
9/14/16 9:20	Tahoe City	0.5	Dinoflagellates	*Peridinium (cyst)*	50	0.07
9/14/16 9:20	Tahoe City	0.5	Dinoflagellates	*Peridinium (Lg)*	602	0.74
9/14/16 9:20	Tahoe City	0.5	Greens	*Ankistrodesmus spiralis*	1306	0.16
9/14/16 9:20	Tahoe City	0.5	Greens	*Cosmarium bioculatum*	3209	1.44
9/14/16 9:20	Tahoe City	0.5	Greens	*Elakatothrix gelatinosa*	552	0.05
9/14/16 9:20	Tahoe City	0.5	Greens	*Mougeotia*	351	3.14
9/14/16 9:20	Tahoe City	0.5	Greens	*Oocystis parva*	4814	0.47
9/14/16 9:20	Tahoe City	0.5	Greens	*Planktonema lauterbornii*	6781	0.41
9/14/16 9:20	Tahoe City	0.5	Haptophyte	*Chrysochromulina parva*	9629	0.44
9/14/16 9:45	Mid-lake North	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	7680	1.44

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
9/14/16 9:45	Mid-lake North	0.5	Chrysophytes	*Flagellates (<5µm)*	19969	0.16
9/14/16 9:45	Mid-lake North	0.5	Chrysophytes	*Kephyrion cupliforme*	4608	0.39
9/14/16 9:45	Mid-lake North	0.5	Cryptomonads	*Rhodomonas lacustris*	1536	0.44
9/14/16 9:45	Mid-lake North	0.5	Cyanophytes	*Aphanothece*	6144	0.11
9/14/16 9:45	Mid-lake North	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	865	0.10
9/14/16 9:45	Mid-lake North	0.5	Diatoms	*Cyclotella gordonensis*	178186	12.62
9/14/16 9:45	Mid-lake North	0.5	Diatoms	*Nitzschia sp.*	192	3.20
9/14/16 9:45	Mid-lake North	0.5	Diatoms	*Synedra acus*	48	0.21
9/14/16 9:45	Mid-lake North	0.5	Dinoflagellates	*Peridinium cyst*	576	0.79
9/14/16 9:45	Mid-lake North	0.5	Dinoflagellates	*Peridinium inconspicuum*	384	0.37
9/14/16 9:45	Mid-lake North	0.5	Dinoflagellates	*Peridinium sp.(large)*	192	0.23
9/14/16 9:45	Mid-lake North	0.5	Greens	*Ankistrodesmus spiralis*	1827	0.23
9/14/16 9:45	Mid-lake North	0.5	Greens	*Cosmarium bioculatum*	1536	0.69
9/14/16 9:45	Mid-lake North	0.5	Greens	*Elakatothrix gelatinosa*	4663	0.39
9/14/16 9:45	Mid-lake North	0.5	Greens	*Oocystis parva*	7680	0.75
9/14/16 9:45	Mid-lake North	0.5	Greens	*Planktonema lauterbornii*	3990	0.24
9/14/16 9:45	Mid-lake North	0.5	Greens	*Tetraspora lemmernannii*	192	0.01
9/14/16 9:45	Mid-lake North	0.5	Haptophyte	*Chrysochromulina parva*	9216	0.42
9/14/16 10:40	Kings Beach	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	18975	3.55
9/14/16 10:40	Kings Beach	0.5	Chrysophytes	*Flagellates (<5µm)*	37950	0.30
9/14/16 10:40	Kings Beach	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	12075	0.79
9/14/16 10:40	Kings Beach	0.5	Cryptomonads	*Rhodomonas lacustris*	1725	0.5
9/14/16 10:40	Kings Beach	0.5	Cyanophytes	*Aphanothece*	12075	0.21
9/14/16 10:40	Kings Beach	0.5	Cyanophytes	*Phormidium*	1241	0.09
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	647	0.08
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Cyclotella gordonensis*	205278	18.30
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Diatoma vulgare*	323	1.44
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Epithemia sorex*	431	2.59
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Staurosira construens*	3347	0.64
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Staurosirella pinnata*	215	0.03
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Gomphonema olivaceum*	53	0.03
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Mastogloia smithii*	431	1.17
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Navicula pupula*	323	0.57
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Navicula radiosa*	215	2.79
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Nitzschia sp.*	539	8.98
9/14/16 10:40	Kings Beach	0.5	Diatoms	*Rhopalodia gibba*	107	2.64
9/14/16 10:40	Kings Beach	0.5	Dinoflagellates	*Peridinium cyst*	647	0.89
9/14/16 10:40	Kings Beach	0.5	Dinoflagellates	*Peridinium inconspicuum*	215	0.21
9/14/16 10:40	Kings Beach	0.5	Dinoflagellates	*Peridinium sp.(large)*	971	1.19
9/14/16 10:40	Kings Beach	0.5	Greens	*Ankistrodesmus spiralis*	1835	0.23
9/14/16 10:40	Kings Beach	0.5	Greens	*Cosmarium bioculatum*	3450	1.54
9/14/16 10:40	Kings Beach	0.5	Greens	*Elakatothrix gelatinosa*	2483	0.21
9/14/16 10:40	Kings Beach	0.5	Greens	*Oocystis parva*	3557	0.35
9/14/16 10:40	Kings Beach	0.5	Greens	*Planktonema lauterbornii*	5615	0.34
9/14/16 10:40	Kings Beach	0.5	Greens	*Tetraspora lemmernannii*	431	0.03
9/14/16 10:40	Kings Beach	0.5	Haptophyte	*Chrysochromulina parva*	27600	1.26
9/14/16 11:00	Crystal Bay	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	1169	0.22
9/14/16 11:00	Crystal Bay	0.5	Chrysophytes	*Flagellates (<5µm)*	27164	0.22
9/14/16 11:00	Crystal Bay	0.5	Chrysophytes	*Kephyrion cupliforme*	1697	0.14
9/14/16 11:00	Crystal Bay	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	6791	0.45
9/14/16 11:00	Crystal Bay	0.5	Cryptomonads	*Cryptomonas sp.*	53	0.10
9/14/16 11:00	Crystal Bay	0.5	Cryptomonads	*Rhodomonas lacustris*	3395	0.98
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	690	0.08

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Cyclotella comensis*	1697	0.73
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Cyclotella gordonensis*	242784	19.32
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Epithemia zebra*	53	1.47
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Fragilaria capucina*	478	0.53
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Gomphonema subtile*	106	0.09
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Navicula pupula*	265	0.47
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Navicula radiosa*	53	0.69
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Nitzschia sp.*	584	9.73
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Synedra acus*	106	0.47
9/14/16 11:00	Crystal Bay	0.5	Diatoms	*Synedra ulna*	53	0.53
9/14/16 11:00	Crystal Bay	0.5	Dinoflagellates	*Peridinium cyst*	690	0.95
9/14/16 11:00	Crystal Bay	0.5	Dinoflagellates	*Peridinium inconspicuum*	743	0.72
9/14/16 11:00	Crystal Bay	0.5	Dinoflagellates	*Peridinium sp.(large)*	1009	1.23
9/14/16 11:00	Crystal Bay	0.5	Greens	*Ankistrodesmus spiralis*	850	0.10
9/14/16 11:00	Crystal Bay	0.5	Greens	*Cosmarium bioculatum*	3395	1.52
9/14/16 11:00	Crystal Bay	0.5	Greens	*Elakatothrix gelatinosa*	2231	0.19
9/14/16 11:00	Crystal Bay	0.5	Greens	*Oocystis parva*	6791	0.66
9/14/16 11:00	Crystal Bay	0.5	Greens	*Planktonema lauterbornii*	6270	0.38
9/14/16 11:00	Crystal Bay	0.5	Greens	*Tetraspora lemmernannii*	212	0.01
9/14/16 11:00	Crystal Bay	0.5	Greens	*Xanthidium sp.*	53	0.02
9/14/16 11:00	Crystal Bay	0.5	Haptophyte	*Chrysochromulina parva*	13582	0.62
9/14/16 11:17	Glenbrook	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	21505	4.03
9/14/16 11:17	Glenbrook	0.5	Chrysophytes	*Flagellates (<5µm)*	19354	0.15
9/14/16 11:17	Glenbrook	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	6451	0.42
9/14/16 11:17	Glenbrook	0.5	Cryptomonads	*Rhodomonas lacustris*	4301	1.24
9/14/16 11:17	Glenbrook	0.5	Cyanophytes	*Aphanothece*	4301	0.08
9/14/16 11:17	Glenbrook	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	942	0.11
9/14/16 11:17	Glenbrook	0.5	Diatoms	*Cyclotella gordonensis*	210752	15.23
9/14/16 11:17	Glenbrook	0.5	Diatoms	*Epithemia sorex*	134	0.80
9/14/16 11:17	Glenbrook	0.5	Diatoms	*Fragilaria capucina*	403	0.45
9/14/16 11:17	Glenbrook	0.5	Diatoms	*Fragilaria crotonensis*	269	0.32
9/14/16 11:17	Glenbrook	0.5	Dinoflagellates	*Peridinium cyst*	1346	1.85
9/14/16 11:17	Glenbrook	0.5	Dinoflagellates	*Peridinium inconspicuum*	807	0.78
9/14/16 11:17	Glenbrook	0.5	Dinoflagellates	*Peridinium sp.(large)*	1750	2.14
9/14/16 11:17	Glenbrook	0.5	Greens	*Ankistrodesmus spiralis*	2557	0.32
9/14/16 11:17	Glenbrook	0.5	Greens	*Cosmarium bioculatum*	2150	0.96
9/14/16 11:17	Glenbrook	0.5	Greens	*Mougeotia sp.*	2154	19.29
9/14/16 11:17	Glenbrook	0.5	Greens	*Oocystis parva*	4301	0.42
9/14/16 11:17	Glenbrook	0.5	Greens	*Planktonema lauterbornii*	7000	0.43
9/14/16 11:17	Glenbrook	0.5	Haptophyte	*Chrysochromulina parva*	12903	0.59
9/14/16 11:40	Zephyr Cove	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	18774	3.52
9/14/16 11:40	Zephyr Cove	0.5	Chrysophytes	*Flagellates (<5µm)*	29015	0.23
9/14/16 11:40	Zephyr Cove	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	3413	0.22
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	213	0.03
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Cyclotella gordonensis*	139955	9.74
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Epithemia sorex*	53	0.32
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Gomphonema subtile*	106	0.09
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Mastogloia smithii*	106	0.29
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Nitzschia sp.*	427	7.11
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Rhopalodia gibba*	106	2.62
9/14/16 11:40	Zephyr Cove	0.5	Diatoms	*Synedra acus*	213	0.94
9/14/16 11:40	Zephyr Cove	0.5	Dinoflagellates	*Peridinium cyst*	1175	1.61
9/14/16 11:40	Zephyr Cove	0.5	Dinoflagellates	*Peridinium inconspicuum*	1282	1.24

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
9/14/16 11:40	Zephyr Cove	0.5	Dinoflagellates	*Peridinium sp.(large)*	3419	4.18
9/14/16 11:40	Zephyr Cove	0.5	Greens	*Ankistrodesmus spiralis*	2457	0.30
9/14/16 11:40	Zephyr Cove	0.5	Greens	*Cosmarium bioculatum*	3413	1.53
9/14/16 11:40	Zephyr Cove	0.5	Greens	*Elakatothrix gelatinosa*	2030	0.17
9/14/16 11:40	Zephyr Cove	0.5	Greens	*Oocystis parva*	1706	0.17
9/14/16 11:40	Zephyr Cove	0.5	Greens	*Planktonema lauterbornii*	3205	0.19
9/14/16 11:40	Zephyr Cove	0.5	Haptophyte	*Chrysochromulina parva*	17067	0.78
9/14/16 12:00	Mid-lake South	0.5	Chrysophytes	*Flagellates (<5µm)*	22119	0.18
9/14/16 12:00	Mid-lake South	0.5	Cryptomonads	*Rhodomonas lacustris*	1843	0.53
9/14/16 12:00	Mid-lake South	0.5	Cyanophytes	*Aphanothece*	5529	0.10
9/14/16 12:00	Mid-lake South	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	2077	0.25
9/14/16 12:00	Mid-lake South	0.5	Diatoms	*Cyclotella gordonensis*	280183	20.33
9/14/16 12:00	Mid-lake South	0.5	Diatoms	*Epithemia sorex*	115	0.69
9/14/16 12:00	Mid-lake South	0.5	Diatoms	*Nitzschia sp.*	576	9.59
9/14/16 12:00	Mid-lake South	0.5	Diatoms	*Synedra acus*	807	3.55
9/14/16 12:00	Mid-lake South	0.5	Dinoflagellates	*Peridinium cyst*	576	0.79
9/14/16 12:00	Mid-lake South	0.5	Dinoflagellates	*Peridinium inconspicuum*	230	0.22
9/14/16 12:00	Mid-lake South	0.5	Dinoflagellates	*Peridinium sp.(large)*	692	0.85
9/14/16 12:00	Mid-lake South	0.5	Greens	*Ankistrodesmus spiralis*	2077	0.26
9/14/16 12:00	Mid-lake South	0.5	Greens	*Cosmarium bioculatum*	1843	0.82
9/14/16 12:00	Mid-lake South	0.5	Greens	*Elakatothrix gelatinosa*	2538	0.21
9/14/16 12:00	Mid-lake South	0.5	Greens	*Oocystis parva*	5529	0.54
9/14/16 12:00	Mid-lake South	0.5	Greens	*Planktonema lauterbornii*	14078	0.86
9/14/16 12:00	Mid-lake South	0.5	Greens	*Tetraspora lemmernannii*	11059	0.72
9/14/16 12:00	Mid-lake South	0.5	Haptophyte	*Chrysochromulina parva*	11059	0.51
9/14/16 12:15	Timber Cove	0.5	Chrysophytes	*Flagellates (<5µm)*	10186	0.08
9/14/16 12:15	Timber Cove	0.5	Cryptomonads	*Rhodomonas lacustris*	1697	0.49
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	425	0.05
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Cyclotella gordonensis*	110355	8.81
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Epithemia sorex*	212	1.27
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Epithemia zebra*	106	2.94
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Staurosira construens*	318	0.06
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Gomphonema subtile*	106	0.09
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Nitzschia sp.*	531	8.84
9/14/16 12:15	Timber Cove	0.5	Diatoms	*Synedra acus*	318	1.40
9/14/16 12:15	Timber Cove	0.5	Dinoflagellates	*Peridinium cyst*	743	1.02
9/14/16 12:15	Timber Cove	0.5	Dinoflagellates	*Peridinium inconspicuum*	850	0.82
9/14/16 12:15	Timber Cove	0.5	Dinoflagellates	*Peridinium sp.(large)*	2338	2.86
9/14/16 12:15	Timber Cove	0.5	Greens	*Ankistrodesmus spiralis*	850	0.10
9/14/16 12:15	Timber Cove	0.5	Greens	*Cosmarium phaseolus*	106	0.21
9/14/16 12:15	Timber Cove	0.5	Greens	*Elakatothrix gelatinosa*	2550	0.21
9/14/16 12:15	Timber Cove	0.5	Greens	*Planktonema lauterbornii*	14773	0.90
9/14/16 12:15	Timber Cove	0.5	Haptophyte	*Chrysochromulina parva*	3395	0.16
9/14/16 12:30	Tahoe Keys	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	3147	0.59
9/14/16 12:30	Tahoe Keys	0.5	Chrysophytes	*Flagellates (<5µm)*	4720	0.04
9/14/16 12:30	Tahoe Keys	0.5	Cryptomonads	*Rhodomonas lacustris*	3147	0.90
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	295	0.03
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Cyclotella gordonensis*	91266	5.74
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Diploneis sp.*	98	0.45
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Epithemia sorex*	1280	7.69
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Epithemia zebra*	147	4.07
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Staurosirella pinnata*	1970	0.29
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Navicula pupula*	49	0.09

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Navicula radiosa*	246	3.19
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Nitzschia sp.*	591	9.84
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Rhopalodia gibba*	98	2.42
9/14/16 12:30	Tahoe Keys	0.5	Diatoms	*Synedra acus*	443	1.95
9/14/16 12:30	Tahoe Keys	0.5	Dinoflagellates	*Peridinium cyst*	492	0.68
9/14/16 12:30	Tahoe Keys	0.5	Dinoflagellates	*Peridinium inconspicuum*	591	0.57
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Ankistrodesmus spiralis*	492	0.06
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Botryococcus braunii*	1477	16.49
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Cosmarium bioculatum*	1573	0.70
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Elakatothrix gelatinosa*	788	0.07
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Mougeotia sp.*	1280	11.46
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Oocystis parva*	98	0.01
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Planktonema lauterbornii*	2758	0.17
9/14/16 12:30	Tahoe Keys	0.5	Greens	*Scenedesmus sp. (individuals)*	197	0.03
9/14/16 12:30	Tahoe Keys	0.5	Haptophyte	*Chrysochromulina parva*	6294	0.29
9/14/16 12:47	Camp Richardson	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	3274	0.61
9/14/16 12:47	Camp Richardson	0.5	Chrysophytes	*Flagellates (<5µm)*	24561	0.20
9/14/16 12:47	Camp Richardson	0.5	Chrysophytes	*Kephyrion globosa*	1637	0.13
9/14/16 12:47	Camp Richardson	0.5	Cryptomonads	*Rhodomonas lacustris*	14737	4.23
9/14/16 12:47	Camp Richardson	0.5	Cyanophytes	*Anabaena flos-aquae*	410	0.03
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	512	0.06
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Cyclotella gordonensis*	201407	13.87
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Epithemia sorex*	102	0.61
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Staurosirella pinnata*	717	0.10
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Gomphonema subtile*	51	0.04
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Navicula pupula*	51	0.09
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Navicula radiosa*	153	1.99
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Nitzschia sp.*	358	5.96
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Rhopalodia gibba*	153	3.78
9/14/16 12:47	Camp Richardson	0.5	Diatoms	*Synedra acus*	461	2.03
9/14/16 12:47	Camp Richardson	0.5	Dinoflagellates	*Peridinium cyst*	666	0.92
9/14/16 12:47	Camp Richardson	0.5	Dinoflagellates	*Peridinium inconspicuum*	666	0.65
9/14/16 12:47	Camp Richardson	0.5	Dinoflagellates	*Peridinium sp.(large)*	1537	1.88
9/14/16 12:47	Camp Richardson	0.5	Greens	*Ankistrodesmus spiralis*	1435	0.18
9/14/16 12:47	Camp Richardson	0.5	Greens	*Cosmarium bioculatum*	4912	2.20
9/14/16 12:47	Camp Richardson	0.5	Greens	*Elakatothrix gelatinosa*	2050	0.17
9/14/16 12:47	Camp Richardson	0.5	Greens	*Mougeotia sp.*	102	0.91
9/14/16 12:47	Camp Richardson	0.5	Greens	*Planktonema lauterbornii*	16702	1.02
9/14/16 12:47	Camp Richardson	0.5	Greens	*Tetraspora lemmernannii*	615	0.04
9/14/16 12:47	Camp Richardson	0.5	Haptophyte	*Chrysochromulina parva*	8187	0.37
9/14/16 13:15	Emerald Bay	0.5	Chrysophytes	*Bitrichia chodati*	1604	0.18
9/14/16 13:15	Emerald Bay	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	3209	0.60
9/14/16 13:15	Emerald Bay	0.5	Chrysophytes	*Flagellates (<5µm)*	9629	0.08
9/14/16 13:15	Emerald Bay	0.5	Chrysophytes	*Kephyrion cupliforme*	4814	0.40
9/14/16 13:15	Emerald Bay	0.5	Chrysophytes	*Kephyrion globosa*	1604	0.12
9/14/16 13:15	Emerald Bay	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	4814	0.32
9/14/16 13:15	Emerald Bay	0.5	Cryptomonads	*Cryptomonas sp.*	502	0.97
9/14/16 13:15	Emerald Bay	0.5	Cryptomonads	*Rhodomonas lacustris*	3209	0.92
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	200	0.02
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Cyclotella gordonensis*	43330	3.31
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Epithemia sorex*	200	1.20
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Staurosirella pinnata*	1908	0.28
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Gomphonema subtile*	100	0.08

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Mastogloia smithii*	100	0.27
9/14/16 13:15	Emerald Bay	0.5	Diatoms	*Synedra acus*	3315	14.57
9/14/16 13:15	Emerald Bay	0.5	Dinoflagellates	*Peridinium cyst*	2009	2.76
9/14/16 13:15	Emerald Bay	0.5	Dinoflagellates	*Peridinium inconspicuum*	703	0.68
9/14/16 13:15	Emerald Bay	0.5	Dinoflagellates	*Peridinium sp.(large)*	1808	2.21
9/14/16 13:15	Emerald Bay	0.5	Greens	*Ankistrodesmus spiralis*	200	0.02
9/14/16 13:15	Emerald Bay	0.5	Greens	*Cosmarium bioculatum*	8024	3.59
9/14/16 13:15	Emerald Bay	0.5	Greens	*Elakatothrix gelatinosa*	2059	0.17
9/14/16 13:15	Emerald Bay	0.5	Greens	*Oocystis parva*	2407	0.23
9/14/16 13:15	Emerald Bay	0.5	Greens	*Planktonema lauterbornii*	401	0.02
9/14/16 13:15	Emerald Bay	0.5	Greens	*Tetraspora lemmernannii*	2009	0.13
9/14/16 13:15	Emerald Bay	0.5	Haptophyte	*Chrysochromulina parva*	12839	0.59
9/14/16 13:50	Rubicon Bay	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	8064	1.51
9/14/16 13:50	Rubicon Bay	0.5	Chrysophytes	*Flagellates (<5µm)*	16129	0.13
9/14/16 13:50	Rubicon Bay	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	3225	0.21
9/14/16 13:50	Rubicon Bay	0.5	Cryptomonads	*Rhodomonas lacustris*	3225	0.93
9/14/16 13:50	Rubicon Bay	0.5	Cyanophytes	*Anabaena flos-aquae*	1615	0.11
9/14/16 13:50	Rubicon Bay	0.5	Cyanophytes	*Aphanothece sp.*	6451	0.11
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	504	0.06
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Cyclotella gordonensis*	137096	9.51
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Epithemia sorex*	201	1.21
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Mastogloia smithii*	100	0.27
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Navicula radiosa*	201	2.61
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Nitzschia sp.*	100	1.67
9/14/16 13:50	Rubicon Bay	0.5	Diatoms	*Synedra acus*	403	1.77
9/14/16 13:50	Rubicon Bay	0.5	Dinoflagellates	*Peridinium cyst*	100	0.14
9/14/16 13:50	Rubicon Bay	0.5	Dinoflagellates	*Peridinium inconspicuum*	706	0.68
9/14/16 13:50	Rubicon Bay	0.5	Dinoflagellates	*Peridinium sp.(large)*	403	0.49
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Ankistrodesmus spiralis*	908	0.11
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Botryococcus braunii*	6058	67.64
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Cosmarium bioculatum*	3225	1.44
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Elakatothrix gelatinosa*	2423	0.20
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Oocystis parva*	2419	0.24
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Planktonema lauterbornii*	1716	0.10
9/14/16 13:50	Rubicon Bay	0.5	Greens	*Tetraspora lemmernannii*	403	0.03
9/14/16 13:50	Rubicon Bay	0.5	Haptophyte	*Chrysochromulina parva*	12903	0.59
9/14/16 14:20	Sunnyside	0.5	Chrysophytes	*Dinobryon sociale v. americanum*	4162	0.78
9/14/16 14:20	Sunnyside	0.5	Chrysophytes	*Flagellates (<5µm)*	31217	0.25
9/14/16 14:20	Sunnyside	0.5	Chrysophytes	*Kephrion Rubri-Claustri*	6243	0.41
9/14/16 14:20	Sunnyside	0.5	Cryptomonads	*Rhodomonas lacustris*	12486	3.59
9/14/16 14:20	Sunnyside	0.5	Cyanophytes	*Phormidium sp.*	977	0.07
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Achnanthes lanceolata var. elliptica*	390	0.05
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Cyclotella gordonensis*	212278	15.26
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Cymbella sp.*	130	0.16
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Epithemia sorex*	260	1.56
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Gomphonema subtile*	521	0.42
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Mastogloia smithii*	130	0.35
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Navicula radiosa*	130	1.69
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Nitzschia linearis*	65	0.28
9/14/16 14:20	Sunnyside	0.5	Diatoms	*Synedra acus*	390	1.71
9/14/16 14:20	Sunnyside	0.5	Dinoflagellates	*Peridinium cyst*	260	0.36
9/14/16 14:20	Sunnyside	0.5	Dinoflagellates	*Peridinium inconspicuum*	1954	1.89
9/14/16 14:20	Sunnyside	0.5	Greens	*Ankistrodesmus spiralis*	1302	0.16

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
9/14/16 14:20	Sunnyside	0.5	Greens	*Botryococcus braunii*	5341	59.63
9/14/16 14:20	Sunnyside	0.5	Greens	*Cosmarium bioculatum*	6243	2.79
9/14/16 14:20	Sunnyside	0.5	Greens	*Elakatothrix gelatinosa*	1563	0.13
9/14/16 14:20	Sunnyside	0.5	Greens	*Oocystis parva*	5202	0.51
9/14/16 14:20	Sunnyside	0.5	Greens	*Planktonema lauterbornii*	5993	0.36
9/14/16 14:20	Sunnyside	0.5	Greens	*Tetraspora lemmernannii*	1042	0.07
9/14/16 14:20	Sunnyside	0.5	Haptophyte	*Chrysochromulina parva*	16649	0.76
3/10/17 9:10	Tahoe City	1	Chrysophytes	*Flagellates (<5µm)*	857	0.007
3/10/17 9:10	Tahoe City	1	Cryptomonads	*Cryptomonas sp.*	1772	3.423
3/10/17 9:10	Tahoe City	1	Cryptomonads	*Rhodomonas lacustris*	16300	4.682
3/10/17 9:10	Tahoe City	1	Diatoms	*Achnanthes lanceolata var. elliptica*	805	0.095
3/10/17 9:10	Tahoe City	1	Diatoms	*Cyclotella bodanica*	805	4.686
3/10/17 9:10	Tahoe City	1	Diatoms	*Cyclotella comensis*	9437	4.040
3/10/17 9:10	Tahoe City	1	Diatoms	*Cyclotella gordonensis*	6004	1.008
3/10/17 9:10	Tahoe City	1	Diatoms	*Cymbella sp.*	53	0.067
3/10/17 9:10	Tahoe City	1	Diatoms	*Diatoma vulgare*	107	0.478
3/10/17 9:10	Tahoe City	1	Diatoms	*Epithemia sorex*	322	1.934
3/10/17 9:10	Tahoe City	1	Diatoms	*Staurosirella pinnata*	161	0.023
3/10/17 9:10	Tahoe City	1	Diatoms	*Gomphonema subtile*	268	0.216
3/10/17 9:10	Tahoe City	1	Diatoms	*Meridion circulare*	429	1.725
3/10/17 9:10	Tahoe City	1	Diatoms	*Nitzschia sp.*	2416	40.237
3/10/17 9:10	Tahoe City	1	Diatoms	*Synedra acus*	644	2.830
3/10/17 9:10	Tahoe City	1	Diatoms	*Synedra ulna*	805	8.025
3/10/17 9:10	Tahoe City	1	Dinoflagellates	*Peridinium sp.(large)*	214	0.262
3/10/17 9:10	Tahoe City	1	Greens	*Ankistrodesmus spiralis*	214	0.026
3/10/17 9:10	Tahoe City	1	Greens	*Cosmarium phaseolus*	429	0.836
3/10/17 9:10	Tahoe City	1	Greens	*Elakatothrix gelatinosa*	537	0.045
3/10/17 9:10	Tahoe City	1	Greens	*Tetraedron minimum v.tetralobulatum*	7721	0.404
3/10/17 9:10	Tahoe City	1	Haptophyte	*Chrysochromulina parva*	37748	1.725
3/10/17 9:30	Mid-lake North	1	Chrysophytes	*Kephyrion globosa*	921	0.070
3/10/17 9:30	Mid-lake North	1	Chrysophytes	*Kephrion Rubri-Claustri*	57	0.004
3/10/17 9:30	Mid-lake North	1	Cryptomonads	*Cryptomonas sp.*	403	0.778
3/10/17 9:30	Mid-lake North	1	Cryptomonads	*Rhodomonas lacustris*	1843	0.529
3/10/17 9:30	Mid-lake North	1	Diatoms	*Cyclotella bodanica*	576	3.353
3/10/17 9:30	Mid-lake North	1	Diatoms	*Cyclotella comensis*	1843	0.789
3/10/17 9:30	Mid-lake North	1	Diatoms	*Cyclotella gordonensis*	5529	1.194
3/10/17 9:30	Mid-lake North	1	Diatoms	*Nitzschia sp.*	288	4.797
3/10/17 9:30	Mid-lake North	1	Diatoms	*Synedra acus*	173	0.760
3/10/17 9:30	Mid-lake North	1	Greens	*Ankistrodesmus spiralis*	346	0.043
3/10/17 9:30	Mid-lake North	1	Greens	*Cosmarium bioculatum*	921	0.412
3/10/17 9:30	Mid-lake North	1	Greens	*Cosmarium phaseolus*	173	0.337
3/10/17 9:30	Mid-lake North	1	Greens	*Elakatothrix gelatinosa*	461	0.039
3/10/17 9:30	Mid-lake North	1	Greens	*Planktonema lauterbornii*	230	0.014
3/10/17 9:30	Mid-lake North	1	Greens	*Tetraedron minimum v.tetralobulatum*	3686	0.193
3/10/17 9:30	Mid-lake North	1	Haptophyte	*Chrysochromulina parva*	27649	1.264
3/10/17 10:05	Kings Beach	1	Chrysophytes	*Kephyrion cupliforme*	848	0.071
3/10/17 10:05	Kings Beach	1	Chrysophytes	*Kephyrion globosa*	848	0.065
3/10/17 10:05	Kings Beach	1	Cryptomonads	*Cryptomonas sp.*	4463	8.621
3/10/17 10:05	Kings Beach	1	Cryptomonads	*Rhodomonas lacustris*	28013	8.047
3/10/17 10:05	Kings Beach	1	Diatoms	*Achnanthes lanceolata var. elliptica*	212	0.025
3/10/17 10:05	Kings Beach	1	Diatoms	*Cyclotella bodanica*	584	3.399

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
3/10/17 10:05	Kings Beach	1	Diatoms	*Cyclotella comensis*	1697	0.727
3/10/17 10:05	Kings Beach	1	Diatoms	*Cyclotella gordonensis*	848	0.209
3/10/17 10:05	Kings Beach	1	Diatoms	*Epithemia sorex*	265	1.592
3/10/17 10:05	Kings Beach	1	Diatoms	*Gomphonema subtile*	53	0.043
3/10/17 10:05	Kings Beach	1	Diatoms	*Aulacoseira italica*	1487	2.924
3/10/17 10:05	Kings Beach	1	Diatoms	*Navicula pupula*	53	0.093
3/10/17 10:05	Kings Beach	1	Diatoms	*Nitzschia sp.*	1115	18.570
3/10/17 10:05	Kings Beach	1	Diatoms	*Synedra acus*	371	1.630
3/10/17 10:05	Kings Beach	1	Diatoms	*Synedra ulna*	53	0.528
3/10/17 10:05	Kings Beach	1	Dinoflagellates	*Peridinium sp.(large)*	903	1.103
3/10/17 10:05	Kings Beach	1	Greens	*Ankistrodesmus spiralis*	637	0.079
3/10/17 10:05	Kings Beach	1	Greens	*Closterium sp.*	106	0.464
3/10/17 10:05	Kings Beach	1	Greens	*Cosmarium bioculatum*	1697	0.759
3/10/17 10:05	Kings Beach	1	Greens	*Cosmarium phaseolus*	106	0.207
3/10/17 10:05	Kings Beach	1	Greens	*Elakatothrix gelatinosa*	212	0.018
3/10/17 10:05	Kings Beach	1	Greens	*Planktonema lauterbornii*	212	0.013
3/10/17 10:05	Kings Beach	1	Greens	*Tetraedron minimum v.tetralobulatum*	12733	0.667
3/10/17 10:05	Kings Beach	1	Haptophyte	*Chrysochromulina parva*	25466	1.164
3/10/17 10:35	Crystal Bay	1	Chrysophytes	*Kephyrion cupliforme*	937	0.078
3/10/17 10:35	Crystal Bay	1	Chrysophytes	*Kephyrion globosa*	937	0.072
3/10/17 10:35	Crystal Bay	1	Chrysophytes	*Kephrion Rubri-Claustri*	937	0.062
3/10/17 10:35	Crystal Bay	1	Cryptomonads	*Cryptomonas sp.*	3463	6.690
3/10/17 10:35	Crystal Bay	1	Cryptomonads	*Rhodomonas lacustris*	20630	5.926
3/10/17 10:35	Crystal Bay	1	Diatoms	*Asterionella formosa*	58	0.028
3/10/17 10:35	Crystal Bay	1	Diatoms	*Cyclotella bodanica*	1878	10.932
3/10/17 10:35	Crystal Bay	1	Diatoms	*Cyclotella comensis*	4688	2.007
3/10/17 10:35	Crystal Bay	1	Diatoms	*Cyclotella gordonensis*	10314	2.026
3/10/17 10:35	Crystal Bay	1	Diatoms	*Epithemia sorex*	58	0.348
3/10/17 10:35	Crystal Bay	1	Diatoms	*Aulacoseira italica*	1232	2.423
3/10/17 10:35	Crystal Bay	1	Diatoms	*Meridion circulare*	58	0.233
3/10/17 10:35	Crystal Bay	1	Diatoms	*Nitzschia sp.*	821	13.673
3/10/17 10:35	Crystal Bay	1	Diatoms	*Synedra acus*	117	0.514
3/10/17 10:35	Crystal Bay	1	Diatoms	*Tabellaria flocculosa*	58	0.361
3/10/17 10:35	Crystal Bay	1	Dinoflagellates	*Gymnodinium fuscum*	58	0.857
3/10/17 10:35	Crystal Bay	1	Dinoflagellates	*Peridinium sp.(large)*	293	0.358
3/10/17 10:35	Crystal Bay	1	Greens	*Ankistrodesmus spiralis*	176	0.022
3/10/17 10:35	Crystal Bay	1	Greens	*Cosmarium bioculatum*	937	0.419
3/10/17 10:35	Crystal Bay	1	Greens	*Cosmarium phaseolus*	58	0.113
3/10/17 10:35	Crystal Bay	1	Greens	*Elakatothrix gelatinosa*	352	0.029
3/10/17 10:35	Crystal Bay	1	Greens	*Oocystis parva*	1875	0.182
3/10/17 10:35	Crystal Bay	1	Greens	*Tetraedron minimum v.tetralobulatum*	14066	0.737
3/10/17 10:35	Crystal Bay	1	Haptophyte	*Chrysochromulina parva*	15941	0.729
3/10/17 11:10	Glenbrook	1	Chrysophytes	*Dinobryon sp.*	916	0.173
3/10/17 11:10	Glenbrook	1	Chrysophytes	*Kephyrion cupliforme*	1832	0.153
3/10/17 11:10	Glenbrook	1	Chrysophytes	*Kephrion Rubri-Claustri*	916	0.030
3/10/17 11:10	Glenbrook	1	Cryptomonads	*Cryptomonas sp.*	1606	3.102
3/10/17 11:10	Glenbrook	1	Cryptomonads	*Rhodomonas lacustris*	15579	4.475
3/10/17 11:10	Glenbrook	1	Diatoms	*Achnanthes lanceolata var. elliptica*	229	0.027
3/10/17 11:10	Glenbrook	1	Diatoms	*Cyclotella bodanica*	1835	10.682
3/10/17 11:10	Glenbrook	1	Diatoms	*Cyclotella comensis*	8247	3.531

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
3/10/17 11:10	Glenbrook	1	Diatoms	*Cyclotella gordonensis*	10080	1.643
3/10/17 11:10	Glenbrook	1	Diatoms	*Cymbella sp.*	57	0.072
3/10/17 11:10	Glenbrook	1	Diatoms	*Epithemia sorex*	57	0.342
3/10/17 11:10	Glenbrook	1	Diatoms	*Fragilaria crotonensis*	344	0.407
3/10/17 11:10	Glenbrook	1	Diatoms	*Gomphonema subtile*	229	0.185
3/10/17 11:10	Glenbrook	1	Diatoms	*Meridion circulare*	286	1.150
3/10/17 11:10	Glenbrook	1	Diatoms	*Nitzschia sp.*	1262	21.018
3/10/17 11:10	Glenbrook	1	Diatoms	*Synedra acus*	803	3.528
3/10/17 11:10	Glenbrook	1	Diatoms	*Synedra mazamaensis*	916	0.187
3/10/17 11:10	Glenbrook	1	Diatoms	*Synedra ulna*	57	0.568
3/10/17 11:10	Glenbrook	1	Dinoflagellates	*Peridinium sp.(large)*	458	0.560
3/10/17 11:10	Glenbrook	1	Greens	*Ankistrodesmus spiralis*	917	0.113
3/10/17 11:10	Glenbrook	1	Greens	*Cosmarium phaseolus*	114	0.222
3/10/17 11:10	Glenbrook	1	Greens	*Elakatothrix gelatinosa*	688	0.058
3/10/17 11:10	Glenbrook	1	Greens	*Spondylosium planum*	344	0.146
3/10/17 11:10	Glenbrook	1	Greens	*Tetraedron minimum v.tetralobulatum*	23826	1.248
3/10/17 11:10	Glenbrook	1	Haptophyte	*Chrysochromulina parva*	28409	1.299
3/10/17 11:30	Zephyr Cove	1	Chrysophytes	*Kephyrion cupliforme*	1792	0.150
3/10/17 11:30	Zephyr Cove	1	Chrysophytes	*Kephyrion spirale*	896	0.029
3/10/17 11:30	Zephyr Cove	1	Cryptomonads	*Cryptomonas sp.*	7740	14.952
3/10/17 11:30	Zephyr Cove	1	Cryptomonads	*Rhodomonas lacustris*	56451	16.216
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Achnanthes lanceolata var. elliptica*	336	0.040
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Cyclotella bodanica*	1570	9.139
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Cyclotella comensis*	4480	1.918
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Cyclotella gordonensis*	8064	1.494
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Gomphonema parvulum*	56	0.014
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Gomphonema subtile*	168	0.136
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Aulacoseira italica*	729	1.434
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Meridion circulare*	56	0.225
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Nitzschia sp.*	785	13.074
3/10/17 11:30	Zephyr Cove	1	Diatoms	*Synedra acus*	673	2.957
3/10/17 11:30	Zephyr Cove	1	Dinoflagellates	*Gymnodinium fuscum*	112	1.655
3/10/17 11:30	Zephyr Cove	1	Dinoflagellates	*Peridinium sp.(large)*	504	0.616
3/10/17 11:30	Zephyr Cove	1	Greens	*Ankistrodesmus spiralis*	280	0.035
3/10/17 11:30	Zephyr Cove	1	Greens	*Cosmarium phaseolus*	56	0.109
3/10/17 11:30	Zephyr Cove	1	Greens	*Elakatothrix gelatinosa*	673	0.056
3/10/17 11:30	Zephyr Cove	1	Greens	*Tetraedron minimum v.tetralobulatum*	19713	1.033
3/10/17 11:30	Zephyr Cove	1	Haptophyte	*Chrysochromulina parva*	33154	1.516
3/10/17 11:40	Mid-lake South	1	Cryptomonads	*Cryptomonas sp.*	1570	3.033
3/10/17 11:40	Mid-lake South	1	Cryptomonads	*Rhodomonas lacustris*	11648	3.346
3/10/17 11:40	Mid-lake South	1	Diatoms	*Achnanthes lanceolata var. elliptica*	224	0.026
3/10/17 11:40	Mid-lake South	1	Diatoms	*Cyclotella bodanica*	1177	6.851
3/10/17 11:40	Mid-lake South	1	Diatoms	*Cyclotella comensis*	6272	2.685
3/10/17 11:40	Mid-lake South	1	Diatoms	*Cyclotella gordonensis*	4480	0.611
3/10/17 11:40	Mid-lake South	1	Diatoms	*Cymbella sp.*	56	0.070
3/10/17 11:40	Mid-lake South	1	Diatoms	*Aulacoseira italica*	2187	4.301
3/10/17 11:40	Mid-lake South	1	Diatoms	*Nitzschia sp.*	897	14.939
3/10/17 11:40	Mid-lake South	1	Diatoms	*Synedra acus*	224	0.984
3/10/17 11:40	Mid-lake South	1	Dinoflagellates	*Gymnodinium fuscum*	56	0.828
3/10/17 11:40	Mid-lake South	1	Dinoflagellates	*Peridinium sp.(large)*	168	0.205
3/10/17 11:40	Mid-lake South	1	Greens	*Ankistrodesmus spiralis*	224	0.028

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
3/10/17 11:40	Mid-lake South	1	Greens	*Cosmarium bioculatum*	896	0.401
3/10/17 11:40	Mid-lake South	1	Greens	*Cosmarium phaseolus*	112	0.218
3/10/17 11:40	Mid-lake South	1	Greens	*Elakatothrix gelatinosa*	280	0.023
3/10/17 11:40	Mid-lake South	1	Greens	*Oocystis parva*	5376	0.522
3/10/17 11:40	Mid-lake South	1	Greens	*Tetraedron minimum v.tetralobulatum*	13440	0.704
3/10/17 11:40	Mid-lake South	1	Haptophyte	*Chrysochromulina parva*	34050	1.556
3/10/17 12:00	Timber Cove	1	Cryptomonads	*Cryptomonas sp.*	2174	4.200
3/10/17 12:00	Timber Cove	1	Cryptomonads	*Rhodomonas lacustris*	20678	5.940
3/10/17 12:00	Timber Cove	1	Diatoms	*Achnanthes lanceolata var. elliptica*	362	0.043
3/10/17 12:00	Timber Cove	1	Diatoms	*Asterionella formosa*	1085	0.524
3/10/17 12:00	Timber Cove	1	Diatoms	*Cyclotella bodanica*	466	2.713
3/10/17 12:00	Timber Cove	1	Diatoms	*Cyclotella comensis*	6617	2.833
3/10/17 12:00	Timber Cove	1	Diatoms	*Cyclotella gordonensis*	9925	1.991
3/10/17 12:00	Timber Cove	1	Diatoms	*Cymbella sp.*	258	0.324
3/10/17 12:00	Timber Cove	1	Diatoms	*Diatoma vulgare*	103	0.460
3/10/17 12:00	Timber Cove	1	Diatoms	*Fragilaria capucina*	207	0.229
3/10/17 12:00	Timber Cove	1	Diatoms	*Staurosira construens*	5996	1.145
3/10/17 12:00	Timber Cove	1	Diatoms	*Staurosirella pinnata*	621	0.090
3/10/17 12:00	Timber Cove	1	Diatoms	*Gomphonema subtile*	466	0.376
3/10/17 12:00	Timber Cove	1	Diatoms	*Aulacoseira italica*	673	1.323
3/10/17 12:00	Timber Cove	1	Diatoms	*Meridion circulare*	310	1.247
3/10/17 12:00	Timber Cove	1	Diatoms	*Navicula pupula*	51	0.090
3/10/17 12:00	Timber Cove	1	Diatoms	*Navicula radiosa*	51	0.662
3/10/17 12:00	Timber Cove	1	Diatoms	*Nitzschia sp.*	1760	29.312
3/10/17 12:00	Timber Cove	1	Diatoms	*Rhopalodia gibba*	103	2.543
3/10/17 12:00	Timber Cove	1	Diatoms	*Synedra acus*	1398	6.143
3/10/17 12:00	Timber Cove	1	Diatoms	*Synedra ulna*	207	2.064
3/10/17 12:00	Timber Cove	1	Dinoflagellates	*Gymnodinium fuscum*	51	0.754
3/10/17 12:00	Timber Cove	1	Dinoflagellates	*Peridinium sp.(large)*	155	0.189
3/10/17 12:00	Timber Cove	1	Greens	*Ankistrodesmus spiralis*	103	0.013
3/10/17 12:00	Timber Cove	1	Greens	*Cosmarium bioculatum*	827	0.370
3/10/17 12:00	Timber Cove	1	Greens	*Elakatothrix gelatinosa*	207	0.017
3/10/17 12:00	Timber Cove	1	Greens	*Planktonema lauterbornii*	362	0.022
3/10/17 12:00	Timber Cove	1	Greens	*Tetraedron minimum v.tetralobulatum*	8271	0.433
3/10/17 12:00	Timber Cove	1	Cyanophytes	*Anabaena aequalis*	6731	0.226
3/10/17 12:00	Timber Cove	1	Haptophyte	*Chrysochromulina parva*	6617	0.302
3/10/17 12:15	Tahoe Keys	1	Chrysophytes	*Kephyrion cupliforme*	3487	0.292
3/10/17 12:15	Tahoe Keys	1	Chrysophytes	*Kephrion Rubri-Claustri*	1743	0.114
3/10/17 12:15	Tahoe Keys	1	Cryptomonads	*Cryptomonas sp.*	5785	11.175
3/10/17 12:15	Tahoe Keys	1	Cryptomonads	*Rhodomonas lacustris*	33129	9.516
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Achnanthes lanceolata var. elliptica*	218	0.026
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Asterionella formosa*	327	0.158
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Cyclotella bodanica*	1419	8.260
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Cyclotella comensis*	12205	5.225
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Cyclotella gordonensis*	10461	0.978
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Cymbella sp.*	218	0.274
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Staurosira construens*	764	0.146
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Staurosirella pinnata*	10462	1.515
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Navicula radiosa*	54	0.701
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Nitzschia sp.*	1855	30.894
3/10/17 12:15	Tahoe Keys	1	Diatoms	*Stephanodiscus alpinus*	54	0.430

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
3/10/17 12:15	Tahoe Keys	1	Dinoflagellates	*Gymnodinium fuscum*	436	6.443
3/10/17 12:15	Tahoe Keys	1	Dinoflagellates	*Peridinium inconspicuum*	218	0.211
3/10/17 12:15	Tahoe Keys	1	Dinoflagellates	*Peridinium sp.(large)*	1419	1.734
3/10/17 12:15	Tahoe Keys	1	Greens	*Ankistrodesmus spiralis*	436	0.054
3/10/17 12:15	Tahoe Keys	1	Greens	*Cosmarium bioculatum*	1743	0.780
3/10/17 12:15	Tahoe Keys	1	Greens	*Cosmarium phaseolus*	218	0.425
3/10/17 12:15	Tahoe Keys	1	Greens	*Elakatothrix gelatinosa*	218	0.018
3/10/17 12:15	Tahoe Keys	1	Greens	*Oocystis parva*	109	0.011
3/10/17 12:15	Tahoe Keys	1	Greens	*Tetraedron minimum v.tetralobulatum*	5231	0.274
3/10/17 12:15	Tahoe Keys	1	Cyanophytes	*Anabaena aequalis*	8732	0.293
3/10/17 12:15	Tahoe Keys	1	Haptophyte	*Chrysochromulina parva*	64516	2.949
3/10/17 12:25	Camp Richardson	1	Chrysophytes	*Kephrion Rubri-Claustri*	3468	0.228
3/10/17 12:25	Camp Richardson	1	Cryptomonads	*Cryptomonas sp.*	1574	3.041
3/10/17 12:25	Camp Richardson	1	Cryptomonads	*Rhodomonas lacustris*	14741	4.234
3/10/17 12:25	Camp Richardson	1	Diatoms	*Achnanthes lanceolata var. elliptica*	1355	0.160
3/10/17 12:25	Camp Richardson	1	Diatoms	*Asterionella formosa*	434	0.210
3/10/17 12:25	Camp Richardson	1	Diatoms	*Cyclotella bodanica*	1085	6.316
3/10/17 12:25	Camp Richardson	1	Diatoms	*Cyclotella comensis*	8671	3.712
3/10/17 12:25	Camp Richardson	1	Diatoms	*Cyclotella gordonensis*	13007	2.092
3/10/17 12:25	Camp Richardson	1	Diatoms	*Cymbella sp.*	162	0.204
3/10/17 12:25	Camp Richardson	1	Diatoms	*Fragilaria capucina*	217	0.240
3/10/17 12:25	Camp Richardson	1	Diatoms	*Staurosira construens*	54	0.010
3/10/17 12:25	Camp Richardson	1	Diatoms	*Aulacoseira italica*	162	0.319
3/10/17 12:25	Camp Richardson	1	Diatoms	*Meridion circulare*	108	0.434
3/10/17 12:25	Camp Richardson	1	Diatoms	*Nitzschia sp.*	2931	48.815
3/10/17 12:25	Camp Richardson	1	Diatoms	*Synedra acus*	1085	4.767
3/10/17 12:25	Camp Richardson	1	Diatoms	*Synedra ulna*	108	1.077
3/10/17 12:25	Camp Richardson	1	Diatoms	*Tabellaria flocculosa*	108	0.672
3/10/17 12:25	Camp Richardson	1	Dinoflagellates	*Peridinium sp.(large)*	325	0.397
3/10/17 12:25	Camp Richardson	1	Greens	*Ankistrodesmus spiralis*	108	0.013
3/10/17 12:25	Camp Richardson	1	Greens	*Cosmarium bioculatum*	2601	1.164
3/10/17 12:25	Camp Richardson	1	Greens	*Cosmarium phaseolus*	108	0.210
3/10/17 12:25	Camp Richardson	1	Greens	*Elakatothrix gelatinosa*	217	0.018
3/10/17 12:25	Camp Richardson	1	Greens	*Oocystis parva*	867	0.084
3/10/17 12:25	Camp Richardson	1	Greens	*Tetraedron minimum v.tetralobulatum*	32084	1.681
3/10/17 12:25	Camp Richardson	1	Haptophyte	*Chrysochromulina parva*	23413	1.070
3/10/17 12:50	Emerald Bay	1	Chrysophytes	*Dinobryon sp.*	313	0.059
3/10/17 12:50	Emerald Bay	1	Chrysophytes	*Flagellates (<5µm)*	732	0.006
3/10/17 12:50	Emerald Bay	1	Chrysophytes	*Kephrion Rubri-Claustri*	104	0.007
3/10/17 12:50	Emerald Bay	1	Cryptomonads	*Cryptomonas sp.*	17718	34.227
3/10/17 12:50	Emerald Bay	1	Cryptomonads	*Rhodomonas lacustris*	3662	1.052
3/10/17 12:50	Emerald Bay	1	Diatoms	*Asterionella formosa*	5369	2.593
3/10/17 12:50	Emerald Bay	1	Diatoms	*Cyclotella bodanica*	1569	9.133
3/10/17 12:50	Emerald Bay	1	Diatoms	*Staurosirella pinnata*	1674	0.242
3/10/17 12:50	Emerald Bay	1	Diatoms	*Gomphonema olivaceum*	209	0.100
3/10/17 12:50	Emerald Bay	1	Diatoms	*Gomphonema subtile*	104	0.084
3/10/17 12:50	Emerald Bay	1	Diatoms	*Nitzschia sp.*	784	13.057
3/10/17 12:50	Emerald Bay	1	Diatoms	*Synedra acus*	34363	150.984
3/10/17 12:50	Emerald Bay	1	Diatoms	*Tabellaria flocculosa*	104	0.647
3/10/17 12:50	Emerald Bay	1	Dinoflagellates	*Gymnodinium fuscum*	784	11.586
3/10/17 12:50	Emerald Bay	1	Dinoflagellates	*Peridinium inconspicuum*	523	0.507

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
3/10/17 12:50	Emerald Bay	1	Dinoflagellates	*Peridinium sp.(large)*	1307	1.597
3/10/17 12:50	Emerald Bay	1	Greens	*Ankistrodesmus spiralis*	1831	0.226
3/10/17 12:50	Emerald Bay	1	Greens	*Cosmarium bioculatum*	104	0.047
3/10/17 12:50	Emerald Bay	1	Greens	*Cosmarium phaseolus*	104	0.203
3/10/17 12:50	Emerald Bay	1	Greens	*Tetraedron minimum v.tetralobulatum*	1046	0.055
3/10/17 12:50	Emerald Bay	1	Haptophyte	*Chrysochromulina parva*	3348	0.153
3/10/17 13:45	Rubicon Bay	1	Cryptomonads	*Cryptomonas sp.*	2600	5.023
3/10/17 13:45	Rubicon Bay	1	Cryptomonads	*Rhodomonas lacustris*	13848	3.978
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Cyclotella bodanica*	1223	7.119
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Cyclotella comensis*	6516	2.790
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Cyclotella gordonensis*	3257	0.354
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Cymbella sp.*	101	0.127
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Gomphonema subtile*	101	0.081
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Aulacoseira italica*	2651	5.213
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Nitzschia sp.*	152	2.531
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Synedra acus*	152	0.668
3/10/17 13:45	Rubicon Bay	1	Diatoms	*Synedra ulna*	152	1.515
3/10/17 13:45	Rubicon Bay	1	Greens	*Ankistrodesmus spiralis*	50	0.006
3/10/17 13:45	Rubicon Bay	1	Greens	*Cosmarium phaseolus*	305	0.594
3/10/17 13:45	Rubicon Bay	1	Greens	*Elakatothrix gelatinosa*	407	0.034
3/10/17 13:45	Rubicon Bay	1	Greens	*Tetraedron minimum v.tetralobulatum*	12218	0.640
3/10/17 13:45	Rubicon Bay	1	Haptophyte	*Chrysochromulina parva*	11404	0.521
3/10/17 14:10	Sunnyside	1	Cryptomonads	*Cryptomonas sp.*	2019	3.900
3/10/17 14:10	Sunnyside	1	Cryptomonads	*Rhodomonas lacustris*	20373	5.852
3/10/17 14:10	Sunnyside	1	Diatoms	*Asterionella formosa*	53	0.026
3/10/17 14:10	Sunnyside	1	Diatoms	*Cyclotella bodanica*	584	3.399
3/10/17 14:10	Sunnyside	1	Diatoms	*Cyclotella comensis*	5093	2.181
3/10/17 14:10	Sunnyside	1	Diatoms	*Cyclotella gordonensis*	5092	0.944
3/10/17 14:10	Sunnyside	1	Diatoms	*Cymbella sp.*	53	0.067
3/10/17 14:10	Sunnyside	1	Diatoms	*Epithemia sorex*	53	0.318
3/10/17 14:10	Sunnyside	1	Diatoms	*Staurosira construens*	106	0.020
3/10/17 14:10	Sunnyside	1	Diatoms	*Gomphonema subtile*	106	0.086
3/10/17 14:10	Sunnyside	1	Diatoms	*Aulacoseira italica*	531	1.044
3/10/17 14:10	Sunnyside	1	Diatoms	*Nitzschia sp.*	212	3.531
3/10/17 14:10	Sunnyside	1	Diatoms	*Synedra acus*	159	0.699
3/10/17 14:10	Sunnyside	1	Diatoms	*Synedra ulna*	1169	11.654
3/10/17 14:10	Sunnyside	1	Greens	*Ankistrodesmus spiralis*	265	0.033
3/10/17 14:10	Sunnyside	1	Greens	*Cosmarium phaseolus*	106	0.207
3/10/17 14:10	Sunnyside	1	Greens	*Elakatothrix gelatinosa*	637	0.053
3/10/17 14:10	Sunnyside	1	Greens	*Oocystis parva*	1697	0.165
3/10/17 14:10	Sunnyside	1	Greens	*Tetraedron minimum v.tetralobulatum*	13582	0.712
3/10/17 14:10	Sunnyside	1	Haptophyte	*Chrysochromulina parva*	30560	1.397
5/23/17 9:00	Tahoe City	1	Diatoms	*Achnanthes lanceolata var. elliptica*	2500	0.295
5/23/17 9:00	Tahoe City	1	Diatoms	*Cyclotella bodanica*	1250	7.276
5/23/17 9:00	Tahoe City	1	Diatoms	*Cyclotella comensis*	26881	11.509
5/23/17 9:00	Tahoe City	1	Diatoms	*Cyclotella gordonensis*	251919	34.459
5/23/17 9:00	Tahoe City	1	Diatoms	*Cymbella sp.*	192	0.241
5/23/17 9:00	Tahoe City	1	Diatoms	*Diatoma vulgare*	48	0.214
5/23/17 9:00	Tahoe City	1	Diatoms	*Epithemia sorex*	192	1.153
5/23/17 9:00	Tahoe City	1	Diatoms	*Fragilaria crotonensis*	96	0.114

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 9:00	Tahoe City	1	Diatoms	*Gomphonema sp.*	96	0.092
5/23/17 9:00	Tahoe City	1	Diatoms	*Aulacoseira granulata var. angustissima f.*	384	0.713
5/23/17 9:00	Tahoe City	1	Diatoms	*Nitzschia sp.*	3365	56.043
5/23/17 9:00	Tahoe City	1	Diatoms	*Rhopalodia gibba*	48	1.185
5/23/17 9:00	Tahoe City	1	Diatoms	*Stephanodiscus alpinus*	288	2.294
5/23/17 9:00	Tahoe City	1	Diatoms	*Surirella robusta var. splendida*	48	7.383
5/23/17 9:00	Tahoe City	1	Diatoms	*Synedra acus*	12308	54.079
5/23/17 9:00	Tahoe City	1	Diatoms	*Synedra ulna*	480	4.785
5/23/17 9:00	Tahoe City	1	Chrysophytes	*Dinobryon sociale v. americanum*	6002	1.124
5/23/17 9:00	Tahoe City	1	Chrysophytes	*Flagellates (<5µm)*	13824	0.111
5/23/17 9:00	Tahoe City	1	Chrysophytes	*Kephyrion cupliforme*	3072	0.257
5/23/17 9:00	Tahoe City	1	Chrysophytes	*Kephrion rubri-claustri*	9216	0.605
5/23/17 9:00	Tahoe City	1	Chrysophytes	*Kephyrion spirale*	3072	0.100
5/23/17 9:00	Tahoe City	1	Cryptomonads	*Cryptomonas sp.*	2980	5.757
5/23/17 9:00	Tahoe City	1	Cryptomonads	*Rhodomonas lacustris*	12288	3.530
5/23/17 9:00	Tahoe City	1	Dinoflagellates	*Gymnodinium fuscum*	1778	26.276
5/23/17 9:00	Tahoe City	1	Dinoflagellates	*Peridinium inconspicuum*	3557	3.449
5/23/17 9:00	Tahoe City	1	Dinoflagellates	*Peridinium sp.(large)*	18270	22.326
5/23/17 9:00	Tahoe City	1	Greens	*Ankistrodesmus spiralis*	673	0.083
5/23/17 9:00	Tahoe City	1	Greens	*Cosmarium phaseolus*	769	1.499
5/23/17 9:00	Tahoe City	1	Greens	*Elakatothrix gelatinosa*	4134	0.346
5/23/17 9:00	Tahoe City	1	Greens	*Planktonema lauterbornii*	2019	0.123
5/23/17 9:00	Tahoe City	1	Greens	*Spondylosium planum*	192	0.082
5/23/17 9:00	Tahoe City	1	Greens	*Tetraedron minimum v. tetralobulatum*	18433	0.966
5/23/17 9:00	Tahoe City	1	Haptophyte	*Chrysochromulina parva*	15360	0.702
5/23/17 9:25	Mid-Lake North	1	Diatoms	*Cyclotella gordonensis*	18003	3.887
5/23/17 9:25	Mid-Lake North	1	Diatoms	*Nitzschia sp.*	187	3.114
5/23/17 9:25	Mid-Lake North	1	Diatoms	*Synedra acus*	1878	8.252
5/23/17 9:25	Mid-Lake North	1	Chrysophytes	*Bitrichia chodati*	750	0.082
5/23/17 9:25	Mid-Lake North	1	Chrysophytes	*Dinobryon sociale v. americanum*	187	0.035
5/23/17 9:25	Mid-Lake North	1	Chrysophytes	*Flagellates (<5µm)*	3000	0.024
5/23/17 9:25	Mid-Lake North	1	Chrysophytes	*Kephyrion cupliforme*	750	0.063
5/23/17 9:25	Mid-Lake North	1	Chrysophytes	*Kephrion rubri-claustri*	13503	0.887
5/23/17 9:25	Mid-Lake North	1	Dinoflagellates	*Gymnodinium fuscum*	46	0.680
5/23/17 9:25	Mid-Lake North	1	Dinoflagellates	*Peridinium inconspicuum*	1080	1.047
5/23/17 9:25	Mid-Lake North	1	Dinoflagellates	*Peridinium sp.(large)*	1174	1.435
5/23/17 9:25	Mid-Lake North	1	Greens	*Ankistrodesmus spiralis*	140	0.017
5/23/17 9:25	Mid-Lake North	1	Greens	*Cosmarium bioculatum*	46	0.021
5/23/17 9:25	Mid-Lake North	1	Greens	*Cosmarium phaseolus*	234	0.456
5/23/17 9:25	Mid-Lake North	1	Greens	*Elakatothrix gelatinosa*	187	0.016
5/23/17 9:25	Mid-Lake North	1	Greens	*Planktonema lauterbornii*	422	0.026
5/23/17 9:25	Mid-Lake North	1	Greens	*Tetraedron minimum v. tetralobulatum*	1500	0.079
5/23/17 9:25	Mid-Lake North	1	Haptophyte	*Chrysochromulina parva*	3750	0.171
5/23/17 9:45	Kings Beach	1	Diatoms	*Cyclotella bodanica*	288	1.676
5/23/17 9:45	Kings Beach	1	Diatoms	*Cyclotella comensis*	3072	1.315
5/23/17 9:45	Kings Beach	1	Diatoms	*Cyclotella gordonensis*	13824	2.562
5/23/17 9:45	Kings Beach	1	Diatoms	*Epithemia sorex*	288	1.730
5/23/17 9:45	Kings Beach	1	Diatoms	*Mastogloia smithii*	96	0.260
5/23/17 9:45	Kings Beach	1	Diatoms	*Nitzschia sp.*	288	4.797
5/23/17 9:45	Kings Beach	1	Diatoms	*Synedra acus*	4519	19.856

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 9:45	Kings Beach	1	Diatoms	*Synedra ulna*	96	0.957
5/23/17 9:45	Kings Beach	1	Chrysophytes	*Dinobryon sociale v. americanum*	865	0.162
5/23/17 9:45	Kings Beach	1	Chrysophytes	*Flagellates (<5µm)*	6144	0.049
5/23/17 9:45	Kings Beach	1	Chrysophytes	*Kephyrion cupliforme*	768	0.064
5/23/17 9:45	Kings Beach	1	Chrysophytes	*Kephyrion globosa*	768	0.059
5/23/17 9:45	Kings Beach	1	Chrysophytes	*Kephrion rubri-claustri*	13056	0.857
5/23/17 9:45	Kings Beach	1	Chrysophytes	*Kephyrion spirale*	2304	0.075
5/23/17 9:45	Kings Beach	1	Cryptomonads	*Cryptomonas sp.*	576	1.113
5/23/17 9:45	Kings Beach	1	Cryptomonads	*Rhodomonas lacustris*	13824	3.971
5/23/17 9:45	Kings Beach	1	Dinoflagellates	*Gymnodinium fuscum*	673	9.946
5/23/17 9:45	Kings Beach	1	Dinoflagellates	*Peridinium inconspicuum*	384	0.372
5/23/17 9:45	Kings Beach	1	Dinoflagellates	*Peridinium sp.(large)*	2307	2.819
5/23/17 9:45	Kings Beach	1	Greens	*Cosmarium phaseolus*	192	0.374
5/23/17 9:45	Kings Beach	1	Greens	*Elakatothrix gelatinosa*	2355	0.197
5/23/17 9:45	Kings Beach	1	Greens	*Planktonema lauterbornii*	769	0.047
5/23/17 9:45	Kings Beach	1	Greens	*Tetraedron minimum v. tetralobulatum*	9216	0.483
5/23/17 9:45	Kings Beach	1	Cyanophytes	*Aphanothece sp.*	15360	0.270
5/23/17 9:45	Kings Beach	1	Haptophyte	*Chrysochromulina parva*	19201	0.878
5/23/17 10:15	Crystal Bay	1	Diatoms	*Achnanthes lanceolata var. elliptica*	392	0.046
5/23/17 10:15	Crystal Bay	1	Diatoms	*Ceratoneis arcus*	978	0.807
5/23/17 10:15	Crystal Bay	1	Diatoms	*Cyclotella bodanica*	294	1.711
5/23/17 10:15	Crystal Bay	1	Diatoms	*Cyclotella comensis*	18791	8.045
5/23/17 10:15	Crystal Bay	1	Diatoms	*Cyclotella gordonensis*	139366	18.541
5/23/17 10:15	Crystal Bay	1	Diatoms	*Cymbella sp.*	49	0.062
5/23/17 10:15	Crystal Bay	1	Diatoms	*Staurosirella pinnata*	196	0.028
5/23/17 10:15	Crystal Bay	1	Diatoms	*Gomphonema subtile*	49	0.040
5/23/17 10:15	Crystal Bay	1	Diatoms	*Mastogloia smithii*	98	0.266
5/23/17 10:15	Crystal Bay	1	Diatoms	*Aulacoseira granulata var. angustissima f.*	196	0.364
5/23/17 10:15	Crystal Bay	1	Diatoms	*Meridion circulare*	98	0.394
5/23/17 10:15	Crystal Bay	1	Diatoms	*Navicula radiosa*	98	1.272
5/23/17 10:15	Crystal Bay	1	Diatoms	*Nitzschia sp.*	784	13.057
5/23/17 10:15	Crystal Bay	1	Diatoms	*Synedra acus*	14719	64.672
5/23/17 10:15	Crystal Bay	1	Chrysophytes	*Flagellates (<5µm)*	3131	0.025
5/23/17 10:15	Crystal Bay	1	Chrysophytes	*Kephyrion cupliforme*	1565	0.131
5/23/17 10:15	Crystal Bay	1	Chrysophytes	*Kephrion rubri-claustri*	5480	0.360
5/23/17 10:15	Crystal Bay	1	Cryptomonads	*Cryptomonas sp.*	2254	4.354
5/23/17 10:15	Crystal Bay	1	Cryptomonads	*Rhodomonas lacustris*	3131	0.899
5/23/17 10:15	Crystal Bay	1	Dinoflagellates	*Gymnodinium fuscum*	392	5.793
5/23/17 10:15	Crystal Bay	1	Dinoflagellates	*Peridinium inconspicuum*	392	0.380
5/23/17 10:15	Crystal Bay	1	Dinoflagellates	*Peridinium sp.(large)*	1176	1.437
5/23/17 10:15	Crystal Bay	1	Greens	*Cosmarium bioculatum*	1565	0.700
5/23/17 10:15	Crystal Bay	1	Greens	*Tetraedron minimum v. tetralobulatum*	3131	0.164
5/23/17 10:15	Crystal Bay	1	Cyanophytes	*Aphanothece sp.*	15659	0.276
5/23/17 10:15	Crystal Bay	1	Haptophyte	*Chrysochromulina parva*	4697	0.215
5/23/17 10:50	Glenbrook	1	Diatoms	*Achnanthes lanceolata var. elliptica*	555	0.065
5/23/17 10:50	Glenbrook	1	Diatoms	*Cyclotella bodanica*	555	3.231
5/23/17 10:50	Glenbrook	1	Diatoms	*Cyclotella comensis*	14797	6.335
5/23/17 10:50	Glenbrook	1	Diatoms	*Cyclotella gordonensis*	68807	12.206
5/23/17 10:50	Glenbrook	1	Diatoms	*Staurosira construens*	92	0.018
5/23/17 10:50	Glenbrook	1	Diatoms	*Fragilaria tenera*	46	0.007

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 10:50	Glenbrook	1	Diatoms	*Gomphonema subtile*	92	0.074
5/23/17 10:50	Glenbrook	1	Diatoms	*Navicula pupula*	46	0.081
5/23/17 10:50	Glenbrook	1	Diatoms	*Nitzschia intermedia*	46	0.158
5/23/17 10:50	Glenbrook	1	Diatoms	*Nitzschia sp.*	833	13.873
5/23/17 10:50	Glenbrook	1	Diatoms	*Synedra acus*	5557	24.416
5/23/17 10:50	Glenbrook	1	Chrysophytes	*Dinobryon sociale v. americanum*	138	0.026
5/23/17 10:50	Glenbrook	1	Chrysophytes	*Flagellates (<5µm)*	5918	0.047
5/23/17 10:50	Glenbrook	1	Chrysophytes	*Kephyrion cupliforme*	5179	0.433
5/23/17 10:50	Glenbrook	1	Chrysophytes	*Kephyrion globosa*	2959	0.226
5/23/17 10:50	Glenbrook	1	Chrysophytes	*Kephrion rubri-claustri*	55489	3.644
5/23/17 10:50	Glenbrook	1	Chrysophytes	*Kephyrion spirale*	1479	0.048
5/23/17 10:50	Glenbrook	1	Cryptomonads	*Cryptomonas sp.*	370	0.715
5/23/17 10:50	Glenbrook	1	Dinoflagellates	*Peridinium inconspicuum*	1898	1.840
5/23/17 10:50	Glenbrook	1	Dinoflagellates	*Peridinium sp.(large)*	7179	8.773
5/23/17 10:50	Glenbrook	1	Greens	*Cosmarium bioculatum*	92	0.041
5/23/17 10:50	Glenbrook	1	Greens	*Cosmarium phaseolus*	741	1.444
5/23/17 10:50	Glenbrook	1	Greens	*Elakatothrix gelatinosa*	2084	0.175
5/23/17 10:50	Glenbrook	1	Greens	*Spondylosium planum*	185	0.079
5/23/17 10:50	Glenbrook	1	Greens	*Tetraedron minimum v. tetralobulatum*	8878	0.465
5/23/17 10:50	Glenbrook	1	Haptophyte	*Chrysochromulina parva*	5918	0.271
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Achnanthes lanceolata var. elliptica*	403	0.048
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Cyclotella bodanica*	454	2.643
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Cyclotella comensis*	21774	9.322
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Cyclotella gordonensis*	130644	22.579
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Cymbella sp.*	50	0.063
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Staurosira construens*	151	0.029
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Gomphonema subtile*	100	0.081
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Mastogloia smithii*	50	0.136
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Aulacoseira granulata var. angustissima f.*	403	0.749
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Meridion circulare*	201	0.808
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Navicula radiosa*	100	1.298
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Nitzschia sp.*	1867	31.094
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Synedra acus*	3533	15.523
5/23/17 11:15	Zephyr Cove	1	Diatoms	*Synedra ulna*	100	0.997
5/23/17 11:15	Zephyr Cove	1	Chrysophytes	*Flagellates (<5µm)*	16129	0.129
5/23/17 11:15	Zephyr Cove	1	Chrysophytes	*Kephyrion globosa*	1612	0.123
5/23/17 11:15	Zephyr Cove	1	Chrysophytes	*Kephrion rubri-claustri*	13709	0.900
5/23/17 11:15	Zephyr Cove	1	Cryptomonads	*Cryptomonas sp.*	100	0.193
5/23/17 11:15	Zephyr Cove	1	Cryptomonads	*Rhodomonas lacustris*	3225	0.926
5/23/17 11:15	Zephyr Cove	1	Dinoflagellates	*Gymnodinium fuscum*	302	4.463
5/23/17 11:15	Zephyr Cove	1	Dinoflagellates	*Peridinium inconspicuum*	1413	1.370
5/23/17 11:15	Zephyr Cove	1	Dinoflagellates	*Peridinium sp.(large)*	6512	7.958
5/23/17 11:15	Zephyr Cove	1	Greens	*Ankistrodesmus spiralis*	403	0.050
5/23/17 11:15	Zephyr Cove	1	Greens	*Cosmarium bioculatum*	806	0.361
5/23/17 11:15	Zephyr Cove	1	Greens	*Cosmarium phaseolus*	201	0.392
5/23/17 11:15	Zephyr Cove	1	Greens	*Elakatothrix gelatinosa*	2271	0.190
5/23/17 11:15	Zephyr Cove	1	Greens	*Mougeotia sp.*	302	2.705
5/23/17 11:15	Zephyr Cove	1	Greens	*Spondylosium planum*	100	0.043
5/23/17 11:15	Zephyr Cove	1	Greens	*Tetraedron minimum v. tetralobulatum*	3225	0.169
5/23/17 11:15	Zephyr Cove	1	Haptophyte	*Chrysochromulina parva*	4838	0.221

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 11:30	Mid-Lake South	1	Diatoms	*Cyclotella bodanica*	140	0.815
5/23/17 11:30	Mid-Lake South	1	Diatoms	*Cyclotella comensis*	14187	6.074
5/23/17 11:30	Mid-Lake South	1	Diatoms	*Cyclotella gordonensis*	109019	14.809
5/23/17 11:30	Mid-Lake South	1	Diatoms	*Nitzschia sp.*	327	5.446
5/23/17 11:30	Mid-Lake South	1	Diatoms	*Synedra acus*	5609	24.645
5/23/17 11:30	Mid-Lake South	1	Chrysophytes	*Dinobryon sociale v. americanum*	280	0.052
5/23/17 11:30	Mid-Lake South	1	Chrysophytes	*Kephyrion cupliforme*	1493	0.125
5/23/17 11:30	Mid-Lake South	1	Chrysophytes	*Kephrion rubri-claustri*	14934	0.981
5/23/17 11:30	Mid-Lake South	1	Dinoflagellates	*Gymnodinium fuscum*	140	2.069
5/23/17 11:30	Mid-Lake South	1	Dinoflagellates	*Peridinium inconspicuum*	5048	4.894
5/23/17 11:30	Mid-Lake South	1	Dinoflagellates	*Peridinium sp.(large)*	6918	8.454
5/23/17 11:30	Mid-Lake South	1	Greens	*Cosmarium bioculatum*	4480	2.004
5/23/17 11:30	Mid-Lake South	1	Greens	*Cosmarium phaseolus*	140	0.273
5/23/17 11:30	Mid-Lake South	1	Greens	*Elakatothrix gelatinosa*	888	0.074
5/23/17 11:30	Mid-Lake South	1	Greens	*Planktonema lauterbornii*	280	0.017
5/23/17 11:30	Mid-Lake South	1	Greens	*Spondylosium planum*	186	0.079
5/23/17 11:30	Mid-Lake South	1	Greens	*Tetraedron minimum v. tetralobulatum*	6720	0.352
5/23/17 11:30	Mid-Lake South	1	Haptophyte	*Chrysochromulina parva*	11947	0.546
5/23/17 11:45	Timber Cove	1	Diatoms	*Achnanthes lanceolata var. elliptica*	791	0.093
5/23/17 11:45	Timber Cove	1	Diatoms	*Cyclotella comensis*	17394	7.447
5/23/17 11:45	Timber Cove	1	Diatoms	*Cyclotella gordonensis*	196077	26.413
5/23/17 11:45	Timber Cove	1	Diatoms	*Gomphonema subtile*	98	0.079
5/23/17 11:45	Timber Cove	1	Diatoms	*Mastogloia smithii*	49	0.133
5/23/17 11:45	Timber Cove	1	Diatoms	*Aulacoseira granulata var. angustissima f.*	395	0.734
5/23/17 11:45	Timber Cove	1	Diatoms	*Navicula radiosa*	49	0.636
5/23/17 11:45	Timber Cove	1	Diatoms	*Nitzschia sp.*	1880	31.311
5/23/17 11:45	Timber Cove	1	Diatoms	*Synedra acus*	10789	47.405
5/23/17 11:45	Timber Cove	1	Chrysophytes	*Dinobryon sociale v. americanum*	98	0.018
5/23/17 11:45	Timber Cove	1	Chrysophytes	*Flagellates (<5µm)*	6325	0.051
5/23/17 11:45	Timber Cove	1	Chrysophytes	*Kephyrion globosa*	3162	0.242
5/23/17 11:45	Timber Cove	1	Chrysophytes	*Kephrion rubri-claustri*	6325	0.415
5/23/17 11:45	Timber Cove	1	Chrysophytes	*Kephyrion spirale*	1581	0.051
5/23/17 11:45	Timber Cove	1	Cryptomonads	*Cryptomonas sp.*	395	0.763
5/23/17 11:45	Timber Cove	1	Dinoflagellates	*Gymnodinium fuscum*	98	1.448
5/23/17 11:45	Timber Cove	1	Dinoflagellates	*Peridinium inconspicuum*	2078	2.015
5/23/17 11:45	Timber Cove	1	Dinoflagellates	*Peridinium sp.(large)*	7424	9.072
5/23/17 11:45	Timber Cove	1	Greens	*Ankistrodesmus spiralis*	197	0.024
5/23/17 11:45	Timber Cove	1	Greens	*Cosmarium bioculatum*	3162	1.415
5/23/17 11:45	Timber Cove	1	Greens	*Cosmarium phaseolus*	98	0.191
5/23/17 11:45	Timber Cove	1	Greens	*Elakatothrix gelatinosa*	3167	0.265
5/23/17 11:45	Timber Cove	1	Greens	*Spondylosium planum*	395	0.168
5/23/17 11:45	Timber Cove	1	Greens	*Tetraedron minimum v. tetralobulatum*	3162	0.166
5/23/17 11:45	Timber Cove	1	Cyanophytes	*Anabaena flos-aquae*	1336	0.087
5/23/17 11:45	Timber Cove	1	Haptophyte	*Chrysochromulina parva*	18975	0.867
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Achnanthes lanceolata var. elliptica*	212	0.025
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Asterionella formosa*	212	0.102
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Cyclotella bodanica*	531	3.091
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Cyclotella comensis*	15280	6.542
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Cyclotella gordonensis*	237690	25.549
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Gomphonema subtile*	318	0.257

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Navicula pupula*	106	0.187
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Nitzschia palea*	106	0.191
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Nitzschia sp.*	1381	23.000
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Synedra acus*	12435	54.637
5/23/17 11:55	Tahoe Keys	1	Diatoms	*Synedra ulna*	53	0.528
5/23/17 11:55	Tahoe Keys	1	Chrysophytes	*Dinobryon sociale v. americanum*	106	0.020
5/23/17 11:55	Tahoe Keys	1	Chrysophytes	*Flagellates (<5µm)*	5093	0.041
5/23/17 11:55	Tahoe Keys	1	Chrysophytes	*Kephyrion cupliforme*	1697	0.142
5/23/17 11:55	Tahoe Keys	1	Chrysophytes	*Kephrion rubri-claustri*	11035	0.725
5/23/17 11:55	Tahoe Keys	1	Cryptomonads	*Cryptomonas sp.*	743	1.435
5/23/17 11:55	Tahoe Keys	1	Dinoflagellates	*Gymnodinium fuscum*	531	7.847
5/23/17 11:55	Tahoe Keys	1	Dinoflagellates	*Peridinium inconspicuum*	1062	1.030
5/23/17 11:55	Tahoe Keys	1	Dinoflagellates	*Peridinium sp.(large)*	12010	14.676
5/23/17 11:55	Tahoe Keys	1	Greens	*Ankistrodesmus spiralis*	212	0.026
5/23/17 11:55	Tahoe Keys	1	Greens	*Cosmarium phaseolus*	425	0.828
5/23/17 11:55	Tahoe Keys	1	Greens	*Elakatothrix gelatinosa*	1913	0.160
5/23/17 11:55	Tahoe Keys	1	Greens	*Spondylosium planum*	106	0.045
5/23/17 11:55	Tahoe Keys	1	Greens	*Tetraedron minimum v. tetralobulatum*	12733	0.667
5/23/17 11:55	Tahoe Keys	1	Cyanophytes	*Aphanothece sp.*	16977	0.299
5/23/17 11:55	Tahoe Keys	1	Haptophyte	*Chrysochromulina parva*	13582	0.621
5/23/17 12:10	Richrd	1	Diatoms	*Achnanthes lanceolata var. elliptica*	296	0.035
5/23/17 12:10	Camp Richardson	1	Diatoms	*Asterionella formosa*	296	0.143
5/23/17 12:10	Camp Richardson	1	Diatoms	*Cyclotella bodanica*	395	2.299
5/23/17 12:10	Camp Richardson	1	Diatoms	*Cyclotella comensis*	12650	5.416
5/23/17 12:10	Camp Richardson	1	Diatoms	*Cyclotella gordonensis*	97247	23.971
5/23/17 12:10	Camp Richardson	1	Diatoms	*Cymbella sp.*	98	0.123
5/23/17 12:10	Camp Richardson	1	Diatoms	*Nitzschia sp.*	692	11.525
5/23/17 12:10	Camp Richardson	1	Diatoms	*Synedra acus*	6978	30.660
5/23/17 12:10	Camp Richardson	1	Diatoms	*Tabellaria flocculosa*	49	0.305
5/23/17 12:10	Camp Richardson	1	Chrysophytes	*Dinobryon sociale v. americanum*	98	0.018
5/23/17 12:10	Camp Richardson	1	Chrysophytes	*Kephyrion cupliforme*	2371	0.198
5/23/17 12:10	Camp Richardson	1	Chrysophytes	*Kephrion rubri-claustri*	6325	0.415
5/23/17 12:10	Camp Richardson	1	Cryptomonads	*Cryptomonas sp.*	98	0.189
5/23/17 12:10	Camp Richardson	1	Dinoflagellates	*Gymnodinium fuscum*	197	2.911
5/23/17 12:10	Camp Richardson	1	Dinoflagellates	*Peridinium inconspicuum*	2722	2.639
5/23/17 12:10	Camp Richardson	1	Dinoflagellates	*Peridinium sp.(large)*	12868	15.725
5/23/17 12:10	Camp Richardson	1	Greens	*Ankistrodesmus spiralis*	197	0.024
5/23/17 12:10	Camp Richardson	1	Greens	*Cosmarium bioculatum*	98	0.044
5/23/17 12:10	Camp Richardson	1	Greens	*Cosmarium phaseolus*	98	0.191
5/23/17 12:10	Camp Richardson	1	Greens	*Elakatothrix gelatinosa*	2078	0.174
5/23/17 12:10	Camp Richardson	1	Greens	*Mougeotia sp.*	197	1.764
5/23/17 12:10	Camp Richardson	1	Greens	*Spondylosium planum*	98	0.042
5/23/17 12:10	Camp Richardson	1	Greens	*Tetraedron minimum v. tetralobulatum*	16603	0.870
5/23/17 12:10	Camp Richardson	1	Cyanophytes	*Anabaena flos-aquae*	445	0.029
5/23/17 12:10	Camp Richardson	1	Cyanophytes	*Aphanothece sp.*	26091	0.459
5/23/17 12:10	Camp Richardson	1	Haptophyte	*Chrysochromulina parva*	9487	0.434
5/23/17 12:45	Emerald Bay	1	Diatoms	*Achnanthes lanceolata var. elliptica*	4476	0.528
5/23/17 12:45	Emerald Bay	1	Diatoms	*Asterionella formosa*	476	0.230
5/23/17 12:45	Emerald Bay	1	Diatoms	*Cyclotella bodanica*	1666	9.698
5/23/17 12:45	Emerald Bay	1	Diatoms	*Cyclotella gordonensis*	54016	6.610
5/23/17 12:45	Emerald Bay	1	Diatoms	*Staurosirella pinnata*	285	0.041

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 12:45	Emerald Bay	1	Diatoms	*Nitzschia sp.*	233	3.881
5/23/17 12:45	Emerald Bay	1	Diatoms	*Synedra acus*	1338	5.879
5/23/17 12:45	Emerald Bay	1	Chrysophytes	*Dinobryon sociale v. americanum*	2190	0.410
5/23/17 12:45	Emerald Bay	1	Chrysophytes	*Kephyrion globosa*	7608	0.582
5/23/17 12:45	Emerald Bay	1	Chrysophytes	*Kephrion rubri-claustri*	3043	0.200
5/23/17 12:45	Emerald Bay	1	Cryptomonads	*Cryptomonas sp.*	95	0.184
5/23/17 12:45	Emerald Bay	1	Dinoflagellates	*Gymnodinium fuscum*	7620	112.612
5/23/17 12:45	Emerald Bay	1	Dinoflagellates	*Peridinium sp.(large)*	4095	5.004
5/23/17 12:45	Emerald Bay	1	Greens	*Ankistrodesmus spiralis*	1619	0.200
5/23/17 12:45	Emerald Bay	1	Greens	*Elakatothrix gelatinosa*	428	0.036
5/23/17 12:45	Emerald Bay	1	Greens	*Tetraedron minimum v. tetralobulatum*	13694	0.717
5/23/17 12:45	Emerald Bay	1	Haptophyte	*Chrysochromulina parva*	21302	0.974
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Achnanthes lanceolata var. elliptica*	679	0.080
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Cyclotella bodanica*	776	4.517
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Cyclotella comensis*	23263	9.960
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Cyclotella gordonensis*	168268	21.262
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Epithemia zebra*	48	1.330
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Navicula radiosa*	48	0.623
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Nitzschia palea*	48	0.086
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Nitzschia sp.*	728	12.125
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Synedra acus*	11261	49.479
5/23/17 13:15	Rubicon Bay	1	Diatoms	*Synedra ulna*	97	0.967
5/23/17 13:15	Rubicon Bay	1	Chrysophytes	*Dinobryon sociale v. americanum*	194	0.036
5/23/17 13:15	Rubicon Bay	1	Chrysophytes	*Kephrion rubri-claustri*	17834	1.171
5/23/17 13:15	Rubicon Bay	1	Cryptomonads	*Cryptomonas sp.*	97	0.187
5/23/17 13:15	Rubicon Bay	1	Dinoflagellates	*Gymnodinium fuscum*	97	1.434
5/23/17 13:15	Rubicon Bay	1	Dinoflagellates	*Peridinium inconspicuum*	1165	1.130
5/23/17 13:15	Rubicon Bay	1	Dinoflagellates	*Peridinium sp.(large)*	8495	10.381
5/23/17 13:15	Rubicon Bay	1	Greens	*Ankistrodesmus spiralis*	291	0.036
5/23/17 13:15	Rubicon Bay	1	Greens	*Cosmarium bioculatum*	1550	0.694
5/23/17 13:15	Rubicon Bay	1	Greens	*Cosmarium phaseolus*	242	0.472
5/23/17 13:15	Rubicon Bay	1	Greens	*Elakatothrix gelatinosa*	2087	0.175
5/23/17 13:15	Rubicon Bay	1	Greens	*Planktonema lauterbornii*	776	0.047
5/23/17 13:15	Rubicon Bay	1	Greens	*Spondylosium planum*	194	0.082
5/23/17 13:15	Rubicon Bay	1	Greens	*Tetraedron minimum v. tetralobulatum*	3101	0.162
5/23/17 13:15	Rubicon Bay	1	Cyanophytes	*Aphanothece sp.*	6203	0.109
5/23/17 13:15	Rubicon Bay	1	Haptophyte	*Chrysochromulina parva*	12406	0.567
5/23/17 13:45	Sunnyside	1	Diatoms	*Cyclotella comensis*	16129	6.905
5/23/17 13:45	Sunnyside	1	Diatoms	*Cyclotella gordonensis*	205644	29.962
5/23/17 13:45	Sunnyside	1	Diatoms	*Epithemia sorex*	100	0.601
5/23/17 13:45	Sunnyside	1	Diatoms	*Fragilaria capucina*	100	0.111
5/23/17 13:45	Sunnyside	1	Diatoms	*Gomphonema subtile*	100	0.081
5/23/17 13:45	Sunnyside	1	Diatoms	*Meridion circulare*	252	1.013
5/23/17 13:45	Sunnyside	1	Diatoms	*Nitzschia sp.*	807	13.440
5/23/17 13:45	Sunnyside	1	Diatoms	*Synedra acus*	7875	34.601
5/23/17 13:45	Sunnyside	1	Diatoms	*Synedra ulna*	201	2.004
5/23/17 13:45	Sunnyside	1	Chrysophytes	*Kephyrion globosa*	1612	0.123
5/23/17 13:45	Sunnyside	1	Chrysophytes	*Kephrion rubri-claustri*	4838	0.318
5/23/17 13:45	Sunnyside	1	Cryptomonads	*Cryptomonas sp.*	454	0.877
5/23/17 13:45	Sunnyside	1	Cryptomonads	*Rhodomonas lacustris*	6451	1.853
5/23/17 13:45	Sunnyside	1	Dinoflagellates	*Peridinium inconspicuum*	605	0.587

Date Time Collected	Station	Depth (m)	Group	Species Name	Abundance Units/Liter	Biovolume mm^3/m^3
5/23/17 13:45	Sunnyside	1	Dinoflagellates	*Peridinium sp.(large)*	1716	2.097
5/23/17 13:45	Sunnyside	1	Greens	*Ankistrodesmus spiralis*	201	0.025
5/23/17 13:45	Sunnyside	1	Greens	*Cosmarium phaseolus*	403	0.785
5/23/17 13:45	Sunnyside	1	Greens	*Elakatothrix gelatinosa*	1514	0.127
5/23/17 13:45	Sunnyside	1	Greens	*Mougeotia sp.*	100	0.896
5/23/17 13:45	Sunnyside	1	Greens	*Tetraedron minimum v. tetralobulatum*	8064	0.422
5/23/17 13:45	Sunnyside	1	Haptophyte	*Chrysochromulina parva*	12903	0.590